SAMENA TRENDS

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FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES

Etisalat: **Etisalat Carrier & Wholesale: An Enabler of Transformation in the New Normal**
49

stc Kuwait: **5G Ecosystem and Digital Interdependence**
62

Huawei: **Transparency as a Building Block for Cyber Resilience**
72

Featured

Saudi Arabia is En Route to being the Most Technologically Advanced and Most Sustainable Country in the World

THIS MONTH

THRIVING IN THE ERA OF DIGITAL INTERDEPENDENCE AND SUSTAINABILITY CHALLENGES

CONTENTS

FEATURED

14

Saudi Arabia is en route to being the Most Technologically Advanced and Most Sustainable...

08

Chairman's Report:
Industry Advisory Group for Development Issues and the Private Sector Chief Regulatory Officers' (IAGDI-CRO) meeting

SAMENA COUNCIL ACTIVITY

07

SAMENA Council Draws Attention to Light-Touch Regulation and Policy Enablement for the Private Sector during Global Symposium for Regulators-2021

12

Simmons & Simmons Joins SAMENA Council to Bring International Legal and Regulatory Expertise to the ICT Ecosystem...

CONTENTS

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Thriving in the Era of Digital Interdependence and Sustainability Challenges

In times when focused recovery efforts are required for mitigating losses and newness brought forth by the Covid-19 crisis — which almost took the world by surprise and foreshadowed concerns that there could be similar or worse crises situations to emerge in the future, thus reinforcing the need for solid, reliable and resilient communications networks more than ever — several urgencies have been highlighted, including the need to reduce vulnerabilities for both humans and ICT systems, and to build trust in digital technologies while ensuring protection and privacy of data that flows across network elements. These urgencies stand tall and pronounced against the backdrop of an existing, complex digital ecosystem, which is highly interdependent and demands sustainability, and with which many global as well as nation-level expectations and progress-making are directly linked.

All stakeholders in the economic value-chain are striving to contest negative impact on revenues, decreasing ARPU and profit, and a decrease in employment for impacted sectors and firms; revenue losses to governments; loss of a degree of control of governments over non-traditional digital communication service providers; and a host of technical issues that relate to Universal Service Requirements, data privacy or consumer protection regulations, flow of data across borders, taxation, and so on and so forth.

Expectations put forth by international ICT community, with our region's policymakers and regulators at the forefront, have conspicuously defined priorities attached to them, such as universal access and the development of meaningful and affordable connectivity, which is foundational for ensuring digital inclusion and expediting digital transformation efforts, to achieve human condition-enhancing outcomes.

The fulfillment of these expectations and goals require security, predictability, and sustainable investments and partnerships, fit-for-purpose collaborative policy and regulation, and targeted demand-side approaches, and to an extent, new experimentation. Amidst these priorities, notably, lie two daunting challenges, however: first, filling three gaps — the broadband coverage gap, the network upgrade gap and the broadband adoption gap; and, second, ensuring accelerated pace of adoption of 5G and its meaningful use as well as well return on investments for Operators. This is not at all easy to do, as it also involves re-thinking financing, funding, and investment models for sustainable broadband development. And this is where innovation and really experimentation should be laser-focused at this age and in time. Ongoing post-Covid-19 recovery efforts and our overarching globally-agreed goals demand consistency, coherence, collaboration, predictability, and enablement at this critical juncture, the "final decade of action".

As we near 2030, the necessity for digital resilience, resilient networks and robust connectivity, which are crucial for making the most beneficial use of the Internet, lie at the heart of how modern human civilization conducts itself and deals with new challenges, while paving a path for new opportunities. We need to ensure we account for those opportunities, while being equally outcome-driven about addressing challenges and issues that require multi-lateral approaches, dialogue, collaboration, and incentivization steps for the Private Sector, so that sustainable investment and digital development happen at the required pace, and desired benefits for the nations and their governments are achieved.

One of the changed realities we are faced

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

with, is the realization that while digital transformation and the increasingly digitalized economy brings many benefits, the degree and sustainability of such benefits heavily depend on the local conditions at hand; whether digital infrastructure is available and analogue complements exist; whether services are inclusive and affordable; whether relevant content and skills are present; and how value is generated and whether it is locally captured.

Thriving in this era of digital interdependence and sustainability challenges requires a very coherent, collaborative action plan. SAMENA Council has the privilege to make contributions on these necessary collaboration-building fronts by building bridges among the stakeholders, who have the vision to leverage interdependence as a means to achieve their own objectives.

Accelerating Fiber & IPv6+ Deployment
to Catalyze New Business and GDP Growth

October 20 | **Dubai, UAE**

About the Event

SAMENA Accelerator policy-level roundtable on Fiber & IPv6/IPv6+ deployment, organized as a part of the SAMENA Council – Huawei collaboration during the UBBF 2021 conference in Dubai, focuses on policy, regulatory, and business enablement issues relating to fiber deployment and industrial digitalization. The SAMENA Accelerator is in continuation of the SAMENA Accelerators held last year in collaboration with Huawei, with special focus placed this year to correlate fiber deployment with socio-economic growth, especially in the rural areas of the region, and to build the case for accelerated fiber deployment as an essential ICT pillar, which can dramatically add to and support sustainable national GDP growth by engaging rural communities. Key incentives and enabling environment need to be provided and key challenges need to mitigated at an unprecedented pace to achieve universal access. Furthermore, accelerating Industrial Digitalization in the era of Industry 4.0 and IoT, with the aim of accommodating complex and distributed network applications, and allowing for Telecom Operators' search for new streams of business growth, including through intelligent cloud network capabilities, demands speeding up the transition from IPv4 to IPv6 and also to IPv6+.

UBBF-SAMENA Accelerator to Focus on:

- Global Connectivity & Digital Development Imperatives
- Transformative Power of ICT Infrastructure and Digital Services for Accelerating Socio-economic Growth
- Policy Visions of Inclusive Gigabit Connectivity
- National Broadband Networks (NBN) and Innovative Technologies to Support Fast Fiber Deployment
- The Role of IPv6 & IPV6 Enhanced Innovation in Regional Digital Economic Transformation
- Country Perspectives on IPv6 Transition
- The Role of Industry Value-chains and the Pace of IPv6 Adoption to Foster Industrial Digitalization

Who Will Speak & Attend:

- Heads of Regulatory Authorities
- CEOs of Telecom Operator Groups
- Industry Leaders
- Decision-makers and Implementation Leads on Fiber & IPv6 from around the World

Participation is virtual + physical. Please request your participation by reaching us at:

+971.4.364.2700   smnaccelerator@samenacouncil.org   www.samenacouncil.org

SAMENA Council Draws Attention to Light-Touch Regulation and Policy Enablement for the Private Sector during Global Symposium for Regulators-2021

The Meeting of the Industry Advisory Group on Development Issues and the Private Sector Chief Regulatory Officers (IAGDI-CRO), was held back-to-back with GSR 2021 last week, with SAMENA Council, represented by its CEO Bocar BA, chairing the the virtual meeting. Attended by various private sector leaders, the virtual diversity of industry participants in the Meeting highlighted the critical importance of multi-stakeholder participation and, because societal and industry dynamics have dramatically changed over the last year and pace of digitization has sped up, it is now necessary to review and reset various policy and regulatory approaches within the Industry. Bocar BA presented the outcome statement of the IAGDI/CRO. The statement emphasized on the need to ensure light-touch regulation, for example in view of the need for cross-border data flows and the role of connected platforms, or to address cumbersome administrative processes and procedures; a challenge common in many developing digital economies across the regions. The statement also acknowledge the timely reactive measures taken by the regulatory authorities to mitigate the challenges last year, which saw direct collaboration

As the Chairman of the IAGDI-CRO, Bocar BA expressed IAGDI/CRO's important role with continued readiness toward working closely with governments to fulfill expressed, common goals, and to help materialize the fifth-generation of collaborative approaches necessary for the sustainability of investment and the growth of the 5G ecosystem.

between regulators and telecom operators and helped ensure access to needed resources (such as spectrum), and temporarily eased regulation on certain fronts, and recommended that these steps should be kept and not reversed. Participants maintained that the lessons and the emergency requirements from the last year should suffice as impetus to continue the forward momentum on policy and regulatory transformation. The statement also acknowledged that businesses and the ICT Industry must continue serving as the engine of progress-making on unique regional and national priorities as well as on globally-agreed sustainable development goals. However, the enablement of such engine requires re-calibrating

CHAIRMAN'S REPORT

regulatory approaches, adopting agility and evidence-based regulation to suit the prevailing and emerging trends within the digital ecosystem, which now increasingly houses a highly diversified group of digital inhabitants. As the Chairman of the IAGDI-CRO, Bocar BA expressed IAGDI/CRO's important role with continued readiness toward working closely with governments to fulfill expressed, common goals, and to help materialize the fifth-generation of collaborative approaches necessary for the sustainability of investment and the growth of the 5G ecosystem.

ITU-D | IAGDI-CRO
INDUSTRY ADVISORY GROUP
ON DEVELOPMENT ISSUES
AND PRIVATE SECTOR CHIEF
REGULATORY OFFICERS

ITU

CHAIRMAN'S REPORT

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

Regulation for Digital Transformation – Accelerating inclusive connectivity, access and use in the era of Pandemics.
An industry perspective.

Online, 22 June 2021

Industry and private sector leaders gathered online on 22 June 2021 to discuss collaborative regulations for digital transformation, creating a more friendly win-win enabling environment in the context of the COVID-19 pandemic and the recovery phase.

Organized on the occasion of the **Global Symposium for Regulators (GSR-21)**, the meeting adopted an **outcome statement**, which was presented to GSR-21, representing an industry perspective on development and regulatory issues.

In her opening remarks, **Ms. Doreen Bogdan Martin, the BDT Director**, highlighted the incredible **opportunity** the ICT sector had been presented with during the COVID-19 crisis. She emphasized the **important role the private sector and industry play** along with all other stakeholders to connect the remaining half of the world's population.

Mr. Bocar Ba, CEO of SAMENA Telecommunications Council and Chairman of the meeting, gave an **overview of IAGDI-CRO** and its mandate in accordance with **WTDC-17 Resolution 71**. He encouraged ITU Sector Members and Member States to support ITU-D's work and promote the sector.

Multi-stakeholder collaborations

Participants agreed that **enhancing collaborations is crucial** for the society to address the challenges of COVID-19 and **connect the unconnected**. The sanitary crisis has revealed that enabling frequent dialogues could lead to fast response to the pandemic, and the industry called for more conversations with regulators. Simply put "it takes a village" to pull through crisis, and to ensure that **no party is working in vacuum**.

Mr. David Kirkpatrick, **Founder and Editor-in-Chief of Techonomy**, highlighted the importance of mobilizing the private sector in **stronger, durable, and innovative partnership approaches**. Taking the example of the GIGA project, he believed that the private sector could bring endless creativity to connect people all around the world and there should be new ways of working together.

Ms. Kui Kinyanjui, **Head of Regulatory and Public Policy at Safaricom**, used the **example of the education sector** to show how partnerships between the government and various former competitors of the private sector could be realized with a purpose. During the pandemic, efforts to make online learning accessible, both in terms of hardware and contents, had **enabled transformative, easy access to quality education**.

Another example to take note of was described by Ms. Maria Alexandra Velez, **Senior Director of Government and Regulatory Affairs at SBA Communications**, where the **industry service** in Brazil worked hand-in-hand **in a partnership with the municipal authorities**. Their myriads of expertise in connectivity and deployment of infrastructure were shared and expressed, to bring forward a creative regulatory environment **serving the benefit of all** relevant sides and the general public.

Flexibility of policies and regulations to allow for accelerated and sustainable innovation

The sector and industry members were keen on emphasizing the need for **flexible regulations** that would allow telecommunication service providers to answer to **the needs of local and global communities**. Mr. John Giusti, **Chief Regulatory Officer at GSMA**, stressed the need for governments to provide **flexibility for network traffic management and quality service parameters**.

An example that underscored the value of flexibility was shared by Mr. Khaled Hegazy, **Chief Corporate Affairs Officer at Etisalat**. Etisalat Egypt was able to **get approvals** from the relevant bodies to deploy network in quarantine hotels **in 24 hours rather than usual protocol** of 45 days to three months, which enabled connection to students and other individuals in need.

Besides flexibility, **agility could be an essential aspect of regulatory interventions**. The regulators can give due space and control to telecommunication companies for them to be the first point of contact during the pandemic, which notably could support successful outcomes.

In light of crisis responses, such as relief and spectrum assignment, there was an argument for the need to **customize regulations that benefit the citizens**. Regulatory bodies have the **authority and the latent power to mobilize polices** to allow for quick and efficient solutions. This goes beyond the flexibility concept; showcasing the innovative disposal of regulation and implementation when the situation calls for it.

Welcoming financial policies for sustainable investment

The COVID-19 crisis has led to higher demand for internet access. Whether it was teleworking, schooling at home, or the transmission of disease control information, the telecommunication industry is faced with the **responsibility to provide reliable services**. This has led to issues such as **spectrum allocation and investments for connectivity**.

Mr. Maxim Naidoo, **Executive Head of Technical Regulation at Vodacom**, called for enabling policies supporting **long-term investments in telecommunication infrastructure**. These long-term investments would ensure future resilience of the network infrastructure **against short-term shocks**, producing more durable outcomes.

In this era, the private sector would appreciate **long-term incentives for sustainable investment** in networks, which offers stability and predictability for long-term business strategies. Mr. Rahul Vatts, **Chief Regulatory Officer at Bharti Airtel India**, underlined the urgent need for **adoption of a holistic view** by regulators and governments to not only promote but also protect investments in high-speed broadband networks.

Mr. Gil Santaliz, **Founder and CEO of New Jersey Fiber Exchange**, spoke of the need for support to infrastructure investments. He mentioned the **fair marketplace**, where private enterprises could predict and have **expectations for their invested capital**, without facing regulatory "guardrails".

During the meeting, a polling was conducted to engage all the participants and learn from their opinions.

1. EXPECTATIONS FOR THE UPCOMING WTDC

More emphasis on partnerships and resource mobilization

Having a strong resolution on the role of private sector in ITU-D

Declaration which is pro industry engagement

All of the above [Most Voted]

2. WHY JOIN ITU-D AS A MEMBER

Opportunity to participate in events and get networked [Most Voted]

IAGDI-CRO provides a voice for industry and private sector [Most Voted]

Opportunity to participate in BDT win-win projects

IAGDI-CRO as a dynamic, forward-looking group

3. INNOVATION DRIVEN AREAS BY INDUSTRY AND PRIVATE SECTOR FOR BUSINESS CONTINUITY

Education [Most Voted]

E-commerce

Health

Other

Going forward, planning the future with "emergency and preparedness"

As the industry envisions the post-pandemic development of ICT, participants expressed their eagerness to support the ITU mission and **efforts to boost connectivity and prepare for future emergencies**.

Ms. Amy Alvarez, **AVP of International External & Regulatory Affairs at AT&T and Vice-Chair of IAGDI-CRO,** highlighted the necessity to also drive changes from the demand side. Although great efforts had been made to enrich the supply of connectivity and ICT applications, **stimulation from the demand side** would lead to improved outcomes. This could involve **expanding digital skills trainings, making locally-relevant content and services available online, and promoting access to and ownership of devices**. The complementary efforts in the demand and the supply side would create a win-win situation for the people, the government, and the industry.

COVID-19 brings long-term transformation in ICT rather than a temporary disruption. As the **industry prepares for the post-COVID world**, it would be helpful to take on a mindset of changes. Ms. Aarti Holla, **Secretary-General of ESOA**, warned the governments as well as the private sector to **hold back on their excitement in the transitioning phase** once we step out of the pandemic period. Being able to **carefully plan the way forward** would be a luxury that must be seized.

Collective efforts will continue to be indispensable for issues such as cybersecurity, cross border data transmission, and regulations of emerging technologies. Ms. Oyeronke Oyetunde, **General Manager of Regulatory Affairs at MTN Group Management Services and Vice-Chair of IAGDI-CRO**, proposed the **harmonization of data sovereignty** as an alternative approach to data localization. While enabling harmonization of data sovereignty is part of **lifting the hurdles to drive greater scale of digital transformation**, the creation of a level playing ground would facilitate long-term industry development and drive conversations further.

In his closing remarks, **Mr. Cosmas Zavazava, Chief of the Partnerships for Digital Development Department, BDT**, expressed the value ITU-D holds in **the voice of the industry and the private sector**. He believes that the progress of the IAGDI-CRO group, and all the ITU-D members, could lead to **progress in advancing sustainable connectivity**.

CLICK **HERE** FOR THE MEETING'S OUTCOME STATEMENT

IAGDI-CRO Governance

Mr. Bocar BA, Chairman
CEO, SAMENA
Telecommunications Council

Ms. Amy Alvarez, Vice-Chair
AVP - International External &
Regulatory Affairs, AT&T

Ms. Oyeronke Oyetunde, Vice-Chair
General Manager: Regulatory Affairs,
MTN Group Management Services

Simmons & Simmons Joins SAMENA Council to Bring International Legal and Regulatory Expertise to the ICT Ecosystem…

Simmons & Simmons joins SAMENA Council to bring international legal and regulatory expertise to the ICT ecosystem. SAMENA Telecommunications Council has announced that Simmons & Simmons, an international legal practice with a core focus in the telecommunications, media and technology sectors and a footprint across Europe, the Middle East, and Asia, has joined its membership of multi-stakeholder community of private-sector entities. Simmons & Simmons advises 10 of the top 15 Operators and has extensive expertise across the legal and regulatory aspects of both networks and services. Expressing his warm welcome to Simmons & Simmons on having joined SAMENA Council's community of Telecom Operators from and operating within the SA-ME-NA (South Asia - Middle East - North Africa) region, Bocar BA, CEO & Board Member stated, "Simmons & Simmons legal and specialist experience in working with Telecom Operators and Satellite Operators as well as internet and TMT players, is an excellent addition to the resourcefulness that the Council embodies. We look forward to collaborating with Simmons & Simmons in advocating on various relevant policy and regulatory

issues of critical importance as the region drives forward in digital transformation." As business sustainability challenges and advanced technologies take center stage in Telecom Operators' strategy and their evolving role within the world's digital economy, SAMENA Council and Simmons & Simmons recognize the importance of the SA-ME-NA region as a high-potential market for business growth, and where Simmons & Simmons' expertise adds value to the industry. Raza Rizvi, Head of TMT in Simmons & Simmons Middle East commented: "We are delighted to join SAMENA Council, which creates an excellent community of industry leaders from across the region. Our participation enables us to communicate and exchange information with key stakeholders in the SA-ME-NA region more effectively and in a collaborative manner. The international perspective we bring to advising clients on the application and evolution of laws and regulations concerning telecoms networks, services and emerging tech is complementary to SAMENA Council's vision. We're particularly excited by the role that Operators and the wider sector bring to the acceleration of digital transformation across emerging markets." SAMENA Council believes policies and co-operative approaches can help develop new methods and models of engagement, help frame future-friendly regulations and policies, and cross-stakeholder involvement should be fostered to incentivize and influence more investment in digital development. The digital ecosystem's sustainability challenges and the need for making better use of digital technologies, therefore, demand that Telecom Operators and specialist firms that work closely with Operators across the regions, deliberate more effectively on common issues and needs, while benefitting from SAMENA Council's advocacy support in building communication bridges with regional governments.

أعمالك اللي بنيتها..
تستاهل تحميها

مع حلول الأمن السيبراني من stc

stc

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Saudi Arabia is En Route to being the Most Technologically Advanced and Most Sustainable Country in the World

Vision 2030 aims to create more opportunities for young Saudi talent to thrive in a bustling environment that will see the Kingdom use its digital transformation to become an economic powerhouse that is less reliant on oil and more so on its public service sectors such as health, education, infrastructure, recreation, and tourism.

stc Group has been has been demonstrating visible impact through the implementation of its sustainability framework and groundbreaking digital technology currently being rolled out across the nation. Examples of these impacts include the company-wide focus and achievements in measurable reduction of resource consumption, direct economic impact through increasing stakeholder value, care for human capital, and building long-term resilience through risk mitigation and good governance.

The company is not only providing customers with digital services with super-fast network speeds, but also helping its customers in reducing their environmental impacts too, largely by facilitating opportunities in online learning,

e-health, other in-demand online services. While the COVID-19 pandemic caused havoc for so many businesses around the world, lockdown meant people were spending more and more time at home causing a surge in demand and usage of digital products and services. This presented a huge opportunity for stc that suddenly saw a spike in online

consumption and had to prove they were able to continue its levels of service to a raft of new customers. stc has been working closely with the government to ensure and support the shift of learning, health services, and government services to a primarily online format, through its digital connectivity infrastructure. During last year's lockdown, for stc employees, remote working was activated as soon as the World Health Organisation announced the epidemic and the percentage of the stc workforce working from home reached 93%.

In KSA, stc is fast building economic resilience through its larger enterprise ecosystem that includes contractors, suppliers, and knowledge, material, and technology partners. The activation of a variety of connected services is allowing its partners to flourish and generate additional economic value. Through a number of high-profile global partners, stc has quickly established itself as a digital hub for the MENA region. Huawei, Ericsson, Rakuten Mobile, and Intel have all recently signed agreements to work with stc on a

number of digital solutions. Another impressive partnership with a global leader is with Western Union, which has bought into stc Pay – the company's foray into fintech, which is already worth over $1 billion.

"Sustainability is the key to achieving the goals Vision 2030 has been set and we at stc realise the influence we have in ensuring KSA is a world-leader when it comes to being environmentally friendly," says Eng. Olayan M. Alwetaid, Group CEO, stc. "As a business we have come a long way in a very short space of time and we have made sustainability a cornerstone of our business, and we will continue to play our part in making Saudi Arabia one of the world's most important and thriving economies though this transition into digital."

By implementing its sustainability strategy not only is stc thriving, but it's also helping to deliver the overarching sustainability agenda of Saudi Arabia. As KSA's main provider of information and communications technology and services, stc is in the process of laying down the physical, digital, and cultural backbone of Saudi Arabia's social and economic transformation for the years ahead. This includes supporting the Saudi Green Initiative and Middle East Green Initiative - twin roadmaps launched by the Kingdom's Crown Prince HRH Prince Mohammed bin Salman to rally the Middle East region in confronting climate change.

The Saudi Green Initiative sets out a blueprint to raise vegetation cover, reduce carbon emissions, combat pollution and land degradation, and preserve marine life. It calls for the planting of 10 billion trees in the Kingdom over the coming decades — the equivalent of rehabilitating roughly 40 million hectares of degraded lands. The initiative also draws an ambitious map for reducing carbon emissions by generating 50% of the Kingdom's energy from renewables by 2030.

stc has rapidly become a global player in the field of ICT and with that comes even greater responsibility. In a bid to remain honest and transparent with its shareholders, stc produces a detailed annual report highlighting the company's activities and performance in the environmental, social and governance aspects of sustainability.

> *Telecoms giant stc has been demonstrating visible impact through the implementation of its sustainability framework and groundbreaking digital technology currently being rolled out across the nation. Examples of these impacts include the company-wide focus and achievements in measurable reduction of resource consumption, direct economic impact through increasing stakeholder value, care for human capital, and building long-term resilience through risk mitigation and good governance.*

What's more, stc has committed to the ICT industry's Net Zero project - a science-based pathway to reduce greenhouse gas emissions across the telecoms sector completely by 2050. stc will also develop renewable energy generation at its campus and facilities throughout Saudi Arabia, to ensure energy efficiency in existing buildings and assets. New buildings will be designed and built with energy-saving features. If the progress of the last 12 months is anything to go by, those in Saudi Arabia could be living in the most technologically advanced country on the planet by 2030 – and also one of the most sustainable.

MEMBERS NEWS

stc Ranked Top Mobile Operator in KSA by Speed and Coverage

Ookla, the global leader in mobile network, internet and data testing and analysis, and provider of accurate and reliable reports on performance and coverage of global networks, has announced that stc was named Speedtest Award Winner for mobile network speed during Q1-Q2 2021, achieving Speed Score of 111.74. Further, stc was named KSA Speedtest Award Winner for the best coverage among the mobile operators in Saudi Arabia, achieving Coverage Score of 842. These results are based on Ookla's speed and coverage metrics, after comparing 3.33 million tests on iOS and Android mobile applications across the local mobile operators. When analyzing operators, Ookla solely considers top operators selected in 3% or more of total testing samples across the market for the entire award period.

Ookla also uses Speedtest to measure mobile network and internet performance and quality, providing data and insights into country trends and an analysis on drivers of market developments. As per its report specialized in the analysis of performance and availability of 5G networks in major cities around the world, Ookla recently announced Riyadh to rank sixth among the fastest capitals globally in 5G network performance in the first half of 2021, with an average download speed of 384.66 Mbps, following the Swedish capital Stockholm. This constitutes a remarkable success reflecting the KSA's efforts to develop the CIT infrastructure and its support for the digital transformation process. This ranking reflects stc Group's success and role in building an advanced 5G network in the Middle East; particularly,

the networks of stc Kuwait and stc Bahrain cover the cities of Kuwait and Manama, which also ranked seventh and fifteenth fastest capitals respectively.

stc's Net Income for Q2 and First Half of 2021 Compared to the Comparable Quarter and First Half of 2020

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 Q2 2021, representing SR 1 per share. The eligibility of dividends shall be for the shareholders at the close of trading on Thursday 05/08/2021 corresponding to 26/12/1442 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 26/08/2021 corresponding to 18/01/1443H.Commenting on these results, Eng. Olayan Mohammed Alwetaid, stc Group CEO, stated that the company has achieved the highest quarterly and semi-annual revenues in its

history, which is a direct result of the distinguished performance of all business units, and the group's subsidiaries, which reflected positively on the financial results. The Enterprise business unit achieved an increase in revenues for the period by 29.3% thanks to the company's ability to provide innovative products and services that meet the needs of the public and private sector. As for the Wholesale business unit, revenues for the period increased by 5.5%, as a result of stc's investments in infrastructure, which is starting to positively reflect on the unit's results. The Consumer business unit also contributed positively to the results for the period as a result of an increase in operating lines by 3.4%, an increase in fixed wireless access subscribers by 6.1%, and an increase in demand for fiber-optic services, which led to an increase in the subscriber base by 20.8%.As a continuation of the company's achieve-

ments, stc has topped the list of the best telecommunications companies in the region according to the ranking by the global magazine "Forbes". stc has been ranked first as the strongest telecommunications company in the Middle East and North Africa. stc also is among the top 44 digital companies in the world. stc, through the digital payments company "stc pay", was able to obtain the license approval of the Council of Ministers on 12-11-1442 AH corresponding to 22-06-2021 for stc pay to become one of the first digital banks in the Kingdom of Saudi Arabia. This reflects stc's success in achieving its ambitious strategy "Dare 2.0", which aims to grow in new, unconventional paths and play a pivotal role in digital transformation and digital empowerment for the public and private sectors and in line with the goals of the Kingdom's Vision 2030 towards a prosperous and diversified economy. The Arabian

internet and Communications Services Company "solutions by stc" obtained the approval of the Capital Market Authority to offer 24,000,000 shares for public subscription representing (20%) of its shares. This will enable the company to achieve its strategy and goals that seek to develop and the information technology and digital services sector. The offering of Solutions by stc is also in line with stc's strategy, which aims to expand the scale and scope and maximize returns for shareholders by

accelerating the performance of assets. Lastly and despite all the challenges faced due to Covid-19, stc has succeeded in maintaining its outstanding performance and achieving growth in most of its sectors. It has also been able to provide support to the public and private sectors, enabling them to digitally transform, preserve their business, and create new investment opportunities. In addition, stc was able to build the largest advanced 5G network in the Middle East covering

most regions of the Kingdom, and these achievements are the result of continuous efforts in developing the network systems and infrastructure. After 5 years full of achievements in digital transformation and integrated infrastructure, stc will continue its efforts to develop a reliable and advanced digital network and infrastructure enabling the Kingdom of Saudi Arabia to become a leading regional center for digital services through innovative projects and global partnerships.

There is a Great Deal the Telecom Industry Can Do Together to Contribute to a Low Carbon Economy: stc Group CEO

stc Group CEO stc Eng. Olayan M. Alwetaid confirmed stc's commitment to providing a service, which is as environmentally friendly, and to adopt integrated sustainable practices into every aspect of our business. "We understand that as a MENA digital enabler we have a duty to our country in Saudi Arabia and to our customers to ensure we are operating in a sustainable manner." Alwaetaid said while speaking in We Act For Impact" panel discussion during MWC Barcelona 2021, he was among environmental experts and ICT infrastructure development leaders who met to discuss sustainability progress at the Green Agenda: We Act For Impact open panel session during the Mobile World Congress (MWC) Barcelona 2021. Through open dialogue, the panel discussion asked ICT industry leaders to assess the latest

progress on the remaining obstacles and positive actions needed to address the climate crisis, particularly as the mobile industry is one of the most advanced in terms of laying out its commitments towards net zero by 2050.Alwetaid gave his thoughts on a number of environmental issues in the debate stating that stc has been playing a pivotal role in Saudi Arabia's digital transformation, which has seen the Kingdom launch a number of digital projects including the roll out and implementation of stc advanced 5G technology. He said: "stc is committed to reducing its carbon footprint and become a green network operator, and we have taken several steps to achieve this goal and reach Net Zero. We have developed a Sustainable Energy Framework designed to take us through 2030. These steps

will reduce our energy consumption and will include better energy management, monitoring, and reporting – with clear benchmarks and KPIs. We will also develop renewable energy generation at our campus and facilities throughout Saudi Arabia. What's more we will ensure energy efficiency in our existing buildings and assets and finally new buildings will be designed and built with energy-saving features." He added: "Saudi Arabia has committed to generating 50% of electricity through renewable resources by 2030 and to reach the environmental targets organizations will be expected to collaborate and work together to achieve KSA's sustainability goals. Eng. Alwetaid was asked about the collaborations stc has planned with its investors. "Stakeholder engagement is an integral part of our approach. By engaging with our key stakeholders, we make sure that we address the issues of most importance to the business, both in our strategic approach and in our reporting. We have made excellent progress in aligning our disclosures with international standards such as GRI, SASB, national standards, and the requirements of sustainability indices and rating agencies." He continued, "First and foremost, mobile communications are the key enabling factor in SMART technologies and applications; it enables IoT and AI-based infrastructures through high-speed connectivity and low-latency, real-time edge-computing applications. At stc, we also plan to reduce emissions through a combination of engagements with our partners in the value chain and by developing e-services that reduce carbon emissions by providing services

over the mobile network." stc is playing a big role in the digitalization of KSA, in line with the Saudi National Vision 2030, the aim of which is to make the Kingdom an industrial powerhouse. stc is also fully in support of the Saudi Green initiative - the world's largest afforestation project with an aim to plant 50 billion trees, including 10 billion in Saudi Arabia. "The government has set a clear strategic vision with broad goals and it's important for private sector leaders to be in alignment with their objective and goals the public sector," said Alwetaid during the discussion. "For this to happen and lead to a green digital recovery, the government should establish a framework of investment incentives including financial support for R&D and scale up. For its part, the private sector must step up and leverage this opportunity with an eye to the future. Also speaking on the Green Agenda: We Act For Impact panel was Kaan Terzioglu, Co-COO, VEON, H.E. Ahmad Hanandeh Minister of Digital Economy and Entrepreneurship, Jordan, Alix Jagueneau Head of External Affairs & Industry Purpose, GSMA, Laura Fernandez Cavas Climate Change and Sustainable Finance Expert, Telefonica, Maria-Francesca Spatolisano, Officer-in-Charge, Office of the UN Secretary-General's Envoy on Technology and H.E. Dr Amani Abou-Zeid Commissioner, African Union.

Etisalat Group Reports AED 4.7 Billion Consolidated Net Profits for H1 2021

Etisalat Group announced its consolidated financial results for H1 ending 30th June 2021. H1 2021 Financial Highlights and Key Developments:

- Etisalat Group subscriber base reached 156.1 million Subscribers.
- Consolidated revenues amounted to AED 26.4 billion representing YoY increase of 3.2 percent while consolidated net profit after Federal Royalty amounted to AED 4.7 billion representing a year over year increase of 3.9% and resulting in a net profit margin of 18%.
- Consolidated EBITDA reached AED 13.4 billion resulting in EBITDA margin of 51%.
- Board approval of interim dividend for H1 2021 of 40 fils per share.
- Credit Ratings agencies S&P Global and Moodys affirmed Etisalat Group's high credit rating at AA-/Aa3 with stable outlook.
- Etisalat successfully completed a bonds issuance worth one billion Euros to refinance the maturing Euro bond tranche.
- Etisalat crowned strongest brand in the MEA region across all categories.
- Etisalat recognised as world's fastest mobile network by Ookla.
- Etisalat forays into 6G-the next generation of the mobile network by conducting research and developing international standards.
- Etisalat expands its SmartHub footprint with a third location opening in Kalba complete with a state-of-art Tier 3 data centre facility.

- Etisalat launched the region's first online Mobile Service Centre, offering real-time visibility and control over business customers' mobile usage.
- Etisalat collaborated with Smart Dubai to provide cyber security services to Dubai government entities.
- Etisalat joins programme led by Khalifa Fund for Small & Medium Enterprise Development.
- Etisalat Misr completed the first VoLTE call using Virtual IMS technology.
- Etisalat Misr signed an agreement with Canal Sugar Company, the first of its kind in the agricultural sector to digitally transform their financial transactions.
- PTCL starts transformation of its IP Edge & Optical Transport Network.
- UAE Trade Connect (UTC)'s digital trade platform went live with seven banks.
- E-Vision launched the Television Audience Measurement (TAM) to identify viewership trends from eLife TV.
- Digital Financial Services partnered with Lulu Group International and Al Futtaim to enable secure and contactless payments.

- Etisalat partnered with Aruba to offer managed Wi-Fi and networking solutions.
- Etisalat collaborated with Cisco to simplify Emirates Internet Exchange (EMIX) operations by building the region's first open and autonomous and secured network.
- Etisalat launched the Smiles' food order and delivery service in the UAE.
- Smiles partnered with Mohammed Bin Rashid Al Maktoum Global Initiatives (MBRGI) to support the global '100 Million Meals' humanitarian campaign.
- As part of its commitment to support and empower People of Determination Etisalat partnered with Ministry of Community Development to launch a web extension to make accessing the web autistic friendly.

H.E. Jassem Mohamed Alzaabi, Chairman of Etisalat Group, stated: "Etisalat continued to demonstrate strong performance showcasing growth across its operations for the first half of the year, thanks to our continuous efforts and focus

(AED m)	Q2'20	Q1'21	Q2'21	QoQ	YoY
Revenue	12,492	13,220	13,216	0.0%	+5.8%
EBITDA	6,523	6,765	6,641	-1.8%	+1.8%
EBITDA Margin	52.2%	51.2%	50.3%	-0.9pp	-2.0pp
Federal Royalty	(1,509)	(1,387)	(1,416)	+2.1%	-6.2%
Net Profit	2,388	2,350	2,395	+1.9%	+0.3%
Net Profit Margin	19.1%	17.8%	18.1%	+0.3pp	-1.0pp

on our vision of driving the digital future with a strong commitment towards the societies we serve and adding value to our shareholders. We are confident that Etisalat Group will maintain its leadership position in the telecom industry while remaining focused on our core business and exploring new growth opportunities ensuring that we are well geared for the future with all our digital capabilities and solutions. I would like to thank UAE's wise leadership for their continuous support to the telecom sector and the Etisalat Group's management team in making the digital vision a reality by staying focused on the company's long-term strategy to drive stakeholder value. Thanks to both our shareholders and loyal customers for inspiring us to set new global benchmarks and reach new business heights." Eng. Hatem Dowidar, CEO, Etisalat Group, stated: "Etisalat Group's strong results in the first half of 2021 is an outcome of our sincere efforts to drive growth and generate efficiencies, with an unwavering commitment to key strategic priorities to enable a digital future and drive digital innovation across our operations. Despite the challenges in our key markets, our businesses delivered growth in revenue, net profit and operating free cashflow. We are proud that Etisalat Group was a key contributor to positioning the UAE as the fastest mobile network in the world and among the top fixed broadband networks globally, meeting the ICT aspirations of the country's leadership. With our success in deploying 5G as well as taking the global lead in fibre penetration, we ensured that our networks are future-ready for the next generation of mobile networks and technologies. As we look ahead with confidence, we will focus on expanding our capabilities, maintaining industry leadership to achieve our long-term goals of enriching customer lives and empowering governments, businesses and societies across our footprint. Etisalat remains grateful to the wise leadership of the UAE, thankful to our customers and shareholders for their constant encouragement, and to our employees who are the cornerstone of our success. We will remain focused on investments in futuristic solutions and next-generation technologies, enhancing the overall customer experience while delivering long-term value for all our shareholders."

Subscribers

In the UAE the subscriber base reached 12.1 million subscribers in H1 of 2020, while the aggregate subscriber base reached 156.1 million, representing a year over year increase of 7%.

Revenue & Net Profit

Consolidated revenues amounted to AED 26.4 billion representing YoY increase of 3.2 percent while consolidated net profit after Federal Royalty amounted to AED 4.7 billion representing a year over year increase of 3.9% and resulting in a net profit margin of 18%.

EBITDA:

Consolidated EBITDA reached AED 13.4 billion resulting in EBITDA margin of 51%.

Etisalat Group Appoints Masood Mohamed Sharif Mahmood as CEO for Etisalat UAE Operations

Etisalat Group announced the appointment of Masood M. Sharif Mahmood as Chief Executive Officer for Etisalat UAE operations. Reporting to Etisalat Group CEO, this new position is part of Etisalat Group's ongoing and agile transformation strategy that targets diversifying and exploring new growth opportunities, accelerating business development in the digital field, expanding geographical presence and maximizing operational efficiency. The appointment also marks the company's relentless efforts to maintain its leading position in digital transformation and continue providing innovative services and solutions to all customers, while investing in UAE nationals and empowering them. Eng. Hatem Dowidar, CEO, Etisalat Group, said: "Etisalat is thrilled by the joining of Masood as CEO for Etisalat UAE operations. With his recognized career and strong drive for results, Masood is a true people leader who will focus on growing Etisalat UAE even further through achieving operational efficiency and generating value by organic growth strategies. In the new normal where smart and digital services dominate the

Eng. Hatem Dowidar
CEO, Etisalat Group

Masood M Sharif Mahmood
CEO-UAE Operations, Etisalat

scene, Etisalat backed by one of the most advanced portfolios of smart services and solutions in the region continues to attract and empower UAE's leading talent in the digital field. We wish him great success in his new role at Etisalat, home to the fastest mobile network on earth". Masood M. Sharif Mahmood, CEO, Etisalat UAE operations, said: "It is a privilege to join Etisalat one of the world's leading telecom groups and ranked the strongest brand across all categories in Middle East and Africa. This exciting appointment represents a great milestone and a motive to work continuously towards adding value for the services and solutions provided to Etisalat customers, capitalizing on our employees' great talent, passion and

capabilities, while realizing the overall objectives of the company. Inspired by the continuous support and wise leadership of the UAE, Etisalat will continue deploying the latest innovative technologies to enrich the digital experience of customers and communities, bringing the country to the forefront in global ICT ranking." With over 20 years of experience, Masood has a proven accomplishment record with vast knowledge in telecom and technology. His expertise in both operational and financial industry led to developing high performing teams, establishing a creative work culture, and setting development strategies that elevated business performance. Masood currently serves on the boards of Al Yah Satellite Communications Company (Yahsat), the UAE Space Agency, and Etihad Aviation Group. He held leading positions throughout his career including the CEO of Yahsat for about a decade, and the Vice President at Mubadala's Information and Communications Technology (ICT) unit. Additionally, he served on the boards of Emirates Integrated Telecommunications Company (Du), among other expertise gained in positions at Dubai Investment Group and the Executive Office of the Government of Dubai. He holds an MBA with a concentration in Finance from McGill University in Canada, and a Bachelor's Degree in Computer Systems Engineering from Boston University in the United States.

Etisalat Partners with the Global Manufacturing and Industrialization Summit to Accelerate 5G Deployment and Advance Industrial Growth

The Global Manufacturing and Industrialization Summit (GMIS) and Etisalat have announced a partnership to accelerate the deployment of the fifth generation of wireless networks (5G) to promote digital transformation both in the United Arab Emirates and globally. As a strategic partner to the Global Manufacturing and Industrialization Summit, Etisalat will share best practices from its experience in rolling 5G communication networks and offering advanced technology solutions to businesses and governments. This strategic partnership will benefit from Etisalat's expertise in 5G and accelerating digital transformation in all sectors while enhancing operational efficiency. Etisalat was the first to launch 5G network in the UAE and the region, and contributed to UAE's capital being ranked among the top 3 fastest 5G capitals worldwide. The summit will benefit from the participation of the leading telco group Etisalat as well as the expertise of Etisalat Digital and its role in accelerating digital transformation to explore how 5G, in combination with Fourth Industrial Revolution technologies such as Artificial Intelligence, Cloud Computing and the Internet of Things, will usher in a new era of innovation for the manufacturing sector, strengthen global supply chain networks, promote sustainable economic growth and contribute to the UAE's newly-launched industrial strategy. Commenting on this partnership, Dr. Ahmed bin Ali, Group Senior Vice President, Corporate Communications, Etisalat said: "Digital technology and 5G networks generate enormous economic and social value, and they can digitally transform every aspect of industrial operation – from production to service delivery. Through its strategy of 'Driving the digital future to empower societies', Etisalat is committed to developing cutting-edge digital communication infrastructure to build more resilient societies and sustainable industries with more than four decades of its digital experience across industries. We are proud to partner with an international platform like GMIS and support the expansion of the UAE's fast-growing and diversified industrial landscape." Etisalat provides telecom and technology solutions to 156.1 million subscribers in 16 countries across the Middle East, Asia and Africa. In 2016, Etisalat announced a partnership with Expo 2020, making it the first commercial partner to use 5G network in the region. In 2018, Etisalat launched the first commercial 5G network in the UAE and in 2020 was also ranked the fastest mobile network globally. Driven by faster data speeds, higher device density and lower latency, 5G mobile networks are expected to fundamentally transform manufacturing processes by further automating factory floors, developing smarter supply chains and improving industrial productivity. As the roll out of 5G networks accelerate, it is also expected to spur significant societal progress, making healthcare services more accessible, enhancing crop production, reducing carbon emissions and improving public service delivery. #GMIS2021 will explore the rising importance of 5G in the manufacturing sector and highlight the evolving mechanisms of interaction between and among humans and machines in the context of the Fourth Industrial Revolution. The Summit will organize a special session on the potential of 5G to drive improvements in climate action, sustainable energy generation, economic growth and social development. Badr Al-Olama, Head of the GMIS Organizing Committee said: "The industrial world is at the forefront of an unprecedented digital transformation as organizations transition to the next generation of networks and technology systems. Digital solutions and 5G is at the very center of this transformation. We are delighted to welcome Etisalat as a #GMIS2021 strategic partner and as a leading player in digital transformation providing the latest and most innovative solutions and services. We look forward to jointly spearheading discussions on the future of this revolutionary technology." Under the theme 'Rewiring Societies: Repurposing Digitalization for Prosperity', #GMIS2021 will draw on key global leaders from government, business and civil society to discuss and debate how data and connectivity are shaping the future of the manufacturing sector while presenting opportunities for investments in technology, innovation and industrialization. The Summit will organize panel discussions, plenary sessions and interactive workshops on topics such as dark factories vs smart factories, Government 5.0, Society 5.0, women in leadership and the UAE's Operation 300bn strategy, which aims to expand the nation's industrial sector and accelerate economic diversification over the next decade. In addition, #GMIS2021 will host three Global Panorama sessions and dedicated side-events focused on renewable energy production, strengthening bilateral relations between different countries and harnessing technological innovation to solve the world's toughest socio-economic challenges. The Summit will run an exhibition to highlight the UAE government's 'Make it in the Emirates' campaign, a first-of-its-kind initiative to encourage local and international investors, developers and innovators to benefit from the facilities and incentives offered by the country's industrial sector.

Telecom Wholesale Business to Play a Pivotal Role in the Future, Says Etisalat Chief

The telecom wholesale business will continue to play a pivotal role in the future just as how it has been especially evident during the pandemic, said Ali Amiri, Group Chief Carrier and Wholesale Officer, Etisalat, during the second day of the Telecoms World Middle East 2021. "During Covid-19, the telecom wholesale business played a critical role in making things work for the world. We witnessed its ability to accommodate the surge in data and SMS traffic, which was triggered by the huge increase of all kinds of online activities.

All these were made possible with a well-established carrier wholesale ecosystem," said Amiri. Amiri, who participated in a keynote panel on 'A post-pandemic market: innovation and technology remain key for wholesale success', said successful telecom wholesalers of the future must have the infrastructure or ecosystem that enables a customer experience that matches the digital players. This can be enabled by automation, virtualization, and on demand services that are delivered in near real-time. He also shared his

insights into digitalization, automation, and standardization, which are essential for carrier wholesalers to be more agile and open. "Digital wholesalers will be able to provide services on demand using easy to use customer portals or applications, enabled by the virtualization of the network. This requirement is vital to be able to serve new types of customers in addition to telcos such as Communications Platform as a Service (CPaaS) platform providers, content providers, gaming and financial services sectors," Amiri said. The panel also delved into harnessing virtualized communications, business intelligence, machine learning and blockchain in their products, and wholesale delivery architecture; and dramatically advancing digital wholesale opportunities and replacing legacy systems for future agility. The two-day virtual event, which concluded on 16th June, focused on the strategies, technologies and big ideas that will be essential for telecommunication companies in 2021.

Etisalat Joins Global Startup 5G Program

Etisalat joins Ericsson's global Startup 5G program
• Etisalat will be able to tap into Ericsson's ConsumerLab research and analytical data, as well as gain exclusive access to a worldwide network of 5G startups
• Collaboration will see Etisalat and Ericsson working together to envision and accelerate commercialization of new 5G consumer use cases

Etisalat has joined Ericsson's Startup 5G program designed to help communications service providers (CSPs) successfully accelerate the commercialization and monetization of 5G by introducing them to the right consumer innovation partners. The program seeks to encourage innovation transfer around 5G technologies between startups and Etisalat to mutually create new business opportunities in the market. As part of Ericsson Startup 5G, Etisalat will receive access to a curated list of companies that develop scalable services, devices, and applications over

5G. By bundling and offering innovative apps and digital services, Etisalat can differentiate the customer experience over 5G, ultimately changing the usage behavior and demand for enhanced mobile broadband connectivity. The program hosts a variety of innovative companies from across the world and is continuously expanding. Startup 5G helps member startups to evolve their business by connecting them with communications service providers around the world, providing exposure in major technology events, and sharing Ericsson's technological and strategic expertise. The program also offers the participating startups to connect with the consumer market using ConsumerLab's expertise to validate their 5G services and concepts and grow. The new collaboration further strengthens the partnership between Ericsson and Etisalat, with the companies working together to research and develop new 5G consumer offerings such as

augmented and virtual reality, digital education, e-sports, and other immersive media applications. Khaled Elkhouly, Chief Consumer Officer, Etisalat says: "5G has the capability to enable new experiences and use cases that are critical for the new digital normal and were impossible prior to 5G, be it for consumers or businesses. This will remotely enable opportunities within education, health, factories, ports, and entertainment. Ericsson's Startup 5G program is a great platform that will amplify the use of these futuristic services, target new opportunities, and implement 5G use cases across verticals. This collaboration will give us the opportunity to introduce new partners and offerings to customers in the UAE as we continue to work to provide unparalleled 5G services." Jasmeet Sethi, Head of ConsumerLab, Ericsson Research, says: "We are really looking forward to working closely with Etisalat to co-create and test applications enhanced by 5G. With access to 22 global startups

which is expected to grow to more than 40 by end of the year, the program offers Etisalat a unique opportunity to not only leverage actionable consumer insights but also connect with innovation partners to emerge as a frontrunner in their markets." Ekow Nelson, Vice President and Head of Global Customer Unit Etisalat and Pakistan at Ericsson Middle East and Africa says: "We're excited to have Etisalat on board for our Startup 5G program. 4G created the foundation for the App Economy that has transformed our societies beyond recognition. 5G is poised to continue and extend this transformation. Our global industry knowledge and expertise positions us to act as matchmakers in the 5G ecosystem, introducing communication service providers to products and services ready to launch on a mass scale. We are using our extensive consumer research to identify the startups with the highest potential for success and are glad to have Etisalat on this journey with us." The Ericsson Startup 5G concept was first initiated in November 2019, as 5G

launches were happening for the first time all over the world, but the vast majority of these were focused solely on connectivity, rather than the many consumer use cases that 5G enables. Ericsson recently released the largest global 5G consumer study to date – Five ways to a better 5G – revealed that 80 percent of 5G early adopters in UAE expect new innovative apps and services to be made available over 5G and are even willing to pay 20-30 percent higher for

it. According to the June 2021 edition of the Ericsson Mobility Report by the end of 2026, 5G will account for 73 percent of all mobile subscriptions in the Gulf Cooperation Council (GCC) countries. By diversifying and evolving their offerings, communication service providers in the region could capture USD 200 billion in 5G consumer revenues between now and 2030.

Telcos and 5G are the Main Drivers of Digital Transformation

The telecoms industry and 5G play a major role in supporting digital transformation as businesses move towards more collaborative and immersive remote working, said Hatem Bamatraf, Chief Technology Officer, Etisalat International, during the Telecoms World Middle East 2021. The pandemic has accelerated digital transformation globally with a shift in investment opportunities and changes in online behaviors. Remote working infrastructure, new online services, technology skills and cyber security are now common investment priorities for governments, corporates, and SMEs. These changed investment priorities are accelerating the digital transformation of society, said Bamatraf. Bamatraf, who delivered a keynote opening presentation titled Shaping a new future for businesses and consumers with 5G and advanced

technologies, underscored 5G's huge potential as a game changer for several industries. 5G offers exciting new revenue prospects but telcos need to go beyond connectivity to achieve good return on investment, he stressed. Recent analysis has estimated that by 2025 there will be around $4.7 trillion of revenue generated and associated in some way by 5G or advanced connectivity. Around $1.6 trillion will be directly due to connectivity, and the remaining $3.1 trillion will be hardware, software, services, platforms, etc. The two-day virtual event on 15th and 16th June brings together CEOs and key decision makers of the leading regional operators to discuss the current landscape, their growth strategies, and investing for their future. Etisalat chief executives participated in panel discussions and live interactive sessions moderated by global and regional

experts. Mohamed Almarzooqi, Vice President, Synergy and Operation Support, Etisalat International, shared his insights into Next generation networks with the power to transform how industries operate. Antonio Ricciardi, Senior Vice President, Consumer Intelligence and Engagement, Etisalat, meanwhile took part in a panel discussion on ‘Unlocking value with the next generation of customer value management. At a session titled Building digitally connected infrastructure in Middle East and Africa, Abdulrahman Alhumaidan, Senior Director, Fixed Access Network Planning and Design, Etisalat, discussed the opportunities and challenges of building a digitally connected national infrastructure, the impact of 5G on national infrastructure, and the investment and regulatory framework.

Etisalat Increases Stake in Maroc Telecom

Abu Dhabi-based Etisalat Group has increased its indirect stake in African telco group Maroc Telecom to 53% in a USD505 million deal. Etisalat has taken

full control of holding company Societe de Participation dans les Telecommunication (SPT) by acquiring the 8.7% stake owned by Abu Dhabi Fund for Development. SPT

owns 53% of Maroc Telecom, a group which has operations in Morocco and ten other African countries. The acquisition will be funded by bank borrowings.

Mobily Net Profit Rises 49% to SAR 470 Mln in H1 2021

Mobily achieved a net profit for the second quarter of 2021, recording net profit reached SAR 244 million compared to a net profit of SAR 185 million in Q2 2020. This is mainly due to the following:

Revenues

Mobily continued to grow its revenues for the second quarter of 2021, amounted to SAR 3,728 million versus SAR 3,559 million in Q2 2020, or a YoY growth of 4.75%. This is mainly attributed to the growth in business unit revenues, the improvement in the consumer revenues and the growth of FTTH active base.

Gross profit

Q2 2021 gross profit amounted to SAR 2,147 million versus SAR 2,062 million in Q2 2020, a growth of 4.13%. This is mainly attributed to healthier topline.

EBITDA

Mobily continued in increasing its EBITDA to reach SAR 1,344 million in Q2 2021 versus SAR 1,335 million in Q2 2020, or an increase of 0.67%. The EBITDA increase is attributed to the growth of revenues.

EBITDA margin decreased to 36.1% for Q2 2021 versus 37.5% for Q2 2020.

Operational profit (EBIT)

Q2 2021 Operational profit amounted to SAR 384 million compared to an operational profit of SAR 334 million in Q2 2020, an increase of 14.76% reflecting the improvement in EBITDA.

Financial charges and Zakat

The financial charges for Q2 2021 amounted to SAR 121 million compared to SAR 139 million in Q2 2020 representing a decrease of 12.50%.

Zakat expenses for Q2 2021 amounted to SAR 20 million compared to Zakat expense of SAR 17 million in Q2 2020.

The reason of the increase (decrease) in the net profit during the current quarter compared to the previous period of the current year isMobily achieved an increase in its net profit for the second quarter of 2021, recording net profit reached SAR 244 million compared to net profit of SAR 226 million in Q1 2021. This is mainly due to the following:

Revenues

Mobily revenues in Q2 2021 amounted to SAR 3,728 million versus SAR 3,603 million in Q1 2021, representing an increase by 3.47%. This is mainly attributed to the growth in business unit revenues, the improvement in the consumer revenues, the growth of FTTH active base and the growth of wholesale revenues.

Gross profit

Q2 2021 Gross profit amounted to SAR 2,147 million versus SAR 2,072 million in Q1 2021, an increase of 3.64%. This increase is mainly attributed to the improvement in the company's topline.

EBITDA

Q2 2021 EBITDA amounted to SAR 1,344 million versus SAR 1,365 million in Q1 2021, representing a decrease of 1.49%.

EBITDA margin decreased to 36.1% in Q2 2021 versus 37.9% in Q1 2021.

Operational profit (EBIT)

Q2 2021 EBIT amounted to SAR 384 million compared to an EBIT of SAR 369 million in Q1 2021, an increase of 3.93% reflecting the improvement in the company's topline.

Financial charges and Zakat

The financial charges for Q2 2021 decreased by 3.79% to reach SAR 121 million compared to SAR 126 million in Q1 2021.

Zakat expenses for Q2 2021 amounted to SAR 20 million versus Zakat expense of SAR 18 million in Q1 2021.

The reason of the increase (decrease) in the net profit during the current period compared to the same period of the last year isMobily achieved a net profit for the first half of 2021, Where H1 2021 net profit amounted to SAR 470 million compared to net profit of SAR 315 million in H1 2020. This is mainly due to the following:

Revenues

Mobily succeeded in growing its revenues where H1 2021 revenues increased by 2.40% to reach SAR 7,331 million versus SAR 7,158 million in H1 2020. This is mainly attributed to the growth in business unit revenues and the growth of FTTH active base.

Gross profit

Gross profit for the first half of 2021 amounted to SAR 4,219 million versus SAR 4,127 million in H1 2020, a growth of 2.21%. This is mainly attributed to the increase in the topline.

EBITDA

Mobily succeeded in increasing its EBITDA to reach SAR 2,709 million in H1 2021 versus SAR 2,620 million in H1 2020, or an increase of 3.37%. The EBITDA increase is attributed to the improvement in revenues.

EBITDA margin increased to 37.0% for H1 2021 versus 36.6% for H1 2020.

Operational profit (EBIT)

H1 2021 Operational profit amounted to SAR 753 million compared to an operational profit of SAR 630 million in H1 2020, an increase of 19.37%, reflecting the improvement in EBITDA.

REGIONAL & MEMBERS UPDATES | SAMENATRENDS
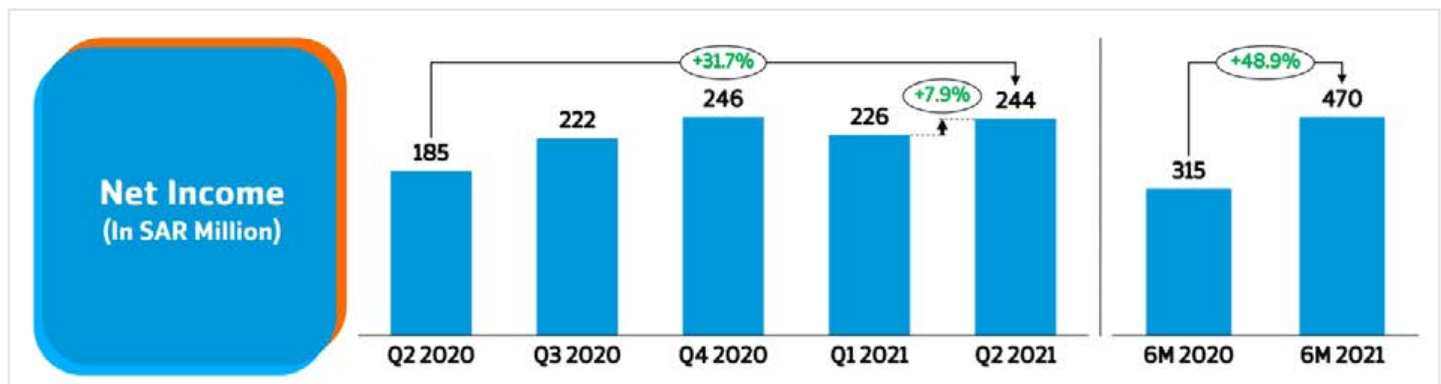
Financial charges and Zakat
The financial charges for H1 2021 amounted to SAR 248 million compared to SAR 300 million in H1 2020, representing a decrease of 17.57%, reflecting the decrease in SAIBOR.

Zakat expenses for the current period amounted to SAR 38 million compared to Zakat expense of SAR 31 million in H1 2020.

Statement of the type of external auditor's reportUnmodified conclusion

Reclassification of Comparison ItemsCertain comparative figures have been reclassified to conform to the current period's presentation.

Additional InformationCAPEX:
Capex in H1 2021 amounted to SAR 425 million versus SAR 1,017 million in H1 2020.

Operational Cash Flow:
Mobily improved its H1 2021 Operational Cash Flow (EBITDA-CAPEX), to reach SAR 2,284 million versus SAR 1,603 million in H1 2020, representing an increase of 42.41%.

The interim financial statements for the period ended 30th June 2021 will be available through Mobily IR App for mobile and tablet devices, and Mobily Investor Relations Website, after being published on Tadawul website.

Omantel Innovation Labs to Push Innovation in Omani Tech Startups

Omantel, the leading telecommunications company in Oman and a key role-player in MENA, is excited to announce the launch of the Omantel Innovation Labs, which will contribute to Oman's Vision 2040 and promote innovation and entrepreneurship in new and emerging technologies. Under this new initiative, Omantel will leverage its expertise, partnerships, reach, and access to technology to build a tech-based startup ecosystem. The key focus of Omantel Innovation Labs is to cultivate entrepreneurial skills among the youth and accelerate the growth of relevant Oman-based technology startups across five technological verticals: 5G, Internet of Things, Cybersecurity, Customer Experience Technology, and Big Data. Located in a 1100m2 facility at Omantel headquarters in Muscat, the Innovation Labs will organize, participate in, and host multiple activities to support the Company's internal innovation agenda by providing systematic spaces, approaches, events and activities that can accelerate product conceptualization, prototyping, testing and deployment of solutions to Oman and Omantel-centric challenges. "We want to support and tap into new ideas and technologies, stay ahead of the curve and drive local innovation. For this, we need to optimally deploy our resources and create an environment wherein caliber and opportunities match national digital transformation goals. Omantel Innovations Labs have been conceptualized and designed to fit perfectly into this ecosystem and aim to put the company at the heart of Oman's emerging culture of entrepreneurial growth, knowledge sharing, collaboration and economic development through digitization," said Talal Said Al Mamari, Chief Executive Officer of Omantel. Omantel has been showcasing innovation possibilities with frontier technologies through numerous recent projects that add efficiency to operations and excitement to everyday activities. Omantel has piloted two major 5G projects in Oman's transport and logistics sector that offer showcase the use of 5G infrastructure beyond network speed and efficiency but also bring more accountability and streamlining to port operations. Omantel is enabling the Middle East's first Artificial Intelligence and IoT-powered store. Soon, shopping at the Ahlain Store in Oman Oil's filling station at Omantel's headquarters in Madinat al Irfan will be a queue-free, cashless, grab and go experience. Omantel has also successfully conducted a 5G test using the mmWave, paving the way for enhanced user experience especially in crowded spaces such as during festivals and events. The trial has demonstrated Omantel's ability to deliver multi-gigabit speeds with eight cell carrier aggregation functionalities and used a carrier bandwidth of 800MHz at 26GHz. Keeping such developments in mind, the aim of the Innovation Labs is to build a platform that can generate use cases for prioritized technologies and facilitate an ecosystem that complements Omantel's differentiating activities.

Oman's new address for Innovation and Entrepreneurship

Leveraging Omantel's expertise, partnerships, reach and access to technology to promote innovation and entrepreneurship in new and emerging technology

24 JUN-AUG 2021

Omantel Partners with Elevatus to Assess Generation Z Talent

Omantel became the first company in Oman to strategically partner with Elevatus, to leverage and utilize its video assessment solution that is powered by AI. With over 2,400 employees, the highly acclaimed and leading telecommunication company used the innovative AI technology to assess a mass number of applicants for an internship program. Elevatus is a renowned AI solution provider, that is helping businesses worldwide boost their success and improve the quality of their decisions with cutting edge and advanced technology. Elevatus provides groundbreaking AI solutions that are helping businesses in various industries centralize all their core processes, and remotely assess, hire, train, educate and survey a mass number of applicants with ease. The two companies joined forces in an effort to help Omantel deliver on their initiative of acquiring top talent, engaging employees, and leveraging innovation and digital transformation. With Elevatus' advanced video assessment solution, Omantel was able to roll out a video assessment and evaluate more than 2,300 applicants remotely, for an internship program tailored specifically to Generation Z, all within a short span of one to two weeks. Ibtihal Mohammed Al Riyami, General Manager Organization planning at Omantel said: "Omantel takes pride in being a market leader that continuously strives to adopt new innovative initiatives in the market. We are rolling out unique, intensive, and interactive training programmes that are designed to enable new Generation Z talent to participate, contribute, and play a vital role in building the future of Oman. Generation Z seek opportunities that are both progressive and unique, and by utilizing new innovative tools like EVA-SSESS, we are able to brilliantly connect and engage with this young generation." With great fervency, the telecom giant is harnessing the power of AI,

videos, and the latest in technology, to get to know and meet the needs of the growing Generation Z. By rolling out a single assessment from Elevatus' leading AI solution, Omantel was able to achieve a remarkable 80% conversion rate, denoting that a vast majority of the applicants successfully engaged and submitted their applications for the internship program in a few days only. "In this digital era, we are at the epicenter of agility and innovation. However, every advanced technology needs an agile team behind it. Omantel's team of leaders and forward-looking managers, seamlessly engaged, adapted and utilized EVA-SSESS innovatively throughout the entire process, to yield lucrative results. They wholeheartedly immersed themselves in the solution, to significantly enhance the experience for both Generation Z and recruiters. We believe that the success of any cutting-edge technology is highly dependent on how users engage, interact and utilize it. And we are pleased to see how our innovative technology is accelerating and enhancing the way teams and companies interact with users, to navigate through the assessment process with ease," said Yara Burgan, CEO of Elevatus. From this lucrative and full fruit partnership, Omantel boosted their ROI by 3X and managed to speed up the assessment process by a massive 83% (12X faster). Omantel is utilizing the video assessment solution, EVA-SSESS, to successfully meet its innovative vision and core values of delivering quality services. The company managed to incrementally speed up the assessment process, filter a mass number of applicants, and select the most qualified candidates for its wide variety of divisions.

Omantel Wins Best Digital Transformation Leadership GCC 2021 Award

At Omantel, strategy and service go hand in hand, leading to success for the Company and convenience for its customers. Recognizing the Company's service to the nation during the COVID-19 pandemic by way of accelerating digital technology's reach to businesses in the region, the Capital Finance International magazine (cfi.co) has conferred Omantel with the Best Digital Transformation Leadership (GCC) Award, 2021. The award further emphasizes Omantel's position as the market leader that puts the country first. Omantel, the Sultanate's leading integrated telecommunications services provider and

its trusted digital enabler, has driven Oman to be among a host of Gulf Cooperation Council (GCC) states at the vanguard of Fourth Industrial Revolution, and is fast turning its digital transformation goals into reality. Omantel is embedding futuristic communications and network technology into every aspect of the nation's functioning through smart solutions, the Internet of Things "IoT", Artificial Intelligence and other frontier technologies. The award categorically recognizes the efforts of Omantel as it rose from just being a telecom company to be an ally in the Omani government's fight against

COVID-19, with multi-pronged measures. In 2020, when the pandemic threatened to disrupt economies, Oman remained on the growth track, powered by Omantel's investments in frontier technologies infrastructure and its 2019 roll out of 5G network service. Omantel provided its solutions to the healthcare, education, public service delivery, as well as business sectors and helped them brace the impact. Its services for health workers, setting up of virtual clinics, e-learning platforms, digital public service delivery solutions, remote working and online solutions ensured uninterrupted service and business continuity. As strict health protocols like lockdowns came into force, Omantel App continued making customers' access to its services easier, quicker and safer from the comfort of their homes. Omantel App users grew from around 300K in early 2020 to 1 million by the end of the year, attracted by its ease of use and excellent service delivery through improved user experience, intuitive design and Artificial Intelligence. During the pandemic, the App became Omantel's virtual outlet bringing instant access to services like top-ups, bill payments, other than purchase of e-sim and instant activation without the need of any human intervention, devices and mobile and home internet plans. The addition of Noor, the AI-powered chatbot to the App, customer engagement levels grew manifold. This AI, bilingual chatbot continues to provide quick and accurate responses on Omantel's products and services, by upselling promotions, answering Frequently Asked Questions and capturing leads. The ever-increasing number of users and growing demand for more services at customer's fingertip have encouraged bringing even more innovative solutions to the App and take the service to the next level. Understanding well the potential of digital transformation to build sustainable, affordable and efficient solutions that touch every aspect of work, life, and play, and lead to the creation of an innovation and knowledge-based society, Omantel has been keeping itself ahead of the curve. Founded five decades back, Omantel has grown to become the leading provider of integrated telecommunications in GCC and remains committed to enabling a digital society to flourish. Acknowledging the award, Talal bin Said Al Mamari, CEO of Omantel said, "We at Omantel are ecstatic as our efforts for society continue to show results in the form of convenience, continuity of business, healthcare, education etc. and most importantly safety, during the pandemic. This recognition humbles as well as encourages us. Omantel is a people's company and it continues to leverage its strengths to make lives of people better and function of organizations more efficient. The award is a boost for us to fast track our future plans that will continue to revolutionize the way Omani society functions. Our timely network upgrades coupled with the 5G roll out in late 2019 formed the base on which solutions to face COVID-19 were built. We are confident that Omantel will continue to offer better solutions to every sector of Oman's growing economy." In 2019, Omantel introduced the 5G fixed wireless access to the people of Oman. 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 and SCT Entering into an Agreement for Satellite Services

Space Communication Technologies Company (SCT) and Oman Teleco-mmunication Company (Omantel) have signed an agreement to provide Satellite Communication to the different verticals in the Omani market. Omantel will utilize the satellite services using the state-of-the-art technologies on Ka-Band from the SCT's satellite Earth Station located in Omantel's Al Amerat Teleport on the Omani Satellite payload on Arabsat6A @ 30.5 E. Omantel will use this service to expand and enhance its reach for mobile network backhauling, in addition to providing connectivity services to their end-customers in different regions across the Sultanate. As the leading integrated telecom services provider of Oman, Omantel sees this agreement as a push towards digitization that is modernizing traditional ways of governance, education, business, services and administration by offering more efficient technologies and advanced solutions. The agreement will further consolidate Omantel's position as the market leader as the Company will expand and enhance its reach for mobile network backhauling, in addition to providing connectivity services to its end-customers in different regions across the Sultanate. Omantel will gain satellite bandwidth to complement its terrestrial range coverage, thus expanding the user base, and bringing them access to the latest innovations through improved connectivity. This agreement is another collaboration between Omantel and SCT.

In 2020, Omantel was selected as SCT's telecom infrastructure service provider and accordingly SCT co-located its main satellite hub in Omantel's Teleport in Al Amerat. Eng Salim Al Alawi, Executive Director of SCT, stated, "Signing the agreement with Omantel is an extension of collaboration between the two companies in the field of space telecommunication. Omantel is considered as one of the biggest strategic partners to SCT. As the agreement states, Omantel will be provided with satellite bandwidth for its commercial users to complement their services provided by terrestrial coverage. This will provide Omantel with satellite connectivity to increase the bandwidth available to the mobile stations in the rural areas. I would like to express my thanks to Omantel's Wholesale Business Unit for their collaboration that led to signing this agreement and a special thanks goes to SCT's team for their recognizable effort to seal the signing." Eng. Salim Al Mazrui, General Manager Wholesale Operations at Omantel said, "Omantel is always keen to utilize the latest available technological solutions to provide the most advanced services to its customers. Through this partnership with SCT, we will be able to increase the backhauling capacity for various mobile stations located in remote areas. By doing so, we will be able to upgrade the mobile technologies offered in these areas, which in turn, will allow our clients to enjoy enhanced services and better customer experience, which is one of our key priorities. We thank our counterparts in SCT for their efforts in facilitating this agreement and we look forward to achieving more mutual benefits under this highly valued partnership." Omantel and SCT are in the process of deploying the project to reap the mutual benefits in the near future. Both parties are committed to work together on other opportunities to further enhance their fruitful collaboration and continue to positively reflect their partnership on the telecom sector in Oman.

Omantel, Huawei to Jointly Establish Regional ICT Training Center in Oman

Oman's leading telecommunications services provider Omantel, and Huawei, a leading global provider of information and communications technology (ICT) infrastructure and smart devices, have collaborated to establish a regional ICT training center to support talent development in the Sultanate. The Huawei Regional ICT Training Center aims to advance new technologies further and support achieving Oman's Vision 2040, where building a knowledge-based economy is a key pillar. The Huawei Training Center will be located at the Omantel headquarters in Muscat where other tech facilities, including the Omantel 5G Exhibition Hall, Huawei HQ online exhibition hall, and the Huawei ICT Academy in Oman are also housed. The Huawei ICT Training Center will also collaborate with entities such as the Centre for Research and Innovation and the Duqm 5G Exhibition Hall. His Excellency Eng. Saeed bin Hamoud al Maawali, Minister of Transport, Communications and Information Technology (MTCIT) said: "Partnerships between the public and private sectors are one of the key elements towards achieving our national digital transformation plans. The collaboration between Omantel and a global leading technology company such as Huawei will strengthen our future generation's skills in the ICT field, build the ICT ecosystem and in turn, boost our nation's digital economy." On his part, Talal Bin Said Al Mamari, CEO, Omantel, said: "We are pleased to partner with Huawei on

establishing this center as we both aim to upskill the youth of Oman and provide them with the necessary tools to participate in Oman's development journey. We look forward to further strengthening our long-standing partnership with Huawei to develop Oman's ICT talent and support them in realizing their full potential." He further added, "Omantel, as an ICT leader, has been playing a vital role in Oman's digital transformation. Oman Vision 2040 has set digitization objectives with which Omantel has aligned its multifaceted strategic growth and investment. Omantel sees itself as an important enabler of change and a platform for knowledge, which will give the young generation the power and expertise to propel Oman towards sustainable, holistic growth. This center will be a milestone in Oman and Omantel's ICT goals." Robin Chen, Oman Huawei CEO, said: "The ICT training center demonstrates Huawei's commitment to build and nurture local ICT talents in Oman for a fully connected intelligent society. We are proud to establish the training center at Omantel's headquarters, where we look forward to bringing our global expertise to build ICT and talent pool ecosystem and contribute to the realization digital transformation ambitions of Oman Vision 2040." Chen added: "The ICT training center will provide training services not only to our local enterprise customers but also to our partners, customers, and staff in the Middle East region, offering them the opportunity to learn, and experience the latest advanced technologies, such as 5G, AI, IP, and IT as part of our support for their digital transformation journeys as well." The Huawei ICT Training Center will also be leveraging various facilities including the ICT Exhibition Hall, Omantel 5G Exhibition hall, Huawei HQ online exhibition hall, and the Huawei ICT Academy in Oman. The establishment of the ICT training center is a solid example of collaboration between the two entities.

Orange Jordan Launches a Comprehensive Plan to Continue Developing Its Mobile and Internet Networks

Orange Jordan recently implemented a comprehensive plan to enhance the performance of its mobile and Internet networks across the Kingdom, launching the Nothing Can Stop Me campaign to affirm that it provides Internet at high speeds and efficiency to its subscribers using all networks, in line with their aspirations and to meet all their needs under any circumstances, since it is the preferred operator for online learning, watching movies, series, online matches, and online games. In a press release issued by the company, Orange Jordan said that the campaign focuses on advanced 4G+ internet services, as it was the first to launch this technology in the Kingdom and the Middle East at a speed of up to 250 Mbps, in addition to providing distinguished internet services via fiber optics, at very high speeds of up to 1000 Mbps. In regards to the coverage of its several mobile networks, the company explained that it has worked to establish 25 new mobile sites, to expand its network coverage and that it succeeded in covering Amman with 4G+ services, it achieved remarkable development in its coverage across the Kingdom, where the coverage rate of 3G and 4G reached more than 98%, It also indicated that subscribers have the best coverage indoors. The company affirmed that the broadband internet services maintain their leading position in this field, whereas Orange Jordan managed to achieve tangible success in spreading its Fiber network to provide high-speed internet services and download capacity that equal the upload capacity, with unlimited use to benefit from the strong and wide coverage everywhere, where homes covered by this service reached over 618,000. Orange Jordan added that this campaign embodies its commitment to provide the best in the local telecommunications sector and providing modern technologies while ensuring its services are in line with the huge development taking place in this sector worldwide by strengthening the infrastructure necessary to support Orange's advanced solutions, taking into consideration the diverse needs of people and institutions, as it constantly develops its offerings to suit the variables of practical and daily life.

Zain Group Posts a 5% Increase in Net Profit in 1H21

Kuwait-based telecoms group Zain has published its consolidated financial results for the six months ended 30 June 2021, reporting a 3% decrease in revenues year-on-year to KWD750 million (USD2.5 billion), while EBITDA decreased 6% annually to KWD310 million. The company booked a net profit of KWD86 million in the six months under review, up 5% y-o-y, with net income for the second quarter of 2021 increasing by 17% y-o-y (KWD41 million). Further, foreign currency translation impact – mainly due to currency devaluations in Sudan and Iraq – cost the group USD378 million in revenue and USD233 million in EBITDA. Zain Group invested USD491 million in CAPEX (20% of revenues), predominantly in expansion of fiber-to-the-home (FTTH) infrastructure, spectrum license fees, 4G upgrades and new network sites across its markets, and 5G rollouts in Kuwait, Saudi Arabia and Bahrain. In operational terms, Zain Group reported a consolidated customer base of 48.3 million at 30 June 2021. In Kuwait subscribers decreased 4% y-o-y to 2.4 million, while the Saudi Arabian unit served 7.4 million subscribers (up 4% y-o-y). Zain Sudan's subscriber base stood at 17 million at 30 June 2021, up 8% y-o-y. Zain Iraq, meanwhile, saw its customer base increase 7% y-o-y to serve 16.1 million users at mid-2021, while the user base in Jordan reached 3.5 million (3.4 million in 2Q20). Mr. Bader Nasser Al-Kharafi, Zain Vice-Chairman and Group CEO, commented: 'The robust growth witnessed during Q2 2021 reaffirms the success of the '4Sight' strategy and digital transformation set forth by the Board and executive management to invest heavily and focus on monetizing our 4G, FTTH and 5G networks, while seeking new business verticals and revenue streams. Our excellent performance is even more satisfying when one considers the unavoidable currency devaluations in Iraq and Sudan, which had considerable impact on the financials.'

Zain Recognized with Prestigious World Finance 'Best Corporate Governance Award 2021' for Kuwait

Zain Group announces it has won the World Finance 'Best Corporate Governance Award 2021' for Kuwait. The company drew praise from the judging panel for its principles and integrity captured by its Investor Relations and Corporate Governance Framework, which drive its ongoing ability to provide shareholder returns and to pursue long-term objectives while ensuring ongoing transparency and accountability. World Finance is a print and online magazine providing comprehensive coverage and analysis of the financial industry, international business and the global economy. Since being founded nearly 20 years ago, the publication is read in over 100 countries, with a readership of 120,000 per issue on average. The annual World Finance Awards select and analyze some of the most diverse and succinct governance platforms and recognize leading organizations in this important area. Zain has adopted a sound Investor Relations and Corporate Governance Framework that enhances the overall governance environment within the company in line with applicable laws, regulations and leading practices. Wherever possible, the company looks to exceed the requirements of the Corporate Governance Regulations issued by the

Capital Markets Authority in Kuwait, Boursa Kuwait, the Ministry of Commerce and Industry and other regulatory bodies. Bader A-Kharafi, Zain Vice-Chairman and Group CEO said, "We are proud of the standards we set with respect to corporate governance and integrity. From the publication of our annual and sustainability reports to our regulatory disclosures as well as operational and financial results reporting, we are guided by a desire to offer all our stakeholders the most transparent access to our information as possible." Al Kharafi added, "The proactiveness and innovative policies of the Capital Markets Authority, Boursa Kuwait, Ministry of Commerce and Industry and other regulatory bodies in Kuwait drive us to be a more agile and responsible organization and we remain motivated to raise the bar even higher with respect to good governance and accountability." Zain's corporate governance framework helps the company to mitigate risks and facilitates an effective board oversight over the company's executive management by monitoring the implementation of policies when running daily operations. Corporate Governance promotes strong internal controls to improve integrity of financials and establishes a culture of compliance. This governance structure has also helped Zain to win the confidence of the market and attract global investors. Zain's CG framework includes a set of policies that have been approved by the board to safeguard the integrity of the day-to-day business operations and to protect the rights of different stakeholders. These policies discuss and outline responsibilities and commitments relating to critical topics such as whistleblowing, conflict of interest, related party transactions, disclosure, remunerations of the Board and the Executive management, and board affairs including board assessment, to name a few. Zain Group's selection for this year's honors is a result of the company's tireless pursuit of transparency and best

practice in its Investor Relations and general operating and reporting functions. The company's Code of Conduct, for example, requires that any business dealings be undertaken with the upmost honesty, integrity and fairness. To uphold this, Zain, its suppliers, business partners, intermediaries and agents are expected to carry on business with the highest levels of integrity, honesty, fairness and responsibility. Zain's Code of Conduct also requires that stakeholders ensure they have adopted a similar approach to conducting their own businesses. The ethical guidelines of Zain's Code of Conduct are extensive and exist to guide and empower the Board of Directors and executive management to make the right choices, as individuals and as a company. Adhering to the Code of Conduct allows Zain to exercise a positive impact on the industry, communities in which it operates, and beyond; and build a company all can be proud of, where corporate responsibility is a key competitive advantage. With respect to compliance, Zain's Corporate Governance and Compliance Department is responsible for monitoring the implementation of the Corporate Governance Framework. The department also facilitates the review assessment of the company's corporate governance framework to verify full compliance with the set framework and related laws and regulations in Kuwait and the countries that Zain operates in. This 'Best Corporate Governance Award 2021' award follows Zain recently been named winner in three categories at the annual Global Good Governance Awards 2021: Best of the Best in Diversity Award 2021; Leadership in Sustainability Award 2021; and Championship Award in Women Empowerment 2021. The annual Global Good Governance Awards are organized by UK-based think tank Cambridge IFA and celebrate individuals, governments, public and private sector institutions and NGOs that exhibit governance and sustainability as their strategic priority.

Arthur D Little

Arthur D. Little Appoints Raimundo Cisneros as Partner in Technology & Innovation Management Practice

Arthur D. Little (ADL) announced that Raimundo Cisneros has joined the company as a Partner in its Technology & Innovation Management (TIM) practice. An accomplished practitioner with over 20 years' experience in management and strategy consulting, and a strong background in software and platforms, high-tech, and media and entertainment, Raimundo will be based out of ADL's Madrid office. Prior to joining ADL, Raimundo was a senior figure at Accenture, having joined the company in 2004. From 2017, he was Managing Director of its Iberian Tech Strategy Practice, leading a 20 FTEs team, +$10m revenue business. He started his career as a Business Analyst for multimedia market research company Future Source. Saverio Caldani, Managing Partner for ADL Italy and Spain, comments: "We're very pleased to welcome Raimundo to our Spanish office, where I am certain that he will quickly establish himself as a vital member of the TIM practice. For the past two decades, Raimundo has specialized in understanding how disruptive, game changing technology affects markets and companies' readiness to compete within them. He is also an expert in analyzing the modern consumer experience, advising companies on how to improve customer conversion rates and achieve higher brand loyalty. As such, he brings valuable knowledge and insights to the ADL team." Raimundo Cisneros, Partner at ADL, adds: "The business and consumer landscape is changing faster than ever before, and companies must harness new innovations in both technology and data science if they are to remain truly competitive. In particular, it is vital to have an omnichannel strategy that delivers a consistent customer experience across all potential touch points – seamless integration at every stage of the consumer journey is key to success. Companies must also explore potential new services, and revenue sources, as a way of differentiating their offering. An important part of my role at ADL will be to help businesses develop new opportunities as they arise, rather than risk being left behind in the innovation race." Raimundo holds a Masters in European Business from the ESCP Business School, plus separate degrees in Business Administration and Economics from Carlos III University, Madrid.

Arthur D. Little Appoints Ashish Sharma as Partner

Arthur D. Little (ADL) has announced Ashish Sharma has joined the company as a Partner. This continues on from a series of local appointments to strengthen ADL's presence in India as it scales its regional footprint. He will be based out of the company's Delhi office. Mr. Sharma has over 20 years of consulting experience across India, the US, Europe, the Middle East, West and South Africa, and Southeast, East and Central Asia. He has worked in public policy with governments and regulators, as well as the World Economic Forum, on issues of importance such as digital infrastructure and industry development, the digital divide, sustainable urbanization, and smart mobility. Mr. Sharma also headed up reports for NASSCOM, the National Association of Software and Service Companies (an Indian non-governmental trade association) on a cyber-industry growth roadmap for India, as well as engineering and R&D initiatives stretching over nearly a decade. With extensive experience working with family-owned conglomerates on their digital transformation journeys, Mr. Sharma has helped companies recast their operating models, processes, and digital architecture in order to eliminate the false dichotomy of control versus agility, and take full advantage of digital enablement. His work is anchored on integrated business planning for faster market response and enhanced profitability, while institutionalizing the organization's identity and culture to ensure successful long-term intergenerational transitions. Mr. Sharma has been a valued member of committees nominated by the Indian Prime Minister's Office and Government Agency NITI Aayog, on digital communications policy, digital infrastructure resilience, and related issues. He was also the government nominee to the executive committee of the recently established university at Kaithal, Haryana. Barnik Chitran Maitra, Managing Partner, Arthur D. Little India, comments: "Ashish's extensive experience in public policy, digital transformation and technologies of the future will prove to be a great asset to ADL India. I look forward to working with him as part of our leadership team." Ashish Sharma, Partner at ADL,

says: "India is at an economic inflection point with technology and digitization at which it is likely to play an important role in capturing untapped innovation potential. I believe that ADL is uniquely positioned to help transform Indian businesses and the government to achieve the Prime Minister's vision of a USD 5 trillion economy." Ignacio García Alves, Chairman and Chief Executive Officer of Arthur D. Little, adds: "Ashish will be a great asset to the global ADL Partnership. ADL is committed to building a dominant practice in India and we welcome Ashish to the India leadership team to accelerate our growth trajectory in the region." Mr. Sharma is a postgraduate of the Indian Institute of Management, Kolkata, and holds an undergraduate degree in Mathematics from the University of Delhi.

AT&T and Cisco Launch 5G Service for the Internet of Things

AT&T and Cisco have introduced 5G network capabilities to boost performance for Internet of Things (IoT) applications across the US. The AT&T 5G network is now ready to deliver lower latency and faster speeds for enterprise customer IoT deployments using 5G certified devices. AT&T and Cisco currently manage millions of connected devices spanning manufacturing, utilities, transportation, public sector, retail, and healthcare industries as well as public safety on FirstNet®, built with AT&T, through AT&T's 4G LTE and low-power IoT cellular networks. AT&T Control Center powered by Cisco gives businesses near real-time visibility of all the IoT devices on their network and helps mitigate security risks, identifies anomalies in data usage and optimizes traffic classification reporting. Adding the capabilities of AT&T's nationwide sub-6GHz 5G network enables enterprises such as manufacturing, automotive and entertainment to begin to take advantage of the higher bandwidth and lower latency currently available to more than 251 million people across the country. For example:

- Owners of 5G-capable connected vehicles will be able to experience faster speeds for downloading, streaming, and sharing music, video, software updates navigation and mapping while on-the-go.
- Mobile Personal Emergency Response Device providers and users can have an improved sense of independence and security with faster response times provided via 5G.
- Manufacturers can take advantage of 5G's-low latency speeds to use camera technology to monitor and identify product defects in near real time on the assembly line to reduce waste.

That's just the beginning.

Adding 5G opens the door to massive IoT connectivity that will create opportunities to transform retail, make autonomous vehicles and smart factories a reality, and revolutionize healthcare. "5G will empower businesses across all industries to digitize faster and reshape business models," said Masum Mir, Vice President and General Manager, Cable, Mobility and IoT, Cisco. "Together with AT&T we are marking a milestone for AT&T Control Center customers to harness the power of 5G to connect industrial and business-critical devices for ultimate IoT visibility." "Working with Cisco, we continue to help businesses deploy IoT devices and applications faster and more securely and get more value out of devices they use," said William Stovall, Vice President, Mobility, IoT and 5G, AT&T. "This is an important first step toward the IoT massive connectivity that will eventually create opportunities for enterprises to realize the full potential of IoT."

AT&T 5G Network Reaches 250m People
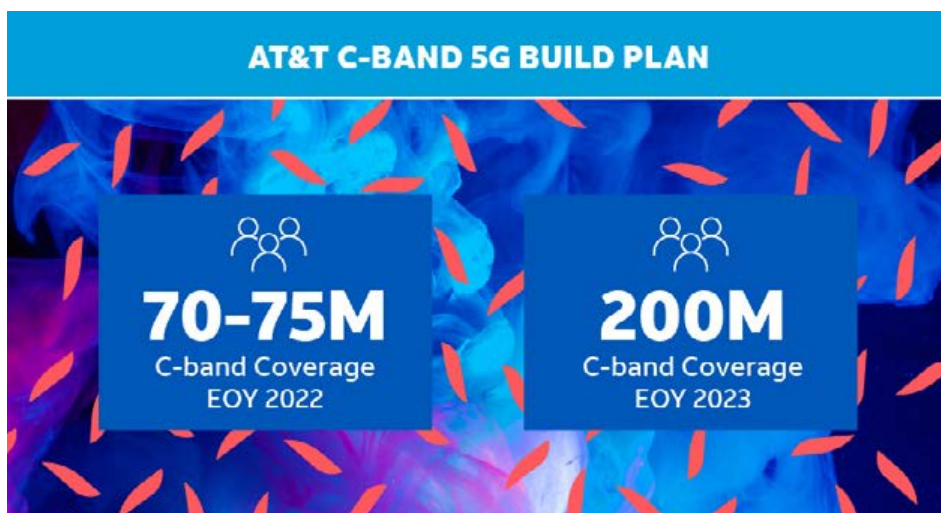
AT&T Communications has revealed that its 5G network now covers 250 million people, with the telco hitting its end-of-year coverage target six months early. The low band 5G network utilizes former 3G spectrum in the 850MHz band. AT&T's '5G+' (i.e. millimeter wave [mmWave]) footprint remains unchanged, with connectivity offered in selected parts of 38 cities. Going forward, the telco expects to cover 70-75 million people with its planned 3.7GHz 5G network by end-2022, rising to 200 million by end-2023.

Batelco Signs MoU with American University of Bahrain

Batelco signed an MoU with the American University of Bahrain (AUBH), the Kingdom's first American-style University, to jointly launch academic and extracurricular initiatives, which aim at enriching the students learning experience and prepare them for their future. The signing ceremony took place at the AUBH campus in Riffa in the presence of a number of officials, and the MoU was signed by Shaikh Bader bin Rashid Al Khalifa, General Manager, Corporate Communications and CSR at Batelco, and Mr. William D. Hurt,

Chief Operating Officer at AUBH. As part of the agreement, the AUBH student body will have the opportunity to take part in summer and semester-long internships at Batelco, and join executive experience programmes, giving them a chance to work on some of Batelco's current projects. Students will also be able to volunteer for and help organize projects that fall under Batelco's CSR programmes. The two institutions also plan to create initiatives to benefit the community and intend to hold panel discussions on topics of interest,

as well as movie screenings on subjects like technology, and events that range from cultural and artistic to seasonal and athletic. Commenting on the agreement, Shaikh Bader said, "We are delighted to be working with the American University of Bahrain, that like Batelco is part of the Mumtalakat portfolio, and look forward to collaborating with them to support education in our society. This fits well with Batelco's continuous commitment towards education and equipping students with the right skills and knowledge as part of our focus on quality education in line with the UN Sustainable Development Goals." "Through this agreement, we aspire to achieve our mutual goals by bringing together academic excellence with corporate knowledge and technology, to create a complete educational experience for the university's students.," he added. Mr. Hurt said, "We are honored to enter into an MOU with Batelco, and jointly collaborate to enhance educational and internship opportunities for our students, in line with our mission to provide an accessible American-style education to the youth of the Kingdom of Bahrain and worldwide."

BNET launches e-Marketplace to Manage Supply Chain Operations Under a Single Digital Platform

Bahrain's National Broadband Network (BNET) announced today the launch of its e-Marketplace platform, a unified digital platform dedicated to the management of supply chain operations and supplier relations. The launch is part of the company's digital transformation efforts, to accelerate autonomy and automation of internal processes and enhance operational efficiency. BNET partnered with SAP Software Solutions to implement its e-Marketplace project by deploying SAP's Ariba e-procurement and supply chain cloud solutions for enterprise systems, a leading solution in digital collaborative commerce that guarantees ease of access. This supports

BENT`s commitment to adopting the latest technological innovations and software, as well as its pursuit of best practice and excellence in managing procurement and supplier relations. In addition to digitalizing supplier operations, SAP Ariba solutions provides real-time and predictive analytics that turn data into actionable insights. This supports BNET with preparedness to keep pace with rapid changes and future developments. The system also integrates advanced technologies including "Internet of Things", "Blockchain", "Artificial Intelligence" and "Machine Learning". The newly launched e-Marketplace aims to improve the assessment and approval process of supplier offers and simplify

management of supplier and vendor relationships. This positively reflects on BNET's overall performance and the level of services it provides to its direct and indirect customers. The project is aligned with BNET's direction to adopt digital cloud solutions across all its operations and to optimize processes by employing innovative technologies and solutions. Mr. Mohamed Bubashait, BNET`s CEO, said: "BNET's e-marketplace is an innovative solution in line with our digital transformation goals and supports our efforts to expand our network of local and international suppliers, in order to enhance competition and modernize our operations. Employing innovative technologies is

an essential part of our strategy, and our adoption of SAP Ariba's digital solution confirms our absolute commitment to continue optimizing our operations and achieve further success and progress in our work." BNET Director of Procurement and Logistics Mr. Jaber Almosallam added: "The e-Marketplace project is part of our efforts to enhance coordination and communication with our network of existing and future suppliers. The new

platform enables a paperless and efficient supplier relations workflow, beginning with the submission of bids, to tenders, to signing agreements and issuing invoices." "BNET's innovative e-Marketplace platform shows how the organization is embracing the world's largest business-to-business network to drive innovation in procurement and supplier relations, and also support Bahrain's diversified economic growth," said Hassan Saleh, Managing Director, SAP

Bahrain. "We will continue to exchange best practices to support BNET's cloud-based digital transformation journey and growth as an Intelligent Enterprise." Along with e-Marketplace, BNET launched a new supplier relations page on its official website to help guide existing and potential vendors and provide the necessary support to make the transition to its new digital platform a smooth and easy experience.

Batelco Achieves H1 2021 Net Profit Attributable to Equity Holders of BD37.5 Million; a 5 Per Cent YoY Increase
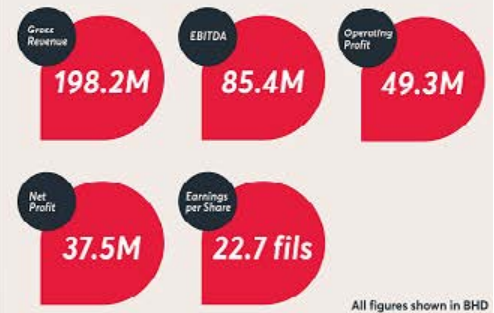
Batelco has announced its financial results for the second quarter of 2021, the three months ended 30 June 2021 (Q2), and for the first six months of 2021 (H1), the period ended 30 June 2021. For the second quarter of 2021, the three months ended 30 June 2021 (Q2), Batelco reported a 3% increase in net profit attributable to equity holders of the company of BD17.8M (US$47.2M) compared to BD17.3M (US$45.9M) for Q2 2020. Likewise, net profits attributable to equity holders of the company for H1 2021 of BD37.5M (US$99.5M) increased by 5% from BD35.9M (US$95.2M) for the corresponding period of 2020. The increase in net profit is mainly attributable to steady increases in revenues for the first six months of the year. Earnings per share (EPS) are 10.7 fils for the second quarter of 2021 compared to 10.4 fils in Q2 2020 resulting in an EPS of 22.7 fils for the period compared to an EPS of 21.7 for H1 2020. Total comprehensive income attributable to equity holders for Q2 2021 reported at BD17.3M (US$45.9M), an increase of 30%

from BD13.3M (US$35.3M) for the second quarter of 2020. Total comprehensive income attributable to equity holders of the company for the first half of 2021 is up by 87% from BD25.2M (US$66.8M) in H1 2020 to BD47.2M (US$125.2M) in H1 2021. Revenues for the second quarter in 2021 of BD98.4M (US$261.0M) increased by 7% compared to BD92.2M (US$244.6M) in Q2 2020. Similarly, revenues for H1 2021 were BD198.2M (US$525.7M), an increase of 4% when compared to BD189.8M (US$503.4M) of revenues in H1 2020. The increase in revenues is mainly due to YoY increases in fixed broadband, adjacent services and wholesale revenues of 18%, 16% and 5% respectively. Operating profit for Q2 2021 is up by 4% to BD23.8M (US$63.1M) from BD22.9M (US$60.7M) in Q2 2020; while year-on-year operating profits increased by 4% from BD47.4M (US$125.7M) in H1 2020 to BD49.3M (US$130.8M) in H1 2021. EBITDA stands at BD41.7M (US$110.6M) in Q2 2021 compared to BD40.3M (US$106.9M) in

Q2 2020, an increase of 3%. For the first half of 2021, EBITDA increased by 4% from BD81.8M (US$217.0M) in H1 2020 to BD85.4M (US$226.5M) in H1 2021, with a healthy EBITDA margin of 43%. Batelco's balance sheet remains strong with total equity attributable to equity holders of the company of BD487.9M (US$1,294.2M) as of 30 June 2021, 3% higher than BD473.2M (US$1,255.2M) reported as of 31 December 2020. Total assets of BD1,007.4M (US$2,672.1M) as of 30 June 2021 have increased by 2% compared to total assets of BD992.2M (US$2,631.8M) as of 31 December 2020. Net assets as of 30 June 2021 which stand at BD526.5M (US$1,396.6M) are 3% higher than BD512.1M (US$1,358.4M) reported as of 31 December 2020. The Company's cash and bank balances are a substantial BD196.4M (US$521.0M), which reflects the 2020 final dividend of 16.5 fils per share paid in April 2021. The Board of Directors approved an interim cash dividend for shareholders of 13.5 fils

per share or 13.5% of paid-up capital for the six-month period of 2021. This is in line with the 2020 interim dividend payment and the Board of Directors commitment to continuously deliver strong returns to shareholders. Commenting on Batelco's performance for the first half of 2021, Batelco Chairman, Shaikh Abdulla bin Khalifa Al Khalifa said, "Batelco's Board is pleased with the Company's performance for the first half of the year. Following a positive start to the year, we are glad to maintain the momentum, which is reflected in our financial results for the second quarter. Batelco achieved a 4% increase in revenues, contributing to a 4% increase in EBITDA and 5% increase in net profit for the six months ended June 2021. We appreciate the efforts of the executive team for their diligent management and commitment to implementing the strategic objectives." "Delivering strong returns for Batelco's shareholders is a priority for the Board of Directors and accordingly, we are glad to note an increase in Earnings Per Share (EPS) of 22.7 fils for the six month period, up from 21.7 fils in H1 2020," the Chairman added. "We're proud of being

the first telecom company in the GCC to receive a license for Open Banking, with the establishment of Batelco's new licensed company, Batelco Financial Services. This step reflects the Board's aspirations to advance steadily towards digital transformation while enhancing and growing Batelco's core business," the Chairman continued. Shaikh Abdulla concluded, "Investments in growing our digital portfolio is in line with international trends and continues to be an important step in our strategic plans to ensure that Batelco is in a position to be a key player in the growth of Bahrain's digital economy." Speaking following the announcement of the Half Year financials, Batelco CEO Mikkel Vinter said, "We are proud of the strong financial results for the first six months of 2021, which are supported by year-on-year increases in fixed broadband, adjacent services and wholesale revenues." "It's been rewarding to make good progress in converting key strategic plans in the digital space into actions, including the successful roll-out of key projects such as the launch of Batelco Financial Services, to provide both consumers and SMEs with a broad

range of financial related services such as digital wallet creation and cards issuance services." "During the first half of 2021, Batelco focused on delivering exceptional speeds and innovative products for the enterprise, consumer, and global business sectors. Key achievements included introducing new 5G Mobile Broadband packages to deliver speeds six times faster than 4G, and redesigned Home Fiber Broadband packages with speeds as high as 1Gbps. "The development of Batelco's Data Centres remains high on the agenda and in line with world class standards in Data security, our teams worked hard to achieve PCI DSS 'Payment Card Industry Data Security Standard' compliance, for Batelco's three Data Centers, thus ensuring a reliable and highly secure data storage environment for our customers." "The successes of the second quarter reflect the dedicated efforts of the entire Batelco team who worked together to achieve the desired results. I am grateful to each team member and encourage them to keep up the positive momentum to execute our ambitious business plans for the second half of 2021," Mr. Vinter concluded.

Cisco Talos Identifies Ransomware as Number 1 Security Threat Between April-June 2021

The Cisco Talos Incident Response (CTIR) team, backed by the world's largest commercial threat intelligence organization, has released its quarterly Threat Assessment Report. Cisco Talos observed a variety of attacks, with ransomware being the quarter's most dominant threat. According to CTIR, ransomware accounted for almost half of all incidents, and more than triple that of the next most common threat. Actors targeted a broad range of verticals, including transportation, utilities, health care, government, telecoms, technology, machinery, chemical distribution, manufacturing, education, real estate and agriculture. However,

healthcare was targeted the most out of all verticals for the third quarter in a row, with government being the second most-targeted. Commenting on the Cisco Talos Threat Assessment Report, Fady Younes, Cybersecurity Director at Cisco Middle East and Africa said: "There are many reasons why actors are continuing to target the healthcare industry, including the COVID-19 pandemic, incentivizing victims to pay to restore services as quickly as possible. On a positive note, there were several pre-ransomware events in which timely detection via Cisco Secure products, along with quick remediation led to containment of the incident before encryption could occur." Ransomware actors used commercial tools like Cobalt Strike, open-source tools and tools native on the victim's device. Other observed threats included the exploitation of known vulnerabilities, cryptocurrency mining, and account compromise. Interestingly, there were multiple incidents involving trojanized USB drives, which is an older attack vector not seen in many years. he lack of multi-factor authentication (MFA) remains one of the biggest impediments for enterprise security. CTIR frequently observes ransomware incidents that could have been prevented if MFA had been enabled on critical services. CTIR urges organizations to implement MFA wherever possible.

Cisco Partners with the Saudi Federation for Cyber Security, Programming and Drones to Enhance Digital Skills in the Kingdom

Cisco has announced a strategic partnership with the Saudi Federation for Cyber Security, Programming and Drones (SAFCSP), to develop the digital skills of 8,000 trainers in the fields of cybersecurity and programming via the Cisco Networking Academy (NetAcad). In Saudi Arabia, the Cisco NetAcad program has one of the highest female student participation rates globally, reaching 32% - a number which Cisco is keen to continue growing. Of the 8,000 participants being trained via Cisco and SAFCSP's new initiative, through a combination of online and on-site courses, the duo will be training and upskilling more than 1,000 women. As part of the skills building agenda, Cisco will develop the competencies of SAFCSP's trainers, looking to gain further expertise in digitization and cybersecurity essentials, including Cisco DevNet and Python qualifications. SAFCSP trainers will also meet with experts from Cisco via coaching sessions in cybersecurity. Building on a memorandum of understanding (MoU) signed in 2018 to develop cybersecurity and programming skills, the collaborative partnership will see Cisco and SAFCSP leverage their industry-renowned upskilling initiatives to enhance the digital capabilities of Tuwaiq Academy, Saudi Arabia's first advanced technology academy, and CyberHub, a platform for Saudi-based students interested in gaining cybersecurity competencies. Both Tuwaiq

Academy and CyberHub were founded by SAFCSP under the umbrella of the Saudi Olympic Committee, which strives to build local professional capabilities in digital transformation – specifically in the fields of cybersecurity and programming. The program is founded on the pillars of inspiration, empowerment and sustainability, and aims to achieve the goal of having one programmer among every 100 Saudi nationals by 2030. Commenting on the partnership, Salman Abdulghani Faqeeh, Managing Director, Saudi Arabia at Cisco said, "With a tech-savvy population and the national agenda putting investments in infrastructure and talent development at the forefront, Saudi Arabia is ensuring that digital transformation and upskilling remains a vital contributor

towards the growth and success of several industries. Cisco continues to be a key enabler of digital transformation in the Kingdom and through our partnership with SAFCSP, we will further contribute towards the agenda of futureproofing job roles and aiding the transition towards a more digitally-focused economy." Since openings its doors to the world in 1997, the Cisco Networking Academy (NetAcad) has served as a platform to train, upskill and develop human capital – aiding the transition towards more digitally-focused economies. In Saudi Arabia, the program was first introduced in 2000 and to date, it has trained over 140,000 students. Today, there are 106 active networking academies in the Kingdom and over 450 academic instructors.

Eutelsat and Vox Sign Distribution Agreement for EUTELSAT KONNECT Capacity Over South Africa

Eutelsat Communications (Euronext Paris: ETL) and Vox, a market leading end-to-end integrated ICT and infrastructure provider and telecommunications company, have reached a multi-year distribution agreement to extend high-speed network connectivity to South Africa. As of June, Vox will leverage the unmatched operational flexibility and power of EUTELSAT KONNECT, the new-generation high throughput satellite, and Eutelsat's market-leading

service to further grow its satellite customer base. Commenting on the agreement, Jacques Visser, Head of Wireless at Vox said: "We are delighted to be partnering with Eutelsat to provide solutions that connect South Africans by supporting customers, entrepreneurs, and commerce, whilst guaranteeing service excellence. We are confident that Eutelsat's unparalleled in-orbit assets, together with its unrivalled customer support will be a great benefit to

a growing number of customers". Philippe Oliva, Chief Commercial Officer of Eutelsat added: "We are pleased to be selected by Vox to enhance and extend its offer of high quality, reliable internet connectivity in South Africa's digital divide. This agreement cements our position as the leading satellite broadband operator in the country and reflects the attractivity of our EUTELSAT KONNECT satellite in the region".

Eutelsat 36D Satellite Selected by Airbus to Embark Its Latest Ultra High Frequency Payload

Eutelsat Communications' (Euronext Paris: ETL) EUTELSAT 36D satellite has been selected by Airbus Defence and Space to carry its latest Ultra High Frequency (UHF) payload. Airbus Defence and Space has already received firm pre-commitments on this payload. Operating in the dedicated 225-400MHz frequency band, the payload will address French governmental applications and other allied governmental applications to support communications over the EMEA region. Built by Airbus Defence and Space, the all-electric EUTELSAT 36D will assure all the main legacy missions

of EUTELSAT 36B, with enhancements to coverage areas and performance. The satellite is due for launch in the first half of 2024. With coverage of Africa, Russia and Europe, 36° East is a key orbital slot for Eutelsat and ranks second behind 70° East in terms of revenue generation in Government Services. Commenting on the agreement, Pascal Homsy Eutelsat's Chief Technical Officer said: "We are excited to take our relationship with Airbus to the next level, embarking for the first time an UHF payload on its behalf. This incremental mission reflects not only the unparalleled coverage of Eutelsat's fleet, but is also a further example of our ability to generate additional value from our core assets, serving Governments as trusted partners." Cédric Oudiette, Head of Secure Communications Strategy at Airbus Defence and Space added: "We are delighted to have the opportunity to embark our UHF payload at this key orbital position, enabling to strengthen Airbus' leading position in satellite communication services for governmental and defence applications."

Eutelsat Launches Eutelsat ADVANCE for End-to-End Managed Connectivity Services

Eutelsat Communications (Euronext Paris: ETL) has launched Eutelsat ADVANCE, a global network solution for unlimited reach in a world where increasing digitalization is having a massive impact on connectivity requirements for businesses. Eutelsat ADVANCE is an end-to-end managed connectivity service, including network interconnection, a management portal and APIs for service providers and their clients, terrestrial connectivity, Ku and Ka-band capacity, and satellite terminals. Available

via Eutelsat's certified network of partners, Eutelsat ADVANCE enables clients to enhance their service portfolio by increasing the range of services they offer, leveraging Eutelsat's powerful global capabilities and 24/7 support. The new solution includes a suite of tailored offerings addressing multiple markets, notably Maritime, Aviation, Enterprise for businesses including energy, construction, banking and retail, Government and Telecoms - with custom backhaul solutions supporting all

4G/5G coverage expansion needs and high-speed transmission links. Eutelsat ADVANCE's global Ku-band network leverages the ST Engineering's Newtec Dialog platform. It facilitates application-use identification and prioritization at a compelling cost that scales with demand. The high-performance Ka-band network will enable powerful connectivity for Enterprise markets using Eutelsat's in-orbit Ka-band resources combined with Hughes Network Systems' ground network system. Philippe Oliva, Chief Commercial Officer of Eutelsat said: "The current context has accentuated the need for worldwide connectivity, as more and more business processes migrate to the cloud. This is why we are launching Eutelsat ADVANCE, our new satellite network-as-a-service offer. Through an innovative portfolio of globally managed services, optimizing and sharing in-orbit resources in Ka and Ku-bands, terrestrial connectivity, the automation of data connectivity services, and a wide range of offerings tailored to specific markets, Eutelsat ADVANCE enhances our customers' portfolios of service offerings in their markets."

FACEBOOK

# Facebook and Liquid Deploying Fiber Network in DRC

Facebook and Liquid Technologies announced a partnership to build an extensive long haul and metro fiber network in the Democratic Republic of Congo (DRC) that is expected to improve internet access for more than 30 million people and help meet growing demand for regional connectivity across Central Africa. Facebook will invest in the fiber build and support network planning. Liquid Technologies will own, build and operate the fiber network, and provide wholesale services to mobile network operators and internet service providers. The network will help create a digital corridor from the Atlantic Ocean through the Congo Rainforest, the second largest rainforest after the Amazon, to East Africa, and onto the Indian Ocean. Liquid Technologies has been working on the digital corridor for

more than two years, which now reaches Central DRC. This corridor will connect DRC to its neighboring countries including Angola, Congo Brazzaville, Rwanda, Tanzania, Uganda, and Zambia. The new build will stretch from Central DRC to the Eastern border with Rwanda and extend the reach of 2Africa, a major undersea cable that will land along both the East and West African coasts, and better connect Africa to the Middle East and Europe. Additionally, Liquid will employ more than 5,000 people from local communities to build the fiber network. "This is one of the most difficult fiber builds ever undertaken, crossing more than 2,000 kilometers of some of the most challenging terrain in the world" said Nic Rudnick, Group CEO of Liquid Intelligent Technologies. "Liquid Technologies and Facebook have a common mission to

provide affordable infrastructure to bridge connectivity gaps, and we believe our work together will have a tremendous impact on internet accessibility across the region." "This fiber build with Liquid Technologies is one of the most exciting projects we have worked on," said Ibrahima Ba, Director of Network Investments, Emerging Markets at Facebook. "We know that deploying fiber in this region is not easy, but it is a crucial part of extending broadband access to under-connected areas. We look forward to seeing how our fiber build will help increase the availability and improve the affordability of high-quality internet in DRC." Liquid Intelligent Technologies is present in more than 20 countries in Africa, with a vision of a digitally connected future that leaves no African behind.

Facebook Adds End-To-End Encryption on Messenger

Facebook rolled out end-to-end encryption for voice and video calls on its Messenger app, a technology widely used on its WhatsApp platform, part of a move to give users more security. In a blog, Ruth Kricheli, director of product management of Messenger, explained it was deploying the encryption option after seeing a surge in the use of audio and video on Messenger, with more 150 million video calls now made daily. Kricheli said the encryption feature was optional and gave users more control over how private they want their calls and chats to be. Facebook has offered end-to-end encryption on one-to-one text chats since 2016, as well as on WhatsApp, "to keep personal conversations safe from hackers and criminals". Likening the technology to a lock and key, Kricheli said end-to-end encryption was becoming the industry standard, where only the user and the people in the chat or call have access. "The content of your messages and calls in an end-to-end encrypted conversation is protected from the moment it leaves
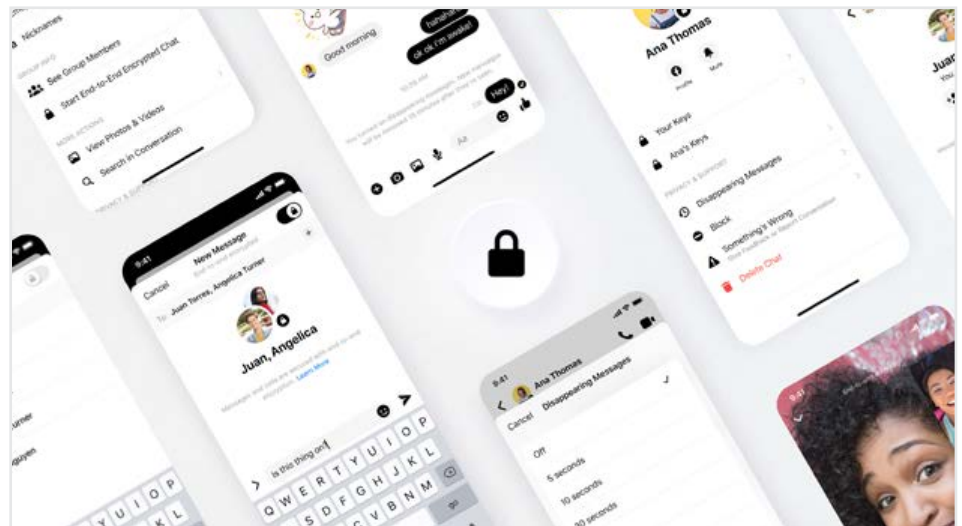
your device to the moment it reaches the receiver's device," she said. "This means that nobody else, including Facebook, can see or listen to what's sent or said." In the coming months, Facebook plans to test end-to-end encryption in Messenger group chats and for Instagram direct

messages. In addition, the company rolled out updated controls over Disappearing Messages, with its recently launched expiring message feature now including a timer to determine the amount of time one has access to the content, ranging from five seconds to 24 hours.

Huawei Releases 2020 Sustainability Report

Huawei has released its 2020 Sustainability Report. The company has been publishing this annual report for 13 consecutive years. The 2020 report explains the major progress that Huawei has made over the past year in its four strategies for sustainability: digital inclusion, security and trustworthiness, environmental protection, and a healthy and harmonious ecosystem.

TECH4ALL digital inclusion initiative: Leaving no one behind in the digital world
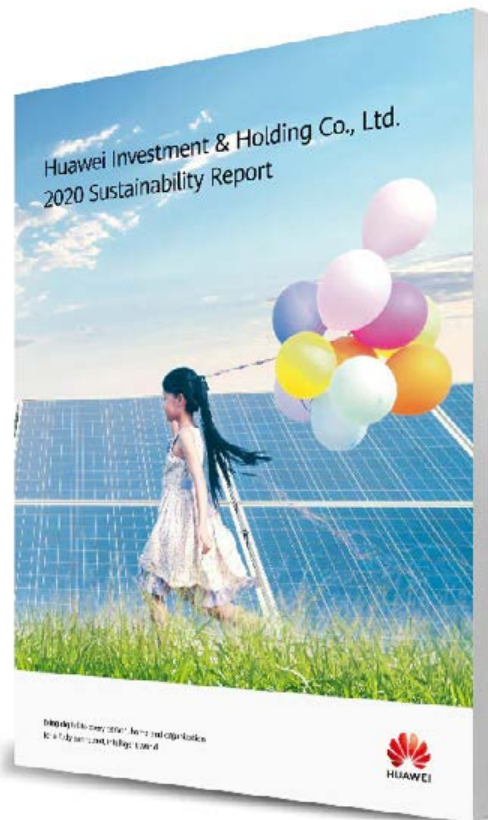
The COVID-19 pandemic has strained global education and healthcare systems in a way that has never been seen before. The company has been using its innovative ICT solutions to provide people across different regions with equal access to quality education and healthcare resources, and playing its part in the fight against the pandemic. In 2020, Huawei rolled out its Skills on Wheels and Connecting Schools programs in over 200 schools around the world, benefiting more than 60,000 people. Huawei also used ICT solutions to assist the pandemic response in the communities where it operates and provided technical assistance to nearly 90 countries, doing its best to support local communities in this time of great need. As part of its efforts to provide universal access to digital technologies and applications, Huawei provides 15 accessibility functions on its smartphones. Every month, about 10 million people use these functions that allow them to better enjoy a smart lifestyle. In 2020, Huawei helped 22 protected areas in 18 countries manage natural resources and protect biodiversity more efficiently using its digital technologies. Huawei also launched the RuralStar Pro solution, which provides voice and mobile broadband services for sparsely populated remote villages. Its RuralStar solutions now provide network coverage for more than 50 million people in remote communities.

Staying people-centric: Building secure, trustworthy, and high-quality products, solutions, and services

"We believe that technology should be people-centric," said Tao Jingwen, a board member and Chairman of the CSD Committee of Huawei, in the report. "Technology should serve people in a manner that fully respects their rights by guaranteeing informed choice and consent." Huawei treats cyber security and privacy protection as its top priorities. In 2020, Huawei released the Software Process Trustworthiness Capability Framework and Assessment Criteria, establishing a complete set of trustworthy coding production mechanisms. As of the end of 2020, Huawei had been granted 2,963 patents relating to cyber security and privacy protection around the world. Last year, the company signed data processing agreements with more than 5,000 suppliers and performed extensive due diligence to ensure compliance. Despite the pandemic and being on the Entity List, Huawei continued to ensure the smooth communications of more than three billion people worldwide and support network stability during more than 200 disasters and major incidents.

Tech for a better planet: Powering green and sustainable development with technology

"An intelligent world should be a green world," said Liang Hua, Chairman of Huawei, in the report. "Advances in technology can help us better understand and protect nature, mitigating the impact of human activity on the planet. We believe that technology can work in harmony with nature and help make this world a better place." As part of its efforts to create a greener and more sustainable digital world, Huawei focuses on cutting carbon emissions, promoting renewable energy, and contributing to a circular economy. In 2020, Huawei's CO_2 emissions per million RMB of sales revenue showed a 33.2% reduction compared to the base year (2012), beating the target (30%) the company set in 2016. In 2020, the global environmental non-profit CDP scored more than 5,800 companies for their efforts to tackle climate change, and Huawei was one of the few companies that were recognized with a prestigious 'A' score for its actions to cut emissions, mitigate climate risks and develop the low-carbon economy. To promote renewable energy, Huawei has deployed its digital power solutions in more than 170 countries and regions, serving one third of the world's population. To date, these solutions have generated 325 billion kWh of electricity from renewable sources and saved 10 billion kWh of electricity. These efforts have resulted in a reduction of 160 million tons in CO_2 emissions. The company is also using more eco-friendly materials, designing its products for greater longevity, using more sustainable packaging, and reducing waste. Combined, these actions will help promote a circular economy.

Tech for good: Continuing to create social value and driving progress towards the UN SDGs

In addition to creating more business value for its customers, Huawei recognizes the importance of creating social value for all stakeholders and advancing progress towards the UN Sustainable Development Goals (SDGs). Huawei cares about its employees and puts their safety first. During the COVID-19 pandemic, the company took a number of steps to ensure the health and safety of employees and help suppliers and contractors safely resume work. In 2020, Huawei organized more than 650 charitable activities around the world. Its flagship CSR program Seeds for the Future has benefited nearly 9,000 students from 130 countries and regions, and these young people will become a valuable talent pool for the ICT industry in the future. Over the past year, Huawei continued to enhance its compliance program and engaged and collaborated openly and proactively with stakeholders to foster mutual understanding and trust. In the post-pandemic era, technology is poised to play an even greater role in supporting sustainable social development. Huawei is ready and willing to work with its partners, and use innovative ICT solutions to support progress towards the UN SDGs, and ultimately, to bring digital to every person, home and organization for a fully connected, intelligent world.

Huawei Pours $100M into Asia-Pacific Start-Ups

Huawei unveiled intentions to invest $100 million in Asia-Pacific start-ups over the next three years, seeking to boost the developer ecosystem in the region through its Huawei Mobile Services (HMS) and cloud offerings. At its Huawei Cloud Spark Founders Summit, the company stated the move will aim to support 1,000 start-ups in Indonesia, the Philippines, Sri Lanka and Vietnam, as part of its Spark accelerator program launched in Singapore, Hong Kong, Malaysia and Thailand in 2020. The program was created to provide support platforms for start-ups with the help of local authorities, incubators, venture capitalists and academia. Huawei also launched an initiative for cloud-plus-cloud collaboration which it expressed confidence will encourage innovation, business ecosystems, and global and local services. It will be boosted by $40 million, coming in equal portions from its Cloud unit and HMS. It also planned to build an HMS Developer Innovation Centre in cooperation with more than 200 universities in the region, to offer support to 100,000 HMS cloud-native developers. "In 2021, our plan is to support 200 start-ups in the HMS ecosystem, and share our network of channel resources with developers worldwide who together serve 1 billion Huawei device users", Zhang Ping'an, CEO of Huawei's cloud business unit (pictured), commented. The company said its HMS platform was the third-largest mobile app ecosystem globally, with 4.5 million developers from more than 170 countries currently using it.

Huawei Rotating Chairman: Spread of ICT is Accelerating Digital Transformation and Growth of the Digital Economy in the Arab World

Speaking at the 5th China-Arab States Expo being held this week, Huawei's Rotating Chairman Mr. Guo Ping has highlighted the decisive role that information and communications technology (ICT) can play as a driver of the Arab world's socio-economic development, expanding the region's digital economy. "The increased presence of digital infrastructure is positively impacting the Arab world," confirmed Guo. The executive noted that the MENA region is projected by the GSMA to spend USD70 billion in rolling out telecom infrastructure between 2019 and 2025. Meanwhile, embracing technologies such as 5G, AI, cloud, and other fast-developing areas has helped economies in the GCC alone to return to a projected aggregate growth rate of 2.2% in 2021, according to the World Bank. "Connectivity and computing are becoming deeply integrated with all industries and are creating new value. The development of advanced ICT solutions is already proving to be an enabler of economic recovery following the challenges posed by the COVID-19 pandemic. New digital applications are also helping to reduce carbon emissions in a variety of industries as per Arab nations' wider developmental

plans. Digital technologies have now become the cornerstone of the intelligent world—and the driver behind its future development in the region," noted Guo. In particular, countries in the Arab world have been among the early global adopters of 5G infrastructure. The GCC region especially has been leading the deployment of 5G, as well as other technologies, that will make the Fourth Industrial Revolution possible. According to Guo, adoption of those technologies has significantly changed sectors like education, healthcare,

and transportation. These industries are gradually moving towards greater intelligence. "To this end, Huawei is committed to knowledge exchange with partners across the Arab world, leveraging the latest technologies to contribute to their ambitious national visons. I sincerely hope that industry partners and policymakers in the region can collaborate in their efforts to accelerate the deployment of digital infrastructure. Together, we can build a more intelligent, interconnected, and low-carbon world," Guo concluded.

Huawei Demonstrates Industry First Single-Wavelength 1.6+Tb/S Field Trial

Huawei has completed an industry leading optical DWDM field trial with line rates per single-wavelength 1.66 Tb/s in a high capacity data center interconnect (DCI) scenario. Together with a European tier 1 operator, this research trial was performed on 96.5km of field-deployed standard G.652 fiber using EDFA-only amplification. A total of 34 channels were transmitted with 150GHz spacing for a total fiber capacity of more than 56Tb/s and a spectral efficiency of higher than 11bit/s/Hz. Additional demonstrations featured single-wavelength transmission of 1.77Tb/s over 60km, 1.65Tb/s over

120km and 1.6Tb/s over 180km. This record-breaking achievement was accomplished with Huawei's advanced channel-matched shaping (CMS) algorithms. It includes the advanced non-linear digital signal processing and advanced modulation based on 400QAM using enhanced probabilistic constellation shaping (ePCS). Particularly, the use of deep neural networks powered algorithms achieves superior performance over state-of-the-art signal processing. In a further display, a metro network demonstration was performed, showcasing 1.28 Tb/s net bitrate per single-wavelength in

a ROADM-based metro network link of 452km G.652 fiber also employing EDFA-only amplification. Dr. Maxim Kuschnerov, Director of the Optical and Quantum Communications Laboratory said: "We achieved an important milestone towards the era of 1.6 Terabit per second transmission in DCI and metro networks. Furthermore, deploying a Super-C+L band line system, the total fiber capacity could exceed 100Tb/s and provide sufficient room for future network growth driven by the rapid expansion of cloud services."

Jawwal, the First Mobile Operator in Palestine, to Launch Its Digital Product "PLUS"

The Palestinian Telecommunication Company "JAWWAL" launches the first telecom digital product "PLUS" in Palestine, as part of its digital transformation strategy. The new application is one of many others Jawwal launched recently, like the first mobile wallet in Palestine "JawwalPay", and the new loyalty program application "Enjoy", and other services like eSIM, and "Mobile Connect" service. "PLUS" provides customers with a unique digital experience, were they can access all needed information and services by just logging into one simple customized application; without the need for subscribers to visit showrooms or any other point of sale. "PLUS" enables subscribers to customize their package by mixing different internet, SMS, and minute bundle choices targeting prepaid plans subscribers. The new program also offers its subscribers with a set of unique features, like the ability to gift bundles, transfer extra minutes to internet bundles and vice-versa, and transfer extra bundles into direct credit to the subscriber's account. The launch of the app and program was accompanied with a "shake to win" commercial campaign, offering every subscriber an immediate prize by just simply shaking the device while logged in the application. The new digital product can be accessed through an app available on both Android and IOS mobile phones, and guarantees an easy and smooth digital customer experience.

PCCW Global Launches On-Demand Access to Leading IX Platforms Through Console Connect

PCCW Global has launched a new IX-as-a-Service (IXaaS) that makes it easier, faster and more flexible to order, provision and pay for IX services from some of the world's largest Internet Exchanges (IXs). Carriers and enterprises can now directly order IX services and pay for their connections to leading IX platforms in real-time and on-demand via the Console Connect digital platform. Console Connect users can experience high-performance remote peering with multiple exchanges across the world, including DE-CIX, LINX, SGIX, KINX, JPNAP, BBIX and thus manage their IX services and connections through a user-friendly web portal. IXaaS forms part of Console Connect's new MeetingPlace, where users can meet, buy, and sell within a growing ecosystem of cloud, data center, colocation, SaaS, UCaaS, IX and IoT partners, while making on-demand virtual interconnections between and among applications, services and one another.

Through the MeetingPlace's community of IX providers, Console Connect users can self-provision and pay for both their IX services and virtual connections in a few clicks. Multiple virtual connections can be provisioned via a single Console Connect Access Port and are delivered across PCCW Global's leading global network, providing users with real-time connectivity among IX peering partners from 450 plus Console Connect-enabled data centers across over 50 countries. Through the Access Port, Console Connect users can also order metro or international connectivity between data centers, or directly interconnect with major cloud, SaaS and NaaS platforms in each region around the world, including AWS, Alibaba Cloud, Cloudflare, Google Cloud, Microsoft Azure, RingCentral and more. Mr. Michael Glynn, Vice President of Digital Automated Innovation, Console Connect, said, "Through our new MeetingPlace, PCCW

Global is making it easier for Console Connect users to provision and pay for IX services from some of the world's largest IX providers using a trusted network. The service includes a dedicated layer 2 interconnection and the cost of the Partner Peering platform, enabling users to seamlessly manage both their IX services and their connectivity, from wherever they are located. IXaaS is a fantastic example of how network automation technology continues to transform traditional network services by making them available on-demand and effortless." Remote peering offers a cost effective way for carriers and enterprises to directly access an Internet Exchange Point (IXP), without the need for costly infrastructure at the exchange point and without having to contract separately with each IXP. Through its on-demand and pay-as-you-go model, Console Connect's IXaaS offers new levels of flexibility and agility with remote peering, enabling

users to instantly access multiple IXs with higher bandwidth options through their existing Console Connect Access Port. Mr. Ivo Ivanov, CEO of DE-CIX International, said, "DE-CIX is pleased to extend our collaboration with Console Connect. DE-CIX was the first Internet Exchange to join the Console Connect ecosystem back in 2019, and since then network automation has demonstrated huge value to our customers. Whilst business value chains get increasingly digitized, we see a growing demand for easy to order and provision high quality, fast, and secure interconnection services worldwide." Mr. Jeff Chan, Managing Director of SGIX, said, "We are excited to team up with Console Connect to enable more companies to remotely peer at SGIX with new levels of flexibility and speed. This collaboration enables us to expand our peering coverage globally, making it easier for companies to connect to our peering platform from anywhere in the world. It also allows companies to manage and monitor their global connectivity through a single, easy-to-use platform."

PCCW Solutions Launches Cloud-Native Infinitum Communications Suite to Empower Digital Transformation of Communications Service Providers

PCCW Solutions, the IT services flagship of PCCW Limited, launched Infinitum Communications Suite (ICS), a cloud-native platform with fully-integrated business and operations support system solutions to help communications service providers (CSPs) quickly launch new offerings, transform digital engagement and drive operational excellence. ICS consists of four modular components, namely Digital Experience Suite, Agent Desktop Suite, Product Catalog Suite and Order Management Suite, with rich functionalities to automate and streamline the end-to-end selling, ordering and monetizing processes in supporting multiple business units of CSPs on a single platform. Built upon microservices architecture and TM Forum's Open APIs,

ICS offers agility and interoperability to ease integration, speed up deployment and drive innovation. CSPs can leverage ICS to accelerate products launch from months to days, improve time-to-market by 20% and target enabling a 30% growth in revenue as well as doubling operational efficiency by streamlining IT implementation. The solution supports CSPs to sell across channels through self-service portal, AI-powered bots and customized mobile application, delivering omni-channel experience to improve customer satisfaction and reduce churn rate. Powered by data analytics hub to capture and analyze customer interactions, ICS helps CSPs to provide data-driven recommendations and more personalized offers to improve conversion rates and

increase revenue. Mr. Ramez Younan, Managing Director of PCCW Solutions, said, "PCCW Solutions has been driving innovation and developing Intellectual Property (IP) solutions to empower digital transformation and the growth of enterprises in various industries across the region. Infinitum Communications Suite integrates the cutting-edge technologies like 5G, cloud-native platform and open APIs, enabling the communications service providers to accelerate innovation, stay competitive and deliver better customer-centric services." ICS is the latest industry-specific solutions within the Infinitum Business Suite family, which is an integrated digital solutions suite to transform businesses end-to-end.

Simmons & Simons Advises Commerzbank and NORD/LB on Wind Farm Financing

Simmons & Simons has advised Commerzbank Aktiengesellschaft and NORD/LB on the financing of Finnish onshore wind farm project, Karhunnevankangas (Karhu), to the value of EUR 220 million. The

Karhu project is being developed with Bremen-based wind and solar park developer wpd and will deliver a total capacity of 188 MW in the Österbotten region of western Finland. The green electricity from Karhu wind farm will be sold to the paper group UPM Kymmene via a Power Purchase Agreement (PPA) for a long term electricity supply contract. The financing package of EUR 220m covers the construction and operation phases and includes a long-term Euler Hermes facility, various guarantees and an equity bridge facility. The Simmons & Simons team was led by banking partner Dr Jens Gölz and associate Marlin Jürgens. Commenting on the deal, Dr Jens Gölz said: "We are very proud to have been appointed to provide legal advice on this complex financing. It was certainly an advantage that the parties had already realized the Finnish Tohkoja wind farm in the same constellation.".

Simmons & Simmons Hires Investment Funds Partner in Luxembourg

International law firm Simmons & Simmons announced that Pieter Leguit will join the investment funds practice in Luxembourg as a partner on 1 July. Pieter's practice focuses on acting as lead counsel to fund managers in the formation of alternate investment funds, in particular private equity and real estate funds. Pieter also regularly represents institutional investors in the assessment and negotiation of their fund investments. Pieter joins Simmons from Loyens & Loeff, where he has been an investment funds partner in the firm's Luxembourg office since 2019. Pieter's notable experience includes his involvement in the restructuring of several real estate funds. Not only has he advised managers in effecting the mergers of their funds and procuring consent from investors worldwide, he has also represented limited partner groups and advisory boards in negotiating the restructuring terms with managers. Pieter will join the Luxembourg funds team, which is headed by Augustin de Longeaux. His hire follows the arrival of tax partner Julie Carbiener at the firm's Luxembourg office in May, demonstrating Simmons' commitment to expanding its presence in the region. Commenting on Pieter's arrival, Luxembourg country head Louis-Maël Cogis said: "Pieter's practice complements Simmons' existing

funds offering in the region. With his expertise in private fund formation and private equity and real estate funds, Pieter's experience will further diversify the services offered by both the local and international Simmons funds teams.". On joining Simmons, Pieter commented: "The investment funds business is very much a cross-border affair, and I am convinced that clients will benefit greatly from the combined expertise that the strong investment funds practices of the various Simmons offices throughout Europe and beyond have to offer".

Saudi Arabia Customers Benefit from 5G Investment with 50% Increase in Speed

			95% Confidence interval (±X %) change from Dec 2020
Mobily			25,471 samples
Download speed (Mb/s)	41.27	+/- 0.68	(+44%)
Upload speed (Mb/s)	10.50	+/- 0.23	(+81%)
stc			41,344 samples
Download speed (Mb/s)	49.97	+/- 0.68	(+57%)
Upload speed (Mb/s)	13.93	+/- 0.22	(+108%)
Zain			11,237 samples
Download speed (Mb/s)	28.06	+/- 0.81	(+44%)
Upload speed (Mb/s)	8.61	+/- 0.26	(+32%)

SpeedChecker, the mobile crowdsourcing company released a new report on the performance of mobile networks in Saudi Arabia. This report is part of an ongoing commitment from SpeedChecker to benchmark true user experience. The SpeedChecker report has been compiled using data from 81,923 unique mobile devices performing 92,832 tests in 1 week in June 2021. Our results and comparison with our last report in December 2020 show that stc customers have enjoyed a 57% increase in speeds with 44% for Mobily and Zain customers. This sees stc stretch its lead slightly over Mobily whilst Zain falls further back. Zain is most competitive in the NW of the country. Customers switching to 5G should see speeds increase by 2 to 3 times. This is reflected in Riyadh being the capital city with the 6th fastest 5G network and Saudi Arabia being in the top 10 countries for 5G speeds. This is thanks to 5G expansion in the region such as the stc Group expanding 5G coverage in Mecca and Zain also expanding 5G coverage.

SpeedChecker: Which Qatari Mobile Network Operator Offers the Best Overall User Experience On 5G Phones?
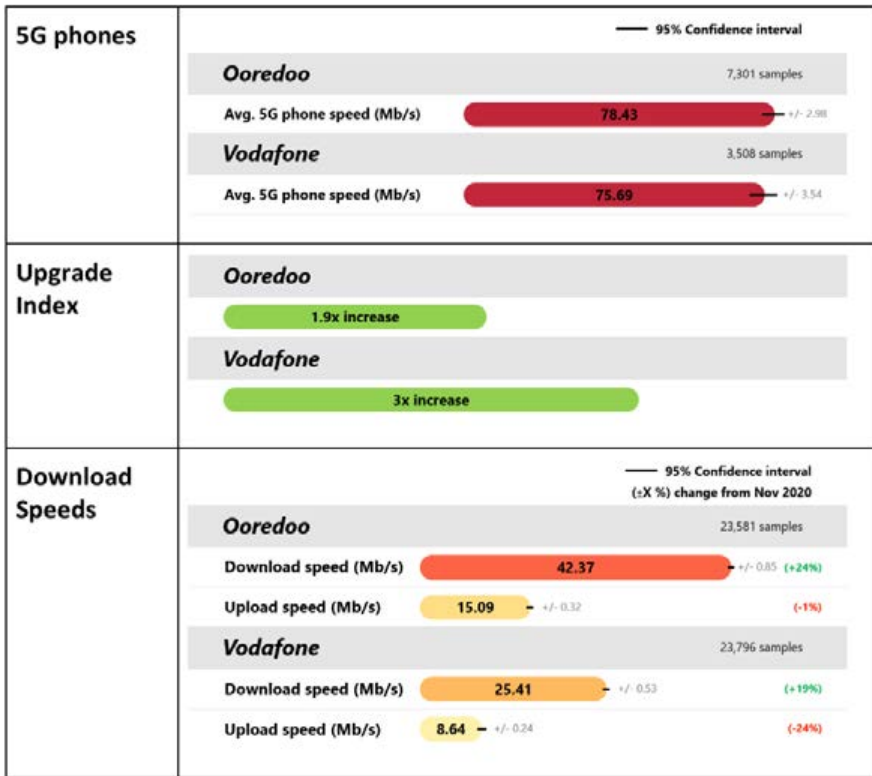
SpeedChecker, the mobile crowdsourcing company released a new report on the performance of mobile networks in Qatar. This report is part of an ongoing commitment from SpeedChecker to benchmark true user experience. The SpeedChecker report has been compiled using data from 55,625 unique mobile devices performing 97,866 tess in three weeks in May 2021. Our results and comparison with last year show that customers in Qatar have noticed an increase in performance of 19% or more since our last report in November 2020. This comes after a substantial investment in 5G technology by Ooredoo and Vodafone allowing for speeds of up to 1Gb/s. SAMENA Trends March 2021. This is part of the Qatar National Vision 2030. Customers of Ooredoo and Vodafone switching to 5G compatible phones can expect to see speeds increase by 2 to 3 times as shown in our Upgrade Index. The average speed is very similar for both operators at over 75 Mb/s. Although Ooredoo has the fastest downloads across all devices there is nothing to choose between them when it comes to 5G phones.

stc Bahrain Wins "Best Consumer Security Solutions" Award with International Finance Awards

stc Bahrain, a world-class digital enabler, has received the prestigious "Best Consumer Security Solutions" award in the International Finance Awards 2021. The award was presented to stc Bahrain in acknowledgement of its digital transformation journey and world-class customer experience. International Finance is a premium business and finance magazine published by UK's International Finance Publications Limited. Dynamic nature of highly disruptive cyberthreats are among the key challenges that consumers and business owners must contend with in today's hyperconnected world. An increasing demand for organization to protect their operation as cyberattacks on critical infrastructure rated the fifth top risk in 2020 the risk continues to grow in 2021 as IoT cyberattacks alone are expected to

double by 2025. According to statistics Cybercrime is set to cost the world $10.5 trillion annually by 2025. Furthermore, the number of Internet connected devices is expected to increase from 31 billion in 2020 to 35 billion in 2021 and 75 billion in 2025. For that reason, stc Bahrain has places its customers security at the core of its operations and continues to develop and invest in solutions to enable them to safely network with the highest standards of service possible. As a result, stc Bahrain has launched a full array of managed cybersecurity services that includes, security monitoring and reporting, web application firewall, end point security, vulnerability assessment and penetration testing. Under cyber security offering, stc Bahrain CSC will monitor and provide recommended

actions to mitigate the threats or provide mitigation steps for customers to act against the identified threats, ensuring the security and compliance of the critical IT assets. stc is in partnership with world-class cybersecurity vendors and utilize local cybersecurity resources to protect businesses, maintain compliance and service availability from the growing threats. Additionally, stc Bahrain's ICT solutions provide services which include design, deployment, configuration, integration, testing and maintenance for the customers security. Furthermore, stc Bahrain's Cybersecurity Services with 24/7 SOC can be provided to a range of business sectors such as government entities, SME's and large corporations from multiple industries such as banking, transportation, aviation, hospitality,

health care, manufacturing, construction and education. stc's PCI-DSS certified security operation center is located in stc premise with full time dedicated security professional and equipped with locally hosted monitoring platform to comply with data privacy regulations. Offering a monthly security posture report to optimize performance and to secure a reliable service that's tailored to meet all customers need, customers can then enrich their plans with wide variety of add-ons covering additional features, services, and devices to be better prepared against any cyberattacks. Eng. Nezar Banabeela,

CEO of stc Bahrain, commented: "Our mission in stc Bahrain is to add value and make the lives of our customers easier by delivering differentiated customers security solutions and providing the highest quality in the way we serve them. We are thrilled to receive this prestigious award, which reconfirms our commitment of providing superior experience to our customers at all our touch points." stc Bahrain has also developed a Security Awareness program which offers a short, comprehensive courses for corporations, aiming to empower the team to build and maintain a culture of cyber awareness and

vigilance - keeping the employees, clients and corporate infrastructure safe. This award adds to the many local, regional, and international awards, which stc Bahrain has won "Best Digital Transformation Provider" 2021 by the World Economic Magazine, as well as "CEO of the Year" and "Best Digital Infrastructure Development" at International Business Magazine 2021, "Best integrated payments solution provider" at the Global Economics Awards 2020 and "Best Emerging Market Initiative" at the 2020 Telecoms World Middle East Awards.

Tech Mahindra Expands Collaboration with Microsoft to Strengthen Hybrid Cloud Capabilities

Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services, has expanded its collaboration with Microsoft to strengthen hybrid cloud capabilities. The collaboration aims to leverage Microsoft Azure Stack HCI, a new hyperconverged infrastructure (HCI) solution to accelerate hybrid cloud transformation, consolidate virtualized workloads and build enterprise resilience. The integration with Azure enables Tech Mahindra to maximize value from on-premise investments while seamlessly maintaining business continuity, securing resources, and unlocking new business scenarios for enterprises. As an Azure Stack portfolio partner, Tech Mahindra seamlessly connects to Azure for hybrid cloud scenarios across datacenters, remote offices, cloud and edge locations. Through this collaboration, Tech Mahindra aims to drive innovation and agility for its customers by aligning their goals and future product development in the Azure Stack HCI space. Vivek Gupta, Head - Global Cloud Services, Tech Mahindra, said, "Being cloud ready is critical for enterprises today to accelerate their digital transformation roadmap. The announcement strengthens our relationship with Microsoft, aimed at empowering organizations with advanced hybrid cloud capabilities. In line with our TechM CLOUDNXT.NOW framework, the

collaboration will enable organizations to become agile, resilient and flexible without compromising on performance and security in an increasingly remote work environment today." Talal Alqinawi, Senior Director, Azure at Microsoft, said, "Enterprises are increasingly accelerating their hybrid cloud strategies to future-proof their business. By extending our longstanding relationship with Tech Mahindra to Azure Stack HCI, we will empower enterprises to build and deploy cloud-native applications with seamless access to cloud services. This will enable customers to maintain business continuity, secure resources and drive innovation." Tech Mahindra recently launched a dedicated 'Microsoft Business Unit'

focused on developing enterprise cloud solutions, leveraging its digital expertise in alignment with Microsoft's priorities and partner standard expectations. As part of TechM NXT.NOW framework, which aims to enhance 'Human Centric Experience', Tech Mahindra focuses on investing in emerging technologies and solutions that enable digital transformation and meet the evolving needs of the customer. Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services, has expanded its collaboration with Microsoft to strengthen hybrid cloud capabilities. The collaboration aims to leverage Microsoft Azure Stack HCI, a new hyperconverged infrastructure (HCI) solution to accelerate hybrid cloud

#NXTNOW

PRESS RELEASE

Tech Mahindra expands collaboration with Microsoft to strengthen **Hybrid Cloud Capabilities**

Accelerate hybrid cloud transformation, consolidate virtualized workloads and build enterprise resilience, leveraging Microsoft Azure Stack HCI

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Tech Mahindra Announces Partnership with TAC Security to Enable Next-Generation Enterprise Security for Customers Globally

Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services, announced partnership with TAC Security, the global leader of risk & vulnerability management, to enable next-generation enterprise security for customers globally. The partnership will leverage artificial intelligence and user-friendly analytics to help measure, prioritize, and mitigate vulnerabilities across the entire IT stack. As part of the partnership, the global security competency of Tech Mahindra's and TAC Security's patented next-generation risk-based vulnerability management platform ESOF (Enterprise Security in One Framework) will be combined to accelerate vulnerability management protocol for customers thereby protecting their

modern applications and infrastructure against cyber threats. The partnership will also help analysts to prioritize security responses and threat investigations in real time while improving security postures for enterprises across the world. Rajesh Dhuddu, Blockchain and Cybersecurity Practice Leader – APAC and EMEA, Tech Mahindra, said, "Cybersecurity threats are becoming a cause for concern for enterprises with each passing day. Therefore, a comprehensive risk and vulnerability management platform to efficiently reduce risk postures, becomes a necessity. Tech Mahindra is fully committed towards providing world-class security to customers by continually improving the experience and effectiveness of the security ecosystem. The partnership

with TAC Security is in line with our NXT. NOW framework, to provide cutting-edge security solutions to customers globally by enabling widest view of vulnerability and risk data across the enterprise to create insightful cyber risk scores." TAC security ESOF is powered by the Artificial Intelligence/ Machine Learning (AI/ML). This will help customers by providing them with the widest view of vulnerability and risk data across the enterprise to create insightful cyber risk scores. Trishneet Arora, CEO, TAC Security, said, ""In the age of zero trust, we are witnessing a rapid growth in vulnerability management challenges. In today's market, the need for risk – based vulnerability management along with cyber score is imperative for every organization, regardless of the industry or size. We are excited to partner with Tech Mahindra to help them effectively manage their complete IT stacks cybersecurity on Enterprise Security in One Framework (ESOF). For TAC Security, this partnership is a step towards capturing the global market of vulnerability management, which valued USD 12.5 Billion in 2020 and is expected to grow to USD 15.5 Billion by2025, together." As part of NXT.NOW framework, which aims to enhance 'Human Centric Experience', Tech Mahindra focuses on investing in emerging technologies and solutions that enable digital transformation and meet the evolving needs of the customer.

Tech Mahindra announces partnership with TAC Security to enable Next Generation Enterprise Security for customers globally

Mubadala-Backed Yahsat Expects New Satellite Launch in H2 2023

Yahsat, the newly listed satellite company partly owned by Abu Dhabi state investor Mubadala, plans to launch a new satellite in two years, aimed at introducing advanced data services to its clients by 2024, its Chief Executive said. "The launch is the second half of 2023 and by the second half of 2024 services will kick in. This will bring the next generation technologies to the table," CEO Ali Al Hashemi told Reuters. Shares of Al Yah Satellite Communications Co (Yahsat) began trading after a $730 million initial public offering, opening at 3 dirhams ($0.8168) per share, 9% above its IPO price of 2.75 dirhams. It is the first major IPO on the Abu Dhabi bourse since Abu Dhabi National Oil Co Distribution was listed in 2017. Al Hashemi said the launch will enable it to have a spectrum of unique features and the highest speeds available in the market. These services will cover maritime, internet of things and data solutions, he said. The Next Generation System satellite is being built by Airbus and will replace one of the satellites operated by Yahsat's satellite phone unit Thuraya, he said. Currently Yahsat has five satellites, while its fixed and mobile services cover over 150 countries. Al Hashmi said Yahsat, which was established in 2007, initially derived its revenue from the government. Currently around 30% is from the private sector and that segment is growing at a very strong pace. "Our target is to achieve very high growth on the commercial side of the business and also to grow the revenue from the government," he said. Yahsat posted revenue of $408 million in 2020 and the growth over the last few years has been largely fueled by the private sector, he said. Al Hashmi said the IPO met good demand. "We attracted investors from all over the globe," he said without disclosing names of investors.

Zain Bahrain Continues to Expand 4G and 5G Networks

Zain Bahrain has promised continued investment to expand its 4G and 5G network footprint in the country, with a strong focus on enhancements to further improve reliability and indoor coverage. In a press release, the operator said it will expand its 5G footprint to more areas of the country, including the new urban developments of Salman Town, Khalifa City, East Hidd and Ramli Housing Areas, using Ericsson's RAN solution to provide enhanced coverage and advanced network capabilities such as 5G carrier aggregation. The company has also made significant investments to modernize and expand its 4G layer to expand coverage and support higher speeds and capacity, by utilizing new LTE bands and modernizing its current equipment to further improve network availability and support higher throughputs. On the investment and network expansion, CEO Duncan Howard said: 'We continue our 5G network expansions in the kingdom at an ever increasing pace despite COVID-related disruptions. The pandemic has highlighted the need for mobile high-speed, high-bandwidth connections that 5G delivers. We have made substantial investments to enhance both our 4G and 5G network infrastructures that will provide faster speeds and connectivity to all our customers, thereby delivering even greater value and quality. With the network expansions and advancements underway, we at Zain Bahrain will offer seamless broadband, entertainment and mobile services to our customers at higher speeds.' Ali Al-Yaham, Director of Technology at Zain Bahrain said: 'Our network improvements will dramatically enhance the day-to-day experiences of our customers that will have far-reaching impact featuring faster connectivity speeds, higher capacity, ultra-low latency and greater bandwidth. Initially, our 5G networks will operate in conjunction with existing 4G networks before evolving to fully standalone networks. Our tie-up with Ericsson to provide its RAN solution will further enable continuous and faster connectivity.'

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Etisalat Carrier & Wholesale: An Enabler of Transformation in the New Normal

The telecom industry in the past year has embraced innovation and technology, helping them launch and define products/services to create a market differentiation and bring digital transformation. During the post-COVID era in the new normal, the telecom wholesale community has done the same, as they are the enabler/provider of inter-connectivity between networks and entities, capacity services, access, exchange of traffic, delivery and data centre services, continuing to play a pivotal role in the future.

> *With Etisalat's vision to 'Drive the digital future to empower societies' has led its network to join one of the most robust and digitally equipped, showcasing infrastructure preparedness and ability to adapt and implement during today's extraordinary times.*

Ali Amiri
Chief Carrier & Wholesale Officer
Etisalat Group

Ali Amiri, Group Chief Carrier and Wholesale Officer, Etisalat, said: "During COVID-19, it was evident that wholesale business played a critical role in making things work for the world. We witnessed its ability to accommodate the surge in data and SMS traffic which was triggered by a huge increase of all kinds of online activities such as e-commerce, gaming, remote work/study, video collaboration, etc. All these were made possible by having a well- established wholesale eco-system."

"The focus moved towards working closely with cloud players, API enabled collaboration and striking the right partnerships. With future telcos looking at optimising connectivity, wholesalers had to enable this for them, as connectivity and infrastructure is the backbone to make this a reality."

Etisalat telecom wholesale drives digitalisation
With communication and connectivity gaining more significance and demand more than ever during the pandemic, telcos play a critical role in closing this gap of digital readiness by becoming the engines of resilience and innovation. Moving ahead, network modernisation and digital transformation are required to bring this change to society.
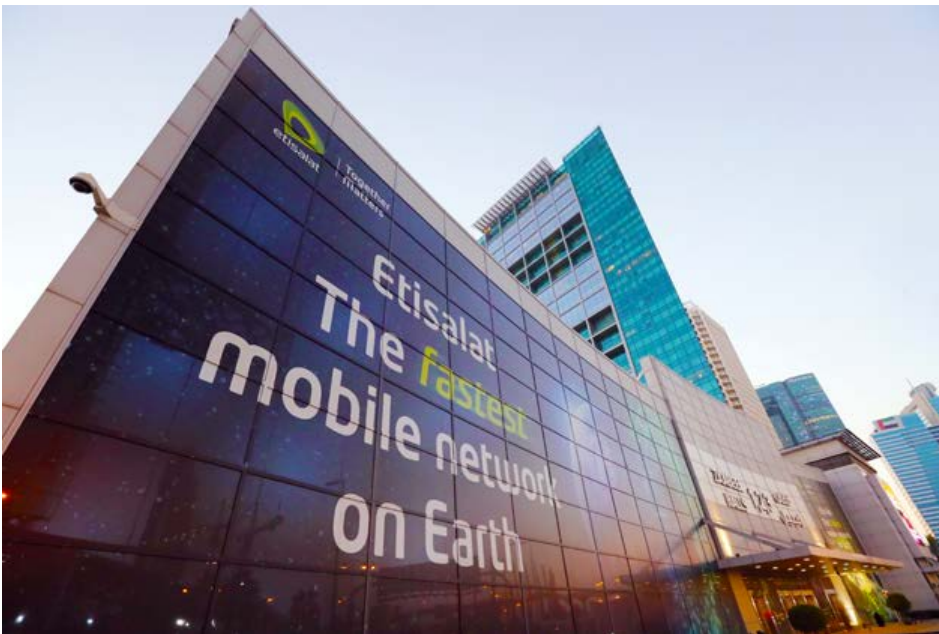
With Etisalat's vision to 'Drive the digital future to empower societies' has led its network to join one of the most robust and digitally equipped, showcasing infrastructure preparedness and ability to adapt and implement during today's extraordinary times. With overall data traffic on the telco network surging exponentially, Etisalat's resilient advanced network remained dependable and secure to proactively assess and manage anticipated increases in bandwidth demand. During the peak of the pandemic,

SmartHub is strategically a right fit for industry verticals such as financial services and gaming. SmartHub's secure digital capabilities support inter-connected clouds and low latency environments directly connected to global networks has the potential to offer diversified and low latency route connectivity to more than 2 billion people in less than 30 milliseconds.

there was an overall growth in video conferencing and VoIP on both fixed and mobile network of more than 250 percent. The traffic in streaming services and video increased by more than 50 percent, while for social media and gamin, traffic rose to more than 80 and 200 percent, respectively. To cope with high bandwidth requirements, low latency apps and a world where everything computes, Etisalat invested in 5G technologies which complemented its services portfolio. With the convergence of virtualisation, IoT, Artificial Intelligence (AI) and data analytics, and the capability of the 5G network, Etisalat was able to deliver smart solutions across industries and verticals. This 5G digital revolution enables end-to-end solutions for industries, bringing to reality the vision of a smart city with smart factories, smart utilities or smart retail.

Etisalat C&W embraced this 5G digital evolution with its wide roaming coverage across its network. Today its 5G network is the fastest growing with 59 worldwide operators in 33 countries specifically for seamless international roaming services.

SmartHub plays a major role in critical functions

Etisalat's SmartHub's IP exchange (IPX) exchange has facilitated regional traffic especially during the peak of the pandemic, enabling faster speeds mandatory for

critical applications. The IPX exchange managing the traffic between mobile networks is the latest mobile carrier exchange taking the fourth position globally and the only one in the Middle East and Africa (MEA) region. Etisalat's wide roaming presence has supported the industry with better quality of service and managing the traffic by adding more availability distributed in more regions. With regional localization at the exchange, it eliminates failures from happening due to cable outages across continents.

Etisalat also expanded its SmartHub presence in UAE with three data centre locations providing new space and enabling global players to expand their presence in the region adding business diversity to carrier business. The state-of-the-art Tier 3 data centre facilities will bring digitalisation, implement cloud transformation initiatives, accelerate connectivity and capacity reach across Europe, US, Asia, Middle East and Africa.

Stressing the importance of opening data centres during this period, Amiri said: "During this unprecedented period that has challenged both health and economy, global markets are looking at enhancing interconnectivity and adding new capacities for businesses and the entire community. As one of the biggest neutral carrier hotels, Etisalat's SmartHub data centres will be an ICT bridge between continents, always supporting business critical activities of global customers.

"Thanks to the UAE vision and Etisalat's goal of enabling digital transformation, our network was prepared to address the unique requirements making it possible for businesses to work remotely, millions of students to enjoy distance learning and all citizens having access to vital services.

"The launch and expansion of infrastructure, power, and space of our data centres in such a short time frame is a testimony to our efforts of meeting the growing demand from existing global customers. We are committed to making 'SmartHub' a preferred location for carriers, cloud service providers, Internet exchanges, and companies looking for

carrier grade data centres."

The addition of the space and high power capacity in Fujairah, Kalba and Dubai will triple the supply of space and power with possibility of scalability, and all of that setup with diversified power grid supply complemented with backup systems (N+N power redundancy).

SmartHub Kalba is Etisalat's third wholesale data centre, following the opening of facilities in Fujairah and Dubai. The new data centre aims to offer geo-redundant ecosystem for global players to expand their regional presence. Additionally, the new facility is also selected to be the landing for Africa-1, a new subsea telecom system connecting Africa, the Middle East and Europe. This gives SmartHub Kalba a pivotal role in catering towards facilitating faster connectivity to various global partners. The Fujairah SmartHub will

meet future demands including landing of a new generation of submarines as well as becoming a disaster recovery hub for Etisalat's customers.

SmartHub is strategically a right fit for industry verticals such as financial services and gaming. SmartHub's secure digital capabilities support interconnected clouds and low latency environments directly connected to global networks has the potential to offer diversified and low latency route connectivity to more than 2 billion people in less than 30 milliseconds.

Digital wholesaler is the way forward

A digital wholesaler will be able to provide services on demand using easy to use customer portals and applications. This will be enabled by virtualisation of the network to serve new types of customers in addition to telcos such as CPaaS platform providers, content providers,

> *The pandemic has emphasised the crucial role of interconnection and wholesale as relevant infrastructure in dealing with capacity and demand. The COVID crisis has also exposed new opportunities as well as accelerated the mega trend-driven change of the telecoms industry.*

gaming and financial services sectors. The digital wholesaler will be able to create a platform and eco-system that can offer many services with a single access (e.g. Cloud connect, IoT platform, SMS, etc.).

The Future of Telecom Wholesale

The pandemic has emphasised the crucial role of interconnection and wholesale as relevant infrastructure in dealing with capacity and demand. The COVID crisis has also exposed new opportunities as well as accelerated the mega trend-driven change of the telecoms industry. With shifts in technology and customer behaviour, the future will comprise immense opportunities for players willing to reinvent their network and service capabilities to ultimately drive growth.
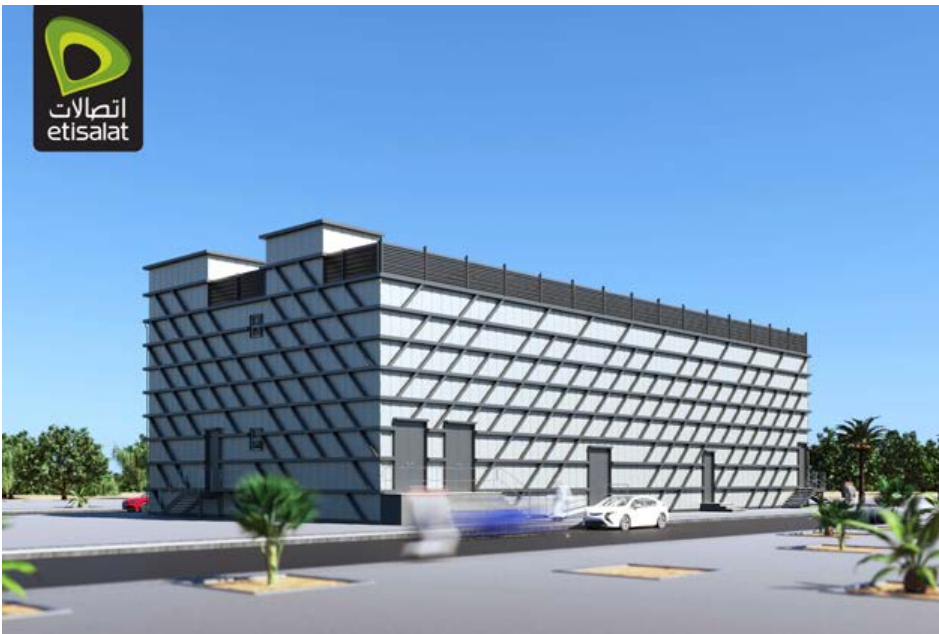
REGIONAL NEWS

Abu Dhabi Ranks Among Top 3 Fastest 5G Capitals Worldwide

United Arab Emirates (UAE) capital Abu Dhabi ranks among the fastest capitals globally in the 5G network index with the fastest median download speeds (421.26Mbps) in the first half of 2021, according to the latest data from Ookla®, a global leader in fixed broadband and mobile network testing applications, data and analysis. This recent achievement is yet another feather in the UAE's cap as not only Abu Dhabi has emerged among the top three fastest 5G capitals in the world, but is also home to the fastest mobile network on earth on an overall basis. Majed Sultan Al Mesmar, Director General of the Telecommunications and Digital Government Regulatory Authority (TDRA), said: "This global achievement is a testimony to UAE leadership's vision and commitment in bringing the country to the forefront taking a lead in the ICT sector while being the most advanced country in digital innovation. 5G is a huge leap forward and a powerful catalyst for digital transformation bringing new opportunities to various industries and the country. The availability and access to the super-fast speeds on 5G is a huge accomplishment that reflects the continuous efforts of both operators and their innovative approach during today's extraordinary times ,Hence, I would like to thank the service providers in the UAE (Etisalat and Du) for their efforts in deploying 5G networks, which contributed to this achievement." "With the UAE leading as the fastest fixed network in MEA and fastest mobile network globally, this further highlights the country's readiness to attract the

best in world class talent and global conglomerates from across sectors showcasing the significance of an advanced state-of-the-art telecom infrastructure contributing to UAE's economic growth and leadership on a global platform." Eng. Hatem Dowidar, CEO, Etisalat Group, said: "This remarkable achievement for the UAE reflects the ongoing efforts of Etisalat and its investments to build one of the most advanced 5G networks in the region and the world. The deployment of 5G across industries and sectors leads the way to digital transformation in UAE, pushing it to the forefront with a network that is future ready for the next generation of mobile technologies. "The continuous support and wise leadership of the UAE has played a critical role throughout Etisalat's journey and the development of the telecom sector, setting a great motivation for us to continue deploying the latest innovative technologies and enriching the digital experience of customers while transforming communities." Fahad Al Hassawi, CEO of Emirates Integrated Telecommunications Company (EITC), said: "As we continue our relentless efforts to expand the 5G network across the UAE, we are proud to celebrate this milestone achievement made possible with the support of all stakeholders. du aims to upgrade the telecommunications sector and develop digital infrastructure in line with the directives of UAE leadership to consolidate the position of the UAE as a global center for technology, innovation and business. "5G technology, and its enormous potential, is key to pioneering the digital economy and keeping pace with the requirements of smart transformation, as it supports a variety of solutions, applications and other technologies that enable better services to residents and business communities. Our mission at du is to con-

tinue to harness all our resources to facilitate the business sector as well as individual customers in the UAE to benefit from 5G technology and contribute towards economic growth and prosperity." Another noteworthy achievement recorded in the UAE was both Abu Dhabi (421.26Mbps) and Dubai (417.07 Mbps) median download speeds featuring in the special 'Global 5G Benchmark Report' that focused on major cities globally measuring 5G performance and availability in the first half of 2021. This ranking is attributed to the long-term planning and investment of both operators in the rapid deployment of 5G sites and jointly working with regulatory authorities to assign the needed spectrum to cater for the demand of high capacity in cities. An end-to-end participation and preparation from both operators supported the early adoption of new technologies and enabled swifter customer experience enhancements as well as meeting requirements of international standards from the International Telecommunication Union (ITU)/ 3rd Generation Partnership Project (3GPP). With vertical and horizontal city expansion in the UAE, high mobile indoor penetration enhancement enabled the deployment of in-building solutions and small cells for better mobile availability anytime, everywhere. The 5G network also made it possible to experience and access data heavy applications in the country. This transformed the telecom network to a state-of-the-art infrastructure, supporting emerging technologies such as IoT, cloud, big data, AI, robotics and AR/VR supporting transformation in a digitally disrupted and fully connected world. Both operators Etisalat and du were continuously involved in focused studies on network readiness and handsets to provide a seamless customer experience.

TDRΛ
ABU DHABI RANKS AMONG THE
3 TOP FASTEST
5G CAPITALS WORLDWIDE

Source: @Ookla
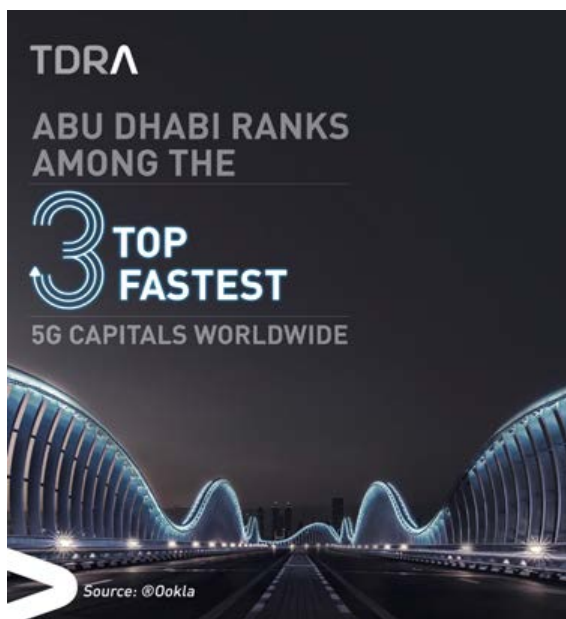
Saudi Arabia Launches Tech Initiatives Worth US$1 Billion

Saudi Arabia has announced a package of qualitative initiatives, technological programmes as well investment funds with a total value of nearly SR4 billion ($1.06 billion), the biggest technological launch of its kind in the Mena region. The move, done in cooperation with ten of the world's key technology giants, aims to enhance digital capabilities and designed to create one programmer out of every 100 Saudi nationals by 2030, in addition to encouraging innovation and creativity and achieving global leadership, reported Saudi Press Agency (SPA). The move follows directives of HRH Prince Mohammed bin Salman bin Abdulaziz, Crown Prince, Deputy Prime Minister and Minister of Defence, in order to achieve the goals of the Kingdom's vision to seize the opportunities of the digital economy. Moreover, these huge initiatives consolidate the Kingdom's position as a regional technological hub for the most important entrepreneurs, innovators and programmers from the region and the world. They also come as a culmination of the distinguished partnership between the Ministry of Communications and Information Technology, the Saudi Data & AI Authority (SDAIA) and the Saudi Federation for Cybersecurity, Programming and Drones. A number of the world's leading technology companies topped by (Google, Amazon, IBM, Cisco, Oracle, Microsoft, Trend Micro and Avance Security), announced their cooperation with the Kingdom in "launching its training programs" by centers specialized in raising the digital capabilities of young national cadres, and other centers working in the field of innovation in technological entrepreneurship. Organizers of the 'event of Launch' unveiled three major initiatives (Tuwaiq, Hemmah, Qemmah), which aim, as a whole, to raise the digital capabilities of female and male youths in the fields of programming, enhance trust between technological companies and funding agencies and encourage innovation and creativity through central gatherings and platforms. Among the important announcements of the 'event of launch', is the unveiling of the Saudi-Chinese eWTP Arabia Capital Fund, which seeks to support emerging technology companies in the Kingdom with a capital of SR1.5 billion ($400 million), in partnership between the Chinese eWTp backed by Alibaba and the Public Investment Fund (PIF) with the support of the Saudi Federation for cybersecurity, programming and drones to contribute to supporting a solid economic system for digital business in the Kingdom. Alibaba Cloud, the digital technology backbone of the Alibaba Group, aims to cooperate with local partners

in the region over the coming five years in academies, training and innovation centers in the Kingdom to build and develop capabilities in technological fields, to support the Kingdom of Saudi Arabia's Vision 2030. The Saudi Federation for Cyber Security, Programming and Drones and the Ministry of Communications and Information Technology launched the two biggest technological initiatives represented by the "Tuwaiq Camp 1000" initiative, which ends with employment as well as the initiative of "Future Skills", which will be held in the Kingdom's 13 regions through 40 training camps covering four fields: cybersecurity, programming, artificial intelligence & data science and electronic games industry. During the Launch event, the Kingdom announced that it will organize and host the global "Leap" conference next year, the world's biggest technological event and first of its kind in the region. It also announced that it will host the RiseUp Summit in Riyadh, the biggest of its kind in the Mena region for entrepreneurs and start-ups. The details of the biggest global conference @Hack in the field of cybersecurity will also continue to be announced within the activities of the Riyadh season, in partnership between the General Entertainment Authority and the Saudi Federation for Cybersecurity, Programming and Drones, with Informatech and Black Hat to address cyber threats around the world by hosting Offensive Security experts for information security training, while hosting the biggest challenge of its kind in the Mena region. Among the announcements that the 'event of launch' witnessed is the launch of SDAIA Academy designed to contribute to building capabilities and enabling it in the field of IA and data science, the launch of "Satr" platform" for programming with more than 1,300 educational videos, and the "Coderhub" platform, the first Arab platform specialized in programming challenges with more than 400 challenges and the launch of a special "Drones" platform to serve drone users inside the Kingdom and the business sector, in addition to the launch of the DJI Academy, the first accredited training centre for drones to serve trainees in the Kingdom and the Middle East region in partnership with the global DJI Academy and STC. In addition, a partnership with the leading e-gaming company, OneMT, is scheduled to open a special studio in Riyadh. Trend Micro announced the establishment of its regional headquarters in Riyadh, and the start of registration for the Apple Developer Academy, the first of its kind in the Mena region, dedicated to programmers and developers in its first phase, at its headquarters at Princess Nourah bint Abdulrahman University in Riyadh. Erbak media project was also announced to take place with the aim of providing content interested in entrepreneurship in the Arab world in cooperation with mbc group and Thmanyah for publishing and distribution, under the auspices of the Ministry of Communications and Information Technology.

77% of Oman Customers Become Digital Converts Since Pandemic

77 per cent of customers in Oman have become digital converts since the pandemic and want to keep buying everything online, according to Sitecore, the global leader in digital experience management software. The research, conducted by YouGov Mena, surveyed more than 650 IT decision-makers across 12 countries in the Gulf Cooperation Council, the Levant, and Egypt. Boosted by the stay-at-home economy of COVID-19, the Middle East's e-commerce market reached $12.1 billion in 2020, representing 53.8 per cent year-over-year growth, according to a recent report by MarketLine. Electronics and retail accounted for $5.2 billion or 42.5 per cent of the total market. As e-commerce continues to grow, customers are placing greater emphasis on the customer experience. Since the pandemic, 78 per cent of Oman's

IT decision-makers said their customers will navigate away from a site and choose an alternative if they can't find what they need in just a few clicks. Furthermore, 90 per cent of Oman respondents agreed that their customers have less patience with slow or poorly functioning websites. "With 77 per cent of Oman customers being digital converts to e-commerce, the country is seeing a rapid transition from bricks and mortar stores to hybrid and e-commerce models," said Mohammed Alkhotani, Area Vice President – Middle East and Africa, Sitecore. "Millennials and Generation Z customers have quickly shifted their significant spending power online. Pressure will continue to mount on retailers until they can deliver an experience that delights." Brands in Oman are taking a variety of actions to improve the shopping experience. The

majority, 77 per cent, ranked an online app or website that works well on mobile devices as among their top three choices. Also scoring highly in the top three choices were brands keeping up to date on the latest trends and fresh inspiration (55 per cent), remembering customers' shopping history and preferences (33 per cent), giving preferential treatment in the form of exclusive offers and invitations (33 per cent), the ability to order by voice command, smartwatch, or smart speaker (22 per cent), and knowing the name during login or customer service (22 per cent). "Brand loyalty has evaporated and there is no margin for error from browsing through to delivery," added Mohammed Alkhotani. "Brands in Oman are already ahead of the curve in prioritizing mobile apps and websites to personalize online experiences."

CITRA Updates Its Application to Enable E-Government

CITRA launched a new update to its application for electronic services on Wednesday, which is in line with the future vision of the State of Kuwait towards enabling E-Government. In a statement to Kuwait News Agency (KUNA), CITRA stated that the application provides electronic services in an interactive way in order to facilitate the procedures of the authority's clients as well as enable customers to view its latest developments and decisions. CITRA indicated that the application updates included applying for individual services and following up on the status of the requests for the authorization of radio services for radio amateurs, the import of communications equipment, the radio service (Citizen Band) and the marine. Moreover, the application would also allow the submission of a request for the release of communications devices with the availability of online payment in addition to sending a complaint or suggestion to the authority and submitting the registration of (.kw) domain. Furthermore, CITRA stated that the application will provide features such as testing the internet speed and requesting the blocking of websites, in addition to the most important updates that are made to the content of the official website, such as the authority's news, the cybersecurity and emergency response page, the communications and information technology sector data for the State of Kuwait and the page on the emerging corona virus.

Bangladesh Advances by 27 Stages in the National Cyber Security Index of Foundation

Bangladesh has advanced by 27 stages in the National Cyber Security Index prepared by the Estonia-based e-Governance Academy Foundation. Bangladesh has climbed to 36th place in the report, which considers the state of cyber security and digital development in 180 nations around the world. Bangladesh was ranked 85th in the December 2020 index. The National Cyber Security Index (NCSI) was established to evaluate basic cyberattack preparedness, cyber events, criminal activity, and major crisis management efforts. In the most recent index released on the NCSI website, Greece is in first place with a score of 97.10. The United States comes in at number 18, while the United Kingdom comes in at number 19. Singapore (16th), Sri Lanka (69th), and Pakistan (70th) are Asia's only representatives in the top 20 countries. Japan is ranked 34th, while China is ranked 73rd. Bangladesh ranks first in South Asia with a score of 59.64 in the index. India ranks 39th among the countries in the region. "Bangladesh's cyber security capabilities is growing by the day, and it is receiving international recognition. The BGD e-GOV CIRT is dedicated to cyber security, and such acknowledgement will motivate us to fight cyber threats and improve Bangladesh's cyber security skills," said Tarique M Barkatullah, Director, BGD e-GOV CIRT in a press release on the matter.

Oman-Made Smartphone to Be Launched This Year

Young, diligent and ambitious Omani cadres have succeeded in designing and assembling a smartphone for the first time in Oman. An Omani team, Mersal, has been able to design and assemble the first smartphone with approved international standards to suit everyone's requirements. The phone is called Mersal 7 or M-7 in relation to the name of the company, and the number 7 is derived from the screen size. Rashid bin Abdullah Al Nasri, CEO of Mersal, said that "the assembly of the phone came after a great effort, as we continued to work for nearly two years continuously in design, selection of components, research and tests, in addition to plans for installation, marketing methods and product launch." Mersal smartphone was designed and assembled at the Makers Oman Centre in Innovation Park Muscat. Al Nasri added that the Mersal phone works with the latest operating system, which is Android 11. The phone has been developed to work through the fourth-generation cellular networks, and work is currently underway to assemble a phone to suit the fifth-generation networks to deal quickly with data. The Mersal smartphone weighs 215 grams, has a 7-inch HD screen, and an ROM of 128 GB, while the RAM capacity is six GB. The phone comes with a 48-megapixel rear camera and a 25-megapixel front camera. As for the battery, it is non-removable and has a capacity of 5000 mAh. Mersal contains two ports for additional SIM cards and memory, in addition to other distinctive technical specifications and features covered by an elegant and attractive body made of metal, plastic and glass. Regarding the total cost of Mersal project, the CEO said that nearly OMR5 million; 50 percent of which was already spent on the phone to design and install a phone at the highest level of efficiency. Al Nasri talked about the challenges and difficulties that faced the Mersal team, "the corona pandemic and its impact locally, regionally and internationally were among the difficulties, in addition to the costs related to research, development and financing. "Technology-related projects are projects that require large amounts of investment, and if all of this is available, it will achieve large and rewarding returns," Al Nasri added. "Mersal smartphone will be launched in the markets at the end of this year (2021) and it will be at a competitive amount not exceeding OMR130. There will be pleasant surprises that we will announce at the launch," the CEO of Mersal said. Al Nasri also said, "We call on investors to partner and enter into this important aspect that is in harmony with Oman's 2040 vision. We also call on government and security institutions and large companies for contractual purchases that will achieve and serve development and economic trends such as creating job opportunities, economic diversification programmes, and the work of a series of technology-related industries." "Apart from meeting local needs, reducing trade deficit, creating local added value, and developing Omani institutions in terms of economic and social benefits, and even some political aspects, " he further said. "We also hope that there will be cooperation from all government agencies competent in this field, and we seek to have Mersal become Oman's ambassador in electronic devices," Al Nasri added. It is noteworthy that Mersal launched the first Omani tablet device (Mersal 10 or M-10) that works with the best international specifications at the beginning of the last academic year 2020-2021. The tablet received good response and feedback from users. It's success was attributed to the rapid response to demand and competitive price, in addition to the fact that the tablet device meets all educational, commercial and personal needs.

Pakistan to Collaborate with Google Cloud and TechValley

Federal Minister for Information Technology and Telecommunication Syed Aminul Haq announced that 5G service would be launched by next December, while initially Beep, a mobile chat platform like WhatsApp, would be introduced for the government employees. The Minister made this announcement while addressing a ceremony at the Digital Government Summit, held here at the Aiwan-e-Sadr. While sharing the government's vision of a Digital Pakistan, he said his Ministry would collaborate with Google Cloud and TechValley in adopting the cutting-edge technology in areas including block-chain technology, artificial intelligence, finding industrial solutions and building smart cities. Taking the challenge of COVID-19 lockdown as an opportunity, he said, his Ministry took the steps to improve connectivity in ensuring facilities in education, health and finance. He said that 100 million people at present were using broadband facilities, adding that a spectrum auction was an option to gain US$ 1 billion. President Dr. Arif Alvi said with timely decisions and preparedness on digitalization, Pakistan could make great strides in technological revolution. "Pakistan will be catapulted in the era of technological advancement if it keeps making fast decisions to join the global digital journey." President Alvi said in the age of information overload, it was important for countries like Pakistan to adopt innovative data management tools offered by Google Cloud and find solutions for public services. He said the global pandemic made digitalization imperative for the delivery of public services including education, healthcare, transportation, security surveillance and building smart cities. "The future is changing faster than you think…The digital evolution is imminent," he said, stressing the importance of pursuing the government's vision of a Digital Pakistan. In the education sector, he said, the information and academic knowledge was no longer limited to books, but could

be accessed through the data available at Google Cloud and other digital platforms. He said Pakistan could greatly benefit by helping its students and professionals join the global digital club of knowledge and ensure their access to the academic lectures of international standards. Federal Minister for Education and Professional Training Shafqat Mehmood said after the Covid-19, the canvas of the education system in Pakistan was changed with the introduction of distant learning through television and radio schools. He pointed out the challenge of "digital divide" and said focus would be laid on ensuring e-learning facilities to the students in remote areas for an access to academic lectures and teachers' training. He said the Ministry of Education was working with Google Cloud and TechValley to launch a project in Islamabad based on the concept of blended technology by experimenting with smart boards, tablets and smart phones as per different age groups. Also, the lectures of Khan Academy are being translated into Urdu for facilitation of students, he added. Federal Minister for Railways Senator Azam Khan Swati said Pakistan Railways was heading on the path of digitalization and productivity as Google Cloud and TechValley had introduced cutting-edge technology to make the institution an emerging public department. By the end

of June 2022, he said, Pakistan Railways would become a profitable public sector entity through technological solutions in environment-friendly transportation, increased passenger and freight trains, checking scrap theft and outsourcing of dry ports. Managing Director Google Cloud for Asia Pacific Paul Wilson, in his video address from Singapore, said Google was collaborating with public agencies to support economic development aligned to the situations, especially during Covid-19. He expressed pleasure that the government of Pakistan was endeavoring to achieve better outcomes across the public sector through employee productivity and effective agency operations. He mentioned that Google expertise could be applied to build government solutions in streamlining workflows, intelligent transportation, health and human services platform, smart and sustainable cities and the remote office and finance platforms. CEO TechValley Pakistan Umer Farooq said as a partner with Google Cloud and the Ministry of IT, his company was promoting the culture of technology to pave the way towards economic development. He mentioned that TechValley had so far trained 8,000 professionals and conducted 5,000 workshops on areas such as access to world class services, industry solutions, and real-time analytics.

# Dubai Advances with ICS Cybersecurity Standards

In response to increasingly sophisticated and dangerous threat situations, Dubai became the first emirate in the UAE, applying standardized cybersecurity to industrial control systems (ICS). The move was in response to a decade-long series of cyberattacks targeting a variety of businesses. According to the representative of Dubai Electronic Security Center (DESC), new standards lead to safer and safer countries. Continue reading for more information on the upgraded protection that has long been needed in the United Arab Emirates industry. DESC was created in 2014. As explained by law, the reason DESC exists is to create a strategy to combat cybercrime targeting government and quasi-government agencies in Dubai. The bottom line is to prevent death, destruction, and economic turmoil. The goal of these efforts is to "establish Dubai as a global leader in innovation, security and security." Some may have to point it out as a Wikipedia certification. Internet enemies, UAE does not approach this topic with clean hands. Of course, we in the West need to be wary of any attacks, as both the United Kingdom and the United States are "good" members on the same list. After seven years of monitoring different state stakeholders and private sectors using different malware to attack industrial infrastructure, recent announcements on new ICS security standards will help inform the world of the Dubai industry. Now you're ready Bend muscles with its own defense.

Bahrain Achieves Highest Ranking of Generations: ITU

Bahrain has escalated up the regulatory ladder to the highest generation of ICT regulation, fostering affordability in ICT services, according to a new report issued by the International Telecommunication Union (ITU). According to ITU's 2020 ICT Pricing Trends Report of Measuring Digital Development, Bahrain has elevated from Third to Fourth generation. The report verifies the variety of influences impacting the pricing levels for ICT services in a region; however, one governing influence on overall affordability is the resilience of a regulatory environment. As found by the ITU study, Bahrain amongst Arab countries, is ranked 2nd for pricings in regard to mobile broadband services, as it maintains affordable fixed broadband rates yet a large - scale data capacity. In addition, Bahrain's mobile broadband prices account for 1.51% of gross national income per capita (GNI p.c.), whereas fixed broadband prices account for 1.82% of GNI p.c, which is below the UN affordability target, therefore allowing Bahrain to meet and outperform the Sustainable Development Goal target before 2025, holding prices below two percent of GNI per capita. Sheikh Nasser Bin Mohammed Al Khalifa, Acting General Director of the Telecommunications Regulatory Authority (TRA) of Bahrain has congratulated and tributed the Kingdom's evolution in regulatory framework to HM King Hamad Bin Isa Al Khalifa, and to HRH Prince Salman bin Hamad bin Isa Al Khalifa, Crown Prince and Prime Minister. According to Sheikh Nasser, this achievement validates the Kingdom's advancements in both the field of telecoms, and excellence of enabling environment of digital transformation, valuing the wise leadership's guidance in expanding Bahrain and shaping it into a regional telecom and ICT hub, seeking to continue efforts to develop the telecommunications sector in the Kingdom of Bahrain. "The regulatory environment's resilience is a significant facilitator of both ICT adoption and price reduction. Regulators in this sector play a significant role in safeguarding consumers' benefits
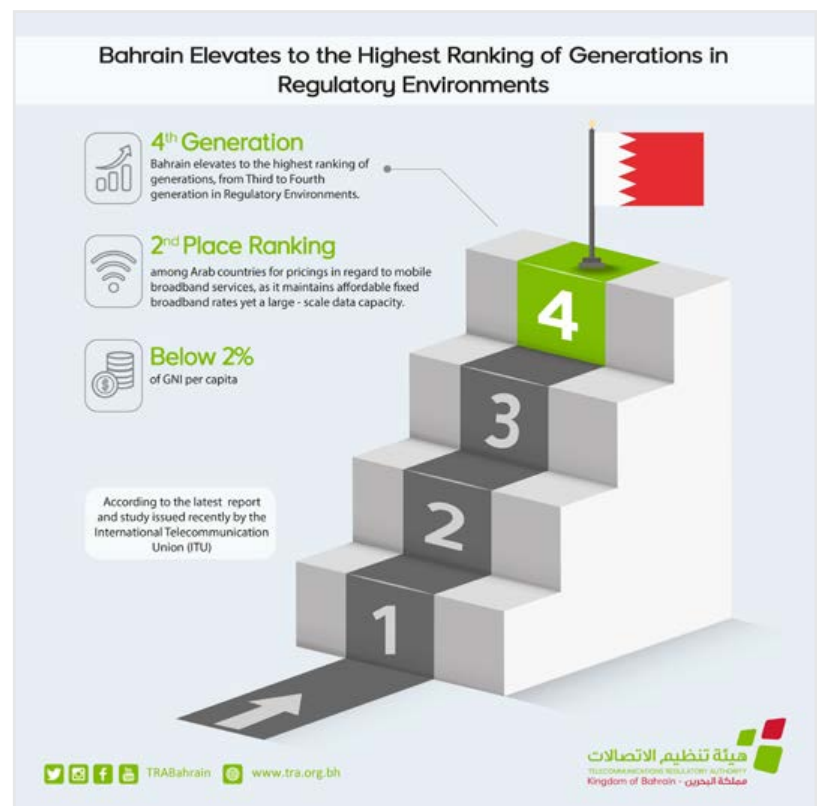
through regulating competitiveness between operators," said Sheikh Nasser. "Regulators also impact market structure and competitiveness through awarding licenses, allocating and designating spectrum, facilitating interoperability and infrastructure exchange, and regulating investment, among other things. A country ascends the regulatory ladder to a higher generation of ICT regulation as its regulatory environment matures. "The pandemic of Covid-19 has demonstrated the critical necessity of connectivity. This position will only expand in the following years as the globe continues to cope with impacts of the pandemic and embraces the 'new reality'. However, continued monitoring of the growth of ICT pricing is crucial for quality management to tackle affordability gaps," he added.

Expansion of 2Africa Subsea Cable System to the Gulf, Pakistan and India

The 2Africa consortium, comprised of China Mobile International, Facebook, MTN GlobalConnect, Orange, stc, Telecom Egypt, Vodafone and WIOCC, announced today the addition of a new branch to the 2Africa cable. The branch will extend 2Africa's connectivity in to The Gulf region. The Gulf branch has been named 2Africa Pearls. It will land at four locations in Saudi Arabia, Jeddah, Yanbu, Duba and Haql, going on to land in Oman, UAE (Fujairah & Abu Dhabi), Bahrain, Qatar, and Kuwait as it extends into The Gulf. The new branch, 2Africa Pearls, will also connect Pakistan and India to the 2Africa Cable System. The new branch joins the recently announced extension to the Canary Islands, the

Seychelles, Comoros Islands, Angola, and a new landing to south-east Nigeria. 2Africa, which will be the largest subsea cable project in the world, will deliver faster, more reliable internet service to each country where it lands. Communities that rely on the internet for services from education to healthcare, and business will experience the economic and social benefits that come from this increased connectivity. Alcatel Submarine Networks (ASN) has been selected to deploy the new branches, which will increase the number of 2Africa landings to 46 locations "stations" in 33 countries, further improving connectivity into the Gulf countries. As with other 2Africa cable landings, capacity will be
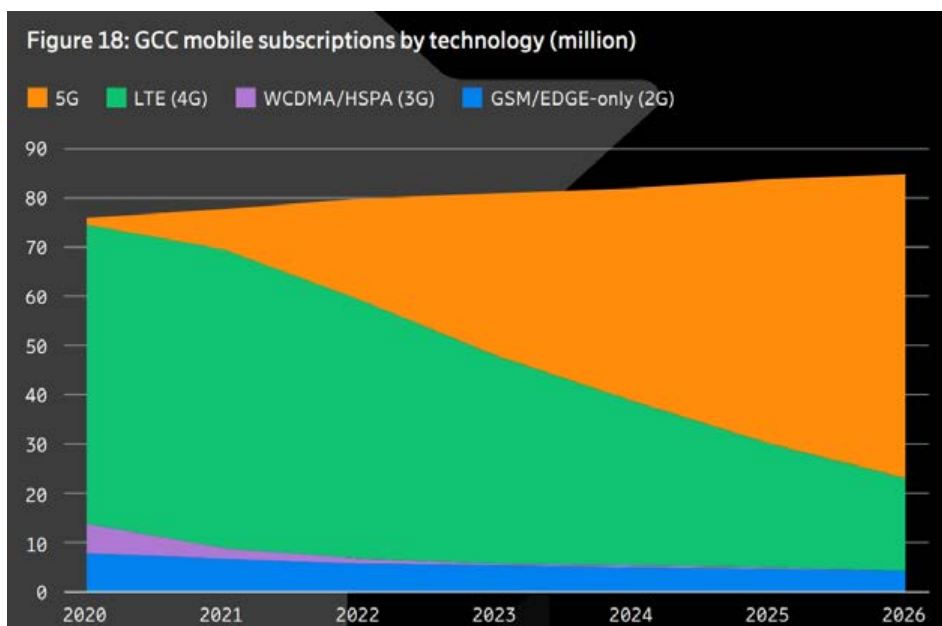
available to service providers at carrier-neutral data centers or open-access cable landing stations on a fair and equitable basis, encouraging and supporting the development of a healthy internet ecosystem. Marine surveys completed for most of the cable and Cable manufacturing is underway The 2Africa consortium has made considerable progress in planning and preparing for the deployment of the cable extension, which is expected to 'go live' late 2023. Most of the subsea route survey activity is now complete. ASN has started manufacturing the cable and building repeater units in its factories in Calais and Greenwich to deploy the first segments in 2022.

GCC Projected to Have 62 million 5G Mobile Subscriptions By 2026

Ericsson predicts that there will be 62 million 5G mobile subscriptions in the Gulf Cooperation Council (GCC) by the end of 2026. The forecast, which features in the twentieth edition of the Ericsson Mobility Report, enhances the expectation that 5G will become the fastest adopted mobile generation. Wojciech Bajda, vice president and head of Gulf Council Countries at Ericsson Middle East and Africa said, "This is a landmark edition of the Ericsson Mobility Report. It is the twentieth edition of the Ericsson Mobility Report and the first to include specific

GCC data. "The report shows that we are in the next phase of 5G, with accelerating roll-outs and coverage expansion in pioneer markets such as the United Arab Emirates." The report states that GCC 5G subscriptions will account for the second highest 5G market penetration globally and will constitute almost three quarters of all mobile subscriptions in the region. Additionally, 5G mobile subscriptions will exceed 580 million globally by the end of 2021, driven by an estimated one million new 5G mobile subscriptions every day. The report features breakout

statistics from GCC markets for the first time where local digital initiatives are accelerating both technological innovation and expected 5G uptake. In 2019, GCC markets were among the first in the world to launch commercial 5G services. Driven by UAE Vision 2021 and digital initiatives in the United Arab Emirates (UAE) such as Smart Dubai Vision to make the city paperless and all government transactions 100 percent digitized, 5G is transforming the economic and social landscape of the nation. As one of the key economies in the GCC, the UAE is supporting the use and growth of technologies such as 5G in a region where mobile data consumption is the highest in the world. According to the Ericsson Mobility Report, at the end of 2020, the GCC had the highest average monthly data traffic per smartphone in the world, exceeding 18GB. Globally 5G is expected to surpass a billion subscriptions two years ahead of the 4G LTE timeline for the same milestone. Key factors behind that include China's earlier commitment to 5G and the earlier availability and increasing affordability of commercial 5G devices. More than 300 5G smartphone models have already been announced or launched commercially. This commercial 5G momentum is expected to continue in coming years, spurred by the enhanced role of connectivity as a key component of post-COVID-19 economic recovery.

Figure 18: GCC mobile subscriptions by technology (million)

■ 5G ■ LTE (4G) ■ WCDMA/HSPA (3G) ■ GSM/EDGE-only (2G)

Saudi Arabia Among the Top Ten Countries in the World for IPv6 Adoption

The Communications and Information Technology Commission (CITC) announced a 50% increase in IPv6 adoption compared to 2020 placing the Kingdom among the top ten countries in the world and the first in the Middle East for the adoption of the most modern version of the internet protocol. Internet protocols provide an identification for devices connected to the network to route traffic across the Internet. IPv6 is the most recent version of internet protocol, which has more advanced and better features than the earlier version IPv4. Through a winning strategy, CITC has been raising awareness on the importance of IPv6 and encouraging major

government and private sector players in Saudi Arabia to adopt the newest protocol version. The commission formed the "IPv6 Taskforce", including public and private sector members, which provides an opportunity for information exchange, unifies efforts to achieve common goals, and supports the adoption of IPv6 in the Kingdom. In addition, CITC organized workshops and training programs, hosted by local and international experts in IPv6. The commission also published an IPv6 guideline including practical information on how to activate the new version of internet protocol in the Kingdom. Mohammed Al-Tamimi, governor of CITC, expressed his

delight with the announcement, "We are proud of the growth in the percentage of IPv6 users in the Kingdom, following concerted efforts by CITC to raise awareness and encourage adoption of this latest protocol. We had great cooperation from operators and other government and private sector organizations and the results were that by 50% increase in IPv6 adoption compared to 2020), placing KSA in the top ten countries in the world and first among the Middle East. We are extremely proud of this achievement and will continue to work hard to turn Saudi Arabia into a digital society."

Saudi Arabia Awarded Highest ICT Regulatory Classification by ITU

SAUDI ARABIA ACHIEVES G5 REGULATOR CLASSIFICATION — **1st** in the MENA region — **9th** in the G20 countries — G5 is the highest level of collaborative regulation, with inclusive dialogue and harmonized approach across sectors involved in the digital economy

Saudi Arabia has been upgraded to the status of fifth-generation (G5) regulator by the International Telecommunications Union (ITU), the United Nations specialized agency overseeing all matters related to information and communication technologies (ICT). The announcement was made during the Global Symposium for Regulators' virtual event. Saudi Arabia's new G5 classification is a testimony to the Kingdom's maturity as a world-class digital nation. The ITU's ICT Regulatory Tracker is a tool used to classify the maturity of ICT regulatory frameworks across 193 countries. It is made up of 50 indicators divided into four pillars: regulatory authority, regulatory mandate, regulatory regime, and competition framework. The tool tracks countries' progress from first-generation regulation (G1), in which regulated public monopolies employ a command-and-control approach, to fifth-

generation regulation (G5), the highest level of regulatory framework in which regulatory agencies collaborate with a wide range of stakeholders to develop a harmonized approach across sectors now reliant on ICT. The Communications and Information Technology Commission's (CITC) recent transformation from a telecom regulator to a digital regulator has paved the way for the next generation of ICT regulation in the Kingdom. CITC has launched several initiatives enabling a cross-sectoral regulatory environment, boosting investments in the sector and supporting innovation and digital transformation across adjacent sectors. The achievement of the "gold standard" for policy and regulatory collaboration came two years ahead of the 2023 target date outlined in the Kingdom's ICT Sector Strategy 2023, and only one year after being classified as a fourth-generation regulator. Significant

initiatives for collaborative regulation with all stakeholders in the Kingdom's digital ecosystem include the Kingdom's Digital Economy Policy, the creation of the Digital Government Authority, the launch of pioneering regulatory sandbox projects, the Fixed Broadband Open Access initiative, the adoption of the WiFi-6 becoming the first country in the EMEA region to do so, and the launch of the "CITC Roadmap for Commercial and Innovative Use of Frequency Spectrum 2021-2023", among others. "The ITU's G5 classification is one of the biggest indicators of success for Saudi Arabia's digital ecosystem to date, and we thank our partners and stakeholders across sectors for their contributions to this significant achievement and for embracing a spirit of togetherness in this digital era," said Mohammed Al Tamimi, Governor of CITC. He also noted, "Saudi Arabia's ICT sector has become a significant player regionally and globally, witnessing rapid transformation driven by flexible, incentive-based, innovative regulations. In just five years, we've witnessed internet speeds increase by 1,589%. The ITU has praised the Kingdom for effectively overcoming digital-related challenges, displaying one of the world's highest levels of organizational maturity, while supporting proactive innovation, the adoption of emerging technology, and the growth of the digital economy.

86% of Consumers in Bahrain Switch to e-Commerce

About 86% of consumers in Bahrain have switched to the world of e-commerce since the start of the coronavirus (COVID-19) pandemic, and they want to continue to buy everything online. This was confirmed by Sitecore, the leading global company in the field of digital experience management software. Since the start of the pandemic, 86% of IT decision-makers in Bahrain say their consumers are willing to leave the online store and go for another alternative if they can't find what they want in a few clicks. About 87% of respondents agreed that consumers have less patience with websites that are slow or not working properly. Said Mohamed Kuhtani, Vice President for the Middle East and

Africa Sitecore, said that turning 86% of consumers digitally to the world of e-commerce in Bahrain shows that the Kingdom is witnessing fast turnaround from traditional stores to e-commerce and hybrid models. "Young consumers are quickly shifting their significant purchasing power to the internet, which means there is still pressure on retailers to be able to give shoppers a rich and joyful shopping experience," he added. Brands in Bahrain are taking a variety of measures to improve the shopping experience. A majority of 85% of brands ranked apps or websites that work well on mobile devices in their top three options for improving customer experience.

Libya, Egypt Discuss Establishing Joint Company to Achieve Full Digital Transformation

The Chairman of the Board of Directors of the Telecom Holding Company, Faisal Qarqab, has held a meeting with the Egyptian ambassador to Libya, to follow up on the agreements that were signed in the field of communications, technology, training and development, during the visit of the delegation of leaders from Libya's information and communications technology (ICT) sector to Egypt last June. During the meeting, Qarqab praised the joint cooperation between Libya and Egypt in the field of communications and information technology, saying "we look forward to this cooperation reaching us in twinning several projects between

the two countries". The two sides also discussed the mechanism of establishing the Libyan-Egyptian company, which will be concerned with putting the necessary initiatives under implementation, and laying the foundations for Libyan-Egyptian investment programs in the field of technology industry and localization, in an effort to reach a complete digital transformation in the two countries. Last June, the Telecom Holding Company signed 4 memoranda of understanding with the Egyptian Telecom Company in the areas of digital transformation, postal services, capacity building and entrepreneurship, as well as technology localization.

IT & Telecom Ministry Launches 'Smart Village Project' in Pakistan

The Ministry of IT and Telecommunication on Wednesday through the Universal Service Fund (USF) launched a "Smart Village" project in four provinces, Islamabad and Gilgit-Baltistan. The project will be funded and technically supported by the International Telecommunication Union and Huawei Technologies Pakistan. Under the project a center to be set up in a backward village equipped with modern facilities from which not only the people of the area will be trained to use IT facilities but also, they will be encouraged to incorporate it in their daily life. The Federal Secretary Ministry of IT and Telecommunication Muhammad Sohail Rajput, the CEO USF Haaris Mahmood Chaudhary, the Area Representative for Southeast Asia, International Telecommunication Union (ITU) Dr. Ismail Shah, and the CEO Huawei Mark Meng were also present on the occasion. While addressing the inaugural ceremony of the 'Smart Village Project', Syed Amin Ul Haque said "Smart Village project is another step towards realizing Prime Minister's vision of Digital Pakistan. The Ministry of IT and Telecommunication through USF is partnering with ITU and Huawei to digitally transform remote and rural communities by connecting and empowering them through better access to a range of digital services in the domain of health, education, commerce, and livelihood. The project emphasizes on the whole-of-government approach and promote

cross-sector collaboration and multi-stakeholder engagement to further improve cost-effectiveness and sharing of resources and expertise in delivering the services to citizens. Initially, one Smart Village will be established each at Islamabad, Punjab, Balochistan, Sindh, Khyber Pakhtunkhwa, and Gilgit-Baltistan". The Minister said that the National Information Technology Board (NITB) launched more than 30 mobile applications, government web portals and websites related to public services. He said that the effects of the steps taken under the Digital Pakistan Vision are now beginning to show. We have started the first e-cabinet, working on E-Parliament, E-Office and Internet Voting also. The federal minister congratulated the teams of USF, ITU & Huawei and ensured his support in the implementation of the project. Syed Amin Ul Haque also said that the Ministry of IT and Telecommunication will continue to undertake more challenging and productive programs in the future for the promotion of IT and Telecommunication related services. Sharing his thoughts at the ceremony, the CEO USF Haaris Mahmood Chaudhary said "Smart Village project is consistent with USF's mission to empower the unserved and underserved communities. This partnership will permit USF, ITU, and Huawei to mutually serve their mission."

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5G Ecosystem and Digital Interdependence

Fahad Al Ali
Chief Technology Officer
stc Kuwait

5G will bring major social and economic value for citizens and national industries, in return allowing significant city transformational gains from the delivery of ultra-high speed, low latency, and flexibility provided by the 5G network. The United Nations High Level Panel on Digital Cooperation's launch of a new tech report in 2019 focused on faster digital cooperation in the "Age of Interdependence". The digital cooperation involves not only governments, but a far more diverse spectrum of other stakeholders such as civil society, academics, technologists, and the private sector. Their role is to take significant steps toward rapidly transforming society and creating opportunities by the application of digital technologies[1]. Analysys Mason projected that 5G will enrich the economy and provide social benefits in Kuwait by generating a cumulative increase of more than USD1.0 billion in GDP during 2018–2025 – that is roughly around 0.09% of the cumulative total GDP of Kuwait over the same period (USD1.1 billion). The spread of digitalization in Kuwait has a potential of translating to 25,000 added jobs and delivering wide-ranging benefits through enhanced access[2].

> *stc's 5G infrastructure possesses the capability of supporting the national vision of diversifying the economy away from oil dependency by digitally accelerating private sector growth, enabling innovation, stimulating competition, and boosting production efficiency. The Company has been working on shaping relevant 5G eco-system technology movements, in line with Kuwait's 2035 vision to maintain a cutting-edge 5G infrastructure in its telecoms market.*

stc, along with the government and other key stakeholders in Kuwait's telecom value chain, have been keen to launch 5G as early as 2019 in certain areas, while providing national coverage later on in the same year[3]. stc's 5G infrastructure possesses the capability of supporting the national vision of diversifying the economy away from oil dependency by digitally accelerating private sector growth, enabling innovation, stimulating competition, and boosting production efficiency. The Company has been working on shaping relevant 5G eco-system technology movements, in line with Kuwait's 2035 vision to maintain a cutting-edge 5G infrastructure in its telecoms market. This vision will lead the eco-system build, while sparking a competitive environment

in relation to human capital with the aim of transforming Kuwait into a financial and trade hub, both regionally and internationally. The objective of this movement is to distinguish Kuwait as an attractive location for investors in the long term[4].

stc has been keen to accelerate digitalization usage by democratizing 5G to help consumers, as well as various public and private enterprises of all sizes, gain affordable access with ease to a wide range of digital services. Access to these solutions is made available through different types of 5G compatible devices at a range of prices, along with 5G enabled mobile and internet packages at competitive rates. Efforts of accelerating 5G development have been implemented by introducing competitive offerings through 5G mobile internet packages that include:
1. Special discounts for early adopters of 5G who subscribed at the launch in May 2019
2. Unifying all 4G and 5G plans and prices,
3. Upgrading legacy plans to 5G free of charge,
4. Handpicked and offered only the best 5G devices for best customer experience

It is evident that the 5G experience paves the way for new immersive mobile experiences, combining 360° cloud-based Augmented Reality (AR), Virtual Reality (VR), enhanced consumer everyday communication, 4K/8K ultra-high-definition (UHD) entertainment, content and cloud gaming, access to everyday online education, distance learning, and training or telemedicine services to manage distance work in aid of high quality streaming of collaborative applications without experience interruption.

Aside from the consumer market, stc has been working on building a new 5G ecosystem with the collaboration of different 5G value chain players to embrace all industry sectors of the Kuwait economy, and provide more accessible 5G to different verticals. This will open a world of possibilities for all sectors, including education, industry, healthcare, media, transportation, and utilities. stc has been

participating in delivering 5G connectivity enhancements in response to enterprise demand. The Company has also been supporting the government in improving fixed broadband penetration, especially for enterprise segments, across Kuwait with the aid of complementary Fixed Wireless Access (FWA) capability of 5G, such as:[5]
1. 5G Dedicated Data Access (DDA) connecting locations, providing services, and dedicating reliable speeds up to 50 Mbps
2. Dedicated Internet Access (DIA) obtaining internet speeds up to 100Mbps
3. Dedicated Access Backup Solution with a constant speed that can provide a dedicated connection to any location with different speeds as an alternative support for a primary connectivity type.

stc also has taken a co-innovation approach with local & international businesses to develop the future utilization of 5G. The Company is only at the beginning of the 5G journey which will evolve into the introduction of new digital products and solution inspired and developed based on 5G technology. Some of which include:
1. A 5G deep coverage solution over Sub-3Ghz spectrum bands (i.e. 2.1Ghz) to allow smoother access to Voice over 5G NR (VoNR) collaborative applications, 5G Carrier Aggregation (CA) services and mass deployment for Internet of Thing (IoT), as well as Machine-to-Machine (M2M) services.
2. Implementation of 5G Standalone (5G SA) architecture, a native cloud connectivity-supported & secured platform, and Advanced Business Support Systems to empower Edge Native Cloud that enables service aggregation near subscriber premises, enterprise campus scenarios, real-time data processing in industrial control, autonomous driving, and offering innovative Network-as-a-Service model capable of integrating with different 3rd parties APIs, and utilizing DevOps Tools to suit wide-ranges of industry transformations.

Nevertheless, multiple innovative industry applications have been made by stc in collaboration with the 5G ecosystem

partners. For example, Cloud CCTV, Cloud PBX, 5G SmartBus, Smart Education/ Virtual VR Classrooms, advanced drone solutions for security and surveillance, and Cloud Call Center solutions . 5G enterprise solutions target enabling secure & smart city services to citizens, and assist verticals in innovating and generating new businesses in untapped markets.

> *stc has been participating in delivering 5G connectivity enhancements in response to enterprise demand. The Company has also been supporting the government in improving fixed broadband penetration, especially for enterprise segments, across Kuwait with the aid of complementary Fixed Wireless Access (FWA) capability of 5G*

Meanwhile, stc has been sponsoring key business-to-business (B2B) events to create a platform for helping small and medium enterprises grow and develop their projects, businesses and facilitate their digital transactions. The Company aims to create an interactive environment and highlight the commercial exchange opportunities between enterprises and leading companies in the private sector, including the enterprises amongst themselves. This serves as a key factor that encourages the exchange of knowledge, innovative tactics and provides the best offers to project owners.

stc's goal is to cooperate with key 5G eco-system owners and build a collaborative environment with the private and public sectors to motivate the development of 5G usage cases, enable entrepreneurial digital markets, and explore multi-sided business models capable of delivering smart city services to citizens in line with Kuwait 2035 vision.
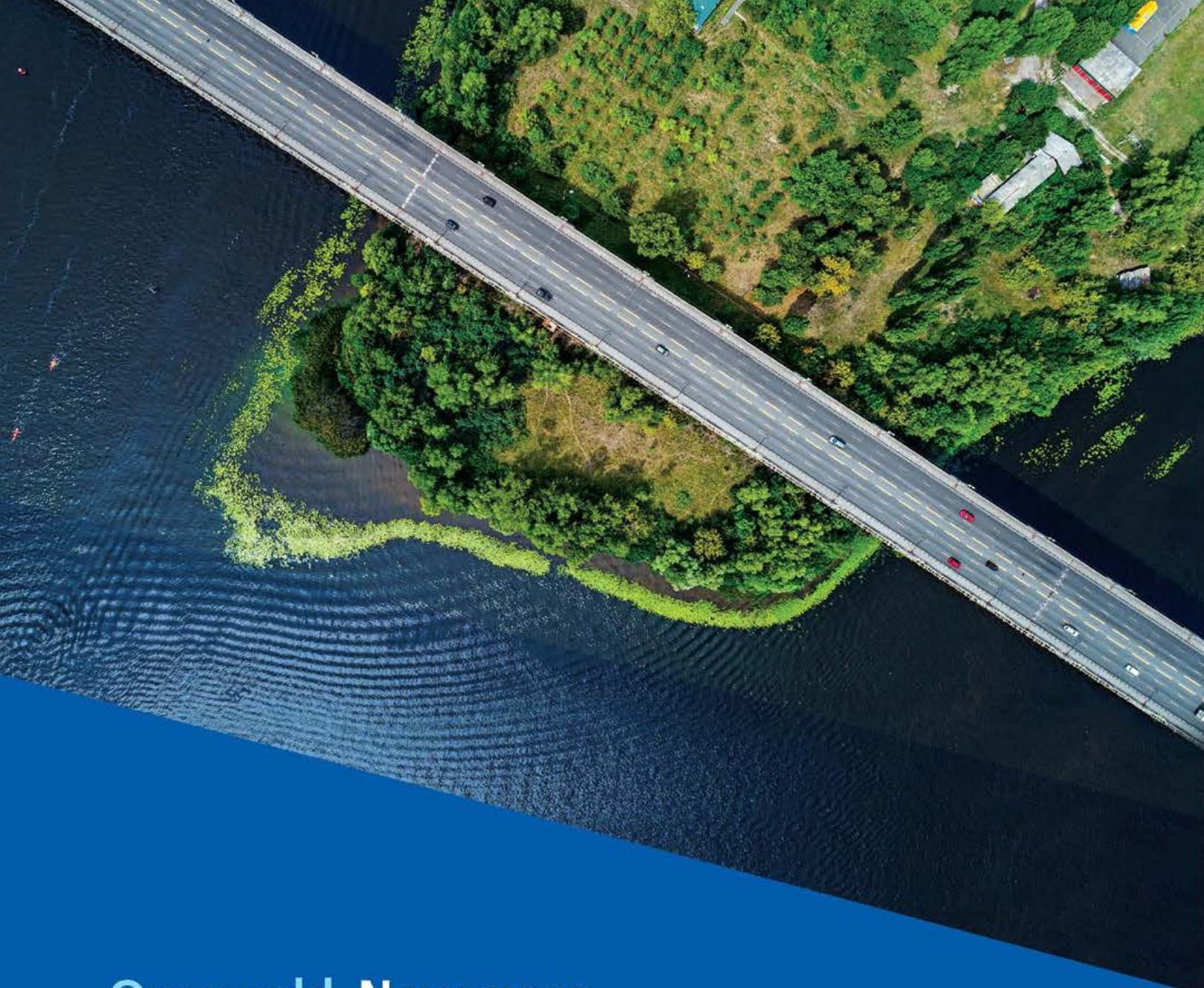
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SATELLITE NEWS

Kuwait's First Satellite Launched into Space

Bassam Al-Feeli, Founder and General Manager of Orbital Space, said that QMR-KWT, an abbreviation of "Moon of Kuwait" has took off into space on Wednesday aboard SpaceX Falcon 9 from Cape Canaveral Air Force Station in the State of Florida. In a statement to the press, Feeli said QMR-KWT is a 1U CubeSat and will be Kuwait's first satellite. "Our goal is to make space accessible to all, and as a startup, we are excited to work with other startups to meet our mutual objectives," Feeli said. "Once in space, QMR-KWT will be the outcome of efforts from all young companies including Orbital Space, EnduroSat, D-Orbit, and even SpaceX, which is less than 20 years old company," he added. "QMR-KWT's functional testing has been completed at EnduroSat facilities and it has been integrated with ION Satellite Carrier, D-Orbit's orbital transportation vehicle, as part of the plan to put it in orbit. The Falcon 9 mission dubbed Transporter-2 rideshare mission will carry several dozens of satellites from the surface of the earth to outer space at around 500 km above sea level in a sun synchronous orbit." Meanwhile, according to Nada Al-Shammari, Director of Educational Programs at Orbital Space, QMR KWT is an educational space mission and is already inspiring and empowering students to become the future professionals in the space sector. The main education mission of QMR KWT is 'Code in Space', added Shammari. "Code in Space is an opportunity for students to develop and test new software solutions by writing software code to be uploaded and executed on the satellite's onboard computer, for the first time ever. We have been receiving proposals from students around the world and we invite students from everywhere to challenge themselves and connect with this unique opportunity," said Shammari. QMR-KWT mission control

and ground station will be located at Dubai Digital Park, Dubai Silicon Oasis as part of the collaboration agreement between Orbital Space and the Mohammed bin Rashid Space Centre (MBRSC) under the umbrella of MBRSC Space Ventures for startups. Established in August 2018, Orbital Space is the first company in the Arab World to provide access to space through CubeSat technology. Orbital Space offers services to design, build, test and operate CubeSats to students and amateurs, to help them gain the know-how to build a satellite, and also support them if they want to do a space-related experiment.

Egypt to Send Two New Satellites into Space Next Year

The Egyptian Space Agency will send two new satellites into space in 2022. These are NExSat-1, intended for remote sensing and scientific research, and EgyptSat 2 which will be used for Earth observation. The information was announced last June 11 by Khaled Abdel Ghaffar, the Egyptian Minister of Higher Education and Scientific Research, at the Euro-African Space Forum held for two days in Lisbon, Portugal. The country wants to become a reference in the African space industry. "We aim to transform Egypt into a center for training, research and development in

space activities [...] to develop and support emerging technologies, to disseminate the use of satellite images to support activities, especially in the field of agriculture, and to stimulate exploration and innovation," said Minister Khaled Abdel Ghaffar. On March 6, 2020, Egypt adopted a new 10-year space development plan, seven months after the establishment of the new space authority that has already piloted the launch of four satellites into space. Capacity building, development of space missions, modernization of facilities to support the growth of the commercial space industry,

development of international cooperation, and development of a strong legal foundation are the pillars of the new space program. Through this program, Egypt wants to break the dependence of most African countries on foreign infrastructure for communications, earth observation, meteorology, disaster management, etc. The country is seeking to move from customer to service provider and tap into the growing business opportunities offered by the sector.

KAUST to Launch a Research Satellite for Monitoring Ecosystems by the End Of 2022

King Abdullah University of Science and Technology (KAUST) and Spire, a leading space data, analytics, and services provider, will launch the "KAUST CubeSat" research satellite by the end of 2022, it was reported here. Matthew McCabe, Director of KAUST Climate and Livability Initiative, explained that the research satellite specializes in collecting high-quality and high-resolution data for terrestrial, coastal, and ocean ecosystems, describing the launch as qualitative process for the Kingdom's efforts in the field of protecting and restoring ecosystems on land and at sea. McCabe said the data collected from the satellite is of paramount importance, especially in providing high-resolution details about the current conditions of ecosystems in the region, and monitoring improvements resulting from environmental management strategies, thus, supporting the Green Saudi the Green Middle East Initiatives. The launch of this first satellite of its kind in the Kingdom constitutes the most technologically advanced, as it combines the expertise of Spire in developing Global Navigation Satellite System (GNSS-R) reflectors, and hyperspectral imaging devices supported by advanced capabilities in processing and artificial intelligence, which will allow KAUST University researchers collect, analyze and use high-resolution images of the Earth's surface for detailed mapping of terrestrial environments, monitoring of vegetation cover status, exploration of coastal ecosystems and coral reefs, development

of precision agricultural research, and a host of other earth and environmental science applications. KAUST CubeSat research satellite will be supplied by a hyperspectral imaging sensor that can image areas of interest anywhere in the world across more than 30 user-adjustable spectral bands which can be adjusted by a visible near-infrared (VNIR) spectrum. The received data from the sensor can be combined with Spire's GNSS receiver to monitor micro-environmental variables such as soil moisture, helping in many areas such as agriculture, forestry, and land management.

Mohammed Bin Rashid Announces the Successful Launch of the Emirati Satellite Ghalib

His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, announced the successful launch of the UAE satellite, Ghalib. His Highness tweeted, "As part of the state's strategy to empower the private sector, a group of our exceptional Emirati youth successfully launched the "Ghalib" satellite, the first Emirati satellite dedicated to track wildlife." His Highness continued, "All the best to Marshal Antech in entering this vital sector. The ambitions of the Emirati youth will always remain the sky."

SpaceX to Launch Korea's Midsize Satellite in 2023

SpaceX will send South Korea's next-generation midsize satellite into orbit in 2023, Korea Aerospace Industries said Sunday. KAI, the nation's sole aircraft manufacturer, which developed KF-21 fighters, plans to launch four midsize satellites by 2025 -- No. 2 in 2022, No. 3 and No. 4 in 2023 and No. 5 in 2025. SpaceX rocket will carry the No. 4 into orbit, which will monitor Korean agriculture. KAI selected SpaceX in an open bidding. Though the launch will take place in the US, many details remain unclear at the moment, including the size of the deal and the type of SpaceX rocket. The launch of midsize satellite No. 1 in March was conducted by the state-run Korea Aerospace Research Institute. Starting from the launch of satellite No. 2, which will be the first one in Korea led by the private sector, KAI will be responsible for the development of the four satellites' system design, body development, manufacture, assembly, test and actual launch. "KAI's chief financial officer Kim Jung-ho met with senior SpaceX official in the US in May and discussed SpaceX's foray into the Asian market, and confirmed the possibility of partnership between the two firms," a KAI official said. "Whether SpaceX will launch satellites No. 2, No. 3 and No. 5 hasn't been decided yet," another KAI official said.

Starlink Acquires License for Satellite Internet in the Czech Republic

SpaceX-owned Starlink satellite internet operator will probably start providing its services in the Czech Republic soon. It has already obtained regulatory approval. According to Czech server Lupa.cz, it's not immediately clear whether end services will officially be available to Czech users in two weeks, though some media reports opined that it could launch service in the Czech Republic as early as September 1, 2021 The site goes on to report that though it's possible to check availability for Czech

addresses on the starlink.com website, Starlink will not actually cover the territory until 2022. Lupa reports that the September date possibly indicates the beginning of connection testing or that "the information provided by the company is out of date." However, Starlink's Irish branch has notified the Czech Telecommunications Authority of the commencement of the services in accordance with an entry in the public register of electronic communications entrepreneurs under the General Power of

Attorney. He pointed it out on Twitter Radek Zajíc. The beta version of the service is already available in 12 countries, including neighboring Germany and Austria, in some other countries there are private tests, but Czechia is probably not among them. Starlink has already launched over 1,700 satellites into orbit, about 1,400 of which are fully functional. But Elon Musk would like to have tens of thousands of satellites in orbit.

OneWeb Signs Broadband MoU with Northwestel for Connectivity in Northern Canada

OneWeb has signed an MoU with northern Canada telco Northwestel for broadband connectivity. Under the agreement announced, the companies will work together to deliver new connectivity services to remote mines, businesses, and governments across Canada's north using OneWeb's Low-Earth Orbit (LEO) constellation. Northwestel is the largest telecommunications provider in Canada's north, and it serves 96 communities across Yukon, Northwest Territories, Nunavut, British Columbia and Alberta. The company is undergoing an initiative launched in 2020 to improve broadband services for residents, governments and businesses using fiber and LEO satellite technologies. "This partnership with Northwestel is more evidence that our network is an important element in bridging the last digital divides by providing high-quality connectivity services to those that need it most," commented OneWeb CEO Neil Masterson. OneWeb said customer

demand is increasing as it prepares to start service north of the 50th parallel in Canada, the United Kingdom, and Northern Europe later this year.
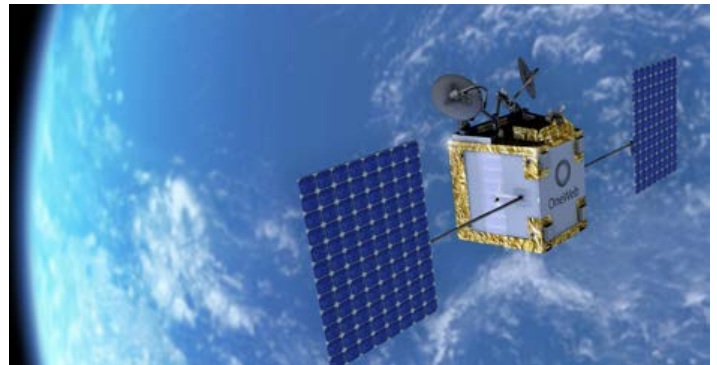
Russian Satellite RSCC Alters Express-AM33 Orbital Slot

The state-owned satellite operator Russian Satellite Communications Company (RSCC) announced it has completed the migration of the Express-AM33 satellite from the orbital position of 96.5 degrees East to the 11 degrees West slot. To move the Express-AM33 to the required position, the satellite made 120 orbits around the Earth at an altitude of 35,880 km, covering 31.7 million km in the process. The company announced the transition on Aug. 17 and said the move was made as RSCC looks to target a stronger position in

the global maritime market. The company said this precise work was performed by 41 employees of the RSCC Mission Control Centers located in Moscow, Zheleznogorsk, and Dubna Space Communication Centers, and the Vladimir Satellite Communication Station. "For four months, specialists provided round-the-clock control of the satellite, updating its trajectory as needed. From August 17, 2021, the Express-AM33 has been ready for operation. Now, in most of the Atlantic Ocean, the crews and passengers of sea-going ships

have obtained access to the Internet and communication services, provided even in the most extreme conditions," it explained in a release. "69 percent of the Earth's surface is controlled by our orbital constellation of 12 geostationary satellites. They are maneuverable enough to swiftly address the problems posed by the market. Should our clients want to get communication services right in the middle of the ocean, such services will be available to them," it said.

OneWeb, StarLink and AAC Space Africa Launches Spark Satellite Fever

August has seen major activity in the space wars as satellite launches ranged from new companies to services to infrastructure. Satellite comms operator OneWeb has launched 34 news satellites into low orbit from the Baikonur cosmodrome in Kazakhstan. In Europe Starlink, the SpaceX-owned satellite internet operator has obtained regulatory approval to provide its comms services in the Czech Republic and pledged to launch a service 'soon'. Meanwhile, a satellite company launch by AAC Clyde Space saw it unveil Space Africa, a service catering for the growing market demand for satellites and space services in Africa. OneWeb's Low Earth Orbit (LEO) service, jointly owned by India's Bharti (telecoms) group and the UK government, now has a total in-orbit constellation of 288 satellites. These form part of OneWeb's 648 LEO satellite fleet that promises high-speed, low-latency global connectivity. European mobile operators, such as BT, are increasingly using satellite to bulk up their infrastructure. "OneWeb is seeing huge demand for its services from global customers," said CEO Neil Masterson. Clients include telcos, ISPs and governments wanting to bring high network speeds to those with low access. OneWeb received a $300 million equity boost from South Korea's Hanwha Systems for an 8.8 per cent stake, bringing total equity investment to $2.7 billion since November 2020, with no debt issuance. The fresh investment is expected to be completed in the first half of 2022, subject to regulatory approvals. Inmarsat criticizes LEO expectations Bharti Group-backed OneWeb is readying to take on Elon Musk's Starlink and Amazon's Project Kuiper. Critics at UK-based satellite comms provider Inmarsat have dismissed the competitive service offered by LEO operators, such as Starlink and OneWeb, saying they "lack fundamental capabilities" of providing secure and comprehensive fast broadband coverage. According to Czech server lupa.cz end services might be available to Czech users as early as September 1, 2021 but this date is more likely to mark the beginning of connection testing. However, Starlink's Irish branch has notified the Czech Telecommunications Authority of the commencement services. The beta version of the service is already available in 12 countries, including Germany and Austria, with some countries conducting private tests. Starlink has launched 1,701 satellites into orbit, and it estimates that 1,400 are fully functional. Founder Elon Musk said he wants to run tens of thousands of LEO satellites. African space race AAC Space Africa will design, build and deliver space missions to the continent from its Cape Town base in South Africa's Western Cape Province. The new subsidiary will also be the group's center of competence for advanced radio communication. Its management team claims to have 40 years of small satellite experience, having pioneered the African CubeSat industry through several missions and launched the first CubeSat on the continent. The African Space economy will be worth $10 billion by 2024, according to AAC Space Africa. Previously AAC Clyde Space had to track ocean currents with earth observation technologies run through its European companies' hubs. "We see great potential for small satellites to provide timely, accurate and targeted data for weather forecasting, ocean monitoring, agricultural planning and land management," said AAC Clyde Space CEO Luis Gomes.

China Finishes Low-Orbit Broadband Satellite, 5G Network Integration Test

China's first low-orbit broadband satellite and 5G network integration test was completed on Sunday, CCTV reported. The report said the test, which was completed in Beijing and Jinan, East China's Shandong Province, has built a backbone network between 5G networks in the two cities via low-orbit broadband satellites. Satellite networks can replace ground fiber networks that need to be laid in advance, the report said. This test simulated a dangerous goods leak at a factory in Jinan, and Beijing staff handled the accident remotely. The network allowed the Beijing staff to observe the scene in real time, manipulate Jinan's unmanned vehicles to approach the dangerous goods, and use robotic arms to deal with the situation. Chen Tianheng, an engineer, said the time delay in the test was about 20-30 milliseconds, and the operators used VR video to control the robots in Jinan. Experts said the test could lead to wireless support for remote areas and emergency communication scenarios. Peng Mugen, from Beijing University of Posts and Telecommunications, said that the integration of 5G networks and low-orbit satellite broadband communication systems will be able to provide broadband wireless communication for polar scientific research teams and deep-sea exploration, as well as helping to deal with forest fires, emergencies and post-disaster rescue.

Oman to get its First Satellite by 2024

Omani Space Communication Technologies has launched a tender for the design, manufacture and launch of its first satellite called "Omansat-1", Al Arabiya reported citing state television. The Sultanate intends to launch its first satellite dedicated to telecommunications in 2024. The company intends to launch a high-capacity communications satellite and its related services, covering the whole Sultanate, its economic waters and the foreign markets associated with it, the company said in a filing. It invited technical and commercial bids and said the last date to purchase the tender document is July 15, while bids are due by September 21. Space Communication Technologies is one of the Omani Telecom and Information Technology Group companies.

European New Era Telecommunications Satellite Ready for Launch

The European Space Agency (ESA) has announced that the world's first commercial fully flexible software-defined telecommunications satellite has been integrated on its launch rocket. It is now ready for its launch, which is scheduled for Friday (July 30). The satellite, designated

Eutelsat Quantum, was developed by ESA as a partnership with European satellite telecommunications company Eutelsat. The prime contractor for the spacecraft was Airbus, which was also responsible for manufacturing the satellite payload. Surrey Satellite Technology Limited (a UK subsidiary of Airbus) was responsible for the new satellite platform. Most of the satellite was developed and manufactured by British industry, because the program was also a UK flagship project. The satellite will be able to be reprogrammed in orbit. This will mean that over its 15-year lifetime it will be able to meet changing data transmission and secure communications demands. Moreover, its transmission beams can be redirected in almost real time so as to be able to supply information to passengers on moving aircraft or ships. Its transmissions can also be adjusted easily, to provide more data when there are surges in demand. Eutelsat Quantum can also detect and characterize 'rogue' emissions, should they occur. This will allow it to dynamically respond to both accidental interference and intentional jamming. It will be launched by an Arianespace Ariane 5 rocket, from the European spaceport in French Guiana, in South America.

Inmarsat Tunes-Up Enhanced Satellite Play

Satellite communications player Inmarsat unveiled a plan to combine its existing system with a forthcoming Low Earth Orbit (LEO) constellation and terrestrial 5G assets to create a single network targeted at a range of corporate customers, the latest move in the connectivity space race. Inmarsat's new combined offer will be named Orchestra and will be targeted at a range of customer segments including maritime, aviation and government organizations. The company will invest $100 million in building the system over the next five years, pitching it as "the communications network of the future". Inmarsat claims potential new use cases will include close shore navigation for autonomous vessels, next-generation safety systems for maritime crews and "direct-to-cloud connections for airlines". In addition to segments it already serves, it plans to target companies with energy rigs and drilling platforms, passenger ships and operators of mid-market business aircraft. Orchestra will combine coverage from its existing Geosynchronous Earth Orbit (GEO) satellites with a constellation of 150 to 175 LEO birds and a 5G terrestrial network, with the new land-based assets set to be developed first. Inmarsat CEO Rajeev Suri said by combining "the distinct qualities of GEO, LEO and 5G into a single network, we will deliver a service that is far greater than the sum of its parts". "Our customers will benefit from dramatically expanded high-throughput services around the world." The move comes as the race for delivering low-latency connectivity from space hots-up, with Elon Musk-led venture Starlink currently in the trial phase and OneWeb in the process of improving its coverage.

Turkey's Türksat 5A Communication Satellite Comes into Service

Turkey's Türksat 5A communication satellite which was launched into space in January will begin serving the world as of 28 June 2021, Transport and Infrastructure Minister Adil Karaismailoğlu said. The Minister informed Anadolu Agency (AA) that a ceremony will be held to mark the communication satellite coming into service at Türksat's Gölbaşı compound in the capital Ankara on June 28 with the participation of President Recep Tayyip Erdoğan. Tests have been carried out on the Türksat 5A, which reached geosynchronous orbit in space as of May 4, Karaismailoğlu said, adding that orbital tests began on May 5 and were "successfully completed." He added that once the communication satellite is operational, it will cover Turkey, Europe, the Middle East, Northern and Southern Africa as well as the Mediterranean, Aegean and Black Seas. Karaismailoğlu went on to say that the production, integration, testing and launch processes of new and domestic communication satellites were also accelerated in the period as Turkey increased its work in the field of space studies and satellite technologies. Emphasizing that Turkey is on track to becoming an international player in the field of satellite and space studies, Karaismailoğlu said that they are constantly updating strategic communication systems in terms of broadcasting and internet access services, noting that they provide necessary innovations to citizens simultaneously around the world. He underlined that they want to be a leader in the region and recognized as a country with high brand value in the world through television and radio broadcasting via satellites, internet access and other value-added satellite services. The minister explained that the country's power and effectiveness in space through satellite communication are as vital as land, air, railway and sea transportation. Karaismailoğlu said the Türksat 5A will propel Turkey to the league of the leading countries using Ku-Band in data communication services with television broadcasting, stating that the satellite's electric propulsion system will provide TV broadcasting and communication services for more than 30 years. Karaismailoğlu added that Turkey's communication satellite traffic will increase from this point onward. Turkey signed an agreement with the global aerospace company Airbus in 2017 for the production of the Türksat 5A and 5B orbiters. Türksat 5A was built in collaboration between Türksat, Turkish Aerospace Industries (TAI) and Airbus Defense and Space. The country is also working on building its own Türksat 6A. Production is ongoing and the project is being completely domestically sourced. It is a product of the collaboration between the Transportation and Infrastructure Ministry and organizations and companies such as leading defense firm Aselsan, TAI and CTech, along with Türksat and the country's top scientific body, the Scientific and Technological Research Council of Turkey (TÜBITAK).

Thales Alenia Space to Provide the Optical Inter Satellite Links for Telesat's Lightspeed LEO 298-Satellite Constellation

As prime contractor for the construction of Telesat's Lightspeed constellation, Thales Alenia Space, a joint venture between Thales (Euronext Paris: HO) (67%) and Leonardo (Milan stock exchange: LDO) (33%), is announcing today that the Optical Inter Satellite Links (OISL) on-board the Lightspeed satellites will be its advanced Optel-C product. Optical Inter Satellite Links will allow Lightspeed to provide global, mesh coverage around the world, including above the oceans and poles, with a high level of security for end-to-end services. Their use will optimize the ground segment with a lower number of gateway sites, more freedom on gateway locations, and the ability to deploy gateways incrementally as system loading increases.

The initial Lightspeed space segment will be comprised of 298 satellites. Telesat's constellation satellites will deliver multiple terabits per second across the globe for secure, low-latency, high-performing broadband professional services. The Optel-C product builds on more than 20 years' experience from Thales Alenia Space in Switzerland in optical communications and space optoelectronics instruments covering engineering, design analysis and assembly integration & tests for opto-mechanics, electronics and photonics. The product consortium involves several partners in Italy, France, Canada, Switzerland and UK. Optel-C is optimized for constellations, robust by design and based on proven terrestrial/submarine technology for communications photonics and mechatronics subsystems as well as on 1550 nm Commercial Off-The-Shelf solutions. Complexity has been reduced to the minimum required to meet performance objectives, to optimize the price point of the product, and to achieve unit production throughput. The product provides a flexible accommodation and easy integration, thus accelerating the satellite assembly time, a key consideration for large scale constellations. The industrial challenge of such a high volume and high throughput production will benefit from the broad experience and proven capabilities of Thales in similar types of volume manufacturing in the defence domain and will be implemented in its Glasgow plant.
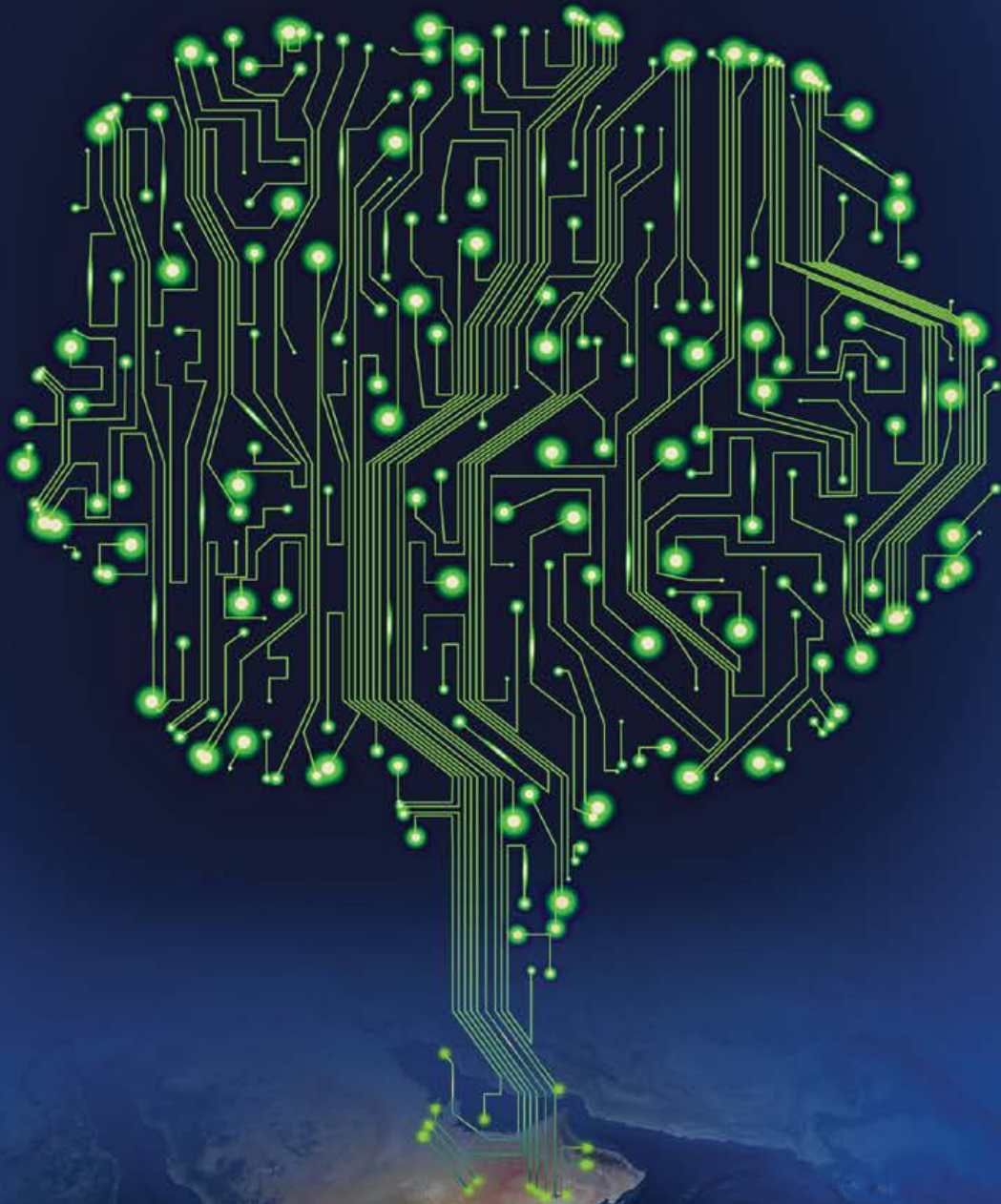
Mobile Technology: A Societal Boon

Omantel, way before COVID-19 impacted economies, was pushing the boundaries of frontier technologies and playing a major role in the national digital transformation strategy that aims to create a sustainable knowledge-based society...

Let's time travel. Not too much into the past. Maybe to just around two decades ago. Now let's recollect how we functioned then – what were the ways in which we transacted, studied, worked, enjoyed our leisure, or ran our businesses and homes. It was during this time that mobile technology began percolating into the lives of common people, drop by drop. The 2G in mobile telephony was the first drop which created ripples that came to change every aspect of humankind's future evolution. Mobile phones combined with the power of internet created a potent mix we cannot imagine our lives without. Mobile technology had existed, but it is its application in daily life that has really earned it recognition among the masses. Cynicism, as they say, always precedes first-hand experience.

Now, back to 2021. We are already in the age of 5G, surrounded by mobile technology - using it from the moment we wake up each morning till the time we retire for the night. We have witnessed three generations of mobile technology in less than two decades.

We carry our work, education, entertainment with us – it's mobile, and no longer restricted to offices, classrooms, halls or shops. Mobile technology has liberated society by adding flexibility, convenience and providing round the clock access to whatever we need.

We are no longer time-bound, geographically restricted, inhibited by distance, or worried about slow response time. Mobile technology has changed society for good, and how!

It has touched the lives not just of urban dwellers, but in hinterlands too, with its application being as versatile as the needs of a society itself. A 2020 survey shows that more than 95% of the Sultanate's population has access to the internet, owns mobile phones, uses social media, computers, and smart devices. This is proof enough of how mobile technology has become a way of life, since Omantel introduced it for the first time, developed it and upgraded it to reach new levels to make life easier to everyone especially during the pandemic.

The power is all in our palms with devices that are becoming more intelligent by the day. While one may argue the downside of such technologies like say, screen addiction, but the benefits far outweigh the perceived disadvantages. This is evident from the fact that, with the emergence of new techs, the ICT world also offers a shield of protection, gives users the power to use their discretion and protect their online data.

The world has shrunk, thanks to mobile technology. We do not need fixed lines to connect any more. Communication is instant and quick. Speed offered by mobile technology has brought people and societies together, created a generation that is highly aware of global developments, sensitised businesses to
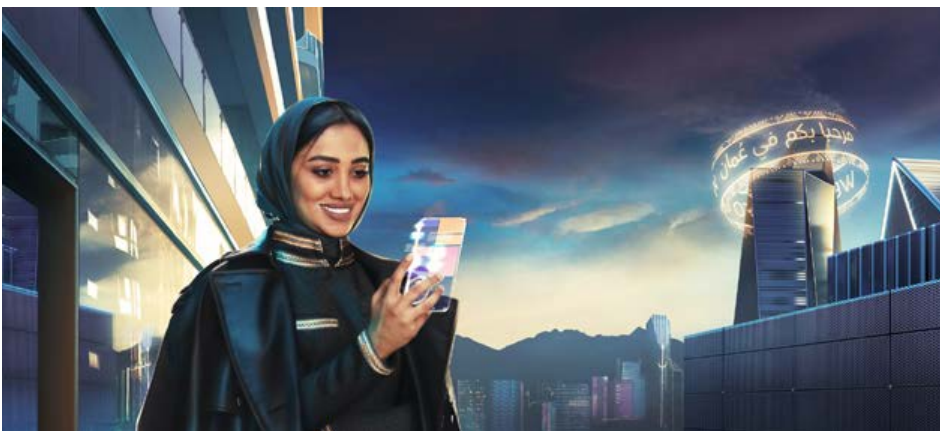
the needs of their clients and helped them respond quicker and better, improved government administration, revolutionised banking and the way we handle money, brought education to our homes, notched up defence and security capabilities of nations, made navigation easier. These examples just touch the surface. If we were to elaborate, the list would be an unending one.

Global case studies point towards a three-time increase in productivity when technologies are deployed in combinations of AI, machine learning, edge computing, quantum computing, blockchain, big data analytics, and 5G.

The COVID-19 pandemic has truly highlighted the real potential of mobile technology, which until then although used, hadn't received it due recognition – more so because its application has become so deeply embedded in our lives that we fail to identify it a separate power. It is now an extension of ourselves.

Virtual healthcare with robotic surgeries, distance learning, online shopping, remote working, cinema experience in our living rooms, quick and efficient business operations, quick disaster mitigation using GPS, more stringent HSSE protocols, are all the result of mobile technology.

Omantel, way before COVID-19 impacted economies, was pushing the boundaries of frontier technologies and playing a major role in the national digital transformation strategy that aims to create a sustainable knowledge-based society, raise the productivity and efficiency of the public and private sectors by building national capacities, strengthen the infrastructure, develop the IT industry and improve the quality and execution of government services.

COVID-19 unexpectedly impacted business processes, personal communications, access to data, learning, transportation, retail and much more. Technologies such as cloud, virtual conferencing, IoT and 5G which were in their pilot stages, became mainstream, nearly overnight. As the shift arrived, businesses across sectors were required to realign their strategies and operations. Consumers are acknowledging the benefits as they are translating into profits, growth and innovation.

Omantel mobile App acts as the Company's virtual outlet enabling customers not only to view and pay their services but rather to subscribe to new services, amend their existing plans, request the delivery of Omantel products to their doorsteps. Omantel Mobile App played a significant role in serving Omantel customers since the start of COVID-19 especially with the introduction of the built-in AI enabled chatbot "Noor".

On the other hand, Omantel has responded rapidly to new emerging market demands, and has outperformed many players by shrinking the time an ICT innovation takes to reach its practical application for individuals as well as enterprises in the Sultanate.

Every vital sector that drives economies is evolving and embracing mobile technology in its latest avatar, and Omantel is committed to make it happen.

Digital Platform of Tomorrow

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.

globalzone.bh

WHOLESALE NEWS

EE Brings EU Roaming Charges Back

UK mobile operator EE announced plans to charge customers more for using their plans in Europe from January 2022, making it the first operator to reintroduce roaming fees following the country's trade deal with the European Union (EU). BT-owned EE said those joining or upgrading with the operator from 7 July 2021 would be on the hook for a £2 extra charge to use their tariff allowances in 47 EU destinations from January 2022. In 2017, legislation was introduced across the bloc putting an end to operators charging customers extra to use their tariff plans in EU countries. Those rules notably no longer apply to EE, Vodafone UK, 3 UK and O2, following Brexit. However, following the signing of a trade deal between the UK and EU in January, all four operators stated they had no plans to reintroduce roaming fees. EE explained its change of course would "support investment into our UK based customer service and leading UK network". Its announcement comes after it was rumored O2 was going to be the first to pull the trigger on EU roaming charges. However, it only introduced a fair use data cap of 25GB a month. Kester Mann, director consumer and connectivity at CCS Insight said the reintroduction of roaming charges reflected a failure "to stem the long-term decline in average consumer spend amid heavy investment in networks". However, he added a £2 per day charge was a "far cry from the bad old days", even though the move would not be well received by customers. "EE has handed on a plate a clear marketing opportunity to rivals. It would have had to carefully calculate that the upside outweighs any potential reputational damage," he added.

Vodafone UK Follows EE By Bringing Roaming Fees Back

Vodafone UK became the latest operator in the country to reintroduce roaming fees for users travelling in Europe, following rival EE, with new and upgrading customers on the hook for extra charges from 2022. In a blog, Vodafone UK CEO Ahmed Essam explained it was adopting a new approach to roaming across its Europe Zone, with subscribers facing at least a £1 daily charge. Terms and conditions on roaming will change from 11 August, although the charges will not be applied until 6 January 2022. Affected customers have the option of paying £2 a day to use their tariffs in Europe, or £1 per day if bought as part of weekly or fortnightly bundles. Its fair use policy of 25GB of roaming data per month will also apply. Existing customers will not be affected while they remain on their current price plan, added Essam. Roaming will also remain inclusive in the Republic of Ireland for all customers. Vodafone becomes the second UK operator after EE to backtrack on a pledge made in January not to reintroduce roaming fees in Europe following the country's exit from the European Union. EE stated in June it would charge new or upgrading customers £2 to use their tariff allowances in 47 EU destinations, also from January 2022. Essam said Vodafone changed "the way we offering roaming" to enable it to continue to invest in its networks, pointing to openRAN, its shared rural initiative, 5G standalone fiber broadband and its converged offerings. Tech, media and telco analyst at PP Foresight Paolo Pescatore believes the "harsh realities of Brexit are becoming more evident" and it was the "gift that keeps on taking". "Wholesale roaming rates will change given the UK's exit and this in turn will inevitably drive higher prices without EU protection. It's a pretty easy decision for UK telcos," he added. O2 UK and 3 UK have yet to reintroduce roaming fees, beyond data fair use limits.

CTU Considering Cap on Wholesale Mobile Data Prices

The Czech Telecommunication Office (CTU) is reportedly considering plans to cap wholesale mobile data charges levied by the country's three main network operators – O2 Czech Republic, T-Mobile and Vodafone – on Czech virtual operators in a bid to drive competition. Business daily Hospodarske Noviny cites CTU chairwoman Hana Tovarkova as saying: 'I believe we will propose a ceiling for wholesale prices at which the three current large operators sell to virtual operators', adding that if implemented, the proposed regulations are likely to remain in place 'for three to four years' depending on the outcome of a sector review that is due to be completed by mid-September 2021.The paper notes that the European Commission holds T-Mobile, O2 and the country's infrastructure operator CETIN, partly responsible and has accused them of certain breaches to EU antitrust regulations. MVNOs in the Republic have complained that T-Mobile's wholesale data charge is '40% more expensive than the price it offers itself'. The CTU's announcement comes a few weeks before elections take place in the country with the government seemingly hoping to make good on earlier promises to cut mobile charges.

CTU Considering Cap on Wholesale Mobile Data Prices

Communications Regulatory Authority | State of Qatar هيئـة تنظيـم الاتصـالات | دولـة قطـر

The Communications Regulatory Authority (CRA) issued an Order to direct Ooredoo Qatar and Vodafone Qatar to implement specific wholesale charges for 2021, 2022 and 2023. Wholesale charges are the price that telecom service providers pay to each other to interconnect and access their networks e.g., termination services, interconnection link services, transmission link services, and duct products. The CRA issued the Order with the aim of maintaining a competitive, fair, and developing telecom sector in Qatar. Under this Order, the telecom service providers started implementing the set wholesale charges from June 1, 2021. The CRA's Order will remain in effect until the CRA issues another Order amending the wholesale charges. The new charges supersede the previous ones and are applicable for telecom service providers' Reference Offers approved by the CRA.

"The CRA was keen that the prices for wholesale services approved by the CRA are in line with international regulatory best practices to ensure the provision of advanced and reliable telecom services across Qatar and building a competitive and innovative Qatari telecom sector that attracts investment. For fixed termination, prices will remain stable for 2021, 2022 and 2023 while mobile termination prices will decrease by 11%, 12% and 13% respectively in the same period," said His Excellency Mohammed Ali Al-Mannai, President of CRA.

Windstream Wholesale to Expand Transport Network

Windstream Wholesale has commenced the initial work to add fiber to three routes on its transport network. The routes in question are: New York City to Albany to Montreal; Jacksonville to Savannah to Myrtle Beach to Raleigh; and Tulsa to Muskogee to Little Rock. According to the telco's press release, the project will pull high-count fibers through existing conduits on some spans but involve the construction new paths on other segments. Windstream notes: 'Diverse routing options protect networks against outages, while delivering coast-to-coast transport.'
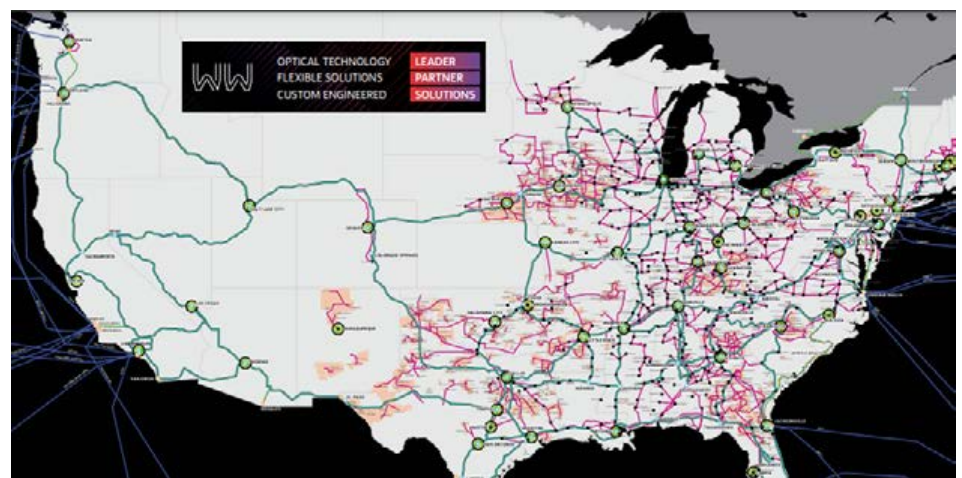
Lighting up the Future

Building a Fully Connected, Intelligent World

HUAWEI

Transparency as a Building Block for Cyber Resilience

The various national transformation programs of Middle East countries certainly have one thing in common—they envision diversified, post-oil economies empowered by digitalization. The advanced technology that underpins the Fourth Industrial revolution is key to realizing this socio-economic progress. Analysts predict that spending on digital transformation in the wider META region is set to accelerate post-pandemic, increasing from 25% of total IT spending in 2020 to 37% in 2024.

> *We at Huawei are committed to building this openness and transparency, as demonstrated most recently in our expanding network of global Cyber Security and Privacy Protection Transparency Centres. On June 9, Huawei opened the largest of such transparency centers in Dongguan, China, which joins a network of similar facilities in the UAE, the UK, Canada, Germany, Italy, and Belgium.*

However, technology needs to be built on a solid cybersecurity foundation. The risks posed by the security gaps that plague some of the hardware and software solutions in use today are all too clear. In one report by Cybersecurity Ventures, global cybercrime is predicted to inflict damages totaling a staggering $6 trillion annually by 2021. With increasing cyberattacks, all industries are taking cybersecurity more seriously. In the public sector, new laws, regulations, and standards are being introduced on a regular basis. In the past two years alone, more than 180 cybersecurity laws have been passed in 151 countries.

This is incredible progress. Yet to secure our digital future from these threats, we will require new levels of collaboration and transparency.

Charles Yang
President
Huawei Middle East

HUAWEI

From governance standards to verification, we need to combine strengths and build our collective capabilities. This includes knowledge-sharing projects like the Security Baselines we released by the time of opening our global Cyber Security and Privacy Protection Transparency Centre, and the 5G Cyber Security Knowledge Base led by the GSMA.

There is an increasing desire from many stakeholders in the region to work together to build this heightened level of collaboration. For example, national cybersecurity strategies drawn up by governments now incorporate contributions from security experts in the private sector, technology companies, and academia, in addition to policymakers. As just one example, Huawei has been invited to sit on numerous national and regional panels, action groups, and think tanks to jointly contribute to various cybersecurity initiatives. We are eager to support and encourage such initiatives.

This level of collaboration relies on transparency. Enterprises and governments must believe in the integrity of the technologies that they are deploying. We at Huawei are committed to building this openness and transparency, as demonstrated most recently in our expanding network of global Cyber Security and Privacy Protection Transparency Centres. On June 9, Huawei opened the largest of such transparency centers in Dongguan, China, which joins a network of similar facilities in the UAE, the UK, Canada, Germany, Italy, and Belgium.

The Transparency Centre provides a platform for industry stakeholders to face the challenges of tomorrow and provide a platform for industry stakeholders to share expertise in cyber governance and work on technical solutions together. The center is designed to demonstrate solutions and share experience, facilitate communication and joint innovation, and support security testing and verification. Stakeholders across the ICT value chain—regulators, independent third-party testing organizations, standards organizations, as well as Huawei customers, partners, and suppliers—are encouraged to carry out in-depth exchanges to improve the entire industry's security capabilities.

Of course, these cybersecurity assurance systems are not developed in a vacuum. They're the result of regular engagement and joint research and innovation with our customers, partners, regulators, and standards organizations around the world. That's what this Cyber Security Transparency Centre is all about.

It is through such ventures that we realize governments and industry organizations must work together on unified cybersecurity standards to build transparency across society. These standards should be technology-neutral and apply equally to all companies and networks. In the telecoms sector, for example, industry organizations like GSMA and 3GPP have been working closely with industry stakeholders to promote NESAS Security Assurance Specifications and independent certifications. These baselines have seen wide acceptance, and we're confident that they will play an important role in the development and verification of secure networks.

Despite these achievements, we still have a lot of work to do. Cybersecurity is a complex, evolving challenge. In some cases, we still lack a standards-based, coordinated approach across the industry, especially when it comes to governance, technical capabilities, certification, and collaboration.

After setting standards in place, we believe the next step is to establish an independent verification mechanism to enforce these standards. The results of such procedures should then be made public so that organizations can make better purchasing decisions based on their security requirements. In parallel, feedback from third parties and security experts will benefit everyone. They can point out gaps and areas of improvement, allowing technology companies to strengthen their hardware and software products.

We need to build these capabilities together. No organization can tackle them all. From governance standards to verification, we need to combine strengths and build our collective capabilities. This includes knowledge-sharing projects like the Security Baselines we released by the time of opening our global Cyber Security and Privacy Protection Transparency Centre, and the 5G Cyber Security Knowledge Base led by the GSMA. The more knowledge and best practices we share, the more effectively we can strengthen cybersecurity as a community. Ultimately, this will be realized by forming tighter coalitions. That means governments, standards bodies, and technology providers working to develop a unified understanding of cybersecurity challenges. This must be an international effort. With these shared goals and aligned responsibilities, we can build a trustworthy digital environment that meets the challenges of today and tomorrow.

TECHNOLOGY NEWS

Korea Targets 2028 for 6G Launch

South Korea targeted deployment of the world's first commercial 6G network in 2028, with the government earmarking KRW220 billion ($193.7 million) to develop the core standards and technologies over five years, Aju Business Daily reported. Science and ICT Minister Lim Hye-sook reportedly stated the nation should take a lead because 6G will be a foundation for digital innovation. Aju Business Daily reported the ministry outlined a 6G R&D action plan during a strategy meeting involving the government, industry leaders and experts. It recently agreed a cooperation with the US on 6G standards and plans for similar partnerships with Finland and China. A major objective of the project is to link satellites and terrestrial networks into a single network. Domestic vendor Samsung previously demonstrated an end-to-end 140GHz wireless link using beamforming in terahertz spectrum as part

of its 6G research. Formal specifications for 6G aren't expected until around 2026, but momentum accelerated in recent months as major players look to introduce commercial service around 2030.

Organizations in Japan and Finland agreed to collaborate on relevant standards earlier this month, while China's government and industry experts outlined a plan in March to advance 6G between 2021 and 2025.

Optus Demos NR-DC Technology

Australian mobile network operator (MNO) Optus has completed a demonstration showcasing the use of New Radio Dual Connectivity (NR-DC) technology to aggregate its mid-band 3500MHz spectrum assets with its recently acquired mmWave 26GHz spectrum. With the demonstration having been conducted in Sydney and carried out in partnership with Ericsson and MediaTek, the MNO said it had shown the benefits of using NR-DC to extend the mmWave 5G coverage over a greater distance. Using MediaTek's M80 test platform and Ericsson's RAN Compute (basebands) and 5G radios, the demo highlighted the benefits of

utilizing both spectrum bands simultaneously, with average and peak 5G speeds expected to increase significantly. Optus has said it expects to roll out this new capability across its 5G network 'later this year' as commercial mmWave devices begin to hit the market. Commenting, Lambo Kanagaratnam, Optus Managing Director Networks, said: 'It's important to us that we look at innovative ways to amplify our 5G technology assets so that our customers receive the best and fastest 5G network possible. The demonstration of NR Dual connectivity aggregation is another significant technology milestone that will help us meet this goal.'

Jazz Launches Massive MIMO Upgrade

Jazz, Pakistan's largest cellco by subscribers, has deployed a commercial Massive MIMO upgrade on its 4G network, enabling the operator provide better coverage, improved data transmission speeds and better service quality. Jazz noted that an 'aggressive' rollout campaign is under way for the technology, and that

the upgraded system had achieved peak throughput of 960Mbps across eight handsets via a single Massive MIMO cell site. Jazz CTO Khalid Shehzad was quoted as saying of the rollout: 'We see that our customers are increasingly using high-bandwidth applications which resultantly puts pressure on existing network

capabilities. Massive MIMO essentially allows us the freedom to provide more data at greater speeds, enabling our customers to use the enhanced services on their existing 4G devices. Network speeds will be faster than ever, which will significantly improve the end-user experience.'

DCMS Unveils Plans to Trial Broadband Rollout Via UK's Water Pipes

Fiber broadband cables could be fed through the UK's water pipes as part of the government's plan to speed up the nationwide rollout of superfast broadband and mobile coverage in rural areas. Under the three-year 'Fiber in Water' program – which is scheduled to conclude in March 2024 – the government will invest GBP4 million (USD5.5 million) in the project, which will also look to test solutions that reduce the amount of water lost every day due to leaks. Any solution used to trial fiber-optic cables in the water mains will be approved by the Drinking Water Inspectorate (DWI) before being used in a real world setting, the DCMS noted, though highlighted the fact that fiber has already been deployed

in water pipes in other countries such as Spain. A competition has been launched to select a consortium, which could comprise telecoms companies, utility providers and engineering companies, to lead and deliver the project. As part of this, a region or multiple regions of the country will be selected to host the trial, and a deadline for applications of 4 October 2021 has been set. Meanwhile, the government body has also confirmed that it is considering giving broadband firms access to more than a million kilometers of underground utility ducts to boost the rollout of next-generation broadband – including electricity, gas and sewer networks – and will soon respond to a consultation

on changing regulations to make infrastructure sharing easier. Commenting, Stephen Unger, Commissioner at the Geospatial Commission, said: 'Fiber is the future of digital communications. Its unmatched performance and reliability can seamlessly connect our society together. But it took over a hundred years to build the legacy copper network, so replacing it with fiber won't be easy … The best way to meet this challenge is to use existing infrastructure, such as the water pipes that already reach every home and business in the country. Our ambition must be for reliable broadband to become as easy to access tomorrow as drinking water is today.'

Google Develops Custom Chip for Upcoming Pixels

Google revealed its upcoming Pixel 6 smartphones would be powered by in-house chip Tensor, a move it claimed was a response to computing limitations of third-party options. The software giant stated AI and machine learning features enabled by the system-on-chip (SoC) silicon would "unlock specific experiences" on its handsets, pointing to intended improvements in speech

recognition and photographic abilities. Its current flagship series, the Pixel 5, uses a Qualcomm chipset. "The team that designed our silicon wanted to make Pixel even more capable," Google noted in its corporate blog. "With Tensor we thought about every piece of the chip and customized it to run Google's computational photography models. For users, this means entirely new features, plus improvements to existing ones." Alongside enabling specific consumer features, Google claimed the security core on Tensor combined with the device's integrated Titan M2 chip would give the Pixel 6 handsets the most layers of hardware security in any phone on the market. In a social media post Google CEO Sundar Pichai said the chip had been four years in development, adding "Tensor builds off of our two decades of computing experience and it's our biggest innovation in Pixel to date". Other details released on the forthcoming flagship handsets include upgrades to its user interface and revamped camera design compared with its predecessor, which features a black strip across the back of the devices housing the lenses and flash. The company plans to launch the Pixel 6 and Pixel 6 Pro devices later this year.

1&1 And Rakuten to Build Fully Virtualized Mobile Network Based on OpenRan

1&1 has announced that it is entering into a long-term partnership with Rakuten to build a fully virtualized mobile network based on OpenRAN technology, as it seeks to become Germany's fourth wireless network operator. With this, 1&1 is moving away from conventional proprietary networks, which are often provided overall by just one network supplier, towards a completely

cloud-based multi-vendor network architecture. Rakuten will take over the build of the active network equipment and will also be responsible for the overall performance of the 1&1 mobile network. 1&1 will have access to the Rakuten Communications Platform (RCP) stack of access, core, cloud and operations solutions as well as to its partner network. In this context,

Rakuten will also provide its specially developed orchestration software so that the 1&1 network can be operated in a highly automated manner. Construction of the 1&1 mobile network will start in the fourth quarter of 2021. Notably, following the signing

of a national roaming agreement with Telefonica in May 2021, 1&1 will be able to offer its customers nationwide coverage during the construction phase of its new network. 'With Rakuten, we have the world's only OpenRAN expert on our side who really has extensive practical experience with this new technology. Rakuten ideally complements our know-how in telecommunications networks, data centers and cloud applications. Together we are building a high-performance mobile network that has extensive automation and agility to fully exploit the potential of 5G,' said Ralph Dommermuth, CEO of 1&1, adding: 'Through complete virtualization and the use of standard hardware, we can flexibly combine the best products. This will make us a manufacturer-independent innovation driver in the German and European mobile market.'

Taiwan Mobile and Nokia Achieve 5G Carrier Aggregation Call

Taiwan Mobile (TWM) and Nokia claim to have achieved the world's first New Radio Carrier Aggregation (NR CA) call by combining spectrum in the 700MHz (n28) and 3.5GHz (n78) bands. In a press release regarding the development, the Finnish vendor noted that the trial took place in a 5G standalone (SA) network environment and was performed using its AirScale 5G SA architecture in TWM's commercial 5G network; MediaTek supported the trial by providing equipment to verify network performance. According to Nokia, the combination of the 700MHz and 3.5GHz spectrum bands offers enhanced capacity and coverage supporting a range of 5G deployment scenarios, including indoor and enhanced outdoor coverage. Commenting, Tom Koh, Senior Vice President and Chief Technology Officer, Technology Group, Taiwan Mobile, said:

'This trial is an important milestone as we execute our 5G strategy and deliver best-in-class 5G services to our subscribers. Combining SA with NR CA, our 5G user experience is raised to the next level while

the utilization of our spectrum assets and 5G networks are maximized. We are pleased with our partnership with Nokia as we continue to advance deployment and build a thriving 5G ecosystem.'

Orange Trials 26GHz 5G Industrial Use Cases

Orange extended a 5G test program in the 26GHz band started in 2019 to include a focus on trialing the frequency's capabilities for industrial use cases in France. In partnership with Nokia, rail company SNCF and academic facility Institut Mines – Telecom (MIT), the operator unveiled the creation of 5G Living Labs which will experiment with the technology for maintenance operations at the railway station in the city of Rennes. The initiative will be open to third parties

"to enrich the use cases" along with local digital programmes, with the focus on activities including creating fresh approaches to energy consumption, novel designs of radio environments and testing cybersecurity. As part of the move, which has received funding from the government, Orange will deliver network services while Nokia will bring technological connectivity offerings, including for private networks. MIT will focus on data hosting using edge computing. Orange highlighted benefits

from the frequency band for industries include high speeds for downloading operating data, remote logistics control through real-time connectivity, and real-time efficiency analysis. Michael Trabbia, Orange CTIO, described the 26GHz band as "particularly suitable" for very localized deployments in areas requiring very high capacity, such as industrial sites or places of increased traffic.

Verizon, Samsung Complete Fully Virtualized 5G Data Session Using C-Band Spectrum

Verizon Wireless and Samsung Electronics have completed an end-to-end fully virtualized 5G data session over C-band (3.7GHz-3.98GHz) spectrum in a live network environment. The new milestone was reached as Verizon prepares for its upcoming C-band '5G Ultra Wideband' expansion. The trials were conducted over Verizon's network in Texas, Connecticut and Massachusetts using C-band Special

Temporary Authority (STA) permits granted by the Federal Communications Commission (FCC). In terms of technology, the tests used Samsung's fully virtualized RAN (vRAN) solution built on its own software stack and C-band 64T64R Massive MIMO radio, in coordination with Verizon's virtualized core. Verizon notes that the trials 'achieved speeds commensurate with traditional hardware-

based equipment'. Going forward, Verizon says it expects to start using its C-band spectrum in the first quarter of 2022, with the new 5G network initially going live in 46 markets and serving around 100 million people. By 2023, coverage is expected to increase to more than 175 million people, ultimately rising to 250 million people by 2024, when the remaining C-band spectrum is cleared.

Intel to Manufacture Qualcomm Chips

Qualcomm became one of the first two customers for Intel's foundry business, as the latter's CEO Pat Gelsinger pledged to aggressively add manufacturing capacity to support further deals. The tie-up was announced at an Intel company update covering its latest technology and product roadmap to 2025. Although revealing Qualcomm as one of its first Intel Foundry Services (IFS) customers, it offered limited details on the specifics of the deal and did not include timescales or volumes. Gelsinger stated "IFS is off to the races". "Both Intel and Qualcomm believe strongly in the advanced development of mobile computer platforms and ushering in a new era in semiconductors." Alongside

the Qualcomm deal, Gelsinger announced Amazon Web Services had signed-up with IFS for its packaging systems. The agreements are the first unveiled since the launch of IFS in March, as part of Intel's IDM2.0 strategy. Intel initially announced it would spend $20 billion on facilities in the US in an attempt to take advantage of growing demand for chip manufacturing capacity. It comes as authorities in the country are keen to widen supply chain options outside of Asia. Gelsinger reiterated plans to announce new manufacturing sites in Europe and the US by the end of the year: "These will be large investments which will support mega fabs and is how we will help the world get to

a more balanced, sustainable and secure supply chain." He added interest from potential customers in IFS had been strong with 100 leads in the pipeline across a range of industries.

Industry Trio Hail 5G Latency, Battery Milestone

Ericsson, Telia and Qualcomm teamed to test new standalone (SA) 5G capabilities on the operator's network, designed to significantly reduce latency and battery consumption for smartphone and enterprise users. The trio have joined forces to develop inactive state of Radio Resource Control (RRC Inactive), a feature they stated reduces the amount of signaling required during state transitions, which has the knock-on effect of lowering both latency and battery consumption. These, they believe, are crucial requirements for many IoT and 5G use

cases, including critical control of remote devices, enhanced mobile broadband and smart transport. To implement RRC Inactive, Ericsson used its software and SA 5G nodes with a test device powered by the Snapdragon X60 Modem-RF system. The companies explained they were able to demonstrate successful transition between "a connected state and inactive state", without the device falling back to idle. Transitioning to a new inactive state reduces the amount of signaling required during state transition, which lowered latency for the end user by up to

three-times. Putting this into real world use cases, the shortened lag will have "a big impact" in experience for applications including cloud and VR gaming. The feature enabled battery savings of up to 30 per cent when activating RRC Inactive, with screen and associated electronics the biggest battery drainers in a mobile device. Jenny Lindqvist, head of Ericsson northern and central Europe, said the milestone was "taking 5G technology to the next level, and RRC will continue to play a critical role for 5G networks for years to come".

Development of 700 MHz 5G Base Stations Drives 5G Investment in China

The development of 700 MHz 5G base stations will drive 5G investment in China in the second half of 2021. Chinese telecom operators are progressing rapidly with the construction of 700 MHz 5G networks. 400,000 700 MHz 5G base stations are currently planned for deployment during the second half of 2021, making this the key driver of 5G investment in China. 700 MHz networks offer mobile operators an attractive combination of wide coverage combined with low propagation loss, which is ideal for 5G. The vast majority of the network infrastructure equipment is likely to be sourced from Chinese vendors, of which Huawei is the key contributor. China is already among the world leaders for the speed at which it has rolled out its domestic 5G networks. According to China's Ministry of Industry and Information Technology (MIIT), 847,000 5G base stations have been deployed in China, as of June 30, 2021. During the recent MWC 2021, Bi Qi, chief expert of China Telecom, announced that the total number of 5G base stations in China is expected to reach 1.7 million by the end of 2021, meaning Chinese operators will double the number of 5G base stations deployments over the next 6 months. Commenting on China Telecom's announcement, an MIIT spokesperson remarked "...this sounds a quite aggressive number". However, several recent developments in China, notably the partnership between China Mobile and China Broadcasting Networks, announced in January 2021, indicate that the target is realistic. In June 2019, the Chinese Government granted a 5G license for the 700 MHz frequency to China Broadcasting Network (CBN). Launched in October 2020, the company is China's newest mobile operator and the only network authorized to operate nationwide, providing cable TV, mobile, fixed broadband and satellite communication services. In January 2021, CBN and China Mobile announced a strategic cooperation agreement to jointly develop a 700 MHz 5G mobile network and at a China Mobile press conference in March, it was announced that the partners plan to complete the construction of 400,000 700 MHz 5G base stations by the end of 2021. The two carriers agreed to share the investment costs for network construction, expansion, and renovation equally. In addition, China Mobile is providing access to its existing 2.6 GHz 5G network to CBN in return for access fees. Work is progressing rapidly and the two companies will in total purchase more than 480,000 700 MHz 5G base stations this year. According to the bidding result just announced on July 18, Huawei has won around 60% share of the total and this procurement of low frequency 5G base stations will bring major benefits to Huawei. CBN and China Mobile also jointly released the device requirements for 700 MHz 5G in March 2021. All 5G smartphone models launched after October 1, 2021, should support the 700 MHz band and voice over NR. CBN stated that 400,000 5G base stations will be deployed in 2021 and nationwide coverage will be achieved in two years. According to the recent study "China's 5G Base Stations to Double in 6 Months?" by Strategy Analytics, "So far, most 5G base stations in China are deployed in the 2.6 GHz or 3.5 GHz band. The 480,000 base stations in 700 MHz will be a significant boost to the 5G infrastructure market and will also be a catalyst for the 5G development in China. "The award of CBN's 5G license has led to increasing interest in the 700 MHz frequency from China's other three telecom carriers, China Mobile, China Unicom and China Telecom, each of which holds 5G licenses for 2.6 GHz and 4.9 GHz. Areas where 700 MHz offers significant advantages include rural and remote coverage, and industrial IoT. The 700 MHz band has the dual advantages of a wide coverage coupled with low propagation loss, making it ideal for the provision of universal coverage in rural and remote areas. The number of base stations required for 700 MHz is far fewer than with other frequencies, reducing network CAPEX and OPEX. 700 MHz 5G networks only require 20% of the base stations need for a 2.6 GHz network, 16% of the number required for a 3.5 GHz network, and only 11% of the base stations needed for a 4.9 GHz 5G network. "700 MHz could be used to build a nationwide low-frequency 5G shared access network for rural areas and could be shared by the four telecoms firms to avoid duplication of construction", according to Zhang Yunyong, General Manager of China Unicom's product center and a member of the National Committee of the Chinese People's Political Consultative Conference. Guang Yang from Strategy Analytics believes that 700 MHz 5G will enable 5G network extensions to reach broader areas more cost-effectively. In addition, the good radio penetration of 700 MHz band can effectively enhance 5G indoor coverage. Both these characteristics help operators improve user experience and grow their customer base. This means that 700 MHz 5G networks have a big potential to stimulate the development of 5G B2B and industrial IoT applications. CBN has a strategic investment from a subsidiary of the State Grid Corporation of China (State Grid), one of the pioneers of 5G industrial applications in China. State Grid has already deployed some large scale 5G smart power grid applications. According to Guang Yang "In the future, CBN could leverage the partnership with the State Grid to explore 5G industrial business opportunities based on the superior propagation characteristics of the 700 MHz band".

TPG Telecom and Samsung to Conduct 5G vRAN Trial in 26GHz Band

Samsung Electronics has announced that it will conduct what it claims is Australia's first 5G virtualized RAN (vRAN) trial on the 26GHz band in partnership with TPG Telecom (Vodafone Australia), using integrated mmWave solution for mobile and fixed-wireless services. Announcing the development, Samsung said it will place its vRAN solution in TPG Telecom's new Innovation Lab in Glebe, New South Wales, while the vendor's latest 5G mmWave product – Compact Macro, which brings together a baseband, radio and antenna in a single form-factor – will be deployed in the wider Glebe area. Commenting, Inaki

Berroeta, CEO at TPG Telecom, said: 'We are very pleased to partner with Samsung as part of our new Innovation Lab to drive product and technology innovation by trialing virtualization … Deploying mmWave spectrum on our 5G network together with vRAN architecture will allow us to develop exciting 5G use cases for industry verticals and enable the delivery of even faster speeds and greater capacity for our customers.' Woojune Kim, Executive Vice President and Head of Global Sales & Marketing, Networks Business at Samsung Electronics, added: 'Samsung is excited to begin this trial with TPG Telecom powered

by our innovative 5G vRAN solution and latest integrated 26GHz mmWave product, which will be the first in Australia … Through a combination of our powerful 5G solutions and ongoing efforts in 5G development, Samsung looks forward to helping TPG Telecom gain the full benefits of 5G to reshape the value of mobile experiences for users and enterprises.' As previously reported by CommsUpdate, in April 2021 TPG Telecom was announced as one of the winnings bidders in an auction for 26GHz frequencies, with agreeing to pay AUD108 million (USD81 million) for its new spectrum.

Openreach and Nokia Partner on Tests of '25G PON' Technology

Openreach, the infrastructure unit of British fixed line incumbent BT, has partnered with Finnish vendor Nokia to conduct the UK's first tests of '25G PON' technology, which is reportedly capable of delivering downlink speeds of up to 25Gbps over a single

optical fiber. The pair note that the technology can run on the same underlying infrastructure that Openreach is already building across the UK, and suggest that, with further field trials to test compatibility with existing technologies, the companies hope to be able to develop an even wider range of services and speeds. Having already tested the 25G PON technology at Openreach's Adastral Park lab in Ipswich, the two companies are now said to be planning to launch a field trial by the end of 2021. Commenting, Peter Bell, Director, Network Technology at Openreach said: 'As the country's largest digital infrastructure provider, it's crucial that we continue to plan, innovate and evolve our network, to make sure we have the capacity and capabilities that the UK needs in the future … The Full Fiber network we're building today is going to be the platform for the UK's economic, social and environmental prosperity, and these trials prove that we can keep upgrading the speeds and services our customers experience over that network for decades to come.'

DT, Ericsson, Samsung Demonstrate 5G Network Slicing on Commercial Device

Deutsche Telekom (DT), Ericsson and Samsung Electronics have announced the implementation of multi-vendor 5G end-to-end (E2E) network slicing with a commercial 5G device. The successful trial implementation, conducted on Ericsson 5G Standalone (SA) infrastructure and a Samsung Galaxy S21 5G device tethered to a VR headset, paves the way for slice access on 5G devices. For the cloud VR streaming game use case, two independent E2E network slices were created: a default

mobile broadband slice and the cloud VR gaming-optimized slice. The 5G E2E network slicing solution is designed and configured to enable higher throughput and stable low latency to the gaming slice, while at the same time providing resource isolation between the two slices and securing slice aware Quality of Service (QoS) differentiation. According to DT, the trial demonstrated a superior experience on the gaming slice even under congested network conditions. '5G SA network

slicing sets a foundation for the creation of new service offerings to consumer and enterprise customers,' stated Claudia Nemat, DT Board Member of Technology and Innovation, adding: 'As an experienced focused company, it is essential that we demonstrate the value of 5G slicing for our customers lives. As a world's first, our unique collaboration with Ericsson and Samsung to provide slices to commercial devices shines a light on how we can bring these benefits to our customers.'

All Set for Growth: Fintech on Brink of Rapid Expansion

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The fintech industry in the Gulf Cooperation Council (GCC) region looks well placed to enjoy a period of substantial growth. Despite widespread smartphone penetration, the unbanked population is still relatively high. Regional governments have spotted the opportunity and have introduced regulation to advance the fintech market. International companies have also taken note, as the recent minority stake purchase in stc pay by Western Union demonstrates. This news is likely to stimulate further investment and accelerate the development of the market. However, what that market will look like exactly is still open to debate.

The conditions for fintech growth in the GCC region are ripe. Smartphone penetration is at 96%, well above the global average of 58%. However, fintech has not developed at a similar pace. The global share of mobile payments in the GCC is growing, but still far behind other regions (such as Asia Pacific).

Even though the GCC is catching up with developed markets in terms of financial inclusion (around 22% of the population in the GCC is unbanked, compared to around 60% in North Africa), many have now started to turn to smartphone transactions. This was particularly evident during the COVID-19 crisis, where cash transactions were not always convenient or possible. In a recent PwC survey of more than 1,000 respondents in the United Arab Emirates, Saudi Arabia and Egypt, 53% said they had used smartphone payments for online deliveries during the pandemic. Moreover, more than 90% of those that did so reported that they would continue using smartphone payments even after the crisis had subsided.

Regional governments have understood the scope for rapid fintech growth and have sought to introduce regulations to facilitate market development. Saudi Arabia, for example, aims to reach an e-payment target of 70% by 2030. The government has brought in several measures to make this target achievable, most notably a national QR code for payments in the country. In 2019, Saudi Payments (representing the regulator, Saudi Arabia Monetary Authority (SAMA)), signed a memorandum of understanding to this effect with twelve parties (nine banks and three fintech firms).

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In January 2021, another significant development came to light with the announcement that SAMA is planning to go live with its open banking initiative during the first half of 2022. This move is expected to see the rise of various fintech services, creating increased competition and choice for consumers.

Bahrain has also been very active in this regard, putting in place regulations to cover regulatory sandboxes, open banking, crypto-assets, and robo-advisory and payment services.
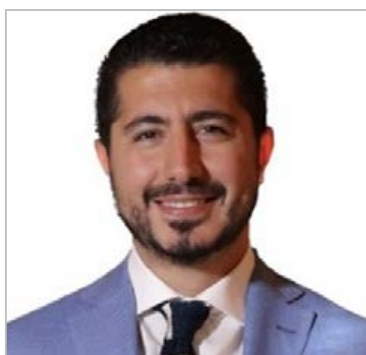
The potential of the GCC fintech market has not been lost on international companies. In November 2020, it was announced that Western Union had agreed to buy a 15% minority stake in stc pay at an overall valuation of US$ 1.3 billion (a 10% stake at US$ 133.3 million, and a further 5% at $66.67 million if stc pay manages to obtain a digital banking license). The transaction is expected to close during the first quarter of 2021.

This transaction will be a boon to the Saudi authorities in their bid to increase the value of the national fintech market to US$ 33 billion by 2023. In particular, it will further strengthen the "payments and currency exchange" component, which accounted for 41% of the total Saudi fintech market in 2019.

With stc pay becoming the first fintech unicorn (valued at more than US$ 1 billion) in the Middle East, the high-profile minority stake purchase marks a symbolic watershed in the development of the regional fintech market, and brings its potential to the attention of even more international investors seeking opportunities in new territories.

The deal will allow stc pay itself to shift its focus towards global expansion. Although the two parties have been engaged in a strategic partnership since October 2018, Western Union's newly acquired formal shareholding will strengthen its incentive to support this expansion.

As a result, stc pay's 4.5 million customers will have access to cross-border financial services. For example, they will be able to send remittances to other customers' e-wallets in Africa, Asia, Europe and Latin America through Western Union's partners, or by using its extensive network of agents for cash transactions.

Given that the e-wallet market occupies such a significant share of the overall fintech sphere, this landmark deal offers an opportune moment to take stock of its current status in the region and consider its future direction. Two paths are possible: **First option:** The regional e-wallet market will follow the same trend of consolidation witnessed in mature markets. Several e-wallets have been discontinued in the United States during the last few years, including Citi Pay, Wells Fargo Wallet, Chase Pay and Capital One. Many banks have bowed to intense competition from popular digital wallets such as Apple Pay or Google Pay by integrating with them instead. In Europe meanwhile, pure payment players such as Worldline, Worldpay and Ingenico have acquired multiple targets in recent years, helping them to increase transaction volumes and expand their range of services.

In the GCC region itself, consolidation would largely stem from a shortage of relevant capabilities, like leading-edge technology platforms or research and development, within individual companies. After all, the market for the various elements of the fintech market, such as e-wallets, near-field communication, blockchain and virtual reality, is only embryonic. Moreover, although traditional banks have become stronger in data analytics, many have prioritized investment in compliance over capabilities, although data and open APIs are likely to emerge as top of the agenda following the open banking announcement.

Second option: The other possible direction for the market is that smaller e-wallet start-ups will engage in product innovation beyond the payments segment. We can see relevant examples from throughout the world. Paytm, a popular e-wallet in India, offers gaming services through its Paytm First Games brand which has more than half a million active daily users. E-wallets also have opportunities for expansion through avenues such as merchant loyalty programs, customized financial guidance or planning tools.

Time will tell which precise direction the GCC fintech market will take. However, after Western Union's investment in stc pay, rapid growth looks a certainty.

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ARTICLE

Etisalat Transforms Healthcare in UAE with Digital Innovation

Etisalat's latest solutions are transforming healthcare in the UAE with advanced technologies and its new digital healthcare vertical has created value propositions

Etisalat Digital's (business unit of Etisalat) unified patient experience value proposition transforms patient care through a combination of innovative technologies.

A positive patient experience matters more than ever, according to healthcare industry leaders worldwide. In an annual survey by Omnia Health Insights in partnership with GRS Research & Strategy, nearly half (45 percent) of respondents in clinics, private hospitals and public hospitals across the globe identified understanding patient needs as the single most important aspect in ensuring a satisfactory patient experience in 2021 – a 15 percent increase from the year before.

The Voice of the Healthcare Industry Market Outlook 2021 found integrated health services (19 percent) in second place, ahead of access to new and improved technologies (13 percent).

Survey participants also saw transparency, convenience, wait times and clinical atmosphere as priorities conducive to creating a satisfactory patient experience. All these span different stages of the patient journey whereupon the patient interacts with the healthcare delivery system.

A satisfactory patient experience will, for example, result from a timely appointment, ease of access to information, and effective communication between patient and healthcare provider.

Alongside clinical outcomes and interventions, Etisalat Digital's Healthcare Division sees enhancing patient experience as necessary to building a patient-centric healthcare model.

Etisalat Digital aims to improve the patient experience through its unified patient experience solution whilst generating operational efficiencies and cost savings for the healthcare provider.

Addressing every stage of the patient journey
Digitising the patient flow begins with a comprehensive exercise to intimately understand the patient journey, which involves mapping interactions or "touch points" between patient and provider.

By identifying specific bottlenecks, Etisalat Digital is better able to design appropriate technology-led solutions tailored to the provider. Inclusivity is also taken into account, recognising that not all patients are digitally-savvy.

Take Patient A (we will call him Fahad). Fahad's patient journey begins at home. Over breakfast while preparing himself coffee, Fahad receives a reminder from his hospital mobile app, about an upcoming appointment the same afternoon with his diabetologist. This mobile app which is integrated with several of the hospital systems, empowers him to easily access various hospital services, book new appointments including telehealth, and also interact with the provider. While getting ready for his appointment, Fahad receives another notification from the hospital app alerting him to leave in the next 35 minutes if he were to make it on

time given the anticipated traffic on his route. Just as he is about to set out, a ride share option pops-up on his hospital app. Instead, Fahad chooses to drive himself. Navigation through maps, helps him take the fastest route.

Upon arrival at the hospital, he finds a parking space with ease thanks to the smart parking feature that has identified and reserved an available slot near the out-patient clinic,, saving him time and effort, especially in the searing heat. He opts to go without a digital valet service, available for certain cases such as a physical disability that would send a porter to the door ready to receive the patient.

As Fahad enters the building, grateful to be in the cool environment, a self-service kiosk allows him to automatically check in through facial recognition and an Emirates ID reader (similar to checking in for a flight at the airport), meaning he doesn't have to queue. While at the kiosk he quickly updates his profile with his new email address and makes a quick payment.

While at the diabetes clinic he receives an estimated wait time on his mobile app since the queue management process is also handled digitally. Upon seeing the consultant he is advised for a blood test, an ultrasound and given a prescription.

Fahad turns to his mobile app again for guidance. Using indoor navigation, the app directs him to the precise location, first to the ultrasound, since there is little wait time as determined by the intelligent system, before taking him to the lab. Meanwhile, he is notified by the app that his prescription is ready for collection from the pharmacy, saving him more time.

A day later, Fahad receives his test results through the hospital app and is able to discuss results with his doctor via video-consultation feature.

He is furthermore reassured that his medical data is safe: Etisalat Digital takes security very seriously. All data through the application is end-to-end encrypted, including in transit, while Etisalat Digital's solutions are hosted securely on its own cloud platforms and data centers within

UAE.

Improving outcomes with cloud-based solutions

Effectiveness, Patient Safety and People Centricity are key elements of Quality of Care. Globally, Health Systems have been trying to meet quality expectations by introducing transformation that makes care more integrated, participatory, and personalised. Some of the challenges in rapid transformation were made apparent by COVID-19, where Etisalat saw digital technologies come to the rescue. However, significant work still lies ahead, and are glad that this conversation has taken centre stage like never before.

Etisalat Digital is playing an increasingly important role in realising health sector transformation using technology enablers creating value in both public and private sector. Most recently, the roll out of the new cloud based digital platform, an Electronic Medical Record (EMR) system, addresses critical barriers faced by medical practitioners and clinics in the private sector to transition from paper based to electronic record keeping.

Etisalat Digital's Cloud-EMR, a part of a suite of solutions called Business Edge for Healthcare, provides essential digital tools for health practitioners to manage their day-to-day workflow. In addition to patient record keeping, it includes tools for patient scheduling and appointment management,

placing laboratory and pharmacy orders, billing, and electronic claims. Necessary regulatory and security compliances, such as two-layer authentication, role and privilege-based access, and localised code catalogues specific to each Emirate are also built-in.

The capabilities to support modern inter-operability standards such as HL7, FHIR and CDA allows the EMR platform to integrate with Health Information Exchange systems of different Emirates and communicate data in real-time to improve patient outcomes. It is not about providing a software system but build necessary services around it making adoption easier so that healthcare providers don't have to think about maintenance and can focus on managing their practice and providing best possible care to their patients.

Etisalat Digital's vision behind the Cloud-EMR platform is twofold: firstly, to support government initiatives like Malaffi (Abu Dhabi Health Information Exchange) and NABIDH (Network and Analysis Backbone for Integrated Dubai Health) with connecting healthcare providers and creating a truly unified database of patient records; secondly to enable digital transformation of medical practices, helping them find cost efficiencies in day-to-day operations and elevating the quality of care to their patients.

REGULATORY NEWS

ITU Director-BDT Opens Global Symposium for Regulators (GSR 2021) and Highlights the Need for 5th Generation Regulation for Fostering Sustainable Growth of the ICT Ecosystem

Director, Telecommunication Development Bureau of the International Telecommunication Union (ITU), Doreen Bogdan-Martin, opened the core program of the GSR-21 sessions yesterday, with a strong message signifying the importance of digital technologies and emphasizing the criticality of a new wave of policy and regulatory leadership required to implement people-centered connectivity initiatives. Acknowledging the contributions and collaboration demonstrated by the regulatory authorities and the private sector over the last year, particularly telecom operators, including measures taken such as expanding access to spectrum resources from the regulatory front to unbuckling usage limits at the user end, Director BDT drew attention to the prevailing climate of global uncertainty and how the role of policymakers and regulators to empower, to enable, and to connect is now ever more important to contend with digital divides. Director BDT linked the way forward to closer collaboration - collaboration among countries and regions, among public-sector entities, telecom operators, and digital platform providers, as well as among other digital space players. Doreen Bogdan-Martin defined the role of the new or fifth generation of regulators as that of architects who can enable "fit-for-purpose, collaborative regulation", helping shape

and optimize the functioning of the digital markets that are now so vital to every segment of our economies, and our societies. Ms. Bogdan-Martin emphasized that regulators require relevant tools that ensure protection of citizen interests while also ensuring predictability and business protection for the ICT ecosystem players. It is the principles of ensuring protection of interests at both ends and to put in place future-proof regulatory frameworks, which should be flexible enough to respond to the challenges of digital transformation requirements of the evolving digital economies, which lie at the foundation of the 5th generation of regulation and it is this next generation of regulatory approaches, combined with customized approaches which should reflect the enormous diversity of our six global regions, that would help mitigate global crises situations of the future. In order to move forward, stakeholder priorities should be aligned, with the willingness that old rules that are no longer relevant should be revoked. Moreover, new strategic priorities should be carefully set on addressing the short-to-medium term outlook for national and global markets, complemented by longer-term strategies that are aligned with relevant national policies, and help ensure a coordinated approach to advancing regional development priorities. The importance of multi-stakeholder coordination and consultation, regulatory adjustments through an iterative process were also highlighted in the Director BDT's address. Since 2000, the Global Symposium for Regulators (GSR) brings together heads of national telecom/ICT regulatory authorities from around the world and has earned a reputation as the global annual venue for regulators to share their views and experiences on the most pressing regulatory issues they have identified. GSR also fosters a dynamic global industry regulators dialogue, between regulators, policy makers, industry leaders and other key ICT stakeholders. GSR's Global Dialogue provides a neutral platform for ITU-D Sector Members to share their views on major issues facing the ICT sector. GSR concludes with the adoption by regulators of a set of regulatory best practice guidelines. Over the next three days the GSR program will seek to address many of the most pressing issues facing regulators working within today's complex and inter-dependent digital ecosystem. GSR-21 will also showcase the ITU's new G5 Accelerator Platform, which brings together new ICT Regulatory Tracker, ICT Policy Impact Lab, and, soon, the new G5 Benchmark, in which SAMENA Council also has had the opportunity to contribute.

ITU's Digital Transformation Centers Train Over 80 000 People – 65 Percent are Women

Women from underserved and marginalized communities made up 65 percent of 80 000 trainees in the first phase of ITU's Digital Transformation Centres (DTC) Initiative. The Initiative, launched in September 2019, saw the ITU partner with technology conglomerate Cisco in nine countries to help strengthen the digital capacities of their citizens, particularly in underserved communities. ITU has opened applications for the second phase of its DTC Initiative, aiming to close the persistent gap in digital skills worldwide. Interested eligible institutions can submit their applications by 31 August 2021. "We want to leverage the momentum we gained in phase one, during which over 80 000 people from underserved and marginalized communities received digital skills training through nine DTCs. The popularity of this training has far exceeded what we anticipated, and greatly encourages us. Clearly, the pandemic has made everyone more aware of the need to be equipped with digital skills. ITU wants to expand the DTC network, but at a pace which will ensure that the quality of training is maintained," said ITU Secretary-General, Houlin Zhao. In the first phase, DTCs were established in nine countries in Africa, Americas and Asia Pacific. The individuals who signed up for DTC courses received training in basic and intermediate digital skills. "Closing the global digital divide is consistent with empowering people and communities, improving lives and livelihoods, and promoting sustainable development," emphasized the Secretary-General. "Empowering people with essential digital skills is a key part of this – a challenge we are proud to tackle together with partners from the private sector." Doreen Bogdan-Martin, Director of ITU's Telecommunication Development Bureau, said: "The pandemic underlined that digital skills are key to inclusion and leaving no one behind in today's digital world. The lack of these skills is becoming the main barrier to digital participation, particularly in developing countries. ITU's network of Digital Transformation Centers plays a crucial role in bridging the digital skills

gap and ensuring that no one is left offline. That is why we are expanding the network to increase the number of DTCs globally. We are continuously engaging with new potential partners to collaborate with us in this Initiative."

Application criteria

The second phase is open to applications from any eligible national institution that commits to being an active partner in the network. Applying institutions must have the mandate, or the support of their national government, to foster digital capacity in their respective countries, as well as a proven track record in delivering digital skills training at basic and intermediate levels to local communities. Selected DTCs become part of a global network that aims to accelerate digital uptake among citizens and boost the capacity of young entrepreneurs and small and medium-sized enterprises (SMEs) to succeed in the digital economy. Any proposed DTC requires a network of fully equipped physical training centers, along with sufficient resources to deliver digital skills training. Detailed criteria are available here. The second phase of the DTC Initiative will commence operations from January 2022. Going forward, more DTCs will be able to join the global network in order to reach a critical mass of people with digital skills training in countries and thus allow them to meaningfully participate in the digital economy.

Benefits of participation

Institutions that become part of the DTC network will receive free access to training

materials developed by ITU, Cisco, HP, and other partners at the global, regional and national levels; access to train-the-trainer programmes under the DTC Initiative; networking opportunities through DTCs worldwide; use of ITU and Cisco branding for promotion and marketing of DTC courses; authorization to award internationally recognized certifications to local citizens; and the chance get access to resources that will allow them to scale their national activities. The first phase of the Initiative runs from January 2020 to August 2021, with nine DTCs: four in Africa (Côte d'Ivoire, Ghana, Rwanda, Zambia), two in the Americas (Brazil, Dominican Republic), and three in Asia-Pacific (Indonesia, Papua New Guinea, and the Philippines). The courses offered are designed both for people who have never used a computer, as well as those with basic digital skills and those looking to enhance their entrepreneurial skills through information and communication technologies (ICTs). ITU has promoted wider partnerships to support the Initiative with both financial and material resources. In November 2020, the Government of Norway joined the Initiative financially supporting the implementation of training through the DTC network. Going forward, ITU aims to mobilize more partnerships in the second phase of the Initiative, widen the network of DTCs and scale the number of training activities through a systemic engagement with partners both at national and international levels.

Romania Opens Consultation on Multi-Band Spectrum Auction

Romania's National Authority for Management and Regulation in Communications (ANCOM) has opened a consultation regarding plans to auction short-term spectrum licenses for unused frequencies in the 800MHz, 2600MHz and 3.5GHz bands later this year. The sale, which is likely to precede the delayed sale of 5G-suitable spectrum, could raise more than EUR70 million (USD83 million). ANCOM intends to auction 195MHz of frequencies, with license expiry aligned with existing permits in the bands, as follows: one block of 2×5MHz FDD in the 800MHz band (791MHz-796MHz/832MHz-837MHz), valid between 1 January 2022 and 5 April 2029; eight lots of 2×5MHz FDD in the 2600MHz band (2530MHz-2570MHz/2650MHz-2690MHz), for a period between 1 January 2022 and 5 April 2029; one block of 15MHz TDD in the band 2600MHz (2600MHz-2615MHz), for a period between 1 January 2022 and 5 April 2029; and 18 5MHz TDD blocks in the 3.5GHz (3400MHz-3490MHz) band, for a period between 1 January 2022 and 31 December 2025. The regulator has proposed the following starting price for user rights in the bands: EUR22 million per paired block in the 800MHz band; EUR4.3 million per paired block and EUR3.5 million for the unpaired block in the 2600MHz band; and EUR700,000 for an unpaired block in the 3.5GHz band. The license fees are to be paid within 15 days from the announcement of the final results of the auction. In a press release setting out the plan, ANCOM vice-president Bogdan Iana commented: 'Expanding the capacity of radio electronic communications networks has become a necessity in the context of the rapid growth of data traffic and the economic, industrial and social importance of the digital economy. This is the reason why we intend to organize a tender for the allocation of the rights to use the spectrum remaining available following the selection procedures carried out by the Authority in 2012 and 2015.'

Agreement Signed Between UN Tech Agency and Host Country Romania for ITU Plenipotentiary Conference 2022

The International Telecommunication Union (ITU) signed an agreement with the Government of Romania for the hosting of the ITU Plenipotentiary Conference 2022 (PP-22) in Bucharest. ITU's supreme governing body is set to convene from 26 September to 14 October 2022 at the Palace of the Parliament in the Romanian capital. "I am very pleased that the ITU Plenipotentiary Conference 2022 will be held in Romania," said ITU Secretary-General Houlin Zhao. "The COVID-19 pandemic has shown the importance of digital technologies and services like never before. Yet challenges remain everywhere. ITU Member States will use PP-22 to set out a roadmap for 2024-2027, at a time when digital transformation is accelerating around the world." Vlad Stefan Stoica, President of the National Authority for Management and Regulation in Communications (ANCOM), who signed the host country agreement on behalf of the Government of Romania, added: "By organizing the Plenipotentiary Conference, we are fully committed to bringing together all countries to work closely for the development of global communications and to strengthen the telecommunication sector. I can assure you that we will spare no effort to successfully organize this landmark event, providing the highest standards in terms of resource allocation, the venue and the well-being of all participants, while also conducting this event in an environmentally and socially responsible manner, making it as eco-friendly, sustainable, gender-responsive and inclusive as possible." ITU's Plenipotentiary Conference is held every four years, convening representatives of the organization's 193 Member States to oversee global radio spectrum allocation, the creation of global technical standards for information and

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communication technology (ICT) networks and services, and efforts to promote digital inclusion in under-served communities. PP-22 is also to set ITU's general policies, adopt four-year strategic and financial plans, and address key ICT issues as requested by ITU Members. Furthermore, the conference will elect ITU's next Secretary-General, Deputy Secretary-General, and Directors of the Bureaux of the Radiocommunication Sector, the Telecommunication Standardization Sector, and the Telecommunication Development Sector, along with the members of the Radio Regulations Board. The Plenipotentiary Conference also elects the Member States that constitute the next ITU Council, which acts as ITU's governing body in the interval between plenipotentiary conferences. ITU Member States will be invited to officially submit candidatures about one year prior to the conference. Candidatures must reach the ITU Secretary-General not later than 23:59 hours (Geneva time) on the 28th day prior to the Conference, i.e., Monday, 29 August 2022.

The UAE Chairs the ITU Council Virtual Consultations of Councilors

The Virtual Consultations of Councilors of the International Telecommunication Union (ITU) Council, which was chaired by the United Arab Emirates, concluded recently. Eng. Saif Bin Ghelaita, Director Technology Development Affairs at the Telecommunications and Digital Government Regulatory Authority (TDRA), chaired the Consultation sessions, which were held through a virtual platform supported by the UAE since the beginning of the pandemic, over the past year. The UAE's chairmanship of the consultations enhances the UAE's global leadership in the ICT sector. It also reflects the support of UAE leadership for Emirati competencies and its keenness to highlight their capabilities in managing and chairing one of the most important international meetings. Commenting on the consultations, Eng. Saif Bin Ghelaita, Director Technology Development Affairs at TDRA and chairman of the ITU Council Virtual Consultations of Councilors, said: "These consultations come at the global recovery stage of the pandemic, as the workflow has begun to return to its normal form in various aspects of life. The world was able to overcome the effects of the pandemic due to the collaboration of various sectors supported by the ICT sector, which provided alternative, practical and immediate solutions that contributed to maintaining the safety of people and the continuation of providing basic services in various sectors. In the meeting, we discussed the requirements

of the next stage, and the need for global cooperation and coordination to improve ICT services in different countries, given the role of these services in achieving people's happiness and ensuring their safety and security." Eng. Bin Ghelaita added: "The UAE was one of the most successful countries in responding to the pandemic, as it maintained the pace of normal life, and moved to alternative solutions easily and smoothly. The crisis came to confirm the rightful plans and strategies adopted by the UAE under the directives of the wise leadership. Today, we are ready to share our successful experience with all countries, and contribute to the happiness of all societies, in compliance with the motto of the United Nations (Leave No One Behind)." Eng. Saif Bin Ghelaita was elected as Vice-Chair of the ITU Council

during the Plenipotentiary Conference 2018, which was hosted by the UAE. This achievement came as a culmination of the UAE great efforts in the ICT sector, and in recognition of the distinguished capabilities of the UAE people, who have proven their competence in all scientific, economic and cultural fields. The UAE joined the ITU Council in 2006, which includes 48 countries, including 7 Arab countries. Countries are nominated for membership in the ITU Council during the Plenipotentiary Conference, which is held once every four years, during which the door for nominations for the Council membership is opened, in addition to the five leadership positions in the ITU and the nomination of members of the Radio Regulations Board.

TPG Telecom to Acquire Additional 5G Spectrum in 3.6 GHz Band

TPG Telecom has entered into an agreement to acquire additional 5G spectrum holdings in the 3.6 GHz band from Dense Air. Completion of the transaction will increase TPG Telecom's 3.6 GHz spectrum holdings from 60 MHz to 90 MHz in Adelaide and 95 MHz in Brisbane, Perth and Canberra. In Sydney and Melbourne, TPG Telecom will acquire 5 MHz of 3.6 GHz spectrum, increasing its

holdings to 65 MHz after the transaction. As this spectrum is immediately adjacent to our existing 5G spectrum holdings, it can be deployed quickly and without significant cost. "TPG Telecom is rolling out its 5G network in major cities, targeting 85 per cent population coverage in Sydney, Melbourne, Brisbane, Adelaide, Perth and Canberra by the end of this year. Iñaki Berroeta, CEO, TPG Telecom said, "For

our mobile and home wireless customers, this additional mid-band 5G spectrum will mean a significant boost in speeds through increased capacity. This spectrum acquisition will enhance our 5G customer experience and set us up for future customer growth as we roll out our 5G home internet service to meet customer demand for NBN alternatives."

BEREC Publishes Opinion on ComReg's Fixed Line Regulation Plans

After the EC announced last month that it was launching an in-depth investigation into Commission for Communications Regulation (ComReg)'s analysis of the retail markets for fixed telephony services and the corresponding wholesale markets in Ireland, the Body of European Regulators for Electronic Communications (BEREC) has now adopted, published and sent its opinion on the matter to the EC. With ComReg confirming the development, it was noted that BEREC's overall conclusion was

that the EC's serious doubts regarding the Irish regulator's draft decision were only 'partially justified'. Among the conclusions set out in the BEREC opinion were that the latter believed the EC's serious doubts regarding the finding of a market for Retail Fixed Telephony Service ('RFTS') and wholesale Fixed Access and Call Origination ('FACO') markets were not justified. Further, BEREC also argued that doubts raised regarding three criteria test and most of the SMP assessment were also not justified. However, BEREC did say that it believed the EC's concerns related to 'the substantiation of the geographic market analysis and the lack of a forward-looking perspective' were warranted. Following BEREC's publication of its opinion, by 20 September 2021 the EC is now required to either take a decision requiring ComReg to withdraw the draft measure, or take a decision 'to lift it serious doubts'. For its part, ComReg has said that in the period to that date it will engage with the EC 'as appropriate', while noting that in the absence of adopting a final decision with respect to its analysis of the RFTS and FACO markets, both its 2014 RFTS Decision and 2015 FACO Decision remain in full effect.

PTA Publishes Details For AJ&K/GB Spectrum Auction

Sector watchdog the Pakistan Telecommunication Authority (PTA) has published an Information Memorandum (IM) detailing its plans for the auction of 1800MHz and 2100MHz spectrum for the provision of next generation mobile services (NGMS) in the Azad Jammu and Kashmir (AJ&K) and Gilgit Baltistan (GB) regions. The sale will feature 2×16MHz in the 1800MHz range – consisting of two lots of 2×5MHz and five lots of 2×1.2MHz – and 2×30MHz in the 2100MHz range, divided into six 2×5MHz blocks. Due to the fractured nature of the 1800MHz allocation, the regulator noted that it would complete a rationalization process after the auction, through which it would endeavor to ensure that the spectrum holdings of licensees is contiguous. The reserve price for airwaves in both ranges was set at USD870,000 per MHz, equating to a base price of USD4.35 million for a 2×5MHz block

of 1800MHz or 2100MHz frequencies and USD1.04 million for a 2×1.2MHz tranche in the 1800MHz band. The concessions will be valid for 15 years.

ARCEP Invites Applications For 5G Spectrum in Reunion, Mayotte

ARCEP has launched calls for applications for the allocation of 5G spectrum in the 700MHz and 3.4GHz-3.8GHz frequency bands in Reunion and 700MHz and 900MHz bands in Mayotte. Any requests for information on the procedure must be sent to ARCEP no later than 14 September 2021, with potential bidders given until 12 October to submit their applications. Regarding the 700MHz band, ARCEP disclosed that it will award 30MHz in the band in both Reunion and Mayotte, while 380MHz in the 3.4GHz-3.8GHz band (38 blocks of 10MHz each) will be awarded in Reunion –

an auction is to be held after the award of the 700MHz spectrum – and 2.6MHz in the 900MHz band in Mayotte. The concessions will be valid for 15 years. ARCEP expects the procedures to be concluded in early 2022, while the authorizations will be awarded during the first quarter of 2022. Further, ARCEP highlighted that it will also hold public consultations shortly with the aim of defining the terms and conditions for the allocation of 5G spectrum in the territories of Guadeloupe, Guyana, Martinique, Saint Barthelemy, Saint-Martin and Saint Pierre and Miquelon.

CURA Issues New ISP License to Netcetera; Modifies Bluewave's Concession

Isle of Man-based BlueWave Communications has been issued a modified telecommunications license by the Communications and Utilities Regulatory Authority (CURA). According to the watchdog, BlueWave's concession has been modified to include the addition of Code Powers, which will grant it the right to install and maintain its own telecoms apparatus on public and private land, subject to the conditions contained within Schedule 5 of its license. In making the modification, the CURA claimed that the application of Code Powers to BlueWave's License 'would be in the public interest as it would improve the competitive environment for consumers in the Isle of Man through improved access to services.

In a separate but related development, the CURA announced that it has issued an ISP license to Netcetera Limited, allowing the company to 'run telecommunications systems within the Isle of Man in order to provide internet and internet related services.

MTN Group Confirms it Will Not Take Part in Ethiopia's Next License Tender

South Africa-based telecoms giant MTN Group has confirmed it does not intend to take part in the Ethiopian government's planned tender for a second new communications license. MTN was one of two bidders for nationwide telecoms concessions offered by Ethiopia earlier this year as part of plans to liberalize its communications sector, but ultimately missed out after its bid was deemed too low. Now, having noted that its bid for that initial license sale 'took into account the license conditions as well as related uncertainties', the South African group said that while it was disappointed to have lost out, it was 'comfortable that [its] approach was guided by disciplined strategic and capital allocation frameworks'. With a second license tender on the horizon, however, MTN Group confirmed: 'The Group has decided not to participate in the new liberalization processes underway in Ethiopia, and we thank the Ethiopian government for the opportunity to have been part of the previous process.'

JCRA Issues New License Terms for JT and Sure

Modifications to the statutory operating licenses for JT Jersey and Sure Jersey have now been issued by the Jersey Competition Regulatory Authority (JCRA), following its investigation into potentially 'anticompetitive' behavior by the two operators. In a press release regarding the matter, the JCRA noted that JT and Sure had previously entered into a Memorandum of Understanding (MoU) that would have enabled them to share a new 5G network which the regulator feared could have operated to the detriment of other operators and, ultimately, consumers. As a result of the watchdog's investigation, JT and Sure terminated the MoU and committed to assist the JCRA to develop new license and compliance conditions to prevent that happening in future. These conditions are now implemented in the modified licenses and impose clear obligations on JT and Sure to ensure that any use of shared assets or networks is 'fully compatible with healthy competition, benefiting consumers through lower prices and faster rollout of new technology'. With the modified licenses having come into effect yesterday (4 August), the new conditions include:

a requirement to notify the JCRA in advance of entering into any agreement with another operator to share network assets; an express requirement to comply with Jersey competition law when sharing such network assets; and a proportionate compliance regime. Commenting, the JCRA's chief executive Tim Ringsdore said: 'We are determined that any requirements for network sharing, or any type of competitive sharing, such as to enable the rolling out of 5G, are developed in a fair manner that lets all operators compete fairly, safeguarding the interests of consumers and promoting economic growth and sustainability ... We have a duty to ensure that Competition Law is adhered to, and I would urge all businesses, regardless of their industry, to familiarize themselves with the Law and be clear about their responsibilities.' Meanwhile, the JCRA has said it will now undertake a consultation process to implement similar license conditions for all 'relevant' telecoms operators in Jersey and will publish guidelines on fair network sharing 'later this year'.

Canada Proceeds with CAD1.4bn Telesat Investment; Oneweb Agrees Satellite Deal with Northwestel

Canada's federal government has entered into an agreement-in-principle with Telesat to invest CAD1.44 billion (USD1.15 billion) into Telesat's advanced low Earth orbit (LEO) satellite constellation, Telesat Lightspeed, through a CAD790 million repayable loan and a CAD650 million preferred share equity investment for which the government would receive a dividend. As part of this investment, the government would also receive warrants that can be converted into common shares in Telesat so that Canadians can share in the financial upside from Telesat Lightspeed. A press release added: 'Telesat Lightspeed will enable broadband internet and LTE and 5G connectivity in Canada starting in 2024, ultimately connecting approximately 40,000 households in rural and remote regions. It will also allow for significantly better service offerings in many regions of the country where current speeds struggle to meet the demands of an increasingly digital world, and it will improve the company's service for business clients in

industries like air transport and shipping. This technology will help the government reach its goal of connecting all Canadian households to high speed internet by 2030, including many Indigenous communities throughout the north and near north that lack the connectivity required for social, economic and cultural prosperity.' Telesat has committed to investing CAD3.6 billion CAPEX in Canada. Separately, LEO satellite operator OneWeb and Bell Canada subsidiary Northwestel – northern Canada's largest telecoms provider – signed a Memorandum of Understanding

(MoU) to deliver new connectivity services to remote mines, businesses and governments across Canada's north using OneWeb's LEO backbone. Northwestel president Curtis Shaw commented: 'This agreement with OneWeb allows us to provide improved broadband services to remote enterprises and governments using state-of-the-art LEO satellite technology. We look forward to providing innovative solutions for northern businesses to go along with our significant residential service improvements over the coming years.'

USF Committee Approves 30 Projects in Pakistan

The Policy Committee of the Universal Service Fund (USF) under the Ministry of Information Technology (IT) and Telecommunication has approved the budget of over Rs18 billion for 30 projects for the financial year 2021/22 and directed to release funds. The Policy Committee meeting was chaired by the Federal Minister for IT and Telecommunication, Syed Amin Ul Haque and attended by Federal Secretary for IT and Telecommunication Dr. Sohail Rajput, Senior Joint Secretary Toaha Hussain Bugti, Member Telecom Muhammad Omar Malik, and other representatives from the Cabinet and the Finance Division. USF Chief Executive Officer (CEO) Haaris Mahmood Chaudhary apprised the committee on the performance of the last three years and the proposed plans for the new financial year 2021/22. Addressing the meeting, Federal Minister for IT and Telecommunication Syed Amin Ul Haque said: "Under the present government, the USF has shown a 100 percent increase in its productivity since inception, with six projects in the first year, 12 in the second year and 25 projects in the third year. It is a testament to the rapid and exceptional performance of the company on which the team deserves compliments." "The USF must maintain this positive momentum with transparency, quality, and timely completion of projects," he added. The federal minister directed the USF to immediately start projects for the provision of broadband services at key tourist destinations

in the Northern Areas and complete them on a priority basis. He expressed satisfaction over the proposed plans to provide uninterrupted high-speed mobile broadband services on national highways and to deliver optical fiber cable to the union councils level across the country to adapt Pakistan to the requirements of the future, including 5G. Haque also said that the broadband services and optical fiber projects in the rural and remote areas of the four provinces are fundamental to the fulfillment of the "Digital Pakistan" vision. At the same time, the USF should develop a system of strict monitoring of these projects so that there are no shortcomings and unnecessary delays. On the recommendation of the committee members, the federal minister directed the USF to submit a progress report on the status of the projects every three months. Earlier, Chaudhary apprised the members of the committee that the project in Kohistan region faced delays due to the extreme weather conditions and difficult routes, while another project in the ex-FATA due to the security situation in the area. These projects are only 5 per cent of the total projects, while 95 per cent of the projects are progressing at their own pace and almost 50 per cent to 75 per cent of the work has been completed. Further, he said, the USF has a transparent system of technical and monitoring audits based on which the funds are released in proportion to the work completed on the project
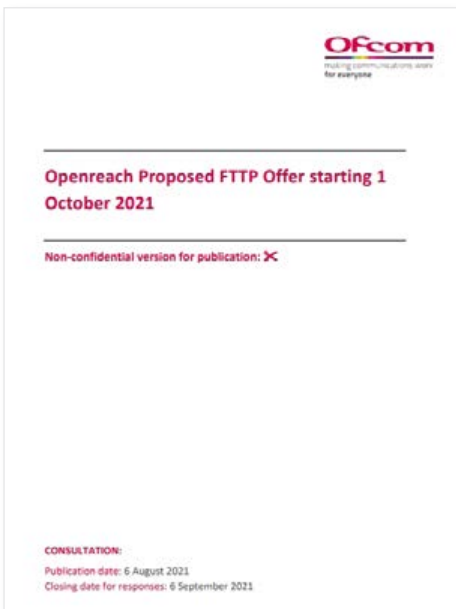
OFCOM Consults on Proposed Openreach Fiber-To-The-Premises (FTTP) Pricing Offer

OFCOM has published a consultation on a new FTTP pricing offer that Openreach intends to introduce from 1 October 2021. Under OFCOM's wholesale fixed telecoms market review rules, Openreach must notify OFCOM of certain offers 90 days before they come into effect. This is so OFCOM can prevent Openreach from harming competition, by restricting any offers that would stifle new network build by its rivals. On 1 July 2021, Openreach notified the regulator of new long-term pricing arrangements for its FTTP services, known as the "Equinox" offer, which will last for ten years. Having assessed the offer and taken account of stakeholders' initial views on it, OFCOM's provisional view is that it should not take any action at this time. The consultation closes on 6 September 2021 and OFCOM intends to publish its decision in September 2021.

EC Gives Approval to Orange/APG Fiber JV

In a decision published today (9 August 2021) the European Commission (EC) has approved the fiber infrastructure joint venture (JV) of fixed/mobile operator Orange Poland and pension fund manager APG Asset Management (Netherlands). The 50/50 JV named Swiatlowod Inwestycje ('FiberCo') was set up earlier this year to engage in the construction and expansion of fiber infrastructure with a focus on less-densely populated areas of Poland, providing wholesale access services.
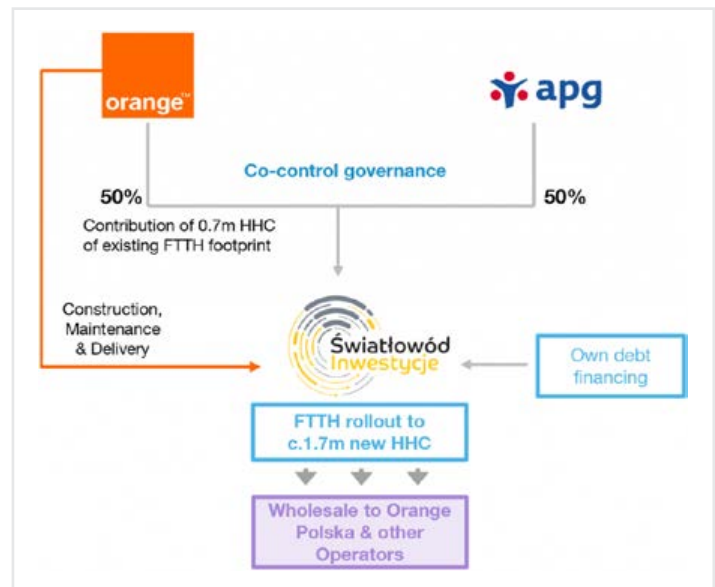
Minimum Internet Speeds to Come into Force; Osiptel Updates Plan Comparison Tool

Peruvian telecoms watchdog the Supervisory Agency for Private Investment in Telecommunications (Organismo Supervisor de Inversion Privada en Telecommuniciones, Osiptel) has updated the nation's regulations regarding service quality requirements for telecommunications services to set the minimum guaranteed connection speed at 70% of the advertised rate. Earlier this year the government passed new legislation (Law No. 31207) guaranteeing minimum connection speeds and setting out the structure for monitoring compliance with the new rules, and the regulator has now published Resolution 138-2021-CD/Osiptel to implement the law. The minimum threshold of 70% of the contracted speed applies to all internet users, regardless of technology, location or timing of their contract (i.e. the rules are retroactively applied to contracts signed before the law came into force), but will be gradually rolled out. As such, from 3 March 2022 the requirement will be set at 52%, rising progressively to 70% by 3 December 2022. Regarding the provision of asymmetric download/upload speeds, the amended regulations establish that the relationship between the two rates should be no lower than a ratio of 1:3. For a plan with a 100Mbps download speed, for example, upload speeds should be at least 33.3Mbps. To monitor the provision of internet services, the regulator will establish a new body – the National Registry of Monitoring and Surveillance of Internet Services (Registro Nacional de Monitoreo y Vigilancia del Servicio de Internet, RENAMV) – and has passed resolution 137-2021-CD/OSIPTEL for the implementation of an automated measurement system to verify the quality of internet services. In a related development, meanwhile, Osiptel has updated its free tariff comparison tool and renamed the service from 'Comparatel' to 'Checa Tu Plan'. According to the regulator the updated tool provides more information and is more user-friendly than its predecessor.

EC Gives Conditional Approval for Orange's Acquisition of Telekom Romania Communications

EU antitrust regulators have given conditional approval, under the EU Merger Regulation, for Orange Group's acquisition of a 54% controlling stake in fixed operator Telekom Romania Communications (TKR) from Greek telco OTE, part of the Deutsche Telekom group. The deal is conditional on the divestiture of TKR's 30% minority shareholding in Telekom Romania Mobile Communications (TRMC), which is a direct competitor of Orange's local subsidiary. Following its investigation, the EC found

'the transaction, as initially notified, would have raised serious competition concerns in the market for retail mobile telecommunication services'. In particular, Orange's minority stake in TRMC would have given it access to commercially sensitive information about its competitor, and allowed it to block important investments by TRMC or the operator's acquisition by a strategic buyer. To address these concerns, Orange has offered to secure the sale of TKR's holding in TRMC to

OTE and will not implement the transaction until TKR and OTE have reached a binding agreement on the divestment, the EC has approved the agreement, and the stake has been transferred to OTE. In November 2020 Orange Romania signed a deal to buy the 54% stake for a price of EUR268 million (USD317 million), subject to ex-post adjustments, giving the Romanian company an enterprise value of EUR497 million.

FCC Expects 5G Boost After Handing-Out C-Band Licenses

The US Federal Communications Commission (FCC) granted the 5,676 licenses covering use of spectrum in the C-Band (3.7GHz to 3.98GHz) won in a bumper auction earlier this year, hailing the development as helping expand 5G access. In a statement, acting FCC Chair Jessica Rosenworcel noted the new licenses opened an allocation key to deploying 5G. She explained C-Band was a "sweet spot

for 5G deployment", due to its ability to "reach more people in more places faster." Spectrum in the band is seen as offering a middle-ground between providing good 5G capacity and coverage, with alternatives very strong in one or the other. Last month the GSMA called on regulators across the globe to step-up availability of mid-band spectrum, which includes frequencies just licensed by the FCC. "With these licenses

in hand, more carriers can deploy mid-band 5G, which means faster speeds over much wider coverage areas and more robust competition," Rosenworcel added. The sale closed in February, raising $81.2 billion and was the country's latest targeted at supporting 5G across various bands. Its next auction is slated for October and will provide further allocations in the mid-band.

UK Commits £30M to Win 5G Open RAN Race

The UK government furthered efforts to diversify network equipment options after banning the use of Huawei 5G kit, launching a £30 million competition to fund R&D projects which accelerate open RAN adoption and position the country as a leading player in the next-generation era. Funded by the UK Department of Culture, Media and Sport (DCMS), the Future RAN Competition

(FRANC) scheme is expected to boost the security and resilience credentials of new 5G technology while bringing societal and economic benefits. To do so, proposals are advised to focus on finding ways to increase power efficiency and tackle issues related to the management of spectrum resources, advanced software platforms and systems integration. Proposals will be accepted until 27 August and winners unveiled in the following months. The DCMS explained the move aims to tackle "the world's over-reliance on a small number of telecoms vendors". Minister for Digital Infrastructure Matt Warman described the competition as a way to "get some of our most creative minds" helping the nation deliver the benefits of 5G "safely and securely". The scheme is part of a strategy the UK unveiled at end-2020 targeting 5G supply chain diversification, which was later slammed by the House of Commons Science and Technology Committee for doing little to ease reliance on Nokia and Ericsson. It called for exploration of more options for market diversification including open RAN and other technologies. Last week, the UK poured £1 million into an open RAN test facility.

CMA Refers Cellnex and CK Hutchison's Tower Deal for In-Depth Investigation

British antitrust watchdog the Competition and Markets Authority (CMA) has announced that is has referred the proposed acquisition of the passive infrastructure assets of CK Hutchison Holdings Limited and its subsidiaries in the UK by Cellnex UK Limited for a full investigation. As previously reported by CommsUpdate, in November 2020 Spain-based mobile tower firm Cellnex Telecom confirmed an agreement to acquire 24,600 towers from CK Hutchison in the UK, Italy, Ireland, Austria, Sweden and Denmark.

At the time it was noted that the EUR10 billion (USD11.8 billion) deal would be augmented by a EUR1.4 billion rollout of 5,250 new sites over the next eight years, while Cellnex and CK Hutchison would sign long-term service contracts for an initial period of 15 years, extendable for an additional 15 years. Now, the CMA has said it has decided to probe the proposed deal further, 'on the basis that, on the information currently available to it, it is or may be the case that this merger has resulted or may be expected to result in

a substantial lessening of competition within a market or markets in the United Kingdom'.

CITC Launches First Phase of Regulatory Sandbox for Solutions Developed by Telcos

Saudi Arabia's Communications and Information Technology Commission (CITC) launched the first phase of the experimental regulatory environment "Regulatory Sandbox" to provide innovative solutions developed by telecom service providers. In a statement, the commission gave the go-ahead for stc, Etihad Etisalat Co. (Mobily), and Mobile

Telecommunication Company Saudi Arabia (Zain KSA) to register as the first participants in the pilot Regulatory Sandbox. The move aims to provide digital services and smart solutions to the government entities, which contributes to supporting decision-making and goal achievement. In the first phase, the Regulatory Sandbox aims to create

a flexible and stimulating environment for telecom service providers to develop business and employ smart solutions. This will accordingly contribute to accelerating the digital transformation processes of various government entities, in line with the strategic directions of the communications and information technology sector that are based on Vision 2030.

Spain 5G Auction Tally Hits €1.1B

Spain raised a total of €1.1 billion in a delayed auction for 5G-suitable frequencies in the 700MHz band, with the local units of Orange, Telefonica and Vodafone splashing more than €300 million each.

The Spanish Ministry of Economic Affairs detailed the end of the auction, with the total sum raised around €15 million above the starting price. Each license carries a duration of 20 years, rising to a maximum of 40 years, running to 2061. The 700MHz band sale was divided into two blocks of 2x10MHz and three of 5MHz, consisting of a total 12 rounds of bidding, which was contested by the country's three major operators after Masmovil opted out of the process earlier this month. All three operators released separate statements following the conclusion. Vodafone Spain said it spent €350 million on 2x10MHz blocks, which will be paid in a single instalment, in addition to a licensing fee of €15.5 million payable each year. It said it would use the new frequencies to expand

its footprint and offer better coverage, including indoors. Orange Spain spent the same amount for the same blocks, stating the move had consolidated its position with the "most spectrum in the priority frequencies for 5G". In total, it said it had invested €523 million on 5G spectrum in Spain, building on 110MHz in the 3.5GHz it bought in the last auction. The local incumbent Telefonica spent €310 million for 2x10MHz, paying slightly less because of faster rollout obligations. Notably, there were no bidders in the 5MHz blocks. It is Spain's second sale of 5G-suitable spectrum, following an auction covering the 3.6GHz to 3.8GHz bands in 2018. A sale of 26GHz spectrum is planned by the year-end.

Ecuador Approves Reform of Telecommunications Law

The President of Ecuador Guillermo Lasso has signed Decree 126 reforming the country's Organic Telecommunications Law, in force since February 2015. The 18 articles of the reform package aim to prioritize connectivity and efforts to reduce the digital divide, particularly in rural areas, rather than maximize tax revenues. In addition to capping the total regulatory obligations paid by operators at 2.5% of total revenues, the decree notably applies a narrower definition of their 'total income invoiced and received', discounting items such as income from the sale of handsets,

SIM cards and assets not assigned to the concession, which should translate into a reduction in their total regulatory obligations. After the latest reform, a telco's annual investment plan may also count towards their universal service obligation (currently 1% of annual revenue), while spectrum tenders are expected to focus on maximizing coverage rather than government revenues. In an interview with Digital Policy Law, Jorge Cevallos, president of the telecom operators association Asetel, welcomed the reforms, which he believes will 'contribute to providing legal

certainty and regulatory predictability'. 'We consider this to be an important step in moving from a model predominantly based on tax collection to a new development model focused on connectivity and closing the digital divide,' he said, adding: 'It shows a serious commitment on the part of the authorities to connect unserved areas. It is a step in the right direction, not only because of the reform itself, but because of the clear message of where public policy is heading in the new government.'

Czech Senate Knocks Back Amendment to Telecoms Law

The Senate of the Parliament of the Czech Republic has blocked a proposed amendment to the country's Electronic Communications Act which aims to improve consumer privacy protection, amongst other things. The amendment

will now be returned to the Chamber of Deputies with proposed revisions from the Senate. The amendment had previously been approved by the Chamber of Deputies by an overwhelming majority of 164 votes out of 168. Among the changes proposed

under the revised Act are the removal of automatic consent for unsolicited telephone marketing calls, moves to make it easier for consumers to switch broadband provider, and changes to make it easier for telcos to deploy networks.

US President Orders Return of Net Neutrality

US President Joe Biden signed an executive order designed to promote competition in the American economy by directing changes at telecom and technology regulators, among a number of other federal agencies. The order urges the Federal Communications Commission (FCC) to restore net neutrality rules it voted to ditch in December 2017 which had prevented operators prioritizing traffic carried over their networks. President Biden also asked the FCC to require ISPs to report their subscription rates and prices to the agency, and share standardized information with consumers about speeds, prices and network management. He also called for "greater scrutiny of mergers, especially by dominant internet platforms". In a fact sheet, the administration characterized some recent deals in the US technology sector as "killer acquisitions", meant to "shut down a potential competitive threat". The Federal Trade Commission (FTC) is tasked with regulating data accumulation and surveillance, with the fact sheet highlighting the ways large online retail platforms

can use information collected from smaller retailers to launch competitive products. The executive order instructed the FTC to "establish rules barring unfair methods of competition on internet marketplaces". President

Biden also called on the FTC to tackle the right to repair mobile phones, seeking "rules against anticompetitive restrictions on using independent repair shops or doing DIY repairs of your own devices and equipment".

CRTC Orders 3 Big Wireless Providers to Boost Competition to Lower Bills

Canada's telecommunications regulator ordered the dominant operators to take steps to increase competition in a market that has some of the world's highest billing rates, although the measure fell short of what some analysts had expected. The move comes more than a year after Prime Minister Justin Trudeau's Liberal government asked the telecoms companies to cut bills by 25% or face consequences after high mobile bills became a hot button issue in the 2019 elections. The Canadian Radio-television and Telecommunications Commission (CRTC) said the telecoms firms should offer wholesale wireless access to so-called Mobile Virtual Network Operators (MVNOs), smaller outfits such as Videotron in Quebec that can then resell the capacity at reduced retail prices and pass on the savings to consumers. The CRTC also said it expects Canada's three main wireless providers – Rogers Communications Inc, BCE Inc , and Telus Corp, as well as SaskTel in Saskatchewan, to offer $35 plans with set minimum conditions, including unlimited cross-Canada talk and text and 3GB of data. The three largest companies have 89.2% of telecoms subscribers and 90.7% of the revenue. They argue Ottawa is working with outdated information and insist their prices are competitive. But in a concession to the majors, the CRTC said only MVNOs with infrastructure or spectrum of their own would be eligible, meaning that interested companies would have to be serious about making investments in physical or network infrastructure. The access agreements will expire after seven years. Michael Geist, a law professor at the University of Ottawa with expertise in Canadian telecoms, said the CRTC missed "the opportunity to maximize new competitors."

RCOM RP Warns that Failure to Renew Licenses Will End Resolution Process

The resolution professional (RP) managing the bankruptcy proceedings for telco Reliance Communications (RCOM) has warned that the insolvency resolution process will collapse if the Department of Telecommunications (DoT) does not renew the provider's licenses when they expire later this month, the Economic Times reports. According to the RP, Deloitte, the expiry of the concessions would leave RCOM with nothing to sell and as a result, its 53 lenders would not be able to recover any of their funds. The development follows on the heels of the DoT's rejection of RCOM's request to renew its licenses, with the ministry instructing the provider to first clear its Adjusted Gross Revenue (AGR)-related dues, totaling some INR260 billion (USD3.5 billion).

Verizon Sells Yahoo Japan License for $1.6 Billion

Verizon Media agreed a sale of its Yahoo Japan license to Z Holdings, a unit of Japanese conglomerate SoftBank Group, a move expected to net the US company around $1.6 billion as it cashes in media assets to fund its core business. Z Holdings owns Yahoo Japan and currently pays Verizon Media a licensing fee to use the brand. Purchasing the moniker outright will provide the Japanese company with greater flexibility around its operation of the subsidiary, the companies stated. Verizon will gain roughly $1.6 billion, apparently in addition to the $5 billion it is set to get from the sale of Verizon Media to affiliates of Apollo Global Management. The transaction is set to close later this year. Z Holdings and Verizon explained their respective units will maintain a "cooperative business and technology relationship", which will include "ongoing technical support during a post-transaction services period". SoftBank bought a controlling interest in Yahoo Japan in 2018, two years after Verizon agreed to buy the search engine and web portal. Verizon subsequently combined Yahoo with AOL to form a media unit called Oath. Now the entire media business is known as Verizon Media. For SoftBank, the move to take full control of Yahoo! follows a string of asset sales. Like Verizon, SoftBank has been working to reduce its debt, but recently indicated a readiness to invest in new ventures including plans to launch a satellite-connectivity service with partners OneWeb and Skylo Technologies.

Korea to Offer 5G Frequencies to Non-Telcos

South Korea will offer additional frequency bands for further 5G deployment and non-telecom companies are eligible to join the bid, the Ministry of Science and ICT announced recently. The wireless spectrums to be provided are a 600 MHz block of a 28 Gigahertz frequency band and another 100MHz block of 4.7GHz. According to the Ministry plan, the government will divide the 28GHz band into 12 blocks, and the 4.7GHz band into 10 blocks for the frequency rollout and companies or institutions seeking to acquire the frequencies can decide on the number of blocks they want. Interested organizations should apply for purchase by October. The allotment will be provided for use of up to five years, and will be announced as early as November. "The supply of the 5G frequencies for special networks will expand the use of the 5G network into various industries, creating new added values through convergence and innovation among different industries," a ministry official said. By special networks, the government refers to the 5G deployment by non-telecom companies, such as Samsung Electronics for the establishment of a smart factory. For its first rollout of 5G frequencies in 2018, the government held an auction, with only the three mobile carriers SKT, KT and LG Uplus allowed to be eligible bidders. This time around, other than the fact that non-telcos can join, the pricing will be different. The prices of the frequency blocks will be set by the government, in accordance with coverage areas of network services, sizes of populations and conditions of network equipment and other surroundings, the Ministry said. The standard price for a 10MHz block of 4.7GHz is set at 100,000 won, while a 50MHz block of 28GHz is priced at 50,000 won. The Ministry said the unit price of 28GHz is set to a tenth of the 4.7GHz price, considering the characteristics of the high-frequency band, network equipment and devices. The Ministry also decided to cut the three-month examination of companies' frequency usage plans to one month. The Korean ICT Ministry has come up with the additional 5G frequency supply plan amid continuing complaints about the poorer-than-expected quality of the nationwide 5G network services. Despite their efforts to make Korea the world's first 5G-enabled country, network operators have been the target of public criticism over slower-than-expected network speeds and expensive mobile bills after the launch of 5G network in April 2019. Korea's nationwide 5G

services are mostly operated by using the 3.5GHz band, through which the maximum download speed falls just short of being 20 times faster than 4G Long Term Evolution, a figure promised by the telcos. SKT, KT and LG Uplus unveiled their plans to use the additional frequency blocks during a meeting with ICT Minister Lim Hye-soon. SKT announced it plans to establish 28GHz-based 5G networks at Coex and Jamsil Baseball Stadium in southern Seoul and at Jeju World Cup Stadium. The company's goal for its 28GHz service is to have more people actually experience the network quality in public places like the chosen venues. SKT plans to enable virtual reality conferences, real-time high-definition streaming and the operation of autonomous driving robots at the places. For Coex, the largest convention center in southern Seoul, SKT plans to make the 28GHz service available by July. KT said it has completed the deployment of a 28GHz wireless network at Suwon Wiz Park in Gyeonggi Province earlier this month and will test-offer 10 different services, including hologram, metaverse/cloud games, VR, 5G UHD streaming and AI robots. It will also provide 28GHz-based WiFi service at Mokdong Chamber Hall in western Seoul in September. LG Uplus has picked historical sites, including Buyeo and Gongju in Chungcheong Province, to provide augmented reality and high-speed content services on history and culture. The company will also establish 28GHz networks at Gwangju Champions Field Baseball Stadium and Bexco in Busan next month to provide high-speed streaming services and 28GHz WiFi. LG will deploy the special 5G networks at three golf courses, including Rainbow Hills in Eumseong, North Chungcheong Province, to livestream KLPGA tournaments.

Ligado Secures 3GPP Approval for L-Band 5G Specifications

Ligado Networks has confirmed that it has received approvals from 3GPP – the wireless industry's global standard-setting body – for new technical specifications that will enable its L-band spectrum to be deployed in 5G networks. The telco says that the approvals 'mark a crucial step in Ligado's expansion of the

L-Band vendor ecosystem and its efforts to deploy new mid-band spectrum in 5G networks in the US.' Ligado is currently developing a 5G Mobile Private Network Solution designed to serve the energy, manufacturing, health care, transportation and other critical infrastructure sectors. As previously reported by TeleGeography's

CommsUpdate, Ligado – which emerged from ill-fated open-access 4G start-up LightSquared in February 2016 – was belatedly given the go-ahead by the Federal Communications Commission (FCC) to utilise its L-band spectrum for 5G in April 2020.
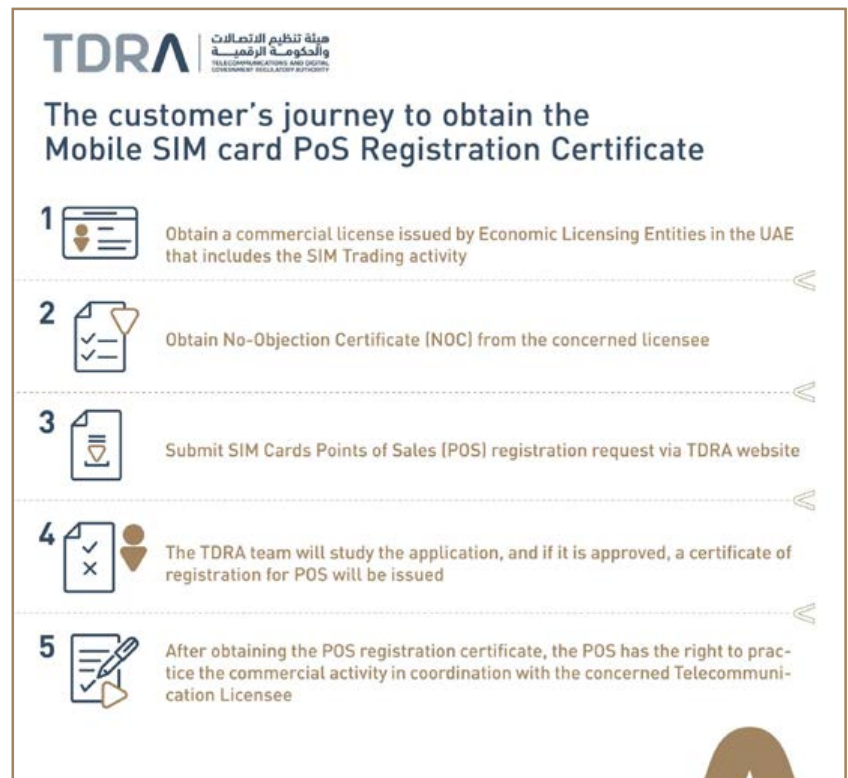
EU Unveils Plan for New Digital ID Wallet

The European Commission on Thursday unveiled a plan to provide digital wallets for the EU's 450 million residents to store their identity documents. According to the proposal, EU citizens would be able to sign up voluntarily for the European Digital Identity Wallets, which would allow them access to a wide range of public services and store official documents. Officials say the coronavirus pandemic has shown the need to have a way of recognizing paperwork across the 27-member bloc. Diplomats last month signed off on a digital green travel certificate, effectively a vaccine passport, as a means of reopening travel across the European Union. The Commission, the EU executive body largely responsible for proposing legislation, intends for the wallets to come in the form of a smartphone application to help citizens navigate cross-border bureaucracy. It could be used to open bank accounts, sign apartment leases and enroll in colleges abroad. The digital wallet "will enable us to do in any member state as we do at home without any extra cost and fewer hurdles," said Margrethe Vestager, the European Commission's executive vice president for digital. "And do this in a way that is secure and transparent." Online platforms such as Google or Facebook would be required to accept the wallet, a provision that aligns with the commission's goal of reining in big tech companies and their control of personal data. Vestager said people would be able to use their EU digital wallets to access those services, instead of their "platform-specific" accounts. "Because of that, you can decide how much data you want to share" only enough to identify yourself," she said from Brussels during a virtual media briefing. Some EU countries already have their own national digital ID systems. Belgium has a mandatory ID card that has a mobile app equivalent that is used to pay taxes, carry out bank transfers or request key documents from local authorities. The Commission plans to discuss the wallet with EU member countries and aims to get them to agree on technical details by the autumn so pilot projects can begin. But before it becomes law, the proposal would be need to approved by lawmakers in the European Parliament and all 27 EU governments.

UAE Telecom Regulator Updates Registration Requirements for Mobile Users
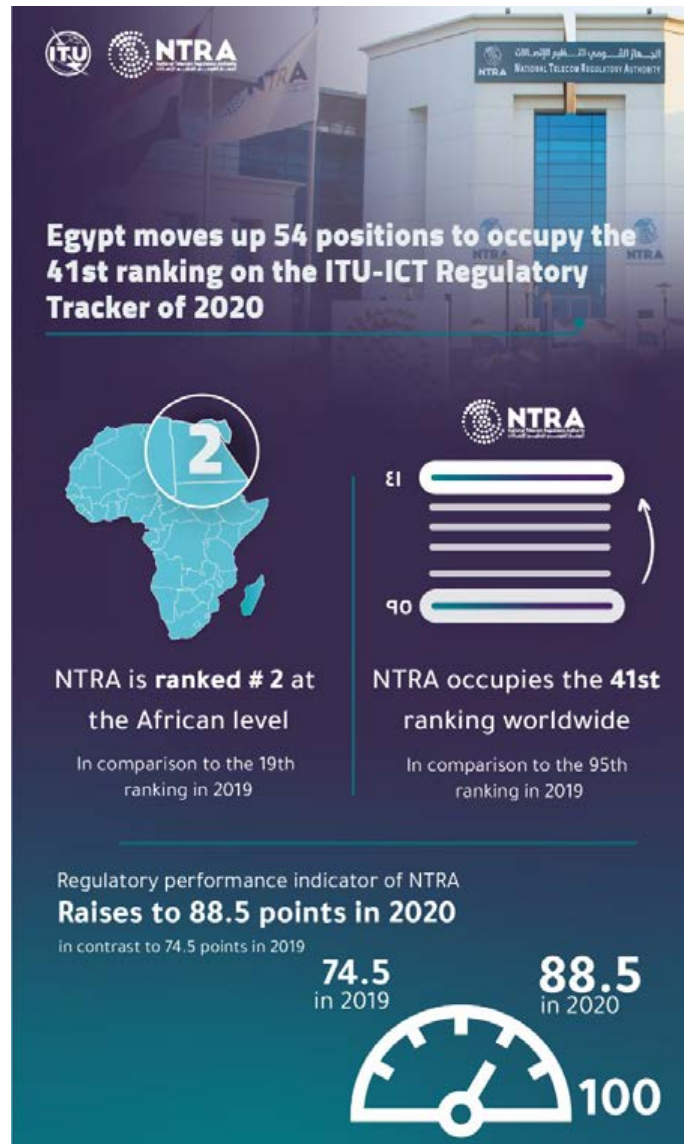
The Telecommunications and Digital Government Regulatory Authority (TDRA) announced the release of an updated version of the Regulatory Policy on Registration Requirements for mobile consumers. The updates included aspects related to the registration of mobile SIM Cards point of sales (PoS), and require that the applicant for the registration of PoS must communicate with the concerned licensee to obtain a no objection certificate (NOC) that includes information about the PoS and the sellers. These updates reflect TDRA's keenness to ensure that customers obtain their mobile SIM cards through approved PoS that meet the standards set by TDRA. "TDRA is keen to launch and update policies that control the relationship between the customer, licensees and PoS, to preserve the rights of all parties, and secure advanced, modern and seamless services that achieve happiness and satisfaction of all customers in the ICT sector. The great and rapid development in the ICT sector requires us to work quickly and accurately to update relevant policies, in order to meet the increasing demand for the services provided by the sector," said Eng. Saif Bin Ghelaita, Director of Technology Development Affairs. TDRA carefully monitors the performance of mobile SIM Cards PoS in the UAE, and facilitates the process of customers obtaining their own numbers easily, conveniently and safely. "In accordance with Federal Law by Decree No. 3 of 2003 and its amendments, (the telecom law) and the Mobile SIM Card PoS Registration Policy, the sale of mobile SIM cards

TDRA هيئة تنظيم الاتصالات والحكومة الرقمية TELECOMMUNICATIONS AND DIGITAL GOVERNMENT REGULATORY AUTHORITY

The customer's journey to obtain the Mobile SIM card PoS Registration Certificate

1. Obtain a commercial license issued by Economic Licensing Entities in the UAE that includes the SIM Trading activity

2. Obtain No-Objection Certificate (NOC) from the concerned licensee

3. Submit SIM Cards Points of Sales (POS) registration request via TDRA website

4. The TDRA team will study the application, and if it is approved, a certificate of registration for POS will be issued

5. After obtaining the POS registration certificate, the POS has the right to practice the commercial activity in coordination with the concerned Telecommunication Licensee

and the provision of telecommunications services are regulated activities that can only be practiced by UAE licensees and their outlets, or by economic establishments that are commercially licensed and registered with TDRA," said Bin Ghelaita. As part of its responsibility for the telecommunications sector, TDRA's teams conduct field visits to the PoS to ensure that they meet all the conditions stipulated in the mobile SIM Cards PoS Policy.

Egypt Advances 54 Places on Telecommunications Regulatory Performance Index

Egypt has advanced by 54 places on the latest Telecommunications Regulatory Performance Index, according to the latest report by the International Telecommunication Union. The annual report focused on the performance of telecom regulators around the world for the year 2020. In the international rankings, Egypt's National Telecom Regulatory Authority (NTRA) now stands at 41st among 193 countries compared to 95th in 2019. The NTRA also ranked second in Africa compared to 19th in 2019. The value of the authority's regulatory performance index increased to 88.5 points out of a total of 100 points in 2020, compared to 74.5 points in 2019. In its evaluation, the report relied on four main axes. The first axis is organizational capacity, which shows the ability of regulators to take regulatory and reform decisions in the market, as well as the extent of the impartiality of the decisions it issues. The second axis relates to regulatory frameworks, and reflects the ability to govern services provided in the market, and the impact of the issued regulatory procedures on the development of the work system in the market. The third axis is related to organizational diversity, which shows the extent of the diversity of the regulatory tasks of the regulator and its participatory relationship with other government agencies. The fourth axis relates to competitiveness, which shows the extent of the ability to create an attractive competitive environment and open new investment horizons. NTRA CEO Hossam El-Gamal said that the improvement in the authority's international ranking is a result of its efforts, initiatives, and regulatory frameworks issued during 2020. These had a significant impact on raising Egypt's international ranking, including the NTRA's provision of new frequency bands to mobile companies in the TDD system. This served as a precedent in the Egyptian market to raise the quality of communication services provided to users. All import services and licenses were also provided electronically, and the freedom of choice for users of communication services was enhanced. This was encouraged by the efforts to develop the service of transferring numbers between mobile networks to take place within 24 hours. In addition, the unified code *155# was launched to control the subscriptions to or cancelling of value-added services. Alongside this, there were initiatives to encourage electronic payment methods, and to protect the rights of telecommunications services users. Moreover, the principle of public consultations in introducing new regulatory frameworks was applied to benefit from the expertise of companies and bodies operating in the Egyptian telecommunications market. El-Gamal pointed out that the advancement of the NTRA's ranking

Egypt moves up 54 positions to occupy the 41st ranking on the ITU-ICT Regulatory Tracker of 2020

NTRA is **ranked # 2** at the African level
In comparison to the 19th ranking in 2019

NTRA occupies the **41st** ranking worldwide
In comparison to the 95th ranking in 2019

Regulatory performance indicator of NTRA
Raises to 88.5 points in 2020
in contrast to 74.5 points in 2019

74.5 in 2019   88.5 in 2020

will enhance Egypt's leading role at international and regional levels in the field of telecommunications regulation. This will give the Egyptian telecommunications market more investment opportunities. It will also contribute to creating and providing an attractive investment and competitive environment, in addition to supporting the speedy achievement of the digital transformation process.

Mauritania Looking to Tighten Internet Control

The President of Mauritania, Mohamed Ould Ghazouani, has warned of a further tightening of state control of internet usage, prompting criticism from human rights bodies. A report from Ecofin says the President is looking to strengthen the cybercrime law which was passed in 2016. He claims online platforms are being used 'to undermine public stability, spread false rumors or spread hatred and incite social groups against others. The law has already been used to imprison bloggers and political activists.

NKOM Advises ESA of Proposed Changes to Price Regulation of Telenor's Fiber-Based Services

Norway's National Communications Authority (NKOM) has sent a draft decision on updated price regulation of access to Telenor Norge's fiber network to the EFTA Surveillance Authority (ESA). Announcing the development in a press release, the regulator noted that with Telenor subject to a requirement not to put buyers of access in margin squeeze, it now intends to revise the current regulation. Specifically, it has said it is proposing changes to the principles of margin squeeze testing for the telco's Virtual Unbundled Local Access (VULA) fiber service. Currently, the Nkom conducts margin squeeze tests

and gross margin tests of Telenor's fiber-based products in the retail market twice a year, with a view to ensuring companies buying wholesale access to the telco's fiber network do not suffer a margin squeeze. As per the proposed changes put forward, the first will see the market share that is assumed for an 'efficient provider' in the test reduced from 20% to 15%, while the second will see a stricter requirement introduced for the gross margin for individual fiber products offered by Telenor to companies, so that the gross margin for these products shall be at least 40%. Meanwhile, the NKOM plans to

introduce a new requirement for the carrier to document passed margin squeeze tests and gross margin tests before the company can implement price changes or launch new fiber-based products in the retail market. According to the regulator, this new requirement will prevent access buyers from experiencing margin squeeze in the period until NKOM carries out its next margin squeeze test. With the ESA having one month to comment on the NKOM's proposals, the Norwegian regulator has said that, once it receives any feedback, it will take this into account and then look to issue a final decision.

US, UK Agree Tech Tie-Up Targeting 6G

The UK and US governments agreed to deepen ties in various areas of technology including collaborating on future development of 6G, as part of ambitions to lead the world in R&D, create jobs and ensure security of citizens. Also included in the agreement is collaboration in scientific fields, while R&D goals will focus on creating wealth, tackling inequality, and ensuring democratic values and open societies. The deal was announced as US President Joe Biden visits the UK for the annual G7 summit. Both nations aim to ensure their values and open market principles are embedded "in the design

and use of technology globally". They plan to concentrate on areas including the resilience and security of critical supply chains, battery technologies and AI, as well as working to improve accessibility and flow of data to support economic growth, safety and scientific and technological progress. A headline-grabbing section of their commitment included ambitions to "develop proposals" on future technology such as 6G, and strengthen collaboration on digital technical standards. Industry murmurings around 6G continues to grow, with mobile technology organizations in Japan and Finland the latest to agree a

development collaboration. The majority of industry players have indicated a commercial launch in 2030. In addition, the UK and US said they would work together to "realize the full potential of quantum technologies" in a bid to improve the functionality and performance of devices. UK Digital Secretary Oliver Dowden said the agreement marks a new era of cooperation with "our closest ally, in which we commit to using technology to create prosperity and guarantee the safety and security of our citizens for years to come".

Saudi Arabia Grants Digital Banking License to Two Firms

Saudi Arabia has granted digital banking license to two firms as the use of finance technology spreads in the Middle East. STC Pay, launched by the kingdom's biggest mobile operator Saudi Telecom in 2018, will be converted into a digital bank with a capital of 2.5 billion riyals (US$667mil or RM2.78bil), according to a central bank statement. It will be called STC Bank. A second firm, led by Abdul Rahman Saad Al-Rashed & Sons Co, will form a digital bank with a capital of 1.5 billion riyals (RM1.67bil). It will be called

Saudi Digital Bank. Saudi Telecom said it will inject additional 802 million riyals (RM890.96mil) to retain its 85% in STC Pay and Western Union will invest 750 million riyals (RM833.19mil) to own 15% of the firm. Western Union acquired the stake in STC Pay last year for US$200mil (RM833.3mil). The central bank also said licensed 16 Saudi fintech companies in the recent past will provide payment services, consumer micro-finance and digital insurance brokerage.

Saudi Arabia's CITC Reviews Telecom Services in Touristic Regions

Saudi Arabia's Communications and Information Technology Commission (CITC) has carried out inspection tours of retail shops and branches of telecom companies in coordination with relevant governmental authorities in Taif, Baha, Asir, and Jazan. Since the Saudi Summer Program 2021 was launched recently, these regions have been witnessing a large turnout of visiting citizens and residents, leading to an increase in demand for telecom services. CITC's inspections aim to measure the quality of coverage and ensure the safety of frequencies. The commission directed all telecom service providers to raise the level of services in these regions to cope with the increasing demand. It also formed technical teams to write daily reports on the performance of networks in touristic areas. The inspections are part of CITC's efforts to improve the quality of telecom services and users' experience, support the efforts of governmental authorities to encourage national tourism and provide quality services in tourist and recreational sites.

Ethiopia Calls for Expressions of Interest in Ethio Telecom Stake Sale

Ethiopia's Ministry of Finance (MoF) and the Public Enterprises Holding and Administration Agency (PEHAA) have announced the completion of a 'key milestone' in the partial privatization of the country's incumbent telco, Ethio Telecom. In a press statement the government bodies confirmed that, as part of a privatization process that began in 2018, the state is now ready to release an Expression of Interest (EoI) for the sale of a 40% stake in Ethio Telecom. According to the MoF, the issuance of the EoI is scheduled for today (15 June), with international investors to be given until 14 July to confirm interest in acquiring the stake. Following the issuance of the EoI, a Request for Proposal (RFP) will follow, with the timeline for this to be 'communicated in due course, with the aim of completing the transaction in an efficient and streamlined manner'. Deloitte Consulting Limited has been appointed as transaction advisor, the press statement also noted, with that company said to now be on the final stage of completing the preparatory work, which includes 'business plan, financial, legal and tax due diligence and business valuation following global best practice'.

PEACE Cable and PCCW Global to leverage Infinera's ICE6 for High-performance PEACE Submarine Cable System

Haitham Zahran
Vice President,
EMEA Subsea Cable Systems
PCCW Global

PCCW Global

Following an extensive and successful technology evaluation and application analysis, PEACE Cable International Network Co., Limited and PCCW Global, the leading telecommunications service provider, have chosen to deploy the Infinera ICE6 optical engine solution on the Mediterranean Segment of the new Pakistan East Africa Cable Express (PEACE) submarine cable system, providing the ability to transmit record-breaking capacity of nearly 25 terabits per fiber pair, while laying the foundation for enhanced service scalability, flexibility, and future differentiation.

Infinera's ICE6 solution was selected based on its outstanding capabilities, including the ability to achieve industry-leading, commercially deployable performance with a combination of ultra-high baud rates and an advanced modulation technique known as Long Codeword Probabilistic Constellation Shaping. Both capabilities are using the latest 7nm ASIC technology, highly optimised algorithms, and Infinera's second-generation Nyquist subcarriers.

Nick Walden, Senior Vice President of Worldwide Sales, Infinera, says: "ICE6 enables PCCW Global and PEACE Cable to offer industry-leading, open, scalable, and flexible services to their customers over the PEACE submarine cable system, as demand across these regions continues to grow dramatically."

The PEACE cable system is a 15 000km-long privately owned cable system connecting three of the largest and most populous continents in the world - Asia, Africa and Europe. When complete, the PEACE system will provide the shortest and most direct data route from Asia to Europe, combined with exceptionally low latency, which is vitally important for people and organisations to connect through the innovative use of ICT.

The PEACE cable system is a 15,000km-long privately owned cable system connecting three of the largest and most populous continents in the world - Asia, Africa and Europe.

The backbone of the project interconnects Pakistan, Djibouti, Egypt, Kenya and France, also providing critical access for Africa to key growing economic corridors and provides a massive bandwidth capacity via multiple fibre pairs.

Traditionally under-served, Africa has the fastest-growing youth population in the world, a rapidly growing number of Internet users and a corresponding increased demand for connectivity. PEACE will provide fast and reliable submarine connectivity, enabling African online collaboration, knowledge and outreach.

Haitham Zahran, Vice President, EMEA Subsea Cable Systems, PCCW Global, says: "The PEACE submarine cable system is specifically optimised for maximum capacity per fiber pair and our advanced network design enables us to continue to embrace new technologies in order to meet growing bandwidth demand over these important routes. We are hopeful that it will soon be the highest-performing open cable system connecting Asia, Europe and Africa."

ARTICLE

Accelerating the Digital Economy

Digital technologies have transformed society on an unprecedented scale over the last two decades. Today, it's digital technology that has the potential to bring widespread social changes and economic advancement. However, it is essential that nations understand and cater to the digital economy as it will play a key role in achieving government objectives of economic diversification, and national digital transformation. Both the public and private sector must transform into digital enterprises

> *We at Huawei are committed to building this openness and transparency, as demonstrated most recently in our expanding network of global Cyber Security and Privacy Protection Transparency Centres. On June 9, Huawei opened the largest of such transparency centers in Dongguan, China, which joins a network of similar facilities in the UAE, the UK, Canada, Germany, Italy, and Belgium.*

to remain relevant and competitive, if they are to thrive in the digital era.

Defining the Digital Economy
The digital economy has been defined in different ways, primarily based on scope. Early on in the digital era, the term knowledge economy was used to denote a combination of the Information and Communications Technology (ICT) sector, digital media and e-commerce. However, the digital revolution in the last two decades has made digital business models much more widespread, this new scenario requires a definition based on a much broader scope. According to the Organization for Economic Co-operation and Development (OECD), the digital economy encompasses all economic activities reliant on, or significantly enhanced by, the use of digital inputs, including digital technologies, digital

Safder Nazir
Senior Vice President, Digital Industries,
Huawei Middle East

infrastructure, digital services and data.

The emergence and evolution of the digital economy is characterized by three key trends that help us better understand the new economic construct:

1. Dominant Digital Business Models

The digital economy is often referred to as a platform economy, where digital business models and platforms that enable them, dominate. In some industries, such as transportation and tourism, digital platforms have caused severe disruption to traditional models: think the likes of Uber and Airbnb. In sectors such as banking and government, digital is now the primary mode of service delivery, leading to branches and customer service centers closing down.

2. The Shift from Providing Services to Creating Experience

Organizations differentiate themselves by creating digital experiences for customers in the digital economy. For example, today's leading retailers inspire customer purchases by using AI-based, personalized marketing messages as well as delivering in-store and online Augmented Reality (AR) and Virtual Reality (VR) experiences. They create seamless digital and physical shopping experiences through automated stores and ecommerce fulfillment centers. The public sector is also providing a similarly seamless digital experience through initiatives such as national government service portals, national digital identities, and more.

3. The Rise of Industry Ecosystems

Traditional and linear value chains with limited partner engagement are now giving way to integrated ecosystems that use software platforms to deliver value, create resiliency, and foster innovation through connected processes. For example, leading banks engage with Financial Technology (FinTech) players to enhance services and innovate rapidly within the Financial Services Industry (FSI). Such industry ecosystems thrive on data sharing and use digital platforms for intercompany collaboration and multiplied innovation.

The Four Key Enablers of the Digital Economy

The global economy is on its way to fulfilling its objectives— more than 65% of global Gross Domestic Product (GDP) is predicted to be digitalized as soon as 2022. Accelerated investment in digital transformation will further spur the creation of digitally-enabled products, services and experiences across all industries, significantly impacting economic development, particularly as nations move away from resource-based economic models. To facilitate this transition, governments and policymakers should focus their efforts on critical enablers of the digital economy. As such, there are four aspects that are foundational to its evolution, addressing them head on will multiply economic growth in the future:

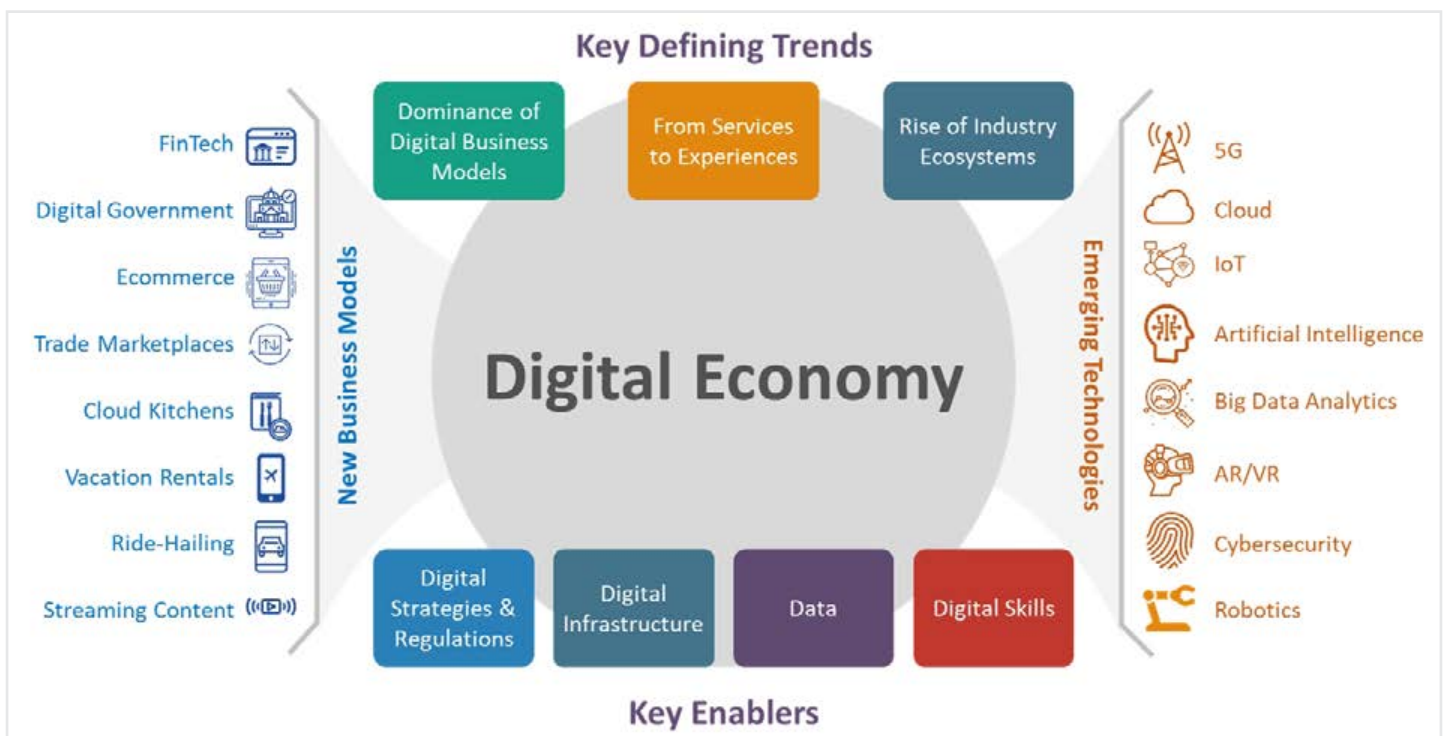### 1. Digital Strategies and Regulations

The digital economy requires focused attention, tailored strategies and policymaking efforts. China, for example, has put significant emphasis on the digital economy in its national strategy for 2021–25 and expects it to become the core component fueling its commercial transformation. The country plans to use data and applications to not only upgrade and transform traditional industries but also foster new business models.

2. Digital Infrastructure

The digital economy requires organizations and individuals to connect seamlessly regardless of their location and therefore relies on robust, reliable, responsive, secure and scalable digital infrastructure. Digital infrastructure, today, is comprised of a myriad of technological elements such as telecommunication networks and storage infrastructure — including

Key Defining Trends

FinTech • Digital Government • Ecommerce • Trade Marketplaces • Cloud Kitchens • Vacation Rentals • Ride-Hailing • Streaming Content

New Business Models

Dominance of Digital Business Models | From Services to Experiences | Rise of Industry Ecosystems

Digital Economy

Digital Strategies & Regulations | Digital Infrastructure | Data | Digital Skills

Emerging Technologies

5G • Cloud • IoT • Artificial Intelligence • Big Data Analytics • AR/VR • Cybersecurity • Robotics

Key Enablers

data centers and the cloud — sensor and camera networks, applications and platforms. By the end of 2022, 60% of network resources will migrate to the network edge, to deliver adaptable and agile connectivity services to a population who live, work, and play in a heavily distributed way.

3. Data

The digital economy is primarily a data-driven economy. Data is the most valuable resource in the digital age, and it's a key enabler of personalized customer experiences and industry ecosystems. The ability of an organization to capture data, synthesize information, learn continuously and apply the resulting insights at scale, is a key differentiator in the digital economy. A combination of IoT platforms, devices, networks, AI and ML tools, spreads intelligence from the edge to the core and creates a data value chain. However, fully exploiting data remains a significant challenge for organizations. It is estimated that less than 3% of existing data is analyzed with the aim of improving enterprise intelligence. National governments and policymakers that focus on developing the digital economy should strive to create an open data economy, where data is shared widely, creating value, albeit supported with strong data privacy and protection laws to counter potential threats.

4. Digital Skills

The increasing role of digital technologies in the workplace requires a range of new digital skills. This falls into two categories: core ICT skills — such as programming, and generic ICT skills required by employees in a digital environment. However, it is difficult to find core ICT skills. With rapid technological evolution, the skills learned at educational institutions often fall short and quickly become outdated. Enhancing the ICT skills of graduating students and the wider workforce will be critical to digitalization efforts and the long-term evolution of the digital economy. For governments and policymakers, this also has significance since they need to adapt a new generation to changing economic scenarios and avoid disruptions to the labor market.

The Digital Economy and National Digital Transformation

Economic prosperity and the improvement of citizens' lives are priorities for every nation. As digital technologies are steadily intertwined with the way products and services are created and consumed, the digital economy is becoming a critical component of national transformation. It's crucial for national governments and policymakers to understand this new economic construct and facilitate its evolution by creating a supportive environment. To thrive in the digital age, organizations must also transform digitally through creating superior customer experiences by embracing digital business models, mastering data and participating in industry ecosystems.

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Afghanistan

The Afghanistan Telecom Regulatory Authority (ATRA) has granted frequency in 1800 MHz band to the state-owned telco Afghan Telecom (Aftel), which offers wireless services under the Salaam brand, for providing broadband advanced/ 4G services. In the country's first spectrum auction last month, ATRA put up for sale frequencies in the 1800MHz (three lots of 2×5MHz), 2100MHz (two lots of 2×5MHz), and 2600MHz (three lots of 2×10MHz) bands, intending to supply the airwaves needed for operators to provide more advanced mobile broadband services. The majority of the licenses went unsold, however, with Aftel emerging as the only winning bidder and paying the base price of USD17.2 million for its 15-year concession. Omar Mansoor Ansari, ATRA Acting-Chairman, expressed that telecom network is changing and new technology generations having better speed than previous ones are being introduced, thus, wireless and wired networks operating in the country need to be configured for providing advanced services in the future. "Frequency sources were previously allocated on an equal basis but they are now allocated to the telecom companies through auction and competition to provide the necessary opportunity for 4G Services; ATRA licenses are not technology-based afterward since mobile service license is apart from technology license. ATRA is working on how the ground is paved for efficient use and cost of spectrum sources are provided for telecom companies in segregation", added Omar. Abdul Kareem Totakhel, Deputy for State Affairs, termed the 4G auction a big achievement for the country in the current condition and congratulated ATRA and telecom companies for this success and accomplishment while speaking in the ceremony.

(July 18, 2021) developingtelecoms.com

ATRA senior officials gave information to the Technical Delegates and Budget and Finance Commission of Lower House members each one Mr. Azim Mohsini, Jawed Sapai, Shukuria Esakhel and technical advisors to the commission had come to ATRA in regard to transparency, progresses and completion of monitoring systems affairs for RTDMS (10% Telecom Services Fee). Mr. Omar Mansoor Asnari, ATRA Acting-Chairman, mentioned in this explained to the members of the commission that ATRA has carried out serious activities for hiring cadres for capacity building bedsides expediting completion process since transfer of RTDMS or monitoring system 10% TSF to the authority based on President's order, further, prepaid part of the system has been completed and there is 700 million Afghani rise to the government income. Mr. Ansari stated, "ATRA has brought modifications within the 10% TSF Act for more transparency and once this is approved by the parliament, RTDMS would be connected with main sources and there would be more transparency". Presentation was presented to the representatives on RTDMS after this meeting and the specifications and characteristics of 10% TSF monitoring system upon telecom networks explained to them nearby. The representatives appreciated ATRA recent efforts regarding the system transparency and assured any support for strengthening the system.

(June 16, 2021) atra.gov.af

Bahrain

In light of supporting the digital transformation strategy in the Kingdom of Bahrain, the Telecommunications Regulatory Authority issues the first license to execute e-signature and trust services, to BENEFIT Company at the beginning of August. On this occasion, TRA's Director of Cyber Security & Technical Affairs Eng. Mohamed Alnoaimi said "Through licensing trust and e-signature services, TRA seeks to keep pace with the latest technologies and developments to carry out its tasks and perform its duties to achieve the strategy of the digital transformation. The e-signature service is the latest initiative of TRA in this field. The increased use of "e-signature" will help to enhance the efficiency of administrative work and the level of performance of government and private services in accordance with the rapid technological trends." Alnoaimi stressed on TRA's commitment to assessing all systems and processes on a periodic basis to ensure their contribution to fulfilling the needs of residents while preserving all parties' rights. TRA also supports initiatives that promote the adoption of latest developments and technologies that improve high quality of service. BENEFIT's Assistant General Manager for Information Technology, Mr. Riyadh Al-Maraj said, "We are pleased that BENEFIT Company is the first entity in the Kingdom of Bahrain to obtain a license for trust services and e-signature, after passing the standards and specifications for providing the service according to the regulations issued by TRA." "BENEFIT

has invested in establishing an advanced technical infrastructure according to the very best international practices to meet the requirements of this license, which we look forward to opening wide doors for many future applications." Al-Maraj added. Trust and e-signature services come within the package of servicers as per the legislations and laws of the Kingdom of Bahrain in accordance with the provisions of Articles (20) and (21) of the Electronic Communications and Transactions Law. E-signature services allow conducting and signing transactions electronically and remotely, and promoting and adopting e-signatures as a safe and reliable method when conducting transactions and services electronically. (August31, 2021) TRA Bahrain

The Kingdom of Bahrain is set to launch a national digital platform aimed at serving health facilities, it has emerged. The yet-to-be-named online hub – which will reportedly be accessible via nhra.bh.munshaat – will fall under the Gulf country's National Health Regulatory Authority (NHRA), and is due to launch later on this year. "This system includes many services, including licensing a new facility or branch, changing the classification of the facility, adding a service, transferring ownership, changing the address, changing the name, and closing the facility or one of its branches," NHRA chief executive, Mariam Al Jalahma told GDN Online. This week, the World Health Organization (WHO) opened its 152nd office, in Manama. Bahrain became the first capital in the Middle East to be dubbed a "Healthy City" by the WHO earlier in the year. According to the NHRA, every health facility in Bahrain will have a dedicated page on the platform, allowing it to track all applications, reports, and violations in one location. The page will also include the validity information of all employee licenses as well as medical devices. "The electronic shift aims to develop the quality and efficiency of services, streamline procedures and facilitate access to services," added Al Jalahma. The Kingdom's digital transformation is part of the Bahrain Economic Vision 2030, which was first unveiled in 2008. The country is among those in Asia with the highest E-Government Development Index (EGDI) values, as per a 2020 report by the United Nations. It ranks just ahead of the Kingdom of Saudi Arabia (KSA), but behind the United Arab Emirates (UAE). "The WHO was monitoring the response of member states and what was accomplished in Bahrain deserves to be acknowledged," said WHO representative and Bahrain Head of Office, Tasnim Atatrah, during the latest WHO office launch on Monday. "Efforts have also been made to ensure the full continuity of essential healthcare services to the people who require treatment for other health conditions and who also need to continue receiving the different services," Atatrah added. "Manama became the first capital in the Middle East to receive

[the Healthy City award], adding a new international achievement to the kingdom's rich track record." (July 27, 2021) healthcareitnews.com

According to the latest 2020 ICT Pricing Trends Report of Measuring Digital Development, issued recently by the International Telecommunication Union (ITU), Bahrain elevates to the highest ranking of generations, from Third to Fourth generation. The report verifies the variety of influences impacting the pricing levels for ICT services in a region; however, one governing influence on overall affordability is the resilience of a regulatory environment. As found by the ITU study, Bahrain amongst Arab countries, is ranked 2nd for pricings in regard to mobile broadband services, as it maintains affordable fixed broadband rates yet a large - scale data capacity. In addition, Bahrain's mobile broadband prices account for 1.51% of GNI p.c., whereas fixed broadband prices account for 1.82% of GNI p.c, which is below the UN affordability target, therefor allowing Bahrain to meet and outperform the Sustainable Development Goal target before 2025, holding prices below two percent of GNI per capita. In praising exerted efforts, Sh. Nasser Bin Mohammed Al Khalifa, Acting General Director of TRA Bahrain congratulates and tributes the Kingdom's evolution in regulatory framework to HM King Hamad Bin Isa Al Khalifa, and to HRH Prince Salman bin Hamad bin Isa Al Khalifa Crown Prince and Prime Minister. According to Sh. Nasser, this achievement validates the Kingdom's advancements in both the field of telecoms, and excellence of enabling environment of digital transformation, valuing the wise leadership's guidance in expanding Bahrain and shaping it into a regional telecom and ICT hub, seeking to continue efforts to develop the telecommunications sector in the Kingdom of Bahrain. Sh. Nasser confirms "The regulatory environment's resilience is a significant facilitator of both ICT adoption and price reduction. Regulators in this sector play a significant role in safeguarding consumers benefits through regulating competitiveness between Operators. Regulators also impact market structure and competitiveness through awarding licenses, allocating and designating spectrum, facilitating interoperability and infrastructure exchange, and regulating investment, among other things. A country ascends the regulatory ladder to a higher generation of ICT regulation as its regulatory environment matures." He added "The pandemic of COVID-19 has demonstrated the critical necessity of connectivity. This position will only expand in the following years as the globe continues to cope with impacts of the pandemic and embraces the "new reality." However, continued monitoring of the growth of ICT pricing is crucial for quality management to tackle affordability gaps."

(July 14, 2021) tra.org.bh

Bangladesh

The Bangladesh Telecommunication Regulatory Commission (BTRC) is planning to allocate 450 MHz spectrum to the country's mobile operators in next two years, a BTRC official revealed this in a virtual public hearing. Replying to a question in the hearing,

the BTRC high officials admitted poor service quality of mobile network operators. They also identified lack of enough spectrum against the increasing demand as one of the key reasons behind such poor service quality. "We will allocate 450 MHz new spectrum

to operators, and hope that by the end of 2022 their service quality will improve further," Brigadier General Shahidul Alam, Director General (Spectrum) of the BTRC, told the hearing. Clients and journalists raised questions and lodged complaints regarding poor service quality, slow internet speed, and call drop etc in the virtual hearing. Replying to the complaints, BTRC Chairman Shyam Sunder Shikder said they were working relentlessly to improve the service." Two committees were formed to investigate the reasons behind poor service quality." The BTRC said it had resolved 60 percent complaints raised in 2019, which was the last hearing before the Covid-19 break out. Replying to a question, the BTRC chairman said the regulator would not allow a few internet service providers (ISPs) to dominate the market and suppress other small ISPs. "If we get specific complaints, we'll certainly take measure regarding those," he added. BTRC Director General Brigadier General Nasim Parvez said service quality does not depend on operators' service only, but it also depends on quality of users' handsets. (August 25. 2021) thefinancialexpress.com.bd

The Bangladesh Telecommunication Regulatory Commission (BTRC) is going to install a telecom monitoring system at a cost of Tk77.65 crore (USD 9.13 million) to oversee the activities of mobile operators and improve the quality of mobile phone services. The regulatory authority has signed a purchase agreement with Canada-based international company TKC Telecom. Under the agreement, TKC Telecom has to install a telecom monitoring system within 180 days. Minister of Posts and Telecommunications Mustafa Jabbar and Secretary of Posts and Telecommunications Md Afzal Hossain addressed the function as the chief guests. BTRC Chairman Shyam Sunder Sikder presided over the function. According to the presentation given at the event, once the system is implemented, the process of collecting and reporting information from mobile operators will be automated. At the same time, it will be possible to observe all the necessary information in real-time. This will ensure regular

and reliable access to voice and data traffic, network usage, and quality information as well as BTRC's revenue. This will greatly improve the BTRC's policy-making system and make reporting to the government more efficient and faster. Speaking on the occasion, the minister said the signing of the agreement is another milestone to the journey of building a Digital Bangladesh. The monitoring system will contribute hugely to monitor telecom services and enhance its standard, he said. It will be possible to immediately verify the actual condition of the telecommunication network in urban as well as rural areas, islands, haors, coastal areas, and remote areas. (August 9, 2021) developingtelecoms.com

The Bangladesh Telecommunication Regulatory Commission (BTRC) has sought citizens' and expert's opinions, suggestions, and recommendations regarding the new draft guidelines for telecom e-waste management. The use of technology is constantly increasing in Bangladesh, at the same time, the production of telecommunication products is increasing along with the import of telecommunication products. The result has been e-waste management. To ensure that e-waste management and recycling is done in an environmentally friendly manner, the Telecommunications Regulatory Commission (BTRC) has taken steps to formulate "Telecom E-Waste Management and Recycling System Guidelines". Following this, five types of products have been included in the draft guidelines under e-waste. The BTRC has sought public awareness and opinion on the guideline. The draft directive states that e-waste management must be approved by the commission before it can be managed and that e-waste management organizations cannot conduct activities in populated or locality areas. The draft guidelines further state that telecom equipment collected through electronic waste management cannot be marketed in the country as a refurbished device in any way. The BTRC said that feedback on the draft guidelines would be received by 5 pm on July 20. Feedback can be sent via e-mail. (June 26, 2021) techobserver.in

Egypt

The National Telecom Regulatory Authority (NTRA) has adopted the regulatory framework for establishing data centers and providing cloud computing services. This step is in line with the state's strategy to support the digital transformation process and attract and increase investments in this field, in addition to maximizing the benefit of Egypt's geographical location and enhancing its strategic position as a regional and global focal point for data traffic and a gateway connecting Africa and the Middle East to Europe, making it one of the most promising markets in the rapidly growing field of data centers. Moreover, NTRA has studied the best international models and practices in the field of establishing data centers and providing cloud computing services, as well as holding meetings and hearings with local and international companies working in this field to find out the best regulatory policies applicable in global markets

and could be convenient for the Egyptian market. The regulatory framework was prepared and approved to serve as a tool for organizing and facilitating work procedures for data centers and providing the necessary facilities for investment in this field. This regulatory framework aims to attract giant data center companies to the Egyptian telecom market. This will contribute to attracting investments in the field of cloud computing and electronic content, and the subsequent provision of new job opportunities in the field of establishing and operating data centers and associated facilities. This would support the state's plans for digital transformation and providing electronic services provided to citizens, through the applications provided by data centers through which electronic transactions can be carried out in a simpler and faster way using quick access to content hosted within data centers in Egypt. (August 22, 2021) dailynewsegypt.com

The National Telecom Regulatory Authority has approved the first time use of Voice over LTE (VoLTE) in its market. VoLTE is an IP medium-based data transmission technology that delivers both call and data services over a 4G network. VoLTE provides high-definition quality phone calls by using LTE networks instead of legacy voice networks. Remarkably, VoLTE-VoLTE calls are crystal-clear, eliminating static background sounds. LTE-enabled smartphones have a 15 million user penetration in the Egyptian market. The unlocking of VoLTE will accelerate communication & economic growth like never before. The adoption of VoLTE enables voice-over IoT for different consumer-to-business and business-to-business applications. The number of global LTE connections has reached 3.3 billion. Subscription will continue to grow stronger and stronger. Forecasters predict by the end of 2024, this number will have grown to 5.8 billion, making up 60% of all mobile subscribers. (August 11, 2021) afrikan.com

The National Telecom Regulatory Authority (NTRA) has conducted a survey on mobile phone users' satisfaction with services provided by local operators in the Egyptian market during the first half (H1) 2021. The survey took place in cooperation with a global agency in the field of market research. The survey was carried out on 17,000 users of mobile phone services, taking into account the geographical distribution, age, and gender of all segments of society. Users were surveyed about the branch network spread of each operator, waiting time inside these branches, diversity of systems and offers, quality of voice and internet services, as well as the customer service. The percentage of users who were satisfied with the mobile phone services provided to them reached 79% for Etisalat Misr, 78% for Vodafone, 76% for WE, and 73% for Orange.
The results of the survey came as follows:
- Branch network spread: WE topped the list by 82%, followed by Orange and Etisalat by 78% each, and Vodafone by 76%.
- Waiting time inside branches: WE topped the list by 76%, followed by Orange 71%, Etisalat 67%, and Vodafone 62%.
- Diversity of systems and offerings: WE led by 66%, followed by Etisalat 65%, Vodafone 63%, and Orange 60%.
- Quality of voice service: Etisalat recorded 80%, followed by Vodafone 77%, WE 76%, and Orange 74%.
- Internet service quality: WE recorded 76%, followed by Etisalat 72%, Vodafone 71%, and Orange 67%.
- Customer Service: Vodafone and WE recorded 74%, followed by Etisalat 70% and Orange 61%.
- Complaint resolution: Vodafone achieved 71%, followed by WE 70%, Etisalat 65%, and Orange 57%.
- Accuracy: WE got 70%, followed by Etisalat 68%, Orange 66%, and Vodafone 65%.

(August 7, 2021) dailynewsegypt.com

The National Telecom Regulatory Authority (NTRA) approved the use of the first voice-over 4G LTE (VoLTE) service in the country. The NTRA's approval came after telecom operators met the technical and regulatory requirements necessary for launching the service. VoLTE is a highly-efficient wireless communication technology, which provides high-quality voice calls for subscribers, especially with regard to voice purity and clarity, without incurring any additional cost. Around 15 million mobile users are due to benefit from VoLTE service, the NTRA said. (July 18, 2021) egypttoday.com

Egypt's Information Technology Industry Development Agency (ITIDA) has awarded Fixed Misr and El-Delta Electronic Systems licenses to provide digital signature services, after receiving the highest scores in the overall evaluation of submitted offers. ITIDA's CEO, Engineer Amr Mahfouz commented: "Eight companies submitted bids for licenses to provide digital signature services, 4 of which were accepted based on technical and financial proposal evaluation separately, while the other 4 companies were turned down for not obtaining at least 75% of the grades, per the statement of work and the technical requirements". Mahfouz added: "ITIDA's Board of Directors has made the decision to grant the licenses to two companies with the highest scores catering to market needs with the availability of five services providers, and according to the study ITIDA is currently doing to apply the latest digital signature technologies and in Egypt. ITIDA's decision to grant new digital signature licenses is part and parcel of the huge development witnessed in the IT sector in Egypt, as it comes to support digital transformation efforts and to accelerate MCIT's Digital Egypt strategy. Additionally, the digital signature aims to link government services to the private and civil sectors, which requires the expansion of digital signature adoption across Egypt. Mahfouz explained that the duration of the license is 3 years, to start from the date of the operation permit and the issuance of the license from the Egyptian Root Certificate Authority (Root CA), subject to renewal for another similar period or periods, per the decision of ITIDA. Hazem Saafan, Managing Director of El-Delta Electronic Systems, said that the company is more than ready to implement its business plans as per the schedule set by ITIDA, to guarantee the success of all aspects of the digital signature system, including management, operations, maintenance, and follow-up services. "El-Delta applies international standards of information security and services quality in cooperation with global consultants, and through our partnership with Telecom Egypt to achieve the extensive outreach, and ensure the highest quality provided to citizens" "We have successful experience in implementing DX projects such as the Automation of Electronic Tax Invoice System, e-Examinations applied in the Egyptian universities, and the infrastructure upgrade in university hospitals.", Saafan added. For his part, Mahmoud Ahmed, Managing, Director of Fixed Misr, expressed his enthusiasm for gaining the license and his confidence in his company's capabilities to carry out any technical, and operational commitment. He added that the company excels in providing high levels of service to both individuals and businesses, through a huge network of service outlets thanks to its partnership with Etisalat Misr. "Fixed Misr has a proven track record in implementing a series of high-tech projects, in addition to its contribution in Egypt's digital transformation through the implementation of Digital Egypt platform, the Electricity smart services platform, in addition to many other national DX projects." Mahmoud added. Last February, ITIDA had announced the new licenses would be awarded to companies to provide digital signature certificates, e-seal, and time stamp services for both individuals and businesses. The digital signature law, issued in 2004 and upon which ITIDA was established, supports Egypt's e-commerce industry by securing the internet as a legally viable medium for digital transactions and aims to support digital

transformation in all state sectors. The executive regulations of the digital signature law have been amended under the decision of the Minister of communications and information technology No. 361 of 2020, to accelerate Egypt's digital transformation adoption; and the central role of digital signature in developing the efficiency of administrative work; and improving the government services, and adding to Egypt's competitiveness globally.

(June 28, 2021) egypttoday.com

The communications ministries of Iraq and Egypt have signed a Memorandum of Understanding (MoU) to strengthen cooperation in the field of ICT. Under the agreement the two countries will promote the sharing of expertise across a range of areas including: telecommunications infrastructure, digital transformation, capacity building, Arabic digital content, research and development, and regulations. Following the signing of the MoU, the Egyptian ministry has agreed to provide its Iraqi counterpart with assistance in carrying out digital transformation and automation projects. To that end, the two offices will establish a joint venture to drive the projects in Iraq, with a joint committee formed to establish its short, medium and long term plans.

(June 24, 2021) Agence Ecofin

The Information Technology Industry Development Agency (ITIDA), through its arm Software Engineering Competence Center (SECC), has launched DX4SW initiative to help the local software development companies follow the latest digital

transformation global trends. The (DX4SW) initiative aims to support digital transformation and enterprise agility in the local IT sector, by helping software development companies achieve their digital strategies and business objectives. The Digital Transformation 4 Software Development Companies (DX4SW) initiative comes in cooperation with the Chamber of Information Technology & Communication (CIT) and the Egyptian Information, Telecommunications, Electronics, and Software Alliance (EITESAL). The DX4SW reference architecture and DX guide focus on the development of five main aspects, including the company Performance and Outcome, Processes, People, Information Systems, and Technology, leveraging SECC's expertise in applying the international quality standards in the software industry. According to DX4SW Product Structure, SECC will present an innovative, technology-enabled, and capability-based reference architecture offering a service roadmap to help these companies optimize its resources and meet the DX global trends, following an initial capability assessment for the beneficiary companies. Both CIT and EITESAL will subsidize their member companies to join the initiative according to their size offering 80% to the small enterprises, 70% to medium-sized, and 60% to large enterprises. ITIDA has set out the eligibility criteria including the beneficiary company has at least three years of work experience, must be an Egyptian company working in the ICT field, must be registered in ITIDA's companies' online database, and is a member in the aforementioned NGOs.

(June 1, 2021) egypttoday.com

Iran

The bandwidth available for mobile internet services in Iran has increased by 30% this week following the award of new spectrum in the 2.3GHz band. According to a report from PressTV, frequencies have been allocated to the country's two largest wireless operators, state-backed Mobile Communication Company of Iran (MCI) and MTN Group subsidiary MTN Irancell. The new spectrum will be used to support 4G services.

(July 9, 2021) commsupdate.com

The government of Iran is taking full control of the country's fixed internet infrastructure by hiving off the network assets of incumbent telco Telecommunication Company of Iran (TCI). A report says that a bill has been approved which will transfer the control of networks to the government, with part-privatized TCI having come in for criticism due to a perceived lack of investment in fixed infrastructure. Backbone networks are already under state supervision via the Telecommunication Infrastructure Company (TIC), which is controlled by Iran's ICT Ministry. (June 14, 2021) Press TV

Jordan

The average Internet speed on mobile phones by the end of the first half of 2021 for all telecommunication companies in the Kingdom went up to 23.46 megabits per second (Mbps) compared with 19.48 Mbps during the same period of 2020 said the Telecommunications Regulatory Commission (TRC)... The TRC said that the average Internet speed for mobile phones in the first half of 2020 for the fourth generation stood at 21.8 Mbps, increasing to 24.7 Mbps in the January-June period of 2021, the

Jordan News Agency, Petra, reported. The commission attributed the increase to the hike in demand imposed by the pandemic-induced shift to remote work and online learning. Average speed for fixed Internet subscriptions by the end of the first six months of 2020 stood at 56 Mbps, which grew to 65.4 Mbps by the end of June 2021, the TRC said, attributing this to the increase in fiber Internet subscriptions.

(August 29, 2021) zawya.com

Kuwait

According to a new global study, the prices of mobile internet in Kuwait are among the cheapest in the world, as telecom companies provide them with the best value per gigabyte of mobile data, reports Al-Rai daily. The study was issued by Top Dollar, which is a center for financial studies. It is based on information collected from around the world to determine which countries provide the best offers for mobile data in comparison with the cost of megabits per second (Mbps) and find the best value around the world, as well as the price per gigabyte compared to local income to determine the cheapest mobile internet prices.

(August 10, 2021) arabtimesonline.com

Lebanon

Imad Kreidieh, Chairman of Lebanon's state-owned telco Ogero, has warned that national power shortages will have a knock-on effect on his company's ability to provide internet services. Sustained power-rationing may soon cause 'disastrous' large-scale internet outages in Lebanon that could cripple the central bank, the economy and vital infrastructure from hospitals to schools, Kreidieh told the newspaper as he warned that services were crumbling under the weight of the country's ongoing economic crisis. Lebanon has struggled with power cuts for decades, but the problem has intensified after a Turkish company operating power barges generating around a third of the country's electricity said last month it was ending operations due to unpaid bills and legal challenges. Ogero has been buying additional diesel generators to keep internet relay stations running – but according to Kreidieh this is costly and unsustainable due to worsening diesel shortages, whilst the introduction of solar-powered network stations remains at a fledgling stage mainly due to financing restraints. Furthermore, the chairman highlighted that Ogero is struggling to import equipment to maintain its networks as the value of the national currency continues to plummet, while the telco also has to pay for international internet connectivity in US dollars, exacerbating the company's funding shortfall that he estimated would be close to USD20 million in 2021. Kreidieh indicated that end-user prices need to be increased to help cover costs, saying the government must make the decision to raise tariffs. Compounding all these problems, Lebanon remains in a political deadlock after the government resigned following August 2020's devastating chemical explosion in Beirut. Despite the major challenges, Mr. Kreidieh confirmed that Ogero is continuing with its plans to expand fiber-optic broadband access – albeit at a much slower pace than previously expected. An intended four-year fiber-optic rollout program began in 2018, but ground to a halt in late 2019, with virtually no work carried out on the project during 2020, before deployment resumed in 2021, the chairman reported, adding that: 'Despite financing difficulties, Ogero has been adding 1,500 to 1,600 new subscribers to the fiber-optic network per month.' However, he calculated that Ogero needs approximately USD80 million in additional funding to complete the network rollout.

(June 9, 2021) The National

Morocco

The National Telecommunications Regulatory Agency (ANRT) has published a decision detailing a number of amendments concerning spectrum used with low-power short-range devices. Among the changes, it is now possible to take advantage of the Wi-Fi 6E standard, which can significantly boost the speed of license-exempt indoor wireless networks. It said that the country is the first in Africa to authorize the use of 6 GHz frequencies for faster Wi-Fi connectivity. In addition to the introduction of Wi-Fi 6E, there is an extension of the 24 GHz band to include omnidirectional radars of obstacle detection and motion detection radars. An official statement said: "From June 2021, it will be possible to use the latest evolution of the WiFi standard, which has a maximum theoretical connection speed of 10 Gb/s. More specifically, WiFi 6 will allow a 40% increase in throughput compared to its predecessor thanks to higher data transfer and more powerful processors." WiFi 6E complements WiFi 5 and 6 (already authorized in Morocco in the 2.4 GHz and 5 GHz bands), it said. ANRT said that it will bring more additional spectrum to the current WiFi allowing high browsing speeds (up to 9.6 Gbps by any hotspot) and reduced latency for activities such as teleworking, video conferencing, e-learning and augmented virtual reality. On the occasion of this revision, some new applications have also been introduced (omnidirectional obstacle detection radars operating in the 24-24.25 GHz band, low-power short-range portable devices operating in some frequency bands).

(June 8, 2021) developingtelecoms.com

Nepal

The Nepal Telecommunications Authority said it would be issuing a guideline for wireless routers suspecting they may be the reason behind poor internet connections, following a flurry of complaints from users that service quality fell short of international standards. The telecommunication regulator said low quality or duplicate equipment could be one of the key reasons behind poor quality of connections. Internet service providers concur that inferior routers have flooded the market, and type certification is necessary to stop the import of such low-grade devices. Min Prasad Aryal, Director of the Authority, told the Post that as per the plan, the new guideline for wireless routers would be implemented within a month. "The preparation of the draft guideline is in the final phase," he said, adding that as the internet has become an essential service, complaints about its quality have proliferated. "This may be due to the low quality of routers," Aryal said. After the draft is ready, the board will approve the guideline. The authority will then direct internet service providers to implement it, said Aryal. "The authority will also conduct market inspection to check whether the routers sold in the stores meet the standards determined by the guideline. The router uses frequency signals which can impact the speed of the internet connection if the device is of low quality, Aryal said. The use of substandard terminal equipment also impacts the quality of internet service. According to the Department of Customs, the value of router imports jumped by nearly 10-fold to Rs2.15 billion in the last fiscal year ended mid-July. Nepal imported 805,280 sets of routers in fiscal 2020-21 against 115,374 units in 2019-20. The country buys most of its routers from China. The cost ranges from Rs2,900 to Rs4,200 apiece depending on quality. Nokia and Huawei are the most common brands in the domestic market, according to service providers. Aryal said that the guideline for routers would also lay down the liability of internet service providers. It will define a clear role of internet companies while installing these wireless devices. "Once the guideline goes into effect, customers will get a warranty on the router, including replacement and maintenance, among other facilities," Aryal said. "The quality of internet connections should not be compromised due to the router." The guideline will protect customer rights as it will also address capacity, security issues and standard. The standard will apply to routers that are sold in the market and which consumers install themselves, Aryal said. The authority will issue type approval of routers before they are imported to ensure quality and standards, the telecom regulator said. Internet service providers said that the number of internet users had doubled, resulting in a massive import of routers. According to the authority, 25 percent of Nepal's total population of 30 million had subscribed to fixed broadband as of mid-July, compared to 17.74 percent a year earlier. There are 7.85 million fixed broadband subscribers, including wired and wireless networks. Sudhir Parajuli, president of the Internet Service Providers' Association of Nepal, said that they welcome the guideline which will help to get standard products in the market. "This will ultimately benefit customers," said Parajuli, who is also the chairman of Subisu Cable Net. "Among the complaints that we receive about our service, 20 percent have to do with router problems," he said. "We hope the guideline will mitigate problems in internet services to some extent." Parajuli said that counterfeit routers were rampant in the market and they were difficult to tell apart from the original product. "But with the implementation of the guideline, which will require type certification before the import, duplicate products will be prevented from reaching the market. (August 15, 2021) kathmandupost. com

The National Telecommunications Authority (NTA) has issued a new bylaw governing telecom infrastructure sharing and related charges. It is hoped the regulation, approved on 13 July, will enable the country's operators to extend service coverage and lower consumer prices by reducing unnecessary investment in redundant infrastructure. Under the new bylaw, a service provider cannot reject or delay a request for access from another company, while requests will be made on a 'first come, first served' basis and any infrastructure must be used within three months or the agreement will be cancelled. Companies granted shared access will also be prohibited from leasing the infrastructure to another service provider. The directive lists 18 different types of passive infrastructure for sharing, including fiber ports, dark fiber cabling, wireless network point to point data and base transceiver stations (BTS), and sets maximum monthly access charges. Assets deployed as part of the government subsidized Rural Telecoms Development Fund will be subject to lower fees than those owned by an operator. (August 4, 2021) commsupdate.com

NTA will provide free internet to community campuses across Nepal. The telecommunications authority will serve broadband internet without any fare for two years. The decision comes as per the FY 078/79 budget by Nepal government for broadband reinforcement. However, the program was started under Parbat Gurung's leadership, the former Minister of Communication and Information Technology. The campaign started free broadband service from earthquake-ravaged 8 districts. Now, NTA will itself lead the initiative to provide free internet to community campuses around the country. NTA has sanctioned a seventy crores budget for the project which will bring fiber broadband services to public campuses and basic schools around the country in installments. As per the news, NTA will fund all the required equipment and infrastructure charges for the broadband connections. NTA is in talks with community campuses in 8 districts severely affected by earthquakes. To call for the internet connection, the concerned campus will require to produce a recommendation letter by their affiliated university. Earlier, the regulator has also planned to provide 20Mbps internet in every ward of the country. The eight districts to receive the first batch of internet roll-out are Dolakha, Ramechhap, Okhaldhunga, Rasuwa, Nuwakot, Sindhupalchok, Kabhrepalanchok, and Sindhuli. In case, the campuses have a low-speed ADSL service, the plan is to upgrade them to 20 Mbps fiber service. On the contrary, NTA will set up a new connection on its own expenses. (July 26, 2021) nepalitelecom.com

Oman

In the first half of 2021, the Telecommunications Regulatory Authority (TRA) received 671 complaints against telecom services and recovered OMR 136,000 to subscribers. The authority issued a statement on the complaints and grievances index for telecom services that it received during the first half of the year, where the data showed that the total billing complaints and financial obligations for mobile telecom services was at a rate of 1062 complaints per 100,000 subscribers, and technical complaints and service availability at a rate of 2,263 complaints per 100,000 subscribers. The data also indicated that the number of grievances filed with TRA about the mobile telecommunications service amounted to 314 grievances during six months of the year, at a rate of 15 grievances per 100,000 subscribers, which resulted in the recovery of OMR 119,000 in favor of consumers. Regarding fixed telecommunication services, the data issued by the authority indicated that the number of complaints received by companies regarding billing and financial obligations was at a rate of 906 complaints per 100,000 subscribers, and at a rate of 3,122 complaints per 100,000 with regard to service quality and technical problems. The total of grievances that were filed with the authority in relation to fixed telecommunications service was

357 during the first half of the year, and OMR 17,000 were returned in favor of consumers. (August 15, 2021) timesofoman.com

Six companies have been seized by the Telecommunications Regulatory Authority (TRA), for practicing unlicensed activities. "The Telecommunications Regulatory Authority seized six violating companies in the field of postal services during its inspection tours. The violations were related to practices like charging fees without obtaining a license from the authority, " TRA said in a statement. (August 8, 2021) timesofoman.com

The National Center for Statistics and Information will be carrying out a survey among users of mobile phones and landlines. A statement issued online by Oman News Agency (ONA) said: "The National Center for Statistics and Information is carrying out a satisfaction survey of users of mobile phones and landlines telecommunication services in the Sultanate, in cooperation with the Telecommunications Regulatory Authority, from Sunday until July 12, with the aim of providing some indications about the level and quality of these services."

(June 13, 2021) timesofoman.com

Pakistan

In accordance with Mobile Device Manufacturing (MDM) Regulations 2021, PTA has issued MDM authorization to Lucky Motor Corporation Limited for manufacturing of Samsung brand mobile devices. The company had applied for authorization to setup mobile device manufacturing plant in Karachi, Pakistan where it will manufacture Samsung brand mobile devices. The authorization to manufacture Samsung Mobile devices in Pakistan is a landmark achievement and will further revolutionize the vibrant mobile manufacturing ecosystem in the country by ensuring presence of major local and foreign players in the market. This is possible only due to the conducive policies of the Government of Pakistan in its "Digital Pakistan" endeavor. PTA has so far issued MDM authorizations to 25 foreign and local companies for the production of mobile devices (2G/3G/4G) locally. Mobile devices manufactured by these companies shall not only be sold in the country but will also be exported to other competitive markets of the region and beyond. The device manufacturing plants shall be instrumental in creating new job opportunities as well as enabling affordability of mobile devices for Pakistani users. The detail of all MDM Authorization holders is available on PTA website. (August 10, 2021) pta.gov.pk

The Pakistan Telecommunication Authority (PTA) has invited applications from local and foreign bidders for the auction of additional next generation mobile services (NGMS) spectrum

in the country. In a statement, the authority said it had invited the applications under the Pakistan Telecommunication (Re-organization) Act, 1996 and the policy guidelines issued by the government for those interested in providing services of 1,800 MHz and 2,100 MHz bands. The information memorandum containing the terms and conditions, requirements and standards is available on the PTA website. The release of the NGMS spectrum in the country would contribute to the overall economic growth through digitalization and improve the quality of broadband services. During a recent meeting, the Economic Coordination Committee (ECC) of the Cabinet had turned down a proposal to revise the criteria for the release of additional spectrum to telecom companies. The ECC had decided to auction the additional spectrum in line with the past practice and complete the auction by the end of September 2021. It observed that the recommendations of the committee, headed by the Adviser to Prime Minister on Institutional Reforms and Austerity, did not cover exchange risk and payment in installments by the operators. The ECC had considered recommendations of the committee for "Release of NGMS Spectrum in Pakistan for Improvement of Mobile Broadband Services amid Covid-19". The Information Technology and Telecommunication Ministry informed the ECC that another committee on the payment terms for spectrum price/license fee had also deliberated on the "Issues of Cellular Mobile Industry for Digital Enablement". The

IT Ministry requested the ECC to approve the policy directive for the auction of NGMS spectrum in Pakistan. The ECC was also requested to deliberate and decide on the recommendations given by the committee on the issues facing the telecom sector for digital enablement. During the ensuing discussion, the IT & Telecom Division informed the ECC that the recommendations of the committee, headed by the Adviser to Prime Minister on Institutional Reforms and Austerity, were different from the policy directive for the auction of NGMS spectrum whereas the policy directive was in line with the past practice. The ECC discussed the matter threadbare and observed that the recommendations of the committee did not cover exchange risk in cases where 50% balance amount would be paid by the telecom operators in installments. Therefore, it would be advisable to go by the past practice. The ECC considered the summary submitted by the Information Technology and Telecommunication Ministry and decided that the Ministry should ensure completion of the auction process by the end of September 2021 in line with the past practice. The spectrum auctions for the NGMS in Pakistan were conducted in 2014, 2016, and 2017, under the directives issued by the federal government. However, the demand for data services grew exponentially and in just seven years, the number of broadband subscribers in the country increased from 14 million in 2014 to more than 100 million in April this year.

(August 7, 2021) tribune.com.pk

Pakistan Telecommunication Authority (PTA) has carried out an independent Quality of Service (QoS) Survey in 12 cities and 12 motorways/highways/inter-city roads of Punjab, Khyber Pakhtunkhwa and Balochistan with the aim to measure the performance and service quality of Cellular Mobile Operators (CMOs). The survey activity is part of the plan for QoS Surveys 2021 and is a continuous exercise in-line with the vision of Prime Minister of Pakistan to provide quality services to public/subscribers. During the survey, the licensed KPIs of voice, network coverage, SMS and mobile broadband/data were checked using automated QoS Monitoring & Benchmarking Tool "SmartBenchmarker". The Drive test teams selected survey routes in such a manner to cover main roads, service roads and majority of sectors/colonies in surveyed areas. Based upon the compliance level of each KPI as compared to the threshold defined in their respective licenses and QoS regulations, CMOs have been ranked between 1st to 4th position in each category i.e. Mobile Network Coverage, Voice service and SMS service in surveyed cities and motorways/highways. Similarly, in Mobile Broadband Speed segment, the ranking is with respect to the highest data download speed. As per the survey results, compliance level in broadband services is better while some issues have been observed in SMS and voice KPIs. The operators have been directed to take corrective measures for improving the service quality upto the licensed standards. The survey results have been placed at PTA's website (https://pta.gov.pk/en/consumer-support/qos-survey/qos-survey) for information of the subscribers. By making this survey public, PTA is spurring competition among the operators to improve their existing infrastructure with an ultimate aim to increase the overall country-wide mobile service quality.

(August 3, 2021) pta.gov.pk

Syed Amin-Ul-Haque, the Minister of Information Technology and Telecommunications, said that the Ministry has finished preparing for the additional spectrum auction across the state, including Azad Jammu and Kashmir and Gilgit-Baltistan. The Federal cabinet authorized the spectrum auction at its meeting on July 27, the Minister said in a statement. He said that an additional spectrum was being auctioned for AJK and Gilgit-Baltistan for the first time in the country's history. The county now has a 4G (fourth generation) facility, but with the new policy, residents will have access to a 5G (fifth generation) service. Both AJK and GB have 2G (second generation) mobile service, and residents in both areas have long wished for a better service, such as 4G, which is currently available in Pakistan. According to him, the basic price for the 1800 MHz frequency is $31 million per MHz, while the price for the 2100 MHz frequency is $29 million per MHz. Amin stated that networking initiatives worth Rs 32 billion were in the works, and that revolutionary measures in the field of IT were being done to enhance online activity. The Minister stated that the ministry's objective was to carry out the Prime Minister's Digital Pakistan Vision, which included the provision of high-quality mobile and internet services across the country. He expressed his expectations that by auctioning the spectrum frequencies, the government will be able to raise millions of dollars in addition to providing improved services to the public. (July 28, 2021) phoneworld.com.pk

Chairman Pakistan Telecom Authority (PTA) Major Gen. (R) Amir Azeem Bajwa highlighted achievements made by Pakistan's telecom sector & recent initiatives taken by the Government & PTA for realization of "Digital Pakistan" vision and advancement of ICT sector at GSMA Mobile World Congress "MWC Barcelona 2021" held in Spain recently. During the event, PTA and GSM Association (GSMA) signed a cooperation agreement. This collaboration was agreed at an exclusive "Realizing Digital Pakistan Milestone Roundtable". The key areas of collaboration under the agreement are knowledge exchange, regulatory modernization, joint projects for digital inclusion, harmonizing data sharing, digital skills program and research on the ICT sector of Pakistan. GSMA will also project Pakistan's achievements at various platforms and promote "Digital Pakistan" Vision at regional and global forums. The Chairman also delivered a keynote address at the Roundtable covering the digital landscape of Pakistan, steps taken to address industry challenges and the market potential for further investment by the operators. Chairman PTA met with Director of International Telecommunication Union's Development Bureau (ITU-BDT), Doreen Bogdan-Martin. The Chairman briefed the ITU Director about digital profile of Pakistan including market potential, spectrum roadmap, recent achievements and efforts to bridge the digital divide. The ITU Director expressed deep appreciation of Government of Pakistan and PTA's efforts for digital transformation and assured her full cooperation to PTA and other ICT stakeholders in Pakistan. The Chairman also met with Masooma Khawari, Minister of Communications and Information Technology, Government of Afghanistan. He assured the Afghan IT Minister of PTA's full cooperation with regards to proposed international connectivity initiatives involving operators in Pakistan for improvement in overall broadband experience in Afghanistan. The Chairman assured the IT Minister of PTA's

full cooperation and also offered regulatory knowledge and experience, whenever required by the Afghan counterparts. A meeting was also held with President Huawei Middle East Region, Charles Yang to discuss the role of tech vendors in bringing latest telecom and ICT solutions for Pakistan. Mobile World Congress, held annually, is one of the biggest telecom events in the world. The Pakistan delegation participation in the event was effectively used to display vast opportunities offered by Pakistan telecom sector. (July 5, 2021) pta.gov.pk

Qatar

The Communications Regulatory Authority (CRA) recently published on its website the fourth version of the Class License for Short Range Devices (SRDs) that replaces the third version that was in place. The fourth version was designed to keep pace with rapid technological advancements in radio-communications equipment and applications and according to the resolutions and recommendations of World Radiocommunication Conference 2019 (WRC-19). The Class License specifies the harmonized standards to be used for SRDs and the fourth version includes updates to the rules, international standards and technical specifications for the SRDs intended to be imported to Qatar as well as the corresponding authorized maximum allowed output power. In addition to updates related to the addition of new frequency bands and applications for SRDs including Wireless Access Systems (WAS) applications like Radio Local Area Networks (RLANs) applications onboard land vehicles which include wagons, cars, trucks, and buses. "The introduction of the additional frequency ranges was in response to the rapid increase in the uses of radio-communications equipment and applications and the numerous recent related advancements. In addition to CRA's keenness to ensure that there is enough radio spectrum to keep pace with the rapidly evolving technological environment and therefore ensuring that advanced, innovative, and reliable information

and communications technology services are provided across Qatar. The additional frequencies to these applications and the review of the authorized maximum allowed output power for some applications will allow using and selling a greater variety of SRDs in the country, which in turn will benefit consumers and other stakeholders," said His Excellency Mohammed Ali Al-Mannai, President of CRA. It is worth mentioning that the CRA is the responsible authority for regulating and managing all the affairs related to the use of the radio spectrum in Qatar, as well as establishing an effective approval regime for telecommunications equipment. Accordingly, CRA has the powers and authorities of granting, amending, renewing, suspending, and revoking Class Licenses, Radio Spectrum Licenses and Authorizations and determining the terms and procedures necessary for their issuance. Also, CRA sets and manages the plan for Radio Spectrum and ensures the optimal use of it, where no person shall operate any radio-communications equipment or make any use of radio frequencies, without a Radio Spectrum License or a Radio Frequency Authorization from the CRA. Moreover, CRA monitors compliance by licensees with the terms and conditions of their licenses and may take any measures and procedures in this regard.

(June 7, 2021) m.gulf-times.com

Saudi Arabia

The Communications and Information Technology Commission (CITC) published a consultation on "Spectrum Light Licensing". The purpose of this public consultation is to provide interested parties with an opportunity to submit their views on the introduction of the light licensing regime and its various aspects. As part of CITC's mission to ensure reliable communications services and innovative digital technologies in the Kingdom, CITC previously launched its 'Spectrum Outlook for Commercial and Innovative Use 2021-2023', which includes the commission's first step towards improving access to spectrum through a light licensing regime. Today's consultation document outlines CITC's plans to improve access to more than 13 GHz of spectrum, through light licensing regimes that cater for specific usage categories. The publication also includes an implementation plan for the introduction of the licensing process which commences in early 2022. The main objective of this ambitious approach is

to facilitate using the spectrum on a shared basis among various users and services. This will promote competition and enable innovation, by allowing flexible licensing methods to meet the spectrum needs of the market through pioneering methods of spectrum management. (August 22, 2021) citc.gov.sa

The Saudi Minister of Communications and Information Technologies, Abdullah bin Amer Al-Sawaha, met the Minister of Economic Development and Innovation of the Italian Republic, Giancarlo Giorgetti. Al-Swaha also held a meeting with the Federal Minister for Economic Affairs and Energy of the Federal Republic of Germany, Peter Altmaier, and the meeting discussed the Kingdom's efforts to accelerate the digital transformation process, stimulate the entrepreneurship and support research, development and innovation system. They also looked at the investment opportunities available in the Saudi market for German

companies specializing in the fields of technology, space and innovation. Saudi Arabia strengthens its partnership in the field of innovation and technical and digital transformation with some G20 countries In the same context, Al-Sawaha, on the sidelines of the meetings of the leaders of the digital economy of the G20, held extensive discussions with the Japanese Minister of the Interior and Communications Takeda Rota, on bilateral relations between the two countries, in particularly in the fields of communications and information technologies and benefiting from their technical development and advanced and distinct expertise in this field. Next, she met Josephine Teo, Minister of Communications and Information, head of the Smart Nation and Cybersecurity Initiative in Singapore, during which they reviewed the Kingdom's promising investment opportunities in the areas of information technology, space and space. innovation. Al-Sawaha has ended his meetings with his counterpart in South Africa, where they discussed opportunities for joint cooperation to accelerate the adoption of modern technologies and stimulate digital entrepreneurship and partnership in the field of research, development and innovation. Saudi Arabia is working to strengthen its partnership in the field of innovation and technical and digital transformation with a number of G20 countries. (August 8, 2021) asumetech.com

The Communications and Information Technology Commission (CITC) published the "Game Mode" report for the second 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 and STC shared first place for quarterly performance in most video games. Zain and STC outperformed Mobily, and Salam (ITC previously) with lower latency in four of the five most popular games in Saudi Arabia: Fortnite, FIFA 21, Apex Legends, and Dota 2. In Fortnite, the popular video game amongst Saudi youth, Zain and STC scored an average response time of 12 milliseconds. This compared favorably with Mobily and Salam at 24 milliseconds. Soccer video game FIFA was also tested by "Game Mode," with Zain and STC also sharing first place among operators with an average response time of 13 milliseconds, followed by Mobily at 23 milliseconds, and Salam at 24 milliseconds. Zain and STC also outperformed other service providers in the average response time for the Apex Legends shooter battle royale game, after recording average response times of 13 milliseconds, followed by 24 and 28 milliseconds for Mobily and Salam respectively. As for the online game DOTA 2, Zain topped the list with 20 milliseconds, and STC closely following at 23 milliseconds, while Salam scored 25 milliseconds, and Mobily came last with 31 milliseconds. Similar to the previous quarter, performance remained relatively low across the spectrum of operators for the popular game League of Legends, with Mobily topping the list of service providers with an average latency of 79 milliseconds, followed by STC with 86 milliseconds, Salam with an average of 89 milliseconds, and finally Zain at 91 milliseconds. The report is part of CITC's 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. The Q2 2021 "Game Mode" report also unveils valuable insights on the overall latency performance of telecom companies within fixed, mobile, and 5G networks. 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. (August 4, 2021) saudigazette.com.sa

The Communications and Information Technology Commission (CITC) announced that it has awarded licenses to two new mobile virtual network operators (MVNOs), bringing the total number of mobile telecom companies inside the Kingdom to seven. The new companies to be given the licenses, after winning a competition announced by CITC in February 2021, are "Integrated Telecom Mobile Company" (ITC Mobile) and "Future Networks Communications" Company, doubling the number of MVNOs inside the Kingdom. In 2014, CITC awarded the MVNO licenses to Virgin Mobile KSA and Etihad Jawraa. During the licensing ceremony, H.E. Mohammed Al Tamimi, Governor of CITC, mentioned that licensing MVNOs comes in line with the Commission's plans to stimulate the investment environment for Saudi Arabia's telecom sector. "At CITC, we aim to enhance the level of competitiveness in the sector, and improve user experience, by facilitating additional service providers," he said. Al Tamimi also highlighted telecom service providers as important partners in transforming the Kingdom into a digital society, a key component of Vision 2030, who can contribute to innovation in telecom, mobile data and internet services. Companies with MVNO licenses can provide users with services, including voice calls, internet, SMS, voicemail, media services and more, without owning any towers or frequencies. The provision of these services depends on the MVNOs renting or purchasing capacities from service providers with infrastructure, and then providing services to subscribers. The granting of MVNO licenses to two new market entrants reflects the level of competitiveness in Saudi Arabia's ICT sector, which enjoys attractive advantages for local and international investors, including robust infrastructure, high user penetration and a clear strategy. The Saudi telecommunications sector is estimated to contribute 5.3% to the national GDP, with a market size that reached SAR 69 billion in 2020, growing by 4% from the previous year. Capital investments of telecom service providers amounted to SAR 17.6 billion in 2020, and the mobile telecom services penetration reached 135.5%. (July 13, 2021) citc.gov.sa

Sri Lanka

The Information and Communication Technology Agency (ICTA) is at the forefront of driving digital transformation to make Sri Lanka a digitally-inclusive nation. ICTA together with the Ministry of Technology, Telecommunication Regulatory Commission

(TRCSL), telecommunications partners and industry partners launched this two-day forum with the objective of creating awareness about the national digital transformation agenda for the country and engage with regional partners to create a conducive environment in the Northern Province for digital technology development. This northern forum is the first of the five regional cluster development programs planned in the Western Province, Southern Province, Eastern Province, and Central Province. This initiative focuses on creating collaboration among stakeholders in the northern region such as Government agencies, industry, SME sector working in agriculture technology, education technology to introduce new and advanced technologies from local and international experts, providing necessary support for new technology research and development, and connecting solution providers with technology-based companies. The Government Forum on the 25th was conducted with an online participation of 158 participants and staff of Jaffna and Manner connecting from the district offices. The main Stakeholder Engagement forum on the 26th was attended by 140 online participants and physically connecting 15 each from the five District Secretariats went up to a total of 225 participants which was well-received. Ministry of Technology Secretary Jayantha De Silva commenting on this initiative stated, "We need to facilitate and support our young talent whom I believe are second to none. To do that, we need to create more jobs, use technology to increase productivity, build capacity and develop the supporting infrastructure in the regions. We have plans to establish five technology parks and revamp two IT parks in Jaffna and Manner. The IT/BPM industry itself requires 300,000 technology professionals and we have many initiatives planned to achieve this goal. As a nation we are now in a progressive path for betterment of the future generation. We want everyone to be a part of this journey and reap its benefits." ICTA Chairman Professor Lalith Gamage stated, "We at ICTA are facilitators of the national digital transformation agenda and have developed a comprehensive strategy to deliver this. We have identified five areas – Digital Government, Digital Economy, Digital Laws and Policies, Digital Services and Digital Technology. Digital Government focuses on digitalizing citizen centric services, ease of doing business and digitalizing services for government efficiency. We have developed a foundational framework to deliver this and are progressing in this area." He also went on to say, "In line with the Digital Economy strategy, five key pillars are identified as drivers to achieve our vision of making Sri Lanka a digitally inclusive nation. Namely; Technology Industry Development, Startup Ecosystem Development, Capacity Building, Technology Diffusion, and Regional Cluster Development. We have many supporting initiatives to implement these and take the message of digital transformation to grassroots levels."

ICTA Chief Digital Economy Officer Anura De Alwis speaking at the session stated, "We started this initiative from the Northern Province since, according to statistics and information we believe that, Northern Province would be a fast adopter of our digital transformation initiatives. For example; the 2nd largest start up community in Sri Lanka is represented by the north province. And we want to take that message to the other regions as well. We at ICTA are facilitators. We have facilitated many initiatives to support startups such as an alternative credit framework for startups, removing impediments for startup development through

the spiralation program. We want to support our startups to go to the global stage. Many programs are in place to develop digital capable youth, future ready women, digitally capable 'differently abled persons', and digitally capable 'elderly generation'." An MOU was signed by ICTA Chief Executive Officer Eng. Mahinda B. Herath and Northern Chamber of Information Technology Chairman T. Thavaruban, signifying the partnership between both organizations in moving forward towards developing digital technology in the Northern region. Regional Cluster Development Director Indumini Kodikara stated, "ICTA would like to thank all partners who have joined us in this national initiative; Ministry of Technology, Telecommunication Regulatory Commission, Dialog Axiata Ltd., Sri Lanka Telecom and Mobitel, Bharati Airtel Lanka Ltd., Hutchison Telekom Sri Lanka, Lanka Bell Ltd., University of Jaffna, SL Association of Software Services Companies (SLASSCOM), Federation of Information Technology Sri Lanka (FITIS), Chairman British Computer Society (BCS), NCIT, CSSL, SLINTEC, SLIBTEC, Extreme SEO and specially thank all the Government, private sector and all others who connected from the Northern region. Without them we will not be able to take this journey and wanted them to hold hands with ICTA in moving forward." (July 5, 2021) www.ft.lk

Sri Lanka's telecom regulator is accelerating structural challenges and trends that have long suppressed the telecommunications industry's growth to create a dynamic, competitive, innovative telecommunications infrastructure. Oshada Senanayake, Chairman – Telecommunication Regulatory Authority (TRC) said that amongst these, the optical fiber submarine communications cable system that carries telecommunications between Sri Lanka and other nations or the Sea – Me – We cable capacity is being increased." The Sea – Me – We 6 submarine cable which would carry telecommunications between Southeast Asia, the Middle East, and Western Europe is now being discussed through the convergence of telco operators across the region. We are looking at adding a further 60 bps of backbone connectivity in three years when Sea – Me – We are ready," he told a virtual Sri Lanka Investment Forum. In addition to this capacity building, the TRC is working on one of the first-in-the-world submarine cable resilience programs with the United Nations Office on Drugs and Crime's Global Maritime Crime Program. The TRC is in the final stages of introducing a data protection law to facilitate data management. "It was sent to the Legal Draftsman," Mr. Senanayake told the Business Times. The telco regulator has introduced a spectrum management framework to streamline spectrum allocation. "We are looking to introduce sandboxing for spectrum frequency testing," Mr. Senanayake added. He said the sandboxing will give spectrum to test certain Internet of Things (IoT) projects etc." This will empower innovation in the country." He said the first 5G spectrum auctioning will be done towards the end of this year in consultation with the International Telecommunication Union (ITU). He added that 75 to 100 locations have 5G cover and the TRC has a rapid trial mechanism in place for 5G. The Cabinet paper for clearing UHF bandwidth for 5G connectivity has been submitted." This means that the terrestrial television which is analog will change more towards digital transmission freeing 700 megahertz of the analog band which will be considered for the 5G spectrum," he said. He added that a new framework for

radio frequency spectrum licensing based on ITU guidelines will be made. With this, there will be faster coverage bringing down overhead costs for firms. A faster turnaround time is needed to attract high-quality services into the country, Mr. Senanayake added. He said that the TRC is in discussion with those providing

'satellite as a service' mechanism to help set up satellite base stations here to grant satellite as a service to multinational companies across the world from Sri Lanka. A cybersecurity law will be enacted within the next few months which will enable a Cyber Security Agency, he added. (June 13, 2021) sundaytimes.lk

South Sudan

Digitel has announced the official launch of commercial mobile services in Juba, the capital of South Sudan. The firm, which will compete with established wireless operators Zain and MTN South Sudan, says it operates 2G, 3G and 4G networks. Both pre-paid and post-paid mobile voice and data services are available for personal and business customers. Additional products and

solutions, such as IPTV and mobile financial services, are set to be launched in the future. Network coverage is available in the capital, as well as some rural areas including Maper and Pochala, with services set to be expanded to other remote locations such as Boma and Kuron Peace Village in the near future.

(July 14, 2021) commsupdate.com

Syria

Syrian authorities have lifted the restrictions imposed on mobile provider SyriaTel, which was placed under judicial custody last year, amidst an escalating row between the government and Rami Makhlouf, SyriaTel's richest man, a cousin of President Assad and the majority shareholder of SyriaTel. According to local news outlets the operator was released after it signed agreements Ministry of Communication and Technology (MoCT) and the Syrian Telecom Regulatory Authority (SyTRA) to provide financial guarantees to clear its alleged tax dues, totaling more than SYP134 billion (USD261 million). Alongside the provision of guarantees, a new board of directors was appointed to the telco, along with new senior officials. (July 27, 2021) commsupdate.com

The Syrian Ministry of Internal Trade and Consumer Protection has approved the articles of a company, which will provide services as a third cell phone carrier in Syria. Local media published pictures showing the license decision in favor of a company called Wafa Telecom, a private equity firm based in Damascus. Wafa Telecom can open branches, warehouses, offices, and appoint representatives inside or outside Syria. Although the decision was signed on September 30, 2020, it was published in the second part of issue 20 of the Official Gazette 2021. in accordance with a license of the "Telecommunications and Postal Regulatory Authority." These activities include the import,

export, and trade of telecommunications devices and electronic circuits. The company's articles provide for delivering cell phone and related services, under the name Wafa Communications (Telecom) Private Equity. Seven Syrian companies contributed to founding WAFA Telecom. They are WAFA telecom, ABC l.l.c, IBC advanced, IBC technology, IBC telecom, tele space, tell you. All of these companies' headquarters are located in Damascus. The license decision explained that the company's capital amounts to only 10 billion Syrian pounds, distributed over 100 million shares where the value of each share is 100 pounds. The duration of the contract is 22 years, starting from the date of the meeting of the General Constituent Assembly, with the possibility of extension to be approved by the ministry. The second clause of the new company's rights stipulates that it is allowed to conclude contracts of different types with companies, banks, governmental and non-governmental institutions. The clause also states that the company has the right to cooperate with natural persons, local or foreign legal persons, and provide payment or transfer services for money and other cellular affairs. Syria currently has two cellular telecommunications companies, Syriatel and MTN, which in 2014 obtained a license to operate for 20 years within the Syrian market. Their revenues exceed 404.5 billion pounds in 2020.

(June 2, 2021) syrianobserver.com

Tunisia

Cayon Cloud Communications has enlisted Pareteum to deploy its 'Experience Cloud' platform as it seeks to launch a number of new

MVNO brands in Tunisia. Cayon, which was initially established as a mobile virtual network enabler (MVNE), is a part of Tunisia-

based Asel Telecom Group. It says it has now acquired a domestic MVNO license and provides mobile services in partnership with existing local brands and organizations via the Tunisie Telecom network. Cayon claims to have launched six mobile brands to date and plans to add a further three in third quarter of this year.

Looking further ahead, Cayon expects to end the year with ten mobile brands and more than 100,000 subscribers. According to its website, Cayon's current MVNO partners include JSK Mobile, Asel Mobile, Nabeulien Mobile Stadium and Khatwa Mobile.

(July 19, 2021) commsupdate.com

Turkey

Deputy Minister of Transport and Infrastructure, Dr. Ömer Fatih Sayan attended the International Istanbul Smart Grids and Cities Congress and Fair. The Minister said that smart cities should make people's lives easier. International Istanbul Smart Grids and Smart Cities Congress and Fair ICSG 2021, which deals with the "Smart Grids and Smart Cities Concept", started in Istanbul. Speaking at the opening of the program, the Minister said that we are rapidly moving towards an era where everything is "smart" and not only people but increasingly machines and objects are interconnected rather than humans. By 2025, it is predicted that there will be 100 billion different connections in the world and only 10% of these connections will be between people. This means that the world will evolve towards smart solutions in many areas." Stating that cities also took their share from this situation, and the mobility in the world will reach 67% by 2050. Minister said, "National Smart Cities Strategy and Action Plan Circular", which was published at the initiative of the President Mr. Recep Tayyip Erdoğan at the end of 2019, "National Smart Cities Strategy and Action Plan" prepared and published by our Ministry of Environment and Urbanization, and Transportation "National Smart Transportation Systems Strategy Document and 2020-2023 Action Plan" prepared by our Ministry of Infrastructure and Infrastructure and published with the approval of the President, are an important guide and driving force in our country's smart cities journey. The Minister said

we will produce 5G and Beyond Communication Infrastructures with Domestic and National Opportunities. Expressing that the most important issue in the process of a city's becoming smart is the "internet of things", "Internet of things; It is possible to define it as the infrastructure that enables advanced services by connecting physical and virtual objects based on information and communication technologies. Especially mobile technologies are at the forefront in the development of smart cities. Our country's investments in this field continue without slowing down. Infrastructure investment, which reached 16.7 billion TL in 2020, continued to increase despite the pandemic process and an increase of approximately 30% was recorded compared to the previous year. The number of machines communicating with each other in our country has exceeded 6.5 million." Minister said that the intertwining of electronic communication infrastructures with other sectors makes the issue of security even more important and added: "In this context, as the Ministry, we are carrying out important studies on the production of 5G and beyond communication infrastructures with domestic and national opportunities, together with BTK and other stakeholders. The Minister said that Turkey Is One of the Leading Countries in Smart Cities draws attention to the importance of domestic and national production at this point.

(June 17, 2021) btk.gov.tr

United Arab Emirates

The Telecommunications and Digital Government Regulatory Authority (TDRA) has concluded the 7th round of its virtual summer camp. The camp received more than 3000 students from citizens and other nationalities. TDRA has organized a closing event attended by H.E. Mohammed Al Zarooni, Acting Deputy Director General of Digital Government, TDRA employees, students and their parents. The closing ceremony witnessed announcement of the students winning in the general course and advanced course. More than 3000 students of 33 nationalities have participated in the camp. Females reached 44% of the total participants. Students has provided more than 5000 projects and contributions. In his speech at the closing ceremony, H.E. Mohammed Al Zarooni, Acting Deputy Director General of Digital Government, emphasized that the camp has become a reference

for information about the role of young people in developing ideas and innovative solutions for the benefit of the society. He stated: "The camp idea was evolved from the fact that we live in a special age, where innovative thinking is a global communication language. That thinking is not limited to school, university or geographic borders. Hence TDRA's virtual summer camp is aimed to be a comprehensive and regular event, where we meet to renew our trust in the real future shapers, our children, who live in an open world full of ideas, technologies and global trends." He added: "This round of TDRA's virtual camp was distinguished in every sense of the word. For the first time, the camp increases the number of participants and received students from 33 nationalities, while it was limited to citizens. After the camp became known regionally and globally, we started to receive requests from outside the UAE.

Because we believe that knowledge is a right for everyone, we changed the camp regulatory system and allowed participation from outside the country. Therefore, our virtual camp is one of many projects that started locally, then soon became global. On this occasion, I would like to thank and appreciate our partners in this ambitious social project. I extend a special thanking to parents, who played an essential role to achieve this wonderful success." The closing ceremony agenda included announcement of winners in the general course and advanced course (Top6). The student explained their projects. Winners of the advanced course (Bottom 6). TDRA has honored parents for their great efforts to help their children and achieve success of the camp. The camp is held virtually for the second year in a row, to complement the successful experience witnessed last year, in compliance with the precautionary measures to protect participating students from COVID-19. This round is a continuation of the successes achieved by TDRA in previous camps, and an example of its commitment to its social responsibilities towards students in the UAE society. It provided them with the necessary skills related to smart city, safe use of technology, social communication, innovative design, creativity, future shaping and other activities. (August 24, 2021) zawya.com

UAE is the only country from the Middle East and Africa (MEA) region among the illustrious list of top 20 countries globally in the fixed broadband index with the fastest average download speeds in May 2021, according to the latest data from Ookla®, a global leader in fixed broadband and mobile network testing applications, data and analysis. Commenting on this achievements H.E Eng. Majed Sultan Al Mesmar Director General of the Telecommunications and Digital Government Regulatory Authority-TDRA said: "This global achievement is a testimony to UAE leadership's vision and commitment in bringing the country to the forefront taking a lead in the ICT sector while being the most advanced country in digital transformation. With the joint efforts of both operators we aim to bring the UAE among the top 10 globally in the Speed test Global Index from Ookla. This will uplift the national performance, enabling the ICT aspirations of the leadership. I hereby thank telecom service providers in the UAE for their relentless efforts towards this achievement, which is part of UAE's preparations for the age of Fourth Industrial Revolution and the Artificial Intelligence" UAE reached an average download speed of 180 Mbps in May 2021, from the January 2021 average of 125Mbps in the fixed broadband SpeedtestTM results. This massive increase was mainly due to the corporate program and initiatives taken by Etisalat and du in 2021 to boost UAE's fixed broadband ranking. This led to a significant rise in the country's broadband ranking, thrusting the UAE by 12 positions from 28th rank in January 2021 to 16th in the global index in May 2021, to be among the top 20 countries globally, whilst UAE was ranked first on the index in the wider MEA region. The high speeds on the fixed broadband network are a prerequisite to delivering the best and most advanced services in the UAE as it enters the age of Artificial Intelligence (AI), Internet of Things (IoT) and the fourth industrial revolution. This is also a major contributing factor to the well-being, economic wealth and social prosperity of a nation. Etisalat and du have worked towards continuously providing the best customer experience with the highest penetration of fiber-

to-the-home (FTTH) connectivity in the world, and modernizing the network to offer the best in class telecom services. Both operators launched specialized packages and promotions giving customers an opportunity to enjoy higher speeds in their home. There were further improvements and upgrades made on the network capacity while also boosting international data capacity to enable consumers with the best experience when they, learn, work and get entertained from home. (July 17, 2021) tdra.gov.ae

President His Highness Sheikh Khalifa bin Zayed Al Nahyan has issued a Federal Decree appointing Majed Sultan Al Mesmar as the Director-General of the Telecommunications and Digital Government Regulatory Authority (TDRA). Al Mesmar has served as the Deputy Director-General of the Telecommunications Sector since joining TDRA in 2010. He holds a Bachelor of Science in Electrical Engineering. Al Mesmar has profound working experience of more than 30 years in telecommunications and regulation, holding various senior-level management posts at several telecom operators locally, regionally and internationally, such as Etisalat Group's Senior Vice President – Special Projects (UAE), Chief Technical Officer at Mobily (Saudi Arabia) and Chief Operating Officer at Etisalat DB Telecom India Pvt Ltd. Since 2017, Al Mesmar has been the Chairman of the Board of Trustees of the ICT Fund. He is also an active participant in many international events, including those of the International Telecommunication Union (ITU), and was elected as Chairman of the Plenipotentiary Conference 2018 (PP18), which is the highest authority in the ITU. He also chaired the World Summit on the Information Society (WSIS) in 2018, and represented the UAE in several Summit sessions. Al Mesmar succeeds Hamad Obaid Al Mansoori, who was once acting as TDRA's Director-General. Talal Humaid Belhoul, Chairman of TDRA's Board of Directors, praised and recognized the major role played by Hamad Obaid Al Mansoori and his remarkable efforts in developing the performance of TDRA and strengthening its leadership and outstanding position among government entities in the UAE. Belhoul also commended what TDRA has achieved during recent years in establishing UAE's place as a leading country in the ICT sector. "Over the last period and under the management of Hamad Al Mansoori, TDRA has made great strides not only in the telecommunications sector, but also in digital transformation, as it aptly played its regulatory and enabling role, in line with strategic variables and general trends of the UAE. TDRA has been a strong supporter of UAE's efforts towards realizing the concepts of 4IR, smart cities and development based on the digital knowledge economy," he said. (July 14, 2021) zawya.com

The Telecommunications and Digital Government Regulatory Authority (TDRA) has been awarded the Best Entity Award for the "Best Procurement Team" and "Best Sustainable Service" categories within the "Best Business Award (BBA)", which is one of the most prestigious awards in the United Kingdom. With this achievement, TDRA becomes the first federal entity that receives these two awards in the field of procurement and supply at the regional level. The Best Business Awards (BBA) aims to identify the most successful institutions in the public and private sectors, and highlight the innovation and creativity of the winning teams

and institutions to be role models in applying the best work mechanisms in achieving their goals. Awarding TDRA is the result of its strategic plan in digital transformation and provision of a sustainable work environment, as well as the optimal investment in procurement and supply human cadres, by including them in institutional professional certification programs in procurement and supply, the establishment of the first youth group in the field of procurement and supply, and nominating TDRA to lead this group, in addition to the establishment of the first procurement and supply group in the telecom field, which includes experts from several local and international institutions. Additionally, TDRA, in cooperation with CIPS, contributed to the launch of the first professional program for fresh graduates in procurement and supply. Commenting on this award, H.E. Mohammad Al Kitbi, Deputy Director General for Support Services Sector, said: "Over the past five years, TDRA has developed the procurement team by focusing on enhancing technology, investing in human cadres to become professionally qualified in the field of procurement and supply, as well as strengthening its relations with suppliers by launching several initiatives and projects to rationalize costs. At TDRA, we are always keen to strengthen our relations with suppliers in order to protect the interests of all parties and achieve the best returns from purchases, in order to ensure that TDRA provides the best services in the ICT sector, and achieve customer happiness." TDRA was the first federal entity to obtain the institutional professional certificate from CIPS, which reflects its commitment to implementing global professional ethical principles in this field, which contributed to adding institutional value in supply chain management based on international best practices. TDRA's procurement and supply team contributed to the development of several institutional procedures and services based on TDRA's strategic plan to provide and preserve a sustainable work environment. Among these initiatives are the digital transformation of procurement and supply system, the application of the "paperless" initiative in all procurement and tender procedures, the application of the electronic contracts system, and electronic billing system. Moreover, among the smart initiatives is the digital transformation of the employee ID service, robotic invoicing, electronic newspapers through a unified platform, smart applications in procurement, and others. TDRA is committed to continuous cooperation in supply chain with all internal partners and strategic suppliers in implementing sustainable initiatives and projects, ensuring the development of the ICT sector, which contributes to raising TDRA's institutional reputation. (June 23, 2021) tdra.gov.ae

The Virtual Consultations of Councilors of the International Telecommunication Union (ITU) Council, which was chaired by the United Arab Emirates, concluded today. Eng. Saif Bin Ghelaita, Director Technology Development Affairs at the Telecommunications and Digital Government Regulatory Authority (TDRA), chaired the Consultation sessions, which were held through a virtual platform supported by the UAE since the beginning of the pandemic, over the past year. The UAE's chairmanship of the consultations enhances the UAE's global leadership in the ICT sector. It also reflects the support of UAE leadership for Emirati competencies and its keenness to highlight their capabilities in managing and chairing one of the most important international meetings. Commenting on the consultations, Eng. Saif Bin Ghelaita, Director Technology Development Affairs at TDRA and chairman of the ITU Council Virtual Consultations of Councillors, said: "These consultations come at the global recovery stage of the pandemic, as the workflow has begun to return to its normal form in various aspects of life. The world was able to overcome the effects of the pandemic due to the collaboration of various sectors supported by the ICT sector, which provided alternative, practical and immediate solutions that contributed to maintaining the safety of people and the continuation of providing basic services in various sectors. In the meeting, we discussed the requirements of the next stage, and the need for global cooperation and coordination to improve ICT services in different countries, given the role of these services in achieving people's happiness and ensuring their safety and security." Eng. Bin Ghelaita added: "The UAE was one of the most successful countries in responding to the pandemic, as it maintained the pace of normal life, and moved to alternative solutions easily and smoothly. The crisis came to confirm the rightful plans and strategies adopted by the UAE under the directives of the wise leadership. Today, we are ready to share our successful experience with all countries, and contribute to the happiness of all societies, in compliance with the motto of the United Nations (Leave No One Behind)." Eng. Saif Bin Ghelaita was elected as Vice-Chair of the ITU Council during the Plenipotentiary Conference 2018, which was hosted by the UAE. This achievement came as a culmination of the UAE great efforts in the ICT sector, and in recognition of the distinguished capabilities of the UAE people, who have proven their competence in all scientific, economic and cultural fields. The UAE joined the ITU Council in 2006, which includes 48 countries, including 7 Arab countries. Countries are nominated for membership in the ITU Council during the Plenipotentiary Conference, which is held once every four years, during which the door for nominations for the Council membership is opened, in addition to the five leadership positions in the ITU and the nomination of members of the Radio Regulations Board. (June 19, 2021) tdra.gov.ae

DATA MODERNIZATION WITH CLOUD

Accelerate your Cloud Transformation journey with us

Connected World
Connected Experiences

ARTICLE

Big Data on Cloud for Telecom

Joy Chatterjee
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Amit KB
Product Manager
Telecom Data Analytics & AI

Tech
Mahindra

With the increasing adoption of smartphones and growth in mobile internet, Telecom operators today have access to exceptional amounts of data sources including – customer profiles, device data, network data, customer usage patterns, location data, apps downloaded etc. Big data is any data with 3Vs. Volume, Variety and Velocity. Communication service providers, network equipment providers and the connected world are generating big data on an extraordinary scale which

Telecom operators today, have the opportunity to leverage this big data to improve growth, increase efficiency and profitability across the entire telecom value chain. Traditionally, telecom operators across the globe were leveraging big data on cloud to lower capital and operational cost, increase IT agility and for business continuity purposes. Now big data on cloud is expanding being utilized to drive income development.

> *Telcos looking to embrace 5G, should leverage Cloud and Big Data to re-deploy their IT Architectures to build modular cloud native big data driven services that will enable dynamic network slicing based on use case driven architectures.*

provides huge opportunity for Telecom operators to get deeper insights into customer behavior, their usage patterns, preferences, interests and carve out services that are dynamic and targeted towards multiple verticals.

Global telecom analytics (primarily driven by big data) market is expected to be valued at USD 11 Billion in 2027 growing at a compounded annual growth rate (CAGR) of 14.7% from 2020.

Global Telecom Analytics Market(USD Bn)

CAGR-14.7%

4.10 (2020) ... 10.71 (2027)

2020 2021 2022 2023 2024 2025 2026 2027

We do imagine the future where telecommunication service providers will have lattice of data driven cloud native services which are adapted for vertical explicit requirements. These services will need and drive reception of Big Data Centric Networks which are worked to help the rising systems administration needs of associated APIs, service orchestration, cloud-driven models, real-time correspondence, Machine Learning (ML), and Artificial Intelligence (AI).

Business Drivers
Following use cases are some of the key business drivers to initiate deployment and adoption of Big data and AI centered services that will build a significant competitive advantage and market leadership in the years to come.
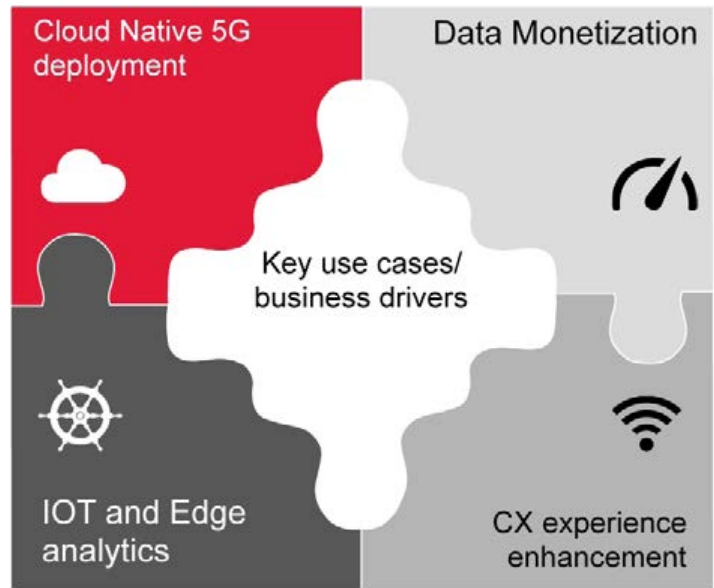
1. Cloud Native 5G Deployment
5G is inherently service centric, in the sense that network is designed keeping in mind the target service(s) beyond traditional voice and data. Network slicing becomes core of enabling these services for different usage and performance characteristics. Telcos looking to embrace 5G, should leverage Cloud and Big Data to re-deploy their IT Architectures to build modular cloud native big data driven services that will enable dynamic network slicing based on use case driven architectures. Imagine building a set of data driven micro-services for enabling session management, policy control, chargeback modelling, mobility service management etc. all connected as HTTP endpoints, with an additional layer of operator and partner driven application specific services that are focused on consumer and specific enterprise needs.

E.g., Set of network services targeted towards consumer or retail industry Vs set of services targeted towards enterprise needs.
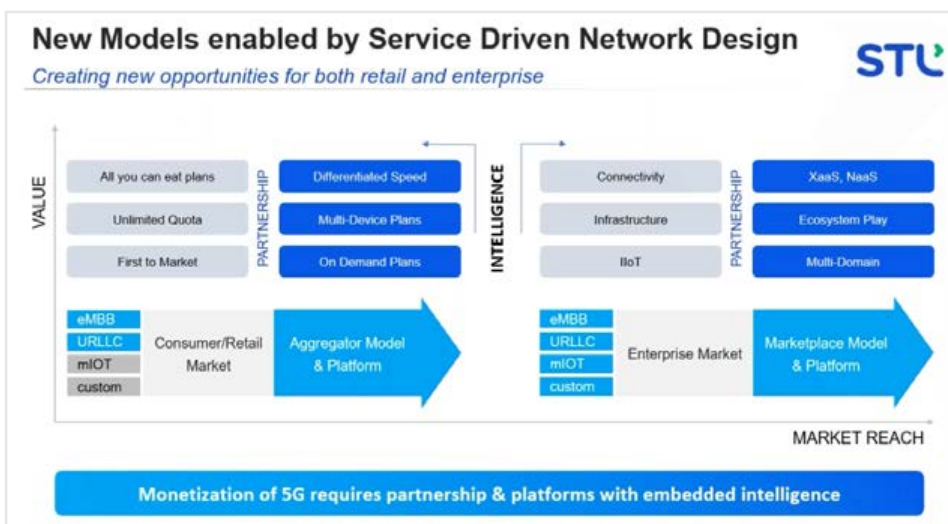
2. Data Monetization
Data Monetization involves creating new revenue streams by making data available to customers and partners as packaged services. Telcos have access to demographics of customers, geo-location, network use, device use, preferences, etc. When this data is processed & modelled, they generate deep insights that can be useful for various industries and verticals and help generate new sources of revenue for Telcos.

Key use cases/ business drivers: Cloud Native 5G deployment, Data Monetization, IOT and Edge analytics, CX experience enhancement

- **Smart city applications:** In Europe, one of the IT service providers and a large telco are working together to build smarter cities. Their integrated solutions portfolio enable municipalities to make smarter use of their services through intelligent data capture and analysis. It will likewise improve the personal satisfaction for residents, who would want to expect traffic postponements and transport or train appearances when voyaging, discover public parking spaces even more effectively, and so on.
- **Targeted Marketing:** Telecom operators are also influencing the retail industry by developing multi-channel marketing campaigns with real-time geo-location services to target and personalize shopping experience. E.g. network operator in the US analyzes people that pass by a billboard at a particular time of the day.
- Few other examples include **Fraud detection** for credit card companies, **Geotargeting** and geofencing for retailers and tourism, **IoT (Internet of Things) applications** for a variety of industries.

Successful data monetization approach will need to focus on the high-value opportunities that are consistent with a company's

New Models enabled by Service Driven Network Design — STL
Creating new opportunities for both retail and enterprise
Monetization of 5G requires partnership & platforms with embedded intelligence

Telcos have access to demographics of customers, geo-location, network use, device use, preferences, etc. When this data is processed & modelled, they generate deep insights that can be useful for various industries and verticals and help generate new sources of revenue for Telcos.

overall business strategy. Enabling these kind of new age services will require extensive maturity in Big Data on Cloud so that Telcos can leverage and exploit these opportunities with speed, agility and assurance.

3. IoT and Edge Analytics
Edge analytics is the collection, processing, and analysis of data at the edge of a network either at or close to a sensor, a network switch or some other connected device. Sensors, smart technology, and other connected devices would not be effective if their entire data analysis process involved sending back information to a central location and waiting for it to be processed and returned. Edge analytics handles the bulk of analysis on-site, usually in a nearby connected network switch or device, and only transmitting the most important data back to a central server. IoT edge analytics allows network controllers to have a much better real-time picture of how devices and sensors are operating. E.g. a device that controls the temperature of a refrigerator at a supermarket could detect a risky change in internal temperature that could cause damage to products in seconds. With edge analytics, the same problem could be resolved in a few seconds with the sensor instantly relaying the problem and implementing a solution. A study has found that delay in loading web pages and starting YouTube videos causes stress levels similar to that caused by a horror movie. With enhance edge computing customers can be provided personalized browsing experience.

CAGR= 31%
2020 → 2027

The global edge analytics market is expected to grow at a CAGR of 31% till 2027.

4. Customer experience enhancement
Telecom operators are leveraging big data analytics to enhance customer experience and standout in the market. The migration of their data systems to cloud has enabled operators to proactively address customer pain points. The operators are now able to deploy new technologies like AI/ML to predict churn, analyze network issues, detect billing anomalies, assess customer sentiments to provide 'wow' experience to the customer. There have been cases where telecom operators have been able to reduce churn by upto 15%[2], improve NPS by 24 points . A leading US Telco has deployed big data and AI enabled enterprise solution which provides personalized experience to customer based on their previous interactions across channels. An European Operator has rolled out remote customer assistance technology, powered by AI and AR, that allows agents to see exactly what the customer sees to lower their dispatch rate by 26%.[3]

Tech Mahindra Value Proposition
Tech Mahindra offers mature set of capabilities that can help transform telecom operators into cutting edge age telecom services organizations. Whether its building set of cloud native modular services that form the core of Network Slicing to building sophisticated data and AI enabled insights to drive segment of targeted application services, Tech Mahindra has the competencies that can help companies succeed in the era of 5G, Edge Analytics and IoT.

Tech Mahindra has already helped several customers across verticals, move from On-Premises legacy application platforms to cloud native data driven services. Tech Mahindra has set of unique IPs that can help your Big Data Cloud transformation journey easier and faster and win in the markets.

Do you know Tech Mahindra now has the capability to strengthen business process orchestration for customers offering 5G services?

It is indeed enabled by iDecisions®, a Tech Mahindra native IP, to facilitate generation of analytical/statistical/ cognitive pursuits on data. The insights thus generated help telecom customers seamlessly manage business measurement faculties around subscriber, churn, marketing, revenue, call center, network, usage. The pinnacle of the assets dexterity is the utmost focus on QoS (quality of Service).

Tech Mahindra offers iDecisions®, an advanced analytics "Business KPI orchestration framework" for rapid and reliable business decisions. Fostering the culture of "data driven organization", it provides blueprint for advanced analytical capability, while fast tracking DevOps and DataOps life cycle across "on premise", cloud and hybrid eco systems.

HIGHLIGHTS
- Enhanced Business KPIs across subscriber, churn, marketing, revenue, call center, network & usage to suit 5G business themes
- Quality of Service with 5G services - A prime focus for KPIs design & enhancements.
- Unleashes business process recalibration and ensures they are fit for digital new normal of customers – driven by modernization and transformation compulsions.
- Telecom business process orchestration maturity by way compliant to eTOM & SID frameworks

Here is one of our high impact case study
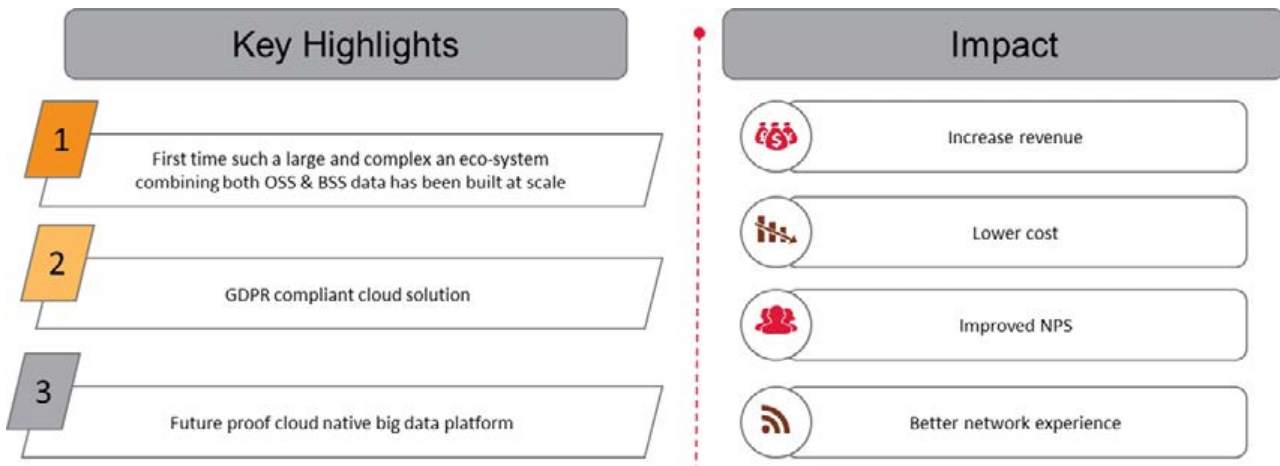*1. Large Teleco in UK Case Study: Migration from Oracle Exadata to cloud-based Snowflake*
Tech Mahindra assisted a large teleco in UK to successfully transforming its data architecture to big data on cloud

Key Drivers:
The organization had a fragmented and a very MIS (Management Information Systems) oriented BI (Business Intelligence), reporting and analytics ecosystem resulting in operational inefficiencies and lack of agility. The current Data & Analytics function's inability to provide timely insights to business functions to help drive customer satisfaction, cost efficiencies, and underpin related business imperatives. The organization wanted new Insights and Analytics platform, which would give them the technical capabilities and services to allow them to have the strategic alignment to their organizational objectives (help them drive up NPS, increase ARPU and EBIDTA and help them become the most loved communications brand in UK). The organization wanted a future proof

[2] https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/reducing-churn-in-telecom-through-advanced-analytics
[3] https://techsee.me/blog/customer-experience-in-telecom-industry/

Key Highlights

1. First time such a large and complex an eco-system combining both OSS & BSS data has been built at scale

2. GDPR compliant cloud solution

3. Future proof cloud native big data platform

Impact

- Increase revenue
- Lower cost
- Improved NPS
- Better network experience

integrated platform that supports big data processing and AI/ML to improve the turnaround times across various functions like networks, finance, operations, sales and marketing.

The solution:

a. Tech Mahindra proposed a single Big Data Lake to be built from where both OSS and BSS based applications would be able to source the data and use/consume it for their needs. This was particularly important to cater to 5G and IoT uses cases.

b. Tech Mahindra leveraged its IP iDecisions® to build the core Data Model for the Insights & Analytics platform which would consume data from the new CRM (customer relationship management), billing and charging, provisioning, enterprise product catalog and other systems seamlessly.

c. Tech Mahindra built a kafka based

event streaming architecture which would enable the data to be passed, processed, transformed and loaded in the Insights platform that could be used by Business for reporting & analytics as well other downstream applications for campaign management and other activities

d. The entire solution was designed to be compliant with stringent GDPR policies
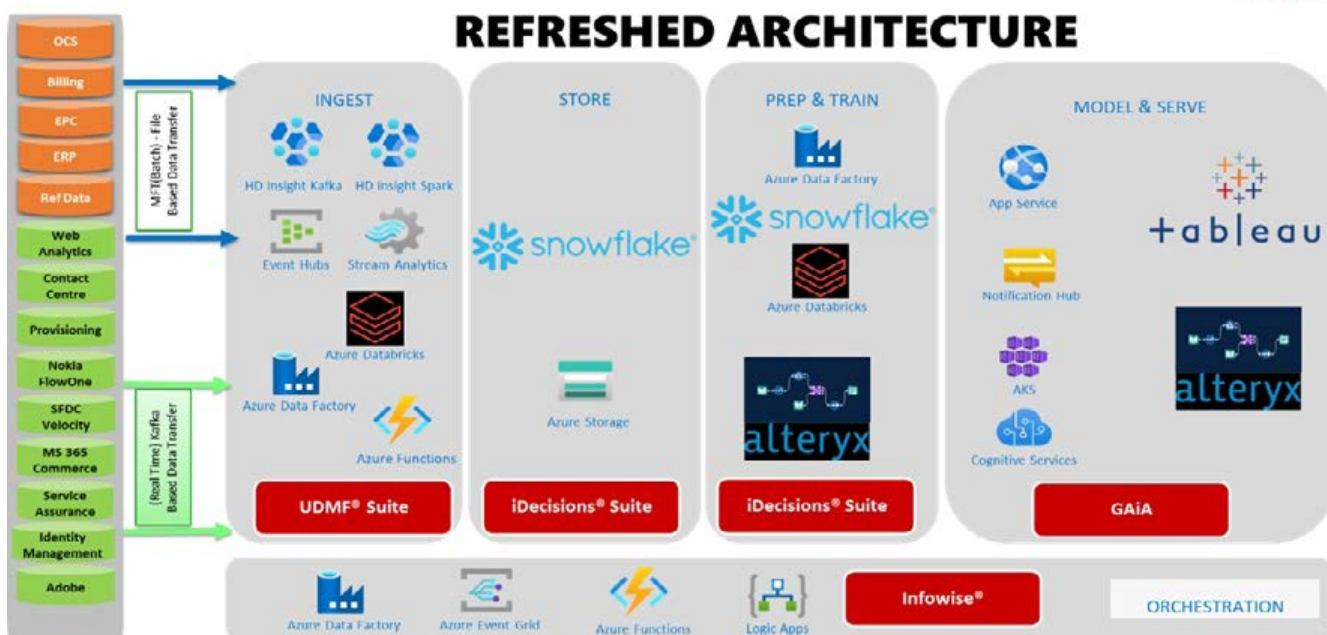
Outcome:

1. **Cloud-native:** Enabled the organization to move all their systems and data to cloud

2. **Lower TCO (total cost of ownership):** Resulted in closure of multiple on premise systems(BI-DWHs) and there by bringing in cost efficiencies

3. **Improved operations:** The new eco-system is now able to have all the data, related to Customer, Products, Services,

Location/Site at one place and is able to process it extremely quickly and are able to deliver different Business Outcomes i.e. real time Campaign using network information or data streaming by the customer

4. **Unlocked new uses cases:** The organization is now able to use location data (catering to GDPR guidelines) to be able to address issues that customers are facing be it related to streaming data or call drops or any other services.

5. **Improved network experience:** The new Insights system helps the organization to proactively address / anticipate any Quality of Service challenges and avoid client churn. They know when the QoS drops below the thresholds irrespective of whether the customer raises a ticket or not and proactively reach out with resolution.

REFRESHED ARCHITECTURE

Digital Disruption

Dr. Vagadia

The digital revolution that we see evolve in front of our eyes, has applications and systems that are collecting, distributing and making available massive amounts of data to almost any situation, which can be reproduced infinitely at virtually zero cost and used for significant productivity gains. The impact of this digital revolution will have on society and economies is likely to be as dramatic, if not bigger than the previous industrial revolutions. The World Economic Forum estimates point to more than US$10 trillion of value from digitization in five key global industries over the next decade.[1] In 2018, McKinsey Global Institute, estimated that an additional $13 trillion could be added to global GDP by 2030 through digitization, automation, and Artificial Intelligence (AI).[2]

> *To transform the organization, requires a break out from the old model, old people, old metrics and old investment profiles. Digital transformation is not just about bringing cross-functional teams and IT systems together, but also about bringing cross-functional data together.*

What's new?

Digitization of businesses is not new, although it is taking on a new dimension as we see the convergence of emerging technologies and innovative business and operating models emerge. Whilst there has been much change and in a short period of time, this is only the beginning. This so-called fourth machine age is just emerging with further advances in digital technologies/computing and, more importantly, their convergence, driven by Internet of Things (IOT), Artificial Intelligence (AI), and high-speed ubiquitous connectivity (5G). It would be wrong to assume that this new revolution is only driven by data. Whilst data is a fundamental enabler for this fourth revolution, it is disruption through engineering and physics such as miniaturization, nanotechnologies, energy storage, etc., which cannot be overlooked. The most significant advancements

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[1] World Economic Forum. (2017). Digital transformation initiative telecommunications industry. The five key global industries are: E-commerce (US$3.1 trillion), Automotive (US$2.6 trillion), Logistics (US$2.1 trillion), Electricity (US$1.5 trillion), Media and Entertainment (US$0.7 trillion).

[2] Assessing the economic impact of artificial intelligence. ITU Trends. Issue Paper No. 1. September 2018.
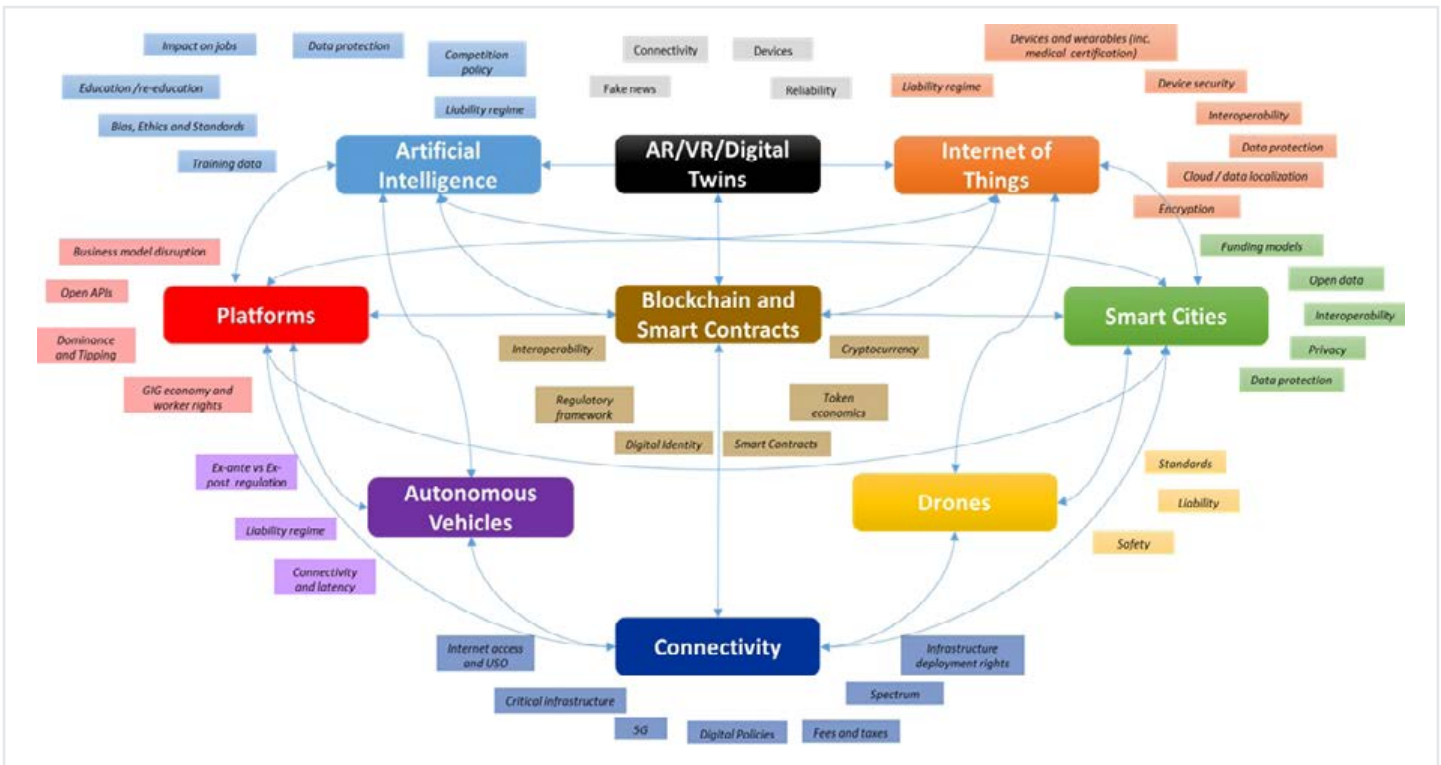
Figure 1: Interconnectedness of emerging technologies

are happening where these two disruptive forces intersect. Whilst each of these emerging technologies are being developed independently and used for different purposes, the fundamental question is how these technologies are interconnected and what disruptive impact they can have on business and operating models. Figure 1 shows the interconnectedness of some of these key emerging technologies.

To make sense of this order of complexity, we need a simple framework to understand how these technologies relate to each other and what impact they might have not only individually but also collectively. Such a framework needs to start from a perspective of how data moves along the value chain from data capture to the applications that make use of data. In the end, digital is after all about the use of data to create value. Figure 2 illustrates a framework I have developed for looking at the data ecosystem and the key technologies that sit at each layer of this ecosystem.
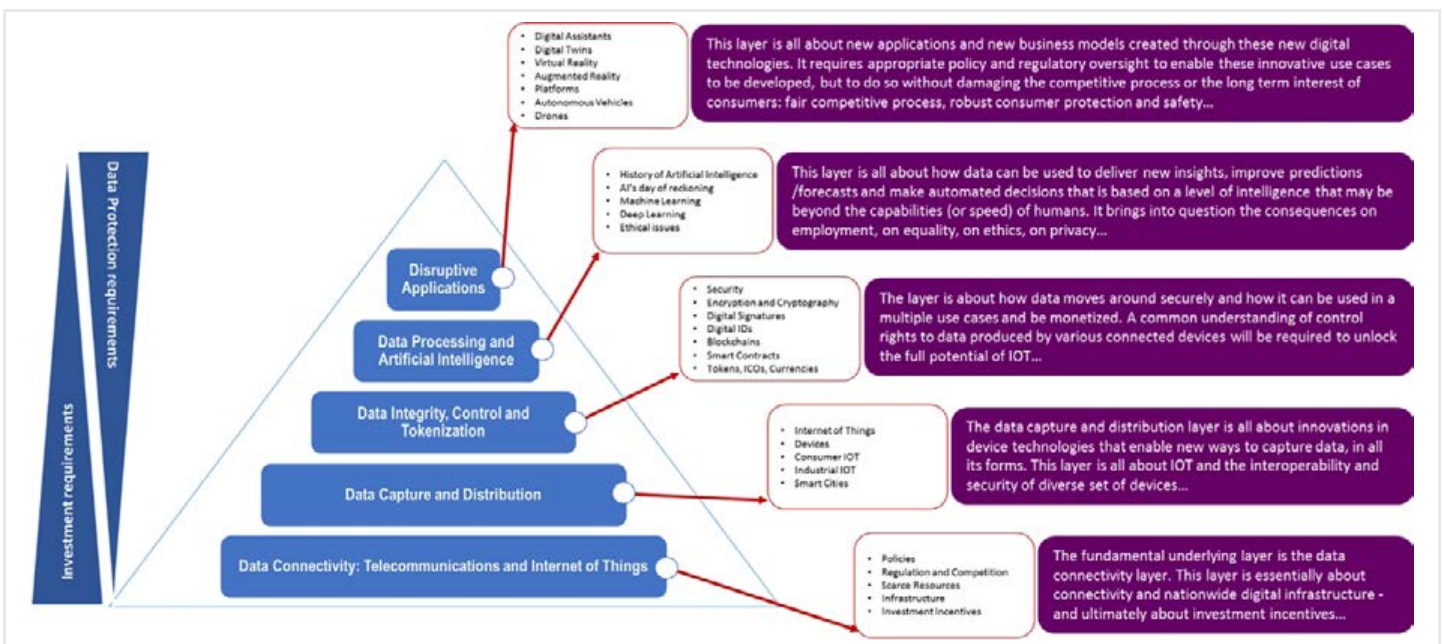

Figure 2: The data ecosystem

It would be impossible to look at all of these layers and technologies in detail here – something I have done so in my book Digital Disruption.[3]

Re-defining the business model
Seven out of ten most valuable public companies in the world by market capitalization are digital platforms. These are Apple, Microsoft, Amazon, Alphabet, Facebook, Tencent Holdings and Alibaba Group. So why are digital enabled businesses growing so rapidly and being valued at such rates? Traditional corporate leaders typically face a set of challenges to grow and expand usually as a result of constraints placed by their operating model. Digital businesses dissolve these intrinsic limits of scalability and scope. Their operating models are designed to scale at rates that traditional firms just cannot fathom.

> *Many firms are doing digital versus being digital, that is, they use technology to fix isolated problems rather than as part of an overall business strategy. Simply investing in digital technologies to digitalize existing functions and processes is not enough.*

In traditional firms, value creation and capture is typically created and captured from the same source, i.e. through sales of goods and services through the price mechanisms. In digital businesses, the sources and options for value creation and capture are broader because value creation and capture can be separated more easily and often come from different stakeholders through modular design.

Many firms are doing digital versus being digital, that is, they use technology to fix isolated problems rather than as part of an overall business strategy. Simply investing in digital technologies to digitalize existing functions and processes is not enough. Digital firms think differently in another critical way. They realize that the concept of the vertically integrated enterprise going it alone is antiquated. In many ways, whilst most firms are not platforms, they need to start thinking like platform players – and move beyond looking at sectors and to the wider ecosystem.

Re-orchestrating the operating model
Operating models deliver the value promised to customers. Ultimately the goal of an operating model is to deliver value at scale, to achieve sufficient scope and to respond to changes. In traditional firms, the intrinsic scalability and economies of scope that could be derived from technology is limited by the operating architecture of the firm that it was deployed in. But digitally enabled firms are designed and architected to release the full potential of digital networks, data algorithms and AI. The more a firm is designed for scale and scope in its operating model, the more value it can create and capture. The problem of increasing complexity is managed through software and analytics, rather than hiring more layers of managers. However, a key challenge in driving digital transformation is that the whole organization is optimized for the current business model. Fundamentally, the organization itself prohibits breakout from the old model. To transform the organization, requires a break out from the old model, old people, old metrics and old investment profiles. Digital transformation is not just about bringing cross-functional teams and IT systems together, but also about bringing cross-functional data together.

Impact on society and policy making
Whilst the adoption of digital technologies has the potential to have profound changes to the competitor landscape and on consumers, it equally has the potential for profound impact on societies and economies, some which we may not necessarily desire. To turn these disruptive technologies into a force for good may require us tearing up existing government policies and regulatory approaches that have served us reasonably well to date. However the very nature of these digital technologies means that jurisdictional national boundaries are dissolving, their reach is global, their adoption pervasive and the way they work not always transparent or predictable.

The rapid scale of change that is enabled by digitization is already impacting large swathes of society. The way people interact with their friends and colleagues, the way people get their news or the way society buys goods and services has profoundly changed in the last decade. As a society we are giving access to our personal data – what we like, who we like, where we go and what watch we watch online - some without us even noticing. The very fabric of trade is changing – sometimes we are not transacting with fiat money but through the intrinsic value of our personal data. The nature of competition is changing primarily through greater automation and new ecosystems. This is already starting to impact employment patterns and the wages people earn.

These are just some of the societal impacts of digitization. This is however just the start – the impact of digitization is going to be much wider and deeper. It will require major policy responses – some of which may need us to have a wholesale rethink about what we value as a society – some of which will need to be coordinated globally. 🌐

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[3] Digital Disruption: Implications and opportunities for Economies, Society, Policy Makers and Business Leaders. (2020). Vagadia, B. See: https://www.springer.com/gp/book/9783030544935

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Angola

The parliament has unanimously approved a law authorizing President Joao Lourenco to grant tax and customs exemptions to Africell, the fourth Angolan 'Unified Global' telecoms licensee, which is preparing to launch commercial mobile network services in December 2021. As reported by Lusa, Angola's telecoms minister Manuel Homem told parliament that Africell had invested 'close to USD800 million' in its Angolan launch, aiming to boost competition, reduce end user costs, improve the quality of services, create jobs and increase the penetration of telecommunications services. The incentives proposed under the law 'result from a market study and negotiation and do not affect competition for companies operating in [the sector],' the minister declared, adding that similar benefits had been given to existing operators in their earlier phases. 'The terms of the [Africell operating] contract include a program for gradual implementation of coverage between urban centers and suburban areas … within eight years the operation should cover at least 60% of urban areas, giving greater priority to coverage of suburban areas,' Mr. Homem added.

(July 26, 2021) commsupdate.com

Australia

The Communications Minister Paul Fletcher has confirmed that allocation limits will apply to the amount of low-band spectrum that mobile network operators (MNOs) can acquire in the country's upcoming 5G frequency auction. In a press release regarding the matter, the Minister noted that bidders will be restricted to holding no more than 82MHz of licensed sub-1GHz spectrum in 'the most populous areas of Australia', saying this cap was consistent with recommendations from the Australian Competition and Consumer Commission (ACCC). To encourage investment in the more sparsely populated regional areas, a slightly higher limit of 92MHz of sub-1GHz spectrum has been set. According to the minister, these limits take into account carriers' existing holdings in similar bands below 1GHz and align with the Australian Government's communications policy objectives. Meanwhile, Minister Fletcher's direction to the Australian Communications and Media Authority (ACMA) also requires that body to set aside spectrum in the 900MHz band for Optus and TPG Telecom (Vodafone Australia). Such action will reportedly guarantee these two operators the opportunity to acquire 10MHz of 900MHz band spectrum at the auction 'to support continuity of services.

(August 9, 2021) commsupdate.com

Austria

The Regulatory Authority for Broadcasting and Telecommunications (Rundfunk und Telekom Regulierungs, RTR) has launched a consultation in coordination with the Federal Ministry of Agriculture, Regions and Tourism (BMLRT) to develop and publish a new schedule for frequency assignments planned for the five-year period 2021 to 2026. The aim of the consultation process is to create planning security for all interested stakeholders, with issues including the spectrum award schedule, market trends, types of use and different sharing and approval models outlined. It will mainly be focused on the 26GHz band, although other frequency ranges which could be awarded for mobile communications and broadband services in the medium to long term will also be addressed. Comments can be submitted by 9 August 2021.

(June 17, 2021) commsupdate.com

Belgium

Telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has begun a consultation regarding plans for the long-delayed 3G/4G/5G multi-band spectrum auction. Interested parties have until 31 August to submit their comments, with the auction expected to be staged early next year. The auction will cover the expiring licenses in the existing 2G and 3G bands (900MHz, 1800MHz and 2100MHz) and new frequencies for 5G, including the 700MHz, 3600MHz and 1400MHz bands. The legislative package setting the conditions for participants and license terms was approved by parliament in June but remains subject to approval by the Council of State. 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 (USD944 million). Under the minister's proposal, the funds will be held in escrow until the regions have reached an agreement. One of the key proposals is to reserve frequencies for a potential fourth mobile network operator (MNO) in order to boost competition. The B2B wireless connectivity provider Citymesh has been positioning itself to assume the role and recently confirmed it intends to apply for the spectrum package. In preparation for its potential new role, meanwhile, CEO Mitch De Geest revealed in an interview with L'Echo at the weekend that the company aims to launch a consumer offer by September, via an MVNO deal with Proximus. 'We want to be aggressive in terms of price,' he said, adding: 'If we are to be the fourth operator, we will face the challenge of having just a few months to launch. We will therefore begin gradually. We won't have hundreds of thousands of direct customers, but the idea is to proceed step by step.' Nonetheless, the company will continue to focus on the B2B market. 'We believe it has greater potential. In the coming years, the number of SIM cards in machines will increase significantly,' he stated.

(July 20, 2021) commsupdate.com

Telecoms regulator the Belgian Institute for Postal Services and Telecommunications (BIPT) has begun a consultation regarding its draft guidelines governing the provision of 'unlimited' internet packages subject to a fair use policy (FUP), as it believes such offers may be in conflict with the EU's Open Internet Regulation. Stakeholders have until 17 September to submit their comments. Under the guidelines drawn up by the regulator, service providers would not be permitted to block internet access once the FUP threshold has been reached, while the FUP cannot in principle be applied to more than 10% of end users of the subscription plan in question. In the event this limit is exceeded, the provider would be required to increase the FUP threshold or modify its marketing and contractual conditions to remove any suggestion that 'unlimited internet' is available. The BIPT will take action if the operator fails to implement either of these measures within six months of surpassing the 10% limit or in the event that 20% of subscribers are hit by the FUP. In addition, the service provider must ensure its 'reasonable use' policy is clearly understood by customers, by providing easy to understand, precise and up-to-date information in precontractual documents, the contract itself and on its website with regard to what exceeding the FUP threshold means for the customer. The BIPT expects service providers to apply the guidelines within six months of their eventual publication.

(July 15, 2021) commsupdate.com

Botswana

The Botswana Communications Regulatory Authority (BOCRA) has approved a reduction in internet tariffs by Botswana Telecommunications Corporation (BTC). A report from ITWeb states that the monthly cost of a 20Mbps connection on a three-year contract will drop from BWP975 to BWP650. A 50Mbps service will see the price fall by 40%, from BWP1,985 to BWP1,200, while the 100Mbps product is being cut from BWP2,800 a month to BWP1,900. BOCRA spokesperson Aaron Nyelesi said: 'Botswana aims at making ICT affordable to citizens in order to facilitate learning and working from home as the economy grapples with the challenges of the COVID-19 pandemic.'

(August 4, 2021) commsupdate.com

Brazil

After a week-long postponement, Brazil's Federal Court of Accounts (Tribunal de Contas da Uniao, TCU) has now approved the public notice for the proposed multi-band 5G spectrum auction. Minister Aroldo Cedraz remains a dissenting voice, but his objections to the bidding terms are not sufficient to derail the process. Fabio Faria, the Minister of Communications, is optimistic of staging the long-awaited auction in October. The delayed spectrum sale will include frequencies in the 700MHz, 2.3GHz and 3.5GHz bands, as well as 26GHz millimeter wave (mmWave) spectrum.

(August 26, 2021) TeleTime

The Minister of Communications Fabio Faria has confirmed that the notice for the auction of 5G-capable spectrum should be published by 25 August. The sale, which will include frequencies in the 700MHz, 2.3GHz and 3.5GHz bands, as well 26GHz millimeter wave (mmWave) spectrum, was originally scheduled to be held this month but was delayed due to deliberations at the Federal Court of Accounts. The Court says it only received the full documentation from sector regulator the National Telecommunications Agency (Agencia Nacional de Telecomunicacoes, ANATEL) on 25 June, and it is now scheduled to rule on the text of the notice at a meeting scheduled for 18 August.

(July 16, 2021) commsupdate.com

Cameroon

The Technical Commission for the Rehabilitation of Public and Para-public Enterprises (La Commission Technique de Rehabilitation, CTR) is preparing a complete diagnostic audit of state-owned telco CamTel. To that end, the CTR this week published a call for expressions of interest (EoIs) for a consultant to conduct the study. The audit is set to examine the economic environment, the operator's current marketing strategy and its overall competitiveness. In addition, the study will examine CamTel's financial position and set out the necessary actions for the company to achieve 'budget equilibrium' and ensure profitability. The decision is part of commitment made by the Cameroon within the framework of an Economic and Financial Program with the IMF, under which the government pledged to conduct audits of public enterprises to ensure their viability and competitiveness. In the case of CamTel, the operator was initially found to be facing stagnating turnover, declining operating income and rising debts. According to the CTR, this is the result of: 'the repeated failure of privatization efforts initiated over the past decade as well as the freezing of structuring investments and a lack of a long-term plan.' (June 18, 2021) Business Cameroon

Canada

Innovation, Science & Economic Development Canada (ISED) has announced the results of the country's 3500MHz 5G frequency license auction, raising CAD8.912 billion (USD7.146 billion) after 103 rounds of bidding. A total of 3,431 regional spectrum licenses were assigned, including 1,495 licenses won via auction and 1,936 'transitioned' licenses – existing fixed-wireless 3.5GHz permits converted to new licenses enabling mobile or fixed 5G services. The 200MHz (3450MHz-3650MHz) bandwidth was divided into 20 10MHz TDD blocks in each of the 172 geographical licensing regions. Just nine licenses went unsold. Out of 23 applicants, 20 winners were awarded 3.5GHz spectrum under 20-year 'Tier 4' concessions, including the following:

Rogers Communications won 325 licenses at auction and received 509 transitioned licenses, covering a combined 34.9 million population, costing CAD3.326 billion

Bell Canada won 271 licenses at auction and received 490 transitioned licenses, covering a combined 34.3 million population, costing CAD2.074 billion

Telus received 142/86 auctioned/transitioned licenses covering 24.9 million people for CAD1.947 billion

Videotron: 294/five licenses won/transitioned (30.0 million population, CAD830.0 million)

Cogeco Connexion: 38/80 licenses won/transitioned (10.3 million population, CAD295.1 million)

Xplornet: 263/698 licenses won/transitioned (16.6 million population, CAD244.4 million)

SaskTel won 68 licenses at auction (1.1 million population, CAD145.1 million)

Eastlink won 50 licenses at auction (2.3 million population, CAD27.9 million)

Tbaytel: four/15 licenses won/transitioned (231,000 population, CAD1.1 million)

Iristel won eight licenses at auction (219,000 population, CAD483,000). (July 30, 2021) commsupdate.com

Canada's ongoing 3500MHz 5G license auction is expected to raise up to CAD8 billion (USD6.4 billion), according to sources cited by The Globe & Mail. Over 20 applicants have been bidding on 1,500 spectrum licenses within 172 geographical blocks since 15 June, and the sources indicated that the auction is currently in the assignment phase and is expected to be completed by 23 July. If preliminary reports are accurate, the 3500MHz proceeds would be a record amount for a Canadian wireless spectrum sale. TeleGeography's GlobalComms Database says that the existing record is CAD5.27 billion achieved in February 2014's 700MHz license auction, which surpassed the CAD4.25 billion earned by the federal government via the AWS-1 (1700MHz) auction of July 2008. (July 15, 2021) commsupdate.com

Chile

Chilean telecommunications regulator the Subsecretariat of Telecommunications (SUBTEL) has announced the launch of a public tender for the deployment of a fiber optic project in the country's Tarapacá region. This is not a small undertaking. The SUBTEL press release mentions a government subsidy of more than $8.2 million for the deployment of about 870 kilometers of optical fiber. Tarapacá is a region in northern Chile, bordering Bolivia. According to the Bnamericas website, works are expected to begin in the first half of 2023 and the network is due to be operational in the first half of 2024. The project, says SUBTEL, remedies a historical connectivity deficit in the region, and will benefit 15 localities. The minister of transport and telecommunications (MTT), Gloria Hutt, said that "we continue to meet the challenges that we set ourselves in our Digital Matrix, which aims to provide greater and better connectivity to different locations throughout the country. We expect great interest from the private sector in this project that will transform the Tarapacá region." Companies interested in applying may do so until Tuesday, 12 October, 2021

at 2:00 pm, the deadline for receiving proposals. Further information on the contest can be downloaded from the SUBTEL website. It's worth pointing out, as TeleGeography's CommsUpdate does, that the Fibra Optica Tarapaca (FOT) network is not to be confused with Chile's nationwide Fibra Optica Nacional (FON) project and the Fibra Optica Austral (FOA) southern fiber plan. There's also the fiber optic in border complexes (FOCF) project, which is expected to take fiber connection to 12 border posts by March 2024.

(July 24, 2021) developingtelecoms.com

Chilean antitrust watchdog the National Economic Prosecutor's Office (Fiscalia Nacional Economica, FNE) has greenlit the acquisition of a 60% stake in Movistar Chile's fiber-optic infrastructure subsidiary InfraCo by KKR Alameda Aggregator – part of international investment firm KKR, Diario Financiero reports. Under the planned deal, KKR Alameda would will acquire a 60% stake in a holding company – InfraCo Holdco – which

in turn holds 100% of InfraCo. According to the FNE's report, InfraCo will build, operate and sell infrastructure and provide wholesale services. The regulator found that the sale would not lead to a concentration of market power as KKR does not have an existing presence in any of the affected markets. Further, the FNE noted that without the transaction Movistar would continue to hold exclusive control over the network, whilst the sale would promote the use of the infrastructure by other players, expanding the capabilities of existing providers and facilitating the entry of new providers into the broadband market. The regulator went on: 'In this way, the [transaction] would contribute to the opening of certain geographical areas in favor of other actors present in Chile, thus enhancing the conditions of competition in different local markets.' Finally, the regulator noted that none of the industry stakeholders consulted on the matter raised any potential concerns.

(June 21, 2021) commsupdate.com

Colombia

The Colombian government is optimistic of staging its auction of 5G-suitable 3.5GHz spectrum by December 2021, officials have indicated. Terms and conditions remain under review, although it is anticipated that the government will apply rural coverage obligations on the eventual license winners, as it did after the 700MHz spectrum sale in December 2019. ICT minister Karen Abudinen told Portafolio: 'We are reviewing the terms of reference for the 5G auction. We are still seeing what those conditions may be, that operators who want to participate will have to meet, but our idea is that we can connect more homes, and more antennas will be installed.' TeleGeography notes that the Ministry of Information Technologies and Communications (Ministerio de Tecnologias de la Informacion y las Comunicaciones, MinTIC) awarded the country's major players with temporary 3.5GHz licenses in early 2020, and Claro, Tigo, Movistar and ETB all went on to stage successful 5G mobile trials in the ensuing twelve months. The regulator's 2019 5G consultation also featured the 600MHz band and various millimeter wave (mmWave) bands, starting with 24.25GHz-27.5GHz.

(June 25, 2021) commsupdate.com

The National Spectrum Agency (Agencia Nacional del Espectro, ANE) has fined Avantel for using frequencies assigned to its sister company, Telecom Partners Colombia (WOM), without prior permission. The offence occurred in August 2020, and involved spectrum in the 723MHz-733MHz/778MHz-788MHz band, as acquired by WOM in December 2019's multi-band spectrum auction. According to the regulator's press release, the matter was brought to ANE's attention by Comunicacion Celular Comcel (Claro) and Colombia Movil (Tigo), and duly investigated by the Technical Spectrum Control Group. Avantel has been fined COP10.6 billion (USD2.9 million) for the infraction. According to TeleGeography's GlobalComms Database, in May 2021 WOM announced plans to stage a 'merger by absorption' of Avantel, which had been acquired by Novator in July 2020. As the 'largest and most financially sound company', WOM will assume all responsibilities to Avantel's creditors and prioritize the payment of its legacy debts. The merger process is expected to conclude within four months of being announced (i.e., by September 2021).

(June 8, 2021) commsupdate.com

Costa Rica

Liberty Latin America (LLA) has announced that it has received authorization from Costa Rican President, Carlos Alvarado Quesada, for its all-cash USD500 million acquisitions of Telefonica Costa Rica (Movistar). Previously, in June this year, the Superintendency of Telecommunications (Superintendencia de Telecomunicaciones, SUTEL) approved the deal, after determining no evidence the transaction would produce

any anti-competitive effects. Movistar will be sold to LLA's 80%-owned Cabletica ISP unit. Going forward, the takeover is expected to close by mid-August, with the two parties stating: 'Telefonica and Liberty Latin America are excited to complete the transaction and to combine Cabletica and Movistar in Costa Rica. The companies intend to close the transaction shortly.'

(August 3, 2021) commsupdate.com

Costa Rica's Superintendency of Telecommunications (Superintendencia de Telecomunicaciones, SUTEL) has initiated a sale of 470MHz licenses, which it says are suitable for 'narrowband radiocommunication'.

All concessions will be valid for 15 years. Interested parties have until 9 August to present their offers to the regulator. (July 14, 2021) commsupdate.com

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Croatia

The Croatian regulator HAKOM) has allocated radio frequency spectrum in the 700 MHz (758-788 / 703-733), 3600 MHz (3400-3800 MHz) and 26 GHz frequency bands (26, 5-27.5 GHz) for 5G mobile communications networks. The awards for the 700 MHz band at the national level were made to Telemach Hrvatska, Hrvastki Telekom and A1 Hrvatska for a total of HRK139,989,998 (€18,642,400). While Telemach Hrvatska and Hrvastki Telekom will each be charged HRK46,094,099, A1 Hrvatska will have to pay HRK45,000,000. The three companies were also awarded licenses in the 3600 MHz at the national level, for which they will be required to pay HRK54,455,750, HRK66,765,750 and HRK52,920,000 respectively. Also on a national level, they were, along with Eolo, awarded licenses in the 25 GHz band, though for considerably smaller fees. In the regional 3600 MHz auction, licenses were awarded to Eolo, Eco Net, Terrakom, BeeIN, Digicom and Markoja. HAKOM notes that the bidding process began on July 12, and the decision to select the most favorable bidders and issue licenses was made on August 12. Permits were issued for 15 years for all allocation areas, except in the case of Medimurje and Varasdin counties, where there are already issued permits for various 5G technology valid until 2023, and for these areas new permits are exceptionally issued for 13 years. The total raised for the state in the auction amounted to HRK358,995,433. (August 16, 2021) broadbandtvnews.com

The Croatian Regulatory Agency for Network Operations (Hrvatska regulatorna agencija za mrezne djelatnosti, HAKOM) has completed its auction of 5G-capable frequencies in the 700MHz, 3.5GHz and 26GHz bands. The sale, which began on 12 July, allocated 15-year licenses on a national and regional basis and raised a total of HRK359.0 million (USD56.1 million). Nationwide 700MHz, 3.5GHz and 26GHz concessions were won by incumbent cellcos Hrvatski Telekom (HT), Telemach Hrvatska and A1 Hrvatska, while Italian-owned fixed-wireless operator EOLO also won a 26GHz permit. Regional 3.5GHz concessions went to EOLO, Eco Net, Terrakom, BeeIN, Digicom and Markoja. (August 13, 2021) commsupdate.com

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Cuba

The Ministry of Communications (Mincom) has announced that a number of new pieces of legislation governing the country's telecoms sector have officially come into force. These include: Decree-Law No. 35 on Telecommunications, Information and Communication Technologies and the Use of the Radioelectric Spectrum of 13 April 2021; Decree No. 42 General Regulation of Telecommunications and Information and Communication Technologies of 24 May 2021; Decree No. 43 Regulation on the Use of the Radioelectric Spectrum of 24 May 2021; Resolution No. 108 Regulation of Interconnection, Access and Essential Installations of Telecommunications Networks of 9 August 2021; Resolution No. 107 Regulations for the Use of Satellite Radiocommunications Services of 9 August 2021; and Resolution No. 105 National Action Model for responding to Cybersecurity Incidents of 9 August 2021. Decree-Law No. 35 is the country's first overarching telecoms law and is designed to create greater coherence in the sector and improve the existing regulatory framework. It is aimed at developing technological convergence and prioritizing the implementation of broadband networks, as well as protecting the interests, rights and privacy of citizens. According to the Mincom, it will 'contribute to the political, economic and social development of the country, through the development and modernization of telecoms infrastructures and, furthermore, promote the harmonious and orderly progress of telecoms/ICT networks and services. It also defines and outlines the services that are considered as Universal Telecommunications Services, which operators must guarantee to provide to all citizens, regardless of their location, and sets out the regulations on the use of spectrum on the island. (August 18, 2021) commsupdate.com

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Czech Republic

The telecoms regulator Czech Telecommunication Office (CTU) has received requests from four domestic operators – Nordic Telecom 5G, O2 Czech Republic, PODA and Vodafone Czech Republic – seeking permission to change their radio frequency allocations in the 3400MHz–3800MHz band. In a press release, the CTU noted that the companies have made the requests 'on the basis of' the refarming commitments they entered into in the 3600MHz-3800MHz frequency band launched on 27 March 2017 (Ref. CTU-1 /

2017-613) and a tender for the purpose of granting rights to use radio frequencies for the provision of electronic communications networks in the 700MHz and 3400MHz−3600MHz frequency bands announced on 7 August 2020 (Ref. CTU-38 426 / 2020-613). The CTU went on to say that all four operators have met the

requirements for refarming outlined above, and that, as such, it is launching a public consultation – comments for which can be submitted within one month of the publication of the call (i.e., no later than 27 June 2021). (June 1, 2021) commsupdate.com

Djibouti

Djibouti has set a six-week deadline for bidders to express an interest in purchasing a 40% stake in the country's incumbent fixed and mobile operator Djibouti Telecom. In documents published late last week, the government set a deadline of 16 September 2021 for expressions of interest (EoI), but also warned would-be suitors that it is not averse to introducing competition in the near future. Capacity Media cites the statement from the government which read: 'The state of Djibouti does not consider the monopoly as an intangible dogma … In the context of a development that has been experienced by the vast majority of African and emerging countries, the company must prepare to face competition from new entrants and the liberalization of the sector, particularly in the cell phone sector.' No

further details on the sale process were disclosed, but the government did confirm that 'selected potential buyers' will be approached and invited to submit 'indicative offers. If all goes to plan, the authorities hope to conclude the sale of a 40% stake in the PTO in 1H22. One of the last monopolies on the African continent, Djibouti Telecom offers wireless, broadband and fixed voice telephony services to around one million Djiboutians, while the country is also home to a host of submarine cables lying as it does at a key strategic location on the Horn of Africa. The government believes its national telco offers a great opportunity for strategic investors and pointed to potential expansion into mobile money services and data centers as future revenue streams. (August 3, 2021) commsupdate.com

Dominican Republic

The Dominican Telecommunications Institute (Instituto Dominicano de las Telecomunicaciones, Indotel) has confirmed that it has received technical and economic offers from Claro Dominicana and Altice Dominicana, ahead of its planned sale of 5G spectrum. The country's third-placed player, Viva Dominicana, is conspicuous by its absence, however. While the technical offers were verified upon receipt, the economic offers will not be reviewed until 22 September. A final decision is expected by 11 October. The 5G auction process will

involve the allocation of frequencies in the 698MHz-806MHz (700MHz) and 3300MHz to 3460MHz (3.5GHz) bands. As per Indotel documentation, nine 2×5MHz blocks of 700MHz spectrum will be made available, alongside 16 10MHz blocks of 3.5GHz spectrum. All licenses will have a duration of 20 years. The watchdog has previously indicated that it expects the 5G auction to generate between USD200 million and USD300 million.
(August 17, 2021) commsupdate.com

Ecuador

The Agency for Regulation & Control of Telecommunications (Agencia de Regulacion y Control de las Telecomunicaciones, ARCOTEL) has announced negotiations have begun with Otelecel (Movistar) and Conecel (Claro), the country's two largest mobile network operators (MNOs), regarding the renewal of their operating concessions. The process will establish the operators' new frequency management rights as well as the technical, legal and

economic conditions that will apply once their current licenses expire in 2023. National and international observers will monitor the negotiations to ensure the process is transparent, the regulator said in a press release. In addition to attracting new investment and generating jobs, the government hopes the new concessions will directly benefit the public by expanding coverage, connectivity, innovation and technological development. (August 27, 2021) commsupdate.com

Ethiopia

Ethiopia is reportedly set to reopen bidding for the country's second new telecoms operator license this month, according to Reuters, which cites two senior government officials as confirming the plan. Notably, the report indicates that the license that will be put up for grabs will allow for the provision of mobile

financial services, with a view to both making it more attractive to would-be bidders and increasing the price. Indeed, Balcha Reba, director general of the Ethiopian Communication Authority, was cited as saying of the plans for the retender: 'We have made some changes that can uplift its value, for instance mobile financial

service.' It is understood that the International Finance Corporation, the private sector arm of the World Bank, will serve as transaction adviser in the deal, and the Ethiopian government reportedly expects prospective bidders to include firms which had expressed interest in the previous attempt to sell the license, but whose bids were deemed to be insufficient. Brook Taye, a senior adviser at Ethiopia's Ministry of Finance, said that the state expects 'strong interest' in the retendered license, while suggesting that the winning bid from the initial tender – which saw a Safaricom-led consortium agree to pay USD850 million for its concession in May 2021 – could serve as a guide for the price that will be achieved in this second sale process. 'At least there is a benchmark and to uplift this benchmark we are working on amending the policy,' Brook noted, again hinting at the expectation that the inclusion of a right to offer mobile financial services will help drive the cost of the concession higher than in the initial license sale.

(August 3, 2021) commsupdate.com

The Ethiopian Communications Authority (ECA) said it has issued a telecoms license to the Global Partnership for Ethiopia (GPE), which has been incorporated as Safaricom Telecommunications Ethiopia.

Ethiopia's award of a new telecoms license paves the way to open the market to international investors for the first time. GPE, a consortium comprising Safaricom, Vodacom, Vodafone, Sumitomo Corporation, and CDC Group, has been designated as a provisional licensee for the nationwide full-service Telecommunications license last month. The new license is effective from 9 July 2021 and is valid for a term of fifteen years from the Effective Date, and renewable for additional terms. "Under Articles 40 and 41 of the Tender Regulations, the Designated Licensee (Global Partnership for Ethiopia) shall incorporate a local company within forty-five 45 calendars," ECA said. With the license nod, the Safaricom-led consortium can now provide any telecommunications service including voice, text, data, and video using any technology whether fixed or wireless anywhere within Ethiopia. According to local media reports, the Safaricom-led consortium is set to create up to 1.5 million new jobs and bring $8.5 billion in investment over 10 years. It will provide 4G and 5G internet services, and by 2023 a low-orbit satellite will be put in place to provide nationwide 4G coverage.

(July 17, 2021) developingtelecoms.com

Germany

The Federal Network Agency (FNA, or Bundesnetzagentur) has published its 'Principles and Scenarios for the Provision of 800MHz, 1.8GHz and 2.6GHz Spectrum'. The paper has been drawn up ahead of the expiry of the spectrum usage rights in these bands at the end of 2025. It follows the publication of the FNA's 'Spectrum Compass' for market consultation in August last year, which contains initial considerations on the future availability of frequencies in the 800MHz, 1800MHz, 2600MHz bands, and aims to give companies the greatest possible legal and planning security at an early stage so that they can continue to invest in their networks. The FNA has evaluated the responses received and is now consulting on its principles and scenarios with the aim of evaluating market players' interests and exploring the next possible steps. The five scenarios presented include a spectrum auction, an extension of spectrum usage rights, a combination of the two, an 'operator model' and a tendering process. The paper also considers a 'negative auction' as an option, whereby the successful bidder would be the one needing the least funding for rolling out mobile coverage to areas that are not financially lucrative (this option should also be considered in context with other forms of funding). The FNA's objective is to improve broadband coverage, especially for communities in rural areas, and the regulator will take particular account of this objective when making the spectrum available again from 2026. At the same time, the aim will be to promote sustainable competition in infrastructure and services.

(June 23, 2021) commsupdate.com

Greece

The Greek government has called for binding bids for its Ultra-Fast Broadband (UFBB) project, which aims to offer 100Mbps connectivity to 750,000 premises, with speeds upgradeable to 1Gbps. A report from Athina984 says the rollout will be one of the largest public-private partnership (PPP) schemes in Europe, with a budget of EUR700 million (USD835 million), EUR300 million of which will come from public funding. The UFBB scheme was first unveiled by the Ministry of Digital Governance in 2019 and has attracted interest from eight potential rollout partners: OTE, Wind, Vodafone, Public Electricity Company, Avax, METKA, Intracom and TERNA Energy. The project will run alongside other schemes financed by the EU's Recovery Fund, which aim to develop 5G transmission corridors, submarine cables, backbone infrastructure and microsatellites.

(June 24, 2021) commsupdate.com

Guyana

The Telecommunications Agency (TA) is poised to award three 700MHz 'mobile radiocommunication service' licenses later this month. The plans appeared in the country's Official Gazette late last month, while the deadline for interested parties to submit their feedback to the watchdog has been set at 13 July.
The three licenses in question are:
- Guyana Telephone and Telegraph Company (GTT); 708MHz-718MHz/763MHz-773MHz
- E-Networks; 718MHz-738MHz/773MHz-793MHz
- U-Mobile (trading as Digicel); 738MHz-748MHz/793MHz-803MHz

TeleGeography notes that the regulatory structure of Guyana's telecoms sector was overhauled in October 2020, following more than a decade of reform efforts. Among other regulatory reforms, that month saw the introduction of the Telecommunications (Spectrum Management) Regulations 2020. Indeed, the award of new licenses means that each operator's 'Frequency Authorization' (dated 5 October 2020) now needs to be amended.

(July 7, 2021) commsupdate.com

Hong Kong

The Office of the Communications Authority (OFCA) in Hong Kong has opened applications for its auction of 5G-capable wireless spectrum in the 600MHz, 700MHz, 850MHz, 2.5GHz/2.6GHz and 4.9GHz bands. The sale, which is due to begin on 25 October, includes 220MHz of new frequencies at 600MHz, 700MHz and 4.9GHz, plus 105MHz of reassigned spectrum in the 850MHz and 2.5GHz/2.6GHz bands. Licenses will be valid for 15 years. Reserve prices have been set as follows: 600MHz – HKD2 million (USD257,000) per MHz; 700MHz – HKD5 million per MHz; 850MHz – HKD4 million per MHz; 2.5GHz/2.6GHz – HKD4 million per MHz; and 4.9GHz – HKD3 million per MHz. Spectrum caps will be imposed on the amount of spectrum which may be acquired by a single assignee, namely 30MHz for the 600MHz band, 30MHz for the 700MHz band, 50MHz for the 2.5GHz/2.6GHz band and 40MHz for the 4.9GHz band. Hong Kong is home to four mobile network operators (MNOs): HKT, Hutchison 3, China Mobile HK and SmarTone. (August 4, 2021) commsupdate.com

India

Sector watchdog the Telecom Regulatory Authority of India (TRAI) has published its recommendations on the licensing framework for the use of satellite connectivity for IoT services and other low bit rate applications. Following consultation with industry stakeholders, the TRAI has proposed a broad framework that would impose few restrictions with the intention of facilitating different business models and network topologies. To that end, the TRAI has recommended that licensees be permitted to use any kind of network topology model and that all types of satellite (i.e. geostationary orbit and non-geostationary orbit) may be used for low bit rate connectivity. Regarding licensing, the TRAI recommended that existing authorizations under the Unified Licensing framework may be amended to enable satellite-based low bit rate connectivity, and that the scope of other types of authorization – such as for Global Mobile Personal Communication by Satellite (GMPCS) services – should be similarly amended. Licensees should also be permitted to obtain bandwidth from government-approved foreign satellites – albeit with some additional conditions. To assist with planning and capacity procurement, the government should also provide a roadmap detailing the scheduled launch dates for communication satellites, and the availability of domestic satellite capacity. Finally, the Department of Telecommunications (DoT) should establish a common online portal for all agencies involved in the grant of various relevant approvals and allocations, through which licensees can submit requests, with the authorities required to respond in a transparent and time bound manner.

(August 27, 2021) commsupdate.com

Indian full-service provider Bharti Airtel has completed the sale of a portion of its 800MHz spectrum to rival operator Reliance Jio Infocomm (Jio), the Economic Times writes. Airtel transferred spectrum covering the Andhra Pradesh (2×3.75MHz), Delhi (2×1.25MHz) and Mumbai (2×2.5MHz) circles to Jio and received INR10.0 billion (USD134.7 million) from the latter and noting that Jio would take on future liabilities of INR4.7 billion relating to the spectrum. The airwaves were part of the frequencies that had been acquired by Airtel through its takeover of Tata Group's consumer mobile business in mid-2019. (August 16, 2021) commsupdate.com

India's Supreme Court has rejected an appeal by cellcos Bharti Airtel and Vodafone Idea (Vi) and defunct mobile provider Tata Teleservices Limited (TTSL) that sought to allow the correction of mistakes made by the Department of Telecommunications (DoT) in calculating dues related to the Adjusted Gross Revenue (AGR) case, the Economic Times writes. The trio are facing demands worth a combined total of around INR1.19 trillion (USD16 billion) in unpaid fees, interest, penalties and interest on the penalties following a ruling by the apex court in October 2019 on the definition of AGR – upon which operators' various license fees are based – to include income from non-core sources, ending a dispute dating back to 2005. The court's October 2019 ruling ordered providers to

pay their dues within 90 days, but failed to specify the amounts that the providers were required to pay. As such, the DoT scrambled to work out the cellcos' dues, with the providers submitting their own self-assessed calculations to speed up the process. The court rejected the self-assessed totals and ruled that the DoT's calculations were final, despite a huge disparity between the two sets of figures. Whilst it had been expected that there would be some differences in the calculations it was expected that these would be fairly minor and easily reconciled – in submitting its initial payment, for example, Airtel included an additional INR50 billion to cover such discrepancies. The demands finally issued by the DoT were roughly double the self-assessed figures, though, and following subsequent analysis the cellcos claimed that the DoT's calculations were riddled with errors that had massively inflated the final figure. For Airtel, its self-assessed total was INR130.0 billion but the DoT's demand totaled INR439.8 billion, whilst for Vi the totals were INR215.3 billion and INR584.0 billion, respectively, and TTSL INR22.0 billion and INR168.0 billion. Notably, due to span of the dispute and the layers of additional payments (principal amount, interest, penalties and interest on penalties), even comparatively small mistakes in determining the providers' unpaid fees resulted in a substantial increase in the final demand. According to the providers, the DoT had made simple clerical errors in some places alongside mistakes in its actual calculations, including counting some revenue twice, not taking into account allowed exemptions and

failing to fully recognize payments made. At a hearing in September 2020 the Supreme Court ruled that cellcos would be permitted to pay the dues over a ten-year period, but enshrined the DoT's allegedly faulty calculations as final, determining that the amounts could not be recalculated or re-assessed. Consequently, in its recent ruling the Supreme Court noted that it had said 'not just once, but twice and thrice that the amounts cannot be recomputed'. No explanation or reasoning was offered for the dismissal of the cellcos' pleas, except that the Supreme Court had already ruled on the matter. Meanwhile, the Supreme Court did not clarify its position on the other legacy of its September 2020 decision. Whilst the ruling allowed providers to pay 10% of their dues up front and the remainder in annual instalments to 31 March 2031, it did not state whether the payments already made by the cellcos by that date were to be taken into account. As such, the providers have argued that they had already paid the first 10% instalment and are not due to make another payment until March 2022, whilst the DoT has argued that they were required to pay 10% of the remaining dues by March 2021. The decision casts doubt on the viability of Vi to continue operating, with the debt-laden and loss-making cellco struggling to raise funds to cover its immediate expenses. Whilst the company is reportedly expected to be granted approval to raise INR150 billion through foreign direct investment (FDI), it has payments totaling INR225 billion due by April 2022, including regular debt payments, spectrum fees and AGR dues. (July 23, 2021) commsupdate.com

Indonesia

The Ministry of Communication and Information (MCI, KemKominfo) has launched refarming in the 2300MHz band as it looks to improve the quality of digital cellular services through the more efficient use of spectrum in Indonesia. Confirming the plan, Minister of Communication and Information Johnny G Plate was quoted recently as saying: 'Refarming of the 2.3GHz radio frequency band is planned to take place nationally with the first step starting on Wednesday 14 July 2021 and will be completed in September 2021 at the latest'. KemKominfo notes that the refarming process is being carried out in nine clusters under plans agreed with domestic operators, including Telekomunikasi Selular (Telkomsel) and Smart Telecom (Smartfren) which won 2.3GHz spectrum earlier this year. As previously reported by TeleGeography's CommsUpdate, back in April KemKominfo 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 Telkomsel bid IDR176.9 billion (USD12.2 million) per block on

the three lots of bandwidth offered – securing two – while Smartfren bid IDR176.5 billion to win the other slot. As such, Telkomsel secured blocks A and C, while Smart Telecom won block B. In addition to the above, KemKominfo says the refarming exercise will also involve broadband wireless access (BWA) operator Berca Hardayaperkasa (trading as hinet), which is also a user of the 2.3GHz frequency band. IndoTelko cites the minister as explaining: 'It starts in a cluster that covers the Riau Islands and is planned to be completed no later than September 2021 in a cluster that covers the East Java area. Overall, there are a total of nine clusters defined for the purposes of refarming the 2.3GHz radio frequency band'. The minister went on to say that the refarming of the 2.3GHz band is designed to support the optimal use of 4G services and also prepare the ground for the easy deployment of 5G technology. (July 19, 2021) commsupdate.com

The Ministry of Communications and Information Technology (MCI, or KemKominfo) has issued a second warning to Indonesian mobile operator Sampoerna Telekomunikasi Indonesia (STI, branded Net1) over its failure to pay overdue BHP frequency spectrum fees.

Having already sent a first warning on 1 May 2021 over total arrears amounting to IDR442 billion (USD31.1 million) – with a due date of 1 June – in the face of continued non-payment KemKominfo has now sent a second, informing Net1 it must make good on the settlement of BHP IPFR obligations on or before 31 July or risk the suspension of its license. The ministry notes that if Net1 fails to comply with regulation PP5 of 2021, it will issue a third warning on 1 August along with the

notification of 'temporary cessation' of operations on the use of radio frequency spectrum. STI was awarded a Cellular Mobile Network Operation License in the 450MHz frequency band under 'Decree of the Minister of Communication and Information Number 1660 of 2016', dated 20 September 2016. It is licensed to use spectrum in the 450MHz-457.5MHz range paired with 460MHz-467.5MHz.

(June 15, 2021) commsupdate.com

Ireland

Ireland's Department of the Environment, Climate and Communications (DECC) has issued an update on the progress of the National Broadband Plan (NBP), noting that despite the ongoing challenges associated with COVID-19, 'significant progress has been made in the first half of 2021, with a number of key milestones achieved and momentum building on the project'. In terms of the rollout progress, the DECC reported that as of 23 July 2021 a total of 239,361 premises had been surveyed, with deployments covering over 92,000 premises under construction and 19,378 premises able to either pre-order or order a connection. Main build works have been completed in two 'Deployment Areas' ('DAs'), in Counties Galway and Cavan, while main build works are said to be progressing with the first premises expected to be made available for connection to the NBP network in 2021 in the following DAs: Ballinasloe, Carrigaline, Dundalk, Limerick, Monaghan, Kilcoole, Roscommon, Tipperary and Tralee. Dates for first available connections in early 2022 are also estimated for the following DAs: Carlow, Castlebar, Killarney, Mullingar, Sligo, Waterford and Wexford. With a total of 45 retail service providers (RSPs) ultimately expected to offer services to consumers over the NBP network, the DECC noted that at present 19 such providers are 'actively' selling services via the in-deployment infrastructure across Cavan, Clare, Cork, Galway, Limerick, Monaghan and Roscommon. Meanwhile, in addressing the impact of the COVID-19 pandemic, and acknowledging its impact on the delivery of the NBP, the DECC noted that in May 2021 it had approved a Remedial Plan for 2021 put forward by National Broadband Ireland (NBI), the company rolling out the new high speed fiber broadband network under the NBP. This Remedial Plan reflects revised targets for the year taking into account delays encountered due to

the pandemic and challenges around program ramp up and network rollout, and the updated contracted target under this plan is for almost 60,000 premises passed by the end of 2021.

(August 13, 2021) commsupdate.com

Irish telecoms regulator the Commission for Communications Regulation (ComReg) has published an Information Notice aimed at providing an update on its COVID-19 temporary licensing framework – under which licenses are currently due to expire on 1 October 2021. The Information Notice also seeks to provide 'information relevant to the consideration of any further COVID-19 temporary spectrum licensing framework beyond 1 October 2021, including next steps and envisaged consultation timelines regarding same'. According to the regulator, having initially introducing the temporary licensing framework in March 2021, it has now outlined the process by which it envisages determining whether its extension may be warranted beyond the current expiry date, 'in light of the prospect of continued Government measures to address COVID-19 and the impact this may have on relevant network operators'. As a next formal step, the regulator has called for the county's mobile operators to submit a joint or common request which would: set out the specific details of the joint/common request indicating any elements of the existing Temporary ECS Licensing framework that ought to be changed (if any) and the reasons for same; and provide sufficiently detailed information based on the updated and prevailing COVID-19 considerations at that time to support a request for any further Temporary ECS Licensing framework. ComeReg has set a deadline of 6 August for the joint/common request to be made.

(July 12, 2021) commsupdate.com

Italy

An administrative court in Rome has annulled fines totaling EUR228 million (USD271 million) levied against Italian telcos Telecom Italia, Vodafone, WINDTRE and Fastweb. The telcos were fined last year by Italy's Competition Authority (Autorita Garante della Concorrenza e del Mercato, AGCM) for collectively raising tariffs when ordered to switch from a 28-day billing cycle to monthly billing. According to a report

from Reuters, the court found that the AGCM had not shown that the companies were not acting within their rights. Italian consumer rights groups reacted angrily at the court decision. Massimiliano Dona, president of consumer association Unione Nazionale Consumatori, was quoted as saying: 'It's a disgrace! That the legal system in this country doesn't work is well known, but we've now touched the bottom.' (July 14, 2021) commsupdate.com

Japan

The Ministry of Internal Affairs and Communications (MIC) in Japan has approved plans that would see mobile network operators (MNOs) sharing frequency spectrum at certain times to optimize the use of scant frequency bandwidth. Noting that the uptake of fifth-generation wireless services will accelerate the utilization of radio waves for smartphones and driverless vehicles in future, the MIC said that it aims to begin spectrum sharing by the end of March next year. Given that the wavebands used for TV relay broadcasts – which can be used for 5G – are only used at certain times of the day the ministry has revised the country's Radio Law to allow MNOs to use that spectrum at night and in the early morning, when TV stations are not using it. The paper goes on to say 'the ministry plans to recruit new subscribers by the end of this year, with four mobile giants, including NTT DOCOMO, likely to apply … One or two companies will be selected next spring, allowing mobile phone users to access 5G services more easily.' Furthermore, it plans to introduce dynamic frequency sharing (DSS) in future to allow multiple operators to use the same frequency band at certain times.

(July 23, 2021) commsupdate.com

Kyrgyzstan

The government is considering proposals to sell state-owned mobile operator MegaCom to the National Bank of Kyrgyzstan or other unnamed potential buyers, chairman of the Fund for State Property Management Mirlan Bakirov told a press conference, quoted by news agency 24.kg. Mr. Bakirov stressed that MegaCom must undergo an asset revaluation before any sale takes place. He added: 'Parliament agreed to include MegaCom in the privatization program [note: Kyrgyzstan's unicameral Supreme Council, the Jogorku Kenesh, approved a Cabinet of Ministers resolution proposing to sell MegaCom on 29 July 2021]. The company is now undergoing an inventory procedure. A special commission will be created; all procedures will be open.' Several previous attempts at finding a buyer for MegaCom have failed, and the property fund chairman noted that in 2019 the cellco's value was estimated at KGS19 billion (USD225 million) before the valuation was reduced to KGS14 billion. Therefore, the Cabinet of Ministers is now undertaking a reassessment of the company, Bakirov said.

(August 20, 2021) commsupdate.com

The Ministry of Digital Development has reiterated plans to launch commercial 5G network services by 2023, under the country's digital economy program for 2021-2023, reports 24.kg. Officials noted that whilst the national development of 4G networks has not yet reached the desired peak level for a full 5G launch to commence, the initial introduction of 5G technology is imminent. A government statement noted that 5G was envisaged to enable smart cities, smart homes and remote-controlled vehicles, and optimize processes in industrial facilities, offices, shopping malls and social facilities. A report cited the Ministry as saying the following steps must be undertaken to introduce 5G technology: carry out work on the release of suitable 5G frequency bands; select a city to test the technology using 5G-capable mobile phones; and monitor the delivery of high quality mobile internet to the population. Furthermore, Tazabek quoted Kyrgyzstan's State Communications Agency director Talant Kalykov disclosing plans to launch a pilot 5G network by the end of 2021, with further details to follow.

(June 11, 2021) Sputnik.kg

Macedonia North

The Agency for Electronic Communications (AEK) has received four expressions of interest (EoI) from telecoms operators for participation in the planned auction for 5G spectrum. The EoI are as follows:
• Neotel: blocks B41, B44, B45 and B46 (3.4315GHz-3.460GHz), suitable for fixed services in regions 1 (Skopije, Ilinden, Petrovets, Zelenikovo, Studenichani, Sopishte, Chucher Sandevo and Arachinovo), 4 (Bitola, Prilep, Demir Hisar, Krushevo, Dolneni, Krivogashtani, Mogila, Novaci and Resen), 5 (Ohrid, Struga, Debarca, Vevchani, Kichevo, M. Brod, Drugovo, Zajac, Oslomej, Vraneshtica, Plasnica, Debar and Centar Jupa) and 6 (Tetovo, Gostivar, Tearce, Jegunovce, Jelino, Brvenica, Bogovinje, Mavrovo and Rostushe)
• Bitstream Mobile: blocks A1 (703MHz-713MHz/758MHz-768MHz) and B1 (3.5GHz-3.6GHz)
• A1 Macedonia: A2 (713MHz-723MHz/768MHz-778MHz), A3 (723MHz-733MHz/778MHz-788MHz), B2 (3.6GHz-3.7GHz) and B3 (3.7GHz-3.8GHz)
• Makedonski Telekom: B2 (3.6GHz-3.7GHz), A2 (713MHz-723MHz/768MHz-778MHz) and/or A3 (723MHz-733MHz/778MHz-788MHz)

The agency plans to grant three approvals for spectrum in the 700MHz band, seven approvals for airwaves in the 3.6GHz band and four approvals for spectrum in the 26GHz band. The authorizations will be valid for 15 years (extendable for another five years afterwards), with starting prices of EUR6 million (USD7.1 million) for 700MHz airwaves, EUR3 million (3.6GHz) and EUR300,000 (26GHz). Under the license's terms and conditions, at least one major city must be covered by 5G technology by 2023, in order to allow 5G coverage in all major urban areas and terrestrial transport routes by 2027. By the end of 2029, 100% of population must have access to 5G signal with minimum downlink of

100Mbps. (July 14, 2021) commsupdate.com

The Agency for Electronic Communications (AEK) has opened a public hearing on its intention to award spectrum for 5G use, giving interested parties until 5 July to submit their expressions of interest (EoI). The agency plans to grant three approvals for spectrum in the 700MHz band, seven approvals for airwaves in the 3.6GHz band and four approvals for spectrum in the 26GHz band. The authorizations will be valid for 15 years (extendable for another five years afterwards). Under the license`s terms and conditions, at least one major city must be covered by 5G technology by 2023, in order to allow 5G coverage in all major urban areas and terrestrial transport routes by 2027. By the end of 2029, 100% of population must have access to 5G signal with minimum downlink of 100Mbps.

(June 4, 2021) commsupdate.com

Malaysia

A public inquiry on the review of the 'Access List', the list of telecoms services available to licensees that are subject to price regulation, has been launched by the Malaysian Communications and Multimedia Commission (MCMC). A Public Inquiry Paper released by the regulator has set out its preliminary views on the facilities and services to be included, removed or amended in the Access List, and it has invited submissions from interested parties by a deadline of 18 October 2021. As part of its review, the MCMC has formulated focus areas for the inquiry, noting that 'the common theme underlying all areas is the need to continuously refine the Access List and its implementation, in order to reflect the state of competition in the supply of regulated facilities and services'. In terms of the specific focus areas, the regulator said these were: ensuring access to Digital Nasional Berhad's (DNB's) monopoly 5G single wholesale network; enhancement of 'High Speed Broadband' ('HSBB') network regulation; ensuring and improving access to passive infrastructure; continuing development of regulation of transmission services; and fostering investment in access network infrastructure. (August 23, 2021) commsupdate.com

Having previously launched a consultation on proposed revisions to the Mandatory Standards for Quality of Service (MSQoS) for wireless and fixed broadband, and public cellular services in April 2021, the Malaysian Communications and Multimedia Commission (MCMC) has now issued a final decision. With the regulator confirming that the new MSQoS will be effective from 1 August 2021, it noted: 'Customer protection is a priority for MCMC in telecommunication services. MSQoS is one of the main instruments used for monitoring to ensure users in the country have quality telecommunication services … The new MSQoS will enable customers to ensure that their complaints are resolved and that they experience satisfactory services for both fixed line and wireless broadband.' As previously reported by CommsUpdate, one of the headline amendments to the MSQoS relates to the required speeds for wireless and fixed-wireless access (FWA) broadband services. As per the new standards that are being introduced, operators will be required to provide a download speed of 2.5Mbps 90% of the time for connections made via both FDD and TDD technology; by comparison, under the existing QoS standards service providers only need to provide downlink rates of 650kbps 80% of the time for TDD-based subscribers and 65% of the time for those using FDD technology. Meanwhile, for FWA broadband services the new QoS standard will introduce a requirement for operators to ensure 25Mbps downlink speeds 90% of the time.

(July 6, 2021) commsupdate.com

Malta

The Malta Communications Authority (MCA) has called for expressions of interest in wireless spectrum in the 1800MHz (1710MHz-1785MHz/1805MHz-1880MHz) and 2.5GHz (2500MHz-2690MHz) bands. The regulator says it has received a formal request from a local telco for the assignment of radio spectrum in the 2.5GHz range and is looking to assess demand for frequencies in the two bands. There are currently six paired 5MHz channels in the 1800MHz band unassigned and these would be offered as six separate 2×5MHz lots. At 2.5GHz, meanwhile, there are five unpaired 5MHz channels unassigned and these would be auctioned as a single 25MHz block. Malta is home to three mobile network operators (MNOs): GO, Epic and Melita.

(July 30, 2021) commsupdate.com

Montenegro

The telecoms watchdog the Agency for Electronic Communications and Postal Services (EKIP) has opened a consultation regarding its draft plans for the upcoming tender of frequencies in the 900MHz, 1800MHz, 2GHz and 2.6GHz bands for use by public mobile electronic communications networks. Since the regulator is legally required to initiate an auction to reallocate existing radio frequencies no later than six months before expiry of the user rights, it has decided to stage a single auction procedure to tender a total of

220MHz of spectrum (2×90MHz of paired and 40MHz of unpaired) in the 900MHz, 1800MHz, 2GHz and 2.6GHz bands. Under EKIP's provisional schedule, the spectrum auction will be held in November 2021, with 'issuance of decision on the selection of bidders' 30 days after completion of the auction, and approvals granted 45 days from 'date of issuance of the decision on selection of bidders. The public bidding procedure of awarding the approvals for the use of radio frequencies in the bands will be conducted by means of the spectrum auction in the combined format of adjusted multi-round sequential bidding (clock auction) and adjusted single-round bidding through sealed bids (sealed-bid auction). Eligible applicants are required to pay a one-off fee of EUR30,000 (USD35,300) for participation in the spectrum auction. 900MHz band: two blocks of 2×5MHz (B1 and B2, 880MHz-885MHz/925MHz-930MHz and 885MHz-890MHz/930MHz-935MHz), reserved for incumbent mobile operators and valid from 21 April 2022 to 1 September 2031. Both blocks will be subject to award in the pre-auction phase at a reserve price per block of EUR946,000, failing which they will be sold in the main auction phase.

1800MHz band: four blocks of 2×5MHz (C12 to C15, 1765MHz-1770MHz/1860MHz-1865MHz, 1770MHz-1775MHz/1865MHz-1870MHz, 1775MHz-1780MHz/1870MHz-1875MHz and 1780MHz-1785MHz/1875MHz-1880MHz), reserved for incumbent mobile operators, valid from 21 April 2022 to 1 September 2031 and subject to award in the pre-auction phase at a reserve price of EUR440,000 per block.

2GHz band: four blocks of 2×5MHz, comprising block D1, 1920MHz-1925MHz/2110MHz-2115MHz (valid from the date of approval issuance to 1 September 2031 and subject to award in the main auction phase with a reserve price of EUR406,000) and blocks D2-D4 (1925MHz-1930MHz/2115MHz-2120MHz, 1930MHz-1935 MHz/2120 MHz-2125MHz and 1935MHz-1940MHz/2125MHz-2130MHz), reserved for incumbent mobile operators, valid from 21 April 2022 until 1 September 2031 and subject to award in the pre-auction phase, unless they remain unallocated, with a reserve price of EUR406,000 per block.

2.6GHz band (paired): eight blocks of 2×5MHz (F7 to F14, 2530MHz-2535MHz/2650MHz-2655MHz, 2535MHz-2540MHz /2655MHz-2660MHz, 2540MHz-2545MHz/2660MHz-2665MHz, 2545MHz-2550MHz/2665MHz-2670MHz, 2550MHz-2555MHz/2670MHz-2675MHz, 2555MHz-2560MHz/2675MHz-2680MHz, 2560MHz-2565MHz/2680MHz-2685MHz, 2565MHz-2570MHz/2685MHz-2690MHz), valid from the date of approval issuance until 1 September 2031 and subject to award in the main auction phase with a reserve price of EUR200,000 per block.

2.6GHz band (unpaired): eight blocks of 5MHz bandwidth (G1 to G8, 2570MHz-2575MHz, 2575MHz-2580MHz, 2580MHz-2585MHz, 2585MHz-2590MHz, 2590MHz-2595MHz, 2595MHz-2600MHz, 2600MHz-2605MHz, 2605MHz-2610MHz), valid from the date of issuance until 1 September 2031 and with a reserve price of EUR55,000 per unpaired block, all subject to the award in the main auction phase. In terms of coverage obligations, in the 900MHz band incumbent operators will be required to provide voice and SMS services to 99% of the population by 1 September 2022, while new entrants will be obliged to cover 25% of the population by the end of the second year of approval validity, 50% by the end of the third year and 75% by the end of the fifth year. In the 1800MHz and 2.6GHz bands, meanwhile, incumbent operators will be obliged to provide 75% of the population with the network signal by 1 September 2022, while new entrants will be required to ensure 15% population coverage by the end of the second year of issuance of approval validity, 30% within three years and 50% by the end of the fifth year. New entrants will obliged to start using the approved radio frequencies and providing public services to end users within one year from the date of entry into force of the approval for the use of the frequencies. Rights holders will be subject to a spectrum cap of a combined 2×30MHz in the 800MHz and 900MHz bands, 2×30MHz in the 1800MHz band, 2×40MHz in the 2.6GHz (only for paired spectrum) and 2×105MHz across all five bands (only for paired spectrum). (July 26, 2021) commsupdate.com

Mauritius

The telecoms regulator the Information and Communication Technologies Authority (ICTA) formally granted 5G licences to mobile network operators Cellplus, Emtel and Mahanagar Telephone Mauritius (MTML) on 17 June. The decision follows an invitation issued by the ICTA last April to operators to apply for radio spectrum that should enable the launch of services before the end of the year. The Chairman of the ICT Board, Mr. Dick Ng Sui Wa, described this development as a very important step for the telecommunications industry, adding: 'this new technology is not just about higher speeds, as it will also make possible new applications in the areas of smart home, Internet of Things, wireless health care, smart cities and autonomous vehicles amongst others. Around the world, 5G is looked upon as a foundation for huge benefits to both governments and businesses willing to optimize on the digital ecosystems which such a technology makes possible.' Following a public consultation last February, the ICTA has decided that each of the three operators will receive a total of 100MHz of frequencies in the 2.6GHz and 3.5GHz bands. The

cellcos were asked to specify their preferred frequency blocks and to disclose their respective timeframes for achieving specific network coverage requirements for mainland Mauritius as well as the outer islands. The regulator said it opted for a direct allocation rather than an auction process in order to promote competition and drive investment.

(June 22, 2021) commsupdate.com

The Netherlands

Rotterdam District Court has suspended an amendment to the National Frequency Plan via which the State Secretary for Economic Affairs & Climate Policy intended to free up the 3.5GHz band for 5G from 1 September 2022 via a license auction expected by April that year, due to an appeal by satellite operator Inmarsat. In a preliminary decision, the judge noted that Inmarsat currently uses the 3.5GHz band, with a ground station located in Burum, Friesland, providing emergency/safety communications for shipping and aviation on behalf of the international community, underlining that: 'Due to its great importance, Inmarsat is obliged to [operate the emergency communications service] with a confidence level of 99.9%. Due to the decision of the State Secretary, this will no longer be possible from 1 September 2022.' The judge continued that, before adopting that change, the State Secretary should have mapped out how emergency/safety communications could be safeguarded, taking into account international treaties to which the Netherlands is a party. The main case will be discussed at a hearing before the end of this year. (July 6, 2021) commsupdate.com

Nigeria

The Nigerian Communications Commission (NCC) has issued a statement saying that while Airtel Nigeria has applied for the renewal of its Unified Access Service License (UASL), the application is yet to be approved as it is still undergoing the required regulatory process. The statement came in response to recent comments from the cellco's Managing Director and CEO Olusegun Ogunsanya that Airtel's mobile operating license, which is due to expire in November 2021, had been renewed by the NCC for a further ten years.

(July 19, 2021) commsupdate.com

National regulator the Nigerian Communications Commission (NCC) has announced two big initiatives: a licensing review and the approval of 73 new satellite permits. The NCC announced this week that it has initiated a process for the review of the existing licensing structure in the country's telecoms industry. While it's not entirely clear what this will entail, the NCC has said that the review was prompted by technological advances and the convergence of technologies and services, and will reflect new licensing trends in line with international standards, while providing opportunities for improved revenue for the government. Equally important is the fact that the existing regime is a good 20 years old. Thus, a review of the terms and conditions of the various license categories, and consultations with industry stakeholders, which will be carried out by an in-house Standing Committee, may well be overdue. A draft framework for new and amended licenses will follow the review and consultations, said the NCC. This news follows another big NCC announcement – this time affecting the satellite sector, which last week heard that the NCC had approved 73 commercial satellite permits in the country. The space landing permits allow various satellite providers to offer commercial satellite broadband services to users in Nigeria. Well-known names such as Intelsat, Eutelsat, Avanti, Hylas, Yahsat, Inmarsat and Iridium are just a few of the recipients of permits covering C band, Ku band, Ka band, L band, XL band, VHF band, Q/V bands, S-band and 3GPP band. The landing permits cover a period of three to 13 years, depending on the provider.

(June 16, 2021) developingtelecoms.com

Norway

The National Communications Authority (Nasjonal kommunikasjonsmyndighet, Nkom) has confirmed its final decision on updated price regulation of access to Telenor Norge's fiber network. The move comes in the wake of its decision in June 2021 to send its draft pronouncement to the EFTA Surveillance Authority (ESA) for its consideration. In a press release the regulator noted that having received feedback from the ESA, this had not led to a need for changes from the draft regulation it had proposed, and as such it confirmed its newly-issued final decision will take effect immediately. As previously reported by CommsUpdate, under the new legislation changes have been made to the principles of margin squeeze testing for Telenor's Virtual Unbundled Local Access (VULA) fiber service. A first change will see the market share that is assumed for an 'efficient provider' in the Nkom's twice-yearly margin squeeze tests and gross margin tests reduced from 20% to 15%. A second amendment, meanwhile, will see a stricter requirement introduced for the gross margin for individual fiber products offered by Telenor to companies, so that the

gross margin for these products shall be at least 40%. Finally, the Nkom has introduced a new requirement for Telenor carrier to document passed margin squeeze tests and gross margin tests before the company can implement price changes or launch new fiber-based products in the retail market. According to the regulator, this new requirement will prevent access buyers from experiencing margin squeeze in the period until Nkom carries out its next margin squeeze test.

(August 23, 2021) commsupdate.com

The Ministry of Local Government and Modernization (KMD) has published a consultation regarding its proposals for a new piece of overarching communications regulation. With the country's current key legislation – the Electronic Communications Act – having been enacted back in 2003, the KMD has now said that its proposed new communications act would facilitate new regulatory mechanisms and increase consumer protections, while facilitating the development of both mobile and fixed broadband infrastructure. In a press release outlining the plan, the Ministry has – amongst other things – proposed

the establishment of an independent appeals board for processing appeals against decisions made by the National Communications Authority (Nasjonal kommunikasjonsmyndighet, NKOM). A deadline of 15 October 2021 has been set for submissions to the consultation. (July 7, 2021) commsupdate.com

The National Communications Authority (Nasjonal kommunikasjonsmyndighet, NKOM) has launched a consultation on its proposed price regulation of fixed-wireless broadband connectivity, as well as the requirements for accounting separation for access to such services. In a press release regarding the matter the regulator noted that it had previously confirmed back in October 2020 that fixed line incumbent Telenor Norge would be required to offer wholesale access to fixed-wireless broadband at prices which ensure buyers do not face a margin squeeze. Now, with the NKOM's consultation including a margin squeeze model, along with the associated principles for designing that model, it has set a deadline of 2 July 2021 for the submission of comments.

(June 16, 2021) commsupdate.com

Peru

The Agency for the Promotion of Private Investment (Agencia de Promocion de la Inversion Privada, ProInversion) has altered the timeline for its planned auction of spectrum in the 1700MHz and 2300MHz bands, with the winner of the tender now due to be announced on 15 December 2021. Under the new plan, the deadlines for submitting and responding to queries regarding the auction have been pushed back to 15 September and 12 October respectively, with would-be participants to submit their applications by 22 October (originally set to take place by 13 August). A list of prequalified bidders will be announced on 4 November 2021, with bids entered in two stages in early December. As previously reported by TeleGeography's CommsUpdate, the winners will be required to deploy mobile networks 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.

(August 5, 2021) commsupdate.com

Peruvian telecoms watchdog the Supervisory Agency for Private Investment in Telecommunications (Organismo Supervisor de Inversion Privada en Telecommuniciones, Osiptel) has issued a new resolution requiring providers of telecommunications services to file daily reports on the cancellation of subscriptions and migration of customers from one plan to another with the same company. Osiptel will use the reports to monitor operators' compliance with the existing rules governing the process, noting that it receives high levels of complaints regarding the migration and cancellation of subscriptions. Between 2016 and 2020, Osiptel resolved more than 185,000 complaints regarding requests to cancel subscriptions, with 36% of those cases found in favor of the customer. Further, Osiptel highlighted that between 2018 and 2020 it had seen increases of 77% and 84% in the number of complaints its had received regarding the termination of contracts and switching tariffs, respectively. The new resolution is set to be implemented in two stages after a delay to allow the regulator and providers to make the necessary adjustments. From 1 January 2022 reports must be filed with information concerning requests from customers to migrate or cancel subscriptions, and from 1 July 2022 reports must be submitted on the total number of requests that were executed by the company. The requirements will only be imposed on companies with more than 500,000 subscribers, however.

(July 12, 2021) commsupdate.com

Philippines

Filipino mobile network operators (MNOs) Smart Communications, Globe Telecom and newcomer DITO Telecommunity have successfully completed initial technical and interoperability tests as part of the government's implementation of Republic Act No. 11202 (aka the Mobile Number Portability [MNP] Act). In a joint statement the three MNOs confirmed that, working in conjunction with their joint venture (JV) company Telecommunications Connectivity Inc. (TCI), the initial tests had been 'within expectations' meaning that soon mobile subscribers across the country will be able to keep their number when switching to another provider. Commenting on the development, DITO Chief Administrative Officer Adel Tamano said: 'As the newest player in the industry, we truly are excited to provide this service to Filipinos wherever they may be. When we entered the industry, it really was to encourage competition and innovation. With the Mobile Number Portability Act, we have broken down barriers and have given the Filipinos the power of convenience to finally switch to their preferred service provider.'

Echoing Tamano, Globe Chief Commercial Officer Issa Guevarra-Cabreira noted that the company had 'learned a lot in the process' and as a result hoped 'to make the transition easy and seamless for our customers once the MNP becomes available to all'. Meanwhile, Smart's Senior Vice President and Head of Consumer Wireless Business, Jane Basas, said the tests would allow the MNO to 'understand and recalibrate [its] systems and processes, so we can make the MNP experience simple and easy for our customers'. TeleGeography's GlobalComms Database confirms that the MNP Act was signed in February 2019, with implementing rules and regulations (IRR) taking effect from 2 July 2019. The Philippines had intended on introducing MNP in the first quarter of 2021 under the remit of the Act, but the rollout was delayed due to the COVID-19 pandemic and will start by 30 September 2021. Globe, Smart and DITO formed the JV consortium TCI, and tapped global firm Syniverse to implement the porting platform.
(July 16, 2021) commsupdate.com

Poland

The consumer watchdog UOKiK has launched proceedings against mobile network operators (MNOs) Orange and Play (P4) for charging customers for additional services without their consent. The President of UOKiK, Tomasz Chrostny, said: 'During sales talks, consultants only informed consumers about the amount of the subscription, they did not mention the costs of additional services. Remember that the inclusion of any services must take place with the express and informed consent of the subscriber.' The operators could be fined up to 10% of their annual revenue. In June this year the watchdog handed fines to T-Mobile and Polkomtel for similar offences.
(July 29, 2021) commsupdate.com

Mobile tower owner Cellnex has been approved to acquire the tower infrastructure of Polish cellco Polkomtel. The country's Office of Competition and Consumer Protection (Urzad Ochrony Konkurencji i Konsumentow, UOKiK) says that while the deal will see Spain-based Cellnex take control of more than half of the mobile towers across Poland, it will not restrict competition. While carrying out its investigation into the proposed deal, UOKiK sought responses from all four of Poland's

mobile network operators (MNOs), plus market regulator the Office of Electronic Communications (Urzad Komunikacji Elektronicznej, UKE). The EUR1.6 billion (USD1.95 billion) deal was first announced in February this year. The transaction will add 7,000 towers to the Cellnex European footprint, while it is also buying active infrastructure including 37,000 radio carriers, 11,300km of fiber backbone network and a nationwide network of microwave radio links. Cellnex has also agreed to roll out 1,500 new sites for Polkomtel, mainly for 5G, at a cost of EUR600 million over the next ten years. In October 2020 Cellnex signed a EUR800 million deal to acquire a 60% stake in the infrastructure unit of Polish cellco Play. Cellnex Deputy CEO Alex Mestre commented: 'This acquisition is a key milestone for Cellnex. It will strengthen Cellnex' position in Poland following the recent acquisition of towers and sites from Play. What is more, this decision will allow us to hold to our commitment to evolve the traditional tower operator model towards an integrated telecommunications infrastructure management model, combining the operation of passive elements (towers) and active elements such as transmission equipment, radio links and fiber-to-the-tower.' *(June 11, 2021) commsupdate.com*

Portugal

Portugal's National Communications Authority (Autoridade Nacional de Comunicacoes, ANACOM) has announced that it has increased the number of daily bidding rounds in its 5G auction, from seven to twelve. On the 81st day of bidding (7 May) the watchdog increased the number of daily bidding rounds from six to seven, but the measure proved insufficient,

with ANACOM describing the process as 'particularly slow'. With offers rising incrementally by just 1% each time, the watchdog has warned that the slow pace of the auction 'could result in a disastrous delay in the development and entry into operation of 5G networks, to the detriment of citizens and businesses. ANACOM has expressed a willingness to allow bids to increase

bids by 5%, 10%, 15% or 20%, but the country's cellcos have proven reluctant to change tack midway through the spectrum sale. TeleGeography notes that the sale of 900MHz and 1800MHz spectrum – which was reserved for new market entrants – concluded on 11 January, after just eight days of bidding. The full 5G auction, which comprises sought-after spectrum in the 700MHz, 2100MHz, 2.6GHz and 3.6GHz bands commenced on 14 January and is now on its 100th day of bidding (3 June). (June 3, 2021) commsupdate.com

Romania

The regulator ANCOM has announced plans for a new auction for the frequencies remaining after selection procedures carried out in 2012 and 2015. It proposes organizing two distinct selection procedures, the first for public consultation, aiming to grant the rights to use the remaining spectrum available from previous auctions (800 MHz, 2600 MHz and 3400-3600 MHz), and the second for the granting of rights in the new bands (700 MHz and 1500 MHz) and in the band 3400-3800 MHz (with the rights coming into force on January 1, 2026, when the existing licenses in this band expire), after the transposition into national law of the European Electronic Communications. ANCOM has set minimum license fees for the rights to use the frequencies. They are the local currency (RON) equivalent of €22 million for the pair block in the 800 MHz band; €4.3 million for the pair block in the 2600 MHz band; €3.5 million for the unpaired block in the 2600 MHz band; and €700,000 for an unpaired block in the 3400-3800 MHz band. The license fees will have to be paid within 15 days from the date of announcing the final results of the auction and go to the state budget. (July 4, 2021) broadbandtvnews.com
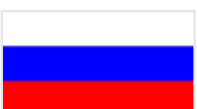
Russia

The State Commission for Radio Frequencies (SCRF) has decided to extend all existing 3500MHz fixed-wireless operating licenses until 1 July 2022, the Ministry of Digital Development, Communications & Mass Media reported on its website. The licenses officially expired in March this year but fixed-wireless broadband operators were allowed to continue providing services while the SCRF reached a final decision on whether to extend the 3.5GHz permits. The Ministry's statement noted that 'many companies continued to provide their clients with fixed-wireless internet access' in the interim period, adding that these companies must 'carry out work to transfer subscribers to other radio frequency ranges' before July 2022 so that 'subscribers will continue to receive internet access services and will not notice the transition to other bands'. The Ministry also indicated that for many subscribers, alternative access methods could be implemented, stating: 'In most cases it is possible to organize broadband internet access using satellite terminals, radio relay stations, and in some cases, fiber-optic lines.' The 3.5GHz spectrum came under previous proposals to redistribute the 3.4GHz-3.8GHz range for 5G mobile services, but such plans have thus far been blocked by Russian satellite/military/security agencies. (June 21, 2021) commsupdate.com

Rwanda

MTN Group has confirmed the renewal of its operating license in Rwanda with effect from 1 July 2021. MTN Rwanda has paid 70% of the RWF91 billion (USD89.4 million) renewal fee, equivalent to around RWF64 billion, with the remaining 30% due by July 2022. The new concession is valid for ten years. The parent group said that the license fee, along with MTN Rwanda's ongoing operational and investment requirements, were funded by cash generated from operations and supplementary funding from local banks. New Times reports that MTN Rwanda has secured a RWF64 billion syndicated loan from a group of ten banks. (August 5, 2021) commsupdate.com

Senegal

Senegal's Regulation Authority for Telecommunications and Post (L'Autorite de Regulation des Telecommunications et des Postes, ARTP) has launched a public consultation as part of a project to improve the mobile number portability (MNP) system. The document aims to gather feedback regarding potential improvements to the existing system, introduced in September 2015, in order improve the customer experience and address the significant number of rejections and low rate of ported numbers. Stakeholders have until 5 September to submit their comments. (August 13, 2021) commsupdate.com

The Regulation Authority for Telecommunications and Posts (L'Autorite de Regulation des Telecommunications et des Postes, ARTP) has launched a new application for Android and iOS devices that enables users to test the speed of their mobile and Wi-Fi connections and

view a coverage map of 2G, 3G, 4G and, eventually, 5G networks in their area. According to the regulator, the 'ARTP Sama Reseau' app collects anonymous user Quality of Experience (QoE) data that is fed to an advanced analyzed platform, providing it with a comprehensive overview of the country's mobile

networks. The new tool forms part of the ARTP's Quality of Service (QoS) and coverage strategy for the period 2021-2023, launched in December last year, which aims to improve market transparency, stimulate competition and encourage operators to investment in network expansion. (August 11, 2021) commsupdate.com

Serbia

The telecoms watchdog the Regulatory Agency for Electronic Communications and Postal Services (Regulatorna agencija za elektronske komunikacije i postanske usluge, RATEL) has extended the deadline for the submission of applications regarding the use of spectrum in the 700MHz, 900MHz, 2100MHz, 2600MHz and 3500MHz bands for mobile or fixed communications networks. The regulator had previously set the deadline at 1 July 2021, but has now postponed the date to 1 September 2021; it did not provide an explanation for the decision. As previously reported by TeleGeography's CommsUpdate, RATEL

requested parties interested in acquiring spectrum rights for the aforementioned bands to submit detailed applications, including information on the services that the frequencies would be used to provide, the technologies that would be utilized, and the area that would be covered. In addition, applicants were asked to supply information regarding their preferred auction type. Once RATEL has received and processed all applications, it will issue a statement regarding the results before proceeding with the next stage of the allocation process.

(July 2, 2021) commsupdate.com

Singapore

The Infocomm Media Development Authority (IMDA) is seeking views from the public and industry on a proposal to refarm the 2.1GHz spectrum band for 5G in Singapore. In a press release, the regulator noted that the band is currently used for 3G services but will expire at the end of 2021, and it is exploring the potential to reuse the spectrum to support the nationwide deployment of 5G Standalone (SA) networks, while simultaneously maintaining 'flexibility for 3G services to continue'. IMDA will look to hold the auction in the second half of this year open to all existing mobile network operators (MNOs) – Singtel, StarHub, M1 and TPG Telecom (TPG Mobile) – if they wish to participate. The release of the 2.1GHz band for 5G will hopefully alleviate the issue of

a lack of 5G bandwidth to secure islandwide reach, it said, while confirming that the reserve price is likely to be between SGD10 million and SGD15 million (USD7.4 million and USD11.0 million) for each of the twelve paired lots on offer. 'As Singapore continues to forge ahead with our nationwide 5G rollout, the availability of the 2.1GHz spectrum will help provide opportunities for growth for all MNOs. The new spectrum can be used to complement existing 5G networks deployed, using the first tranche of 5G Call For Proposal (CFP) spectrum, to enhance coverage and capacity, as well as the potential for deployment of an additional nationwide 5G SA network,' IMDA confirmed in the release.

(July 27, 2021) commsupdate.com

Somalia

The National Communications Authority (NCA) has issued a public notice stating that all currently unlicensed service providers will be required to apply for a permit to operate in the country by 31 August 2021. The request applies to all providers and operators of communications infrastructure, applications and services, internet services, terminal equipment, domain services and VSAT services. TeleGeography's GlobalComms Database stated that in October 2019 the NCA launched a consultation process for the country's first licensing regime for the ICT and telecoms sector and the new Unified Licensing Framework (ULF) was formally introduced in February 2020. The new framework allows for the

provision of multiple services through the introduction of service and technology-neutral licenses to promote innovation and competition. Three types of permits exist under the new ULF, namely: Communications Infrastructure Provider (CIP) License, which is required for the operation and provision of network infrastructure; Application and Services Provider (ASP) License, issued to service providers which do not own their own infrastructure but instead lease and utilize the infrastructure of a CIP; and Communications Infrastructure and Services Provider (CISP) License, a combined permit which allows holders to operate and provide infrastructure, services and applications.

(August 3, 2021) commsupdate.com

Spain

Spain's long-awaited auction of 5G-suitable 700MHz licenses is now underway, with Telefonica Espana (Movistar), Orange Espana and Vodafone Spain going head-to-head for the concessions. Grupo MASMOVIL has opted to sit out the process, mirroring its approach in 2018, when the government auctioned 5G licenses in the 3.6GHz-3.8GHz band. A total of seven concessions are being tendered, broken down as two 2×10MHz blocks, two 2×5MHz blocks and three 1×5MHz blocks (downlink only). All licenses will be valid for a period of 20 years, but extendable for a further 20-year period. The base price will generate bids of EUR995.5 million (USD1.174 billion). (July 20, 2021) commsupdate.com

The Board of the Spanish National Securities Market Commission (Comision Nacional del Mercado de Valores, CNMV) has authorized the takeover bid for the shares of Euskaltel submitted by Kaixo Telecom, which owns Grupo MASMOVIL. Kaixo is co-owned by international private equity firms Cinven, KKR and Providence, and the CNMV's approval comes after the government authorized the foreign investment. The 100% takeover of Euskaltel involves the buyout of 178.645 million shares, which are priced at EUR11 (USD13) per share, for a total takeover fee of EUR1.965 billion. Euskaltel's three largest shareholders, Zegona Communications, Kutxabank and Alba Europe – who collectively hold 52.32% of the company's shares –

accepted the takeover proposal in March this year. (July 7, 2021) commsupdate.com

The competition authority approved a proposed €2 billion acquisition of regional fixed player and MVNO Euskaltel by Masmovil without conditions after concluding it would not pose significant problems. CNMC noted although Euskaltel had a significant presence in the Asturias, Galicia and the Basque Country regions, its national presence was limited, meaning combining with the MNO would not have a significant impact on competition. It added in the areas where Euskaltel had a strong market share, it had a different strategy to Masmovil, other "significant operators" present and able to continue to exert pressure. The regulator also noted third parties it quizzed did not raise significant issues and broadly viewed sector consolidation as a positive. As a result, it cleared the deal without conditions. Masmovil announced its bid for the company in March, with the offer subject to approval by Euskaltel shareholders and the final nod from stock market authorities in Spain. It is making the move through subsidiary Kaixo Telecom. In its statement announcing the proposed acquisition, Masmovil said the deal would consolidate its position nationally, noting the larger business would be in a better position to accelerate investment in 5G and fiber. (June 17, 2021) mobileworldlive.com

Sweden

The Post and Telecom Agency (Post & Telestyrelsen, PTS) says the application period for broadband subsidies has ended, with almost SEK7.5 billion (USD860 million) having been requested by network operators. The regulator has SEK1.6 billion of funding to allocate for the rollout of broadband infrastructure in three regions, Norrland, Svealand and Gotaland. A total of 129 applications for broadband support were received from companies, municipalities and

associations, covering 1,817 separate projects. Bjorn Blondell, division manager at PTS, commented: 'It is very positive that the interest has been so great and that applications have been received with so many projects. PTS's broadband support is an important tool for achieving the Government's broadband strategy … Not all projects will be eligible for funding this time, but PTS's broadband support will continue in the coming years.' (August 11, 2021) commsupdate.com

Tanzania

The World Bank has approved the Digital Tanzania Project (DTP) with a financing of USD150 million from the International Development Association (IDA). The project aims to increase access to high quality broadband internet services for the government, businesses and citizens, and improve the government's capacity to deliver digital public services. This will be achieved through the following components: the digital ecosystem – strengthening the laws, policies, regulations, institutional capacity, and human capacity needed to promote ICT infrastructure investment, market competitiveness, digital engagement, job creation, and innovation; digital connectivity – ensuring access to affordable, high quality internet services for all citizens, including in rural areas, and for

critical government institutions; and digital platforms and services – building the technical capacity, skills, institutions, and local digital infrastructure for the government to deliver services to citizens and conduct its own business digitally. By the end of the DTP's implementation, more than 75% of Tanzania's population will be covered by a mobile broadband network signal (3G or higher); some 425 government ministries, departments and agencies will benefit from broadband internet service; and a minimum of 40% of citizens (aged 15 and above) will be able to use the internet. The number of monthly transactions accessing a public service via the internet or a mobile phone will increase from 200,000 to at least 500,000. (June 1, 2021) commsupdate.com

Togo

The Council of Ministers has adopted a draft decree codifying the Regulatory Authority for Electronic Communications and Posts (ARCEP's) improved powers for handling conflict resolution, sanctions, and conciliation processes. Togo First cited a statement from the council which confirmed: 'This draft decree, which simultaneously aims to protect consumer rights and the interests of operators in the sector, aims to specify the rules for conciliation, the handling of disputes and the application of sanctions by ARCEP'.

In addition, with the government seemingly determined to level the playing field in the country's telecoms market, it has unveiled a draft decree to determine which operators hold significant market power (SMP). If the decree is adopted, ARCEP will be tasked with generating a report every year assessing the status of the digital communications market in Togo. This report will be examined by the council of ministers, the paper notes.

(July 8, 2021) commsupdate.com

Trinidad

A Trinidadian High Court Judge has declared that state-backed operator Telecommunications Services of Trinidad and Tobago (TSTT) is legally required to implement fixed number portability (FNP) – five years after its chief rival first raised the issue. Delivering a written judgement, Justice Frank Seepersad partially upheld a 2016 lawsuit from Columbus Communications Trinidad Limited (CCTL, trading as Flow) against industry watchdog the Telecommunication Authority of Trinidad and Tobago (TATT), over its failure to enforce the issue. In doing so, Justice Seepersad rejected TSTT's claims that the Telecommunications Act and its associated regulations only required that it

facilitate portability, not implement it. The Trinidad and Tobago Guardian quotes Justice Seepersad as saying: 'TSTT's interpretation of the proposed amendment to Regulation 9 disregards the established interpretative requirement to avoid an interpretation which is absurd and its position defies common sense, commercial logic and is devoid of practicality ... Citizens should not be forced, frustrated or blackmailed into staying with a telecommunications provider because of fear of inconvenience or uncertainty. TSTT's behavior has been callous and calculating and must be roundly rejected.'

(August 3, 2021) commsupdate.com

Uganda

The government of Uganda has been awarded USD200 million financing by the World Bank to carry out a series of digital inclusion schemes. The new Uganda Digital Acceleration Project-GovNet (UDAP-GovNet) will support the extension of 1,000km of national fiber backbone infrastructure, an additional 500km of fiber-optic network links between towns, mobile broadband connections for 900 government administrative units and service centers in underserved areas, and 828 Wi-Fi hotspots in select locations to support access to online services among rural and underserved

communities. The funding will include USD140 million of financing from the World Bank's International Development Association (IDA) plus a grant of USD60 million. Tony Thompson, World Bank Country Manager for Uganda, commented: 'Transforming Uganda's digital infrastructure is an urgent necessity for post-COVID-19 recovery. We look forward to the time when all citizens can access high quality and low-cost internet, public services online, a digital economy driving growth, innovation and job creation.'

(June 8, 2021) commsupdate.com

United Kingdom

OFCOM has published proposals to change the way it licenses certain satellite systems. OFCOM explains that a number of new satellite broadband networks are currently being developed, which use Non-Geostationary Satellite Orbit (NGSO) systems to connect people to the internet, particularly those in hard-to-reach areas. NGSO systems are more sophisticated than earlier satellite broadband networks. Rather than ground equipment pointing at a single satellite to connect people, NGSO networks can involve thousands of satellites orbiting the Earth which satellite dishes need to track as they move across the sky. While this can potentially bring faster speeds to customers, OFCOM says, it can be more complex for different NGSO satellite operators to agree how to

operate their networks without them interfering with each other. To help support competition in this market and protect the quality of the service customers receive, OFCOM is proposing changes to the licensing process for NGSO systems. This includes new checks on potential interference between networks, and publishing license applications it receives so that other interested parties have an opportunity to raise any interference or competition concerns. The changes would also require different networks to co-operate with each other on technical matters to avoid risk of disruption to their services, under the conditions of their license. OFCOM says that it recognizes the importance of these new services to the wider space sector and will be publishing its Space Sector Spectrum Strategy

in the autumn. This will not affect these NGSO licensing proposals. (August 6,2021) mondaq.com

Telecoms regulator OFCOM has published the proposed annual license fees for UK spectrum licenses in the 2100MHz band. The target frequencies were originally auctioned back in 2000 with a fixed license term of 20 years, but following a government direction, OFCOM varied the terms of these concessions in 2011 to make them indefinite and to require the payment of annual license fees from 1 January 2022. The concessions, which are currently held by the UK's four network operators – EE, O2 UK, Three UK and Vodafone UK – include paired and unpaired spectrum. With the government direction requiring OFCOM to set fees 'that reflect the full market value of the spectrum', it has proposed the following charges: GBP567,000 (USD785,000) per MHz for the 119.1MHz of paired 2100MHz spectrum; and GBP290,000 per MHz for the 20.1MHz of unpaired 2100MHz spectrum. Meanwhile, the regulator has said it also proposing to increase these fees by consumer price index (CPI) each year.
(July 15, 2021) commsupdate.com

British telecoms regulator OFCOM has said that,

following its award of 700MHz band spectrum via auction back in March 2021, it is now considering making changes to 800MHz frequency licenses with a view to enabling mobile network operators (MNOs) to improve network coverage and increase capacity. As per the watchdog's proposals, the permitted power output for the equipment MNOs use in the 800MHz band would be increased, bringing it in line with the conditions in place for the recently awarded 700MHz band. Further, Ofcom confirmed that power limits for 800MHz licenses would also be measured per antenna rather than per each individual piece of radio equipment. Measures are, however, being proposed to ensure that operators avoid interference with other nearby spectrum users, such as the airwaves used for Digital Terrestrial Television (DTT). Meanwhile, to help facilitate equipment manufacturers' making of equipment that is capable of using both the 700MHz and 800MHz bands, OFCOM is proposing to amend some out of band and out of block limits. According to the regulator, this is to align more closely the limits with the conditions set out in the country's 700MHz licenses and with the European Conference of Postal and Telecommunications Administrations (CEPT) mask for the 800MHz band. (July 14, 2021) commsupdate.com

United States

T-Mobile US and Verizon Wireless have requested permission from the Federal Communications Commission (FCC) to exchange a number of AWS, PCS and 600MHz licenses. The License Exchange Agreement – which was signed on 5 August – involves concessions held by former Sprint Corp holding companies Sprint Realty, Sprint Spectrum and SprintCom, all of which were acquired by T-Mobile US as part of the Sprint-T-Mobile mega-merger in April 2020. The Verizon licenses are variously held by bidding vehicle Cellco Partnership, Alltel and Rural Cellular Corporation. The public interest statement notes: 'These assignments involve only the transfer of spectrum; no network or other assets or customers are involved. The assignments are, in some markets, intra-market license exchanges that will enable more efficient operations resulting from larger blocks of contiguous spectrum and/or the alignment of spectrum blocks held in adjacent markets. Most of these intra-market exchanges involve the exchange of an even amount of spectrum, where neither party will increase its spectrum holdings in the market.' In 37 of the 42 counties where spectrum is being assigned to the T-Mobile licensees, T-Mobile's resulting spectrum aggregation will be below the applicable spectrum screens. Verizon's spectrum aggregation, meanwhile, will fall below the spectrum screen in 40 of 41 counties.
(August 24, 2021) commsupdate.com

The US Federal Communications Commission (FCC)

has revealed that it has received a total of 26 'complete' applications ahead of its Auction 110 spectrum sale in October, alongside a further 16 'incomplete' submissions. Notable companies that have filed complete paperwork include the likes of AT&T Auction Holdings (AT&T Communications), T-Mobile License (T-Mobile US) and United States Cellular Corporation (UScellular). Fierce Wireless notes that DISH Network has lodged an application via a holding company called Weminuche, while Grain Management will bid via New Level III. The list of incomplete bidders, meanwhile, includes major players such as Cellco Partnership (Verizon Wireless) and Frontier Communications Holdings. The two lists are rounded out with small-scale regional operators, spectrum investors and assorted bidding vehicles. Companies have until 2 September to finalize their incomplete submissions. According to TeleGeography's GlobalComms Database, Auction 110 will include 100MHz of mid-band spectrum in the 3.45GHz-3.55GHz band. The process will begin on 5 October 2021 and see the spectrum divided into ten 10MHz blocks licensed by Partial Economic Area (PEA), for a total of 4,060 flexible-use licenses.
(August 19, 2021) commsupdate.com

The Federal Communications Commission (FCC) has published its first map that shows 4G LTE mobile broadband coverage across the U.S. The map shows coverage as of May 15, 2021. Users can click boxes to show the coverage of each of the nation's four

largest mobile carriers: AT&T, Verizon, T-Mobile and UScellular. These four wireless service providers voluntarily submitted the coverage data to create the map. Specifically, the map shows where customers can expect to receive 4G LTE service at a minimum download speed of 5 Mbps and upload speed of 1 Mbps. To use the map, consumers can enter in specific addresses or zoom in to locations to see where 4G LTE mobile data and voice service is available. Users can also click boxes to show broadband and voice coverage on separate layers. Or they can click all the boxes to show the gaps in coverage across the U.S. The FCC, under its Acting Chair Jessica Rosenworcel, is determined to get more thorough and accurate maps of broadband coverage across the country. Under her leadership, the Broadband Data Task Force was created in February 2021 to implement long-overdue improvements to the FCC's broadband data and maps. The new 4G LTE map was created by the Broadband Data Task Force. The new mobile map provides a preview of how mobile data will be collected by the FCC in the future as it improves the specificity and consistency of its broadband availability data. For fixed internet service, the FCC aims for its maps to show broadband internet

access on a house-by-house, location-by-location basis. "Broadband internet access" means that service is available or could be connected within 10 business days with a standard installation. The FCC will standardize location data through the use of a common dataset of all structures in the United States where mass-market fixed broadband internet service can be installed. It will also validate provider-submitted data and allow users to challenge the information shown on the maps. Decent broadband mapping has become extremely urgent as the government is poised to infuse billions into broadband infrastructure in its effort to close the digital divide. For instance, the FCC recently said it was ready to release the first batch of funding — some $311 million — from the Rural Digital Opportunity Fund (RDOF) Phase I auction. But in the same breath the agency revealed a long list of winning bidders have already defaulted on their obligations and hinted many more could soon follow suit. The main reason that RDOF bidders are backing out of their commitments is because once they dug into the details of their service areas, they discovered that many of these areas were already served — the maps they had initially relied on just weren't accurate. (August 7, 2021) fiercewireless.com

Uruguay

The Regulatory Unit of Communications Services (URSEC) has announced that a database administrator, which will be responsible for implementing and developing mobile number portability (MNP) in the country, has been selected. The Number Portability Committee chose the Cleartech – Cietel consortium as its first choice for the role for the period 2021-2026, with the Sonda Uruguay – Mediafon Datapro consortium coming in second place. The two companies were the only prequalified bidders that were approved by the Number Portability Committee at the end of June. The preferred bidder has been given five days to either accept or reject its selection. 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 regulatory conditions, general rules and 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. However, the timetable was subsequently delayed in May in order to ensure the security and transparency of the process. Mobile operators will bear the cost of the number transfer process, which should take no more than three days to complete.
(August 23. 2021) commsupdate.com

The Regulatory Unit of Communications Services (URSEC) has issued a number of resolutions to lower fixed and mobile termination rates charged by the country's telecoms operators. Effective 1 June 2021 the charge for termination in state-owned ANTEL's fixed line network from the Claro and Movistar networks has been set at UYU0.31 (USD0.007) per minute (plus VAT), a decrease from the previous rate of UYU0.77. Regarding mobile termination rates (MTRs), effective 1 June the URSEC has established a rate of UYU0.88 (plus VAT) per minute for calls between the wireless networks of Claro, Movistar and ANTEL, compared to the previous provisional rate of UYU1.7 per minute.
(June 29, 2021) commsupdate.com

Virgin Island

The Telecommunications Regulatory Commission (TRC) of the British Virgin Islands (BVI) has invited the country's telecoms licensees to re-apply for their licenses ahead of the expiration of the respective concessions next year. In a press release issued by the

government on 1 June, the TRC noted: 'The four unitary licenses issued to CCT, Flow, Digicel and BVI Cable TV by the TRC in 2007 are due to expire over an eight-month period in 2022. The license renewal process is governed by section 24 of the Telecommunications Act

2006 and Article 3 of the License. In deciding whether to renew a license, the Commission must decide whether the Licensee in question has complied with its various obligations under the Act, the Telecommunications Code, the License, and any Commission instructions, and on whether the Licensee has been in persistent breach of any of those obligations. All operators seeking renewal must apply to the Commission no less than twelve months before their License expiration.'

(June 4, 2021) commsupdate.com

Zambia

A public consultation has been launched by the Zambia Information and Communication Technology Authority (ZICTA) to 'share [its] preliminary views and plans regarding the identified spectrum to facilitate for the early rollout and commercialization of 5G as well as to encourage immediate capacity expansion of existing broadband systems' With the ZICTA inviting industry view and comments on its planning and licensing proposals for key 5G spectrum bands, it now seeks to gather information on the level of demand for the different bands being considered and understand industry spectrum acquisition plans and priorities. All feedback received will be reportedly be used in conjunction with the ZICTA's strategic objectives to inform spectrum planning and licensing decisions related to the following activities: identification of 5G priority bands; adoption of band allotment plans and per operator bandwidth requirements; development of a spectrum planning work program aimed at preparing identified bands for licensing; development of fair and transparent licensing process appropriate for each band, considering market demand; and the development of a 5G spectrum roadmap. Four bands have been identified by the ZICTA as meeting 'all requirements for low, mid and high band categories of spectrum required to meet 5G capacity and coverage requirement', namely the 700MHz, 2.6GHz, 3.5GHz and 26GHz bands. Of those, it noted that 3.5GHz frequencies had 'emerged as a key focus for 5G' across many other countries and, as such, one specific question it posed as part of the consultation was whether respondents agreed that this band is 'vital to 5G deployment in Zambia'. A deadline of 20 August 2021 has been set for submissions to the consultation. (July 28, 2021) commsupdate.com

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