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# SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

## BUILDING DIGITAL ECONOMIES
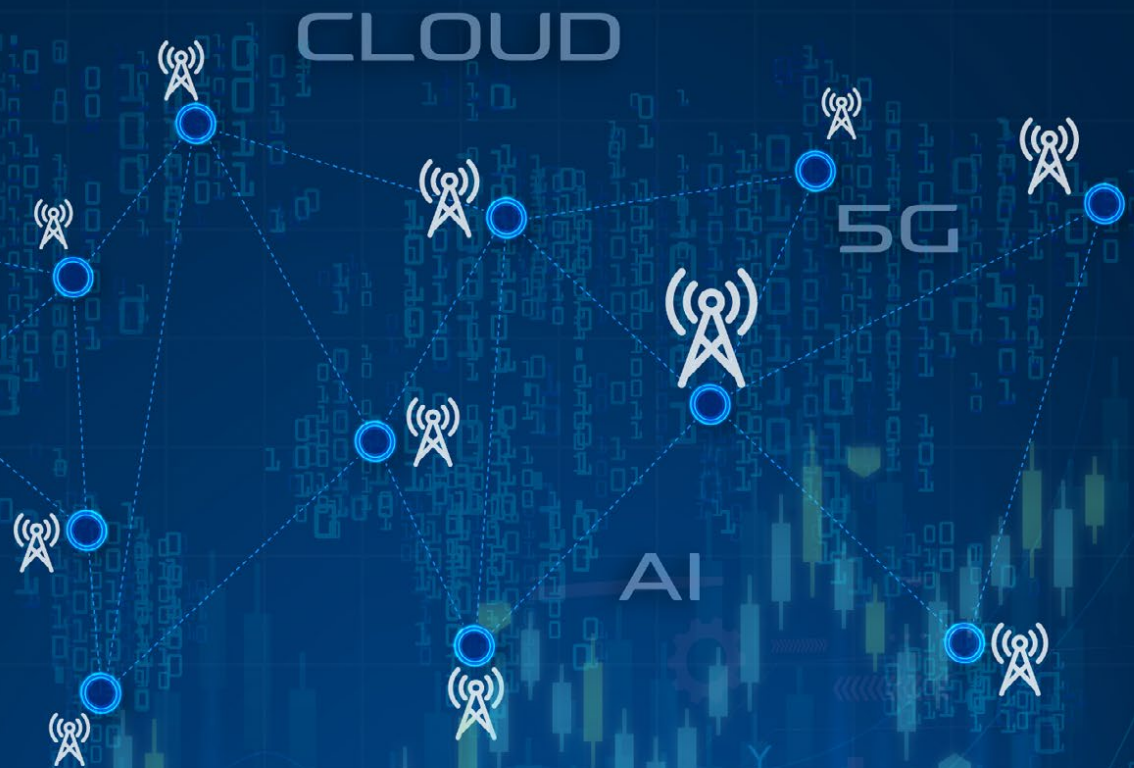
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5G

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*Featured*

**First Cross-Sector Alliance Launched to Help Close the Digital Divide around the Globe**

THIS MONTH

# DIGITALLY EMPOWERED ECONOMIC RECOVERY

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**Batelco**

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# Digitally Empowered Economic Recovery

Historically, our Industry has had long technology development cycles, and the processes inevitably resulted in technology and solutions that were very vendor-specific. Not to mention, these cycles impacted the speed of industry harmonization, innovation, and collaboration among the stakeholders. Despite that, trillions of dollars were invested to build infrastructure that has now proven its necessity beyond doubt.

With 5G, many of these traditionally slow processes have been accelerated, with the use of mobile wireless technology now spanning diverse use-cases across multiple economic sectors and industries, across licensed, unlicensed and shared spectrum. In the now digitally-powered world, ubiquitous connectivity, computing, and comprehension are now driving technology development, with reduced cycles of adoption and with a greater sense of togetherness among all stakeholders of the Industry. In this regard, partnership, collaboration, digital capacity-building and innovation carry great weight and are crucial for sustaining the digital development momentum created over the past year, and which is essential for the digital-led economic recovery efforts around the world. In the aftermath of the pandemic, new socio-economic and business paradigms , which are almost utterly different from those of the past, are the way to the future.

Fostering meaningful connectivity in the age of the digital economy demands Telecom Operators to exercise a multi-dimensional, progressive role. This role throughout the last year, since the pandemic, was well-recognized, with multiple calls of action launched centralized on ensuring robust connectivity. However, Operators themselves are facing tremendous revenue-generation challenges, which have a direct impact on how far, how much, and for how long the Operators can continue with

their voluntary offerings for the end-users while living up to the expectations of the Regulators and their own shareholders. This merits a paradigm shift in policy-making and regulations Nonetheless, Operators, by themselves, can help catalyze their own financial recovery with some good measures.

As has been featured in this edition of TRENDS, Operators need to broaden their B2B ICT offerings and take a leading role in creating a digital ecosystem of solutions across various other sectors, including Education, Healthcare, and Financial Services. Notably, these are also the main cross-sector collaboration areas in which the EDISON Alliance will be active throughout the current year. Operators must also enhance their attractiveness and availability to their customers via new digital services and applications that enrich their trust on Operators and offer a great digital experience. Artificial Intelligence and Machine Learning should be explored and implemented to enable advanced condition-based maintenance capabilities across the networks. The latter is particularly important for ensuring that the networks are made resilient. In this age of digital transformation, data-based decision-making in real-time by concerned stakeholders is absolutely critical for reducing opex and increasing network asset health, among other requirements.

On our way to economic recovery, increased network capacity and greater resilience are a pre-requisite for building a sustainable Digital Economy. Key enabling factors, such as public-private collaboration, improved policy and regulatory enablement steps, aligned well with digital transformation goals set by Operators, and sustainable influx in investment in both infrastructure and incubation of innovation and ICT talent, will play a central role in our endeavors to put the economy back on track.

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

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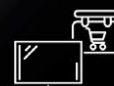
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## Cross-Sector Collaboration

# First Cross-Sector Alliance Launched to Help Close the Digital Divide around the Globe

Almost half of the world's population remains offline and broadband services are too expensive for 50% of the population in developed countries. These "connectivity deserts" hamper access to health, education and economic inclusion.

To ensure global and equitable access to the digital economy, the World Economic Forum has launched the Essential Digital Infrastructure and Services Network or "EDISON" Alliance. The Alliance will work with governments and industries to accelerate digital inclusion. Its goal is to ensure an unprecedented level of cross-sectoral collaboration between the technology industry and other critical sectors of the economy.

A wider group of Champion Leaders will advise and support the EDISON Alliance, which is an open-ecosystem of change-makers, mobilizing joint effort and aligning priorities to enhance the case for digital investment. A multi-sector Board is steering the Alliance. Hans Vestberg, Chairman and Chief Executive Officer,

Verizon, will serve as Chair of the Alliance and Board. He is joined by Paula Ingabire, Rwanda's Minister for ICT and Innovation; Ajay Banga, Mastercard Executive Chair; Shobana Kamineni, Executive Vice-Chairperson of Apollo Hospitals Group;

and Robert F. Smith, Founder, Chairman and CEO of Vista Equity Partners. The World Economic Forum will serve as the secretariat and platform for the Alliance. From SAMENA Council, Bocar BA is among the Champions of the EDISON Alliance.

*"I consider the EDISON ALLIANCE as a source of much-needed support for fostering synergistic co-ordination and innovation among the ICT Industry and the Health-care, Education, and Financial sectors. This open-ecosystem of change-makers, created by the WEF, has the potential to unearth some excellent new opportunities to support digital development goals and visions for sustainability across various interconnected ecosystems."*

**Bocar BA**



# The EDISON Alliance

Connecting Governments, Connecting Industries, Connecting People

"This marks the first time so many private and public sector leaders from across industries are coming together to close the digital divide. Accelerating affordable access to digitally enabled services – like healthcare, education or financial services - is foundational to economic recovery and social cohesion. Achieving this will take deep, sustained collaboration. It is critical that we move together and that we move fast." Derek O'Halloran, Member of the Executive Committee, Head of the Digital Economy at the World Economic Forum. The EDISON Alliance will prioritize digital inclusion as a platform of partners with a common purpose for achieving the Sustainable Development Goals. In 2021, the Alliance will focus on increasing digital inclusion in healthcare, education and financial services.

*The Alliance will prioritize three focus areas related to the Sustainable Development Goals each year. For 2021, EDISON will focus on Healthcare, Education, and Financial Inclusion.*

COVID-19 has exposed digital inequities and exacerbated the digital divide. The pandemic has revealed the affordability challenges in wealthier nations and deepening digital divide – nearly half the world is still not online.

The World Economic Forum has launched the EDISON Alliance to accelerate digital inclusion, address inequality, and connect critical sectors of the economy. It is the first global mobilization of public sector and industry leaders from all industries to ensure everyone can participate in the digital economy.

The following groups are responsible for the governance and day-to-day work of The EDISON Alliance:
· **Board of the Alliance,** the small group of the Board will help shape what are the most impactful steps we can collectively take to advance the digital inclusion agenda across relevant sectors. The Board will contribute to the strategic direction and provide institutional support in developing and helping deliver the objectives of the Alliance.
· **Champions,** the broader group of public and private sector leaders that are the public Champions and mobilize peers and network to drive awareness of the issue, core objectives, and initiatives.
· **Executive Network,** the Champions will each nominate a representative for the Executive Network. Network members will advance specific initiatives and objectives in relevant subgroups (e.g., around health, education, or financial inclusion – and will convene at least twice a year as a full cohort to report on progress in the different domains).

The Alliance will prioritize three focus areas related to the Sustainable Development Goals each year. For 2021, EDISON will focus on Healthcare, Education, and Financial Inclusion.

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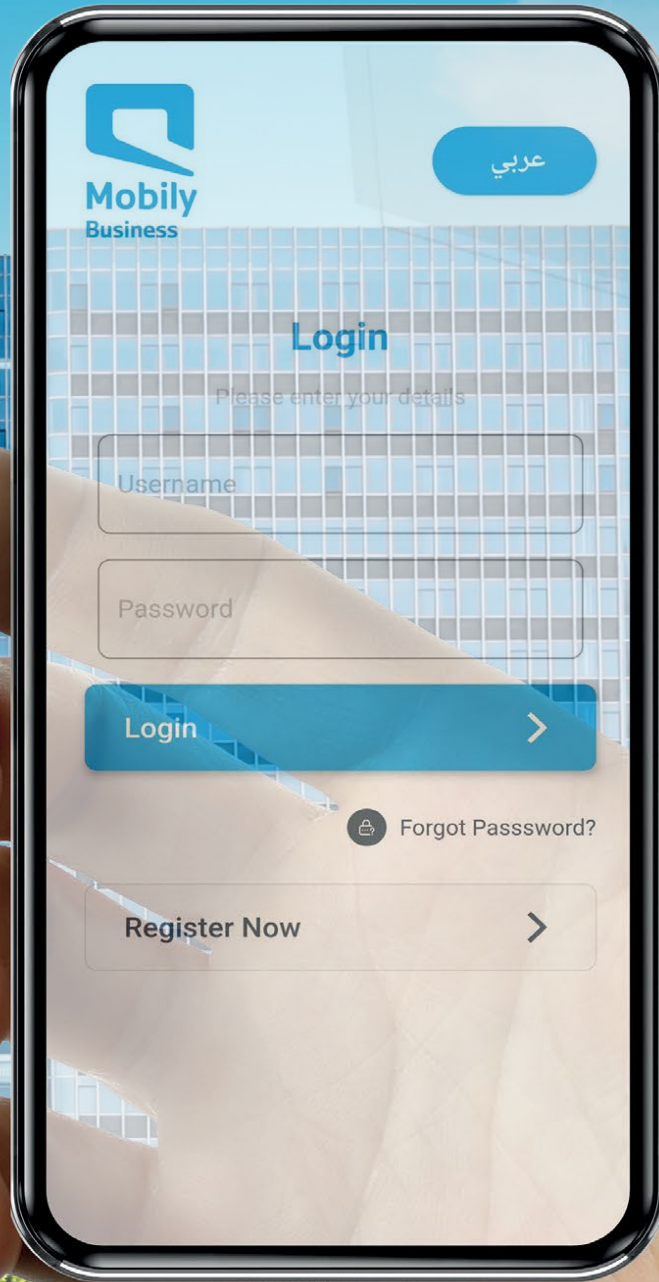
# SAMENA COUNCIL ACTIVITY

## SAMENA Council and Internet Society Collaborate to Help Shape the Future of the Internet



SAMENA Telecommunications Council has announced its collaboration with the Internet Society, to help ensure the sustainability of the Internet and to foster digital trust-building, as the world embraces new communications technologies and new challenges emerge within the digital space. The Internet Society is a global non-profit promoting the development and use of an open, globally connected, and secure Internet.

Expressing his warm welcome to the Internet Society on this new collaboration front within the ICT Industry, **Bocar BA, CEO & Board Member,** stated: *"The aim for Universal Digital Access depends greatly on the protection, sustainability, and inclusive access to the Internet. We are surrounded by new challenges and while opportunities ahead of us are tremendous, so are the difficulties. It is critical that trusted bodies within the Industry join hands and collaborate to address Internet policy, technology standards, and future development issues. We are delighted to enter into a collaboration framework with ISOC."*

Sharing the Internet Society's views, **Rinalia Abdul Rahim, Senior Vice President, Strategy, Communications and Engagement at the Internet Society**, stated: *"Our partnership with SAMENA Council will help us do more for the Internet. By promoting security in Internet routing, the role of community networks, and the need for quality Internet measurements, we will be helping to shape not just the future of the Internet in the region, but also the benefits it can offer to all those who use it. Together, we will be able to assist organizations in adopting technical best practices, and we will be more effective in advocating for policies that deliver a bigger, stronger Internet for everyone."*

This new partnership between SAMENA Council and the Internet Society will help highlight the need for routing security and the adoption of Mutually Agreed Norms for Routing Security (MANRS), an activity aimed at securing global Internet routing, with participants ranging from Telecom Operators, ISPs, Cloud providers, Internet Exchange Points, Content Delivery Networks, to Internet Companies. As a part of the collaboration, both SAMENA Council and ISOC will help conduct technical capacity-building workshops and introduce the concept of community networks which are communications infrastructure built, managed and used by local communities to address connectivity gaps in underserved areas within the SA-ME-NA region.



# MANRS

## Mutually Agreed Norms for Routing Security

MANRS provides crucial fixes to reduce the most common routing issues, outlining four simple but concrete actions for network operators.

### Anti-spoofing
Prevent traffic with spoofed source IP addresses.

### Filtering
Prevent propagation of incorrect routing information.

### Coordination
Facilitate global operational communication and coordination between network operators.

### Global Validation
Facilitate validation of routing information on a global scale.

manrs.org

## MEMBERS NEWS

# Stc Group Launches the Advanced Technology and Cybersecurity Company

stc Group announced the launch of the Advanced Technology and Cybersecurity Company; a new company dedicated to providing advanced cybersecurity services and solutions in the business sector. The recently announced launch comes to keep abreast of the growing demand for digital services in parallel with stc's DARE Strategy, which aims to foster digital transformation, pave new paths for development, and achieve the objectives of Saudi Vision 2030. This new effort is part of the response to the exceptional circumstances the world is witnessing, circumstances which led many businesses and government agencies to resort to digital solutions for business continuity. "The vision of the company is to create a reliable platform for the digital economy with world-class leading cybersecurity capabilities to enable and protect the critical economic infrastructure and both government and private services," said Mr. Haithem Alfaraj, Chairman of the Board of Directors of the Advanced Technology and Cybersecurity Company and Senior VP of stc's Technology and Operations Unit. Alfaraj added that the company is launching a wide range of innovative and managed cybersecurity services and solutions, including providing protection services against denial of service (DoS) attacks through its largest local and regional platform, which has a capacity of more than 1.5 terabytes. Other benefits offered include local and managed services to detect vulnerabilities, adhere to security controls, and use secure email and browsing through platforms which leverage leading technologies according to the Gartner Research Center. The Advanced Technology and Cybersecurity Company has a cybersecurity operations center that provides the most advanced services. The center is managed by capable national talents, observes the highest levels of professionalism, and adopts international best practices to monitor, respond to and protect against advanced cyber attacks. In addition to conducting proactive digital intelligence research, the center is supported by advanced and integrated services and platforms to address and respond to cyber incidents. Not only that, but one of the strategic objectives of the company is to provide young national talents with training and development in technologies and cybersecurity. "The establishment of the new company reflects the importance of cybersecurity services. The cybersecurity sector is one of the Kingdom's and the world's promising and rapidly growing sectors. Given the increasing and varying cybercrimes and threats, this sector is of vital importance and priority in relation to the Kingdom's plans and programs to keep abreast of modern technologies and to protect the Kingdom economically, politically, and socially," said Fahad Aljutaili, CEO of the Advanced Technology and Cybersecurity Company. In 2020, stc was the leading digital enabler of the G20 Riyadh summit by dedicating all its efforts and capabilities to provide digital solutions and services, including managed cybersecurity services and solutions that enabled the prevention of more than 42,000 dangerous e-mails and more than 600,000 harmful websites, in addition to addressing 290,000 electronic threats and preventing 41.5 hours of service disruption attacks. Researchers estimate that cybercrime will cost the world around six trillion U.S. dollars in 2021. The world also faces a cyber attack every 39 seconds as attackers use e-mails and websites as means attacks and target their victims. It is also easy for them to launch denial-of-service and ransom attacks using modern technologies such as digital currency payments, artificial intelligence tools and FinTech. By 2025, the world will have 75 billion devices connected to the internet, making cybersecurity of major importance. The world also faces a shortage of specialized human capabilities in the field of cybersecurity. According to experts, the world will be facing an estimated shortage of 3.5 million specialists in 2021.
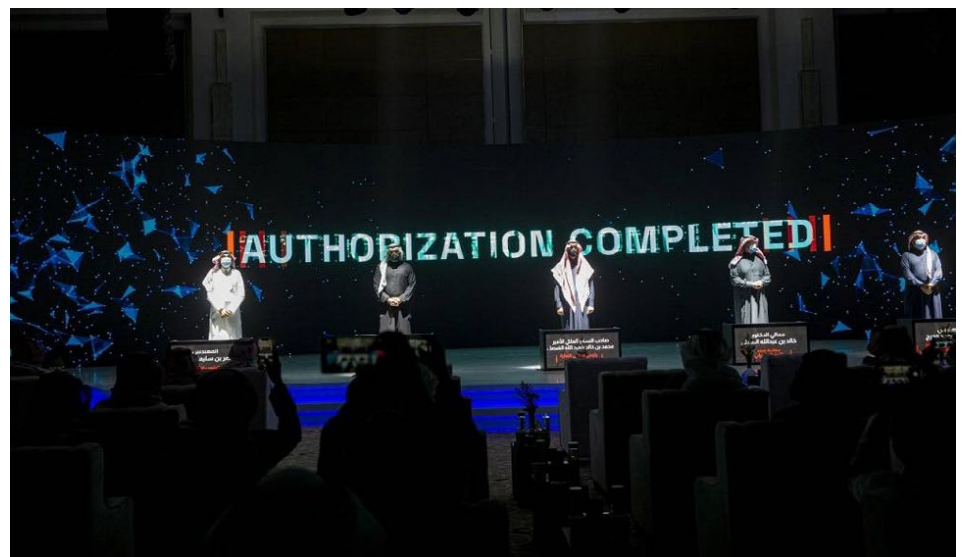
# Saudi ARAMCO, stc and Huawei Signed a Memorandum of Understanding to Launch a Joint Innovation Program for 5G Technology Utilization in Oil & Gas Industry

stc achieved another milestone in its 5G network development with its partner Huawei after pioneering 5G network deployment in the Middle East in 2019. stc announced it has signed a Memorandum of Understanding (MOU) with Saudi Aramco, the world's largest integrated oil and Gas Company to launch a joint innovation program for 5G technology and applications utilization in Oil & Gas industry, which will fuel economic growth and societal benefits in the kingdom and around the world ARAMCO and stc have reached a consensus that 5G is a key technology to IR4.0 (Industrial Revolution 4.0) digital transformation in the gas and oil industry, and deemed it necessary to make it a priority and undertake further investments in resources to achieve in-depth research and innovation. In this regard, both parties proposed a roadmap of 5G network construction, and services innovations, verifications and deployments for oil and gas industry. This ambitious plan will guide both parties to jointly analyze the application scenarios and requirements of 5G in oil and gas industry, thus, develop and promote relevant innovative solutions. It also aims to greatly promote the application of 5G technologies in regional and global energy industries. In the next few years, the two parties will jointly explore fast deployment of the enterprise 5G dedicated network for the oil and gas industry, and study the feasibility of the relevant applications in order to finally establish industry digitalization standards for the oil and gas sector. Both parties will use key technologies such as E2E 5G slicing, Multi-access Edge Computing, and Massive IoT to deploy an enterprise 5G dedicated network and key use cases for Aramco's upstream, middle and downstream production services, such as 3D augmented reality and remote collaboration, smart video surveillance, intelligent security management, machine vision, drone and robot applications, so as to directly drive and serve the digitalization of the oil and gas industry. Aramco Technical Services Senior Vice-President, Ahmad Al Sa'adi, said: "We recognize 5G is a major enabling technology for digital transformation. Therefore, we will continue to collaborate with local service providers and their partners to co-innovate and develop solutions for new digital use cases and pilot them over 5G networks at our facilities." stc VP of Business Development, Dr. Sultan Bin Saeed, said: "Saudi Arabia has entered the acceleration phase of 5G commercialization. In this era of Internet of Everything, 5G networks, thanks to their high speeds, massive connection capabilities and low latency, will become engines of rapid development across industries. Through joint efforts with Aramco, stc, as a trusted digital enabler in the region, will fully leverage the advantages of 5G, AI, and cloud-network synergy to promote innovation and digital transformation, creating new value for the oil and gas industry."



## 5G Coverage for the GCC Summit Center in Al-Ula

The stc Group played a remarkable technical and digital role in the city of Al-Ula during the 41st GCC Summit, named the "Summit of Sultan Qaboos and Sheikh Sobah". In a recent press release, stc announced powering the summit's meeting center in Al-Ula with the 5G network, and serving the Mirror Theatre with fiber-optic technology. Furthermore, the Group also secured a backup with microwave technology and satellite technology (VSAT), installed and operated 17 mobile towers with 11 equipped mobile sites to cover the summit's location and the roads leading to it, and provided 9 different networks for audio, Internet, and inter-site connection. As a digital enabler of the 2030 Agenda, stc confirmed its continued commitment to providing the Kingdom with the latest network technology and the most reliable ICTs in various events and across different locations.

Batelco

# Batelco Chairman Presents the Winners of the "Chairman's Award"

Batelco Chairman Shaikh Abdulla bin Khalifa Al Khalifa rewarded the winners of the Batelco "Chairman's Award" during the annual Town Hall that took place at Batelco's Headquarters. The event was broadcasted live to Batelco team members, of which 80% continue to work remotely due to COVID-19. Launched under the direction of the Chairman, the "Chairman's Award" is an annual award created to acknowledge and reward Batelco team members who have demonstrated exceptional performance and have accomplished remarkable achievements while practicing the Company's values. The 12 finalists were selected from a pool of high performing employees that have been selected by the top management team on a monthly

basis throughout 2020. The names of the winners were revealed for the first time to all Batelco team members in an exciting atmosphere amid much anticipation. The 3 winners who each took home a trophy and cash reward are Hussain Abdulla in first place, Sana Mayoof in second place and Hussain Barakat in third. Commenting on this rewarding ceremony, Shaikh Abdulla said, "I'm pleased to be here today to award the winners in person as they truly deserve the recognition, and I would like to take this opportunity to personally congratulate them on their success. It has been a long selection process with the involvement of Batelco's top management team and Board members, and the finalists have proven themselves at each stage. It

was a difficult task to select a clear winner but encouraging a healthy competition is always a good thing." "People are the greatest assets of Batelco and we on the Board are very pleased to see promising young talented Bahrainis who are the leaders of tomorrow. It's important to support them, encourage them to realize their full potential and provide them with the tools to ensure a bright future," he added.

*Batelco's CEO Mikkel Vinter who was also present on the occasion gave a presentation to the Batelco team members highlighting Batelco's achievements for 2020 and outlining the strategy for 2021.*



"We were honored to have the attendance of the Chairman today to present the awards to the winners in person. This reflects the importance the Chairman and the Board gives to encouraging young talents. I would also like to congratulate and recognize the 12 finalists," said Mr. Vinter. "The "Chairman's Award" is one of the main initiatives that Batelco is putting in place as part of its culture transformation journey in line with its strategic vision and mission. This is a positive way to start the year and we have exciting plans to continue with this journey in 2021," he added.

# Batelco Chairman Welcomes the Governor of the Central Bank of Bahrain at its Hamala Data Center

Batelco Chairman Shaikh Abdulla bin Khalifa Al Khalifa welcomed the Governor of the Central Bank of Bahrain, Mr. Rasheed Muhammad Al Maraj, to Batelco's Hamala Data Center. The visit took place in the presence of a number of executives from both organizations, where the Batelco team introduced the Governor to the Data Center's facilities, which is the largest of its kind in Bahrain. The Hamala Data Center received a Tier III certificate from

the Uptime Institute, a global authority that specializes in evaluating global data centers through a series of performance-based assessments designed to measure progress and efficiency of all data centers across the world. Commenting on the visit, the Governor praised the excellent quality of the Data Center, pointing out that the development of such facilities is in line with the Kingdom of Bahrain's aspirations for the banking and financial technology

sectors, saying: "We are proud to have a Data Center of this caliber in the Kingdom of Bahrain. The establishment of a data hub that meets the highest international standards will contribute positively towards boosting the Kingdom's digital economy." He added, "In recent years, organizations in general and specifically the banking and finance sector have expressed a need for reliable local data hubs that meet world-class standards

to enhance their operations. This came as a result of the increased dependency on data and the need to effectively store and manage its components. The Batelco Data Center will ensure that institutions within the Banking sector can depend on seamless business continuity, supported by the latest technologies, offered by Batelco." On this occasion, Shaikh Abdulla commended the Governor's visit to the Data Center, and thanked him for his continuous support to the banking sector and the role it plays in enhancing the Kingdom of Bahrain's economy, saying: "We were honored by the presence of the CBB Governor, Mr. Al Maraj, at Batelco's Data Center, which has been recently established as part of the company's efforts to provide world-class facilities that support the accelerated development of the Kingdom's digital economy." "The Batelco Data Center will play a significant role in providing digital services to both the public and private sectors and enable organizations to stay ahead of the latest digital developments, especially within the data management and security fields.

Batelco's efforts will continue to support the Kingdom's position as the region's leading hub in the ICT and data economy, contribute to the modernization and development of the Kingdom's technical structure as well as support the banking sector in line with the Kingdom's economic vision for 2030." The Data Center, located in Hamala, is Batelco's second Data Center, with a Tier III certificate from the Uptime Institute for data center construction and design. It covers a land area of 12,236

square meters and is equipped with a 2.7 Megawatt capacity of total energy that services a total of 250 working cabins, making it the largest data center of its kind in the Kingdom. The new Data Center is in line with Batelco's plans, following the opening of its first Tier III Uptime Institute-certified Data Center at the beginning of 2019; a remarkable achievement that marked it as the first data center to obtain all the necessary design and construction certificates in Bahrain.



# Arrow Labs Deploys MIMS Technology Across BNET's Field Operations and Service Delivery

Arrow Labs, the technology company uniting deskless, frontline workers, announces it has been chosen by BNET (Bahrain Network) - Bahrain's national broadband network that connects the Kingdom through ultra-fast-optic infrastructure – to manage field operations and service delivery. Arrow Labs will deploy its core product, MIMS, an enterprise SaaS software running on state-of-the-art Amazon Web Services (AWS) cloud, unifying frontline workers. Accessed by mobile app, web, and wearables - MIMS connects employees/machines/facilities to deliver flawless work-flow execution. Launched in October 2019, BNET is an independent wholesale broadband provider, and a key part of the Kingdom of Bahrain's fifth National Telecommunication Plan to develop and enhance the telecommunication sector. BNET provides next-generation fiber broadband connectivity solutions to all licensed telecom operators and ISPs in Bahrain. It also provides broadband

services to large enterprise customers. BNET has integrated Arrow Labs' MIMS technology to automate its service provision and manage its workforce more efficiently. 11 MIMS modules including 'Task', 'Asset', 'Incident', 'Locations' and 'Allocation Management' have been deployed, running on the back-office web portal and mobile app for BNET's delivery team. BNET aims to integrate all its key systems, including MIMS to provide a seamless service delivery operation. This includes Enterprise Resource Planning and its Business Support Systems to achieve full automation, from client request through to service activation. Some of the added benefits will be:

· Real time capacity-based management - optimized service bookings;
· Material reductions in incident response time – e.g. a cut in fiber or exchange outage;
· Accurate consumption tracking; and
· Significant increases in critical infrastructure availability

MIMS - which is used by clients such as G4S and DP World - increases staff productivity by 30%, business efficiency by 40%, and reduces operating costs by 20%. Rami Darwish, CEO and Founder of Arrow Labs, commented:
"We are delighted to partner with a visionary client such as BNET. By integrating our MIMS technology, BNET will be even more efficient in delivering next generation connectivity to its citizens and businesses. BNET will be core to delivering Bahrain's Fifth National Telecommunications Plan – and we look forward to playing a part in that." Salah Abdulraheem, Chief Digital Platforms Officer at BNET said: "Our partnership with Arrow Labs is aimed at optimizing our productivity and efficiency levels as a company. This ultimately supports our efforts to achieve our goal of ensuring a resilient digital communication infrastructure in the Kingdom, while remaining focused on delivering an exceptional customer experience with a reliable and consistent service."

# BNET Opens Network Intelligence Centre of Excellence (NICE) to Support Bahrain's Telecom Service Providers

Bahrain's National Broadband Network (BNET), launched in October 2019 and responsible for providing broadband network services across the Kingdom of Bahrain, has opened a Network Intelligence Centre of Excellence (NICE), to support BNET's mission of delivering secure, reliable and stable network services to its customers, Bahrain's licensed service providers. NICE has been developed to provide 24/7 proactive monitoring and management of Bahrain's smart digital telecommunication infrastructure networks to ensure the continuity of network operations and services by addressing any issues in real time. The new center supports BNET's strategic objective of optimized and efficient digital operations. Among the functions covered by NICE are Fault Management, to enable the timely resolution of network faults and interruptions, and Performance Management, to predict and prevent service interruptions through the proactive network monitoring which will ensure consistency in the performance level. BNET CEO Mohamed Bubashait said that Bahrain's National Broadband Company is very pleased to launch the new Network

Intelligence Centre of Excellence following the recent introduction of the Company's new Service Management Centre (SMC), with both Centers located onsite at the BNET Headquarters in Hamala. "Our aim is to ensure that Bahrain's Licensed Operators have access to seamless and efficient support for all their needs around the clock so that they can deliver the best quality of services to benefit the end users, Bahrain's consumer and business customers across the Kingdom. Furthermore, we are focused on adopting modern, world-class solutions to meet international standards," he added. Mr. Bubashait continued by saying, "The ongoing support we are receiving from the BNET Board of Directors is invaluable in enabling our team to complete key strategic initiatives which we designed to be in line with the Kingdom's goals for the telecommunication sector. BNET Acting Chief Technical Officer Mohamed Alkaabi said that the criticality of BNET's network services and operations requires a world class network operation monitoring center and the new NICE operation perfectly meets this requirement. "BNET NICE strives to efficiently and effectively operate Bahrain's digital telecommunication infrastructure using digital innovations to ensure secure and reliable services," he added. BNET is an independent wholesale broadband provider. As part of Bahrain's fifth National Telecommunication Plan, BNET provides next-generation wholesale fiber broadband connectivity to all licensed telecom operators in Bahrain. It also provides broadband services to large enterprise customers in the Kingdom. BNET continues to work on enhancing National Broadband connectivity and is committed to enabling the provisioning of quality services to all licensed operators, to positively impact the end-user through the availability of high speed, secure, reliable and affordable internet. This will ultimately lead to improved consumer satisfaction and economic growth and is in line with BNET's vision as a company and the Kingdom's fifth National Telecommunication Plan.



# BNET Opens Service Management Centre (SMC) to Support Bahrain's Telecom Service Providers

Bahrain's National Broadband Network (BNET), launched in October 2019 and responsible for providing broadband network services across the Kingdom of Bahrain, has opened its new Service Management Centre (SMC) to support all of Bahrain's licensed service providers. The SMC has been established to provide 24/7 support for Service Assurance and order fulfillment related to all BNET products and services with the aim of enhancing customer experience. The new SMC is another achievement that is part of BNETs strategy to fulfil its goals in line with the Kingdom of Bahrain's strategy and vision for the telecommunication sector. BNET CEO Mohamed Bubashait said that "Bahrain's National Broadband Company is delighted to introduce its new SMC which has been developed to improve the delivery of services to its valued customers, the Kingdom's licensed service providers. One of our main strategic pillars is to be a customer-experience

focused company. Therefore, at BNET we aim to provide high quality services to Bahrain's licensed service providers and cultivate meaningful relationships with each operator to ensure satisfaction." Mr. Bubashait went on to extend his thanks and appreciation to BNET Board Chairman Shaikh Ali bin Khalifa Al Khalifa and all BNET board members for their continuous support and guidance. BNET Chief Commercial Officer Ahmed AlSharafa added that "through BNET's support to the licensed service providers, end-user customers across Bahrain will benefit from an enhanced experience when applying for new or upgraded broadband

services, making their journey faster and more efficient." "Developing our services is in line with our vision to enable licensed operators in Bahrain to deliver the latest high-speed fiber-optic services. Our goal is to connect 100% of all businesses and 95% of all households across the Kingdom, as part of efforts to ensure a resilient telecommunication infrastructure and support economic growth." he said. BNET is an independent wholesale broadband provider. As part of Bahrain's fifth National Telecommunication Plan, BNET provides next-generation wholesale fiber broadband connectivity to all licensed telecom operators in Bahrain. It also

provides broadband services to large enterprise customers in the Kingdom. BNET continues to work on enhancing National Broadband connectivity and is committed to enabling the provisioning of quality services to all licensed operators, to positively impact the end-user through the availability of high speed, secure, reliable and affordable internet. This will ultimately lead to improved consumer satisfaction and economic growth, and is in line with BNET's vision as a company and the Kingdom's fifth National Telecommunication Plan.

# Etisalat Crowned the Strongest Brand in the MEA Region Across all Categories

Etisalat has made history by emerging as the strongest brand across all categories in Middle East and Africa (MEA) region. This feat puts Etisalat among the top 25 brands globally in the strongest brands index by Brand Finance, the world's leading independent brand valuation and strategy consultancy. This global accomplishment was made possible due to Etisalat's brand strength and performance with continuous efforts and investments in accelerating its value by engaging with consumers across markets with launching many successful innovative global branding initiatives. With this ranking from Brand Finance, Etisalat is now among the world's strongest brands including Ferrari, Coca Cola, Apple, among others making it to the global top 25 strongest brands in the world. Continuing its growth streak, Etisalat is turning its sights on transforming into a truly global player and climbed 17 spots in the global 500 brand value ranking this year from 225th to 208th . Another noteworthy achievement this year is being ranked among the top five strongest telecom brands across global markets and the strongest telecom brand in MEA region. Etisalat has also retained its title as the most valuable telecom portfolio of brands for the fifth year in a row with an impressive portfolio of brands touching more than AED 40 bn including Etisalat Misr, Mobily,

Ufone, Maroc Telecom, PTCL and is also the only telecom brand to retain AAA brand rating. David Haigh, CEO, Brand Finance said: "When COVID struck in 2020, Etisalat led from the front ensuring business continuity, digital and innovative solutions, enablement of smart cities and remote learning to help drive the digital future of the UAE. Staying relevant and enabling the nation with the fastest network on the planet, Etisalat has earned its place as the

region's 'Strongest Brand', ready deliver on its ethos of 'Together Matters' as the UAE welcomes the world at Expo 2021." Eng. Hatem Dowidar, CEO, Etisalat Group said: "This is a historic achievement for Etisalat to be recognised on such a global platform among the best in the world and the region. Our efforts to bring innovation and digital transformation for all our customers have also led to Etisalat being ranked as the strongest brand on a global scale."

"The previous year has demonstrated our strength and commitment in delivering uninterrupted high quality services to all our customers adding value to our brand while focusing on our vision to 'Drive the digital future to empower societies' realising our digital ambitions to reality," Dowidar added. "Recognised as the strongest brand in Middle East and Africa region is another testament to our efforts in sustaining a healthy portfolio that maximises synergies, creating brand loyalty and enhancing customer experience. Thanks to the UAE leadership's support, vision and encouragement that has helped Etisalat achieve this significant milestone despite the headwinds posed by today's extraordinary times realising our digital goals and surpassing many of the top global and regional brands." Operating in 16 countries with 149 million subscribers across Asia, Middle East and Africa, Etisalat's success can also be attributed to its continued efforts to provide the best solutions and services in the various markets in which it operates, its support for community initiatives and events, and its adoption of digital transformation strategies in its various operations. Etisalat has led the telecom sector and the region with the deployment of the 5G network setting a major benchmark in the industry. Most recently Etisalat made a huge leap forward with the landmark announcement of achieving the world's fastest 5G download speed of 9.1 gigabits per second. Etisalat's pioneering 5G efforts in the region and delivering one of the fastest, smartest and best-connected places on earth for the upcoming global mega Expo 2020 Dubai has attributed to its success as a brand in the region. As the premier digital services and telecommunications partner of Expo 2020 Dubai, Etisalat is prepared to deliver the event's visitors and delegates 5G connectivity that brings the Expo themes to life for the millions of visitors. The success and growth of Etisalat's brand value is mainly driven by an innovative customer service strategy, adapting well to a digital savvy marketplace, leading the 5G revolution and the successful launch of global brand building initiatives. Etisalat has also led digital innovation in the country by working on several digital initiatives in infrastructure, entertainment and smart cities. Etisalat has reached out and engaged with its consumers across markets with global branding initiatives by sponsoring global football teams and clubs aligning with the brand's priorities of being at the forefront of major sporting events. Etisalat also launched the brand campaign 'Together Matters' to highlight togetherness among its subscribers in today's world of connectivity. Brand Finance is the world's leading independent branded business valuation and strategy consultancy, and is the organisation behind the Global 500 Brands and Telecom 300 league table of the world's biggest brands ranked by their brand value, assesses the dollar value of the reputation, image and intellectual property of the brand.

# Etisalat Partners with Aruba to Offer Managed Wi-Fi and Networking Solutions

Etisalat announced its partnership with Aruba, a Hewlett Packard Enterprise company, to provide Managed Wi-Fi and networking solutions to its customers in the UAE embedded with advanced analytics across the retail, healthcare, and hospitality verticals. The strategic partnership with Aruba involves the state-of-the-art Aruba Central Platform hosted at Etisalat's data center. The locally hosted platform ensures data privacy and residency, guaranteeing a more secure and resilient user experience. The platform also provides a network management dashboard, enhanced Wi-Fi analytics and monetization tools powered by Faraday Networks. Etisalat has also onboarded CADD Emirates as the system integrator and support services provider. Etisalat's customers will benefit from high-speed network access, high-density wireless coverage, in-built IoT support, and comprehensive security among others, through the latest generation of access points, switches, user experience sensors, and other solutions. Businesses can take advantage of the bespoke solution architecture designed to meet their specific requirements. Salvador Anglada, Group Chief Business Officer, Etisalat said: "We are pleased to offer Aruba's solutions to our customers as it complements Etisalat's agile and cloud-native Wi-Fi solution and LAN network designed to accommodate high speed, low latency, and comprehensive security. Through this collaboration, we look forward to empowering our clients with the latest digital technologies and smart solutions aimed at increasing operational efficiency and enhancing user experience." Ahmad AlKhalafi, MD, HPE UAE, said: "We are pleased to support Etisalat accelerating the launch of MSP services across the UAE leveraging our innovative solutions. Together we can offer a curated suite of solutions specifically designed to help enterprises in the UAE migrate to a more agile, cost-effective cloud-based IT models."

# Etisalat EMIX Supports Transitioning to a New Normal by Building a Path to Autonomous Networking

Etisalat announced that it is building the region's first open and autonomous and secured network. Cisco AI/ML automation is used to simplify Etisalat Emirates Internet Exchange (EMIX) operations with a set of innovative use cases aimed at providing an intent-based and closed-loop automation solutions to EMIX network. As Etisalat advances in the automation journey, the network intelligence and refined analytics will improve operational decision making and reduce time-to-outcomes, which is critical in preparing the network for future 5G capacity demands and service agility to deliver always-on connectivity to EMIX customers and partners. The new automation framework is built on the proven foundation of open APIs in Cisco Network Services Orchestrator (NSO), Cisco's WAN Automation Engine (WAE), and Cisco AI/ML Platform to incorporate big data consolidation, machine learning, event correlation, and closed-loop

change automation. With the support of intelligent 'capacity planning' application, Etisalat will manage to quickly scale the infrastructure which will translate into being able to maintain service levels when traffic levels are in flux. While predicting network capacity demands based on the recent usage patterns and trends, which can be very unpredictable during peak utilization times, and maintaining a high level of the service quality by automatically routing the critical applications using AI to predict the best network paths for high applications quality and customer experience. "Advanced automation is at the heart of Etisalat's strategy in every corner in the network. It is critical to 5G success for improving operational efficiency and driving new services," said Haitham Abdulrazzak, Chief Technology Officer, Etisalat. "We are focusing on service performance metrics and the real time experience of our customers with

immediate and long-term benefits to transform our infrastructure and deliver the best-in-class customer experience." "We opted for Cisco solution due to the outcome driven approach in automation that will have a major impact on network capacity management," said Saeed Al Zarouni, Senior Vice President - Mobile Network, Etisalat. "The next-generation networks that we're driving supports our customers stay ahead of the curve and create new, ground-breaking experiences for their customers and end users for decades to come," said Adam MacHale, VP of Service Providers in EMEAR region, Cisco. "We worked closely with Etisalat to realize their vision for open, autonomous and secure EMIX network that can proactively handle upcoming demands, improve operational decision making and reduce time-to-outcomes, to deliver the best-in-class customer experience."

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# Mobily and KAUST Tie to Upgrade Internet Connectivity

KAUST (King Abdullah University of Science and Technology) has launched a new 400 Gbps international connectivity upgrading from the previous 10 Gbps connection speed to help researchers collaborate with their international peers at super-fast speeds. The Saudi telecommunications services company Mobily, has signed a long-term contract to supply the institution with four 100 Gbps dedicated circuits and submarine optical fiber network cables, enabling KAUST to build direct connections into the SURF, NORDUnet, and GEANT research and education networks in Europe, and the SingAREN network in Singapore. The new capacity, comprising 200 Gbps from KAUST to Amsterdam

and 200 Gbps to Singapore, connects it to major research and education network hubs in Europe and East Asia. These connections will provide researchers with fast, efficient data transmission and reliable access to scientific resources and cloud service providers anywhere on the planet. The upgraded links will enable high-performance science applications, including high-volume bulk data transfer, remote experiment control and data visualization. With this capability, a KAUST researcher will be able to collaborate with peers anywhere on earth without geographical limitations. Leveraging this capacity will allow researchers in realizing the full potential of KAUST's state-of-the-

art, data processing resources, such as the supercomputer Shaheen II. Before the upgrade, it could take more than 24 hours to transfer a 100 Terabyte data set. With the new 400 Gbps bandwidth capacity, this would take only 37 minutes. For example, all nine Blu-ray disks of Star Wars: The Complete Saga could transfer from KAUST to a university in California in approximately 10 seconds. KAUST CIO Jason Roos said: "This new capability will transform the scientific landscape for KAUST by providing a technological ecosystem that will truly enable researchers to easily collaborate with peers located at any the top tier research institutes across the globe

# Mobily and Nokia Pilot World's First 4G and 5G Fixed Wireless Access Network Slicing

Nokia announced that it has successfully piloted 4G and 5G fixed wireless access (FWA) network slicing with Saudi Arabian telecommunications services provider, Mobily on their live commercial network – the first sliced FWA deployment in the world. The ongoing pilot, which took place in the capital city of Riyadh, occurred in a multi-vendor environment and included sliced access, transport and core networks with management and assurance capabilities. The solution will allow Mobily to offer new FWA services to priority consumer and enterprise customers. It also enables slicing per application including voice, data, online gaming or home office applications. Nokia's 4G/5G network slicing solution works in LTE, 5G non-standalone (NSA) and 5G standalone (SA) networks. It provides mobile broadband connectivity from 4G/5G devices and Customer Premises Equipment (CPE) to cloud applications through sliced access, transport and core. With the Nokia slicing solution Mobily can divide its network into multiple virtual networks and offer FWA service tiers and premium services to its customers utilizing advanced network

resource allocation mechanisms. During the pilot, Mobily utilized Nokia's AirScale 4G/5G base stations with its NetAct solution with management, control and assurance, as well as Nokia's routers, Network Services Platform (NSP) and Digital Operations software. Mobily also used existing third-party core as well as Nokia's FastMile 4G/5G FWA gateway and third-party CPE products. The slicing capabilities are implemented with software upgrades and configurations into Mobily's existing network. Nokia's slicing solution supports existing LTE, 5G NSA and 5G SA devices. The slice continuity between LTE and 5G allows operators to maximally utilize their network coverage and assets such as available spectrum for new mobile services. Nokia's customers are already working on a variety of slicing use cases including enterprise applications, transportation, manufacturing, utilities, public safety and smart city applications. Mobily is the brand name of the Saudi Mobily Company, a Saudi Arabian telecommunications services company that offers fixed-line, mobile telephony and Internet services. Nokia was the first

vendor to launch 4G and 5G network slicing and has developed the solution further with slice management automation, orchestration and assurance capabilities. With the same solution, architecture operators can now turn on slicing services for Fixed Wireless Access users. Alaa Malki, CTO, Mobily said: "Mobily continuously works in partnership with global vendors to try new innovative technologies. Network slicing will enable mobile operators to rapidly provide, manage and assure services within minutes. Each slice can have a different network performance, quality, routing and security capabilities as well as Key Performance Indicators for service assurance." Ari Kynäslahti, Head of Technology and Strategy at Nokia Mobile Networks, said: "For early pioneering operators it's important to get practical real-life experience of the new slicing technology and its business opportunities. Nokia was the first vendor to offer a slicing solution and we are proud to continue our long-standing partnership with Mobily to offer 4G and 5G network slicing services to their customers."

# Orange Jordan Enhances Its Mobile Network in The Kingdom

Orange Jordan has recently announced enhancing mobile networks in Amman and Ajloun governorates, to ensure better coverage and a faster internet with the latest technologies especially 4G+, aiming to expand and offer the latest solutions for individuals and enterprises in the both governorates. The company deployed its investment to increase the 3G coverage to 98.6%, 4G to 97.4%, and to enhance the 4G+ network, allowing customers to enjoy the high-speed and reliable internet services in light of the increased demand on these important technologies in facilitating every day's life aspect. Chief Consumer Market Officer, Naila Al

Dawoud, affirmed Orange Jordan leading position as the strongest internet provider in the Kingdom, offering 4G+ for mobile with speed of up to 250 Mbps exclusively, to keep customers connected to what matters to them anywhere, noting that the company aims to enhance its network coverage and offer new solutions that suit customers' needs and international developments. Al Dawoud noted that Orange Jordan is providing a wide array of offers with convenient prices; through its shops and e-Shop to ensure that everyone can benefit from the 4G+ technology and the best coverage with no additional fees including; YO offers, Humat Al Watan, and

Net-Everywhere. From his side, Chief ITN & Wholesale Officer, Eng. Walid Al-Doulat, said that Orange Jordan invested millions on its mobile networks as the number of users increased noticeably, the investment in the Amman and Ajloun networks is valued at JD 5 million, in addition to installing towers in Ajloun, which contributed to decreasing data traffic by 21%. Orange Jordan has activated new 4G+ networks at 900 MHz frequency across the capital, where the new frequency will increase the network's capacity and improve 4G+ network's speed and coverage, in addition to expanding 4G+ service to cover the capital, he added.

# Orange Jordan Supports Visually Impaired Students to Continue Their Studies

Orange Jordan distributed high-speed internet lines and MiFi devices, in cooperation with the Cultural Forum of the Blind, to support visually impaired students in continuing their studies. The support provided comes as formal education continues to be replaced by distance learning in line with official procedures to curb the spread of Covid-19. The company granted students the lines

and MiFi devices to help them utilize the internet in accessing online educational platforms after they received smart devices equipped with screen reading programs. This support, said Orange Jordan, falls under the "Differently abled, definitely enabled" umbrella launched by the company, as part of its corporate social responsibility, to enhance digital inclusion and enable persons with disabilities in the

kingdom by providing digital skills and tools necessary to contribute to socio-economic development. With the shift to distance learning, Orange Jordan offered free browsing of the "Darsak" platform and supported students to continue studying, as education remains one of the main pillars of its corporate social responsibility and role as a responsible digital leader and the kingdom's digital partner.

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# stc Receives ISO Certification in Business Continuity

Kuwait Telecommunications Company – stc, a world-class digital leader providing innovative services and platforms to customers, enabling the digital transformation in Kuwait, announced that it has been certified with the latest version of the ISO Certification in Business Continuity (ISO 22301:2019). The certification comes after a thorough and vigorous auditing process performed by TopCertifier, one of the leading consultation firms in ISO certifications. stc released a statement indicating that the certification process, headed by the Business Continuity Team and involved several other employees, revealed the practices and procedures implemented within the Company while implementing its business continuity plan. During the evaluation process, the team presented the necessary requirements requested by the international ISO standard in details, while confirming that internal protocols were taken accordingly. The findings and documented procedures were delivered by the Business Continuity Team to the independent auditing team at TopCertifier for verification prior to the submission. stc has obtained and maintained the (ISO 22301:2012) version since 2017, and since then has been following the requirements of the quality standard, and accordingly, stc has revamped its processes to adhere to the requirements of the latest version (ISO 22301:2019). The ISO Certification in Business Continuity comes as a testament

to the diligent approach taken by stc to implement protocols and guidelines to maintain all business-related operations during the pandemic. While the continuity plan goes beyond the restrictive measures witnessed during the pandemic, the team at stc had developed a comprehensive management system to effectively manage such incidents in case they occurred. Through active monitoring and continuously enhancing the system, stc managed to safely resume its operations for all stakeholders while abiding to the guidelines imposed by the government. Eng. Fahad Al Ali, stc Chief Technology Officer, said, "Receiving this ISO certification confirms and demonstrates our commitment to implement a robust business continuity plan that is adaptable to different circumstances and resilient during times of uncertainty. At stc, we continuously search for new ways to enhance the offerings and services we provide our customers with. To continue delivering the same quality of services to our customers, it is critical that we provide our employees with access to the necessary resources they need through a streamlined and documented process." Al Ali added, "Our focus is to uphold the highest international standards when delivering our digital solutions to customers, and as we implement our digital transformation strategy. Throughout the year, we were committed to supporting our customers and the Kuwaiti market during

a difficult period, while delivering our services interruptions-free. We identified the challenges that appeared in our path and transformed them into opportunities to elevate the user experience. This enabled us to introduce new-to-market products that can leverage on the strength of our strong 5G network and revamp our services to provide convenient access to our individual and corporate customers. Moving forward, we aim to further enhance our offerings and expand our spectrum of digital solutions to cater to the needs of our diverse customer base." In his words of appreciation, Al Ali thanked the team at stc and all those who participated in achieving this great recognition for the Company. Considering that stc is the most recent telecom company to enter the Kuwaiti market, the Board of Directors at stc had recommended to plan and establish a continuity plan in case of unexpected events that may disrupt both the internal and external operations of the Company. It is worth mentioning that the latest version of the ISO 22301 is an upgrade to a comprehensive standard that represents the highest level of commitment to business continuity and disaster preparedness. By achieving ISO 22301 certification, stc continues to demonstrate its focus on high availability and business continuity, as well as the commitment to constantly provide reliable services to its customers.

# Zain Introduces Virtual Zain Great Idea Program

Zain, the leading digital service provider in Kuwait, announced the launch of the sixth edition of its Zain Great Idea (ZGI) tech startup accelerator program, which comes this year in an all-virtual format to adhere to the health guidelines posed by the COVID-19 pandemic. The program comes in joint collaboration with Brilliant Lab, a startup Accelerator Service from Kuwait, and Mind the Bridge, a global organization based in Silicon Valley that bridges the world through entrepreneurship education for startups, enterprises, and investors to succeed in global markets. ZGI offers a refreshed opportunity for local talents and Kuwait's entrepreneurial community, as it has been one of the most successful initiatives Zain presented to the Kuwaiti market as part of its comprehensive innovation and entrepreneurship strategy. Throughout five successful editions, ZGI empowered, trained, and invested in hundreds of creative and driven Kuwaiti youth, of which many now own thriving and active Small and Medium-sized Enterprises (SMEs) to this day in local and regional markets. Commenting on the program's launch, Zain Kuwait's Chief Corporate Communications and Relations Officer Waleed Al Khashti said: "We are delighted to announce the official launch of the sixth edition of our Zain Great Idea tech startup accelerator program. This year's edition comes in an all-virtual format in an effort to abide by health guidelines and restrictions posed by the COVID-19 pandemic". Al Khashti explained: "The pandemic was not a barrier that prevented us from renewing our commitment to Kuwait's entrepreneurial community. On the contrary, we took it as a challenge to reintroduce the program more exceptionally than ever. We at Zain are the first to believe in technology's excellence as an effective and high-efficient tool to develop skills and train talents". Al Khashti continued: "After 10 years of continuous feats achieved by this initiative, we have succeeded in pushing forward hundreds of brilliant entrepreneurs who own thriving businesses and SMEs that operate not only in the local market, but even across regional and international ones as well". Al Khashti unveiled: "In this virtual edition, all participants will have a chance to receive a cash investment of USD 50K to fund their tech startups'

operational and commercial costs. Participants will be able to apply for this funding by pitching their startups to the investment committee we created along with our partners at Rasameel Investment Company and Brilliant Lab". Al Khashti expressed his appreciation to the teams at Zain, Brilliant Lab, and ZGI partners who work tirelessly and around the clock to make this initiative a success amid exceptional circumstances to redesign the entire program in an all-virtual format while maintaining the program's known high-quality level. Zain Kuwait's Sustainability, Innovation, and Entrepreneurship Department Manager Haya Al Mana said: "Our ZGI finalists will be able to benefit from Zain's leading experiences across many areas that are essential to any startup, including marketing, advertising, customer care, public relations, digital partnerships, business/consultancy/legal services, and much more". Al Mana continued: "Any entrepreneur who gets accepted into the program's first phase will join our bootcamp, which will be completely virtual this year and will continue for four weeks. The bootcamp will feature workshops, training sessions, panel discussions, and more, facilitated by world-class experts, academics, and trainers from top international educational institutions such as IE Business School, MIT, Stanford, and more. In addition, we will offer one-to-one sessions with top experts in various fields for every finalist". Neda Al Dehani, Founder and CEO of Brilliant lab commented: "Today, the Zain Great Idea program has become a reference for the local startup market. The program's previous editions featured many startups that continued to develop and attract promising investment opportunities to the Kuwaiti market". Al Dehani added: "Many of the unique startups that were a part of ZGI received investment interests recently, including, for example, three of last year's ZGI 5 alumni: Armada (order & delivery solutions), HOT (online training and workouts), and Baims (e-learning platform)". Al Dehani also mentioned that the year 2020 witnessed a new startup acquisition within the local market, where Provision recently acquired "Li3ib", an app that was a success story of ZGI 4. Al Dehani continued: "I advise new startup owners, whether from the Kuwaiti or GCC markets, to join the sixth edition of ZGI and make use of the investment, business, and marketing services it offers". Al Dehani concluded: "This program surely puts the national and regional startup economies on strong grounds, because it offers great career opportunities for the youth, as well as real-world training experiences that will ultimately develop their business skills and produce a productive workforce based on world-class experiences". Zain is well aware of the crucial role played by private sector organizations in supporting social and economic sustainability projects. Springing from its growing commitment towards practicing its social responsibility, the company is committed to printing a positive impact through all its activities. This has led Zain to embrace the most influential issues in the community, including the support of youth, entrepreneurship, and innovation.

# Arthur D. Little Appoints Robert Clover as Energy & Utilities Practice Partner

Arthur D. Little (ADL) announced that Robert Clover has been appointed as a Partner at ADL UK, where he will become a member of the company's Energy & Utilities practice and play a key role in developing its local and international client base in this area especially in respect of the energy transition. Robert joins ADL from FTI Consulting, where he has been the Managing Director of its Clean Energy Practice for the past five years, delivering strategic advisory work and business model innovation for companies including ENEL, ABB, Siemens,

GE, Vestas, Mainstream Renewable Power, Macquarie, Nordex and Total. In particular, he has worked in renewable energy technology development and deployment including onshore/offshore wind, solar PV, storage, hydrogen, hydro and financing innovation. Prior to FTI, Robert was a Partner at MAKE Consulting, a leading research and business intelligence service in the wind sector, and from 2004 to 2012, he was Global Head of Clean Technology Equity Research at HSBC Group plc. Nick White, Managing Partner of Arthur D. Little

UK, comments: "I'd like to extend a warm welcome to Robert, who I'm sure will prove to be a major asset to the Energy & Utilities team. The pressing challenges that the energy transition presents requires people with both vision and experience to tackle them properly. The required technologies are still in their relative infancy, so it's essential that companies take advice from proven experts in the field. ADL provides this expertise, combined with deep understanding of the policies, markets and technologies, as well as bringing innovative thinking. Robert will strengthen our offering considerably." Robert Clover, Partner at ADL, adds: "I'm looking forward to helping ADL's clients handle the energy transition in whatever form it takes, whether it's helping conventional utilities to diversify their energy mix, or supporting companies who want to embrace cleaner energy alternatives. De-carbonization of the corporate world will remain a key imperative for many years to come, and companies must continue to develop sustainable business models. I am pleased to join ADL, a company with a reputation for both progressive thinking and practical advice in this area."





# AT&T 5G Speed Tops the Competition in Q4 2020

AT&T 5G network speeds beat the competition in Q4 2020, confirming that AT&T customers continue to enjoy the Nation's Fastest 5G Wireless Network according to the latest results from Ookla® Speedtest. And that's not all - we've also hit a milestone of the Overall Fastest Wireless Speeds in the nation for 2 consecutive years2 and the Fastest Wireless Network for iPhone since 2019, according to Ookla. 3 Why is this important? Wireless connectivity continues to be a vital part to our everyday lives and has proven to be even more so in in our current world when we need connection the most. Fast wireless speeds
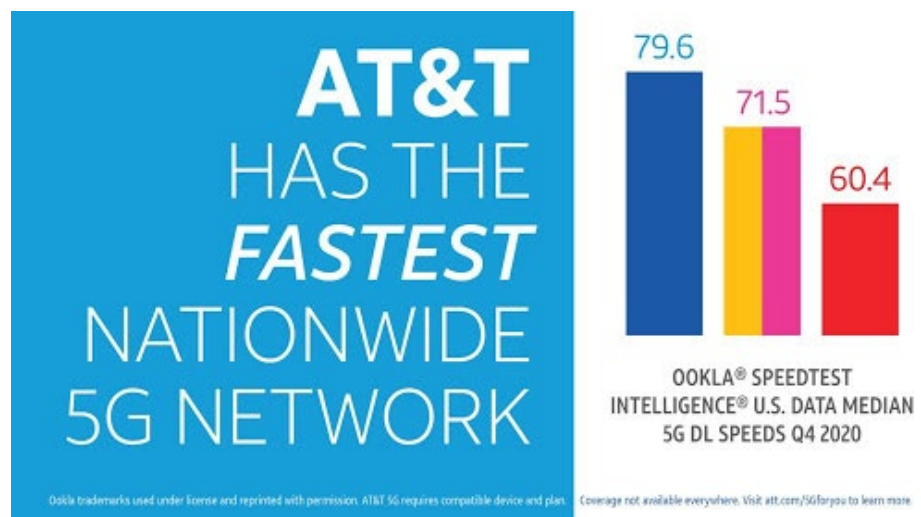
contribute to our customers having a great wireless experience when connecting to what they love most, and it can help speed up things like downloading your favorite HBO Max movie, game or app on the go. Our customers can also celebrate knowing they are on a faster wireless network than subscribers on other carrier networks. How did we get here? Our customers deserve the best, so we invested billions of dollars in technology investments for our network, and this win is a result of that. This all starts with our employees' hard work

making enhancements to our network despite the challenges that COVID-19 brought to the country. Last year, our network build team thought outside the box to make sure our 5G build plan was able to continue. "We continue to lead the competition and deliver the speeds our customers need thanks to the dedicated, hard work by our teams," said Chris Sambar, EVP-Technology Operations. "I am determined we have the best and most innovative engineers in the business." Our nationwide 5G network currently reaches

Americans in more than 14,000 cities and towns.4 And we haven't stopped - we continue to densify our nationwide 5G network while also launching new AT&T 5G+ technologies, currently in 38 cities, for communities across the nation. Where do the speed results come from? Ookla speed results don't come from a lab. AT&T's fastest wireless network wins are based on millions of real-world consumers testing speeds daily across the nation on the Ookla Speedtest application.

## AT&T is Bringing 5G+ to U.S. Airports

The effects of COVID-19 left a huge impact on the travel industry with a heavy decline in national and international travel among Americans. Although things have slowed down, AT&T is working behind the scenes to enhance customer travel experiences with the widespread deployment of 5G+ in airports across the country. The multi-year effort will cover major gate and concession spaces at select U.S. airports, where travelers and airport employees have the greatest need when accessing mobile applications and entertainment with a 5G+ capable device. Last month, AT&T launched 5G+ at TPA, providing coverage from the moment passengers with a current unlimited plan turn on their capable phones at the airplane boarding gates, to the moment they leave the airport. "This is a tremendous enhancement for our passengers and guests and we're thrilled to be able to roll this out just in time for Super Bowl LV," said Marcus Session, TPA's VP of Information Technology Services. "With the future increase of airport traffic, it is important that our wireless networks are enhanced to support the connected traveler. Having this kind of connectivity will help improve the passenger experience and create a positive impression for everyone who uses it." A stronger network means no more worrying about hit-or-miss Wi-Fi connections in airports. Travelers can stay connected to the people they love, be more productive working or stay entertained watching their favorite movies or shows. Customers with a capable



device and qualifying plan will be able to download an entire season of Friends or Sesame Street on HBO Max before a flight to stay entertained throughout their journey. Our investment has enabled AT&T to have the Fastest Nationwide 5G Network1 and with 5G+ coverage coming to participating U.S airports, AT&T will deliver greater connectivity for travelers in the U.S. and help provide a more enjoyable, seamless travel experience. In addition, fast and reliable connectivity in airports can also help improve operational efficiency for airlines, other tenants and airport operations. "We strive to exceed our customers' expectations with technology that will enhance their day-to-day lives," said Jay Cary, VP - 5G Product & Innovation Postpaid Wireless Products. "As Americans gain confidence traveling again, we're proud to bring AT&T 5G+ to its first airport,

with more to come nationwide. Providing our 5G+ network in airports across the country will help enhance experiences of streaming and downloading movies and games, securely access demanding business applications, and help with logistics such as in-airport navigation, checking flight updates and more." Access to our 5G+ network is now easier than ever because it comes included in our postpaid unlimited plans at no extra cost to you. And those customers with AT&T Unlimited Elite get the added benefit of HBO Max included on us. 5G+ is included in our postpaid business unlimited plans too.2 AT&T's 5G+ airport investment is another example of our commitment to dedicate time and resources to improve our network for customers and communities across the country.

# AT&T Senior Executive Vice President and CFO John Stephens Updates Shareholders

John Stephens, senior executive vice president and chief financial officer of AT&T Inc., spoke at the Citi Global TMT West Virtual Conference where he provided an update to shareholders. He addressed the following areas: Customer-centric approach. Stephens said that AT&T's significant investment in network performance, combined with attractive wireless device pricing for both new and existing customers, should continue to drive migrations to unlimited plans and momentum in the company's wireless business. Additionally, with the introduction of a hybrid distribution model for the Warner Bros. 2021 slate of movies, combined with new distribution deals with Xfinity and Roku, the company anticipates activations of HBO Max will continue to increase. In fact, Stephens said that the release of Wonder Woman 1984 on HBO Max contributed to high subscriber engagement over the holiday season and that AT&T will provide updated details on HBO Max subscribers when it announces fourth-quarter earnings. Continued financial flexibility in 2021. AT&T expects to have the financial flexibility in 2021 to continue to invest in growth areas, sustain the dividend at current levels and focus on debt reduction. Stephens reiterated that in 2021, the company expects to generate free cash flow in the $26 billion range1 (exclusive of proceeds from potential asset divestitures), with gross capital investment in the $21 billion range.2 This builds upon management's guidance of at least $26 billion of free cash flow in 2020. Stephens also said that AT&T continues to take a thoughtful and thorough approach to monetizing non-core strategic assets and investing capital effectively. The company has refinanced more than $60 billion of debt at historically low rates and reduced its amount of debt coming due through 2025 by about $30 billion. AT&T will provide its 2021 financial outlook and capital allocation guidance when it reports fourth-quarter and full-year 2020 results on Wednesday, January 27, 2021.

# BT And Digital Boost Launch Free Mentoring Program for UK Small Businesses

BT launched a new mentoring program to support small businesses during the pandemic, in partnership with Digital Boost, a free non-profit platform which unites digital experts with leaders of small businesses. BT has pledged to deliver free one-to-one coaching sessions to at least 1,000 small businesses as part of its Small Business Support Scheme, which launched last Summer. The mentoring initiative is open to all BT employees and has been successfully trialled with a number of small businesses prior to launch. BT has enlisted the expertise of its colleagues across the business – including senior executives - to upskill small businesses on a range of topics, including Cyber Security, Marketing, Social Media, Strategy, and more. Digital Boost will connect individuals from small businesses with relevant BT experts via its free online platform, where small businesses are able to register their interest in booking a free virtual mentoring session. BT launched its Small Business Support scheme last Summer – a broad range of measures to help small businesses get better positioned for growth during and beyond the pandemic. The scheme aims to do this by boosting the connectivity, cashflow and confidence that many small firms say they lack as a result of the ongoing COVID-19 restrictions. The new mentoring program forms a key part of BT's efforts to drive skills and optimism amongst small firms, with an earlier survey conducted by BT and Small Business Britain revealing that more than half (53 per cent) lack confidence in the future of their business. 63 per cent of small firms felt they needed more support in marketing and sales; 44 per cent wanted more assistance with digital skills; while 36 per cent lacked skills in building business resilience. BT is responding to these concerns by increasing access to free, expert advice to 1,000 small firms initially, with a view to further expanding the reach of the program over the coming months. Pete Oliver, MD SME for BT's Enterprise unit, said: "Helping small businesses to acquire new skills and boost their confidence during these exceptionally challenging times is a central part of BT's Small Business Support Scheme. We've already equipped a further 20,000 small businesses with digital skills since the launch of the scheme and now we're going even further by introducing a free mentoring program. By partnering with Digital Boost, we can engage our own colleagues around the need to step up and support small businesses, with experts around the company volunteering their time as BT mentors. "Our ambition is to scale this very quickly, involving colleagues from all levels, including the senior leadership team.

I have already signed up as a mentor and look forward to learning a huge amount and helping a small business to thrive into the future." Sherry Coutu, Founder at Digital Boost, said: "At Digital Boost, we help those who work for and lead small businesses and charities to survive the COVID-19 crisis and be more competitive in the long-run. BT is a key partner in our effort to help prepare the UK to build back better after the pandemic." Brett O'Brien, Internal Engagement Manager at BT, has been involved in the pilot of the mentoring scheme, providing his sales expertise to a small business. Brett said: "I volunteered to be a Digital Boost mentor as I felt it was my duty to support the small businesses

that are trying to weather the storm of COVID-19. I have lots of friends and family working in small businesses that are no longer in work, so I felt personally motivated to support the small businesses that are fighting for survival. My expertise is in sales/partnerships and I have so far conducted two mentoring sessions. The feedback from them was great and I feel a sense of pride knowing that I'm making a direct impact to help these small firms stay in business." BT has already helped tens of thousands of small businesses acquire new digital skills through its Skills for Tomorrow program which aims to reach 1 million small business owners and their employees by 2025. In recent months,

BT has launched new learning content on crucial topics - such as how to protect yourself from cyber-attacks and using social media to reach new customers. In the last year alone, BT has delivered over 190 free learning webinars for small businesses. BT is also acutely aware that it's an extremely worrying and uncertain time for small businesses and is providing access to expertise to small business leaders around maintaining wellbeing by boosting their mental and physical health. A free online Wellbeing Toolkit is already available and a webinar series specifically designed for small businesses will launch next month.

## BT Wins a New Contract to Connect Dutch Diplomatic Missions Around the World

BT announced it has signed a contract with the Dutch Ministry of Foreign Affairs to provide communication services to their embassies and consulates in 120 countries using the latest software defined networking technology. The contract is valued at 33 million euros over the initial period of four years, with an option to be extended to a total duration of up to nine years. It was won in a public, EU-wide tender procedure. The new network services will form the foundation for the ministry's digital transformation journey and will enable secure collaboration internally as

well as with external partners. Users will benefit from secure access to data and cloud services. Joris van Oers, managing director for Europe at BT, said: "I am really proud that the Dutch government has put their trust in us to connect their embassies and consulates around the world. We can build on many years of experience serving public sector customers such as EU institutions and governments in many countries, and we are happy to support the Ministry of Foreign Affairs on their journey into a more digital future."

## China Mobile and CBN Finalize Collaboration Agreements

China Mobile, China's largest mobile provider by subscribers, and 5G licensee China Broadcasting Network (CBN, also known as China Radio and Television), have built upon the collaborative framework agreement that the pair signed in May last year regarding 5G network co-construction and sharing with the inking of a series of 'specific collaboration agreements. The deals comprise four new agreements, each of which last until 31 December 2031 and separated into two phases with Phase One ending on 31 December

2021, and Phase Two spanning 1 January 2022 to 31 December 2031. As noted by TeleGeography's GlobalComms Database, the two companies had inked a co-construction agreement that would enable China Mobile utilize the 700MHz spectrum for 5G services whilst CBN would benefit from an accelerated rollout and entry into the market by using Mobile's existing networks. The new agreements are as follows. The 5G Network Co-construction and Sharing Collaboration Agreement, under which the two companies will

jointly construct the 700MHz network, will comprise investment in the establishment, expansion of capacity as well as upgrade and renovation of the 700MHz network at a ratio of 1:1. The network will be owned by both companies as an indivisible integral asset at a ratio of 1:1, and China Mobile and CBN will both have the right to fully use the 700MHz network to provide services to their respective customers. China Mobile will provide CBN with a transmission carrier network linking between 700MHz 5G base stations and CBN's connection points in

prefecture-level cities or provincial centers for use on a paid basis. The 700MHz 5G network and China Mobile's 2600MHz network – to which CBN has been granted access on a wholesale basis – will adopt the same shared technical solutions. The 5G Network Maintenance Collaboration Agreement establishes that the two parties share equal network management rights of the 700MHz 5G network, although China Mobile will undertake the operation and maintenance work on the network, with CBN paying fees for such. The network will be dual-connected to the respective core networks of the two operators, and each will undertake the maintenance work for their own core networks. China Mobile will be responsible for the maintenance of the

transmission carrier network. The Market Collaboration Agreement, meanwhile, sets out plans for the two firms to collaborate on innovation in areas such as models of products and operations, whilst remaining independent in terms of branding and business operations. Further, under Phase One of the agreement, CBN may share China Mobile's 2G, 4G and 5G networks on a paid basis. During Phase Two CBN may share China Mobile's 2600MHz network (on a paid basis) but, following large-scale commercialization of the 700MHz network, CBN will not utilize Mobile's 2G and 4G networks. The Network Usage Fees Settlement Agreement details the fees payable by CBN to China Mobile. During Phase One, operation and maintenance

fees for the 700MHz network and usage fees for the transmission carrier network will be accrue from the second month after the 700MHz 5G base stations are connected to CBN's core network or transmission nodes, with the fees charged according to the number of base stations. In addition, CBN will settle usage fees for Mobile's 2G/4G/5G networks according to the business volume of CBN's customers in their use of the systems. During the first five years of Phase Two of the deals the various fees payable by CBN will be paid at rates negotiated by the two parties but in 2026 the pair will renegotiate the settlement amounts for the remaining duration of the agreements.

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## Cisco Appoints John D. Harris II To Its Board of Directors

Cisco announced the appointment of John D. Harris II to its board of directors. "We are very pleased to welcome John to the Cisco Board," said Chuck Robbins, chairman and CEO, Cisco. "John is known for his strong leadership and results-oriented approach. His depth of experience operating a global business at scale, and commitment to excellence will positively impact Cisco's strategy and enhance our trusted relationships with customers as they increase their digital agility." Harris has over 30 years of technology, non-profit and business board experience. He most recently served as vice president of Business Development for Raytheon Company and chief executive officer of Raytheon International, Inc. where he oversaw worldwide sales and marketing, international business and government relations operations functions. He was also responsible for developing and leading the execution of Raytheon's global business strategy. Harris joined Raytheon in 1983. Throughout his career, he held

positions of increasing responsibility, including vice president of Operations and Contracts for Raytheon's former Electronic Systems business, vice president of Contracts for the company's government and defense businesses, and vice president of Contracts and Supply Chain for Raytheon Company. In 2010, he was named president of Raytheon Technical Services Company (RTSC). Harris also served as general manager of Raytheon's Intelligence, Information and Services business, where he was responsible for the consolidation of the former RTSC with Raytheon's Intelligence and Information Systems business. Harris served on the RTCA NextGen Advisory Committee, the Board of the USO of Metropolitan Washington, D.C., the National Advisory Council on Minority Business Enterprise with the U.S. Department of Commerce, and was a member of the Council of Trustees for the Association of the United States Army. He served as Raytheon's Executive Diversity Champion in 2007-2008, leading

the Executive Diversity Leadership Team and providing strategic direction for the company's overall diversity and inclusion efforts. In February of 2010, Harris was honored with the prestigious Black Engineer of the Year Award. Harris received his Bachelor of Science degree in Business Administration from Boston University.

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## Cisco and Acacia Communications Announce Amended Merger Agreement

Cisco and Acacia Communications announced an amendment to the definitive merger agreement under which Cisco previously agreed to acquire Acacia. Under the terms of the amended agreement, Cisco would acquire Acacia for $115 per share in cash, or for approximately $4.5 billion on a fully diluted basis, net of cash and marketable securities. Cisco and

Acacia expect to complete the acquisition by the end of the first calendar quarter of 2021, subject to closing conditions, including Acacia stockholder approval. Upon completion of the acquisition, CEO Raj Shanmugaraj and Acacia employees will join Cisco's Optics business. "I am delighted that Cisco and Acacia have decided to come together in this mutual deal," said Chuck Robbins, chairman and CEO, Cisco. "We look forward to welcoming Raj and the Acacia team to Cisco to offer our customers world-class coherent optical solutions to power the Internet for the future." The pending acquisition of Acacia reinforces Cisco's commitment to optics as a critical building block that will enhance the company's 'Internet

for the Future' strategy with world class coherent optical solutions for customers, further enabling them to address the unprecedented scale of modern IT. Cisco is committed to supporting Acacia's existing and new customers around the world that require industry-leading coherent optics, digital signal processing / photonic integrated circuit modules and transceivers for use in networking products and data centers. "Both Cisco and Acacia have been focused on helping customers create a simpler operations environment, with a shared vision for the future of routing and switching with pluggable optics," said Bill Gartner, senior vice president and general manager, Cisco Optical Systems and Optics Group. "Together we will ignite our

strategy to transform the optical world as we know it, with innovative solutions to boost network capacity inside and outside the data center." "We maintain our strong conviction in the strategic benefits of joining the Cisco family and believe it will enable us to better support our existing customers, while reaching an expanded footprint of new customers globally," said Raj Shanmugaraj, president and CEO of Acacia. "We are pleased to have reached this agreement with Cisco and are excited to move forward with the combination which we believe will transform the optical industry, while providing great opportunities for Acacia employees to continue their innovation."

# Cisco Doubles Down on Webex Ecosystem and Accelerates Webex App Hub

Announced at WebexOne, the all new Webex is not just a powerful suite of apps, it is also a platform that helps everyone to have a seamless experience as they move between Webex and their other favorite apps. Our platform starts with a powerful programmability and extensibility layer via our open APIs and SDKs. This lets anyone get the capabilities they need with Webex— across calling, messaging, meetings, devices, intelligence and analytics. To ensure everyone can benefit from this platform, we announce the new Webex App Hub. Available, the App Hub is where we make it easy for users to find and use integrations within a Webex messaging space, and soon you'll be able to experience the same thing in a Webex meeting. Users will be able to easily add and collaborate with third-party applications while in a Webex meeting, then save the work to follow up afterwards. Of course, the App Hub also is great for IT managers who are looking to make native integrations company-wide. "Our vision with building a strong open ecosystem-based approach for partners is to make sure that regardless of the application someone is using, they can work seamlessly with Webex, where the experience is magical and fully integrated for the user," said Jeetu Patel, SVP and GM, Security & Applications, Cisco. We announce the following upcoming integrations, and many more will soon follow:
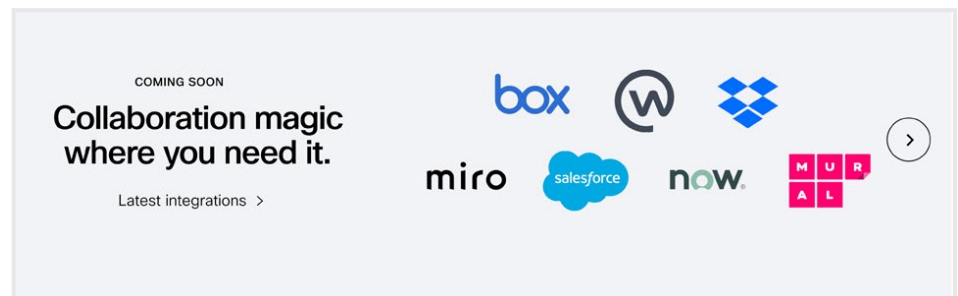


Box: Get the most of your Webex meetings with content stored in Box. Currently, Box and Webex are integrated such that you can easily share and manage Box content when you're in Webex. We are now taking this integration to the next level so that from within Box, you get embedded access to Webex enabling you to start or schedule a Webex meeting, and share content with a Webex Space - either with an existing Space or a newly created Space - all without leaving Box. All Webex content sharing events are captured in the Box activity feed.

Aaron Levie, CEO, Box: "As we continue to manage our 'new normal', organizations are continuously looking for tools that help employees work more securely and seamlessly from any device, location, and application. We are thrilled to expand our partnership with Cisco to create an even deeper integration between Box and Webex that enables secure work for our joint customers."

Dropbox: For Dropbox users, the powerful

integration coming between Dropbox and Webex will help drive more effective meetings. Click and select a file in Dropbox to share during a Webex meeting. Leverage Dropbox in Webex to easily capture notes, agendas, and follow-up tasks to share with the team or move from chat to a meeting without leaving the Dropbox UI. Meeting artifacts like presentations and recordings are accessible in Dropbox before, during and after meetings.

Drew Houston, Co-founder and Chief Executive Officer, Dropbox: "We lose a lot of context when working remotely, and it's easy for things like meeting notes, action items, comments, and follow-up tasks to get lost in the shuffle of video meetings. We're excited to team up with Webex to provide an organized, centralized repository to keep teams connected and ensure people never miss a beat, no matter where they're working from,"

Miro: Harness the power of visual thinking and team collaboration by using Miro within Webex. This integration allows you

to embed any Miro board directly inside of your Webex project space for everything from ideation and workshopping to product planning and design without ever leaving your meeting.

Andrey Khusid, Miro CEO and Founder, Miro: "Now more than ever, it's critical for enterprise teams to have swift access to tools that boost engagement and creativity. The seamless integration between Miro and Cisco's Webex gives meeting participants the collaborative superpowers they need."

MURAL: Offering an enhanced layer of engagement to video meetings from within Webex, MURAL helps distributed teams share, think, and solve problems together through visual collaboration. The integrated solution will give every team member a voice and makes remote planning, Agile ceremonies, design sprints, brainstorming sessions, and client collaboration more productive and fun.

Mariano Suarez-Battan, co-founder and CEO, MURAL: "The world's largest enterprise companies look to MURAL to help teams collaborate securely and visually so their ideas can be understood, improved, and acted on faster. Combined with Webex video technology, MURAL helps teams activate imagination together, no matter where they are."

Salesforce: Bringing Webex and Salesforce together can make sales activities and motions 10x better and help drive quotes to cash. Within Salesforce, your Webex meetings, messages and calls will be associated with Leads and Opportunities. These custom Webex objects will be delivered through the Salesforce AppExchange.

ServiceNow: Our integration with ServiceNow incident management means Webex actions related to Meetings, Calling and Messaging become "in agent" workflows, eliminating manual repetitive tasks and context switching.

Chirantan "CJ" Desai, Chief Product Officer, ServiceNow: "Organizations are continuing to seek digital tools that enable seamless experiences for their employees and customers in the COVID economy. ServiceNow is pleased to be working with Cisco to provide incident management experiences that will enable more seamless Webex collaboration and communication for users."

Workplace from Facebook: Workplace and Cisco are coming together to improve employee communications for all organizations, particularly those with frontline employees and distributed teams split between working in-office and from home. Now, joint customers can broadcast Webex video live to Workplace and users will also be able to interact (like, comment, react, ask questions, use polls, etc.) during Webex broadcasts, for real-time engagement. Upcoming product experiences will include being able to use Workplace with Webex hardware, and Workplace live engagement features being brought into the Webex experience. Additionally, we have announced a combined offer: Webex customers who are new to Workplace will receive six months' access to Workplace Advanced at no cost. Workplace customers who are new to Webex will receive special discounts off Webex software and hardware devices (all offers subject to limitations).

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## Eutelsat's Konnect to Provide Connectivity Services to the Post Office Network in Côte d'Ivoire

Eutelsat Communications' konnect has signed a framework agreement with its distribution partner InterSat to provide connectivity services to the Post Office in Côte d'Ivoire. The multi-year agreement will enable the connection of circa 170 post offices throughout the country. Furthermore, all 170 post offices will be equipped with konnect Wifi hotspots in white zones, enabling the Post Office to offer broadband solutions to its local customers. In the future, its scope could be expanded to 3,000 parcel-points ('Point Relais') throughout the country. Leveraging the recently operational EUTELSAT KONNECT high-throughput satellite, the roll-out of the service will start in January 2021 over a six-month period. Commenting on the agreement, Philippe Baudrier, CEO of Konnect Africa said: "We are privileged to support an institution such as 'La Poste' in expanding the scope of its universal service mission. This agreement is the perfect example of how konnect can help both public and private entities in Africa to bridge the digital divide in rural areas. Already providing connectivity to schools, clinics and health centers in several countries, konnect is re-defining connectivity expectations for people who live and work beyond reach of terrestrial networks." Jeoffrey Woods, CEO of InterSat stated: "We are very proud to work together with the Post Office of Côte d'Ivoire. This framework project comes in response to the desire of the Ivorian government, particularly with the support of the Post Office of Côte d'Ivoire, to deliver high quality digital services throughout the country to meet the operational needs of its 170 postal offices, but also to ensure the continued roll-out of ubiquitous services to populations living in white areas. Reliable and affordable broadband access has now become a reality." Isaac Gnamba Yao, CEO of La Poste, Côte d'Ivoire added: "In addition to its statutory mission of providing a Universal Postal Service for the transport of mail and other related services, the Post Office in Côte d'Ivoire has now added the task of facilitating access to the Internet for rural populations. To achieve this, it has partnered with konnect and InterSat by signing a memorandum of understanding on 22 December 2020. The agreement, which forms part of a public-private partnership, is one more step by the Post Office in Côte d'Ivoire towards the achievement of its ambition to become the "Maison du Citoyen et des Entreprises, Coursier de l'Etat (House of Citizens and Businesses, State Courier [free translation])".

# Liquid Telecom Renews and Expands Capacity Agreements on Eutelsat's EUTELSAT 7B Satellite

Liquid telecom, Africa's leading telecoms group, has renewed and expanded its Ku band capacity agreements on Eutelsat Communications' (Euronext Paris: ETL) EUTELSAT 7B satellite. Under this multi-year, multi transponder agreement, Liquid Telecom will further leverage the unparalleled coverage of Sub-Saharan Africa of the 7° East orbital position to extend its VSAT services. This will provide customers with fast and reliable internet access, even in the most remote corners of the region. Commenting on the agreement, Philippe Oliva, Chief Commercial Officer of Eutelsat said: "We are delighted to have the opportunity to take the partnership between Liquid Telecom and Eutelsat to the next level. By working together to further strengthen our ties, we can ensure that the combination of Eutelsat's satellite coverages of Sub-Saharan Africa and Liquid Telecom's unrivaled expertise in the VSAT market can deliver the highest possible service levels to Liquid's customers throughout the continent". Scott Mumford, CEO of Liquid Telecom Satellite Services added: "We are delighted to renew and expand our agreements with Eutelsat, ensuring we can continue to rely on its support and coverage to deliver high-speed, reliable connectivity to existing and future customers, no matter where they are located."



# Huawei and Central Agency for Information Technology in Partnership to Support IT Talent in Kuwait



Huawei, a leading global provider of information and communications technology (ICT) infrastructure and smart devices, has partnered with Kuwait's Central Agency for Information Technology (CAIT) to play a key role in powering the country's digital transformation through training IT talent within the public sector. The cooperation between Huawei and CAIT resulted in the initiative of supporting IT talents in government sectors, which will provide online training platform and free exam opportunities to participants. The cooperation will also provide Arabic based training on cloud computing, Artificial Intelligence (AI) and other advanced technologies in line with Huawei's to support digital transformation and empower various talents. With the professional trainings and certifications, employees within the public sector's IT divisions will have the knowledge, skillset, and understanding to develop and implement next-generation intelligent solutions that will elevate Kuwait's society and propel its digitalization journey. Liam Zhao, CEO of Huawei Gulf North office, said: "Investments in talent development are equally as important to realizing digitalization goals as building physical infrastructure. An intelligent society requires individuals who are digitally savvy, and who have the qualifications to understand not only how the latest technologies work, but how best to deploy them to benefit all members of society. Huawei is committed to enhancing the ICT talent ecosystem and is pleased to work with CAIT to help build digital talent within Kuwait's public sector." Haya Alwadani, General Director of CAIT, said: "The events of 2020 have demonstrated how important technology is to ensure that our society remains stable in any number of situations. Kuwait's digital transformation is an essential endeavor that will not only enable us to realize an intelligent, technology-driven society, but to enhance socio-economic growth and increase sustainability throughout the country. Given Huawei's extensive experience as a world-leading developer of technology as well as a well-established provider of ICT education, they were the natural choice for us to partner with for this initiative." So far, hundreds of employees in the IT departments of more than 29 government entities in Kuwait have joined this initiative. Participants from CAIT, Ministry of Education (MOE), and Public Authority for Sport (PAS) have passed the exams and been awarded with Huawei certificates. Digital transformation was recently recognized by His Highness the Prime Minister Sheikh Sabah Khaled Al-Hamad Al-Sabah as a key focus area for Kuwait's government. Advanced ICT infrastructure has also been recognized for its supportive role in the fight against the COVID-19 pandemic and supporting business and government continuity.

# Huawei Recognized as a 2020 Gartner Peer Insights Customers' Choice for Data Center and Cloud Networking with The Highest Rating

Huawei, a leading global provider of information and communications technology (ICT) infrastructure and smart devices, is excited to share that they were named a 2020 Gartner Peer Insights Customers' Choice for Data Center and Cloud Networking for its CloudFabric Data Center Network (DCN) Solution. Huawei has a high 4.9/5 stars as of November 2020, ranking first among almost 20 vendors. As of November 2020, Huawei CloudFabric has received customer feedback from various industries worldwide, covering products and solutions such as CloudEngine series data center (DC) switches, iMaster NCE-Fabric — an autonomous driving DCN management and control system, and Huawei iMaster NCE-FabricInsight — an intelligent analysis platform designed for DCNs. In the Product Capabilities, Integration & Deployment, and Service & Support categories, Huawei received high ratings from customers in different industries such as finance, Internet, carriers, and public services.

- "Our departments use Huawei switches, and the branch also chooses Huawei. The switch did not disappoint, its

technology is first-class and its functions are very stable" - Feedback from a finance product manager
- "High-quality switch and services!The ADN solution is very impressive,we already deployment AC-DCN Controller, it really improve the standardization and efficiency of network management. And we have deployed their network analyzer FabricInsight hundreds of network failures have been helped to fast locate during yearly period." - Feedback from an O&M Engineer in the government industry

"We are honored to receive this distinction once again, with the highest rating (4.9/5) and recognition from global customers. We thank everyone that gave us feedback on Gartner Peer Insights," said Leon Wang, President of Huawei Data Center Network. "In the future, we will remain committed to meeting customer requirements and continuously innovating, ultimately providing products and solutions that are recognized by customers and in doing so help to accelerate their digital transformation." Huawei CloudFabric serves over 9200 enterprise customers

in more than 140 countries. Customer trust is derived from Huawei's continuous innovation on and leading position in DCNs.

- In 2020, Huawei released the all-new CloudFabric 2.0 Solution. Based on an open architecture, this solution can connect to multiple clouds and is compatible with devices from multiple vendors, reducing operating expenses (OPEX) by 28%. The high-density 400GE intelligent and lossless network features zero packet loss and low latency, improving the computing capability by 27% and data storage IOPS by over 30%.
- Huawei launched the CloudEngine 16800 next-generation 400GE DC switch. Based on the industry-leading new platform, new optical interfaces, and new intelligence, the switch enables efficient collaboration between different fields of 'new infrastructure' and accelerates the industry's digital transformation.
- In addition to innovative solutions and products, Huawei CloudEngine DC switches have gained the trust of customers worldwide. According to Gartner's Market Share: Enterprise Network Equipment by Market Segment, Worldwide, 2Q20, 29 September 2020[1], market share of Huawei's 10Gbps and 25Gbps Ethernet Switches rank highest in the global port shipments.

Gartner Peer Insights is an online platform of ratings and reviews of IT software and services written and read by IT professionals and technology decision-makers. The goal is to help IT leaders make more insightful purchase decisions and technology providers improve their products by receiving objective, unbiased feedback from their customers. Gartner Peer Insights includes more than 350,000 verified reviews in more than 340 markets.



Huawei Named as a 2020
Gartner Peer Insights **Customers' Choice** for Data Center and Cloud Networking
Highest Rating (4.9/5 stars, as of November 2020)
Serving 9200+ Enterprise Customers in 140+ Countries

Gartner Peer Insights Customers' Choice constitute the subjective opinions of individual end-user reviews, ratings, and data applied against a documented methodology; they neither represent the views of, nor constitute an endorsement by, Gartner or its affiliates.

Building a Fully Connected, Intelligent World

# Huawei and China Unicom Deploy Simplified Rural Solution

Huawei and China Unicom have deployed the world's first commercial RuralStar Pro site in a village in Southern China to provide voice and data services for local

residents. This promotes digitalization in rural areas and helps lift the residents out of poverty. The solution was deployed in a mountainous Maopo village in Kaiyang

County, Guizhou Province. The village resides 1,000 meters above sea level and is often surrounded by thick fog. Prior to the solution, the villagers had weak

or no signal coverage and had to walk up the mountains to make a call. This difficulty in communication was one of the reasons this village struggled to develop economically. Maopo village is one of the key targets for precise poverty alleviation in Guizhou, of which rural digitization is high prioritized. Despite finalizing site planning, China Unicom had to delay the network construction multiple times. This is because the foggy environment made using microwave for transmission difficult and it is costly to lay optical fiber in the mountainous village. Huawei's new RuralStar Pro solution enables the operator



to overcome these challenges. RuralStar Pro revolutionizes the traditional base station mode with its all-in-one design that integrates baseband, radio frequency (RF), and wireless LTE backhaul all in one tiny box. This design supports LTE wireless self-backhaul, innovatively compensating for the weaknesses of microwave and optical fiber transmission. Integrating main equipment, this design also helps reduce the site's power consumption to only a little over 100 W, which is far lower than that of the traditional site. This site can be installed on a 6 m pole, significantly reducing civil work costs and simplifying delivery. As a result, site investment is greatly reduced. The access-backhaul integrated design was first implemented by Huawei in wireless networks. This deployment, in particular, is a major milestone in expanding access to rural communities and marks the first commercial use of such a design in the communications industry. With the access-backhaul integrated base station deployed in Maopo village, the installation and commissioning took only 2 hours, 80%

shorter than a traditional site. After the site was deployed, the coverage proportion in the village soared from 5% to 85%, and clear VoLTE voice services and a download speed of 20 Mbps are now accessible to the residents. One of China Unicom's engineers who was involved in the site deployment was impressed by how fast the site was deployed, saying that this was the fastest site he had deployed in 10 years. China Unicom Guizhou highly praised the deployment, saying: "Broadband is playing an increasingly important role in the alleviation of poverty in rural areas, particularly for the villages where network deployment is challenging. In the future, we will continue to work with Huawei to develop simple and cost-effective network solutions for villages in mountainous areas to bring mobile broadband and its benefits to more people." Innovation will never cease. Since its maiden launch three years ago, Huawei's RuralStar series has been continuously improving. Huawei will continue to innovate products and solutions to bring digital to every person, home, and organization.

# Huawei's 5G Core Solution Won the Golden Zizhu Award at the 2020 China Communications Industry Conference

The annual China Communications Industry Conference was held in Beijing. At the conference, Huawei's 5G Core solution was presented with the 2020 Golden Zizhu Award, and won the "Excellent Product Technical Solution in 2020" award. In addition, both the communication industry's top ten events in 2020 and the top ten technology trends of 2021 were announced. The accelerated commercial use of 5G brings rich service experience to individuals and families, makes industry applications more flexible, and brings new service growth opportunities. The core network plays a key role in 5G networks, as it continuously promotes the commercial use of 5G and enables 5G to better serve users and the digital transformation of industries. Huawei 5G Core solution is based on cloud native and uses key technologies such as network slicing, MEC, 5G LAN, and automation engine to provide users with a deterministic network with customizable, guaranteed, and manageable experience. The solution helps carriers maximize the

value of network connections, meet the requirements of different industries for differentiated networks and deterministic experience, expand the industry market, and pave paths for 5G to all economic sectors while serving users. The network has the following advantages:
Stable: The innovative 5GC Cross DC N-Way Redundancy, intelligent 100-fold flow control, and seamless batch upgrade of the telco cloud ensure high network reliability and availability.
Simple: The 2G/3G/4G/5G convergent core network helps carriers quickly construct networks and reduce operation costs.
Fast: Huawei 5G Core solution uses a series of MEC hardware and innovative technologies, such as UPF's plug-and-play, multi-dimensional dynamic slicing, network capability openness, and A/B test, to implement fast network deployment, service provisioning, application integration, and version rollout.
Intelligent: Intelligent technologies are introduced for network optimization,

proactive network fault prevention, and automatic fault recovery, achieving intelligent and automatic O&M.
Beneficial: Through smooth user migration, priority operation, and new communication solutions, Huawei 5G Core solution helps carriers ensure and improve user experience, and expand their 5G subscriber base. Public networks for private use, high-availability private networks, and industry solutions help carriers become the preferred partners in industry digital transformation.
Huawei will work closely with global carriers and industry partners to promote 5G commercialization and facilitate business success through continuous innovation. The Communications Industry Conference (CIC) & Annual Conference on Communication Technology have been held for 15 years, starting in 2006. The conferences gathered government officials, experts, and top entrepreneurs in the communication industry, being among the most esteemed industry events in China.

# Huawei FusionDC Leads Globally

Recently, Omdia, the reputable international research agency, released the report on 2019 Global Prefabricated Modular Data Center Market. According to the report, Huawei prefabricated modular data center solution ranks the world's No. 1 with a market share of 31%. Huawei has been leading the market for six years consecutively. As the leader in the market of prefabricated modular data center, Huawei keeps developing innovative solution. Huawei FusionDC, the new generation of prefabricated modular data center solution, innovatively integrates advanced technologies across several domain, like prefabricated modular building, AI, smart power, smart cooling and full-lifecycle digital management. FusionDC will help customer build future-proof data center facilities. FusionDC adapts fully modular design and have all modules prefabricated in the factory. It enables Lego-like fast construction and minimize on-site job. The solution only takes 6 months to deploy a 1000-cabinet Tier III data center and shorten TTM by at least 50%. With "One-layer One-DC" architecture, Huawei FusionDC supports flexible power density upgrade and vertical capacity expansion. The highly scalable architecture help one-generation facility be adaptable to two or three generation IT devices. Huawei FusionDC is compatible with the intelligent fan wall and indirect evaporative cooling system. With non-raised floor architecture and diffuse air supply, it features low PUE, high power density, and high space availability. In addition, the full-link converged PowerPOD and SmartLi lithium batteries reduces the footprint of power supply and distribution area by 30% compared with traditional solutions. Digital technologies are integrated into the entire process of Huawei FusionDC in planning, construction, operation, O&M, and optimization, which visualizes the design, planning and construction of data center, simplified O&M and delivers fantastic full-lifecycle using-experience. Meanwhile, FusionDC integrates multiple AI features including iPower,iCooling and iManager. These smart features provide data center with predictive maintenance, optimize energy efficiency in real time and improve O&M efficiency and resource utilization. Huawei FusionDC uses the prefabricated modular building technology into the structure design. Its design is strictly comply
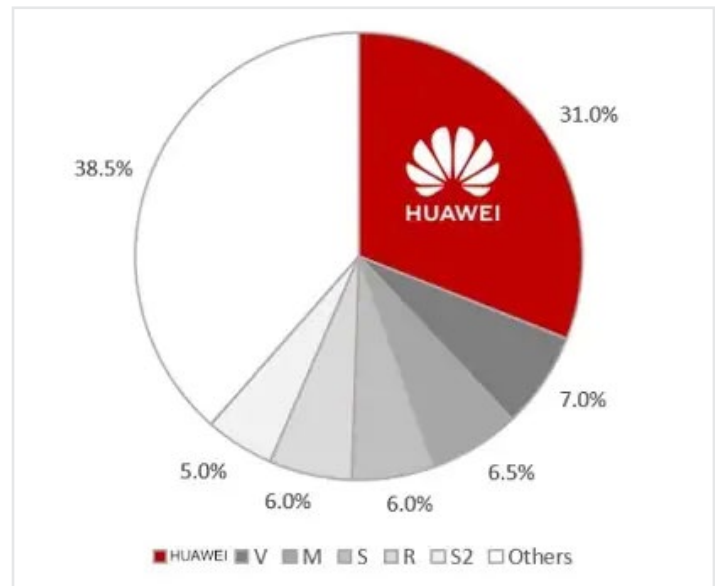


with both international and local building design codes and construction standards. With the patent PanShi steel structure, it can support five-layer stacking and maximum intensity-9 earthquake resistance. The specific anti-corrosion technology help prefabricated modules supports a design lifecycle of 50 years. Meanwhile, it is treated with fire-proof and water-proof technologies to protect data center against risks. The solid FusionDC will help data center run safely for long term. Huawei FusionDC prefabricated modular data center solution focuses on customer value and has won wide recognition from the market and customers. It has been applied to wide range of industries, like telecom carriers, cloud, colocation, government, transportation, finance, oil and mining, etc. Its footprint covers lots of large-size data centers like Huawei Cloud Dongguan, Ulanqab, Langfang Base, Qingdao Jimo Cloud, and Dubai International Airport Nigeria MTN, CloudExchange. In the future, Huawei Fusion will keep continuous technological innovation and help customer build simple, green, smart and reliable next-generation data center.

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# Interxion: A Digital Realty Company Collaborates with PCCW Global to Deliver Submarine Cable Gateway to Europe

Interxion: A Digital Realty Company (NYSE: DLR), a leading European provider of carrier- and cloud-neutral colocation data center solutions, has signed an agreement with PCCW Global to locate the Pakistan and East Africa Connecting Europe (PEACE) subsea cable system's termination and interconnection equipment in Interxion's MRS2 data center in Marseille, France.

The collaboration will enable low-latency access to over 160 connectivity providers along with multiple content, cloud, gaming and video streaming platforms. The high-speed, 15,000km PEACE subsea cable system will offer high capacity, low-latency routes connecting China, Europe and Africa. In addition to France, the cable will land in Malta, Cyprus, Egypt, Djibouti,

Kenya, Pakistan and other countries and regions, with onward terrestrial connectivity to China. The PEACE subsea cable will be the 15th subsea cable system to land in Marseille, further enhancing the value of network hubs deployed on PlatformDIGITAL®, Digital Realty's global infrastructure solution, in the region as enterprises seek greater resiliency

and performance for interconnecting global workflows. The collaboration represents a strategic expansion of both PlatformDIGITAL® and Console Connect, PCCW Global's Software Defined Interconnection® platform. Both platforms enable new and existing customers to deploy and manage hybrid IT services quickly and efficiently. Console Connect is available to Interxion customers at MRS1, MRS2 and MRS3, providing them with instant access to a global ecosystem of cloud, SaaS, UcaaS, IX and IoT partners, as well as extended coverage to more than 400 data centers in 47 countries worldwide. Interxion customers in Marseille can also access Console Connect's new Internet On-Demand service, which offers high performance Internet access on-demand across PCCW Global's leading tier 1 IP network. Interxion's Marseille campus is one of the world's leading digital hubs for intercontinental data traffic with a thriving community of numerous connectivity providers, digital media and cloud segments along with local as well

as global enterprises, providing customers with a strong foundation to execute their digital transformation strategies and scale globally. Mr. Sameh Sobhy, Managing Director, Middle East, Turkey and Africa, PCCW Global, said, "Interxion's fluid interconnection environment in Marseille enables the PEACE subsea cable to efficiently service the needs of the vibrant community of interest on the campus, while extending the system's reach to additional markets such as Frankfurt and Paris." Mr. Sun Xiaohua, Chief Operating Officer of the PEACE Cable International Network CO., LTD, said, "Selecting the right data center in Europe for the PEACE subsea cable to interconnect with is a critical component to ensure the project's commercial success. We know that with Interxion we have made the right strategic decision." The PEACE subsea cable will provide the most direct and high-capacity route from Asia to Europe. These features, combined with the exceptionally low-latency, are vitally important for a wide array of commercial and consumer

applications. Moreover, PEACE deploys a state-of-the-art "system-within-a-system" configuration that gives each party the required flexibility to design its own subsystem with reconfigurable bandwidth for different points over the lifetime of the cable. Mr. Mike Hollands, Senior Director, Market Development, Interxion, said, "This collaboration with PEACE and PCCW Global not only solidifies Marseille's future as an intercontinental hub with access to state-of-the-art communication services, but also affords Interxion's global customer base entry into new markets and the ability to link their often geographically dispersed infrastructure in close proximity to the connected community via PlatformDIGITAL®." Mr. Hollands added, "The PEACE cable is well placed to meet the burgeoning exchange of data and video traffic between Europe, Africa and Asia, enabling enterprises to extend their global workflows and efficiently execute their digital transformation strategies."

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# SpeedChecker Joins SAMENA Council to Extend its Commitment to Improve QoS and Digital Experience in the Region

SAMENA Telecommunications Council has announced that SpeedChecker, specializing in providing Telecom Operators solutions to measure end-users' internet quality as well as providing insights based on crowdsourcing, has joined its membership. Expressing his warm welcome to SpeedChecker on joining the Council's community of Telecom Operators, Tech Providers, and specialist firms, **Bocar BA, CEO & Board Member stated:** "SpeedChecker is playing an important role within the Industry to help end-users obtain a better understanding of how to make their Internet go faster and it empowers both Telecom Operators and Regulators with important insights to improve Internet infrastructure and make it more resilient. As SAMENA Council continues to contribute at both regional and global digital development fronts, the

role of its diversified group of Members such as SpeedChecker has become ever more important for assisting in making our digital networks more resilient and more inclusive." "SpeedChecker is extending its commitment to the Middle East and Northern Africa region by joining SAMENA Council", **said, Janusz Jezowicz, CEO of Ireland-based telecom analytics company SpeedChecker.** "We are looking forward to participating in SAMENA Council by contributing our insights into the quality of service and quality of experience of mobile operators in the region. With the Middle East Operators at the forefront of 5G investments, we look forward to providing them the next-generation telco analytics platform and data to drive efficient network expansion and improve connectivity for consumers and enterprises in the region." SAMENA Council believes policies and co-

operative approaches can help develop new methods and models of engagement among industry stakeholders, help frame future-friendly regulations and policies. Cross-stakeholder involvement should be fostered to incentivize and influence more investment in digital development, and the role of all digital space players should be given visibility. The digital ecosystem's sustainability challenges and the need for making better use of digital technologies, therefore, demand that the Private Sector, across the regions, collectively communicate on common issues and needs, while benefitting from SAMENA Council's advocacy support in building communication bridges with regional governments.

More about SpeedChecker
https://www.speedchecker.com

# Tech Mahindra Recognized for People and Environment Related Causes in 2020

Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services and solutions, progressed several people and environment related causes in 2020 In June 2020, Tech Mahindra signed a joint declaration with UN Global Compact urging governments to align their COVID-19 recovery efforts with the latest climate science. By moving towards a zero-carbon resilient economy, Tech Mahindra aims to reduce carbon footprint, emissions and will conserve energy using new-age technologies like internet of things, artificial intelligence and blockchain. CP Gurnani, MD & CEO, Tech Mahindra, said, "COVID-19 has allowed all of us to reconfigure our priorities and understand the importance of building a sustainable world - by focusing on healthcare and leveraging technology to enable new ways of working. At Tech Mahindra, we are committed towards building a sustainable business with responsibility and by creating value for our stakeholders, while also keeping in mind the long-term impacts on the environment. It's time to focus on and implement technology-led solutions that will help us reboot." Other significant recognitions included two Stevie® Awards for the company's response to the COVID-19 pandemic. Tech Mahindra received a Gold Stevie for innovative use of HR Technology and a Bronze Stevie for being the most valuable employer across Asia Pacific.

Tech Mahindra earned this recognition for its resilient and agile approach to the COVID-19 pandemic, which was centered around building safe, sustainable human experiences for our stakeholders. As a leading digital transformation provider, Tech Mahindra effectively leveraged its digital prowess to become a leader in the COVID-19 crisis while establishing best practices for its employees, clients and partner ecosystem. Harshvendra Soin, Global Chief People Officer and Head of Marketing, Tech Mahindra, said, "While technology for us is only an enabler, moments of truth for our associates are still 'human'. This recognition is a testament of how we adopted our HR systems to the new normal, to create positive experiences for all our employees. We will continue our focus on the safety and well-being of our employees as well as the society, truly reflecting our spirit to be a 'Company with a Purpose." The Stevie Awards for Great Employers recognize the world's best employers and the human resources professionals, teams, achievements and HR-related products and suppliers who help to create and drive great places to work. Tech Mahindra also re-emerged as a leader in the S&P Dow Jones Sustainability Indices (DJSI) 2020, one of the world's most renowned indices for ESG (Environmental, Social & Governance), for the sixth consecutive year. The company is also ranked amongst

top seven global companies in the "IT services & Internet Software and Services" segment. The DJSI ranking reflects Tech Mahindra's on-going commitment towards driving its sustainability agenda across environmental, social and governance (ESG) principles through specific initiatives such as improved processes and policies, audits and assessments, transitioning to low carbon economy, implementing water security projects, adopting circular economy practices, and investing in innovation and green technologies and solutions. Sandeep Chandna, Chief Sustainability Officer, Tech Mahindra, said, "We, at Tech Mahindra, take great pride in driving measures that focus on our core strategy of managing social and environmental impacts while improving operational efficiency and business profitability." In December 2020, Tech Mahindra secured a place on the prestigious 'A List' for tackling Climate Change and strategizing Water Security under the environmental themes covered by Carbon Disclosure Project (CDP). As the only Indian IT company to feature in the CDP Climate Change and Water Security 'A' Lists in 2020, Tech Mahindra is one of only 4 Indian companies in this prestigious list of 313 global organizations. Tech Mahindra is recognized for leading environmental transparency and strategic actions to reduce emissions and manage climate risks in the past year.



# Zain Bahrain Successfully Trials NB-IoT

Zain Bahrain, a leading telecoms operator in the kingdom, in collaboration with Ericsson, a world-leading provider of communications technology, announced the successful completion of trials of Narrow Band Internet of Things (NB-IoT) technology to support Bahrain in achieving National Telecommunication Plan (NTP) - 5 Machine to Machine (M2M) aspirations. The trial that started in Bahrain in early

August with Ericsson highlights Zain's capability on NB-IoT and the company's continuous investment to enhance its network by introducing and showcasing the massive potential the latest technologies will have in the kingdom, said a statement. NB-IoT is based on the 3GPP cellular standard and is designed to be a low-power, low-cost, high-penetration solution to enable low-bandwidth communications

as part of the Internet of Things, using a very narrow band of low-frequency spectrum. NB-IoT has an excellent range and object penetration capabilities making it perfect for remote monitoring of static or limited movement installations where data transmissions are small. Once deployed in Bahrain, the technology is expected to help accelerate the proliferation of IoT devices and develop the IoT ecosystem, the

advantages of which include coverage, long battery life, and cost-effective solutions to enterprises, it said. Commenting on the successful completion of the NB-IoT trial, Ali Al-Yaham, Director Technology at Zain Bahrain, said: "NB-IoT is the main pillar to enable IoT & M2M in a massive scale. Zain Bahrain's successful trial with Ericsson shows that NB-IoT has everything that is needed to become the new, interoperable standard in the machine-to-machine (M2M) communication sector. NB-IoT is expected to become an integral part of 5G, addressing the

## Zain Bahrain Partners With OSN

Zain Bahrain operator in the Kingdom recently, announced the signing of an exclusive partnership with Atyaf Home Entertainment, a one-stop entertainment service provider in Bahrain. Zain Bahrain provides its customers with OSN streaming subscriptions for a year. Through the OSN application, Zain Bahrain's customers will be able to enjoy complimentary viewing of their favorite shows, Disney+ Originals, HBO, Paramount+, kids' content & so much more. Zain Bahrain's customers will enjoy OSN streaming as part of their plans when they activate a new line or when they choose to upgrade their plans to eligible packages on postpaid, fiber, 4G & 5G home broadband, or mobile broadband packages. Customers can claim the offer within ten days of line activation or service upgrade, enabling the use of the service for a period of 1-year. Through OSN streaming, Zain customers will gain access to Arabic and English entertainment at a click of a button and the application is compatible with various devices, including the newly launched iPhone 12 series. Commenting on the partnership, Ammar Alketbi, Zain
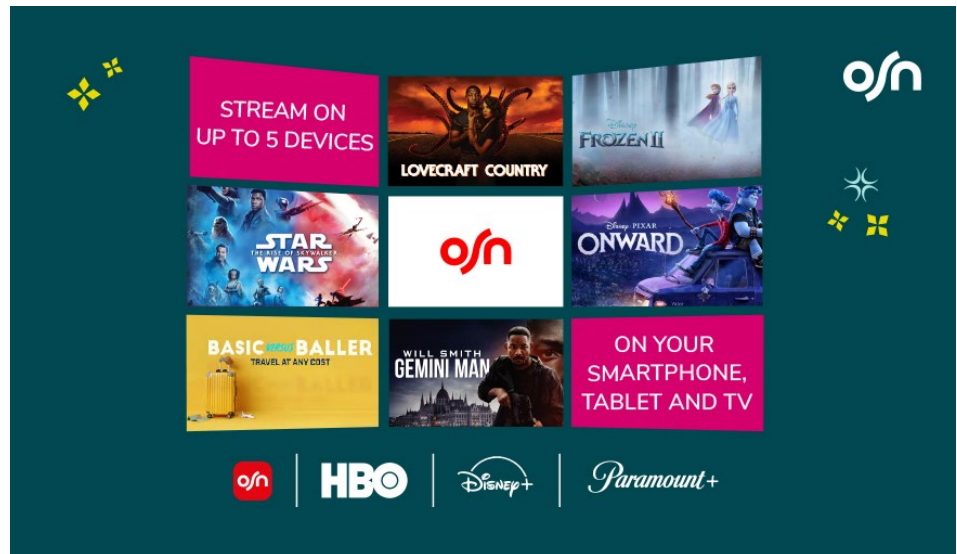


Bahrain Director of Consumer Marketing and Sales, said "We always believe in 'customer first' and accordingly bring in seamless and enhanced experiences that they can avail anytime and anywhere. This partnership will ensure that entertainment lovers in Bahrain have ample choice and easy access to unique content across a variety of different genres. We at Zain Bahrain are committed to providing world-class premium content and we are confident our subscribers will enjoy the streaming experience". Through the partnership, Zain Bahrain reinforces its commitment to offering its customers the latest technology & services, applications, and gadgets to enjoy a smarter way of living by constantly staying connected.

## Zain Bahrain Expands Global Network By 75%

Zain Bahrain, a leading telecommunications operator in Bahrain, expedited its expansion plans during 2020 – a year that proved to be significantly exceptional in terms of service continuity for businesses and consumers. During the year, the telecommunications giant expanded its global network by 75% accommodating for significant data growth across its mobile and fixed network, driven by remote working, virtual education and meetings and the increasing use of digital solutions. Zain leveraged its global network spread across 16 countries with more than 30 points of presence and with interconnections in more than 13 tier one internet exchanges across the world, from Singapore to Europe and passing through the MENA region to the US. In addition, to ensure the highest availability of its global network and to provide the lowest latency to its customers, Zain has spread its capacity across all submarine cables such as TGN, FLAG, GBI, EIG, IMEWE, GCCIA as well as all terrestrial cables in the region. Further to rapidly expanding its global capacity, Zain has ensured to host multiple content delivery networks, such as Google, Facebook and Netflix in order to better serve its Bahrain clients, it said. Zain B2B & Wholesale Director, Ali Mustafa, stated: "The pandemic has been dramatic in terms of human impact and lifestyle. However, we have been successful in rapidly expanding our international connectivity to meet the significant growth which has been supported by a solid infrastructure that Zain has in place. This has enabled us to deliver on our commitment to provide increased availability, reliability and state of the art service to our customers. During the pandemic, the Zain Global Network has demonstrated resilience by providing a diverse connectivity through utilization of all submarine and terrestrial cables, in addition to providing the lowest latency through its presence on multiple internet exchanges and points of presence across the world. Zain's global capability is not only limited to Zain Bahrain's customers, but is also extended to local ISPs supporting them in serving their customers and meeting the exponential growth in data traffic." -

# Zain Saudi Deploys 2nd Phase Of 5G Network

Zain KSA, one of the leading telecom operators in the Middle East region, is deploying the second phase of its 5G network in the Kingdom of Saudi Arabia (KSA) using Infovista radio planning portfolio. In line with Saudi Vision 2030 and in order to support the comprehensive digital transformation of the Kingdom, the plan for the spread and geographic expansion of Zain KSA's 5G network aims to deliver the new 5G services to every corner in Saudi Arabia. Consequently, Zain KSA rolled out its 5G network in its first phase on Oct 2019, and was ranked first in

its 5G rollout in the Kingdom, the Middle East, Europe, and Africa, and fourth globally. It is also recognized by ICT government authorities as the number one operator for covering all Saudi's administrative regions, having the largest 5G reach within governorates, and covering to date 50 cities enabled by more than 4,700 towers. This high level of commitment drove Zain KSA to select best of breed technologies. In order to optimize and roll-out its second phase of 5G network at a fast pace, where it selected Infovista, the leading

provider of network planning, testing, performance and application control solutions for that mission. Leveraging crowdsourced dataset, including a large volume of social media data, for traffic map creation, Infovista radio planning solution helped Zain KSA reach an unmatched level of accuracy when it comes to precise planning for densification in order to successfully introduce 5G in new cities of the Kingdom. As a result, Zain KSA maximized and accelerated the deployment of its innovative 5G network. Abdulrahman Al-Mufadda, Chief Technology Officer at Zain KSA, said: "As we accelerate the rollout of 5G services in the country with new cities being covered, we want to ensure we deliver best-in-class experience in the location of our customers and to better serve them. As well as provide residents and citizens alike with tools for innovation and development that will benefit the diversification and the competitiveness of the national economy." Faiq Khan, Managing Director, East Europe, Asia and Africa at Infovista said: "We are committed to helping Zain KSA deliver in its second phase the incomparable 5G experience to its customers throughout the entire Kingdom. Our innovative, market-leading radio planning software and optimization solution aims to support the fast and complete deployment of Zain KSA's 5G network as well as help Zain KSA in creating a paradigm shift in the telecommunications infrastructure by leveraging network automation capabilities." To reliably provide the best subscriber performance, capacity and coverage, Zain KSA benefits from the Infovista advanced End-to-End 5G planning capabilities, which covers radio to transmission in a synchronized and automated way. Infovista is a leader in modern network performance, providing complete visibility and unprecedented control over modern networks and their applications.

## Nokia, Zain KSA Expand 5G Strategic Partnership

Nokia and Zain Saudi Arabia have announced an expansion of their strategic 5G partnership with the rollout of 60,000 FastMile 5G Gateway 3.1 with eSIM across Saudi Arabia over the next twelve months. Nokia FastMile 5G gateways take advantage of the company's self-optimizing mesh Wi-Fi 6 solution for real time Wi-Fi performance optimization. The gateways ensure a quicker and easier account setup by using eSIM technology that allows users to avoid the process of acquiring and installing a physical SIM

card. Nokia claims the deployment is 'the first time eSIM has been used in a 5G fixed-wireless access solution'. Eng. Abdul Rahman bin Hamad AlMufadda, CTO at Zain KSA, said: 'Rolling out our new 5G fixed wireless access routers comes in line with our digital transformation and 5G expansion strategy reiterating our role in serving the Kingdom's society. Our mission from the start was to strengthen the 5G experience in the Kingdom into two levels: horizontally, concerned with spreading the 5G network across the largest possible

geographical scale. Vertically, through 5G fixed wireless access solutions to enable homes and offices with the best and most reliable broadband experience available. In alignment with Saudi Vision 2030 we will continue to invest further to enable the digital sector and the national digital transformation namely through: cloud computing, IoT, and AI; while simultaneously aiming to become the digital service provider of choice in the Kingdom.'

# Saudi Central Bank (SAMA) Grants Zain Fintech Subsidiary, 'Tamam', First Consumer Micro-Financing License in Region

Zain Group, a leading mobile telecom innovator in seven markets across the Middle East and North Africa announces that Tamam Financing Company (Tamam), the financial technology (fintech) subsidiary of its operation in Saudi Arabia has been officially licensed by the Saudi Central Bank (SAMA) to provide micro-financing services to consumers across the Kingdom. This makes Tamam the first entity in the Kingdom and the region to be licensed by a regulator to offer consumer micro-loans via a fully digital customer experience, through a mobile app. The licensing follows the completion of an eighteen-months testing period within SAMA's Regulatory Sandbox. The rigorous process saw the app and the service vetted for functionality, security, and compatibility with customer user profiles in Saudi Arabia, in line with the Sandbox's guidelines. The platform displayed high product viability and strong demand throughout testing and obtained PCI-DSS accreditation which protects the security of the digital infrastructure and data. Established in 2019, Tamam aims to increase financial inclusion in the Kingdom in line with the Financial Sector Development Plan, which forms part of Saudi Arabia's Vision 2030. The platform provides individuals requiring financing the opportunity to immediately avail a Shari'a-compliant consumer micro-finance. The end to-end Shari'a approved process takes less than 5 minutes from downloading the app to receiving the financing amount based on the user credit profile. Commenting on the licensing of Tamam, Bader Al-Kharafi, Zain Vice-Chairman and Group CEO, Zain KSA Vice-Chairman and Tamam Chairman said, "We are extremely proud of the teams at Zain Group, Zain KSA and Tamam in the successful delivery of this innovative Shari'a compliant service that provides consumer micro-finance in

less than five minutes through a mobile app. Innovation is key to our ongoing developments and investing in viable digital services such as the fintech sector is a strategy we have launched a few years ago with Zain Cash and continue to implement across our markets as a critical component to our sustained evolution and success." Al-Kharafi continued, "Zain KSA's evolution to becoming a digital lifestyle provider requires us to take bold moves in new digital areas, and we are pleased at how the Saudi Central Bank and the Kingdom's wider community are extremely receptive to such developments. We believe the thorough testing achieved during the eighteen months of trials has made our platform the most robust of its kind, and we look forward to increasing the number of consumers benefiting from micro-financing services." Fintech services remain largely under-penetrated in the Middle East, so the establishment of the first consumer micro-financing platform in Saudi Arabia represents a fantastic opportunity for growth. Sultan Al Deghaither, Zain KSA CEO and Tamam Vice-Chairman & MD, commented, "The license granted to us by the Saudi Central

Bank is a quantum leap for Tamam and strengthens its position as a leading provider of financial technology solutions locally as well as regionally. Innovation and investment in digital services, such as fintech, is at the heart of Zain KSA's vision to be the leading provider of digital services in the Kingdom. The company's ambition requires us taking advantage of new areas of digital growth, playing our key contributory role in the Kingdom's 2030 Vision." Al-Deghaither thanked, "His Excellency Dr. Ahmad bin Abdulkareem Al-Kholifey, Governor of the Saudi Central Bank, and the relevant divisions of the establishment, for their proactive efforts to promote innovation in the fintech sector in the Kingdom. I also thank and recognize the efforts of the fintech team at Zain Group, which assisted in realizing this opportunity and scaling it to its current level." Zain Group's activities in fintech commenced with the award-winning Zain Cash mobile money platform that has facilitated the disbursement of monetary support through eye scans to vulnerable individuals by the UNHCR, and it continues to expand, impacting people's lives for the better in Iraq and Jordan.
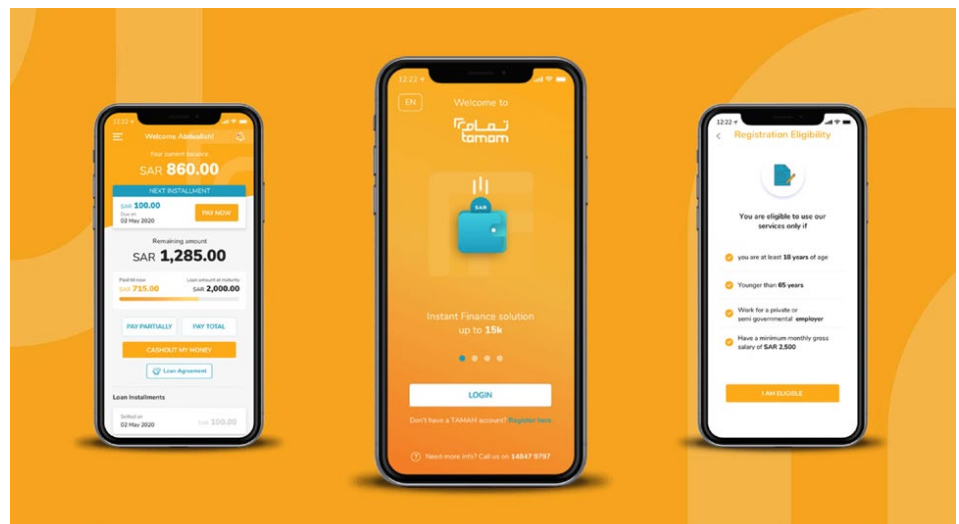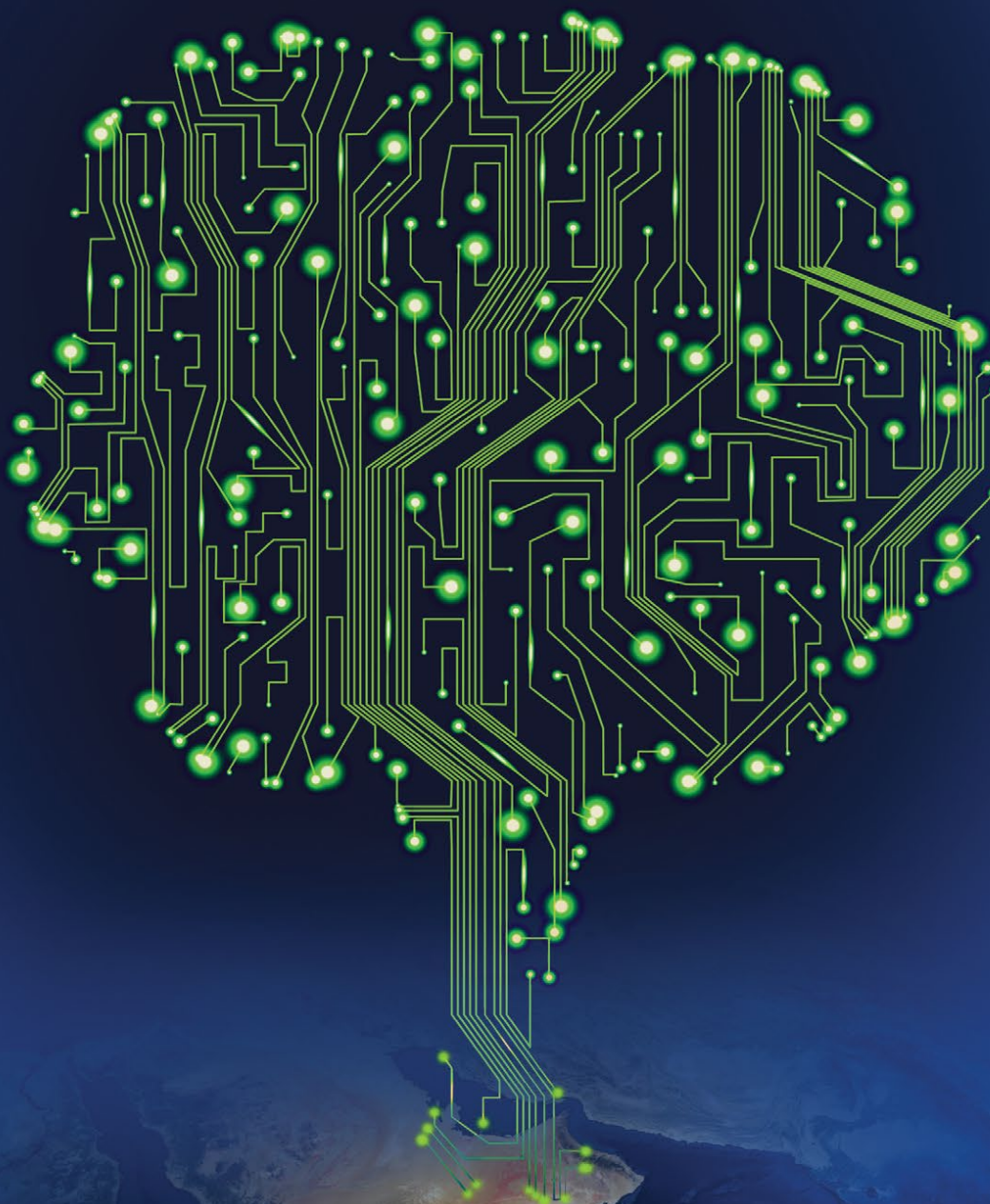
# Omantel: Empowering Economic Recovery Through Sustainable Digital Transformation

## Robust and Visionary Roadmap for Future Generations

**Baha Mohamed Ridha Al Lawati**
Vice President Enterprise
Omantel

عمانتل
Omantel

"A sustainable, digital economic recovery from the global slowdown which was accelerated by the COVID-19 pandemic." This was the tone, vision and strategy of the Framework Working Group of the G20 2021 which met in January.

The pre-COVID years too had been showing a marked shift towards digital & ICT Services; the Digital Economy Report 2019 by United Nations Conference on Trade and Development stated that digital economy accounted for between 4.5 and 15.5 percent of the world's GDP in 2019.

At the start of 2020, over 4.5 billion people were using the Internet, with 3.8 billion social media users and nearly 60 percent of the global population online, says the Digital 2020 Global Overview Report, citing the World Internet Development Report 2020. These figures indicate a highly digital future, that will form the backbone of every country's economic progress.

Oman, way before COVID-19 impacted economies, took solid steps towards its own digital transformation aiming 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.

Oman's national goals, even before the spread of COVID-19, are parallel to combined global economic objectives of a strong, balanced, inclusive and sustainable economic recovery that hinges on digital solutions.

The country has been readying itself for this future since 2003 in the form of its Digital Transformation Strategy. The Arab Monetary Fund has underlined how Oman, through this strategy, has been focusing on developing society's capabilities, including individuals' skills, and extending government applications and smart services to help establish a comprehensive system of ICT-based and ICT-reliant industries.

> *Omantel has provided 4IR (Fourth Industrial Revolution) technologies such as the Internet of Things, cloud computing, artificial intelligence, unified communications, smart cities, block chain, and most recently, the 5G network, other than partnering with various world-leading firms, to make information and communications technology more achievable, accessible and affordable.*

In this context, Omantel, the leading integrated telecommunications company in Oman with innovative and advanced ICT and digital services, became the Atlas bearing the weight and responsibility of a digitally powered economy. As an enabler, Omantel has been astutely carrying the responsibility of digitally channelling economic recovery and growth by reducing the connectivity gap for users, communities, areas and businesses.

Powered by government support in the form of policy updates and an open-minded approach, Omantel has been bolstering the public and private sectors with its reliable, fast, state of the art and efficient infrastructure. Omantel has provided 4IR (Fourth Industrial Revolution) technologies such as the Internet of Things, cloud computing, artificial intelligence, unified communications, smart cities, block chain, and most recently, the 5G network, other than partnering with various world-leading firms, to make information and communications technology more achievable, accessible and affordable.

### State of the art infrastructure, services and acquisitions

The Company has continuously expanded its services bouquet targeting specific sectors, and embarked upon several initiatives ranging from developing Intelligent Public Infrastructure, Smart Building Management Solutions, Digital Banking and Healthcare Services Infrastructure, Unified Collaboration Solutions, Cloud, High Performance Computing, Artificial Intelligence solutions, Machine Learning, Big Data Analytics, Deep Learning and Smart Contracts. Omantel has worked round the clock to adopt and implement the ISO 27701 for privacy and data protection and have introduced latest and sophisticated cyber security services and solutions for the business to protect and mitigate their ever expanding threat surface in today's digital age.

These services helped the company in equipping Special Economic Zones with the latest in the field of ICT, and positioned Omantel as a productivity catalyst. Its growing presence in the international Subsea Cable market has facilitated growth of cloud, content, and next-generation communication globally which forms the backbone of the 4th Industrial Revolution worldwide.

Omantel's Submarine cables investments totalling over $500 million have made Oman one of the most connected countries in the world and has positioned Omantel as one of the largest wholesale companies in the Middle East and North Africa. Prominent internet content providers such as Google, Akamai, L3, Microsoft and other major international companies host their content in the Sultanate, making access to their content faster for subscribers of Omantel and subscribers of other regional telecom companies.

Omantel has been growing in every sphere, be it in operational abilities or financial astuteness and has been itself pursuing revenue diversification streams. Omantel acquisition of 21.9% stake in Kuwait-based Zain Group made Omantel the second largest shareholder in Zain Group, created its presence in key large regional markets like Kuwait, Iraq and Saudi Arabia. The acquisition has also ushered in synergetic opportunities between the two Groups in the commercial, new business developments and operations spheres.

Omantel has also transformed its financial indicators, a key example of which is an exponential 43% YoY growth in 2019 consolidated net profit compared to 2018. Besides, multiple market exposures also re-rates the Omantel's business risk and growth profile.

Another milestone in Omantel's journey was making Oman one of the most connected countries in the region. This was achieved due to the successful implementation of Omantel's strategy of capitalizing on the Sultanate's unique characteristics including the geographical location. The massive international subsea connectivity of Omantel (i.e. access to more than 20 subsea cables) proved to be a game changer and enabled Omantel to become a leading regional telecom player. Combined with a number of significant wholesale projects that are currently progressing, Omantel is steadily contributing into making Oman a global telecom hub in the near future.

And since driving sustainable economic growth and diversification is among the company's main strategic objectives, Omantel rolled out its 5G services in late 2019, providing an environment for small and large enterprises to move towards efficiency through Internet of Things M2M, Cloud data etc. The verticals where 5G can be deployed across GCC and the MENA region range from aviation and logistics to oil and gas.

> *Omantel's Submarine cables investments totalling over $500 million have made Oman one of the most connected countries in the world and has positioned Omantel as one of the largest wholesale companies in the Middle East and North Africa.*

Furthermore, Omantel has continued to lend its support to SMEs, which are emerging to play in important part in Oman's economic growth strategy. These new businesses are technologically aware and savvy, disruptive in their approach and rely more on digital solutions for success.

**Innovative ICT solutions empowering the society to counter COVID-19 challenges**

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.

> *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.*

Through its rapidly implemented measures, Omantel led the way in digital adoption. The Company allayed general security concerns over digital processes through its efficient, innovative and tailor-made solutions for individuals, private and government entities. This not just enabled businesses and powered the economy, but also the Company's own manpower to work remotely, flexibly without hindering service delivery.

One of the case studies was the back up Omantel's call centre infrastructure provided for the Ministry of Health's crucial COVID-19 response. The Company's ICT solutions like the Home Doctor and Virtual Clinics are complementing the hard work of frontline health staff. Home

Doctor Solution helps both healthcare providers and patients to continuously monitor patients' health condition online around the clock. The Remote Consultation Telemedicine (Virtual Clinic) has helped overcome geographic barriers to healthcare, especially for specialized providers where patients and doctors can meet virtually for consultation.

Other than this, Omantel has lent its technical and infrastructural resources for distance learning needs of the Ministry of Education. Omantel's ICT devices secured commercial and service establishments by checking temperature, detecting face masks and keeping a people count digitally. Its Artificial Intelligence-enabled automated chatbots have taken over some call center duties.

Omantel's digital solutions have created contactless work premises with alerts that replace Fingerprint/Badge Scanner through Bluetooth and GPS. Omantel has also facilitated the highly secure e-Signature service that eliminates the need for physically signing or sending documents, by replacing the system with digital and mobile processes that enable signature on any device.

Needless to say that Omantel revolutionized the Working from Home set-up by offering and facilitating platforms like Cisco Webex and Microsoft Teams, which are both virtual meeting and collaboration tools, apart from the Company supported popular and successful In Country Video Conference solution Igtimaati, which also digitizes minutes of meetings. All these have kept the efficiency and network speed uninterrupted, thus helping the economy continue on its path of growth with minimal impact.

**Contributing to Oman's digital future**

A World Economic Forum study showed that returns on digital investments and in new technologies is positive overall, with 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.

Accordingly, Omantel's pathbreaking ICT solutions have lent these policies a big push. The Company continues to throw its full technological support behind the economy as businesses, government and private offices and academic bodies prepare themselves for the new normal.

The pandemic accelerated digital adoption and forced the reinvention of processes and business models in Oman. Thus, building on these advances is the best course of action to kickstart growth, the report indicates. Omantel has been playing an empowering and leading national role in this direction with continued reinvention, rethinking and investment for every sector. For example, blockchain is being piloted in the logistics sector as supply chains become more complex. Oman's airports and sea ports are at the forefront of embracing digital dependence through 5G, robotics, Drone and other technologies to improve security, customer experience and operational efficiency.

> *The pandemic accelerated digital adoption and forced the reinvention of processes and business models in Oman. Thus, building on these advances is the best course of action to kickstart growth...*

To sum up, digital economies, post COVID-19 will thrive by catering to personalised needs through solutions that offer easy transactions and real time functionality, thus creating more growth avenues and profits. A trickle-down effect of this on the people will be seen in the form of sustained economic prosperity. Therefore, it is expected that Omantel, the digital partner of choice in the consumer arena as well as for public and private sector businesses in Oman, will always continue to empower the Sultanate's digital future and pave the way for Generation Z and beyond.

# Shield solutions

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## REGIONAL NEWS

# Bahrain Among Top Countries Protecting Biometric Data

Bahrain is among the top five countries globally for protecting biometric data, according to a new research. Bahrain scored 20/31 making it the third most considered in terms of collection, storage and use of biometric data. Turkmenistan with a score of 25/31 tops the list, while China, scoring 2/31 is the worst country for biometric data collection and use, said the Comparitech survey. The lower the score, the more biometric data is collected and used. The countries that received the lowest scores overall showed a lack of regard for the privacy of people's biometric data. Through the collection, use, and storage of biometric data, these countries use biometrics to a severe and invasive extent, it said. From passport photos to accessing bank accounts with fingerprints, the use of biometrics is growing at an exponential rate. And while using your fingerprint may be easier than typing in a password, just how far is too far when it comes to biometric use, and what's happening to your biometric data once it's collected, especially where governments are concerned? Comparitech updated its biometric data study to include 96 countries and found

out where biometrics are being taken, what they're being taken for, and how they're being stored, while also exploring the latest biometric updates amid the ongoing pandemic. There is huge scope for biometric data collection, so it has identified eight key areas that apply to most countries (so as to offer a fair country-by-country comparison and to ensure the data is available). Each country has been scored out of 31, with low scores indicating extensive and invasive use of biometrics and/or surveillance and a high score demonstrating better restrictions and regulations regarding biometric use and surveillance. Then, to see how current biometric use for Covid-19 purposes affects a country's score, it has deducted a point for each area biometrics have been introduced as an emergency control measure (six areas in total). While China topping the list perhaps doesn't come as too much of a surprise, residents of (and travelers to) other countries may be surprised and concerned at the extent of biometric information that is being collected on them and what is happening to it afterward, says Comparitech study.

Key findings:
- Many countries collect travelers' biometric data, often through visas or biometric checks at airports
- The vast majority of countries use biometrics for bank accounts, e.g. fingerprints to access online app data and/or to confirm identities within the banks themselves
- Despite many countries recognising biometric data as sensitive, increased biometric use is widely accepted
- Facial recognition CCTV is being implemented in a large number of countries or at least being tested
- EU countries scored better overall than non-EU countries due to GDPR regulations protecting the use of biometrics in the workplace (to some extent)
- Many of the top-scoring countries don't necessarily receive their high scores for "best practices" but because they are developing nations that haven't moved toward technology-based solutions in certain areas.



# Nepal Telecom Applies for Mobile Money License

Nepali Digital Payment Company, a joint venture created by state-owned telecoms provider Nepal Telecom (NT) and Rastriya Banijya Bank, has applied to Nepal Rastra Bank (NRB) – Nepal's central bank – for a license to operate a mobile money service, reports Nepalitelecom.com. NT managing director Dilli Adhikari has

reportedly confirmed that the company has implemented all the necessary technical and legal infrastructure within the six-month timeframe agreed with the NRB in July 2020. The bank will now monitor the system before granting final approval for the service, which is expected to begin operating in late February or March.

Nepal's telecoms regulator, the Nepal Telecommunications Authority (NTA), approved directives governing mobile money services early last year, enabling users to make payments and transfers via a digital account linked to their mobile number.

# TRA Concludes the 1st Edition of the Winter Innovation Camp

The Telecommunications Regulatory Authority (TRA) concluded the 1st edition of its virtual winter innovation camp for UAE citizens and GCC citizens residing in the country, by honoring the winners and best projects owners, in the presence of H.E. Mohammad Al Kitbi, Acting Deputy Director General for the Support Service Sector, the winning students and their parents. The winter camp aimed to prepare youth and leverage the winter break to master robotics skills and artificial intelligence techniques, with a focus on ICT. This camp complemented the latest edition of TRA summer innovation camp, which was held virtually and in which students were introduced to the various electronic parts and tools that are essential in electronics industry. They learned how to equip a home technical lab that contains many tools, including sensors, control and electronic circuits, in addition to understanding and installing the robot parts in the correct sequence, and learning the basics of programming and how to use it to control the robot, as well as other skills. In his speech at the ceremony, H.E. Mohammad Al Kitbi, Acting Deputy Director General for the Support Service Sector, said: "We aimed, through the winter camp, to leverage time and introduce students to future sciences, enabling them to deal with the latest technologies, and learn about robotics and artificial intelligence professionally and scientifically. The exceptional circumstances that the world is witnessing did not prevent us from organizing this camp, as we overcame them by taking advantage of the advanced ICT infrastructure and technologies that the UAE provides for all its citizens." H.E. Al Kitbi added: "Today I meet with you with full pride of the enthusiasm we have witnessed among our children in acquiring new skills. With this winter camp, we add a new chapter to our continuous work in building a brighter future for our children, a future that will be managed by an educated generation capable of comprehending the vocabulary and concepts of science, dealing with it and leveraging it in the service of its homeland and society. Today, we stand just steps away from celebrating the golden jubilee of our glorious union, and as we live in the next fifty, we confirm that the success of our plans and strategies depends greatly on the people of this country. The next fifty start with you, you are the hope and the goal, you are the bet of our wise leadership and your honorable parents."

# Bangladesh to Export Bandwidth to Saudi Telecom

The Bangladesh Submarine Cable Company Limited (BSCCL) is set to export 600 Gbps (gigabits per second) bandwidth worth US$3.6 million to Saudi Telecom. The capacity will be transferred from the western part of the core cable of the SMW-5 submarine cable to Yanbu in Saudi Arabia through Marseille in France, BSCCL Managing Director Mashiur Rahman told the FE. The transfer will be implemented following the signing of a formal agreement between the two parties. In this regard, Mr. Mashiur said that the agreement will be signed in March next. Both parties are now finalizing the details of the agreement. The deal will help reduce the operation and maintenance cost of BSCCL on SMW-5 submarine cable, according to a company release. Bangladesh got connected with the first undersea cable, South East Asia - Middle East - Western Europe 4 (SEA-ME-WE 4), in 2006 and with the second one, SEA-ME-WE 5, in 2017. BSCCL is a core telecommunications service provider and international submarine cable operator of Bangladesh. The company emerged in July 2008 as a public limited company. The Bangladesh government has 73.84 per cent stakes in the company, institutional investors have 11.58 per cent, foreign investors 2.72 per cent and general investors 11.86 per cent stakes.

# Saudi Arabia's ICT Market to Top US$32 Billion In 2021

Overall spending on ICT in Saudi Arabia is set to reach $32.9 billion this year, up 1.5% on 2020, according to the latest predictions revealed last week by International Data Corporation (IDC). The announcement came as IDC hosted the virtual edition of IDC Directions Middle East, Turkey & Africa. Speaking at the event, the firm's regional director for Saudi Arabia and Bahrain, Hamza Naqshbandi, announced that spending on IT in the Kingdom will reach $11.1 billion in 2021, with services and devices accounting for more than half of the market. He said that IT spending in the country (including mobile devices, storage, hardware, systems, and software) will grow 4.2% year on year, with the government, finance, and communications sectors to spend in excess of $3.6 billion on IT in 2021. "IDC expects that emerging technologies will continue to play a critical role in the post-pandemic digital economy as business and IT leaders in Saudi Arabia look ahead to 2021 and the new normal,"

said Naqshbandi. "Saudi Arabia's vision for a smart economy relies heavily on digital transformation initiatives, an area the government has always focused on and heavily invested in long before COVID-19. The ongoing pandemic has validated the country's strategic direction, acting as a catalyst to spur the adoption of emerging technologies." The online event hosted more than 1,000 senior executives from the region's most influential technology vendors, telecommunications operators, and IT service providers. It offered an unrivalled immersive experience for participants as they seamlessly engaged in content-rich presentations and panel discussions, connected with exhibitors via video chat, and interacted key industry players in designated networking zones. Expert speakers explored the latest trends in cloud, artificial intelligence, cybersecurity, the Internet of Things, and intelligent automation, to name just a few. Providing a unique opportunity to interact

with IDC's industry-leading analysts, the event included a session titled 'The Next Phase of Saudi Arabia's Digital Aspirations: Opportunities and Considerations'. This dedicated session provided senior ICT industry executives with in-depth analysis of the latest trends and developments shaping the Saudi ICT market, helping them to identify key sectors, segments, and geographies to target in the coming years. Accompanied by the very latest forecasts and predictions, discussions focused on the impact of disruptive technologies on the Saudi market and contextualized the impact of the new normal on the local ICT environment. IDC experts highlighted that the public sector will remain the Kingdom's largest in terms of ICT spending through 2024, followed by finance and communications, with education and healthcare expected to be the fastest growing sectors over that period.

# Egypt Aims to Achieve Comprehensive Digital Transformation of All Non-Banking Financial Activities

Financial Supervision Authority is currently aiming to achieve a comprehensive digital transformation based on the use of modern technology and tools in providing all services in non-banking financial activities, Head of FRA Mohamed Omran said. These activities include money market activities, the stock exchange, real estate finance, micro, medium and micro finance, consumer finance, insurance and financial leasing and factoring, Omran clarified. This came during the press conference held via video conference technology to announce the results of non-banking financial activities in 2020. Omran said that the comprehensive digital transformation will contribute to expanding the base of financial inclusion and reducing the cost of obtaining these services. "The authority will also focus on raising societal awareness of non-banking financial services available to obtain financing for all segments of society, especially

marginalized groups, which will increase their productivity and raise their standard of living, and the authority will also spread sustainability applications and increase community awareness of the green economy," he noted. The Head of Financial Supervision stressed that the authority will continue to provide support for any efforts that would promote non-bank financial services and expand its base and spread, pointing out that the past year 2020 was the hardest year in human history due to the outbreak of the Corona virus, which prompted countries of the world to spend long times In attempts to contain the virus, which has caused terrible damage to individuals and societies large and small, especially the most vulnerable. He pointed out that economic activity in the world suffered greatly due to the imposition of tight restrictions on movement during the first half of the year, in order to stop the spread of the virus, until the International

Monetary Fund launched the title "The Great Closure" on one of its reports of this closure, which led to a significant reduction in global growth. The results could have been much worse had it not been for the gradual return to normal activity faster than expected after most countries of the world reopened their doors for the resumption of economic activity in the early second half of the year. He warned that the Egyptian state was already able to achieve a growth rate of 3.6 percent during the fiscal year 2019-2020, due to the country's success in implementing a package of urgent and unprecedented measures to revitalize the economy during the pandemic through financial and monetary policies and regulatory measures. In addition, it continues to implement the financial and economic reform program it started in 2016.

# Oman Australia Cable Ready for Installation

The Oman Australia Cable (OAC), which will span 9,800 km between Muscat and Perth, hit another significant milestone in its construction with SubCom confirming that the fiber has now been fully manufactured. Load #1 of 2 is now being loaded onto a freighter to transfer to the main-lay ship for installation beginning in March 2021. Final splice for the OAC is on target for December 2021. Once completed, OAC will be the only submarine cable directly connecting continental Australia and EMEA, providing the first secure, diverse, express and lowest latency route between the two continents. OAC is designed with 4 fiber pairs and a total system capacity of 54 Tbps. Bevan Slattery, founder of SUB. CO said, "2020 has been an extraordinarily challenging year to commit to building a cable of this scale, but I am delighted that we have achieved 100% of cable production and completed the first load system assembly testing within the original product schedule. This could not have been done without the assistance of our fantastic partners: SubCom." David Coughlan, CEO of SubCom noted, "We knew that this was going to be a task when we committed to the program back in February 2020, but we also knew we would be up for the challenge. Despite everything that



THE OMAN AUSTRALIA CABLE
A NEW EXPRESS SUBSEA CABLE CONNECTING EMEA TO AUSTRALIA AND BEYOND
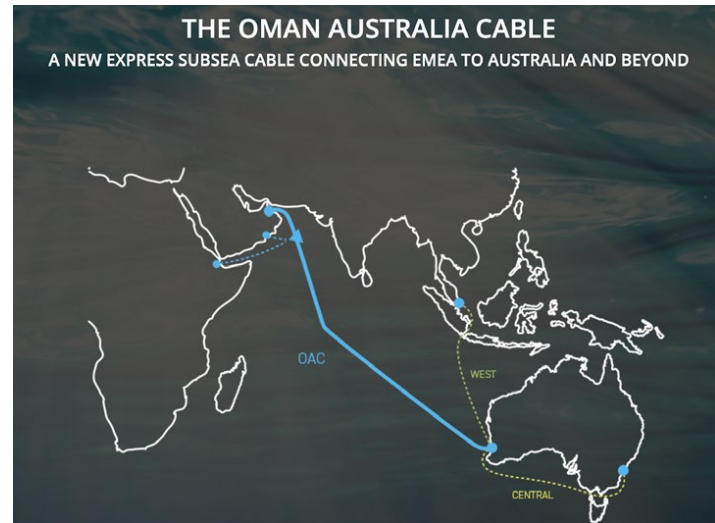
has been thrown at us, our team has done an exceptional job to keep this project going, on time, on budget and most importantly, safely."

# Mobile Data Users in Nepal Higher Than Wi-Fi

A recent Nepal Telecommunication Authority (NTA) report has shown higher mobile data users than WiFi here in Nepal. This is based on the Management Information System (MIS) report of NTA for the month of Kartik 2077. The MIS of last Kartik highlighted that there are currently 23,921,180 broadband internet users. Among the internet users 17,575,419 surf the web using mobile data. Fixed broadband users in Nepal are around 63,45,761. The table illustrates internet distribution in Nepal among different technologies.

| Mobile Data | Wired Internet |
|---|---|
| 1,75,75,419 | 6,11,999 |
| Fixed Broadband | Wireless Internet |
| 63,45,761 | 26,662 |

Likewise, wired broadband has 6,11,999 users while 26,662 subscribe to wireless protocols. As of now, mobile data users are ranked at the top with 76%, fixed wire 26%, and fixed wireless at just 1%. NTA's spokesperson Min Prasad Aryal believed the high user number of mobile data is due to mobility and convenience. Smartphone users have grown increasingly in Nepal. Source. Due to portability, mobile data is an easy choice for smartphone users. The users can simply buy a sim and in a few clicks, the internet is on. It is not easy to

develop infrastructures for fiber net. Thus, internet users are mostly relying on mobile data. Smartphones give users portability and practicality which fiber or wireless system can't afford instantly. Furthermore, Aryal pointed out that due to network expansion limitations, Fiber net has not been used widely all over the country. To use a fiber net, you need to reside at specific fixed locations (Home or office) while smartphone users can use the internet on-the-go. The advantages of mobile data easily trump over fiber net when it comes to feasibility at the users' end. Find Wifi Vs Mobile data for internet connectivity. Internet usage from the cellular network doesn't have a long history in Nepal. However, it has quickly steadily improved in the country. So far there are three companies providing mobile communication services namely Nepal Telecom, Ncell, and Smart telecom. Chaudhary Group is also ambitious about launching its own version of Jio services in Nepal, with the brand name CG Telecom. But its availability in the future is unsure. Among the existing three, Nepal Telecom enjoys the most subscribers that are 1,06,19,143 at present. Privately owned Ncell has 67,56,515 users while Smart Cell has drawn only 1,99,761 users so far. Ncell

and Smart Cells are just Mobile operators whereas Nepal Telecom provides various services such as FTTH, ADSL, WiMAX, etc. As it seems, Nepali internet community is not only expanding technology it is also contributing to a healthy competition. As smartphone users are increasing daily, so the demands for the internet and the communications companies and ISP are doing their best to afford the service at reasonable prices and raise their customes base. Internet penetration has reached 80% across the country. At present, Nepal Telecom has been providing copper-based ADSL internet service in rural areas whereas Fiber-based FTTH is the running service in urban areas. While the telecommunication services display wide use of broadband connections, in terms of bandwidth consumption, Wi-Fi stays well ahead. Heavy internet users usually surf from urban areas. Audio/Video streaming, downloading, and online gaming over Wi-Fi (home broadband) consume far more bandwidth in Nepal than that of cellular networks. Nepal Telecommunications Authority (NTA) released the above statistics based on the distribution of wireless, cable, fiber, and 3G and 4G internet services.

# Etisalat and Du Announce Strategic Partnerships with Emaar Properties to Provide Telecom Services to Local Communities in the UAE

du, from Emirates Integrated Telecommunications Company (EITC), and Etisalat, from Emirates Telecommunication Group Company, have announced the finalization of their master developer agreements (MDA) with Emaar Properties. As part of the new partnership, both operators will, through the Taawun infrastructure deployment initiative, cover Emaar's major projects, providing essential telecommunications infrastructure. Customers will be able to choose their retail telecom operator of their choice and the arrangement will further support to the government's long-term vision in developing smart infrastructure and establishing a robust telecom sector for master developers. Under the MDA, du and Etisalat will install, maintain, and oversee state-of-the-art fixed telecom services and solutions across various sites, including Al Aryam Phase II, Lagoons Phase 1, Dubai Creek Harbour, The Valley by Emaar, Emaar Dubai South, Mina Rashid

Properties, Dubai Hills Estates and Arabian Ranches Phase 3. Saleem AlBlooshi, Chief Technology Officer, du, said, "We are delighted to have the opportunity to work alongside Emaar Properties, a company whose profile, reputation, and history of sustained success across a multitude of projects offers an insight into its vision and ambitions for the future. With the finalization of this MDA, Emaar and its customers will benefit from the broad range of services we provide, all of which are dedicated to delivering convenience and empowering residents, communities, and the country. As an integral driver of the UAE's economic, social, and digital transformation, we are driven by our commitment to our partners." Saeed Al Zarouni, Senior Vice President, Mobile Network, Etisalat, said, "Our collaboration with Emaar will drive an array of opportunities for both parties in the years ahead. At Etisalat, we are committed to the

total digital transformation of consumer and business customer experiences in line with our overall strategy and vision of 'Driving the Digital Future to Empower Societies'. By working with Emaar, we will combine our creativity, ambition, and insights to meet and exceed commitments to our customers." Commenting on the partnership with du and Etisalat, Ahmad Al Matrooshi, of Emaar Properties PJSC, said, "Delivering a world-class telecommunications infrastructure is an integral part of Emaar's commitment to our customers. The Taawun partnership not only delivers a choice for customers, but it also guarantees the best-in-class in voice and data services, capable of catering for the needs of generations to come. The partnership is aligned with UAE Vision 2021 and smart city development in Dubai, which has helped the country to become one of the world's most connected and sustainable nations."

# New Platform Launched in Oman to Help Record Public Services Complaints

The Authority for Public Services Regulation (APSR), has launched the 'Hasil' platform to help subscribers submit their complaints. A statement issued online by APSR said: "The Authority has provided a complaints referral service directly through the offices of supply and distribution companies or the companies' contact centers. The companies, in turn, will file the complaint directly on behalf of the subscriber to the Authority in accordance with procedures for considering subscribers' complaints." Subscribers can also submit their complaints through the complaints platform 'Hasil' on the authority's website apsr.om To submit your complaint, visit the complaint platform:
1- Enter the required information.
2- You will receive a text message confirming the submission of the complaint,

containing the complaint number and the time period for communication with you.

3- Follow your complaint through the platform.
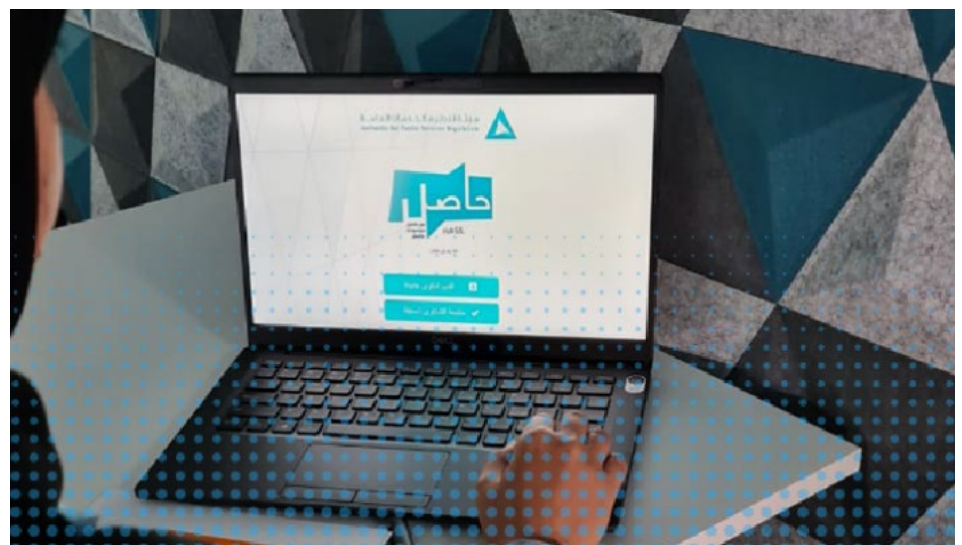
# Pakistan To Get 5G by 2022-23

Pakistan has kick-started its journey to make the most advanced 5G internet commercially available to consumers in 2022-23, which would accelerate the download speed 10 times to one gigabit per second (Gbps) and widen economic activities significantly in the country. The government of Pakistan is developing a comprehensive roadmap for 5G technology readiness in the country. It is aimed at auctioning "spectrum for...5G services in fiscal year 2023," the Pakistan Telecommunication Authority (PTA) said in its annual report 2020. The Covid-19 pandemic proved a blessing in disguise as the digital economy widened multi-fold during these testing times in Pakistan. The crisis has prompted regulators and stakeholders to improve digital infrastructure. Earlier, mobile phone service providing firms successfully conducted a test trial of 5G services under limited environment and on non-commercial basis in 2019 and 2020. Pakistan stands the first country in South Asia to test 5G "with a recorded download speed of more than one Gbps." The tested speeds stand 10 times high compared to 100 megabits per second (Mbps) on 4G internet in the world, it was learnt. Federal Minister for IT and Telecommunication Aminul Haque said the government has planned to launch 5G technology by December 2022 but experts in different fields are still skeptical, believing the country will take a much longer time (5-7 years) to roll out the next-generation technology. Haque made a test video call through 5G to China and said it was a wonderful experience. The voice was loud and clear, and the video quality was also wonderful, according to an international media outlet. The modern technology would make great economic progress when it comes to Pakistan, Haque added. GSM Association

estimates the economic contribution of the mobile industry in Pakistan will reach $24 billion, contributing 6.6% to total gross domestic product (GDP) by 2023. The telecommunication authority said it, along with the government, would publish a Spectrum Master Plan and a Spectrum Rolling Strategy to enable operators to plan their investments in a more efficient manner. Together, they will need to create an environment that encourages creativity and innovation so that large and small businesses can explore the possibilities created by 5G. In Pakistan, 98% of the households own a mobile phone whereas penetration of mobile services reached 81.1% at the end of October 2020, with 172.3 million mobile subscriptions. Broadband subscriptions showed impressive growth trends of 17% during FY20, crossing the 90.1 million mark in October 2020, whereas 4G subscriptions registered an exponential 60% growth in FY20. Resultantly, total broadband penetration in Pakistan reached 42.4% by the end of October 2020. With the expansion of 3G and 4G

services, an increase of 77% was seen in data usage for FY20. PTA has geared up to hire international consultants for market valuation and auction of spectrum in 1,800 MHz and 2,100 MHz in Pakistan including AJK and G-B. "The availability of additional spectrum in 1,800 MHz will also enable operators to expand their existing 4G operations and transition to advance technologies." It is aimed at auctioning "the spectrum for the proliferation of LTE and VoLTE Services in FY21 and 5G services in FY23. Furthermore, it has also planned for re-farming of spectrum allocated to WLL operators, which will also make additional spectrum available for 5G services." It was learnt that the government has estimated to raise Rs27 billion through the auction of the spectrum in FY21. Earlier, the authority had directed mobile phone service providing firms to refund Rs9.2 billion to consumers following the Supreme Court debarred the firms from the imposition of service and maintenance charges in 2019. However, they have so far refunded only Rs6.9 billion.



# Maroc Telecom Rebrands African Subsidiaries as Moov Africa

Maroc Telecom has rebranded its eleven subsidiaries in Africa as Moov Africa, effective 1 January 2021. The company, which has more than 70 million customers

on the continent, has revealed its plans to unite its subsidiaries around a single identity. 'This new identity illustrates the vision of the Maroc Telecom group "Africa

on the move", which lies in the principle of sharing the group's know-how and its capacity for innovation for the benefit of the countries in which it operates'.

# Abu Dhabi Customs Completes 'Digital Transformation' Of All Services

Abu Dhabi Customs has announced 100 percent completion of the digital transformation of all its services through the 'TAMM' platform, in order to upgrade the customs system and enhance customer satisfaction. The digital services provided by Abu Dhabi Customs include 40 integrated core services that reflect Abu



Dhabi Customs' advanced infrastructure, operational flexibility and innovative technology. Its digital services also enable the completion of digital payments for 18 services via the 'Abu Dhabi Pay' platform - an integrated digital payment platform within 'TAMM'. This reflects the importance of digital transformation in facilitating transactions for investors, wholesalers and customs brokers, helping them to save times and facilitate the movement of trade. Rashid Lahej Al Mansoori, General Director of Abu Dhabi Customs, said that achieving 100 percent digital transformation will enhance the completion of customs transactions, and facilitate the movement of trade and stimulate business and investment in Abu Dhabi. He added that this development also supports Abu Dhabi government's efforts to accelerate the digital transformation of all government services to enhance sustainability and provide optimum customer service. Abu Dhabi Customs' digital channels received more than 2.7 million visits during 2020, while more than 56,480 working days were saved for employees of government agencies. Customer satisfaction with Abu Dhabi Customs' digital channels reached 95 percent during 2020, which reflects the successful impact of the entity's digital transformation on its customers. The digital services enable customers to complete customs services available - in both Arabic and English - by entering the service using the digital ID. Then the customs declaration form can be filled out, with the required documents attached, and the request submitted along with fee payment. The customs declaration can then be printed so that customers can obtain customs services from anywhere in minutes.

# Pakistan-Based B2B eCommerce Startup Raises US$6.5 Million

In one of the biggest seed rounds in the Middle East and North Africa region (MENA), the Pakistan B2B marketplace, Bazaar, raised $6.5 million. Bazaar is one of Pakistan's best-funded startups, with its overall raise of $7.8 million. This is the Global Founders Capital's first investment in Pakistan, which is co-leaded by the Berlin-based Global Founder Capital and the Pakistanis-based VC Indus Valley Capital. According to MENAbytes info, this seed round was the second-largest startup ever in the MENA region and the largest in Pakistan. It should also be noted that Bazaar has a variety of leading global and regional institutional and angel investors in addition to its leading investors. The bazaar was only launched 8 months ago and hopes to digitize traditional retail stores in Pakistan. It was established to be a mobile-based e-commerce market by Hamza Jawaid and Saad Jangda, allowing

community (kiryana stores) owners to access manufacturers, wholesalers, and suppliers' inventories. The Bazaar app currently houses over 500 SKUs of branded and unbranded products with the option of free next-day delivery. Moreover, Bazaar was also able to beat its own initial target of serving 800 Karachi retailers by the end of 2020 and was able to close the year with over 10,000 retailers. Hamza Jawaid, Bazaar Co-founder and a former McKinsey consultant, also explains that Bazaar has incredible opportunities to empower micro-businesses through technology in Pakistan, which has emerged as the fifth largest country in the world with rising digital adoption. "Over 80% of our customers own and operate smartphones, yet their way of running a business has not changed, until now. We will boost your company and your lives dramatically by taking them

online, making flexibility for the most important things, which will eventually lead to greater returns," he continued. Also, Bazaar's Co-Founder Saad Jangda, who previously was a Careem Product Manager, says, "We at Bazaar agree that developing the technology layer is a huge opportunity for traditional businesses. We finally have the right foundation to build huge tech institutions, considering the sheer size of the market, a new narrative and emphasis on our ecosystem, and an explosion of Pakistanis coming home." It also has several other goods in its pipeline in addition to Bazaar's mobile market. The start-up aims to extend its teams and its presence across Pakistan with these new funding opportunities. Global Founders Capital and Indus Valley Capital also look forward to building a partnership with Bazaar to revolutionize Pakistan's retail industry for $150 billion.

# Bahrain in Top 50 for Online Business Setup

When it comes to the best places for setting up an online business, the Kingdom of Bahrain does pretty well considering the global completion. It ranks 38 out of 99 countries, according to Best Accounting Software, a global firm that reviews and rates financial software to help organizations make more informed purchases. The island nation has shown promising potential in moving up the list thanks to a robust tech environment and supporting legal framework. E-commerce continues to grow year-on-year, with eMarketer forecasting global sales worth $6.542 trillion by 2023, accounting for 22 per cent of all retail sales (up from 14.1 per cent in 2019). This means 2021 could be the year to start your online business. Best Accounting Software's researchers looked at 20 different categories across 99 countries. From GNI per capita and corporate tax rates to the number of social media, internet users, and co-worker spaces by each individual country, they analyzed a plethora of key areas. The resulting data suggested the majority of countries most suited to starting an online business are located in Europe. Joined by the US, Canada, and Singapore, these countries provide an all-around great starting point for your next business venture – but, the "perks" of these locations tend to be met with a higher corporate tax rate. Accordingly, Denmark turned out to be the best country in the world to set up an online business. Denmark enjoys a top score for secure internet servers (over 277,000 per 1 million people) and share of individuals with a finance account (99.92 per cent). It is also the cheapest of the top 10 to start a business (0.2 per cent based on the GNI percentage). Denmark also ranks second highest for how much of the population use the internet for online purchases/paying bills (88 per cent) and is positioned near the top for total number of internet users (98 per cent). The country did, however, have the second-lowest postal efficiency score in our top ten, has a very low number of co-work spaces (32), and received mid-range scores for mobile internet speeds (66.68 Mbps), social media user penetration (71 per cent), and corporate tax rates (22 per cent). Other

top countries in order are Switzerland, the Netherlands, the US, Norway, Sweden, Singapore, Germany, Canada, Luxembourg.

TOP PERFORMERS IN EACH CATEGORY

In addition to top scorers, there are countries that outshine others within each category.

- Best for mobile internet speed: With average speeds of 129.61 Mbps, the UAE enjoys mobile internet that's over 4 per cent faster than second-place China.
- Best for fixed broadband: Singapore is the only country to exceed 200 Mbps for its fixed broadband speeds, enjoying average rates of 229.42 Mbps. This is almost 20 per cent faster than second-place Romania (188.85 Mbps).
- Best for fixed broadband subscriptions: Thanks to over 45 per cent of the population having a fixed broadband connection, France takes the top spot here. In fact, all of the countries with subscription figures over 40 per cent of the population are located in Europe. These include Switzerland, Denmark, the Netherlands, Norway, Germany, and Malta.
- Best for internet users: Similar to social media users, the UAE and Kuwait come out on top along with Bahrain, with 99 per cent of their population using the internet.
- Best for social media users: With 99 per cent of the population using social media, the UAE clinches the top spot again but it is also joined by Kuwait

in this category. As of January 2020, the UAE was recorded as having 9.73 million social media users and Kuwait 4.2 million.

- Best for secure internet servers: As the only country in our study to exceed 200,000 servers per one million people, Denmark is the clear winner here with over 277,000 per one million. An impressive statistic, especially considering the country's small size.
- Best for online purchases/paying bills online: About 89 per cent of Norwegians use the internet for online purchases or paying bills, closely followed by 88 per cent in fellow Nordic countries, Denmark and Finland.
- Best for Low Corporate Tax Rates: With corporate tax rates of 0 per cent, the UAE and Bahrain offer clear benefits for many businesses. It's worth noting that Bahrain has no taxes on income, sales, capital gains, or estates with the exception of oil and gas trades. In the UAE, each jurisdiction is able to levy corporate taxes of up to 55 per cent on any business, but, in practice, it is mostly levied on foreign banks and petroleum companies.
- Best for GNI: Switzerland ranked the best for GNI per capita with a value of $85,500 in 2019, $3,000 more than second-place Norway and almost $85,000 more than bottom-placed Uganda.
- Best for Individuals with a finance account: Every country within the top

20 has over 90 per cent of its population using a financial account, but Denmark outdoes them all with a score of 99.92 per cent.

- Best for payment processing providers: A large number of countries scored full points for in this category, including Australia, Austria, Belgium, Canada, Germany, Ireland, Italy, the Netherlands, Spain, the UK, and the US.
- Best for economic freedom: Singapore enjoys great economic freedom and performs well in all of the categories covered here: property rights, judicial effectiveness, government integrity, tax burden, government spending, fiscal health, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, and financial freedom.
- Best for business start-up procedures: With just one procedure required to register your business in New Zealand and Georgia, these two countries offer a stress-free, speedy entry into the market.
- Best for days required to start a Business: Thanks to there being one only procedure necessary for business start-ups, it's no surprise that New Zealand and Georgia are also the quickest places to establish a business. Here, you could be up and running in just one day.
- Best for cost of start-up business procedures: Based on the percentage of GNI it costs to start up a business, Ireland, the UK, and Slovenia are best at just 0.1 per cent. Unsurprisingly, with its lengthy procedures, Venezuela ranks worst in this category, costing 211.8 per cent of GNI.
- Best for time zones: The most 'popular' time zone is UTC +1 and includes 44 countries worldwide (most of Europe and Central Africa), providing great multinational connections.
- Best for logistics performance: According to the World Bank's Logistic Performance Index, Germany is the best in the world. It outperforms the average scores across all of the other high-income countries, boasting great infrastructure, timeliness, competence, international connections, ease of customs, and tracking and tracing.
- Best for postal efficiency: With full marks for postal efficiency, Switzerland comes out on top yet again. Measured on reliability, reach, relevance, and resilience, Switzerland has dominated the index since it began in 2017.
- Best for co-work spaces: As previously mentioned the US boasts a far greater number of co-work spaces than any other country. With over 2,400, the opportunity to find a suitable office space and to network with fellow entrepreneurs is vast.
- Best for digital skills: Many online businesses rely on key skills, from basic coding to general computer skills. According to World Bank data, Finland has the most digitally skilled workers, scoring 5.83 out of 7.

# UAE the 13th Best Country in the World to Launch an Online Business

The UAE has been ranked 13 out of 99 countries for ease of starting an online business. The study was carried out by Best Accounting Software, a service that reviews and rates financial software. The ranking considered, among other criteria, internet coverage and penetration; country wealth and ease of processes (including corporate taxes), and; access to delivery services and skilled workers. The UAE had an overall score of 68.41, just below the UK and ahead of Belgium. The GCC country ranked best for mobile internet speed (with average speeds of 129.61 Mbps), best for internet users with 99 per cent of their population using the internet, and best for low corporate tax rates at 0 per cent. Saudi Arabia had a score of 53.67 while Kuwait scored 51.39 out of 100. Denmark was ranked as the best country to launch an online business, followed by Switzerland and the Netherlands. European countries dominated the top 20. E-commerce continues to grow year-on-year, with eMarketer forecasting global sales worth $6.542 trillion by 2023, accounting for 22 per cent of all retail sales (up from 14.1 per cent in 2019). According to research firm Kearney, the GCC e-commerce market will reach revised to $24bn, revised $2bn higher due to Covid-19. The average annual spend on e-commerce in Saudi Arabia and UAE rose by 30 per cent in just one year between 2018 and 2019. Consumers spend between $600 and $1,300 online every year in the two GCC countries, Kearney estimates.

# Ooredoo Group Inks Five-Year 5G Strategic Agreement

Qatar's Ooredoo Group has signed a global frame agreement for the supply of 5G radio, core and transport products and solutions, as well as related implementation and integration services. In a press release announcing the development it was confirmed that the agreement covers all ten of Ooredoo Group's operating companies, those being in Qatar, Indonesia, Algeria, Iraq, Kuwait, Oman, the Palestinian Territory, Tunisia, Myanmar and Maldives. With the deal including the provision of Ericsson Radio System, including MINI-LINK 6000 products that are capable of 10Gbps, Ericsson Cloud Core, Cloud Infrastructure and Ericsson Cloud Communication solutions, the vendor claimed it will 'enable end-to-end 5G support to digitally transform and modernize Ooredoo's existing mobile networks across its operating companies'. Further, it has been suggested that the solutions will also significantly shorten time-to-market for new services and improve network performance to meet the growing expectations of consumers

and enterprises. Commenting, Sheikh Mohammed Bin Abdulla Al Thani, Deputy Group Chief Executive Officer, Ooredoo Group, said: 'The agreement represents another step in the longstanding and successful partnership between Ericsson and Ooredoo, which enables our company to continue network expansion, enhancement and digital transformation.

Ericsson is bringing state-of-the-art global technologies to the countries we operate in, which enables us to provide the latest digital solutions for communities to enjoy the best of the internet, including connecting the most remote areas, supporting start-ups digitally and providing immersive experiences for sports fans at upcoming mega-sporting events.'



# Telecom Revenue Surges 129 Percent in Pakistan Amid Lockdown

Contribution of the telecom sector to the national exchequer increased by 129 per cent in the fiscal year ending in June 2020 compared to a year ago owing to Covid-19 lockdown, the Pakistan Telecom Authority (PTA) said. Sharing its Annual Report 2020, PTA highlighted that the surge in demand for telecom services due to lockdown resulted in significant growth not only in the subscriber base but also in the usage of telecom services. Data usage by the end of December 2020 was 4,498 petabytes (PB) compared to 2,545PB in December 2019 — a growth of more than 77 per cent, the report noted. One PB is equal to 1,000 terabytes (TB). "This substantial growth would not have been possible if the networks were not upgraded," PTA said, adding that currently the country has international bandwidth connectivity of 3.1TB and with 47,000 cell sites, of which 90pc are 4G-enabled sites. Broadband subscribers crossed 90

million in the country by the end of 2020, showing a growth of around 8pc against 2019. Total broadband penetration across the country reached 42.2pc. Telecom networks are currently available for 87pc of the population. The report said that PTA was working with operators to increase their network coverage for remaining 13pc unserved people of the country. Total teledensity in the country currently stands at 82pc, the report added. Due to higher business volumes, telecom sector emerged as a prominent contributor to Pakistan's economy in FY20 compared to FY19 despite the economy being under pressure due to the Covid-19 pandemic. The sector contributed Rs278 billion in FY20 against Rs121bn in the previous fiscal year. The PTA annual report highlighted that in the last five years, total broadband subscription in the country grew by 175pc. Despite the negative impact of Foreign Direct Investment (FDI) across

the economy due to global lockdowns, the share of telecom sector was 25pc or $623m in the total FDI made in the country during the fiscal year ending on June 2020. Total investment made by the local operators were $734m with a growth of 14.25pc in FY20 against the previous fiscal year. Total revenues of the sector reached Rs537bn in FY20, mainly generated by mobile sector. The report claims that financial gains have been equally enjoyed by telecom consumers. "The affordability of telecom services in Pakistan have improved over the years and currently the per "GB broadband" prices are as low as $0.20 which is amongst the lowest in the region," it added. The regulator said government revenues increased manifold with tax collection on handset imports due to Device Identification & Registration System.

# Virgin Mobile Develops Saudi Banking App



Telecom provider Virgin Mobile has signed an agreement with the Saudi Investment Bank (SAIB) to become the first entity in the Kingdom to obtain a banking agent's license. The strategic partnership, endorsed by the Saudi Arabian Central Bank, will enable the telecom provider's customers to use financial services on their phones. Erik Dudman Nielsen, Group CEO of Virgin Mobile Middle East & Africa, told Arab News the announcement of the new milestone made him proud. "We're now in a position where we can enable Virgin Mobile customers to take electronic funds of any sort and fundamentally allow them to do international money transmittance or remittance," he said. Nielsen said that the services would be made available to everyone, regardless of which banks they had accounts in or which telecom providers they used. "Users will not need to have an account with the Saudi Investment Bank. You're completely bank independent. Any customer from any bank, or for that matter, any mobile operator, can use our app and perform mobile transfers. But existing customers of Virgin Mobile will get exclusive benefits for their transfers," he said. Phase one, which the company aims to kickstart in February, will allow customers to use the

application to link their bank accounts and cards to their phone, allowing them to carry out international transfers. "Effectively, if you have money on an ATM card or bank account, you can transfer it to the Virgin Mobile banking application, and then straight from your mobile phone you can do international money remittance," he said. Phase two will be to enable domestic usage, allowing users to pay for items in stores, restaurants and cafes using only their phones. However, that option has been available to Saudis for a while, with options such as Apple Pay, which was made available to Saudis in early 2019, and mada Pay, launched in mid-2019. Saudis have been able to pay bills and transfer funds to sellers electronically using SAMA's Sadad payment system since 2004. However, Nielsen believes that Virgin's reputation and loyal userbase will create a strong enough incentive for users to opt in for the new application, once all the services are made available. "As part of the Virgin Mobile brand, and our company ethos, we are very customer-focused. That goes for everything we do; we always try to remove ping points for customers. Over the past three years, quarter by quarter, we have been the company with the least complaints in Saudi Arabia as per CITC

(The Communications and Information Technology Commission) regulations. In that sense we are the best-performing mobile operator in Saudi Arabia," he said. Nielsen says that with that ethos behind them, coupled with very strong digital capabilities and an abundance of research analysis, Virgin can expect to see plenty of customers come onboard with the new services. "We do have experience from other countries. For example, in Oman, customers can buy life insurance products on the back of their subscription. For us, what we're doing in Saudi Arabia is a natural expansion step, and we expect to continue to develop and evolve and hopefully provide even more exciting products to the Saudi Arabian market." Since launching in 2014, Virgin Mobile has netted more than 2.5 million customers in Saudi Arabia, and has become one of the top ten Mobile Virtual Network Operators (MVNOs) in both the Kingdom and in Oman, out of more than a thousand in the world. "We have a 6-7 percent market share both in Saudi and Oman, so we're very proud of the performance that we have. It's a testament to what it means to be an MVNO. We're very focused on the segments we serve, and we provide offers and services built around their needs, and that's how we succeed," said Nielsen. The Virgin Mobile announcement came after the news last week that digital payment transactions in the Kingdom jumped by 75 percent in 2020 as Saudi consumers embraced online shopping during the coronavirus (COVID-19) pandemic, while cash withdrawals from ATMs and other payment points fell 30 percent over the same period. Speaking to Arab News, Talat Zaki Hafiz, economist and secretary-general of the media and banking awareness committee for Saudi banks, said non-cash transactions are expected to make up to 70 percent of all transactions by 2030.

# Why Digitalization Will Remain a Driving Force for Middle East Economies

**Charles Yang**
President
Huawei Middle East



*Clearly, the events of 2020 have prompted digital adoption on a never-before-seen level. It is now time to double down on putting tech innovation to work in spurring economic advancement.*

While 2020 was a challenging year for many individuals, businesses, and governments across the Middle East, there is one silver lining that arose: digitalization was accelerated as tech innovation occurred more rapidly than almost ever before.

From healthcare to education and retail, businesses and consumers have rapidly increased their use of connected technologies in the Middle East. Digitalization strategies have been a must for any organization looking to keep up with and better serve an increasingly connected society. Several corporate CEOs have reported that their companies' digital adoption grew in a few months in ways that would have otherwise taken three to four years, or possibly longer. One KPMG survey of CEOs in the summer of 2020 found that for 75% of their enterprises, the crisis sped up their efforts to digitize operations and create next-generation operating models by months, or even years.

Clearly, the events of 2020 have prompted digital adoption on a never-before-seen level. It is now time to double down on putting tech innovation to work in spurring economic advancement.

The reality is that healthcare providers, businesses, governments, and more are still searching for new ways to achieve continuity while overcoming lockdowns and other disruptions, as well as serving their customers in the best way possible. Sunil Gupta, a business administration professor at Harvard Business School, put it quite well in noting that crises have a tendency to drive big changes and innovation, and that big companies need to take advantage of this time to question the fundamentals of their business and reimagine their business.

> *With lower latency, more reliability, and greater capacity than its predecessor networks, 5G in particular is the engine that will continue to drive digital transformation on the scale needed to fuel economic recovery in the Middle East.*

Companies are not just adopting new technologies, but are further embracing technologies that were already gaining traction before the pandemic. According to one recent IDC forecast, 60% of global gross domestic product will be digitized by 2022. In this sense, the "digital economy" goes beyond traditional definitions and just the ICT sector. It now refers to a broad range of economic activities that use digitized infrastructure and knowledge as key factors of production and value creation. Core infrastructure powered by AI and 5G, for example, is built to quickly leverage new, ever-expanding digital applications in different sectors. These are being integrated into core production processes and management systems to improve efficiency and competitiveness.

With lower latency, more reliability, and greater capacity than its predecessor networks, 5G in particular is the engine that will continue to drive digital transformation on the scale needed to fuel economic recovery in the Middle East. To really understand the potential of 5G as an enabler of economic growth, we need only look back to when 4G mobile broadband was launched a decade ago, in the midst of a global recession. The creation and massive growth of the smartphone application sector, facilitated by 4G, allowed businesses to step up their operations. Now consider that 5G is not only immensely fast at nearly 100 times faster than 4G, but that it has 20-30 times more capacity as well as being more efficient and reliable. While 4G has certainly changed lives, 5G changes entire societies.

> *Connectivity together with cloud, AI, computing, and industry applications will augment business operations across all sectors, creating greater accessibility as well as generating new revenue streams and even sparking novel industries that have yet to be invented.*

If 4G enabled the mobile application revolution that helped to elevate businesses out of an economic depression, then the many advantages of 5G will open the gates to the most incredible transformation of our society that we have yet to see. Connectivity together with cloud, AI, computing, and industry applications will augment business operations across all sectors, creating greater accessibility as well as generating new revenue streams and even sparking novel industries that have yet to be invented. It is for this reason that the digital economy is becoming society's new driving force of economic development, and its growth rate in many countries is higher than that of the overall traditional economy.

Investing in 5G capabilities and stronger digital ecosystems in the Middle East is no longer a nice-to-have. It is a must-have. In promoting the development of the digital economy, governments are also now providing guidance and support through capital, talent, tax policies, and other programs, creating an environment that helps industries better apply advanced technologies. From enhancing healthcare delivery to providing uninterrupted education to students, to enabling seamless access to essential public and private sector services, investment in digital infrastructure and the digital economy can provide tremendous returns on investment in 2021 and beyond.

> *Investing in 5G capabilities and stronger digital ecosystems in the Middle East is no longer a nice-to-have. It is a must-have. In promoting the development of the digital economy, governments are also now providing guidance and support through capital, talent, tax policies, and other programs, creating an environment that helps industries better apply advanced technologies.*

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## SATELLITE NEWS

# Mohammed Bin Rashid Launches DEWA's Space Program Space-D

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, said the vision of the UAE's leadership and the committed efforts of its citizens have enabled the country to achieve ambitious goals, create new opportunities, and overcome diverse challenges. Stressing that using advanced technologies and adopting innovative solutions to develop sustainable projects are vital to accomplishing the country's strategic objectives, His Highness said: "We are working steadily to establish global leadership in every sector. Development projects will not stop in our country. We continue to execute innovative initiatives that promote the happiness and wellbeing of the people. Investing in and nurturing our human capital continues to be one of our biggest priorities so that our people can innovate and accomplish great things." "The real value of our projects lies in their ability to achieve our strategic objectives, maximize the use of available resources and adopt the latest innovations. Furthermore, the success of these projects is determined by their positive impact and the enhanced quality of life they help achieve," His Highness added. Sheikh Mohammed's comments came during his visit to the Innovation Tent at Dubai Electricity and Water Authority's (DEWA's) head office, accompanied by HH Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai; HH Sheikh Maktoum bin Mohammed bin Rashid Al Maktoum, Deputy Ruler of Dubai; and HH Sheikh Ahmed bin Mohammed bin Rashid Al Maktoum, Chairman of the Mohammed bin Rashid Al Maktoum Knowledge Foundation. During the visit, His Highness launched DEWA's space program, Space-D, an initiative that aims to build DEWA's capabilities and train Emirati professionals to use space technologies to enhance its electricity and water networks. The program will take advantage of Fourth Industrial

Revolution technologies such as Internet of Things (IoT), Artificial Intelligence (AI), and blockchain to exchange information with the help of satellite communications and earth observation technologies. The project features the launch of a main satellite equipped with the latest imaging and satellite communication technologies, which will take place in conjunction with Expo 2020 Dubai to be held from 1 October 2021 to 31 March 2022. The project supports the National Space Strategy 2030, which aims to realize the leadership's vision by using space sciences, technologies, applications and services to enhance development. His Highness was briefed by HE Saeed Mohammed Al Tayer, Managing Director and CEO of DEWA, about the various phases of DEWA's space program, which seeks to enhance operational efficiency and effectiveness and promote preventive maintenance of electricity and water networks including planning, production, transmission and distribution. The program will also contribute to enhancing flexibility and agility in monitoring and managing electricity and water networks, as well as the accurate and rapid assessment of the

impact of weather and climate change on energy supplies and energy infrastructure. It will also provide a backup support system for the network through satellite communications. "We are guided by the ambitious vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, who said: "The UAE's ambitious goals in the space sector are aimed at exploring, planning and shaping the future. Our youth, engineers and pioneers are opening new horizons for science, technology and innovation in this vital sector." "DEWA's space program will contribute to enhancing the UAE's global competitiveness and strategic partnerships in the national space sector as well as paving the way for a new phase of Emirati capabilities in space exploration, technology and related industries that will be used to strengthen electricity and water networks in Dubai," Al Tayer added. "DEWA's Space Program will provide world-class services in cooperation with leading global satellite technology companies. We are committed to ensuring 100% availability of DEWA's services and maintaining the highest levels of availability, reliability,

and efficiency with the help of our state-of-the-art infrastructure and advanced technologies. Through innovation and sound scientific planning, we seek to contribute to making the UAE the world's leading nation by its centennial in 2071," added Al Tayer. "The program supports the Dubai Clean Energy Strategy's target of obtaining 75% of Dubai's total power capacity from clean energy sources by 2050. The performance and efficiency of the photovoltaic solar panels at the Mohammed bin Rashid Al Maktoum Solar Park will be monitored using special cameras on the main satellite, which will

also help study the impact of weather and climate change on energy infrastructure and supply," explained Al Tayer. DEWA's Space-D project includes the launch of a satellite constellation to support its main satellite. These will be manufactured by Emiratis at the Research and Development (R&D) Centre of the Mohammed bin Rashid Al Maktoum Solar Park. The system features a ground station at the solar park as well as IoT and AI technologies to support ground communication transmission stations in electricity and water networks. By deploying this infrastructure, DEWA seeks to increase

the efficiency and effectiveness of its planning and operations, and enhance preventive maintenance at its production, transmission, distribution divisions as well as its smart grids, and electric vehicle charging stations. Multi-spectrum, high-resolution thermal imaging devices such as those used on board spacecraft, specifically designed for use in electricity and water networks, will be deployed to detect thermal fingerprints in high voltage transmission lines, substations, buildings and solar power stations.

## Nepal To Open Ka-Band Range for Use in Rural Areas

Singapore-based Kacific Broadband Satellites Group has announced that the Nepal Telecommunications Authority (NTA) plans to open the Ka-band frequency range (19.7GHz-21.2GHz downlink, paired with 29.5GHz-31GHz uplink) for use in Nepal. The recommendation will allow businesses, communities and government agencies to access services delivered by the company's Kacific 1 satellite, which uses Ka-band technology designed specifically to provide reliable, high-speed broadband internet to rural and remote populations through concentrated spot

beams and simple easy-to-install onsite 1.2m antennas. This technology, although new in Nepal, has been successfully used in other countries in Asia, including ones with similar mountainous geographies. The company highlights that around 80% of Nepal's population lives in rural areas that are not easily served by cable-based technologies. Meanwhile, the Minister for Communication and Information Technology, Parbat Gurung, has urged state-owned telecoms provider Nepal Telecom (NT) to focus on expanding services in remote mountainous

areas, reports Nepalitelecom.com. The government has expressed concern over delays to the deployment of NT's LTE wireless network and the installation of fibre-optic cabling along the route of the Mid-Hill Highway connecting the country's seven provinces. Aware that expanding mobile and internet services to mountainous regions might not provide a sufficient return on investment, the minister has reportedly instructed NT to focus on service quality rather than profits.

## FCC Issues Final Call for Incumbent C-Band Earth Stations

Attention incumbent C-Band Earth station operators, the FCC's International Bureau said that any Earth stations that don't appear operational or haven't gotten back to the FCC or satellite operators on their operational status if it is in question will be terminated and lose their incumbent status as of April 19. That status is important as the FCC relocates incumbent Earth stations following the C-Band spectrum auction. RSM, the C-band relocation coordinator, is required by the FCC to make sure that all incumbent earth stations are accounted for in the transition to the upper

200 MHz of the band, where Earth stations are being relocated. Those include cable and broadcast earth stations that receive network programming or programming from the field. While the FCC said the vast majority of Earth station operators are accounted for, a "limited number" remain unclaimed, either because satellite operators or Earth station operators have confirmed them to be no longer operational or because their operators have been unresponsive to "multiple and varied" efforts--e-mail, certified mail, phone--to contact them. The FCC is now

presuming that both categories have ceased operations, a status, or lack of it, that means they "will not be entitled to protection from interference from the network deployments of new wireless licenses or be eligible for reimbursement of any transition costs, including the cost of any filters, that those earth stations may decide to incur. "The FCC said they will need a notification by April 19 if any of those are operational and intend to participate in the transition.

# Iodine Serves to Propel Satellite in Space

For the first time, a telecommunications satellite has used an iodine propellant to change its orbit around Earth, reports the European Space Agency (ESA). Specifically, it has been used in an electric thruster that controls the satellite's height above Earth. Iodine is described as being less expensive and simpler to use than traditional propellants. This means that small satellites, such as CubeSats, would be able to do propulsive operations and that bigger satellites could also gain by reducing both the complexity and cost of



a propulsion system. The space agency specifically hopes the innovation could help with the issue of space junk. The idea is that it could more easily enable satellites to self-destruct cheaply at the end of their missions, by steering themselves into the atmosphere where they would burn up. "The technology could also be used to boost the mission lifetime of small CubeSats that monitor agricultural crops on Earth or entire mega-constellations of nanosats that provide global internet access, by raising their orbits when they

begin to drift towards the planet." The technology was developed by the French company ThrustMe, a spin-off company from the École Polytechnique and the French National Centre for Scientific Research (CNRS), and was supported by ESA through its program of Advanced Research in Telecommunications Systems (ARTES). ThrustMe launched its iodine thruster on a commercial research nanosat called SpaceTy Beihangkongshi-1 that went into space in November 2020. It was test fired earlier this month before being used to change the orbit of the satellite. ThrustMe outlines three main advantages of using iodine over xenon and other propellants:

- Iodine is stored as a solid, unlike xenon which is stored under pressure. Therefore, no sloshing, no explosion risk, no cumbersome launch qualifications and no intervention needed at the launch pad.
- It is the least reactive of the halogens, thus it is not a metal and will not deposit on conductive surfaces (as the first electric propulsion systems did when they were propelled with cesium).
- Iodine cost 10 to 100 times less than xenon – just to buy the same amount
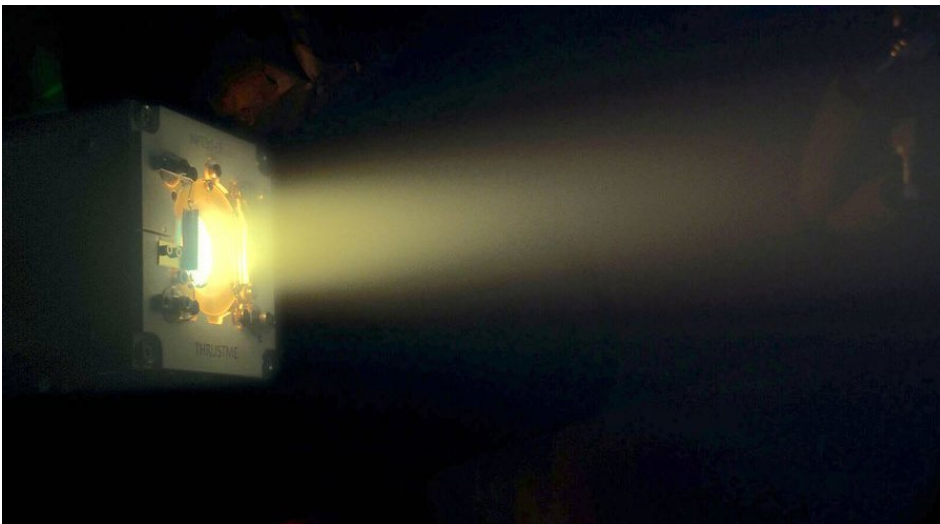
# SSI Partners SES For Satellite Capacity in Northern Canada

SSi Canada – which operates the QINIQ broadband and SSi Mobile services in Nunavut – has signed a multi-year partnership with SES Networks under which the latter will deliver new



satellite backbone capacity to Northern Canada including all 25 communities of Nunavut. A press release says the partnership comes at a critical time for Nunavut, with the COVID-19 crisis having led to an unprecedented need for reliable internet and mobile communications for studying, working and shopping online and at home, causing rising demand for QINIQ and SSi Mobile services. SSi CEO Jeff Philipp declared: 'Thanks to timely regulatory approvals from the Canadian government, we are now working hard to bring this new capacity online as quickly as possible. This is an essential step to ensure continuity of QINIQ broadband, and we look forward to expanding our network offerings and capabilities in the coming months and years as we work to deliver on the government's goal of broadband connectivity for every Canadian, no matter where they live.' Omar Trujill, VP of Sales, Fixed Data Americas at SES Networks, added: 'We are happy to bring our expertise of operating more than 70 geostationary and medium earth orbit satellites to help SSi Canada scale up their backbone, ensuring that the remote communities in Nunavut are at the forefront in achieving the 50Mbps/10Mbps [download/upload] threshold.'

# SpaceX Set to Launch First Starlink Mission Of 2021

As the second SpaceX launch of the year, and the first of many Starlink missions scheduled to launch in 2021, the company is set to launch the Starlink v1.0 L16 mission — the 16th launch of operational satellites and 17th Starlink flight overall. Liftoff is currently scheduled for January 20th at 8:02 EST (13:02 UTC) from LC-39A at the Kennedy Space Center. This mission was originally scheduled to be the third SpaceX launch of the year, however, a delay to the Transporter-1 mission will now make Starlink v1.0 L16 the second launch of the company's busy 2021 schedule. SpaceX is aiming for a new record of 48 orbital missions this year. SpaceX's previous launch record was set last year when the company flew 25 orbital missions. Starlink is SpaceX's own constellation of satellites designed to provide low latency internet anywhere in the world. Current satellite internet relies on large satellites with long lifespans, generally 15 years or more, placed into geostationary orbit, approximately 35,800 kilometers (22,245 miles) above the earth's surface and directly over the equator. This allows only a few satellites to cover most of the earth. However, due to the high orbit of the satellites, it takes more time for a signal to travel to and from the satellite, approximately 550 milliseconds.

This prevents current satellite internet providers from offering low latency, high-speed internet like Starlink aims to provide. Starlink's solution to the latency problem is to have thousands of smaller, short-lived satellites, with lifespans of around five years, to be placed into a Low Earth Orbit of approximately 550 kilometers (340 miles) and lower. This allows latency to be much lower than any geostationary satellite, since the signal does not travel as far. Starlink satellites also use a flat packed design that allows many satellites to be launched on a single mission, with the added bonus of being smaller and cheaper to manufacture in mass production. Current geostationary satellites don't benefit from large scale manufacturing due to only deploying one or a handful of spacecraft. Designing the satellites to have a shorter lifespan compared to their geostationary counterparts also allows the constellation to be continuously upgraded as new satellites are constantly launched. For example, currently the user terminal and a ground station must be in the range of the same satellite in order for a packet of data to reach its destination. However, SpaceX wants to equip future satellites with a laser interlink. Laser interlinks will allow data to be transferred satellite to satellite instead of satellite to

ground station. Due to the speed of light being faster in a vacuum compared to in the atmosphere, this can allow for faster data transfer, as well as the ability to serve areas where no ground station is available, such as the middle of the ocean. There have been at least two Starlink satellites launched with the laser interlinks, and on September 3rd, 2020, SpaceX announced the two spacecraft had successfully tested the laser interlinks on board the satellites. Another benefit of a Low Earth Orbit constellation such as Starlink is natural orbital decay. If a satellite fails in orbit and is unable to de-orbit itself, orbital decay caused by drag will ensure the satellite de-orbits in weeks to a few years, depending on the satellite's altitude. This is to ensure a minimum number of dead satellites are left behind which can cause possible collisions with other satellites in orbit. If a satellite encounters issues on orbit but is still capable of de-orbiting, the satellite can actively do so rather than waiting for the slower orbital decay due to drag. SpaceX is currently offering a beta version of the Starlink internet service, jokingly named the Better Than Nothing Beta, where users pay $500 for the Starlink terminal and router, and then $99 per month for the service.

# Azercosmos and SatADSL Partner for Central Asian Satellite Internet

Azercosmos, operator of the Azerspace-1 & Azerspace-2 satellites together with Belgian satellite service provider SatADSL, are pleased to announce a new partnership agreement. Under the new agreement, SatADSL, thanks to its Cloud-based Service Delivery Platform (C-SDP), will provide accessible and reliable internet access using the Central Asian beam of the Azerspace-1 satellite. SatADSL's ready-to-use internet packages offering will be made easily accessible to its Central Asian customers through Azerspace-1, but also to all the 14 teleports already connected to the C-SDP around the globe. SatADSL now provides satellite connectivity across five continents, including Central & South

America, Europe, the Middle East, Africa and Central Asia. SatADSL's platform has been deployed in over 45 countries. "Our partnership with SatADSL demonstrates the high-quality service that Azercosmos provides to its customers and partners. We are pleased to collaborate with SatADSL and believe that this will open up new opportunities and projects that will be mutually beneficial in the upcoming years." noted Mark Guthrie, Chief Commercial Officer at Azercosmos. Thierry Eltges, co-Founder & CEO at SatADSL said, "This exciting new strategic alliance creates a wealth of opportunities for bringing enhanced connectivity services to East Europe & Russia. Partnering with



Azercosmos will bring high-performance, reliable IP access services to parts of the continent where reliable connectivity remains a big challenge."

# Spacex Expands Public Beta Test of Starlink Satellite Internet to Canada and the UK

SpaceX has launched more than 1,000 of its Starlink high-speed internet satellites to date and, as it seeks regulatory approval in other countries, Elon Musk's company is now offering early public access to the service in Canada and the U.K. "Earlier this month we expanded our 'Better than Nothing Beta' program to include customers across the pond in the United Kingdom," SpaceX lead manufacturing engineer Jessie Anderson said during the company's launch webcast. "Within the northern U.S. and Canada, and now the U.K., we are focused on rural and remote areas where there is no easy access to fiber or cable," Anderson added. SpaceX began the public beta program in October, with service priced at $99 a month, in addition to a $499 upfront cost to order the Starlink Kit, which includes a user terminal and Wi-Fi router to connect to the satellites. Starlink is SpaceX's plan to build an interconnected internet network with thousands of satellites, designed to deliver high-speed internet to anywhere on the planet. The network is an ambitious endeavor, which SpaceX has said will cost about $10 billion or more to build. But the company's leadership estimates that Starlink could bring in as much as $30 billion a year, or more than 10 times the annual revenue of its rocket business. SpaceX launched its 17th Starlink mission from Florida on Wednesday morning, with a Falcon 9 rocket carrying another batch of 60 satellites to orbit. The launch also marked a milestone for SpaceX's reuse of its rockets, with the Falcon 9 booster launching and landing for a record eighth time. Musk has previously said that SpaceX's Falcon 9 rockets are designed to launch and land up to 10 times without major repairs or refurbishment. Anderson noted that, in addition to individuals in rural areas of the northern U.S., SpaceX has signed up the town of Marysville, Ohio, and Virginia's Wise County Public School District for Starlink service. In the Ontario province of Canada, the rural indigenous community of Pikangikum First Nation became the first in the country to receive Starlink service. Pikangikum is about 300 kilometers northeast of Winnipeg and has a population of less than 3,000 people, with about 400 to 500 households. SpaceX partnered with Canadian information and technology services company FSET to bring Starlink user terminals to the Pikangikum community. "I hope that this gives them, the younger generations, a little bit of hope," Pikangikum Health Authority victim services leader Vernon Kejick said in a video on SpaceX's launch webcast. "We're creating a pathway for the younger people." The Starlink kits were delivered via airplane, which is the main way the community connects with more populated areas of Canada. "There's still a lot of work to do, but at least we have access to technology and information, and hopefully that playing field is at least a little closer to being level," FSET CEO Dave Brown said on the launch webcast. Starlink recently received approval to begin operating in the U.K., where it is priced at £89 per month plus the £439 cost of the kit. It's unclear how many homes and offices are currently using Starlink's service. SpaceX continues to look to expand Starlink internationally, with public records showing the company registered in Austria, Australia, Argentina, Brazil, France, Chile, Colombia, Germany, Greece, Ireland, Italy, Mexico, the Netherlands, New Zealand, the Philippines, South Africa and Spain. The company also requested market access in Japan, and Musk has talked about Starlink coming to India and the Caribbean as well.



# Globalstar to Provide Satellite Services for Smart Livestock Tag



Globalstar has signed an agreement to supply satellite services to Ceres Tag, a direct-to-satellite animal tracking platform. The Ceres Tag is a smart ear tag that weighs just over one ounce, that attaches to the animal and automatically sends the data to the cloud via the Globalstar Satellite Network. Ceres Tag said this relationship with Globalstar allows it to supply an automated daily recording of animals including pasture feed intake. It is a low cost, scalable, plug and play option for ranchers designed to produce better performing animals at a greater profit. Globalstar David Kagan said animal monitoring is an area in which Globalstar sees significant future growth: "We saw an immediate match between Globalstar and Ceres Tag to deliver this unique monitoring capability to over 80% of the world's livestock that are located in remote locations where there is no infrastructure and where you may only see the animals once or twice a year," he commented.

# European Space + Digital Players to Study Build of EU's Satellite-Based Connectivity System

The European Commission has selected a consortium of European satellite manufacturers, operators and service providers, telco operators and launch service providers to study the design, development and launch of a European-owned, space-based, communication system. The study will assess the feasibility of a new initiative aiming to strengthen European digital sovereignty and provide secure connectivity for citizens, commercial enterprises and public institutions as well as providing global coverage for rural and 'not-spot' areas. Complementing Copernicus and Galileo, this new EU flagship program, once given the green light, would fully exploit the synergies of the technological potential akin to the Digital and Space industries. The contract value of the year-long feasibility study amounts to 7.1 million euros. The European space-based connectivity system, advocated by Commissioner Breton, is set to provide secure communication services to the EU and its Member States as well as broadband connectivity for European citizens, companies and mobility sectors, strengthening EU digital sovereignty. It will build upon the European Union's GOVSATCOM program of pooling and sharing satellite services and will ensure a high level of reliability, resilience and security not currently available in the

market; it will also leverage the EuroQCI initiative that promotes innovative quantum cryptography technology. More specifically, the study phase awarded by the European Commission will consolidate the user and mission requirements and provide a preliminary architectural design and service provision concept, as well as associated budgetary estimates. A Public-Private Partnership (PPP) scheme will be considered and assessed during this phase. The study will look at how the space-based system could enhance and connect to current and future critical infrastructures, including terrestrial networks, strengthening EU capability to access the cloud and providing digital services in an independent and secure way, which is essential for building

confidence in the digital economy and ensuring European strategic autonomy and resilience. It will leverage and strengthen the role of satellites in the 5G ecosystem, assessing interoperability whilst also taking into account the evolution towards upcoming 6G technologies. This European sovereign infrastructure is set to benefit a large range of sectors, including road and maritime transport, air traffic and control, autonomous vehicle development as well as many Internet of Things (IoT) applications. It is intended to offer enhanced security in the transmission and storage of information and data supporting the needs of various users such as governmental agencies, finance & banking companies, science networks, critical infrastructures and data centers.



# Turksat 5A Launches to Bring Ku-Band Services To EMEA

The Turkish communications satellite Turksat 5A launched in the US last week, bringing with it, potentially, a new source of satellite-borne services to the aviation and maritime markets. Aerospace manufacturer and space transportation services company Space Exploration Technologies Corp (SpaceX) has reported that it successfully launched the Turksat 5A satellite last Thursday evening in what was its first launch of 2021. A Falcon 9 rocket carrying the satellite took off from Space Launch Complex 40 at Cape Canaveral Space Force Station in Florida. Turksat reported

the first signal was acquired 35 minutes after launch. Turkish satellite operator Turksat ordered Turksat 5A and a sister satellite, 5B, from Airbus Defence and Space in 2017. Turksat 5A, a communications satellite in geostationary orbit (GEO), will sit at 31 degrees East, primarily for data services in Ku-band, which it will broadcast over portions of Europe, the Middle East and Africa. The satellite will enter service in the second quarter of 2021. Turksat 5B will carry Ka- and Ku-band payloads and operate from 42 degrees east in GEO. It is expected to launch later this year, also on

a Falcon 9, bringing capacity over Turkey, South Africa, the Middle East and North Africa, West Africa, the Mediterranean Sea and the Aegean Sea. With these two new satellites, it has been reported that Turksat aims to increase its capabilities for data and provide a wide range of services to its customers in the aviation and maritime markets. As for SpaceX, this is expected to be one of the busiest years so far for the launch company. SpaceX performed 25 orbital launches in 2020, all using Falcon 9 vehicles. The company is likely to exceed this number in 2021.

# Airbus to Build Two More Multi-Frequency Satellites for Intelsat

Airbus announced it signed a contract with Intelsat to build two OneSat satellites operating in multiple frequency bands for Intelsat's software-defined network. The contract was signed on 31 December 2020. The satellites will be based on Airbus' OneSat product line which can be reconfigured in orbit, known as software-defined satellites (SDS). Airbus will deliver them as an end-to-end integrated solution, from design to manufacture. By integrating the ground segment software components into Intelsat's software defined-network ecosystem and digital suite will support dynamic operation of end-to-end satellite resources. The two SD satellites are due for delivery in 2023 and are intended to deliver services to Intelsat's customers across multiple regions. Transformation plan This agreement is said by the parties to "mark the beginning of a radical evolution of Intelsat's network; Intelsat is pursuing an aggressive, multi-year network transformation plan with investments in new assets that are designed for extremely high speeds, enhanced capacity flexibility, redundancy and backwards compatibility". Intelsat Chief Executive Officer Stephen Spengler said: "Intelsat's next-generation software-defined network will be the catalyst for our growth, enabling future Gogo Commercial Aviation inflight broadband services, as well as other managed services across Intelsat's customer segments." Intelsat completed the acquisition of Gogo Commercial Aviation in December 2020. It began a major restructuring initiative in May 2020.

# Softbank, Hughes Network Systems Fuel OneWeb Aim

Recently rescued satellite communications company OneWeb secured $400 million in additional investment from Hughes Network Systems and SoftBank Group, as it continues to target 2022 for completion of its first full commercial fleet. In a statement, OneWeb confirmed the new backing brought the total raised since entering bankruptcy protection in March 2020 to $1.4 billion, putting it on track to meet its target for completion of 648 orbiting satellites. Financial Times (FT) reported SoftBank contributed $350 million of the fresh cash with the remainder coming from Hughes Network Systems. The Japan-based group was one of the early backers of the project and retained a small stake gained from its status as a creditor when OneWeb was rescued from Chapter 11 bankruptcy by a consortium of the UK government and Bharti Airtel parent Bharti Enterprises. As a result of its latest investment SoftBank will gain a place on OneWeb's board. OneWeb CEO Neil Masterson said: "We have made rapid progress to restart the business since emerging from Chapter 11 in November. We welcome the investments by SoftBank and Hughes as further proof of progress towards delivering our goal." The company plans to provide commercial communications services from a fleet of Low Earth Orbit birds in 2022: it has already launched 110 satellites and said the investments leave it "positioned" to be fully-funded to meet its aim. However, FT estimated it needed to raise a further $1 billion. OneWeb faces stiff competition in the sector from a number of other players using similar systems.

# Saudi Arabia Counting Down to Unveil Partnerships in Space Sector

The Saudi Space Commission (SCC) is counting down to announce a set of preparatory partnerships to help propel the Kingdom's role in the space sector, the agency's chairman, Prince Sultan bin Salman, has revealed. Once an integrated project proposal has been completed, it will be submitted to the Saudi government for approval and implementation, the Saudi Press Agency reported. The announcement was made during a signing ceremony between the commission and the Local Content and Government Procurement Authority (LCGPA). The prince said: "This agreement comes within the partnership and integration methodology adopted between government agencies to enable the space sector to fulfil the directives of King Salman to establish a space-linked integrated industry, which has become a promising sector with economic contributions." The joint agreement will open new horizons for development in scientific research and innovation in the space industry, depending on local capabilities, particularly youth. The Kingdom was planning an SR8 billion ($2.13 billion) boost for its space program as part of its Vision 2030 reform plan, Reuters reported in October. The SSC was established by a royal decree in late 2018 to stimulate space-related research and industrial activities and is led by Prince Sultan, the first Saudi astronaut to travel to space.

# Viasat And SKY Brasil Partner to Expand the Distribution and Availability of High-Quality Satellite Internet Service Across Brazil

Viasat and SKY Brasil (SKY) announced a partnership to increase the availability of fast, reliable satellite internet across Brazil. Through this agreement, SKY will sell, install and provide on-site technical service for Viasat's high-speed internet service. Viasat gains a strong Brazilian distribution partner with proven local expertise, and will help train SKY's vast network of distributors, resellers and installers on its internet service offerings. In October 2020, Viasat became the first satellite Internet Service Provider (ISP) to offer high-speed broadband connectivity across 100% of Brazil. Viasat's residential internet service for Brazil uses Telebras' SGDC-1 satellite bandwidth to provide satellite broadband service. "SKY is present in all cities within Brazil, offering services that adapt to the daily life and different consumer needs and profiles of Brazilians. We are specialists in offering excellent service and technical support with an unbeatable distribution network that delivers great value and a highly-differentiated service that can be seen in our business results on a national scale. We look forward to working with Viasat. This partnership is in line with SKY's objective, which is ensuring all Brazilians have access to information and entertainment," said Sérgio Ribeiro, chief operations officer at SKY Brasil. "This partnership reinforces SKY's strategy of leveraging its vast distribution network to offer Home Services and Home Automation to increase the comforts of home, while ensuring all Brazilians have access to the best home services they require," added SKY President, Estanislau Bassols. The Viasat/SKY association is in line with Viasat's goal to offer connectivity options to all Brazilians. This partnership provides Viasat a strategic, local partner and channel to reach a broader set of potential subscribers who can benefit from its competitively-priced satellite internet service plans. Today, Viasat offers three plans: a premium plan (Viasat 30Mega), an advanced plan (Viasat 20Mega) and a basic plan (Viasat 10Mega), with download speeds of up to 30 Mbps, 20 Mbps, and 10 Mbps, respectively. All three plans come with a Wi-Fi router and attractive features such as messaging and unlimited basic navigation, and a free zone between 2:00 AM and 7:00 AM local time. With the launch of the Viasat 30Mega plan in October 2020, Viasat is recognized as offering the best satellite internet service in the Brazilian market, allowing customers to enjoy faster access to daily online activities such as social networks, video streaming content, videoconference services, remote work, and distance education. Evan Dixon, Vice President, Global Broadband Services at Viasat commented, "Working with SKY, Brazil's premier leader in satellite television, further reinforces our commitment to the local market, and accelerates the ability to bring high-speed satellite connectivity to more homes across the country – even those in the most difficult to reach locations." "This is an exciting move for Viasat in Brazil and an important part of our distribution strategy", added Bruno Soares Henriques, Viasat Brasil's commercial director. "Since the launch of our commercial service, we have seen the growing demand for connectivity outside of the fiber footprint, and believe our SKY partnership will help reach Brazilians who live in unserved or underserved areas where other terrestrial services are not available."
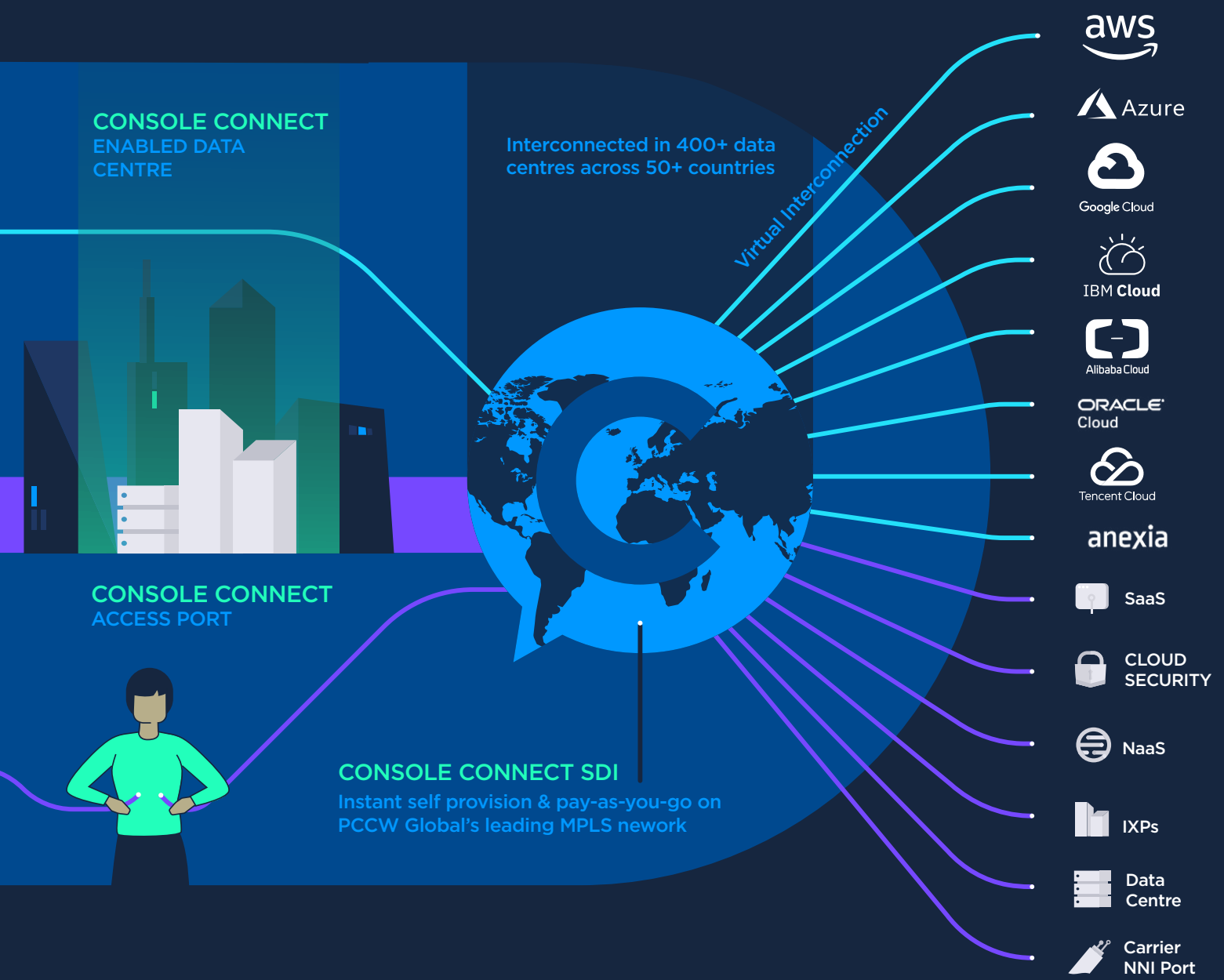
# Satellite Monitoring System Deployed in Tunisia

A satellite monitoring system of fishing vessels over 15 meters was put into operation, the Ministry of Agriculture, Water Resources and Fisheries announced. This system is based on three complementary components, namely a central computer system at the ministry, 50 central and local control rooms and terminals ensuring the transmission of data relating to the location and activities of vessels while guranteeing confidentiality. These terminals will be installed in 874 vessels (that is 6.72% of the fleet), the ministry added Friday in a press release. Sea equipment manufacturers are free to choose suitable terminals in compliance with rules of competition. Fiscal and financial advantages are instituted to cut the cost of operating these terminals. A 5% premium on the cost of hydrocarbons will be provided to cover annual operating and maintenance costs in midland and the south where fishing sites are far from ports. The ministry laid emphasis on the importance of this surveillance system in optimizing the safety of fishermen and vessels and combating illegal fishing which threatens seafood wealth and the sustainability of the sector. This system also provides a database for scientific research programmes on monitoring the exploitation
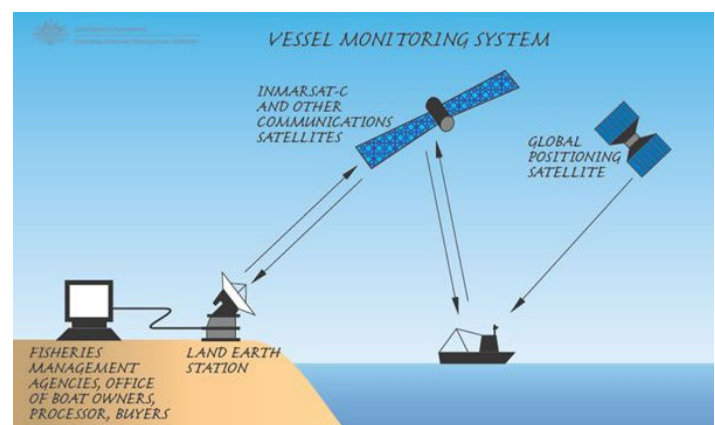


of fishing sites. It will help reduce the costs of naval surveillance, address illegal fishing and protect small fishermen against losses. The Ministry is working to set up a computer system dedicated to sea fishing and aquaculture to ensure better services for fishermen and equipment manufacturers and streamline human and financial resources.

# DELIVERING ON-DEMAND CONNECTIVITY INTO THE MIDDLE EAST

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# New Interconnection Opportunities in Africa

Console Connect by PCCW Global shares exclusive insights on Africa's rapidly growing data centre and cloud ecosystem.

*The Africa Interconnection Report looks in detail at the current state of Africa's data centre and cloud landscape, exploring some of the broader global and local trends that are driving growth in data centres and cloud services.*

2020 was a significant year for Africa's cloud and data centre ecosystem. There was considerable investment into carrier-neutral data centres across the region and slowly but surely the adoption of cloud services gathered pace.

The impact of the COVID-19 pandemic led many businesses to accelerate their adoption of cloud services in order to help them operate during these difficult times. But they are also looking beyond the short-term and want a more strategic view of how cloud can drive efficiencies and reduce cost in the future.

*The impact of the COVID-19 pandemic led many businesses to accelerate their adoption of cloud services in order to help them operate during these difficult times. But they are also looking beyond the short-term and want a more strategic view of how cloud can drive efficiencies and reduce cost in the future.*

To gain a deeper insight into these trends, Console Connect by PCCW Global commissioned consultancy firm Balancing Act to gather market research on the region's data centre and cloud ecosystem. The Africa Interconnection Report looks in detail at the current state of Africa's data centre and cloud landscape, exploring some of the broader global and local trends that are driving growth in data centres and cloud services.

**Data centre growth**

The report identifies that about a quarter of Sub-Saharan African countries have an existing or planned carrier-neutral data centre. Of the rack capacity in 5 key countries (South Africa, Nigeria, Kenya, Ghana and Angola), South Africa represents 89% of total capacity in those selected countries.

There are currently 10 Sub-Saharan African countries with carrier-neutral data centres



Chart 1: Number of racks in carrier-neutral data centres in 5 key countries in 2020
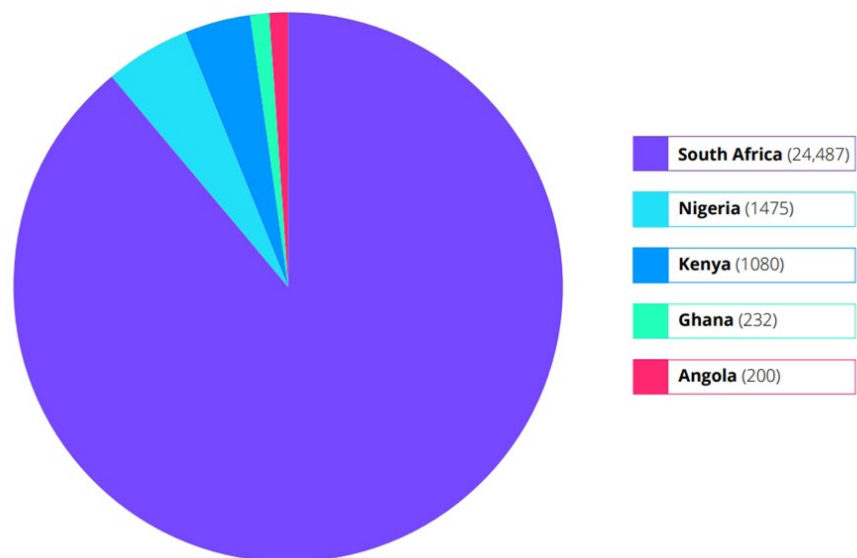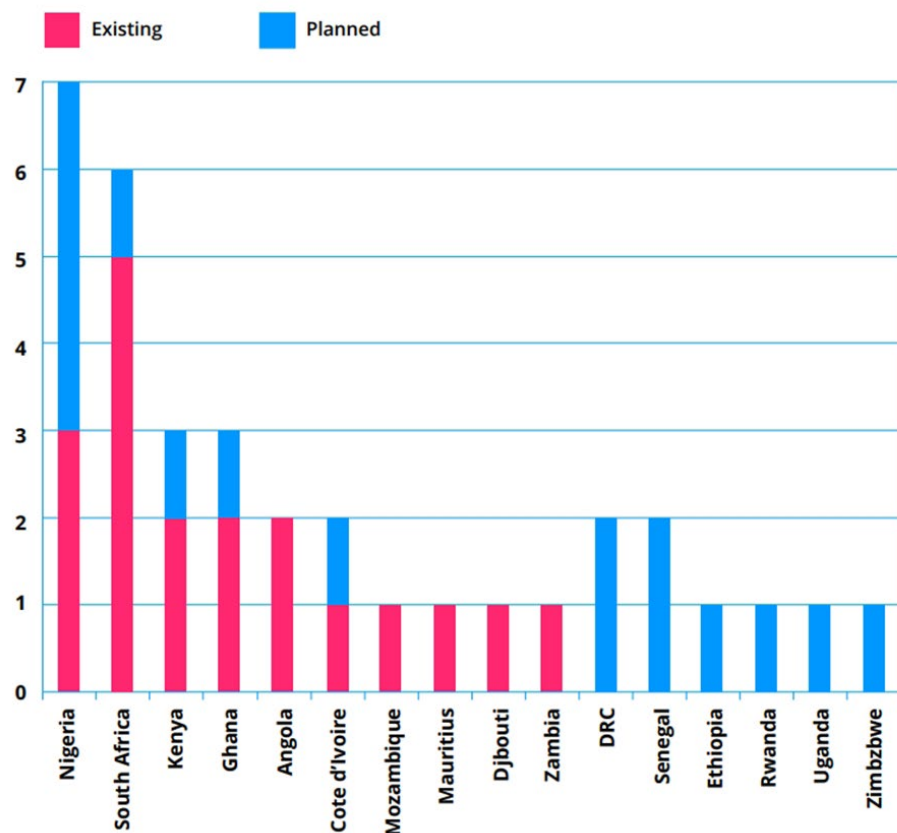
- South Africa (24,487)
- Nigeria (1475)
- Kenya (1080)
- Ghana (232)
- Angola (200)

Chart 2: Number of existing and planned carrier-neutral data centres in Sub-Saharan Africa by country

*Five major hyper-scale cloud providers are found to have an active interest in Africa, including Microsoft Azure, AWS, Google Cloud, Whale Cloud and Huawei Cloud. Both AWS and Microsoft have expanded beyond South Africa and Alibaba plans to expand from there into other Sub-Saharan African countries over the next 12-18 months*

**Clouds gather over Africa**
The availability of more data centre space is paving the way for the arrival of hyperscale cloud providers to the region.
Five major hyper-scale cloud providers are found to have an active interest in Africa, including Microsoft Azure, AWS, Google Cloud, Whale Cloud and Huawei Cloud. Both AWS and Microsoft have expanded beyond South Africa and Alibaba plans to expand from there into other Sub-Saharan African countries over the next 12-18 months

(Angola, Cote d'Ivoire, Djibouti, Ghana, Kenya, Mauritius, Mozambique, Nigeria, South Africa and Zambia), with 6 more coming on stream shortly (DRC, Ethiopia, Rwanda, Senegal, Uganda and Zimbabwe).

The report finds that not only are there significant investments being made in new data centre facilities, but the overall quality of data centre infrastructure is improving too.

The quality and operational expertise of carrier-neutral data centres in Sub-Saharan Africa has improved a great deal

*The quality and operational expertise of carrier-neutral data centres in Sub-Saharan Africa has improved a great deal over last 5 years and looks set to improve further in the years ahead...*

over last 5 years and looks set to improve further in the years ahead – with several of the region's planned next-generation data centres are being built to Level IV standard.

The table below summarises the local cloud presence of the five major players:

Table 3: Hyperscaler and local presence by country — Source: Balancing Act (estimates)

| COUNTRY | PRESENCE | LOCAL CLOUD PROVIDERS |
|---|---|---|
| Nigeria | • Microsoft<br>• VMWare Cloud Provider<br>• Google Cloud | 3-5 |
| South Africa | • AWS (Cape Town and Johannesburg)<br>• Google Cloud<br>• Huawei Cloud<br>• Microsoft Azure<br>• VMWare Cloud Provider<br>• Whale Cloud Services<br>• Teraco's neutral cloud platform | 40-50 |
| Kenya | • AWS<br>• Microsoft Azure<br>• Google Cloud | 2-4 |
| Angola | • Microsoft Azure | 1 |
| Ethiopia | | 2 |
| Uganda | | 3 |
| Cote d'Ivoire | | 1 |
| Mozambique | | 2 |
| Multi-location | SEACOM (offers hybrid cloud) | |

*"Network automation can help support the development of Africa's cloud and data centre ecosystem. Console Connect's Software Defined Interconnection platform provides African enterprises and carriers with new levels of network speed, agility and security as they connect to more clouds and data centres inside and outside of the region,"*

says Neil Templeton,
VP of Digital Innovation
Marketing at PCCW Global

There is no doubt that COVID-19 has accelerated the uptake of cloud services in Sub-Saharan Africa. Companies that might not have considered these services before have gone through lockdown periods where they needed to provide hassle-free home working and communications.

For some, especially outside South Africa, this requirement had already been on their roadmap in the form of things like future Bring-Your-Own-Device strategies for multi-location companies and COVID-19 has simply accelerated their implementation.

Research company IDC has predicted as a result of the pandemic, cloud spending will rise across Middle East, Turkey and Africa to US$2.8 billion a year. It sees online collaboration tools, cloud-based platforms, and secure remote access as all being central to this process, as will also improvements in infrastructure resiliency and disaster recovery. The sectors it highlights are: education, media and communications, government, healthcare and retail.

Beyond these COVID-19 changes, there were already several dynamics producing a migration to the cloud. When a carrier-neutral data centre opens in a country there is an accompanying growth in local cloud suppliers. Over time, many of them become consultants who bridge the gaps between legacy systems and hyperscaler offers. This is particularly true in South Africa where there are large numbers of companies supplying cloud software.

**The need for local interconnection**
The acceleration in digital transformation and the arrival of more data centres and hyper-scale cloud service providers in Africa is also increasing the need for local interconnection.

As they move further along their digital transformation journey, businesses across Africa will become interdependent on a much larger pool of cloud, SaaS and other business services. As well as needing quick and instant access to data centres, enterprises will require seamless interconnection between their SaaS, cloud and other business critical services.

"Network automation can help support the development of Africa's cloud and data centre ecosystem. Console Connect's Software Defined Interconnection platform provides African enterprises and carriers with new levels of network speed, agility and security as they connect to more clouds and data centres inside and outside of the region," says Neil Templeton, VP of Digital Innovation Marketing at PCCW Global.

Console Connect is the only Network-as-a-Service (Naas) platform that offers extensive reach across Africa. Users of the platform can interconnect between data centres in a growing number of African countries, including South Africa, Kenya, Nigeria, Mozambique, Uganda, Ghana, Ivory Coast and Djibouti.

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The platform also enables users to spin-up direct and secure layer 2 services to global cloud, SaaS, and IX peering partners on the platform. This includes direct connections to all leading hyperscale cloud providers, such as AWS, Alibaba Cloud, IBM Cloud, Google Cloud and Microsoft Azure.

"Console Connect is continuing to expand its ecosystem of data centres, cloud, SaaS and XaaS partners across Africa, the Middle East and worldwide," adds Neil.

To download the full Africa Interconnection Report, click here. For further information on Console Connect, visit:
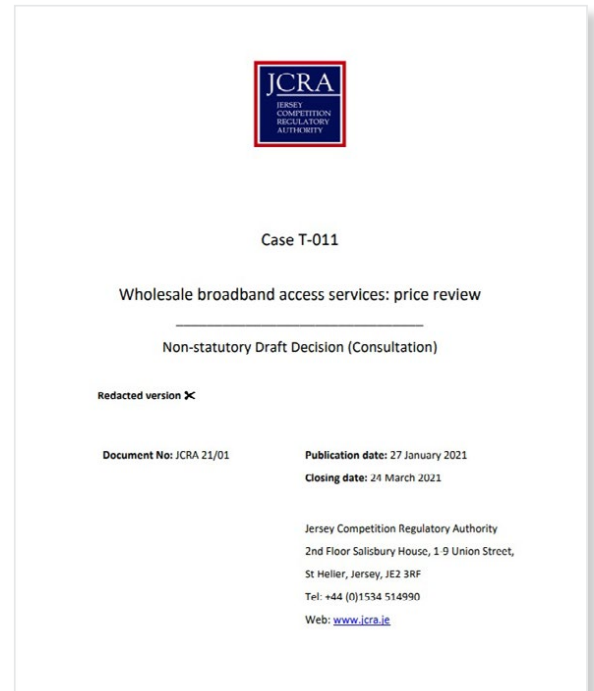www.consoleconnect.com

## WHOLESALE NEWS

## JCRA Consults on Proposed Price Control for Wholesale Broadband Access Services

Feedback on a draft decision related to a price review of wholesale broadband access services has been published by the Jersey Competition Regulatory Authority (JCRA), with the regulator having proposed a price control on fixed line incumbent JT Jersey, set on a forward-looking basis. With JT having previously been determined to hold significant market power (SMP) in the sector in question, the JCRA has claimed that a proposed price control 'is consistent with generally accepted principles and applied proportionately to Jersey'.

According to the regulator, the price control would be set so as promote more effective competition, while at the same time providing JT with 'the opportunity to recover its efficiently incurred costs plus an appropriate return on investment'. Meanwhile, the regulator noted that two different pricing approaches have been considered, saying that under both of these the proposed prices would be lower than the current price. Submissions to the consultation have been requested by a deadline of 24 March 2021.

JCRA
JERSEY
COMPETITION
REGULATORY
AUTHORITY

Case T-011

Wholesale broadband access services: price review

Non-statutory Draft Decision (Consultation)

Redacted version ✕

Document No: JCRA 21/01     **Publication date:** 27 January 2021
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## Italy's CDP Asks for More Time to Study Open Fiber Share Sale

The Italian state-backed investment fund Cassa Depositi e Prestiti (CDP) has requested further time to conduct negotiations regarding the sale of a stake in national wholesale network operator Open Fiber, in which it holds a 50% interest. Its co-shareholder, utility group Enel, is looking to sell all or part of its 50% stake to Australian infrastructure fund Macquarie, with the 50% holding valued at

EUR2.65 billion (USD3.2 billion). CDP has first right of refusal on any share sale and was given 30 days to make up its mind from the date of Enel's confirmation of its plans to sell, which came on 23 December 2020. A report from Reuters says that CDP has requested an extension to 25 February while it continues to study the situation. There have been rumors that some sections of the government are keen

for CDP to take at least part of the Enel stake, possibly raising its interest to 60% to give it control of Open Fiber, which is seen as a strategic national asset, leaving Macquarie to acquire the remaining 40%. There are also negotiations ongoing which would see Open Fiber combined with the broadband networks business of Telecom Italia (TIM), which also counts CDP as a shareholder.

## MoC Fines HOT Over Failure to Comply with Wholesale Market Provisions

Israel's Ministry of Communications (MoC) has fined HOT Telecom ILS6 million (USD1.8 million) for failing to properly comply with the provisions of the country's wholesale market reform. In a press release regarding the matter, the watchdog said that it had found 'HOT Telecom's conduct did not

allow for normal wholesale market activity on its network, in a manner that, in effect, led to the exclusion of competitors from its network and to the deterrence of the development of competition'. According to the MoC, while regulated tariffs for wholesale services were set during 2017,

HOT began providing such access only during 2018, while the regulator claimed that even after doing so, 'complications that did not enable service providers to provide proper services to consumers, were detected'.

# UK Outlines Wholesale Worries of Liberty, Telefonica JV

The UK's competition authority set out the scope of a probe into the proposed merger of O2 UK with fixed provider Virgin Media, with a focus on the impact on MVNOs and provision of fiber backhaul. In a consultation document released yesterday (21 January), the UK Competition and Markets Authority (CMA) outlined the full extent



of its detailed investigation into the deal between Liberty Global-owned Virgin Media and Telefonica's O2 UK announced in May 2020. One of the main potential sticking points cited by the CMA was the position of Virgin Media as the second largest provider of fiber backhaul to the country's mobile operators behind BT's Openreach. The regulator said there were concerns the new business would have the incentive and ability to alter agreements with other MNOs, including upping prices, changing terms or reducing service quality. Regarding the MVNO market, it will investigate similar risks of O2 changing terms or cutting supply of wholesale mobile services, and how these actions would change the competitive outlook for virtual operators and consumers. The CMA does not plan to look into the direct impact on consumers of O2 and MVNO Virgin Mobile being owned by the same business. "Evidence we have seen to date suggests that Virgin Mobile has a low and declining market share at the retail level." "We have also seen evidence that suggests that O2 and Virgin Mobile are not close competitors, in particular Virgin focuses on attracting mobile customers by cross-selling its mobile offering as an add-on to its fixed services."

# Italy Inches Closer to National Wholesale Broadband Provider

Italy's competition authority, the Autorità Garante della Concorrenza e del Mercato (AGCM), has said that while the proposed FiberCop last-mile network grid was a "strategic objective" for Italy, it wants to ensure "healthy, dynamic competition." Hence it is investigating the agreements that have been put in place to create the FiberCop network after long negotiation, and the supply agreements with Fastweb and Tiscali. FiberCop is the proposed joint venture for Telecom Italia's fixed network assets as well as those of Flash Fiber – the joint between Telecom Italia and Fastweb, which is owned by Swisscom. Italy's government has been pushing for a single national company to provide wholesale fiber broadband infrastructure for a considerable time, by pulling all the retail fiber assets together and combining them with those of wholesale fibre provider Open Fiber. Assuming the plan receives all the necessary approvals, AccessCo will be formed, but there is determination among the relevant authorities that it will not be

dominated by Telecom Italia. Telecom Italia currently own FiberCop outright, but the plan is for private equity firm KKR to acquire a 37.5% stake, and Fastweb a 4.5% holding. Enter Macquarie To add to the protracted wrangling between so many parties, Australia's Macquarie

intends to acquire a stake of 40% to 50% in Open Fiber from Enel, the Italian energy firm. The Turin-based, state-backed Italian investment bank Cassa Depositi e Prestiti (CDP) owns the rest. Macquarie is expected to transfer some of its stake in Open Fiber to the FiberCop joint venture.

# Digitally Empowered Economic Recovery

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**Q. What does digitally-empowered economic recovery mean to you, both in terms of societal normalcy and business continuity?**

**A.** Looking at the immediate future, digitalization in general and connectivity in specific will be enablers and drivers of economic recovery. Both technologies allow people to do their work despite prevailing restrictions (e.g. social distancing), therefore aiding the economy to get back on track. What's more, investments in digitization (from governments and companies alike), which are now seen as crucial, will further stimulate the economy.

Regarding societal normalcy, digitally-enabled solutions especially for the healthcare sector (for example to monitor (potential) patients' conditions) will play a major role in the future. They can not only help to detect or even avoid future pandemics and health crises, but can also be a tool to return to a more normal state and ease-up on restrictions earlier.

**Q. What trends has the recent global health crisis catalyzed for the ICT Industry and particularly for Telecom Operators? Which of these trends are here to stay?**

**A.** As Microsoft CEO Satya Nadella put it, "we saw two years of digital transformation in two months". And he is right: there are a number of digital trends in various industries that have been accelerated during the last year.

- **Sales:** Due to widespread business closures, stores were forced to shift their sales activities into the digital sphere, and many did. In some markets, the number of digital sales channels increased by more than 100 percent in just under three months.
- **New work:** Working from home (or basically anywhere) as well as virtual collaboration tools have become increasingly common during the last year. Once the pandemic is under control, we expect some people to return to their offices. But still, the possibility to work remotely and still be in touch with team members will be

> *For telcos, all of these trends mean that the importance of their services (like connectivity) is much more widely recognized, which can be translated in value adjustments and price increases.*

But in order for this to happen, companies need to adopt and accelerate digitized business. In doing so, not only the way employees are working in the "new normal" changes, but also how we interact with our customers. For example, we witness a significant alteration of internal processes for telecommunication companies, since everybody's use of digital tools and communication solutions has increased drastically in order to ensure efficient mobile working or working from home.

important for employees, so employers should make sure they can enable it.
- **Healthcare:** Telehealth solutions (from doctor consultations via phone to virtually-assisted surgeries) became more widely available, and there is still lots of room for evolvement with new network standards and reduced latencies in the wings.
- **Education:** Schools and universities had to increase their capabilities regarding e-learning very quickly, and are (quite often) still far from perfect.

Even though we don't expect virtual learning to become a widespread form of teaching, schools will be permanently changed after the crisis, and profit from acquired know-how.

For telcos, all of these trends mean that the importance of their services (like connectivity) is much more widely recognized, which can be translated in value adjustments and price increases. Customers' churn behavior has also changed, since being for hours and days without data connectivity is not an option anymore. As a result, many users value high quality more than low prices, rewarding quality providers and reverting moves towards the cheapest player.

**Q. How has the importance of Telecom Operators changed or has become more acknowledged over the past year?**
**A.** As mentioned above, telco services, especially connectivity services, have drastically increased in importance, and companies as well as end users have become painfully aware of that. Working from somewhere other than the usual office (and using data-intense applications) made a stable, sometimes mobile, but at any rate high-bandwidth connection a necessity for many. Consequently, connectivity has become less of a commodity (as increasingly perceived in recent years), but more a value differentiator for companies as well as their workforce.

**Q. What are the key transformational changes that have taken place for Operators? Moreover, what will the new sales channels look like and what**

capabilities are needed for sustaining operational excellence, especially as home-office and virtual collaboration trends continue?
**A.** People working from home have a lower tolerance for service outages and bandwidth issues. They now demand a (close to) zero-outage service in their homes, which will result in a need for improved SLAs and readily available customer service, like those currently offered in the B2B segment.

Another transformational change is the possibility for an emerging B2C-B segment. Employers could start taking over a part of their employees' home connectivity costs to support them working from home efficiently. This could work similarly to the mobile tariffs in some markets, where employers provide their employees with split invoices, etc.

Regarding sales channels: Digital will continue to be a key sales channel. Whereas before the current crisis, between seven and 15 percent of acquisitions were made here, this number in some cases increased during the first six months of the pandemic to 20 to 30 percent! This trend is here to stay and customers expect a seamless (online) experience across their entire customer journey. To ensure this operators will need to improve their digital customer engagement capabilities and provide easy-to-use customer touchpoints.

**Q. What does this mean in terms of required capabilities and organizational needs?**
**A.** As we said, telcos need to build or buy know-how regarding both technologies as

well as sales. More customer-centricity, for example, requires an UX-optimized design of every customer facing implication and a cross-product and channel-connected CRM tool. But not only OIT experts are called for, telcos also need to rethink their sales approach and move away from silo-like sales organization with different departments responsible for different sales channels. An integrated organizational cross-channel approach is needed, and the suitable processes to go with it (i.e. more transparency and more overall aligned processes across the organization).

Apart from acquiring knowledge, operators in addition have to make sure that their networks are prepared to handle sudden usage spikes in unexpected areas due to the change in work locations.

**Q. What are the top five measures you'd recommend for Operators to contribute in the digitally-empowered economic recovery processes and generate sustainable growth for themselves?**
**A.** Due to our experience in the industry, we recommend these five measures:
1. Broaden your B2B ICT offering.
2. Create a (digital) ecosystem of solutions.
3. Strengthen your company's digital channels and omni-channel capabilities (e.g. increase their attractiveness and create easy-to-us customer touchpoints like via app).
4. Implement AI/ML enabled CBM capabilities.
5. Guarantee bandwidths and improved SLAs specifically for the small office/home office/consumer segment. 🄲

**About the authors:**

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**About Simon-Kucher & Partners:**
Simon-Kucher & Partners is a global consulting firm with more than 1,400 professionals in 40 offices worldwide focusing on TopLine Power®. Founded in 1985, the company has over 35 years of experience providing strategy and marketing consulting and is regarded as the world's leading pricing advisor.

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# iCONNECT

## TECHNOLOGY NEWS

## Wi-Fi 6E Certification Will Cause Device Surge

The Wi-Fi Alliance's Wi-Fi 6E certification is now available. Wi-Fi 6E refers to the Wi-Fi standard that applies to Wi-Fi operation in the 6 GHz spectrum band. The certification is designed to help ensure secure, reliable, interoperable experiences by using certified devices. This development will add tremendous momentum to the launch of Wi-Fi 6E compatible and interoperable devices. The U.S. Federal Communications Commission has opened 1200 MHz of 6 GHz spectrum for unlicensed use, including Wi-Fi. Other countries that also have made that move include the U.K., Chile, South Korea and the United Arab Emirates, as well as European Union countries. The Wi-Fi Alliance also expects to see the 6Hz band opened for unlicensed operation in Brazil, Canada, Mexico, Peru, Taiwan, Japan, Saudi Arabia, Myanmar and Jordan. Several product vendors are already unveiling Wi-Fi 6E devices, a Wi-Fi Alliance press release notes. Wi-Fi 6E certification utilizes WPA3 security, which continues to evolve to protect against new threats. Recent updates include more robust password generation and the ability to mitigate additional attacks. Wi-Fi 6E capabilities include orthogonal frequency division multiple access (OFDMA), target wake time (TWT) and multi-user multiple input, multiple output (MU-MIMO). "These features all benefit from the additional 6 GHz spectrum capacity and the availability of up to seven super-wide 160-MHz channels to move more data and deliver high-bandwidth Wi-Fi 6E applications including unified communications, AR/VR and holographic video," the Wi-Fi Alliance said in a press release. "Wi-Fi 6E delivers lower latency to satisfy industrial IoT and enterprise environment requirements. Wi-Fi 6E brings additional capacity, speed, and reduced latency for critical activities such as telecommuting, telepresence, and distance learning."

## Comcast Aims for True 1 Gig Over WiFi Experience

Comcast says it's now delivering the fastest internet speeds over WiFi in the Northeast, after bumping up speeds and gateways for its 1-gig customers in 14 states. The cable operator said it's upgraded speeds for these customers from 1 Gbps to 1.2 Gbps, making it possible to achieve true gigabit-speed broadband over WiFi. Comcast said it will also upgrade at no additional charge its gigabit customers who don't already have WiFi 6-certified routers to xFi Advanced Gateway devices capable of gigabit speeds. With the changes, customers paying full freight for gig-speed Internet from Xfinity can now say they're actually getting 1,000 megabits per second. The rollout in Northeast markets "from Maine to Virginia to Washington, D.C." started on Jan. 7, said Comcast, adding that it will take initiative and reach out to gig customers who don't have the right gear. The move comes as Comcast's gigabit speed customers, perhaps more aware of SpeedTest.net than other customer cohorts, seem to be increasingly complaining that their pricey broadband service is delivering less than 1 Gbps. Comcast has offered gigabit-speed service to its entire footprint since 2018. The company hasn't disclosed how many of its 30 million high-speed internet customers pay for 1 gig. But a recent study conducted by consultancy OpenVault found that only around 5.6% of U.S. cable broadband customers take 1 Gbps service. "We are hyper-focused on advancing our internet product with new innovation," said Kevin Casey, president of Comcast's Northeast Division, in a statement. "Now our customers can enjoy faster speeds, state-of-the art gateways with WiFi 6 technology, wall-to-wall WiFi coverage, personalized tools and controls, and advanced cybersecurity protection."

# Telstra Claims 5G Speed Record for Commercial Network

Australian mobile network operator (MNO) Telstra has claimed a new record, having registered what it called a 'whopping' download speed of 5Gbps for a single user on its commercial 5G network. In a blog post, the MNO said it had achieved the speed working closely with Swedish vendor Ericsson and US-based Qualcomm Technologies. It noted that the speed had been actually been recorded at its 5G Innovation Centre on the Gold Coast just before Christmas, while Telstra highlighted the fact that this was the second time in three months that it had achieved a new peak downlink rate; previously, in September 2020 it had reported reaching a speed of 4.2Gbps, using 5G millimeter wave (mmWave) technologies, with that having represented a doubling of its previous peak speed. With regards to the most recent achievement, Telstra confirmed the most recent speed record was achieved on the live 5G network by using the Ericsson Radio System complete

base station for mmWave, the Streetmacro 6701 aggregating 800MHz of mmWave spectrum with a 4G LTE anchor band. It was conducted on a 5G smartphone form factor mobile test device, powered by the Qualcomm Snapdragon X60 5G Modem-RF System with third generation Qualcomm QTM535 mmWave antenna modules. The cellco has said it views

mmWave as being 'the next important iteration of 5G, technology that will take 5G to the next level', and it has been testing it on the country's intended frequency (26GHz) since 2017. A commercial rollout to consumers is expected in 2021, following the auction of spectrum in the band in question and improved availability of mmWave-compatible devices.

# NBN Co Claims to Have Set 5G Long-Range Transmission World Record

Australia's NBN Co has announced achieving what it claims is a world record for long-range 5G transmission using mmWave, as part of its efforts to develop new options to further optimize the performance of its fixed-wireless infrastructure. In live testing at a proof-of-concept site near Mortlake, Victoria, NBN Co and its technology partners – Ericsson, Qualcomm Technologies and Casa Systems – reportedly achieved a stable 5G mmWave transmission of close to 1Gbps at a distance of 7.3km, double the distance recorded at the site just three months earlier. According to the operator the field measurements will provide development

guidance for wireless technology suppliers, while also helping NBN Co understand the most cost-effective, and spectrum-efficient ways to integrate 5G into its evolving network architecture. NBN Co is exploring 5G technology operating in mmWave spectrum as part of its commitment to enhancing customer experience and evolving its fixed-wireless network for future needs. At present, the operator's infrastructure currently covers more than 620,000 premises across regional and rural Australia, with more than 90% of customers currently within 7.3km of a fixed-wireless cell. Commenting on the development, NBN Co's Chief

Technology Officer, Ray Owen, said: 'This is a significant achievement for [NBN Co] and our technology partners, Ericsson, Qualcomm Technologies and Casa Systems, we anticipate strong interest from the global technology community as we further develop these capabilities. With industry development for mmWave largely focused on high-density urban environments, this trial helps prove the case for additional work to suit the unique requirements of the nbn Fixed Wireless network and other regional and rural use-cases around the world.'

# KT Corp Starts Testing Standalone 5G

South Korean mobile network operator (MNO) KT Corp has begun testing standalone (SA) 5G on its commercial network, Yonhap News Agency reports. According to the local press outlet, KT

has revealed that its employees will take part in the testing of the technology at its major offices and in urban areas. The MNO noted that this development marks the final phase of trials ahead of a commercial

rollout of SA 5G, which it has claimed will make a noticeable improvement to its services.

# European Big Hitters Make Open RAN Pledge

Operator heavyweights Deutsche Telekom, Orange, Telefonica and Vodafone Group established a collaboration covering the rollout and development of open RAN technology, in a bid to ensure the continent keeps up with early pacesetters, the US and Japan. In a joint statement, the operators detailed the signing of an MoU covering "their individual commitment" to implementing open RAN across Europe, with the aim of creating an interoperable market and ensuring the availability for a timely deployment in the continent. They plan to work with existing and new ecosystem partners, industry bodies including the O-RAN Alliance and Telecom Infra Project, and European authorities "to ensure open RAN reaches competitive parity with traditional RAN solutions". The quartet increased their respective commitments to open networking in

2020. Vodafone, a major backer for a few years now, in November 2020 detailed plans to deploy open RAN equipment at 2,600 networks sites in the UK by 2027, while Orange outlined plans to open a TIP Community Lab in Paris focused on trialling the technology. Telefonica struck a partnership with Rakuten Mobile covering ecosystem developments while Deutsche Telekom continued calls for the inclusion of laws related to open RAN, claiming operators were becoming more independent from hardware manufacturers. Orange's global director of radio innovation Olivier Simon told Mobile World Live the continent's major operators were as committed to open RAN as rivals across the world, but some regions were "already ahead of Europe". "In the US, you can see a lot of different companies really embracing the open

RAN concept. In Japan, we have the same situation. In Europe, we need a strong push, we need an ecosystem, and we need to be really clear as operators that open RAN is the future," he said. Simon added the European Commission and national governments were the targets of the operators' collaborative message, and it was inviting these bodies to fund R&D, lab tests and to help small companies grow. "Public authorities need to be conscious about how important this breakthrough is," said Simon. Simon noted other European operators were also free to join the collaboration, while it had not sought any vendors to join the pact. Addressing the role of major European vendors Ericsson and Nokia, Simon lauded the fact the pair had also committed to the technology, while noting open RAN was both a "threat and an opportunity" for them.

# China to Build 30 'Fully Connected' 5G Factories By 2023

China aims to build 30 "fully connected" 5G factories in 10 key industries by 2023, as the country has fast-tracked industrial Internet development through integration with 5G technologies. Three to five industrial Internet platforms with international influence will come into being and a big data center for industrial Internet will be established by 2023, said an action plan on industrial Internet development for the next three years, which was unveiled by the Ministry of Industry and Information Technology (MIIT). The action plan pointed out that the next three years (2021-2023) will be the period of the rapid growth of China's industrial Internet. Emerging business formats will prevail such as intelligent manufacturing, network-based collaboration and personalized customization during the period, it said. The industrial Internet, also known as the Internet of Things (IoT) for industry, refers to the broader adoption of advanced technologies such as next-generation wireless networks, big data and artificial intelligence and IoT. MIIT data showed China has already nurtured



over 70 industrial Internet platforms into regional influence, connecting about 60 million sets of industrial equipment and more than 400,000 industrial enterprises.

# Swedish Cellcos Boost 5G Speeds Using New Spectrum

Swedish operators Tele2 and Telenor have announced an expansion of their 5G services under the umbrella of their network sharing joint venture (JV) Net4Mobility. The JV won 100MHz of spectrum in the 3.5GHz band in the government's 5G

auction earlier this week and the operators have moved quickly to activate the new frequencies. This has enabled them to upgrade to what Tele2 terms as 'real' 5G, with download speeds of over 1Gbps, up from 500Mbps previously. The gigabit

service has been made available by Tele2 in 30 Swedish cities and by Telenor in 37 cities. By the end of 2023 the Net4Mobility partners expect to have rolled out 5G connectivity to more than 99% of Sweden's population.

# Ooredoo Algeria Deploys Nokia's Cloud-Native Core

Ooredoo Algeria has deployed Nokia's cloud-native Core software to cost effectively strengthen its network performance and reliability, and to strategically position itself for the future and the launch of new services to meet customer needs. A press release announced: 'By modernizing its core to a more efficient, cloud-based network, with near-zero-touch automation capabilities and high-level operational efficiencies, Ooredoo Algeria can meet rising customer demand for much greater bandwidth capacity and service quality. The deployment follows Nokia's support to help Ooredoo Algeria deploy North Africa's first cloud mobile gateway and facilitate the complete migration from the legacy core to Nokia's cloud-native core network

technology.' Djillali Erouane, Technology Operational Director at Ooredoo Algeria, added: 'Moving the core network to Nokia's cloud solution can support industrial

automation and the Internet of Things (IoT) when these technologies become available in the country.'



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"With Nokia's cloud-native core solution, we are able to deliver the latest services, while better controlling our operational costs, supporting industrial automation and the IoT."

Djillali Erouane
Technology Operational Director at Ooredoo Algeria

# Vodafone Switches on Greece's Third 5G Network

Vodafone Greece launched its 5G network last week, following on from launches by its rivals Cosmote and Wind in December 2020. The Vodafone network is available in parts of Athens and Thessaloniki, with 40% of the population expected to be covered by March 2022. At the same time, through the

parallel modernization of the 4G network, Vodafone says its 4G customers will also benefit from an improved connection experience and higher speeds by up to 50%. The Greek government's auction of 5G-capable spectrum was completed on 16 December, raising EUR372.3

million (USD450.8 million) for the state. Frequencies in the 700MHz, 3.7GHz and 26GHz bands were sold, alongside permits for the 2100MHz range, some of which are already in use, but are due to expire in 2021.

# Beltelecom Completes 5G Test Phase, now 'Ready to Deploy'



BelTA cites Yuri Petruchenya, director general of Belarusian state-owned telco Beltelecom, as saying that the company has finished testing a 5G network and is now ready to move to the launch phase. In a presentation outlining the next generation technology in the China-Belarus industrial park Great Stone on 14 January, Petruchenya confirmed that Beltelecom has successfully tested 5G services using equipment operating in the 3.6GHz band. The two sites – the industrial park itself, and a second location in Kopyl District, Minsk Oblast – used equipment supplied by Huawei of China. Access speeds peaked at 1.235Gbps, he said.

# When the world stops
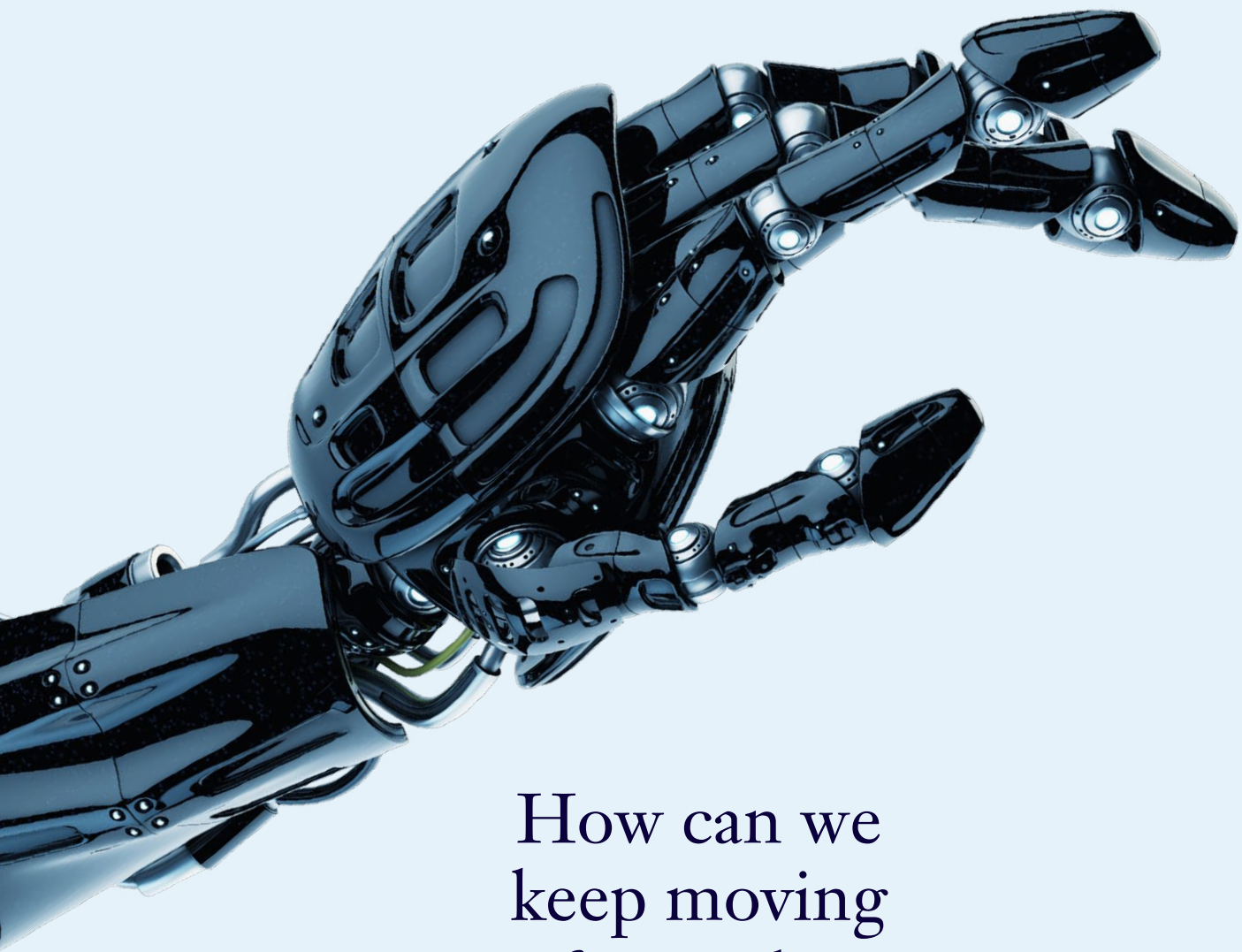
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## REGULATORY NEWS

## DITRDC Consults on Draft Standards, Rules and Benchmarks for SIPs

Australia's Department of Infrastructure, Transport, Regional Development and Communications (DITRDC) has begun consulting on draft standards, rules and benchmarks related to the country's statutory infrastructure provider (SIP) regime, which came into effect on 1 July 2020. In a press release regarding the matter, the regulator noted that with the introduction of the SIP regime there is now a legal framework ensuring premises across the country can be connected to a network providing superfast broadband services. It also reiterated that where SIPs operate fixed line and fixed-wireless networks, they must also support voice services. According to DITRDC, there are now 19 SIPs on the register of the Australian Communications and Media Authority (ACMA). To further define the level of service that SIPs provide, DITRDC is now consulting on a number of elements, including: maximum timeframes for connection, repairs, and appointment keeping; peak speeds; network remediation plans; transparency requirements for any rebates payable; and associated record-keeping. It said that these draft standards, rules and benchmarks draw on arrangements currently used by NBN Co as the default SIP for all of Australia, as well as the historical Customer Service Guarantee (CSG). Submissions to the consultation have been requested by a deadline of 1 March 2021.

## CMA Publishes 'Issues Statement' As Part of Examination of Proposed O2 UK-Virgin Media Merger

Following the request from O2 UK and Virgin Media that their proposed merger be fast-tracked to an in-depth investigation by the Competition and Markets Authority (CMA), the latter body has now published an 'issues statement' in which it details its provisional main concerns related to the tie-up. The statement sets out the scope of the watchdog's inquiry, outlining initial theories on what might adversely affect competition, but it does not set out findings or conclusions. Specifically, the CMA has called attention to two areas, namely the wholesale MVNO sector and the wholesale leased line market, saying it has identified 'primary potential theories of harm' in relation to the operators' activities in these sectors. A deadline of 4 February 2021 has been set for submissions on the CMA's issues statement. As previously reported by CommsUpdate, in May 2020 Spain-based Telefonica, parent company of O2 UK, and Virgin Media parent Liberty Global inked an agreement to merge their British subsidiaries to form a 50:50 joint venture (JV). At that time, it was claimed that the combination of the two service providers will create a nationwide integrated communications provider with annual revenue of around GBP11 billion (USD15 billion) and more than 46 million pay-TV, fixed broadband and mobile subscribers. Further, the companies suggested that the JV initiative will deliver 'substantial' synergies, valued at GBP6.2 billion on a net present value basis after integration costs, and equivalent to cost, CAPEX and revenue benefits of GBP540 million on an annual basis by the fifth full year post-closing.

## Starlink Secures Licensing Approval for Terminals From OFCOM

Starlink, the broadband satellite internet service of SpaceX, has received licensing approval for its user terminals from British telecommunications regulator OFCOM, Bloomberg reports. With the development paving the way for Starlink to enter the UK broadband sector, it was noted that the regulatory authorization had actually been granted back in November 2020, according to an OFCOM spokesperson cited by the report. Meanwhile, Light Reading notes that Starlink's satellite-based broadband connectivity is expected to be tested by a small group of trial users in the near future, with invitations understood to have been sent out earlier this month. Looking towards the launch of commercial services, British consumers are expected to be charged GBP439 (USD593) for the equipment needed to connect to Starlink's service when it launches, while the ongoing monthly charge will be GBP84 for a broadband plan offering average downlink speed of between 100Mbps and 150Mbps.

# PTA Notifies Mobile Device Manufacturing Regulations 2021

Pakistan Telecommunication Authority (PTA) notified 'Mobile Device Manufacturing (MDM) Regulations, 2021' binding the manufactures of 8 percent of total manufactured device to be done locally by end of two years and showing 'Manufactured in Pakistan'. According to the notification, these Regulations shall come into force with effect from 25th January 2021. An application for the grant of Authorization to manufacture Mobile devices in Pakistan shall be made the form set out in Schedule 'A' to these Regulations. The Authorization holder shall ensure localization of mobile device manufacturer in the manner prescribed below: at the end of one year, 2 percent of total manufactured device packaging to be done locally, 2 percent of total manufactured device chargers to be produced locally, 1 percent of total manufactured device hand-free to be produced locally, 10 percent of total manufactured device Motherboard Assembly (PCBA) to be produced locally, at the end of 2nd year, 8 percent of total manufactured device to be done locally, 8 percent of total manufactured device display screens and components to be produced locally, 10 percent of total manufactured device batteries to be produced locally. All devices shall be manufactured as per ITU-T technical standards and certification reports for all components shall be provided to PTA for verification. If the Authorization holder fails to comply with any of the above conditions, they can submit a written justification to the Authority. In case of same is accepted by the Authority, the above conditions shall be extended for a maximum period of 2 Years or in case of any revision in the MDM policy issued by the government of Pakistan. PTA may conduct inspections of the manufacturing facility through its designated representative to ensure that the Authorization holder is complying with the standards set out in terms and conditions of the Authorization. Provided that the Authorization holder shall demonstrate the following equipment is installed in the manufacturing facility as part of inspections, Laboratory of Reliability Testing, Battery Test Lab, Accessories Test Lab and Radio Frequency Audio and Optical Lab. Quality and Control Testing at assembly line including Device Function Test (b) Controlled Drop test of device (c) Electrostatic Discharge (ESD) setup/tools (e.g. ESD Coat, Cap, Wrist band etc.). An application under sub-regulation (1) shall be accompanied Application Processing Fee (non-refundable) of US dollar hundred ($100) or its equivalent in Pak rupees to the Authority and shall submit proof of payment along with the application. The Authority may grant Authorization to manufacture mobile devices in Pakistan to an applicant who fulfills the open, transparent, and non-discriminatory eligibility criteria given by the Authority from time to time. The Authority shall consider all applications on merit and in determining whether or not to grant a certificate, the Authority shall consider the following factors, technical competence and experience of applicant's management and key members of staff and local participation in the business; and technical viability of the applicant's business plan for mobile device manufacturing. The Authority may reject an application; if it appears that the grant for the Authorization shall threaten or potentially threaten national security. The applicant must have valid registration of Security Exchange Commission Pakistan (SECP). In case the Authority decides to reject the application, it shall give reasons for rejection. An Authorization shall be valid for a period of ten (10) years. The Authorization may be renewed for another term(s) beyond ten (10) years on one year (1 year) prior written request of the Authorization holder before the expiry of the existing term, subject to the terms and conditions applicable at that time.



# MNP Will Start By 30 September, NTC Says

The Philippines' National Telecom-munications Commission (NTC) announced that the rollout of Mobile Number Portability (MNP) – delayed due to the COVID-19 pandemic – will start by 30 September 2021. The Philippines had intended on introducing MNP in the first quarter of this year under the remit of the Republic Act 11202 – also known as the Mobile Number Portability (MNP) Act – signed in February 2019, with implementing rules and regulations (IRR) taking effect from 2 July 2019. Whilst the two dominant operators Globe Telecom and PLDT's Smart Communications had already started to allow MNP within their respective networks – albeit only for subscribers shifting from pre-paid to post-paid – they are yet to allow it for anyone wishing to switch network provider, NTC Deputy Commissioner Ed Cabarios said, due to 'the community quarantine'. In an interview earlier this month, Cabarios pointed out that the widespread quarantine imposed in the country since March 2020 has 'limited the movement of the clearing house tapped to finish the back-end of the scheme'. However, in a recent Senate hearing the deputy commissioner now confirmed interoperability testing for MNP will be conducted in June with its introduction to follow three months later. Globe, Smart and new third player DITO Telecommunity have formed a consortium called Telecommunications Connectivity, and tapped global firm Syniverse to implement the porting platform.

# ETNO Flags European 5G Lag

Industry group ETNO called for swift action to address fragmentation and a restrictive regulatory environment which it argued is hindering the continent's progress in 5G relative to the US and Asia. Research by the association showed the region is lagging in network deployments and digital investment metrics covering 5G and AI. It said fragmentation and regulation contributed to "weakening the European telecoms sector". The State of Digital Communications report, launched by ETNO in conjunction with research group Analysys Mason, showed a quarter of citizens had access to at least one next-generation network in Q3 2020, up from 12.9 per cent in the comparable 2019 period. In contrast, 76 per cent of the US population had access to technology, while in South Korea the figure stood at 93 per cent. ETNO's research also found demand in Europe was lower than other markets, noting this could impact the operator business case for faster rollouts. The average mass market telecoms spend per capita in Europe stood at €34.70, compared with €76.10 in the US and €52.50 in Japan. European ARPU is also lower at €14.90, versus €36.90 in the US and €28.10 in Japan. Europe's biggest operators including Vodafone Group, Deutsche Telekom, Telecom Italia and Telefonica have all launched 5G, so the report will no doubt be concerning the national governments which have earmarked the technology as key for future infrastructure development and boosting economies. In other areas, ETNO noted Europe had a significant role in advancing innovation in AI. Between 2010 and 2020, the continent secured 11,400 patents, better than China (5,700) and Japan (4,000), but behind South Korea's 16,800 and 53,200 by the US. Rupert Wood, research director at Analysys Mason, added: "European operators remain exposed to greater competitive pressures than elsewhere and consequently have revenue lines that change little in relation to surging demand."
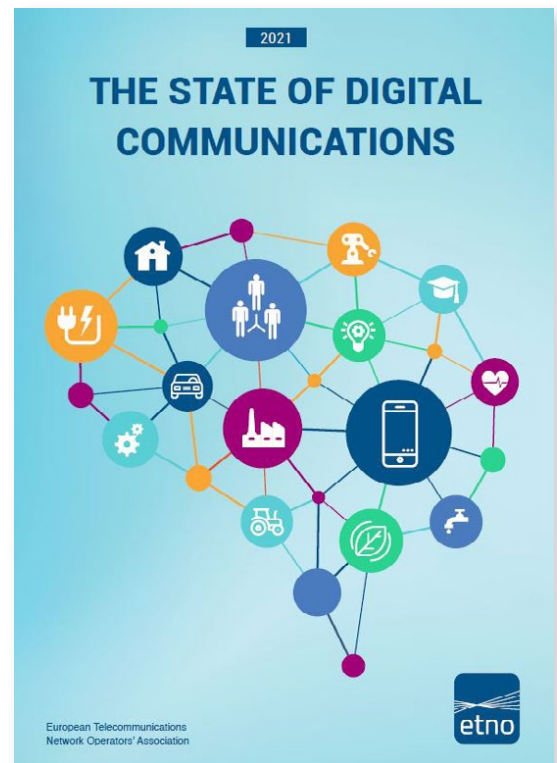
# Approval of ROW Policy by Federal Cabinet a Historical Success of MoIT&T

Pakistan Federal Minister for IT and Tele-communication Syed Amin Ul Haque has said that the Right of Way (RoW) Policy will play important role for the comple-tion of Digital Pakistan Vision. He termed the approval of Right of Way Policy by federal cabinet as historical success of Ministry of IT & Telecom. In a statement on Wednesday, the Federal Minister for IT offered thanks to Prime Minister, federal cabinet, PM Taskforce and all concerned departments on endorsement of Right of Way Policy. He said that no government in the past gave any importance to Right of Way Policy. Federal Minister said that Right of Way Policy will pave way for laying of telecommunication network and dig-italization. It will be helpful for removing hurdles in way of laying optical fiber cable (OFC) and telecommunication extension across country, he added. The key features of Right of Way Policy are: Fee determina-tion, dispute resolution, national security, safety and protection from health hazards, telecom as critical infrastructure, sharing of Right of Way, security of telecom infra-structure and common services corridor.

# Frontier Secures FCC Approval for Chapter 11 Restructuring

Frontier Communications has announced that it has secured approval from the Federal Communications Commission (FCC) for its Chapter 11 restructuring. Frontier now has regulatory approvals, or favorable determinations, for its required change-in-control applications related to its court-supervised restructuring from the FCC and 13 states, namely: Arizona, Georgia, Illinois, Minnesota, Mississippi, Nebraska, Nevada, New York, Ohio, South Carolina, Texas, Utah and Virginia. The telco notes: 'Frontier expects to promptly consummate the transactions contemplated under its previously confirmed Plan of Reorganization and emerge from Chapter 11 in early 2021. Upon emergence, Frontier will have reduced its total outstanding indebtedness by more than USD10 billion and will move forward with enhanced financial flexibility to support continued investment in an improved customer experience and long-term growth.'

# Masmovil Wins Portugal Newcomer Spectrum

Portugal has concluded the first part of its latest spectrum auction and it appears Masmovil has come out on top and will therefore become the country's new mobile network operator. ANACOM announced the completion of phase one of the spectrum sale earlier this week, but did not divulge the identity of the winner, or indeed winners. The regulator simply said the auction of three 5 MHz blocks of 1800 MHz spectrum and one block of 900 MHz frequencies had raised €84.35 million after eight days of bidding. Our interest was piqued due to the activity in the 1800-MHz band. While the single lot of 900 MHz spectrum sold for the reserve price of €30 million, there was clearly some competition for the 1800 MHz airwaves. The lots carried a reserve price of just €4 million, but each ended up more than four times higher at €18.12 million. Given that the spectrum was reserved for a new market entrant, that is highly noteworthy. As a quick recap, the regulator last year made the decision to reserve some 900 MHz and 1800 MHz for a newcomer last year, incurring the wrath of established MNOs Vodafone, Meo and Nos, who believed the licensing conditions to be unfair. In

particular, the expressed concerns over price breaks on spectrum for a new player and requirements to allow that player to roam onto their networks. Such was their ire that the regulator reconsidered – to an extent – and altered the pricing structure for the spectrum, but the big guns continued to complain about state aid and pledged to continue to challenge the rules, including through litigation. Nonetheless, the auction got underway in December. While the telcos debated the rights and wrongs of the auction rules, industry watchers speculated over the likelihood of a new market entrant. The name most commonly in the frame was Masmovil, owner of Portuguese cable operator Nowo and business service provider ONI. Nowo already operates as an MVNO in Portugal, but with a market share of just 2% as of the end of Q3, according to Anacom's data, was hardly a threat to the big three; to add context, Nos is the smallest of the three with a 26.4% market share, while leader Nos claims in excess of 40%. Spanish newspaper Expansion has named Masmovil as the winner of the 1800 MHz frequencies, which will allow it to become a fully-fledged operator. And with its

bigger rivals required to provide network access for as much as 10 years, it stands a good chance of making its presence felt. But, presuming its information is correct, what of the competition it faced for the frequencies? Portugal's Expresso speculates that a companies interested in using the spectrum for Internet of Things (IoT) purposes were bidding for the spectrum, one of whom emerged victorious. However, the news outlet believes Nowo was barred from taking part in this part of the auction, being an existing player. It seems more likely that Expansion's information is correct, and that as a player without existing spectrum assets, Masmovil was permitted to participate. The suggestion that its competition came from an IoT player seems highly plausible though. We will have to wait for a formal announcement from the regulator to be certain of the outcome. In the meantime, the big guns are set to battle it out for 5G spectrum via an auction of 58 lots of frequencies in the 700 MHz, 900 MHz, 1800 MHz, 2.1 GHz, 2.6 GHz and 3.6 GHz bands that is due to get started in the coming days.

# UK Government Looks to 5G to Boost Industry

The UK government announced a £28 million joint investment scheme with businesses in the country to fund nine national projects covering use of 5G in AR, private networks and open RAN. In a statement, the government explained the 5G Create program is part of a wider £200 million investment in testbeds and trials to explore new ways the technology can boost productivity, grow existing businesses or spark new ones. The government



has provided £15 million of the funding to be shared across the nine projects, with the remaining £13 million coming from project partners. These include operator EE, which worked with technology companies to create a new AR app set to be released alongside a new television series called the Green Planet, which enables users to stream holographic videos of parts of the show. Fellow operator 3 UK is also involved, working with partners to improve operations at ports by deploying 5G-powered cranes and using the technology to enable real-time tracking of the movement of goods at two locations. Other projects include work to improve fan experiences at two of the UK's biggest venues, while the Eden Project in Cornwall will explore how 5G and 360-degree video can enhance visitor experiences, in a bid to boost tourism. In Scotland, trials will explore how 5G can support the construction industry. Through a dedicated private 5G network, the technology will be used to power cameras, drones and sensors at engineering company BAM Nuttall's sites in three cities, including Glasgow. Meanwhile, five of the projects will also test the technical possibilities of open RAN, as part of the government's 5G diversification strategy.

# FCC Publishes New Broadband Deployment Report; Continues to Bridge Digital Divide

The US Federal Communications Commission (FCC) has released its annual 'Broadband Deployment Report', asserting that significant progress was made to bridge the digital divide in 2019. Since the watchdog's previous report, the number of Americans living in areas without access to at least 25Mbps/3Mbps down/upload speeds (i.e., the FCC's current benchmark) has dropped from more than 18.1 million at the end of 2018 to fewer than 14.5

million at the end of 2019 – a decrease of more than 20%. Moreover, more than three-quarters of those in newly served locations – nearly 3.7 million Americans – are located in rural areas, bringing the number of rural Americans in areas served by at least 25Mbps/3Mbps to nearly 83%. Since 2016, the number of Americans living in rural areas lacking access to a 25Mbps/3Mbps service has fallen more than 46%. Outgoing FCC chairman Ajit

Pai commented: 'From my first day as chairman, the FCC's top priority has been closing the digital divide. It's heartening to see these numbers, which demonstrate that we've been delivering results for the American people. In just three years, the number of American consumers living in areas without access to fixed broadband at 25Mbps/3Mbps has been nearly cut in half.'

# FCC Mulls 12GHz Band for Mobile Use

The US Federal Communications Commission (FCC) weighed a move to make more spectrum available for 5G, opening a public consultation on whether to allow mobile services in the 12GHz band. In a statement, the agency explained the band is currently used by satellite service providers and sought input on whether it would be possible to share the frequency with terrestrial mobile services without causing harmful interference. The FCC also asked for comment on approaches to assigning usage rights; potential sharing mechanisms; and the public interest benefits of either keeping the existing satellite-focused framework or accommodating new services. Outgoing FCC chairman Ajit Pai stated "technical studies will undoubtedly be submitted from all sides", adding the agency will "scrutinize the arguments and data in the record and be guided by the evidence and sound engineering". Dish Network and industry group the Competitive Carriers Association (CCA) backed the move. However, it faced opposition from satellite communications providers OneWeb and SpaceX, which already deployed hundreds of satellites using the



12GHz frequency and was recently awarded nearly $1 billion in US government funding to deliver internet connectivity.

# FCC Chief Pai Urges Spectrum Policy Overhaul

Outgoing US Federal Communications Commission (FCC) Chairman Ajit Pai called on Congress to reform the nation's spectrum management framework, warning the current fragmented approach could hinder future progress. In a speech, Pai explained spectrum in the US is currently managed by two separate agencies, with the FCC governing commercial airwaves and the National Telecommunications and

Information Administration (NTIA) those used by government bodies. He noted the US is one of the only countries to have such a split system. Pai argued the structure "doesn't work", pointing to efforts by federal agencies to "throw up roadblocks" in recent years as the FCC worked to free additional spectrum for commercial use. He blasted the government as "arguably the biggest thing hampering efforts to use

spectrum more efficiently", and insisted "we must bring an end to the practice of each agency having its own" policy. "If the FCC ultimately holds the pen on all spectrum matters, perhaps agencies will stop throwing up roadblocks by default and will recognize that the best way to preserve their interests is to persuade the Commission with sound engineering and facts."

# US Government Mulls Program to Boost Open 5G

The US government began consulting on potential approaches to spur development of an open 5G ecosystem, as it moves to offset potential interoperability issues which could hinder the technology. In a notice of inquiry, the National Telecommunications and Information Administration (NTIA) sought recommendations from the industry on the goals and focus areas for a program designed to promote open infrastructure and software in 5G networks and services. The NTIA is also seeking details on how a 5G Challenge scheme could be designed to "focus on the greatest impediments to maturation of end-to-end open 5G stack development"; what incentives could be used to maximize collaboration and interoperability; and the timeline for executing the plan. US authorities have already proposed open RAN systems as an alternative to equipment from Chinese vendors including Huawei and ZTE. The NTIA noted the proposed program would boost a 5G initiative launched by the

Department of Defence (DoD) in 2019, adding the ultimate goal was to create a competitive challenge which "maximizes the benefit to both the open 5G stack market and the DoD on an accelerated schedule". Comments are due by 10 February. In October 2019, the DoD detailed the creation of 5G test beds at military sites, with contracts for trials issued a year

later. In September 2020, it also issued a call for information on spectrum sharing. It previewed its full 5G strategy in May 2020, outlining goals to spur development of key technologies including open architecture, mmWave and dynamic spectrum sharing; influence 5G standards to its benefit; and mitigate security vulnerabilities.

# US C-Band Auction Smashes FCC Record

A US sale of C-Band spectrum (3.7GHz to 4.2GHz) closed its first phase with a staggering $80.9 billion in bids after 97 rounds, shattering the country's previous auction record. In a statement, Federal Communications Commission (FCC) Chairman Ajit Pai said the early results "represent a strong endorsement by the private sector of the service rules and transition plan put in place by the FCC to

quickly make the C-Band a critical part of 5G rollout in the United States". He noted bids were placed for all 5,684 available licenses, adding proceeds from the initial phase of the sale crushed a previous high of $44.9 billion set by the agency's AWS-3 auction, which closed in January 2015. The auction now enters an assignment phase during which winning bidders will compete for specific frequencies. Winners

will be announced upon completion of this phase. In a LinkedIn post, mobile network provider BitPath's COO Sasha Javid noted the assignment phase typically takes about a month, and reiterated earlier warnings from analysts the auction's high tally "could result in slower buildout, high prices for consumers, less stock buybacks and missed targets for debt reduction".

# PTA Renews PTCL License For 25 Years

State-backed telco Pakistan Telecommunication Company Limited (PTCL) has completed the renewal of its integrated telecom service license for the next 25 years, with effect from 1 January 2021. Sector watchdog the Pakistan Telecommunication Authority (PTA) notes that the concessions is technology neutral

and allows the company to provide all telecom services – with the exception of mobile services – on a nationwide basis. Under the renewed license, PTCL is subject to 'enhanced quality of service (QoS) parameters' and a 5% annual increase in Next Generation Access Network (NGAN) connections. The license fee comprised an

upfront payment of 0.66% of PTCL's annual gross revenue plus an annual levy of 0.5% of gross revenues and the operator is also obliged to contribute a total of 2.0% of its annual gross revenues to the Universal Service Fund (USF) and Research and Development Fund.

## Telefonica Fulfils German Coverage Requirements

Telefonica Deutschland says it has fulfilled the national coverage requirements set by the Federal Network Agency (FNA) as it is now able to supply 98% of German households with 4G services. The company rolled out around 7,200 LTE stations in previously unserved areas and along transport routes last year, and installed an additional 3,800 transmitters to increase capacity and connection speeds, allowing it to serve seven million more people with 4G than at the end of 2019. Telefonica is investing around EUR4 billion (USD4.8 billion) in its networks by 2022 and plans to supply around 30% of the population with 5G by the end of this year and increase coverage nationwide by 2025. The firm became Germany's third mobile network operator (MNO) to introduce 5G services on 3 October when the network was activated in the country's five largest cities of Berlin, Hamburg, Munich, Frankfurt and Cologne.

## US, Canada Sign Cross-Border Spectrum Coordination Pact

The US Federal Communications Commission (FCC) and Innovation, Science & Economic Development Canada (ISED) have signed an arrangement to implement a modernized framework for cross-border radio frequency spectrum coordination, covering usage of frequencies by terrestrial and earth stations. An FCC statement said that the new General Coordination Agreement (GCA) and Transitional Arrangement will help eliminate interference along the US-Canada border and support rapid deployment of new communications services. The modernized agreement supersedes, among other existing instruments, the Above 30MHz Agreement which has not been updated since 1962 and restricted the types of arrangements available for spectrum coordination. Under the new framework, the US/Canadian authorities will have flexibility to create and update spectrum coordination arrangements in response to rapidly evolving communications needs. These decisions also ensure that all stations and frequencies coordinated prior to the GCA's entry in force maintain their coordinated status.

## Personal Data Protection Bill Under MoIT Enter Final Stage

Personal Data Protection Bill under Ministry of IT and Telecommunication, has entered into final phase. On the direction of Federal Minister for IT and Telecommunication Syed Amin Ul Haque, points of maintaining privacy and economic continuity have been incorporated in the bill. In this regard a high level meeting was held under Federal Minister for IT and Telecommunication Syed Amin Ul Haque here on Thursday. The meeting was attended by Secretary IT Shoaib Ahmad Siddiqui and senior officers of the Ministry. Federal Minister for IT Syed Amin Ul Haque said it is our topmost priority to ensure protection of Pakistani citizens' data. Objective of this bill is to protect Pakistani consumers' data and promote economic activities, he added. He said that the Personal Data Protection Bill was prepared with the consultation of all the stakeholders and their proposals were included in it. The Federal Minister said that Data Protection bill had been prepared while keeping in view all international rules and policies of social media companies. He said that the bill encompasses fundamental rights including human rights and digital rights. The Federal Minister for IT said that draft Personal Data Protection Bill will be dispatched to concerned department soon for giving it legal shape. After the approval of the bill, the data of Pakistani consumers will be safe according to international standards, he said.

# A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

## Afghanistan

Although Afghanistan continues to be confronted by numerous challenges, largely due to the material effects of many years of war and civil strife, there have been successes in the country's efforts to rebuild infrastructure and create a functional telecom sector. Telecom services now cover over 90% of the population, though penetration rates remain relatively low. Efforts continue on rolling out fixed-line services, but these are limited to outside the main urban areas and thus the country heavily relies on mobile network infrastructure. The government has been supported by the World Bank and a range of other donors to develop a nationwide fiber backbone. Afghanistan now has terrestrial cable connectivity to five neighboring countries, while work on the 'Wakhan Corridor Fiber Optic Survey Project' to connect to China is nearing completion. The mobile market showed reasonably strong growth between 2012 and 2017 but faced a serious slowdown in 2018, with the number of subscribers falling 8% year-on-year. This was partly due to increasing violence in the country (creating population displacement as well as damage to infrastructure), and also to a downturn in the regional economy. Insurgent activity continues to degrade telecom infrastructure, mainly in damage done to mobile towers. However, there were positive signs of recovery in 2019, with slow subscriber growth despite the uncertainty created by the presidential election. The Covid-19 pandemic contributed to a fall in the number of mobile subscribers in 2020, and the segment is expected to remain under pressure well into 2021. Afghanistan has seen a strong increase in mobile broadband penetration over the past few years, with penetration reaching 22% in 2019 compared to only 1% in 2013. The sector is still at an early stage of development and penetration remains relatively low compared to other Asian nations. As with the mobile sector, the number of mobile broadband subscribers has been affected by the pandemic though slow growth is expected to return in the sector after 2022. BuddeComm notes that the outbreak of the Coronavirus is having

a significant impact on production and supply chains globally. During the coming year the telecoms sector to various degrees is likely to experience a downturn in mobile device production, while it may also be difficult for network operators to manage workflows when maintaining and upgrading existing infrastructure. Overall progress towards 5G may be postponed or slowed down in some countries. On the consumer side, spending on telecoms services and devices is under pressure from the financial effect of large-scale job losses and the consequent restriction on disposable incomes. However, the crucial nature of telecom services, both for general communication as well as a tool for home-working, will offset such pressures. In many markets the net effect should be a steady though reduced increased in subscriber growth. Although it is challenging to predict and interpret the long-term impacts of the crisis as it develops, these have been acknowledged in the industry forecasts contained in this report. The report also covers the responses of the telecom operators as well as government agencies and regulators as they react to the crisis to ensure that citizens can continue to make optimum use of telecom services. This can be reflected in subsidy schemes and the promotion of tele-health and tele-education, among other solutions.

Key developments:
- Regulator and Ministry of Communications develop new policy to improve telecom QoS;
- Salaam Telecom launches its LTE service in some areas of Kabul;
- Progress made with the Wakhan Corridor Fiber Optic Survey Project;
- Report update includes the regulator's market data to March 2020, operator data to Q2 2020, Telecom Maturity Index charts and analyses, assessment of the global impact of Covid-19 on the telecoms sector, recent market developments.

(January 20, 2021) developingtelecoms.com

## Algeria

The Telecoms Minister Brahim Boumzar stated this week that a decree to implement number portability is being finalized, with a draft version currently being studied by the regulator before being sent to the General Secretariat, with the expectation of the service being launched this year. A telecoms reform act, Law 18-04 of May 2018 ('General rules on post and electronic communications'),

included provisions supporting number portability but its implementation has been delayed. The telecoms authorities are now accelerating the process to introduce portability to help encourage network operators to improve their service quality and coverage via the ramping up of competition.

(January 15, 2021) Agence Ecofin

# Bahrain

Bahrain now has full nation-wide 5G coverage, according to its Ministry of Transportation and Telecommunications. All of its 1.5 million population can now access the super-fast service, with the quickest take up likely to by businesses first. Two of Bahrain's three mobile operators have touched full coverage, which could spark a "new wave of opportunities for streaming, gaming and supply chain technologies", according to the Ministry. The Gulf state expects to attract more tech firms focused on data-driven services in the region. Amazon Web Services launching the region's first hyper-scale data center in the Kingdom last year.

Bahrain's telecom sector attracted more than $2 billion between 2009 and 2019. The ICT sector now accounts for nearly 3 per cent of GDP. Kamal bin Ahmed Mohamed, Bahrain's Minister of Transportation and Telecommunications, said in a statement: "We are continually striving to ensure that the Kingdom maintains its position among global leaders in this crucial sector. This includes ensuring availability and deployment of commercial 5G services and enhancing readiness for next generation ICT services such as the Internet of Things and machine-to-machine communications." (January 11, 2021) gulfnews.com

# Bangladesh

The Bangladesh Telecommunication Regulatory Commission has issued the draft regulatory and licensing guidelines for the country's cellular mobile services to facilitate the launch of 5G mobile phone service. The draft guidelines, published for public opinion on Thursday, would also allow the telecom regulator to issue a single license to each of the telecom operators to provide all generations of services, including 2G, 3G, 4G and even 5G when it is launched in the country, once the guidelines come into force. The unified license would be called the Cellular Mobile Services Operator License, the draft guidelines said. The commission has issued the draft guidelines at a time when the fourth-generation telecom service accounts for 26.91 per cent of the country's mobile phone subscribers with the number reaching 4.57 crore while another 27.8 per cent or 4.72 crore mobile phone connections are 3G enabled. As of November 2020, 54.71 per cent or 9.29 crore of the country's 16.98 crore mobile phone connections are 3G and 4G enabled while the remaining 45.29 per cent or 7.69 crore mobile phone users still use their handsets for making voice calls only. While a large proportion of mobile phone users in Bangladesh still do not have mobile internet connections, around 400 telecom operators in 129 countries or territories are investing in the 5G network with the service already launched by 96 operators in different countries, according to data from Raconteur Media, a London-based independent publisher of special interest content for some of the world's leading brands. Of the countries, South Korea had the highest seven crore 5G mobile phone subscribers across the globe as of July 2020. The country's mobile phone subscribers were using 5G at a speed of 59Mbps. Apart from South Korea, the speed of 5G internet available in Japan was 49.3Mbps, 47.5Mbps in Norway, 43Mbps in Australia, 42.8Mbps in Switzerland, 33.5Mbps in Denmark, 32.2Mbps in the United Arab Emirates and 31.3Mbps in Qatar. The data said that 118 telecom operators in 59 countries or territories had announced the launch of the service within their live networks. According to Ookla's Speedtest Global Index for

October 2020, the average download speed for mobile phones in Bangladesh was 10.76Mbps. Speaking about the government's plan on the 5G rollout, newly appointed BTRC chairman Shyam Sunder Sikder said that the commission had been moving forward to launch the 5G service by 2023 and had drafted the guidelines in this respect that would be finalized on the basis of public opinion. Even though the country is yet to harvest the benefits of the 4G launch, the commission plans to take forward the development of the 4G and 5G services simultaneously, he said. In the draft guidelines, the commission said that the 5G service, once launched, would enable developing countries to make full use of new technologies such as internet of things, artificial intelligence, cloud computing, machine-to-machine communication and data analytics, among other things. The licensing guidelines are in line with the government's spirit and plan to introduce 5G to promote high speed mobile broadband and multimedia communications, upscale usage of smart devices in smart homes or cities throughout the country and make it affordable for all and also to promote the fourth industrial revolution, it said. The BTRC, in its draft guidelines, would issue the unified license to the telecom operators who would obtain the 5G service technology neutral spectrum from the commission. Besides the existing telecom operators, the commission has also reserved slots for new telecom operators. It said that new entrants who would obtain the 5G service technology neutral spectrum from the commission would be eligible to apply for the license or permission for providing 5G service. The license would be valid for 15 years from the date of issuance. The telecom operator that will receive the cellular mobile service operator license will have to provide 5G services in all divisional headquarters within 12 months from the date of issuance of the license. In two years of the license issuance, the operators will have to provide 5G services to 50 per cent of the district headquarters. Within three years of the license issuance, the operator will have to take the service to all district headquarters. The commission has designated 2.6GHz

and 3.5GHz band frequencies for the 5G service, said the draft guidelines, adding that the licensee has to obtain the spectrum designated for 5G technology from the commission to provide 5G

services in addition to other generations of cellular mobile phone services.

(January 11, 2021) newagebd.net

# Egypt

The Ministry of Communications and Information Technology has announced that 16 small- and medium-sized enterprises (SMEs) will implement 15 digital transformation projects at government agencies. The total value of these projects stands at more than EGP 43.5m, and come as part of the "Our Opportunity is Digital" initiative. Minister of Communications and Information Technology Amr Talaat said that the announcement reflects the ministry's keenness to stimulate creativity among SMEs working in the IT field. It also aims to provide them with opportunities to participate in the implementation of digital transformation projects. Talaat said that the coming period will witness the launch of another set of projects and opportunities for SMEs in Egypt. In a press release, the minister added that SMEs play an important role in economic growth, in addition to creating job opportunities for youth. He also said that such initiatives open up wider horizons for Egypt's youth to gain experience, and obtain the skills for government work that enhance their competitiveness in the local and global markets. The companies have won digital business opportunities and projects in four different categories, namely: Quality Management & Testing; GG Web Services integration services; Content Digitization; and Analysis, Design and Project Engineering. A total of four SMEs won in the Quality Management and Testing category. The "Our Opportunity is Digital" initiative aims to enhance the contribution of SMEs registered on the Information Technology Industry Development Authority (ITIDA) database in implementing digital transformation projects for government agencies. The initiative provides business opportunities through three tributaries, namely the implementation of business through contracting with government agencies directly, and the implementation of works through contracting with companies contracting with government agencies. This is in addition to skill competitions that include training opportunities for workers at SMEs to hone their skills in the field of data science and artificial intelligence

(AI). These opportunities end with the implementation of work in the aforementioned fields. Since its launch, the initiative has provided, through its platform, about 31 opportunities in digital transformation projects, with an estimated value of EGP 80m.

(January 10, 2021) dailynewsegypt.com

New frequency band allocation agreements have been signed by three mobile operators working in the Egyptian market. The frequencies were granted to Vodafone Egypt, Etisalat Misr, and Telecom Egypt (TE) by the National Telecom Regulatory Authority (NTRA). Minister of Communications and Information Technology Amr Talaat, who witnessed the signing ceremony, said that his ministry will not delay the introduction of new frequencies according to market needs. Talaat said that the agreements are the result of fruitful cooperation over several months between the mobile companies, the NTRA, and the Armed Forces' Signal Corps. He emphasized that, since the beginning of 2019, the Ministry of Communications and Information Technology has begun plans to support Egypt's infrastructure. As part of these efforts, the government has invested nearly EGP 30bn in developing Egypt's communications network. Vodafone purchased a band of 40 MHz for $540m, TE took 20 MHz for $305m, and Etisalat took 20 MHz for $325m. Talaat said that the agreements with the three companies are a step towards supporting Egypt's information infrastructure. They also take into account the communications sector's significant and pivotal role over 2020, during the novel coronavirus (COVID-19) pandemic. The Minister added that, following the recent developments, Egypt's information infrastructure was able to bear the increasing burdens placed on telecommunications services by users during the height of the pandemic. He also noted that mobile companies raised the principle of participatory volunteer work, to meet consumers' needs during the last phase.

(January 2, 2021) menafn.com

# Iran

Hamrave Aval (Mobile Company of Iran, MCI) has started commissioning 5G since the beginning of the current year (started March 21, 2020) and will be put into operation by yearend (to end March 20, 2021). The Director-General of Hamrahe Aval (Mobile Company of Iran, MCI) revealed the program of this operator for offering 5G technology of mobile phone. 5G program of MCI has started with utmost power and pilot project has been made

according to the scheduled program and will soon be put into operation. Building of Hamrave Aval and four other points have been appointed as candidate location including Milad Tower, Ministry of Communications and Information Technology (ICT), Book Garden, and Tehran University of Shahid Beheshti University, the director-general added.

(January 5, 2021) tehrantimes.com

Iran's largest cellular operator, state-backed Mobile Communication Company of Iran (MCI), is expecting to launch 5G services by the end of the current financial year (20 March 2021). A report from The Tehran Times says that commissioning of the network began last year and a pilot system is due to be switched on shortly. The Iranian government had initially hoped to see commercial services introduced in 2020.

(January 4, 2021) commsupdate.com

# Jordan

The Telecommunications Regulatory Authority confirms that it has received many complaints about telecom companies raising the prices of recharge cards, and the authority has communicated directly with the companies about this issue, which in turn denied that it raised the prices, noting that the Commission has sent official letters and awaits the official response from Before these companies. In this regard, the authority notes that recharge cards are a means of payment that reaches the beneficiary through distribution channels, as these channels add profit margins to the original prices, whether these channels are electronic or through direct sales to the beneficiaries, and in the event that companies deny that they raise prices, these channels are It is the one who raised the prices, and the authority also notes that the prices of selling recharge cards are outside the authority of the authority and are not subject to regulation and their prices are determined according to market factors. It also confirms that the options for purchasing recharge cards are many and varied and at varying prices and the citizen can choose the appropriate method, whether through purchase Corporate exhibitions directly or through agents and points of sale, or through any of your bills.

(January 28, 2021) trc.gov.jo

# Lebanon

President Michel Aoun and caretaker Prime Minister Hassan Diab exceptionally approved a request to extend the decision that doubles the Internet's speed for subscribers on the Ogero network, the Ministry of Telecommunications announced. The decision, which was approved earlier this year alongside coronavirus (COVID-19) preventive measures, was extended temporarily, until March 31st, 2021. It requires the doubling of the Internet's speed for limited-speed subscriptions that have no consumption limits, and the doubling of the consumption capacity for subscriptions with limited capacities, within available technical possibilities, free of additional costs. The Telecommunications Ministry said the extension comes in a move to make room for citizens to conduct their business from their homes amid the procedures and recommendations that require them to stay at home and limit roaming to prevent the spread of COVID-19. It also aims to assist students in continuing their remote education. In addition to that decision, President Aoun and caretaker PM Diab exceptionally approved the temporary extension of the decision that reduces the additional international and local capacities required from internet and information transmission companies. This is to provide more facility to subscribers during the general mobilization and its restrictions. Lebanon recently extended the general mobilization until the end of March 2020.

(January 3, 2021) the961.com

# Nepal

Nepal moved to the 111th position in the world in terms of fixed broadband speed in December, an improvement of five places compared to the previous month. A global index report published by Ookla, a US-based firm that analyzes internet connection speeds, has ranked Nepal at the 111th position with an average fixed broadband speed of 24.05 mbps. Last April, it was recorded at 17.97 mbps. In December, Nepal's download speed was recorded at 24.05 mbps against the global average of 96.43 mbps. The upload speed was recorded at 22.46 mbps compared to the global average of 52.31 mbps. The Maldives was ahead of Nepal with a broadband speed of 24.86 mbps. While Sri Lanka was ranked 107th with an average internet speed of 26.86 mbps, India was in the 65th position and had an average internet speed of 53.90 mbps. Thailand, with an average speed of 308.35 mbps, was in the top rank of fixed broadband speed in the lists of 176 countries considered for the assessment. Regarding the mobile data speed, Nepal observed a slight improvement with the country moving up from 114th in November to 115th last month.

(January 24, 2021) myrepublica.nagariknetwork.com

The number of Nepalis on the internet has increased dramatically during the pandemic, with high-speed mobile connectivity accounting for 59% of the total internet users, new figures by the Nepal Telecommunications Authority (NTA) this week show. Some 96% of Nepali households own mobile phones, and the proportion of smartphones with data rose rapidly during the pandemic in 2020. Some 24 million Nepalis, which is 80% of the 2011 population, currently use fixed broadband and mobile internet to browse the internet. While a majority of mobile users have 3G internet, 4G is rising fast as telecom companies encourage users to buy the service through affordable packages. Three telecommunications companies provide 4G Internet services in Nepal: Nepal Telecom, Ncell, and Smart Telecom. Some 6.3 million mobile users currently have access to 4G services— 2.04 million Nepal Telecom users, 4.08 million through Ncell, and 199,000 who are on Smart Telecom. Meanwhile, 5.2 million users have fixed cable and wireless broadband, with 4.8 million among them using wireless services. There are currently 127 registered internet service providers in Nepal, out of which only 40 companies have active users—only six among them are main players in Nepal's internet market. WorldLink is the biggest service provider in the country with 422,000 active customers. Nepal Telecom, which provides internet services to 900,000 users across the country, has the WiMAX Wi-Fi service, ADSL internet, as well as its recent Fiber to the Home (FTTH)—which includes voice, mobile data, and IPTV package. FTTH has already reached 300,000 users. Nepal's internet market has long been hampered by high prices,

technological limitations and unreliable connectivity even as Nepalis have rapidly built an extensive virtual presence during the pandemic. The bandwidth is often too narrow to support heavy traffic in Nepal's international gateway and local networks. The cross-border connections are through underground fiber optic cable that connects ISPs to India's Airtel and Tata. As it is, internet consumption went up 35% during the first four months of the lockdown as Nepalis shifted their social and professional lives—education, employment, and entertainment—online. Nepal's baby steps towards distance learning got a boost as the lockdown replaced schools with virtual classes. But the pandemic also brought to light the glaring digital divide despite widespread mobile connectivity even as it was aided by digital education packages from Nepal Telecom and Ncell. Meanwhile, Nepal's fledgling e-commerce industry is taking flight as safety concerns and convenience drive internet users to buy and sell online. The pandemic has made Nepalis health-conscious and tech-savvy, with sales of healthy food, fitness and gadgets on the rise. Nepal has also seen an upsurge in digital payments as more and more people use e-wallets to conduct transactions. Nepali internet users, already increasingly hooked on YouTube, sought greener pastures on relatively newer social media like TikTok during the lockdown, helped by special offers from telecom companies. The TikTok boom, which now takes up 25% of the bandwidth in Nepal, saw netizens making use of the short-form-video application as a creative and professional outlet.

(January 6, 2021) nepalitimes.com

# Oman

The Chief Executive Officer of Telecommunications Regulatory Authority (TRA), has made field visits to some governorates of the Sultanate to understand requests and complaints of the people. A statement issued online by the TRA said: "His Excellency Eng. Omar bin Hamdan Al-Ismaili, Chief Executive Officer of the Authority, is on a field visit to a number of villages in the North Al-Batinah, Al-Buraimi and Al-Dhahirah governorates, in the presence of telecommunications companies, in order to discuss the telecommunications companies' plans and understand the requests and complaints of the people.

(January 10, 2021) timesofoman.com

Vodafone is now formerly recognized as the third mobile operator in Oman. A recent royal decree has mean that the company has obtained a first-class license to establish and operate public telecommunications services in the Sultanate. Strictly speaking, as a number of local press reports have pointed out, Oman has approved the licensing of Oman Future Telecommunications (OFT) as the country's third mobile operator. Shareholders of

OFT include a number of Omani institutions such as government pensions and investment funds, as well as a group of private investors. The new provider will, however, launch using the Vodafone brand, based on a strategic partnership with the global powerhouse, which operates mobile and fixed networks in 21 countries and partners with mobile networks in 48 more. In fact Vodafone Group and OFT announced the strategic partnership agreement in late 2019 as part of Vodafone's Partner Markets program. The non-equity agreement said that the companies would work together to roll out a new mobile network and develop a number of new services using the Vodafone brand in Oman to drive the next stage in the development of the country's telecommunications market. At the time commercial launch was planned for the second half of 2020. The launch of Vodafone Oman is undoubtedly a significant development, bringing greater competition to a market where operators Ooredoo and Omantel currently share about 5.7 million connections. The country has a population estimated at just over five million.

(January 6, 2021) developingtelecoms.com

# Pakistan

Telecom sector has emerged as a prominent contributor to Pakistan's economy and the sector contribution to the national exchequer has shown an increase of 129% in year 2020 when compared to year 2019, despite economy being under pressure due to COVID effects. As per Pakistan Telecom Authority (PTA) Annual Report 2020, released here today, the sector contributed PKR 278 billion (including PTA deposits to national exchequer) in FY 2020 as compared to PKR 121 billion in FY 2019 registering Year-on-Year growth of 129%. A surge in demand for telecom services due to lockdown resulted in significant growth not only in subscriber base but also in the usage of telecom services. Today, data usage stands at 4,498 Peta Bytes(FY2020) as compared to 2,545 Peta Bytes (FY 2019) showing a growth of over 77%. This substantial growth would not have been possible if the networks were not upgraded. The country currently has international bandwidth connectivity of 3.1 Tera Bytes and around 47,000 cell sites, of which 90% are 4G enabled sites. According to the PTA Annual Report, in the last five years, total broadband subscription in the country grew by 175%. Today broadband subscribers have crossed 90 million showing a growth of around 8% in FY2020. Pakistan has a total broadband penetration of 42.2% in FY2020. The telecom networks are currently available for 87% of the population and PTA is working with operators to increase their network coverage for remaining 13% unserved people of the country. The total teledensity now stands at 82% with over 172 million mobile subscribers and 2.2 million fixed-line subscribers. In 2020, the Foreign Direct Investment (FDI) across the economy was affected due to global lockdowns, however, telecom sector made an iconic share of 25% (USD 623 million) in the total FDI made in the country. Total investment made by the local operators grew by 14.25% and a total of USD 734 million were invested locally. Total revenues of the sector reached PKR 537 billion in FY 2020, which was mainly generated by mobile sector. The financial gains have been equally enjoyed by telecom consumers, the affordability of telecom services in Pakistan have improved over the years and currently the per GB broadband prices are as low as USD 0.20 which is amongst the lowest in the region. Similarly, due to Device Identification & Registration System (DIRBS) introduction government revenues increased many folds with tax collection on handset imports. The local manufacturing of handsets has enlivened the telecom ecosystem, with growth in local 4G device manufacturing crossing 34%. Pakistan experienced trials of 5G services which were one of the few firsts in the South Asia. PTA is aiming for spectrum auction of LTE, VoLTE services in 2021 as a precursor to 5 G. The regulator is also gearing up for auction of spectrum for high speed broadband services in AJK & GB. PTA Annual Report informs that the regulator this year awarded 110 licenses for different telecom services and issued 91 commencement of service certificates to the operators. PTA conducted QoS surveys across Pakistan for data, voice and SMS services and the operators were directed to take corrective measures where they underperformed. PTA conducted number of successful raids against illegal VoIP setups this year to curb grey telephony. The Annual Report further revealed that PTA was ranked as 4thgeneration telecom regulator by the ITU, which places PTA in top five regulators of Asia-Pacific region. The Pakistan Citizen Portal recognized PTA as the best performing organization in complaint redressal satisfaction. The above performance is a testimony that the sector and the regulator are moving in the right direction under the continuous support and guidance of the Government of Pakistan in the form of prudent policies and directions that spur the growth of digital technologies. While commenting on the situation arising due to Covid-19, the Annual Report further added that year 2020 was an extraordinary year around the world, unexpected, unforeseen and unanticipated events unfolded and changed the way world was functioning. The new normal, replaced focus of the world on telecoms and digitalization, the global telecom sector responded to the demands and so did Pakistan. Being at the forefront, while the country was acclimatizing to the changed conditions towards normalization, PTA assured network upgradations, traffic optimization, load balancing that resulted in uninterrupted service provision.

(January 15, 2021) pta.gov.pk

Federal Minister for Finance and Revenue, Dr. Abdul Hafeez Shaikh, chaired the meeting of the Advisory Committee for the release of Next Generation Mobile Services (NGMS) spectrum in Pakistan held at the Finance Division. Federal Minister for Science and Technology Fawad Chaudhry, Federal Minister for Information Technology and Telecommunication Syed Amin ul Haque, Adviser to the PM on Commerce Abdul Razak Dawood, Chairman PTA Major General (R) Aamir Azeem Bajwa, Secretary Ministry of Information Technology and Telecommunication, Executive Director Frequency Allocation Board and other senior officials participated in the meeting. The Chairman PTA briefed the Advisory Committee about the latest developments in the sale of available spectrum of next generation mobile services in the country. While appreciating the sale of maximum possible spectrum, the Finance Minister stated that it will contribute towards overall economic growth through digitalization and improve the quality of broadband services in Pakistan, he added. The Committee was also briefed that the hiring process for the consultants was completed in December 2020 as per procedure and newly hired consultants are on board for the sale of available spectrum within the current financial year. The Finance Minister urged the consultants to follow a proactive approach and meet the given deadlines effectively. He emphasized that the time is of essence in the release of NGMS Spectrum and the whole process of auction must be transparent for strengthening and expanding communications / IT Services across the country. The next follow-up meeting of the Advisory Committee is expected to take place in March, 2021.

(January 15, 2021) telecoalert.com

Federal Minister for IT and Telecommunication Syed Amin Ul Haque said that under Prime Minister's vision of Digital Pakistan, broadband services will be provided across the country. The Minister expressed these views during a meeting with Chief Minister Gilgit Baltistan (GB) Khalid Khurshid who called him, said a news release. During the meeting matters related to the provision of broadband services in GB, and IT parks were discussed. Syed Amin Ul Haque said that work was underway for the provision of 4G services in Gilgit Baltistan. "Arrangements are in final stage for the provision of telephone, internet and cable service under triple bundle services in GB", he added. He asked CM GB to identify important tourist points in Northern Areas so that broadband services could be started there to facilitate tourists and for the promotion of tourism. He said that work is going on the project for upgrading the of 2G towers for providing 4G services on Karakarum highway and its surrounding areas. GB Chief Minister Khalid Khurshid lauded the steps and performance of Ministry of IT & Telecom under the supervision of Minister for IT Syed Amin Ul Haque.

(January 10, 2021) dailytimes.com.pk

# Qatar

The Communications Regulatory Authority (CRA) and College of the North Atlantic in Qatar (CNA-Q) signed a Memorandum of Understanding (MoU) to cooperate in the fields of academic, research, and student support in terms of Information and Communications Technology (ICT). The MoU was signed by His Excellency Mohammed Ali Al-Mannai, President of CRA and Dr. Salem Nasser Al-Naemi, President of CNA-Q (Acting). The MoU shall be valid for three years from the effective date, and the cooperation framework and scope of work include setting up testing and validation processes and procedures for telecom and networking systems at CNA-Q. In addition, instructors and faculty members will be invited to participate in finding solutions for current telecom related challenges in Qatar, setting up, reviewing, and updating regulations for CRA in various telecom fields. Other benefits of the MoU include providing instructors and faculty members with resources that help conducting applied research that has mutual benefits to CNA-Q and CRA, as well as inviting students to attend and participate in activities held and organized by CRA such as training sessions, workshops, conferences, and symposiums. Capstone projects themes to students in telecom and networking will also be proposed, while having co-supervisors from CRA, coordinating short visits and trips to CRA's departments and sites, and updating curriculum plans for the telecom and networking diploma's and bachelor's degree to include regulatory related courses. The MoU is also open to allow cooperation in any other programs and activities agreed upon by CRA and CNA-Q. "CRA welcomes the signing of the MoU, it will enhance the cooperation and coordination between CRA and CNA-Q, as we are always keen to build bridges of cooperation with different entities to exchange information and best experiences. The MoU will support training and developing youth skills and increase their knowledge of ICT, also through applied research which is a key tool for development and providing solutions to related challenges, the MoU will contribute to the development of ICT sector in Qatar," said His Excellency Mohammed Ali Al-Mannai, President of CRA. "Finally, I would like to thank CNA-Q for their cooperation and we look forward to start working and cooperating with them within the MoU framework to achieve our common goals; supporting students and applied research and promoting the development of the ICT sector," he added.

Commenting on the MoU, Dr. Salem Nasser Al-Naemi, President of CNA-Q (Acting) said: "We are pleased to collaborate with CRA, in order to offer our students and faculty new knowledge sharing opportunities. Contributing to the development of ICT sector in our Nation is an important step, as we move at a fast pace into a digitally driven era. I am confident that this agreement will prove to be mutually beneficial, especially that CNA-Q is committed to create highly-trained, industry-ready graduates. Above all, we greatly anticipate our evolving role in this collaboration, it is a new milestone in our journey to empower the new generation and give them the right tools to sustain our country's growth, and help achieve Qatar National Vision 2030 goals." (January 26, 2021) cra.gov.qa

The Communications Regulatory Authority (CRA) has published on its website a document titled "Qatar Spectrum Outlook", which is one of its kind in the region that provides the stakeholders and interested parties with an overview of CRA's overall approach in terms of the planned activities to manage the radio spectrum affairs in Qatar until 2022. The Spectrum Outlook includes CRA's priorities related to some of its planned programs and projects for the radio spectrum until 2022, including CRA's plans to update the National Frequency Allocation Plan (NFAP), review the radio spectrum usage fees, and the mechanism of the Quality of Service mobile networks audit, also it highlights some of CRA's strategic projects that will be implemented before FIFA World Cup - Qatar 2022. "It is a true pleasure to share Qatar Spectrum Outlook with the stakeholders and interested parties. This document was developed in line with CRA's keenness to manage the radio spectrum effectively and transparently, as it will help us in enabling the stakeholders and interested parties to understand CRA's future plans and programs related to the radio spectrum management, especially that the FIFA World Cup - Qatar 2022 is very close," said His Excellency Mohammed Ali Al-Mannai, President of CRA. The document outlines CRA's plans to address issues related to access to radio spectrum and enabling new technologies, and to make resources available to support telecom services and applications that are expected to require new or additional radio spectrum in the coming years, especially during the hosting of the FIFA World Cup - Qatar 2022. The CRA ensures

to appropriately and practically meets the radio spectrum needs of a diverse range of actual and potential radio spectrum users. During the development of the document, the CRA ensured to take into consideration a wide range of factors that influence the demand for and the supply of radio spectrum, including: end-user demand, technology changes or advancements, the international harmonization of the radio spectrum, and relevant national or international policies. It is worth mentioning that the CRA adopted Qatar Spectrum Outlook after taking into account the views and comments received earlier and related to the CRA's public consultation conducted in this regard. The views and comments were submitted by stakeholders, concerned and interested parties from the local and international Information and Communications Technology industry. (January 17, 2021) cra.gov.qa

# Saudi Arabia

The Communications and Information Technology Commission (CITC) published a follow up public consultation on its "Spectrum Outlook for Commercial and Innovative Use 2021-2023", along with responses received to the previous public consultation, which took place in July 2020, on "Spectrum for IMT-2020 and beyond: Fostering Commercial and Innovative Use of Radio in the Kingdom of Saudi Arabia". The consultation proposes a plan to release more than 20 GHz of additional radio spectrum, with the aim of promoting further innovation and investment in multiple wireless technologies within the Kingdom's commercial sector. This progressive spectrum policy aims to enable Saudi Arabia's transformation into a leading digital society, in line with Vision 2030 and CITC's National Spectrum Strategy (NSS). CITC is inviting all interested parties, both local and international, to provide comments on the updated spectrum outlook. CITC welcomes the participation of telecom and technology providers, industrial stakeholders, public entities, members of the public as well as consumers of telecom and digital services. Submissions can be made until 28 February 2021. CITC is leading a global initiative to "foster commercial and innovative use of spectrum", to capitalize on this finite resource. This initiative seeks to enable the digital transformation of the Kingdom and the world, and comes as a part of CITC's transition to become a digital regulator. This latest publication presents a draft spectrum outlook, reflecting the stakeholder's comments following the July consultation. The initial consultation received comments and submissions from 65 organizations, spanning 20 different countries, which were also published along with CITC's responses. CITC thanks all those who responded to the initial consultation. Interested parties will now have a second opportunity to review and comment on the response document and the updated 5-year spectrum outlook, prior to its finalization and adoption. (January 30, 2021) zawya.com

The Minister of Communications and Information Technology Abdullah Al-Swaha said that Saudi Arabia has ranked seventh in the world in the quality and speed of Internet and the quality of the coverage of the fifth generation. Addressing the Future Investment Initiative (FII) conference here on Thursday, the minister said that the Kingdom has succeeded, during pandemic, in responding to digital challenges, especially in the early days when the Cabinet decided to impose a total lockdown. Al-Swaha noted that the Kingdom has the largest information technology investments in the Middle East region through the partnership of Aramco and Google, saying: "Flexibility, the implementation and speed have returned today with the largest technical investments in the Middle East and North Africa region, with more than SR1 billion between Saudi Aramco and Google". According to Al-Swaha, the Kingdom pumped billions into digital investments before and during the coronavirus pandemic, which resulted in widening the scope of Internet coverage, expanding the coverage of 4G and 5G networks to advanced levels, as well as in creating opportunities for companies and Saudi youth in various fields of digitization. "There might be many fluctuations, ambiguity and complexity in future, and hence the future would be for those who have resilience, flexibility and resistance. The current and future generation will not forgive us if we do not invest in digitization, as these investments have had a special importance in preserving the environment, in caring for human health, and in securing alternatives during the pandemic," he said while stressing the need for investment and innovation in the field of digitization. On "THE LINE" project in NEOM, the minister said that it would exceed 150 years of the Industrial Revolution as for individuals, stressing that this special model for renewable energy without emissions is 100 percent, in addition to innovations in the field of gas and oil through the use of data to improve the quality and reduce costs. (January 28, 2021) saudigazette.com.sa

In a recent report, the International Telecommunications Union (ITU) hailed the impressive and rapid development of the Communications and Information Technology sector, in Saudi Arabia, pointing to the role of the Saudi Communications and Information Technology Commission (CITC) as the regulator of the sector. The Saudi model is a pioneer in transforming regulating the communications and information technology sector, notably among the most mature category (5G), the report stated. The ITU report pointed out that Saudi Arabia is continuing to prioritize the rapid growth of its ICT sector and pursue sustainable economic diversification as part of its Vision 2030. "A new strategy bringing government agencies and the private sector together as well looking into new and emerging technologies have been critical elements of the Saudi Arabian regulator's journey," the report added. The report said that the CITC is stepping up to meet the 5th-generation regulation challenge with an ambitious new digital transformation strategy with a guiding vision of a "connected nation for a thriving digital economy." "Their vision also emphasizes safeguarding the public, providing reliable

service, ensuring fair competition, and balancing the diverse needs of multiple stakeholders," the report highlighted. Today, CITC is delivering on its vision by working to create a robust regulatory platform within which government and businesses can safely operate and invest, the ITU report stressed. The CITC has achieved success against the challenges and overcoming them through a world-class mature and ambitious strategy to realize the shift towards a regulator regulatory, the report elaborated. Following the outbreak of the coronavirus pandemic in the Kingdom, the CITC collaborated quickly and effectively with telecom operators to meet the surge in demand for online access

and data with increased speeds and data capacity, free services, expanded spectrum use, and enhanced network configurations and connectivity. "This rapid response played a critical role in enabling remote work, business continuity, delivery apps, e-government services, and remote learning across Saudi Arabia, the ITU report highlighted. CITC is placing a strong emphasis on sustainability through the inclusion of ITU's global standards on sustainability within its core objectives. As it continues to hit milestone after milestone, CITC is well on its way to becoming one of the world's most developed 5th-generation regulators, the report added. (January 12, 2021) saudigazette.com.sa

# Sri Lanka

The Telecommunications Regulatory Commission of Sri Lanka (TRCSL) has sought public feedback on the proposed number portability services in Sri Lanka. The TRCSL said a public consultation paper has been published as the mandatory next step for the implementation of number portability services in the country. The public can obtain further information in this regard by downloading the consultation paper from the TRCSL's official website. The public consultation paper invites comments and views from the industry, academia, and other parties who are interested regarding the proposed implementation of number portability in telecommunication networks of Sri Lanka. The TRCSL said in August 2020, that it was looking at introducing number portability, which is the ability of telephone subscribers to switch between service providers or locations while retaining their original telephone numbers. It said prior to switching operators, subscribers need to be completely aware of the services offered by the new operator and the terms and conditions of the new contract. This is because only the number is retained and not the services or tariff plan given by the existing service provider for that number. The TRCSL is expecting public feedback on the 7-point public consultation paper by 12 February 2021. The public have been urged to send in their feedback to the official address of the TRCSL in Colombo 8 or via its official e-mail.

(January 19, 2021) menafn.com

The Telecommunications Regulatory Commission of Sri Lanka (TRCSL) has published a public consultation to seek feedback on its proposed mobile number portability (MNP) plans, the Colombo Gazette reports. TRCSL's consultation is the next step mandated in Sri Lanka's plan to introduce number portability and invites comments and views from the industry, academia, and other parties who are interested regarding its proposed implementation in telecoms networks in the country. As previously reported by CommsUpdate, in August 2020 TRCSL put in place 'preliminary measures' to usher in MNP. Using its Twitter platform, the regulator confirmed: 'TRC initiates preliminary steps on implementing number portability which would enable consumers to select service providers without change of existing mobile numbers'. TeleGeography notes that progress towards making MNP a reality in Sri Lanka has been tortuously slow. It was back in 2008/09 that the TRCSL first began studying the possibility of introducing MNP, while in April 2010 the regulator issued a Terms of Reference (TOF) inviting consulting firms to assist in the establishment of the necessary regulatory framework. Subsequently, in February 2014 the then director-general Anusha Palpita was quoted as saying that MNP implementation remained suspended as it would not be cost-effective until there is a greater proportion of post-paid subscribers in the market. The TRCSL is expecting public feedback on the seven-point public consultation paper by 12 February 2021.

(January 18, 2021) commsupdate.com

# Syria

The Syrian Telecom Regulatory Authority (SyTRA) has fully restored mobile coverage along the Hama-Aleppo road. According to the Ministry of Communication and Technology (MoCT), the watchdog carried out works along the highway after it was secured by the Syrian Arab Army (SAA) to ensure that the 40 base stations serving the area are able to operate 24 hours a

day, through a combination of grid power, batteries, solar energy and local generators. Separately, meanwhile, the MoCT notes that roaming agreements with Turkish mobile operator Turkcell have been cancelled, accusing the provider of violating the ITU's instructions regarding cellular coverage.

(January 15, 2021) commsupdate.com

# Turkey

Deputy Minister of Transport and Infrastructure Dr. Ömer Fatih Sayan, spoke at the event on "The Power of Domestic Production and SMEs in Technology", organized by the Union of Chambers and Commodity Exchanges (TOBB) and Vodafone. Stating that information and communication technologies are the leading actors in every sector, Sayan said that the investments to be made in this field are developed by directly affecting all other fields. Sayan explained that as the Ministry, in line with the "National Technology Move" initiated by President, they consider the development of a sustainable domestic and national ecosystem in the field of information and communication technologies as a strategic goal and that they carry out important works in this field together with stakeholders. Emphasizing that one of the most important tools that direct the economy is the manufacturing industry, Sayan said, "SMEs, which constitute 99.8 percent of active companies in our country, as in many countries, are the main sources of economic growth and business development. SMEs, job creation, "It plays an important role in promoting domestic demand through innovation and competition." Reminding that the Ministry and the Information Technologies and Communication Authority (BTK) have issued various regulations with the aim of supporting SMEs in the information and communication sector and getting more shares from the sector, Sayan said that in 3G concession agreements and 4.5G authorization certificates, mobile operators will make their investments in electronic communication networks. at least 10 percent of said they want to ensure the product or system established to develop SMEs in Turkey. (January 20, 2021) btk.gov.tr

# United Arab Emirates

United Arab Emirates (UAE) telcos Etisalat and Du have raised the foreign ownership limit on their shares from 20% to 49%. A report from Gulf News cites financial analysts as saying that the move will allow for strategic partnerships and invite further foreign investment – both passive and active – as the two operators look to capitalize on the country's growing 5G market. Etisalat also has international operations across the Middle East, Africa and Asia. Currently only around 5% of Etisalat's shares are held by non-Gulf nationals, while the level at Du is below 1%. Both telcos are majority owned by the UAE government.

(January 21, 2021) gulfnews.com

The General Authority for Regulating the Telecommunications Sector (TRA) organized the first meeting of 2021 of the Online Service Index (OSI) Executive Team, an indicator of UAE Vision 2021 National Agenda. The meeting, held virtually, was attended by OSI team members representing 11 federal entities, including local electronic/digital governments. The meeting aims at reviewing best government practices for the year 2020, and international developments, especially with respect to the special circumstance that the world has gone through in recent months. The meeting reviewed key achievements made by the UAE in Open Data, and the substantial development in the UAE Open Data Portal. The UAE advanced to the 16th place globally in the 2020 Open Data Inventory (ODIN) report, issued by the Open Data Organization, covering 187 countries, to record a jump of 51 ranks at once, compared to the 2018 report. On this meeting, Salem Al Housani, Acting Deputy Director General of the Information and mGovernment Sector, and Chairman of the OSI Team, said: "At our first meeting this year, I find nothing better than to start with inspiration from the message of His Highness Sheikh Mohammed bin Rashid Al Maktoum, which he addressed to his people on the 15th anniversary of his Accession Day. The message was full of evidence that the UAE nation is indeed able to achieve and lead in various fields. We meet at the start of this year to affirm progress in cooperation between government and local entities to realize UAE's visions and future goals." Mr. Al Housani stressed that the UAE was able to make strides in Open Data last year, reaching the 16th place globally. He added: "We will continue our meetings and joint cooperation to achieve all entitlements as today we are just a few months away to celebrating our golden jubilee, the deadline set by our wise leadership to realize UAE Vision and National Agenda Objectives. This requires further efforts from us as a national OSI team, and action to increase communication, coordination and cooperation between our government entities, in order to have an increased activation of smart services in line with UAE Vision 2021 and the goals of the National Agenda." During the meeting, participants reviewed the big leap made by the UAE in Open Data, according to the Open Data Watch, which measures the inclusiveness and openness of official data and statistics. It also includes an assessment of UAE Open Data Portals across 3 key sectors, 22 categories and 65 sub-indicators. Furthermore, the meeting addressed the Open Data Race, one of the open data team initiatives in cooperation with 14 government entities, which contributed to raising UAE's ranking to 16th in the Global Open Data Index. The meeting reviewed the achievements of UAE Hackathon in its previous sessions. Priorities of the National OSI Team are to provide a sustainable environment and an integrated digital infrastructure and to achieve the goals set at the global level. The Team acts in accordance with major global trends in the UN e-Government Survey, namely: bridging the digital divide, Open Data, promoting use, multichannel services, Connected Government (G2G), and e-participation.

(January 12, 2021) tra.goe.ae

# REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

## Angola

President Joao Lourenco has authorized the privatization of state-held stakes in three telecoms network operators, TV Cabo Angola, Multitel and Net One, Novo Jornal reported. Presidential Orders No. 184/20 and No. 185/20 authorize the privatization via initial public offering (IPO) of the state's holdings in TV Cabo Angola and Multitel, respectively, and delegate powers to the Minister of Finance (with the power to sub-delegate) to verify the validity and legality of all subsequent actions in the privatization process. Presidential Order No. 186/20 authorizes the privatization via a 'limited tender by prior qualification' of the state's shares in Net One, while similarly delegating powers to the Minister. The stakes up for grabs are: 49.27% in TV Cabo Angola (held via wholly state-owned Angola Telecom [AT]); 90% in Multitel (held via AT [30%] and two other wholly state-owned groups, oil firm Sonangol [40%] and Banco de Comercio e Industria [BCI, 20%]); and 51% in Net One (held via MSTelcom, itself a wholly-owned subsidiary of Sonangol). TeleGeography notes that under Angola's privatization program, stakes in five other telecoms operators are earmarked for sale this year, namely: AT, MSTelcom, Angola Cables (AT owning 51%, MSTelcom 9%), Angola Comunicacoes e Sistemas (100% owned by Sonangol/MSTelcom) and mobile market leader Unitel. Sonangol is scheduled for privatization in 2022, while a share sale for BCI was approved by a presidential order in May 2020 but has not yet been carried out. Telephone directory company ELTA and postal operator ENCTA are also on the privatization list. Regarding Unitel, Angola's 'PROPRIV' privatization program website says that a 25% stake in the cellco currently held by MSTelcom will be sold via public tender, with an initial target of '2020' (delayed), but Sonangol also owns a direct 25% Unitel stake, acquired from Brazilian telco Oi in January 2020.

(January 13, 2021) commsupdate.com

## Argentina

Since 1 January Argentina's telecoms operators have had strict limits placed on their ability to increase tariffs by the National Communications Agency (Ente Nacional de Comunicaciones, ENACOM). Fixed line telcos, mobile operators and ISPs are only able to raise retail prices by 5%, while telcos serving SMEs and cooperatives are able to increase prices by 8%. The rule was imposed via Resolution 1466/20, dated 21 December 2020. The watchdog explains: 'With this regulation, it is sought to establish a balanced, affordable and [high] quality access to ICT services, guaranteeing the human right to communication, as established by the regulation published in the Official Gazette and communicated to the public in a timely manner.'

(January 8, 2021) commsupdate.com

## Australia

The Australian government is reportedly considering using the nation's export credit agency to provide support to bidders looking to acquire Digicel Group's Pacific operations. The Irish-owned, Jamaica-based group was reported to have begun examining the potential sale of its subsidiaries in the Pacific region late last year after it received 'unsolicited approaches from a number of parties' regarding the units. The debt-laden group's operations in the region comprise units in Papua New Guinea, Fiji, Tonga, Samoa, Vanuatu and Nauru, and with an estimated value of up to EUR1.6 billion (USD1.95 billion) a successful divestment of the units could wipe a substantial sum from Digicel's USD5.4 billion debt burden. China Mobile is seen as the company most likely to enter a bid for the division and although Digicel has not revealed the identities of the parties it is currently in talks with, in May 2020 (i.e. prior its reported initiation of sales proceedings) it had denied rumors that it was in talks with the Chinese firm to offload its operations in the region. Nevertheless, Australia's national security agencies were reportedly concerned about the prospect of a Chinese state-owned firm gaining access to critical infrastructure in the region, leading the government to consider offering subsidized loans or loan guarantees to other bidders. The sources also noted that there were also worries that Digicel might exploit national security concerns to extract money from the Australian government.

(January 14, 2021) Daily WA Today

Optus has asked the government to make partnering with a telco a prerequisite to secure funding under a forthcoming $22.1 million program to find new enterprise and industrial use cases for 5G. The government has committed to two initial rounds of the 'Australian 5G innovation initiative' under its $74 billion

JobMaker plan announced in June last year. With the 5G initiative currently under design, Australia's three mobile network operators (MNOs) - Optus, Telstra and TPG Telecom - are all pushing the case for partnership to be a key criteria for applicants to get access to the government funding. Optus is the most public of the three in pushing for MNO involvement in funded projects, expressing alarm at the prospect of projects being funded "without any involvement from an MNO". "Optus has been concerned to note preliminary feedback which suggests the initiative might be structured in such a way that applications for projects could be progressed without any involvement from an MNO," it said in a submission. "This would be ill-advised, as MNOs have existing expertise, infrastructure, and access to spectrum. "There is a real risk that the funding under this initiative may be exhausted on niche projects that have no pathway to scalability, or granted to applicants that are not in the business of networks and are not equipped to consider 5G as a holistic technology solution. "Strong participation by the MNOs will likely produce better results and a better return for taxpayer funding. "The government should consider the suitability of framing … partnership as a requirement in all applications to the initiative." Optus also pressed the case for "minimum quotas of projects" to be "awarded to MNOs who lodge compliant applications". Optus is not alone in pressing the case for partnership with a telco to be a key criteria to secure government funding. Communications officials noted on December 23 last year [pdf] that "the telecommunications industry saw significant potential

in joint applications." "Telstra noted that 'partnerships will be an integral component of any grant applications that demonstrate new, compelling uses of 5G'; in particular, Telstra identified that joint applications will be critical for bringing together different aspects of emerging technologies and will be necessary to demonstrate the full potential of 5G," the government noted. "Optus and TPG Telecom also raised the importance of working with the telecommunications sector as a partner to deliver high quality projects in a timely manner", it added, saying some of this commentary came directly from an industry workshop. Optus argues that any 5G trial will ultimately require infrastructure and spectrum to check that it can scale - and that trialists should use existing 5G networks, rather than spend any government money building their own, in order to prove their concept scales appropriately. In its own submission [pdf], Telstra similarly argues that government funding should not be spent on "the deployment of 5G infrastructure or testbeds", but instead be concentrated on developing new use cases for 5G. Part of the argument stems from the relatively small amount of money on offer for the scheme, with funded projects likely to fall into the $500,000 to $1 million range, though various parties had sought slices of between $200,000 and $2 million through the initial consultation process. The government is currently formulating the guidelines for grant funding and expects to make them available - as well as open applications - early this year.

(January 5, 2021) itnews.com.au

## Bahamas

The Utilities Regulation and Competition Authority (URCA) has confirmed that it is evaluating the feasibility of licensing a third Bahamian mobile operator to compete with Bahamas Telecommunications Company (BTC) and ALIV. As per the recently released 'Draft Annual Plan 2021' document, URCA notes: 'As set out in the draft electronic communications sector policy, the government of the Bahamas will consider whether further liberalization of the mobile telephone market should be undertaken in the form of a third mobile operator. The policy requires that URCA provide advice and recommendations to the government on this matter, including a feasibility and market

analysis to support any recommendations made.' The evaluation process is scheduled to commence in the first quarter of 2021 and conclude in 2Q21. According to TeleGeography's GlobalComms Database, BTC's monopoly was disrupted just over four years ago, when ALIV launched on 23 November 2016. Strategic shareholder Cable Bahamas (REV) received the nation's second wireless licensee the previous year, defeating rival bidder Virgin Mobile Bahamas. Digicel Group pulled out of the bidding process early on, wary of the strict rollout obligations attached to the concession.

(January 7, 2021) commsupdate.com

## Belgium

The Belgian government approved draft legislation which will finally enable the country's long-delayed 5G mobile spectrum auction to be staged. The cabinet approved five royal decrees proposed by telecoms minister Petra De Sutter, as well as draft amendments to the electronic communications law required to proceed with the auction, which is expected to take

place by early 2022. The process had been stalled by the lengthy delay in forming a new federal government and disagreement among the regions over how the auction revenues, which are expected to be at least EUR800 million (USD974 million), should be divided. The five decrees cover frequency usage in various bands, namely: the allocation of the 2.6GHz band,

including the possibility for the Belgian Institute for Postal Services and Telecommunications (BIPT) to withdraw unused user rights in that band; the option for the BIPT to extend existing 2G (900MHz and 1800MHz) and 3G (2100MHz) licenses due to expire in March 2021 until the auction has been completed; the allocation of the 700MHz band, also referred to as the 'second digital dividend', for 5G services; the allocation of the 1427MHz-1517MHz range, standardized for SDL by the 3GPP and therefore suitable for use by mobile operators with other frequency bands; and the allocation of the 3400MHz-3800MHz (3.6GHz) band for 5G services. The draft amendment to Article 30 of the Law of 13 June 2005 on Electronic Communications, meanwhile, concerns the fees for the use of the spectrum. The texts also specify that operators will be required to provide 5G coverage to 70% of population

after one year, 99.5% after two years and 99.8% after six years. With regard to the thorny issue of radiation standards, the minister has stressed that operators will have to respect regional regulations, as 'it is not for the federal government to dictate the rules. The next step will be to present the proposal to the Inter-ministerial Committee on Telecom and Broadcasting and the Coordination Committee of the federal government and regions, following which parliament must approve the legislation and the BIPT can begin planning the technical details of the auction. Meanwhile, Proximus CEO Guillaume Boutin has told L'Echo that the coverage targets set out in the draft legislation are feasible and that he expects that the deployment of 5G services will 'go very quickly', indeed even faster than the 4G rollout, as the low frequency 700MHz band will enable coverage of a wider area, (January 25, 2021) L'Echo

## Canada

The telecommunications regulator will launch a multi-day review of the Canadian Broadcasting Corp.'s broadcasting licenses. The CRTC says electronic hearings will begin at 10 a.m. before its five-member panel. The Canadian Radio-television and Telecommunications Commission will first hear from the public broadcaster which is seeking to renew licensees for its various English- and French-language audio and audio-visual programming services. Seventy

interveners are scheduled to begin presentations on Friday and continue over eight days until Jan. 26. The Canadian Media Producers Association will make the first presentation. Others include the Canadian Olympic Committee, Quebecor Media Inc., Friends of Canadian Broadcasting and the Office of the Commissioner of Official Languages. CBC's response to the intervener presentations is scheduled for January 27. (January 11, 2021) toronto.citynews.ca

## Chile

Competitions for 5G spectrum in the 700MHz, AWS and 3.5GHz bands in Chile will proceed to a series of independent auctions, sector watchdog the Department of Telecommunications (SUBTEL) has confirmed, after the initial technical offers submitted by the interested parties were tied. Spectrum in the 26GHz band, however, will be awarded to all three of the companies that submitted offers – Claro, Entel and WOM – without auction, as there is sufficient available bandwidth to fulfil the requests. Regarding the other three bands, WOM and would-be newcomer Borealnet

will go head-to-head for the available 700MHz band frequencies, whilst the two will also face competition from Claro for the AWS airwaves. Finally, the 3.5GHz range will be contested by WOM, Claro, Movistar, Entel and Borealnet. SUBTEL notes that the auctions will take place in ascending order based on the amount of spectrum available, starting with the 700MHz frequencies – for which there is a single 2×10MHz block – on 8 February, followed by the AWS band (2×15MHz) on 11 February and the 3.5GHz frequencies (150MHz) on 16 February. (January 18, 2021) commsupdate.com

## Colombia

The Communications Regulatory Commission (Comision de Regulacion de Comunicaciones, CRC) has reportedly ordered the country's cellcos to sign interconnection agreements with market newcomer Partners (WOM), ahead of the latter's planned network launch. According to Portafolio.com, the watchdog handed down its ruling on 28 December 2020, quoting a CRC spokesperson as saying: 'The decisions contained in the issued resolutions will be the basis for Partners Telecom Colombia to materialize access, use and interconnection relationships with Comcel and Tigo-Une, for which the parties must comply with the defined schedule.' According to TeleGeography's

GlobalComms Database, in December 2019 Partners (representing Icelandic-owned, UK-based private equity firm Novator Partners) successfully bid on frequencies in the 700MHz band and 2500MHz bands in Colombia's multi-band spectrum auction. In July 2020, meanwhile, Novator Partners acquired an unspecified majority stake in Colombian mobile operator Avantel and launched a restructuring of the business. CEO Chris Bannister has indicated that a full commercial switch-on will take place in the first quarter of 2021, under the WOM brand that Novator currently uses in Chile.
(January 7, 2021) commsupdate.com

## Czech Republic

The Czech Telecommunications Office (ČTÚ) will launch a price and quality index for mobile services in February. The index will compare calls, SMS, and data services. For fixed location services (ie fixed lines), the consumer will be able to to compare the prices for calling, internet, and television services. At the same time, the ČTÚ is also preparing a decree, the aim of which is to determine the scope, form and manner of transmitting information from operators for the purposes of operating this tool. In recent years, domestic prices of telecommunications services, especially mobile data, have been criticized by some government officials as being higher than elsewhere in Europe. According to a 2018 EU Commission analysis, the average EU customer spends around 33 Euro on 20 GB of data, while Czechs would have to pay almost 55 Euro for the same amount. A 2017 study by the organization telefonujici.cz found that mobile tariffs in the Czech Republic were on average 79% higher than the EU average. The arrival of a fourth nationwide operator was supposed to contribute to their reduction. In the end, the three Czech mobile operators (Vodafone, T-Mobile, and O2 Czech Republic) won frequencies in an auction linked to future next-generation 5G networks. As of this year, operators must state in contracts the exact Internet connection speed provided. There are about 15 million active SIM cards in the Czech Republic. Almost 3.3 million customers use the Internet connection via fixed networks.

(January 9, 2021) praguemorning.cz

## Dominican Republic

The Dominican Telecommunications Institute (Instituto Dominicano de las Telecomunicaciones, Indotel) presented the tender specifications for its planned 5G auction at an online event held on 28 December. The regulatory authority confirmed that the sale 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. The sale process will commence this month and is expected to conclude in August. All licenses will have a duration of 20 years.

(January 4, 2021) commsupdate.com

## France

The French government has increased state support for the deployment of fiber-optic networks in the country to EUR3.57 billion (USD4.31 billion). Under the France Relance project, the government will provide EUR570 million of additional funds for the deployment of fiber in rural areas, with EUR420 million to be distributed to public initiative networks not yet subsidized by the government. These will include the following projects: Seine et Marne (led by Seine-et-Marne Numerique, EUR6.5 million), Aude (SYADEN, EUR9.5 million), Auvergne (Auvergne Digital Agency, EUR123 million), Cher (Berry Numerique, EUR16 million) Dordogne (Perigord Numerique, EUR45 million), Doubs (Doubs Tres Haut Debit, EUR5 million), Haute-Savoie (SYANE, EUR15 million), Indre (Open Fixed Syndicate RIP 36, EUR20 million), Manche (Manche Numerique, EUR46.3 million), Sarthe (Sarthe Numerique, EUR6.5 million) and Brittany (Megalis, EUR150 million). The France Relance program is part of the Tres-Haut Debit (THD) project aiming to cover 100% of the French population with very-high speed broadband services (>30Mbps) by 2022. (January 19, 2021) commsupdate.com

France's independent telecoms regulator, the National Agency of Frequencies (Agence Nationale des Frequences, ANFR), has published its monthly update on the number of base transceivers stations (BTS) in the country, reporting that it had authorized a total of 18,039 5G New Radio (NR) sites (excluding shared sites) by January 2021. Orange France, the country's leading cellco in terms of subscribers, has been authorized to operate 1,953 BTS in the 2100MHz and 3500MHz frequency bands, with the operator's CEO Stephane Richard saying in an interview with local newspaper Journal du Dimanche that the 5G network has now been activated in 160 cities across the country. Going forward, Orange is aiming to deploy 5G in 30 other cities, such as Aix-en-Provence, Brest and Toulon, while 5G services will be activated in the capital Paris in Q1 2021. Second-largest operator by subscribers, Altice France (SFR), has been authorized to build a total of 2,048 5G-enabled NR sites in the 2100MHz (1,700) and 3500MHz (775) frequency bands. For its part, Bouygues Telecom had permission to operate 3,553 5G sites in the 2100MHz band and 821 BTS in the 3500MHz band, with the operator now claiming to cover 25 cities with a population of over 70,000 (equivalent to over 1,000 municipalities) with 5G. Lastly, Free Mobile claimed the top spot with a total of 12,895 authorized 5G sites across two bands: 12,894 in the 700MHz band and 941 in the 3500MHz band. Meanwhile, the number of 4G sites in operation in France reached 47,498 BTS by 7 January, while the number of 3G-enabled sites stood at 48,369.

(January 13, 2021) commsupdate.com

French telecoms regulator ARCEP has published Decision No. 2020-1455-RDPI, ordering Free Caraibe to comply with its first deployment obligations in the French overseas territories (FOT) of Guadeloupe,

Martinique, French Guiana, Saint Barthelemy and Saint Martin by 31 December 2021. Under the terms and obligations of its frequency authorization No. 2017-1038, the operator was required to provide mobile services to 50% of the population in Guadeloupe and Martinique, 30% in French Guiana and 75% in Saint Barthelemy and Saint Martin by November 2018, though it missed the deadline. In October 2020 the operator stated that it had inked a mobile network sharing agreement with Digicel on 3 February 2020, for the creation of as joint company – Madiacom – and the transfer of Digicel's mobile network in the new unit. However, due to the COVID-19 pandemic the implementation of the project had been delayed, with Free Caraibe now given until the end of 2021 to fulfil its obligations. (January 11, 2021) commsupdate.com

## Guatemala

The Superintendence of Telecommunications (Superintendencia de Telecomunicaciones, SIT) issued Resolution SIT-DSI-664-2020 on 4 January 2021, paving the way for the auction of a 60MHz block of spectrum in the 700MHz band later this year. The move represents the first notable action of new SIT boss Marco Antonio Baten Ruiz, who replaced Jose Monterrosa on 29 December 2020.

(January 8, 2021) commsupdate.com

## Hong Kong

The Office of the Communications Authority (OFCA) in Hong Kong has warned the territory's remaining 2G handset users that they should look to upgrade to newer alternatives to ensure that they retain connectivity. While formal plans for a full 2G shutdown have yet to be announced, the regulator says that the reassignment this year of spectrum in the 900MHz and 1800MHz bands – both currently used for 2G services – means that mobile network operators (MNOs) will be looking to refarm 2G spectrum to support more advanced technologies such as 4G or 5G. In a statement, the watchdog said: 'With less spectrum deployed for 2G networks, MNOs may gradually scale down their provision of 2G services. Customers using old mobile handsets which support reception of 2G services with only one of the above frequency bands may be affected in the process.' It is urging consumers to contact their service provider to upgrade their plan to 3G or above. OFCA completed the reassignment of 2×25MHz of frequencies in the 900MHz range, with licenses now valid for a further 15 years to January 2036. 1800MHz spectrum is due to be reassigned in September this year.

(January 13, 2021) commsupdate.com

## Hungary

The National Media & Infocommunications Authority (NMHH) has completed the auction of 900MHz/1800MHz mobile spectrum licenses valid from April 2022 to April 2037 for a total price of HUF150.2 billion (USD505 million), including HUF73.8 billion for 900MHz frequencies and HUF76.4 billion for the 1800MHz band. The spectrum – all in current usage on 2G/3G/4G networks – was divided between Hungary's three leading cellcos: Magyar Telekom secured 16MHz in the 900MHz band and 40MHz in the 1800MHz band, compared to Vodafone (18MHz at 900MHz, 40MHz at 1800MHz) and Telenor (26MHz at 900MHz, 40MHz at 1800MHz). Each 15-year license may be extended for a further five years.

(January 29, 2021) commsupdate.com

## India

India's Department of Telecom (DoT) was tipped to distribute auction applications to potential bidders this week for the country's next 4G spectrum sale in March, The Economic Times (ET) reported. Industry sources told ET the auction would be held 45 to 60 days after DoT issued the documents to Reliance Jio, Bharti Airtel and Vodafone Idea. In mid-December the government approved guidelines for the sale of spectrum across seven bands. A total of about 2,250MHz of airwaves will be on the block, with spectrum licenses valid for 20 years. Analysts forecast the auction to generate up to INR3.9 trillion ($53.3 billion). DoT also plans to convene a meeting tomorrow (6 January) with local operators, equipment vendors and international tech companies, including Google, Facebook and Apple, to start work on a long-term spectrum roadmap and identify potential 5G bands, the newspaper wrote. In October, the country's government established a panel comprising the heads of its telecoms and defence ministries, among others, to streamline spectrum allocation and deliver a long-term roadmap designed to offer operators clarity on the specific bands to be made available. A 4G auction planned in 2020 was pushed to early 2021. (January 5, 2021) mobileworldlive.com

The Indian government has sought bids from banks for the sale of its full shareholding of 26.12% in telco Tata Communications – previously known as Videsh Sanchar Nigam Limited (VSNL). According to the paper, the government is planning to divest the stake during the current financial year via an Offer for Sale (OFS) mechanism, with any remaining shares to be acquired by strategic partner Panatone Finvest.

(January 20, 2021) The Economic Times

Reliance Jio Infocomm (Jio), India's largest mobile provider by subscribers, has petitioned courts in Punjab and Haryana seeking urgent intervention from the government to halt the destruction of its infrastructure, accusing its rivals of instigating the vandalism, the Economic Times reports. Infrastructure supporting Jio's networks have come under attack by farmers protesting against new agriculture laws, following rumors that Jio's parent Reliance Industries Limited (RIL) would be a major beneficiary of the reforms. Reliance has denied any association with the controversial bills, adding that it 'in no way benefits from them' and accusing Jio's competitors of spreading misinformation to damage its reputation. Further, it was reportedly suggested that the cutting of Jio's fiber was intended to encourage customers to port to other mobile networks. Rival cellcos Bharti Airtel and Vodafone Idea Limited (Vi) dismissed the allegations as 'baseless' and 'fictional', condemning the vandalism. (January 4, 2021) commsupdate.com

## Indonesia

The Ministry of Communication and Information (MCI, known locally as KemKominfo) has announced that the selection process for companies seeking to secure 2.3GHz (2360MHz-2390MHz) mobile spectrum, which opened on 20 November 2020, is declared to have been 'terminated'. In a written statement dated 23 January, KemKominfo head of public relations, Ferdinandus Setu, explained that the decision to cancel the selection process had been 'taken as a precautionary and careful step from the MCI to align every part of this selection process with the provisions of laws and regulations relating to acceptance. Non-Tax State (PNBP) within the MCI, especially Government Regulation Number 80 of 2015.' IndoTelko notes that as a result, the outcome of the 2.3GHz band selection process announced to the public in December 2020 has been cancelled and participants' bid bonds returned on 22 January 2021. In a prepared statement, the ministry confirmed: 'KemKominfo will immediately take more careful and careful follow-up steps to ensure that the radio frequency spectrum is a limited natural resource, especially the 2.3GHz radio frequency band in the 2360MHz-2390MHz range can provide maximum benefit for the people and nation of Indonesia.

KemKominfo is working hard to prepare a more careful and more careful re-selection in the 2.3GHz frequency band. The hope is that cellular operators will soon have the opportunity to compete again in a selection process to increase their frequency spectrum.' No deadline has been given. As previously reported by CommsUpdate, on 14 December 2020 KemKominfo announced that three companies – Telkomsel, Smart Telecom (Smartfren) and Hutchison 3 Indonesia (Tri) – had emerged successfully from the selection process, as rivals XL Axiata and Indosat Ooredoo both crashed out in the evaluation stages. In the press release, MCI disclosed that while all five operators applied for documents to participate, at the deadline only four had formally submitted applications with Indosat Ooredoo being the one that declined. Of the remaining participants, the KemKominfo selection team tasked with auditing the applications subsequently announced that Telkomsel, Smartfren and Tri had all passed the 'Administrative Evaluation of 2.3GHz Radio Frequency Band User Selection in the Range of 2360-2390MHz for the Need for Organizing Cellular Mobile Networks', while XL Axiata had not.

(January 26, 2021) commsupdate.com

## Ireland

Irish telecoms regulator the Commission for Communications Regulation (ComReg) has launched a consultation on a study that it commissioned related to spectrum in the 26GHz band. ComReg's consultation examines, among other things, how it might best organize and effectively manage the band in order to ensure the efficient use of spectrum for the continued provision of existing services, while also appropriately catering for any future demand for wireless broadband services 'in a timely and effective manner'. The regulator has invited interested parties to comment on the matters discussed in the study, and has set a deadline of 23 February 2021 for submissions.

(January 27, 2021) commsupdate.com

## Latvia

Latvian telecoms watchdog the Public Utilities Commission (SPRK) will temporarily suspend its internet quality measurements until it completes development and implementation of a new system, based on a prototype system developed by the Body of European Regulators for Electronic Communications (BEREC). The regulator expects the new measurement tool to be in place during 2021 and, once it becomes operational, the SRPK will resume its quality assessments. According to the SPRK, the new tool will: 'provide the possibility to perform measurements according to a common measurement method with the possibility to compare quality indicators between different countries. In addition, the system will enable the regulator to determine whether an ISP is blocking or blocking access to a page or service.

(January 19, 2021) commsupdate.com

The Public Utilities Commission (Sabiedrisko Pakalpojumu Regulesanas Komisija, SPRK) has initiated a public consultation on new draft rules regarding interconnection. The regulation sets out the requirements, deadlines and information that must be disclosed in a basic interconnection offer. The SPRK notes that the rules include new obligations on the information to be included in the offer, such as the location of interconnection points, the specifications of the equipment used to provide the interconnection and the wholesale services offered, and the procedure for reporting and rectifying faults. Operators that are obliged to publish a basic interconnection offer will be required to make the document available on its website. Providers that have already published a basic interconnection offer will be required to amend the offer in line with the new rules. The regulator is accepting comments on the draft regulations until 17 February.

(January 15, 2021) commsupdate.com

## Mexico

Mexico's Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) has announced plans to stage a public tender to enable the commercial exploitation of 41 blocks of radioelectric spectrum. Spectrum included in the sale process spans the 800MHz, 1900MHz, 1700MHz/2100MHz and 2.5GHz bands, and the concessions cover a combination of regional and national coverage areas. The watchdog notes that the tender will help to expand coverage to underserved locations, notably in the south-east of the country. Indeed, specific coverage obligations have been established for the states of Chiapas, Guerrero, Oaxaca and Veracruz. The tender will consist of four stages, the first of which will commence next month, although the formal submission of bids is not scheduled to take place until September. The available spectrum is broken down as follows:
Block A1: one block; 814MHz-824MHz/859MHz-869MHz (Regions 1-4);
Blocks A5.01-A9.05: 37 blocks; 814MHz-824MHz/859MHz-869MHz (Regions 5-9);
Block B1: one block; 1755MHz-1760MHz/2155MHz-2160MHz (national coverage);
Block C1: one block; 2500MHz-2530MHz/2620MHz-2650MHz (various locations); and
Block D1: one block; 1910MHz-1915MHz/1990MHz-1995MHz (national coverage).

(January 26, 2021) commsupdate.com

Mexican President Andres Manuel Lopez Obrador, widely known as AMLO, intends to present his cabinet with a proposal to evaluate whether certain government institutions – including the Federal Telecommunications Institute (Instituto Federal de Telecomunicaciones, IFT) – could be abolished and merged into existing ministries. According to Reuters, Lopez Obrador, who has implemented steep budget cuts and trimming wasteful expenditure since taking office, seeks to use the funding to support welfare and infrastructure spending. While the IFT has managed to dent America Movil's market power since its introduction in 2013, AMLO maintains that the watchdog has failed in its duty to rein-in the monopolistic power of some companies.

(January 13, 2021) commsupdate.com

Mexican industrial conglomerate ALFA has cancelled the sale of its telecoms unit, despite attracting a 'double-digit' number of bidders. The competitive sale process reached its second phase before ALFA called it off. On 21 December ALFA stated: 'Following an exhaustive evaluation process, [ALFA's] Board of Directors determined that it would be in the shareholders' best interest to redirect efforts to attract strategic proposals for its two separate business units (Infrastructure and Services) and maintain all options open to maximize value.' (January 5, 2021) commsupdate.com

## Nigeria

Airtel Africa has announced that an application for the renewal of its Nigerian subsidiary's spectrum licenses has been approved by the Nigerian Communications Commission (NCC). Airtel Nigeria's 900MHz and 1800MHz spectrum licenses were due to expire on

30 November 2021 but have now been extended for a further ten years, to 30 November 2031. Under the terms of the spectrum licenses, Airtel Nigeria has paid NGN71.611 billion (USD186.7 million) in renewal fees. 'I am pleased to announce that our application

in Nigeria to renew our spectrum licenses in the 900MHz and 1800MHz bands for a ten-year period has been approved by the NCC,' commented Raghunath Mandava, CEO of Airtel Africa, adding: 'This is our largest market and we remain focused on bridging the digital divide and expanding our broadband capability in the country. On behalf of Airtel Nigeria and the Group, I would like to thank both the government of Nigeria and the NCC for their cooperation and support in this important process.' (January 29, 2021) commsupdate.com

The Nigerian Communications Commission (NCC) has started probing data depletion in the telecoms industry in line with its mandate of consumer protection. Its Executive Vice Chairman and Chief Executive Officer, Prof Garba Dambatta, who spoke on the sidelines of the presentation of ZIK Prize for Leadership Award to him, said reduction in the cost of data might not provide the lasting solution to the issue of data depletion, promising that the Commission would explore new measures that would address the issue. "NCC has instituted a forensic audit on the cost of data, just like we did with cost of Short Message Service (SMS) on a particular mobile operator, where we discovered that the operator unlawfully surcharged its subscribers to the tune of over N100 million and we have asked the particular operator to make refunds immediately and

the operator has commenced refund to the affected subscribers. This could have gone unnoticed, if not for the quick intervention of NCC. We have plans to even extend the forensic audit on SMS to other telecoms operators. "So, like we did for SMS, we are doing same for data to find out the reason for fast data depletion and it will be carried out across all Mobile Network Operators (MNOs). By the time the audit is completed and the result is out, perhaps we will have better information of what is happening in the data segment, as it relates to fast data depletion," Dambatta said. He said the Commission did its benchmarking recently and discovered that the cost of 1 Gigabyte of data had come down below N500, which represents 50 per cent reduction from what it used to be. He said there was, however, a target to reduce data cost to N390 per Gigabyte by the year 2025, adding that Commission is almost there. The target, as enshrined in the National Broadband Plan (2020-2025), is to achieve N390/ Gigabyte in the cost of data by the end of 2025, but the recent benchmarking that the NCC did, showed that the cost of data has reduced to more than 50 per cent from what it used to be at the beginning of 2020. For us as industry regulator, this is a good sign that data cost is coming down and that the issue of data depletion as experienced by subscribers, is gradually been addressed. (January 18, 2021) thenationonlineng.net

## Panama

The National Public Services Authority (Autoridad Nacional de los Servicios Publicos, ASEP) has confirmed that it has extended the temporary spectrum allocations awarded to the country's four MNOs last year, from 1 January 2021 to 30 June 2021. As a result, the cellcos can all continue to utilize the frequencies free of charge to better serve Panamanian customers during the ongoing COVID-19 pandemic. The spectrum was previously used between 1 October 2020 and 31 December 2020. ASEP has published a series of resolutions based on Cabinet Resolution No. 88 (dated

12 November). The spectrum allocations are as follows:
- Claro: 1710MHz-1780MHz/2110MHz-2180MHz;
- Digicel: 1865MHz-1870MHz/1945MHz-1950MHz;
- Cable & Wireless: 703MHz-708MHz/758MHz-763MHz; and
- Tigo: 1710MHz-1780MHz/2110MHz-2180MHz.

Note: Tigo's concessions are held by Grupo de Comunicaciones Digitales; the latter holding company formally took receipt of all of the licenses previously held by Telefonica Moviles Panama (Movistar) on 28 September 2020. (January 7, 2021) commsupdate.com

## Peru

The Ministry of Transport and Communications (Ministerio de Transportes y Comunicaciones, MTC) has announced plans to implement measures that it hopes will inject around PEN1.5 billion (USD413 million) into the mobile sector with the goal of providing more than 2,600 communities with 4G connectivity for the first time. Commenting on the need for the network expansion works, MTC head Eduardo Gonzalez explained: 'The difficult situation calls for making efforts and accelerating the expansion of telecommunications services in the shortest term … The internet access gap between urban and rural areas creates limitations for development and integration into the digital world.' The MTC's plans include structuring

the upcoming competition for AWS-3 and 2300MHz spectrum based on investment commitments for the deployment of 4G sites in rural areas, which the ministry claims could provide an additional PEN1 billion for the expansion of coverage to 1,590 locations. The MTC has also proposed modifying the methodology for renewal of qualifying titles for coverage, which could add investment commitments for around PEN450 million. MTC notes that the renewal process is expected to be completed by June. Finally, the MTC has proposed the introduction of a new fee for the use of spectrum for telecoms services, potentially increasing investment from PEN7 million in 2020 to PEN130 million 2021. (January 13, 2021) commsupdate.com

## Philippines

The National Telecommunications Commission (NTC) said it would meet with telecom firms and the Department of Information and Communications Technology (DICT) to ensure their plans for improvement this year would be "completed" on time. The first bi-monthly meeting will be in the first week of February, where telcos are expected to brief the NTC on the status of their network roll-outs and the problems they encountered, the NTC said in a statement. The NTC said it would "push for front-loaded implementation of telcos' roll-out plans, particularly for the first 2 quarters of 2021." The commission's monitoring comes after President Rodrigo Duterte last year threatened he would "close" all telecommunication providers and "expropriate" if their services won't improve by the end of that year. The commission, citing data from the Ookla Speedtest Global Index, said the country's mobile Internet connection speed was at 22.50 megabits per second (mbps) in December versus 18.49 mbps the previous month. The improvement raised the country's rank to 29th from 34th among 50 Asian countries, and to 18th from 22nd out of 46 Asia Pacific countries, the NTC said. Globe said it has finalized partnerships with 11 tower companies, while Smart said it has agreements with 9 tower companies, it added. Globe and Smart also increased capital expenditures to P90 billion and P92 billion, respectively, in 2021 in anticipation of DITO Telecommunity's launch in March, according to the NTC. (January 25, 2021) news.abs-cbn.com

The Philippines' third telco player DITO Telecommunity has announced that it is confident it will pass the government-mandated technical audit of its new network, which is due to begin next week. The newcomer informed the National Telecommunications Commission (NTC) that, having secured a six-month extension in July 2020 'in relation to the delay caused by the COVID-19 crisis', its new network is now ready to be audited. DITO must now deliver on its commitment to have covered 37% of the population with a service delivering a minimum average download speed of 27Mbps. The test will be conducted by independent auditor R G Manabat & Co with a certain number of the start-up's 1,600 or so cell sites tested. 'For the past months, amid the difficulties posed by the current global pandemic, DITO has made great strides in the rollout to ensure that the results of the audit will be positive,' the company's chief administrative officer Adel Tamano said, adding that the newcomer also intends to push through with its commercial launch in March 2021. DITO's next technical audit is slated for July this year, at which point it has pledged to have extended service coverage to 51% of the population (minimum speed of 55Mbps). Should DITO repeatedly breach its commitments, the government is able to recall its radio frequencies and seize its PHP25.7 billion (USD535 million) bond. (January 8, 2021) commsupdate.com

## Portugal

Spanish telecoms firm Grupo MASMOVIL has been identified as the buyer of three blocks of 1800MHz spectrum in the first stage of the auction being held by the National Communications Authority (Autoridade Nacional de Comunicacoes, ANACOM). According to Expansion, MASMOVIL took part in the auction via its Portuguese cable/MVNO subsidiary Nowo. Going forward, MASMOVIL intends to roll out a 4G network covering Lisbon, Porto and the Algarve. As per regulator data, the winning bidder paid EUR18.117 million (USD22.012 million) for each of the three blocks on offer, for a total commitment of EUR54.351 million. In related news, the second phase of the Portuguese auction commenced yesterday (14 January). This phase includes spectrum in the 700MHz, 900MHz, 2100MHz, 2.6GHz and 3.6GHz bands. Incumbent operators MEO, Nos and Vodafone will all go head-to-head for the 5G suitable frequencies, with MASMOVIL also expected to boost its spectrum holdings.

(January 15, 2021) commsupdate.com

Portugal's National Communications Authority (ANACOM) has confirmed that its auction of 900MHz and 1800MHz spectrum – which was reserved for new market entrants – concluded on 11 January, after eight days of bidding. Final 900MHz bids stood at EUR30 million (USD36.8 million), while final 1800MHz bids

totaled EUR18.117 million. The actual identities of the new bidders have not been disclosed in ANACOM's documentation, although MASMOVIL-backed cableco/MVNO Nowo has previously stated its intention to take part in the process. Bidding for sought-after spectrum in the 700MHz, 2100MHz, 2.6GHz and 3.6GHz bands has yet to commence. Incumbent operators MEO, Nos and Vodafone will go head-to-head for the 5G suitable frequencies. (January 12, 2021) commsupdate.com

The National Communications Authority (Autoridade Nacional de Comunicacoes, ANACOM) has confirmed that its multi-band spectrum auction – which commenced on 22 December before being paused on 23 December – resumed on 4 January. Bidding for sought-after spectrum in the 700MHz, 2100MHz, 2.6GHz and 3.6GHz bands has yet to commence, however, with the initial stages of the auction concentrating on the allocation of the 900MHz and 1800MHz bands, which has been reserved for new market entrants. At the end of day four 900MHz bids stood at EUR30 million (USD36.8 million), while 1800MHz bids totaled EUR14.84 million. The identities of the new bidders themselves have not been disclosed in ANACOM's documentation, although MASMOVIL-backed cableco/MVNO Nowo has previously stated its intention to take part in the process. (January 6, 2021) commsupdate.com

## Romania

Romania's National Authority for Management and Regulation in Communications (ANCOM) has revealed that 945,186 telephone numbers were ported in 2020, of which 92% (873,519) were mobile numbers and only 71,667 fixed line numbers. RCS&RDS (DIGI) accepted the most mobile porting requests (377,536), followed by Telekom Romania Communications (141,795), Vodafone (133,158), Orange (125,633) and Telekom Romania Mobile Communications (95,375). Post-paid customers accounted for 55% of the mobile numbers ported. Fixed telephone numbers were ported between the main providers as follows: RCS&RDS 34,014, Orange 13,671, Vodafone 12,792, Telecom Romania Communications 4,899 and GTS Telecom 3,200. Almost 7.3 million numbers have now been transferred between networks since the portability service was introduced in October 2008. Of these, 6.4 million (87%) have been mobile numbers and over 900,000 landline numbers. (January 21, 2021) commsupdate.com

The National Authority for Management and Regulation in Communications (ANCOM) has fined Telekom Romania Mobile Communications RON700,000 (USD143,475) for non-fulfilment of its spectrum license obligation to provide mobile voice coverage to at least 98% of the country's population. The regulator's most recent monitoring survey conducted between August and December 2020 found that all four of the country's mobile network operators (MNOs) increased their voice services footprint last year. Orange Romania's mobile voice services covered 98.27% of the country's population in 2020, compared with 97.81% the previous year, Vodafone Romania achieved 98.16% coverage (up from 97.76% in 2019), RCS&RDS (DIGI) 98.02% (2019: 95.42%) and Telekom Romania Mobile Communications 97.25% (2019: 96.63%). Under the terms of their radio spectrum licenses, Orange, Vodafone and Telekom Mobile were obliged to cover at least 98% of the population with voice services through their own radio access network by 5 April 2017, and RCS&RDS by 5 April 2019. (January 15, 2021) commsupdate.com

## Saint Helena

The government is looking to license a telecoms operator to offer fixed voice and data, mobile and TV services on the island, or 'a new hybrid offering all of the services in innovative and creative ways', according to Tom Allen who is acting as a consultant on the project. In a LinkedIn post, Allen noted that the development is potentially exciting as the remote tropical island is about to get connected to a 100Gbps fiber connection when the Google Equiano cable lands there. No timeline is given concerning the selection process for the would-be quad-play licensee, but Allen notes that: '[there is] the opportunity for the island to totally embrace a digital future that will solve many of their current challenges, including the ability to use credit or debit cards. Saint Helena could become a Smart Everything, from supporting remote learning at every level, to super secure data centers and satellite ground stations.' (January 8, 2021) commsupdate.com

## Serbia

Serbia delayed its 5G auction again for the end of 2021 due to the COVID-19 pandemic scuppering investment plans of operators, reported Serbian news agency Tanjug. Tatjana Matic, minister of trade, tourism and telecommunications, said due to the "global economic crisis" and the unpredictable effects the pandemic has on businesses, companies have "withdrawn" potential 5G rollout plans citing uncertainty. Matic noted operators registered interest in airwaves due to the potential to transform the industrial sector, and consumers will not be using 5G networks for mobile content services "to a large extent". Serbia originally planned to hold its 5G auction at the end of 2020 but this was pushed back to Q1 this year, also due to the effects of the Covid-19 pandemic.

(January 2, 2021) developingtelecoms.com

## South Africa

MTN Group reportedly threatened legal action against South Africa's telecoms regulator over rules set for an upcoming spectrum auction, opposing a plan to allow small operators first dibs on certain frequencies.
South African technology website MyBroadband reported it had viewed a letter from MTN lawyers contesting the Independent Communications Authority of South Africa's (ICASA) proposal to exclude network operators from initially bidding on lots of spectrum based on their market share. Dubbed the "opt-in" scheme, ICASA will use a criterion to ensure smaller operators are able to access spectrum before larger rivals. For example, national operators with a retail market share of more than 45 per cent in more than ten municipalities are unable to bid on certain spectrum in the first round. MTN argued the scheme could mean tier-two operators (those with less than a market share of 45 per cent in fewer than ten municipalities) snap up all of the 3500MHz spectrum made available.

(January 7, 2021) mobileworldlive.com

The communications regulator revealed six companies applied to take part in its multi-frequency spectrum auction including all of the market's existing operators, with the sale expected to begin by the end of March. In a statement, the Independent Communications Authority of South Africa (ICASA) announced it had received completed submissions from existing mobile players Vodacom, MTN, Telkom SA, Cell C and Rain Networks alongside Liquid Telecom. The regulator added a submission had also been made from an organization called Women Building a Better Society but had been rejected as it missed the deadline. Spectrum on offer is expected to allow operators to expand the scope of existing mobile services and boost 5G networks, which are currently using temporary bandwidth released by authorities to improve connectivity during the ongoing Covid-19 pandemic. The sale will include various allocations across the 700MHz, 800MHz, 2600MHz, and 3500MHz bands and is expected to begin by 31 March. Winning bidders will have to adhere to a range of terms including provisions for MVNOs and coverage commitments. Under rules published last year, a new entrant would also be required to purchase a minimum number of lots to ensure they become a credible competitor. (January 4, 2021) mobileworldlive.com

## Sweden

The Swedish Post and Telecom Agency (Post & Telestyrelsen, PTS) completed its auction of 2.3GHz and 3.5GHz 5G spectrum after four rounds of bidding on a single day, with all five incumbent cellcos securing licenses. Telia Sweden, Hi3G Access (Tre Sweden) and Net4Mobility (the network sharing venture of Tele2 Sweden and Telenor Sweden) won spectrum in the 3.5GHz range, while 4G-only operator Teracom was the sole bidder for 2.3GHz frequencies. The sale raised a total of SEK2.32 billion (USD273.7 million) for the Treasury.

The full allocations are as follows:

- Tre Sweden: paid SEK491.25 million for 100MHz of spectrum between 3400MHz-3500MHz
- Net4Mobility: paid SEK665.5 million for 100MHz of spectrum between 3620MHz-3720MHz
- Telia Sweden: paid SEK760.25 million for 120MHz of spectrum between 3500MHz-3620MHz
- Teracom: paid SEK400.0 million for 80MHz of Spectrum between 2300MHz-2380MHz.

Separately, Net4Mobility partners Tele2 and Telenor have selected Ericsson and Nokia to deploy their nationwide 5G radio access network. Tele2 had previously named Nokia as its core network vendor for Sweden and the Baltics. (January 20, 2021) commsupdate.com

The Supreme Administrative Court in Sweden has ruled that Chinese vendor Huawei cannot challenge a decision to exclude its equipment from the country's 5G rollouts, meaning the delayed 5G spectrum auction should go ahead as planned on 19 January. According to a report from Reuters, Huawei says that it is still awaiting a decision on two other appeals lodged against the ban in November. The firm says going ahead with the auction while a legal challenge is still pending would have 'serious consequences. Swedish equipment firm Ericsson has supported Huawei's position, saying the ban is a restriction on free competition. Sweden's Post and Telecom Agency (Post & Telestyrelsen, PTS) is auctioning 5G-capable spectrum in the 2.3GHz and 3.5GHz bands.

(January 18, 2021) commsupdate.com

## Taiwan

Taiwanese mobile operator Asia Pacific Telecom (APT) has been told it needs to improve its 4G coverage before it can share the 5G spectrum and network belonging to rival Far EasTone (FET). The stipulation was made as the National Communications Commission (NCC) began reviewing a partnership application from the two cellcos, with FET president Chee Ching and APT president Huang Nan-ren attending a weekly commissioners' meeting to answer questions regarding the matter. In September 2020 FET agreed to pay TWD5 billion (USD178 million) to acquire an 11.58% stake in APT, while in a parallel move the two parties also inked a spectrum sharing deal, under which APT would gain access to FET's 5G-suitable 3.5GHz spectrum, paying TWD9.47 billion to use the frequencies, while also sharing network deployment costs. Should the NCC ultimately opt to approve the partnership application, it has been noted that it would mark the first time in Taiwan that two cellcos had offered services using the same spectrum and network. Commenting on the matter, NCC Vice Chairman Wong Po-tsung said: 'We are cautiously optimistic about the partnership, but we want the two carriers to offer more information on how each of them can manage the network independently, maintain 5G service quality, raise the service coverage rate and ensure full disclosure of information.'

(January 15, 2021) The Taipei Times

The National Communications Commission (NCC) has yet to set a timetable for releasing a portion of the 5G spectrum supporting private 5G network applications. The appropriation of the 5G spectrum for private enterprise networks may not come until the government fixes the tariff rates for spectrum usage,

which is to be set between 2021 and 2022, according to industry sources. Many Taiwan-based networking equipment makers, including Alpha Networks, Foxconn Technology, Compal Electronics and HTC, are all ready to begin mass-production for network devices supporting 4.8-4.9 GHz frequencies. With demand for such devices from local companies not being seen on the horizon, these equipment suppliers are likely to tap markets in Japan and China initially, said the sources. The Ministry of Economic Affairs (MOEA), stating it

will ask NCC to accelerate the commercialization of 4.8-4.9 GHz bands, said it will not stop its efforts to promote joint development of relevant networking devices between ITRI (Industrial Technology Research Institute) and local companies. The ministry noted that 4.8-4.9 GHz-enabled devices developed by Alpha Networks with technology transferred from ITRI are finding their way into Japan's 5G market.

(January 12, 2021) digitimes.com

## Thailand

The Central Administrative Court has ruled that state-owned operator TOT must pay market leader AIS a total of THB1.35 billion ($45 million) relating to a revenue sharing concession. The sum arises from an international direct dialing service that the providers offered between November 2008 and September 2012. The 900MHz concession agreement that covered this service expired in September 2015, and in May 2017 the Thai Arbitration Institute ruled that TOT must pay AIS its revenue share. TOT attempted to petition this ruling but the CAC has now dismissed this challenge, giving TOT 30 days to pursue an appeal in Thailand's Supreme Administrative Court. AIS has recently emerged victorious from a number of long-running disputes, including another with TOT which the operators settled

in September 2019 with an agreement that will see AIS leasing back TOT's towers for the next ten years. Earlier this month, AIS won another case against state-owned CAT Telecom after the Arbitration Committee ruled that AIS subsidiary Digital Phone did not need to compensate CAT following the expiration of their concession agreement. However, while AIS was quick to claim victory, CAT still has 90 days to petition the committee's ruling. CAT opened the case in January 2018, demanding that Digital Phone transfer the ownership of an infrastructure holding including a call center system and 4,657 towers, as well as claiming compensation of THB13.4 billion ($445.9 million) plus THB116 million per month for interest and lost opportunity. (January 26, 2021) developingtelecoms.com

## Togo

The Electronic Communications and Postal Regulatory Authority (ARCEP) has announced it is introducing a range of measures designed to strengthen consumer protections, including imposing fairer pricing. ARCEP is reportedly ushering in new pricing standards for communications services, which it has presented in five new measures that cover:

• transparency of offers – going forward, telecoms operators must provide users with complete transparency in their tariff offers to allow consumers to make reasonable comparison of the various offers available

• end of the validity period on credits – the credit on a SIM card can no longer be considered as expired, as long as the SIM card is active' and 'top-ups must

not have a period of validity beyond which the user loses the remaining balance of his credit'.

• reasonable validity for packages and promotions – the period of validity of a tariff plan/offer must be reasonable with regard to the subscription amount and clearly communicated to consumers

• charges applied to account-to-account credit transfers – from now on, the fees applied for these operations and deducted by the operators, 'must not exceed 3% of the amount transferred'

• ceiling for customer service – from now on, 'the tariff for public access to operator customer support services cannot be billed at more than XOF20 [USD0.04] per call, whatever the duration of the call'.

(January 25, 2021) Agence Ecofin

## United Kingdom

UK regulator OFCOM pushed back plans to hold a 5G spectrum auction, moving the initial bidding start date by two months due to the Covid-19 (coronavirus) pandemic. In a statement, the body said the principal stage of the auction for the 700MHz and 3.6GHz to 3.8GHz frequency bands set for this month, is now scheduled for March. OFCOM added it will continue to monitor developments of the situation following the outbreak. A BT spokesperson told Mobile World Live the

operator is "disappointed" but understands the move. "The auction and subsequent release of spectrum remains central to the future rollout of mobile networks and 5G. The economy's recovery from Covid-19 is dependent on resilient digital infrastructure and we urge OFCOM to resist any further requests for delays." The regulator previously said the auction will lead to an 18 per cent increase in mobile capacity in the UK and the goal was to boost 5G network rollouts and improve

mobile broadband. Its auction plan faced challenges from some of the country's operators, as they sought a different approach to awarding the spectrum in the wake of requirements to invest heavily into removing Huawei equipment from their networks.

(January 25, 2021) mobileworldlive.com

The telecoms regulator OFCOM has now formally confirmed that four bidders will contest its upcoming auction of spectrum in the 700MHz and 3.6GHz-3.8GHz bands. In accordance with regulations, the watchdog has now published the identities of the participants, which unsurprisingly are the four mobile incumbents: EE, O2 UK, Three UK and Vodafone UK. Last month the quartet had been confirmed as qualified bidders, but notably each had until 23 December 2020 to withdraw from the award process. Meanwhile, the timeline for the auction itself is still reportedly being considered in light of the ongoing global health crisis, with OFCOM cited as saying: 'We are keeping the timing of the start of bidding in the auction under careful review in light of the recent worsening of the coronavirus situation, and will publish an update on this in due course.' As previously reported by CommsUpdate, in November 2020 OFCOM finalized the regulations relating to the planned award of spectrum in the 700MHz and 3.6GHz-3.8GHz bands, saying it would proceed with preparations to hold the auction 'as soon as it is reasonably practicable to do

so in light of the COVID-19 pandemic'. At that date, the regulator said it would work with all interested bidders to ensure the auction can proceed in a safe and secure way, with a view to starting bidding in mid-January 2021. (January 8, 2021) commsupdate.com

The telecoms regulator OFCOM has confirmed that, having completed an initial information gathering process, it has decided to proceed to the provisional decision phase of an investigation into BT's compliance with its obligations as a broadband universal service provider. BT has been designated as a universal service provider, and as such is subject to regulatory conditions which set out how it must provider broadband universal service obligation (USO) connections to eligible consumers. In October 2020 OFCOM announced it had opened an investigation amid concerns that 'BT may not be complying with the regulatory conditions correctly where it assesses excess costs for a given connection'. Specifically, the regulator suggested at that date the situation could result in some customers' quote for a connection being higher than necessary. Now, OFCOM has confirmed that it has moved to the next phase of the investigation, saying it will continue to gather additional evidence, while it expects to provide a further update on the matter 'by the end of March'.

(January 13, 2021) commsupdate.com

## United States

The FCC's Wireline Competition Bureau is seeking input on how to hand out over $3 billion in new broadband benefits created by Congress in the recently passed package of appropriations and COVID-19 aid funds. The $3.2 billion Emergency Broadband Benefit Program was created to help low-income households access the internet, and fund equipment and service for students forced to study from home during the pandemic. The latter was imparted because the FCC under chairman Ajit Pai interpreted the E-rate subsidy statute language as excluding home service and equipment because the statute directed the subsidy to be used for classrooms not homes. Democrats argued that was too narrow a reading. Companies participating in the new program will be reimbursed for providing discounted service and equipment (up to $50 per month and up to $75 on tribal lands) during the pandemic. Companies providing tablets, desktops or laptops fur use during the pandemic can get up to $100 per connected device (only one device per household). "We're excited to get to work on this new program, which responds to my call last June for Congress to fund a program to advance the Keep Americans Connected initiative that we launched when the pandemic started," said Pai. "The Emergency Broadband Benefit Program will go a long way to ensuring that low-income American families and veterans are connected during the pandemic, and that

students can engage in remote learning with support from the program's funding for connected devices." Pai said the staff is working quickly to stand up the program and get the money to needy consumers, while at the same time "guarding against waste, fraud, and abuse," which will include a congressionally required audit of the program. The stand-up will have to be quick for Pai to be around for any of it since he will be exiting in two weeks. Among the questions the FCC would like answers on as it figures out how to structure the program:

1. "Which providers can participate in the program and what do such providers need to do to elect to participate?

2. "How should the Commission set up an expedited process for approving broadband providers for areas where they are not eligible telecommunications carriers?

3. "How should the Commission and providers track participating households and verify that they are eligible?

4. "What services and connected devices are eligible for reimbursement from the program?

5. "How should the Commission structure the reimbursement process?

6. "What rules are needed to ensure appropriate service on Tribal lands?

7. "How should the Commission and participating providers promote awareness of the program?

8. "What reporting requirements are needed both during the program and at its conclusion?"

In addition to the $3.2 billion for the Emergency Broadband Connectivity Fund, the appropriations/aid bills include $98 million to implement the Broadband Deployment Accuracy and Technological Availability (DATA) Act, bipartisan legislation enacted in 2020 to create a comprehensive national broadband map, $300 million for broadband infrastructure in rural America, and $250 million for the FCC's COVID-19 Telehealth Program. "Tens of millions of Americans do not have broadband simply because they cannot afford it," said FCC commissioner Geoffrey Starks. "No family should have to decide between keeping the lights on or getting the household connected, especially during a public health crisis that has made being online more essential than ever. The Emergency Broadband Benefit is poised to connect tens of millions of Americans and to jumpstart a long-term focus on broadband affordability at the FCC. This is long overdue for struggling Americans, including those who are recently unemployed due to the pandemic... I look forward to engaging with a wide range of commenters as we develop this vital program over the next two months."

(January 4, 2021) nexttv.com

Analysts warned high prices in a US auction of C-Band spectrum (3.7GHz to 4.2GHz) could spell bad news for operators, as the tally from the ongoing sale climbed well beyond $75 billion. Bids hit $76.5 billion after 50 rounds, more than doubling the $30 billion in spending Wells Fargo Securities analysts expected and beating the $45 billion forecast by MoffetNathanson. Craig Moffett, a senior analyst for the latter, flagged the auction tally as worrisome in a research note, arguing operators would "necessarily suffer lower returns as a result of having paid more than expected for spectrum that will generate no more revenue than expected." He warned the massive investments made in the sale "risk displacing the capital investment needed to put the acquired spectrum to use" and, in a worst-case scenario, "financially destabilizing one or more players." However, analysts at Lightshed Partners disagreed, asserting the steep prices would not negatively impact capex but instead increase pressure on "any high bidder to build more quickly to secure a return on this investment." The sale began 8 December, with a total of 280MHz of spectrum and 5,684 licenses in play. Moffett tipped the proceeding to wrap and winners to be announced by "early February."

(January 4, 2021) mobileworldlive.com

## Uruguay

The government of Uruguay has approved the timetable for the long-delayed introduction of mobile number portability (MNP), which enables mobile users to retain their number if they switch service provider. TeleSemana reports that a number portability database administrator will be selected to manage the process next month, with contracts and agreements with mobile operators expected to follow in March. By July tests of the system should begin ahead of a commercial launch of MNP on 1 October 2021. Mobile operators will bear the cost of the number transfer process, which should take no more than three days to complete. 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. Article 472 states that operators are obliged to offer MNP under the guidelines provided by the regulator and that they will also have to assume the costs of adapting their networks and systems to implement portability. These costs cannot be transferred to end-users. Two months later, a committee comprising representatives from industry regulators and mobile operators was established to prepare for the introduction of MNP. The committee is responsible for formulating a timetable for the introduction of MNP, reviewing the numbering plan and determining the costs.

(January 22, 2021) commsupdate.com

The state-owned operator ANTEL invested a total of USD134 million in its operations last year and plans to increase total spending to USD152 million in 2021, El Observador cites the company's President Gabriel Gurmendez as saying. This year, ANTEL plans to increase territorial coverage of its 4G network to 99%, with a view to completing its rollout in 2022. In addition, the firm plans to connect around 377 locations with mobile services and complete the rollout of its fiber-to-the-home (FTTH) network in a number of areas, including Las Piedras, Santa Lucia and Ciudad de la Costa.

(January 7, 2021) commsupdate.com

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