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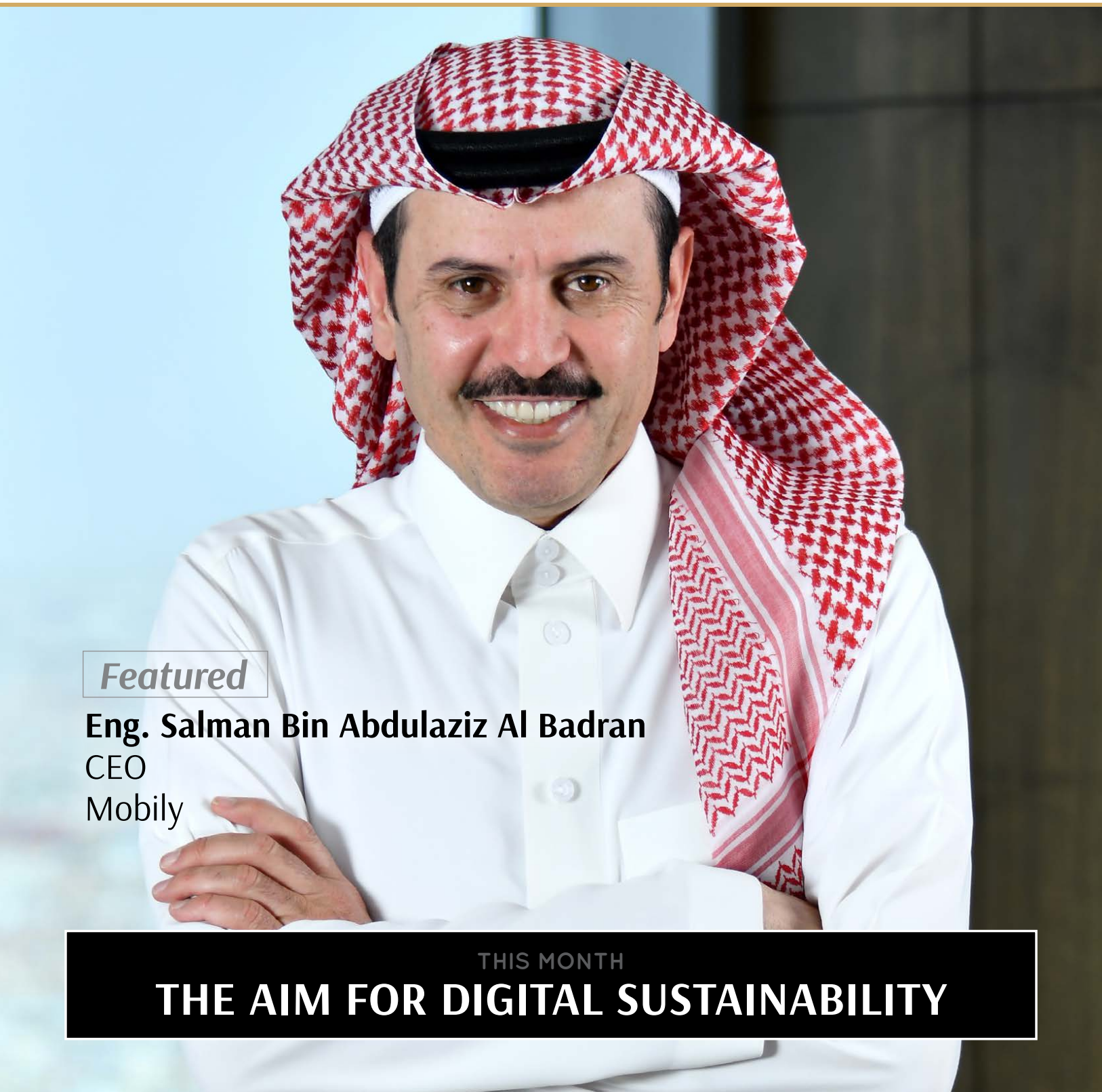
SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES



Featured

Eng. Salman Bin Abdulaziz Al Badran
CEO
Mobily

THIS MONTH

THE AIM FOR DIGITAL SUSTAINABILITY

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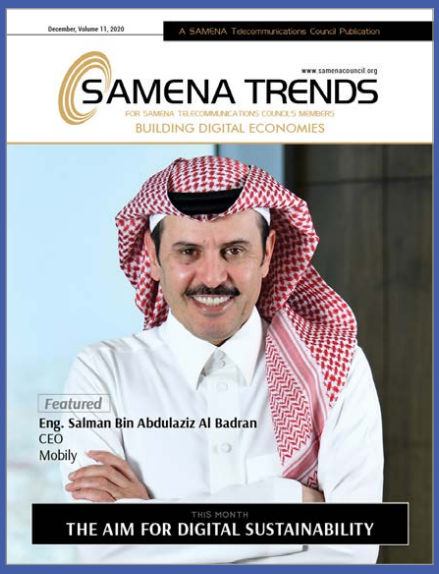

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The Aim for Digital Sustainability

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 and digitization trends across markets and industries, and sustainable influx in investment in both infrastructure and incubation of innovation, play a crucial role as well.

As we have observed, of late, the SA-ME-NA region, especially the Middle East, is demonstrating noticeable progress (and progressiveness) in ICT development. The challenges of the year 2020 have indeed been good catalysts for the new wave of digitization being observed worldwide. A major contributing factor, which has been catalyzed very well over the past year, is the heightened focus of ICT Players to work collaboratively work with Regulators and Policymakers in the fulfillment of the over-arching goal of "Universal Digital Access". As a result of sound policies, which preceded the 2020 crisis in many ME countries, complemented by clear ICT goals, investment in ICT infrastructure and subsequent acceleration of digital development, the region has done well in achieving digital progress at a much faster rate than predicted, earlier.

Resultantly, new paradigms in digital value-creation have emerged, whereby the power of connectivity, computing, and comprehension will drive further development and digital adoption in the post-pandemic era. In this regard, partnership, collaboration, digital capacity-building and incubation of innovation would prove to be crucial for sustaining the digital development momentum. Under the new paradigm shifts, which have abruptly changed connectivity needs and the speed of digitization, other industries (verticals) have also been compelled to increasingly bank on the power and potential of digital technologies to manage their pressures to deliver and thrive.

These are the times when future innovation depends on the sustainability of an open and symbiotic ICT ecosystem, which should foster improved relationships, such as between Tech Providers - Operators, Operators - Content/App Providers, Content/App Providers - Consumers, Tech Providers - Consumers, Tech Providers - Content/App Providers, Operators - Consumers, Tech Providers - Governments, Operators - Governments, and Governments - Citizens, among others. The relationships are indeed as complex as they sound. Thus new synergies and possibilities among ICT players, beneficiaries, as well as technologies must be created. That is, broadband access, cloud computing, advanced computational capabilities, artificial intelligence, intra and inter-industry applications and digital services must be harnessed together in a meaningful way to create new opportunities for business growth as well as for achieving new milestones in socio-economic well-being in an inclusive manner.

SAMENA Council believes that public-private-people cooperation is essential for addressing the digital inclusion and digital sustainability imperatives. Not only are the ICT players themselves but other industries as well are central to the digital world in which we now live and operate. The world now demands better communication services, enhanced digital experiences, increased business productivity, and improved quality of life, and not to mention, faster recovery. It is thus important that we act upon some implementable recommendations (some of which have been repeatedly highlighted by SAMENA Council across its own as well as both regional and global platforms) that foster innovation and will help attract more end-user confidence in advanced technologies, including 5G. At the infrastructure level, we need to achieve ubiquitous coverage and ensure optimal user experience while maximizing network value for the investors. At the policy-level, this merits further harmonizing policy and regulatory efforts by keeping in view the multiple aforementioned relationships within the ICT ecosystem.

May the Year 2021 bring success and sustainability to all those who have invested their time, energies, leadership, and goodwill to support value-creation within the evolving ICT ecosystem, and to involve other industries.

Happy New Year!

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

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Mobily Speaks to SAMENA Council

Q. Under your leadership, what is the main "theme strategy" that is driving Mobily's contributions in building a sustainable digital economy in Saudi Arabia?

A. Mobily's new corporate strategy has been developed with the aim of playing a pivotal role in the achievement of the objectives of the Kingdom's Vision 2030, especially by expediting digitalization and enabling various programs of the vision. The initiatives and programs of this new strategy, which we call the "GAIN" strategy, have been developed to support the success of the ICT strategy and to create new opportunities for the digital economy's growth, while meeting multiple socio-economic goals within the Kingdom.

> *Mobily's 5G services now cover 70% of all major cities. Customers can now enjoy much more reliable connectivity, the lowest response time, and higher performance in crowded areas.*

In terms of network capabilities, significant improvements have been made in the network with an emphasis on enhancing the quality of customer experience. The latest Meqyas report has ascertained the effect of these improvements by ranking Mobily number one in latency for most of the widely used social media, video conferencing, and video gaming platforms.

Moreover, our financial performance has been phenomenal in 2020, evidenced by the dividends announcement ($102.7 million) for the first time after a lapse of almost six years. The profit for the first nine months of 2020 was $143.2 million, which is 244% higher than the $41.6 million achieved in 2019. We owe such results to the optimization of operational costs while enhancing core and digital revenues, a clear sign of the success of our new strategy, "GAIN." However, the main reason behind this success is the untiring efforts of all of my colleagues I like to call "Mobilyans" out of love and respect.

Eng. Salman Bin Abdulaziz Al Badran
CEO
Mobily

Q. In retrospect, how has the Year 2020 been uniquely challenging for your operations and what core strengths did Mobily bank on to tread through these challenging times?

A. In multiple ways, 2020 has indeed been extremely challenging for Mobily, like the rest of the telecom industry and in fact, the entire local and global economy. These challenges have allowed Mobily to prove that it can rely on its intrinsic strengths as a modern integrated telecom operator with excellent technical and human resources to stand the test of time. As the pandemic increased the traffic on digital channels dramatically, Mobily relied on its agility, efficient internal and external integration, and operational excellence based on digitalization to deal with this challenge successfully. Our focus in this regard has been on user experience, which was greatly enhanced through the revamped Mobily app. As a result, penetration of digital sales recharges and customer interactions (through digital channels) have multiplied many folds resulting in faster time-to-market and better customer engagement and satisfaction.

Mobily announced one of MENA's largest projects that uses capabilities of NB-IoT technologies in smart energy management and consumption. It will implement 10 million smart meters across the KSA for the Saudi Electricity Company (SEC), including management, manufacturing, installation and operating, digital connectivity, and technical connectivity with other management systems.

Q. During the SAMENA Accelerator on Fiber Deployment in November 2020, SAMENA Council reiterated to regional Regulators and Policymakers the need to accelerate Fiber infrastructure. What Fiber initiatives has Mobily taken on this front?

A. The FTTX open access Initiative has been very successful for Mobily, and we have achieved the highest FTTH sales per year since the start of Mobily's FTTH services. This initiative gives users the option to select their preferred operator to enjoy the services as well as benefit from new customer experience.

Q. What are Mobily's notable collaborative achievements in recent times?

A. The launch of the National eSIM Platform has been an important achievement in the recent past. We have collaborated with other operators and government agencies for the successful launch of this platform. We believe that this is an essential milestone in the digitalization of telecom services in the Kingdom. Mobily also has a multitude of services and projects supporting and enabling digitalization in adjacent sectors (e.g. education, health, and energy). For example, Mobily announced one of MENA's largest projects that uses capabilities of NB-IoT technologies in smart energy management and consumption. It will implement 10 million smart meters across the KSA for the Saudi Electricity Company (SEC), including management, manufacturing, installation and operating, digital connectivity, and technical connectivity with other management systems. This project was started in December 2019 and is expected to be completed by March 2023.

Q. What are the core enhancements in digital customer experience that Mobily has introduced?

A. Mobily has revamped its operating model and its HR Unit. This has already shown significant improvement in operational excellence, employee engagement, and customer experience.As an important step towards better customer experience and enhanced digitalization, we have recently launched a direct carrier billing service with Google. This service allows Mobily customers to pay for their online transactions on Google Play Store while the charge appears on their mobile phone bill without the need for a credit card. Furthermore, according to the CITC customer experience report, Mobily has received the lowest number of complaints in fixed services for six consecutive quarters, and registered the lowest number of complaints in mobile services for eight consecutive quarters among the mobile operators.

We have also launched a Chat Bot service to further enhance customer experience. It provides always-on customer service with reduced wait time and personalized human interaction while providing impactful business insights for improving our services.

Q. In the leading 5G market of Saudi Arabia, what are Mobily's contributions in the 5G service growth?

A. Mobily's 5G services now cover 70% of all major cities. Customers can now enjoy much more reliable connectivity, the lowest response time, and higher performance in crowded areas. This is expected to improve customer lives while boosting the national economy and helping in the realization of a digital Saudi society. According to the Global Speed Index, Mobily is proud to be one of the operators that contributes to reaching the highest speed of Mobile broadband.

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SAMENA COUNCIL ACTIVITY

SAMENA Council Hails Regional Policy & Regulatory Measures on Spectrum Availability; Emphasizes on Spectrum Policies that Transcend Short-term Economics

SAMENA Telecommunications Council, presenting its views and recommendations during the ITU and CITC collaborated *"Radio Spectrum for IMT-2020 and Beyond: Fostering Commercial and Innovative Use"* event, emphasized on adopting spectrum management approaches in the larger interest of the Industry and sustainability of digitization efforts in the long run. The discussions of the ITU-CITC webinar focused on future-oriented spectrum policy development to ensure business certainty and investment, exploring the future potential of 5G, vehicular communication systems, unlicensed wireless technologies, satellite communications, and other developments emerging within the ICT sector. The webinar also stressed on the need for multilateral cooperation in spectrum management, allocation, and harmonization in line with the ITU's standards and guidelines.

SAMENA Council, represented by Bocar BA, CEO & Board Member, delivered a keynote message, reiterating how innovative and effective policy and regulatory solutions and enabling measures, which have been key to setting the foundations for digital transformation, remain absolutely essential to building a sustainable digital future and a sustainable digital economy. Creating a harmonized spectrum environment through enabling practices, which should incentivize innovation, foster healthy competition and regulatory stability, is a challenge that requires, one, the management of high data growth with additional and/or more efficient use of existing spectrum; two, bringing unlicensed and/or shared spectrum usage to the equation; and, three, utilizing 4G spectrum to drive 5G. Moreover, hybrid solutions for the provision of connectivity, especially through cooperation with Terrestrial and Satellite players, should also be explored. Such collaboration may boost fulfillment of SDG 9 by accelerating resilient rural broadband infrastructure, quality of service, and industrialization.**Bocar BA stated**: *"As a national asset and scarce national resource, spectrum needs to be managed to optimize returns to the government while ensuring it contributes an equal, if not more, value to the overall national economy. The future of connectivity is pointing to the likelihood that more spectrum for both licensed and unlicensed services will indeed be needed. To tread the next decade, we need to enshrine affordability of Spectrum into national ICT policies and address the issue of license fees, opening up multiple spectrum bands, and extending duration of licenses for Operators. It is a pleasure for SAMENA Council to be a part of the CITC's endeavors in developing a five-year spectrum roadmap for commercial and innovative use, and to make more than 10 GHz of spectrum available in Saudi Arabia for innovative uses by 2024. This is a very progressive regulatory enablement step for Operators, and it will set a new precedence in the SA-ME-NA region."*

Drawing the attention of the regional Policymakers and Regulators on key considerations, SAMENA Council mentioned a string of efforts throughout the year 2020, including the Leaders' Summit 2020 and the ITU's recent Private Sector and Ministerial Roundtables, during which collaboration between the Private Sector and Governments was pressed upon to achieve nation-specific as well as global milestones of achieving Universal Digital Access and to accelerate the pace of digital development and overcoming digital divides by encourage cross-industry collaboration. As spectrum is crucial in this regard, SAMENA Council re-emphasized on the need to (1) do more of what has worked well throughout the COVID-19 crisis, (2) consider temporary spectrum awards during Covid times for permanent allocation, (3) think beyond short-term revenue-generation from spectrum awards, (4) address spectrum needs of both Terrestrial and Satellite Operators, (5) rethink taxation and license fees, (6) award as much contiguous spectrum as possible, (7) prioritize the release of unallocated portions of 600 MHz, 700 MHz and 800 MHz spectrum; and release of 3.8 – 4.2 GHz frequencies, (8) consider deferred payment facility and extension of spectrum licenses to 25 years, and (9) promptly tackle spectrum interference issues within the SA-ME-NA region.

Through meaningful collaboration with the Private sector, the Policymakers need to promote innovation in the commercial use of spectrum, by increasing access through both licensed and unlicensed approaches, and by ensuring that spectrum management practices account for competitive dimensions of the future and tackle the challenges facing 5G+ deployment. Each country of the SA-ME-NA region must position itself among the leading nations in unlocking innovative high-performance use cases, and this first requires ensuring access to spectrum resources, fostering advancement of other ICT infrastructure such as through Fiber proliferation and Cloud adoption, and to enable digital-driven use cases that can contribute to sustainable growth of the region's digital economy.

MEMBERS NEWS

stc to Expand its Data Center Portfolio in Saudi Arabia

In presence of HRH Prince Mohammed bin Khaled Abdulla Al-Faisal, stc has announced launching 3 Mega Data Centers in Riyadh, Jeddah and Al-Madina, with SAR 1 billion investment. They aim to host telecommunications equipment and digital cloud infrastructure, offering higher availability, more flexibility and faster time to the customer. stc adopted Next Generation build technology through modular and prefabricated solutions, affirming business continuity and service uptime. It also enables stc to optimize future expansions with Grow-On-Demand technology and Quick-To-Market solutions. The three new Data Centers have been built with over 150 prefabricated modules (PFM's), fully equipped with power, thermal management and IT infrastructure. Providing 10.8 MW of critical IT power (white space ready) expandable to 16.8 MW. Phase 2 of the program already in construction will bring the total Critical IT Power to 40.8 MW. Furthermore, the short-term future will see stc expanding its mission critical white space to more than 105 MW of Data Center IT power across the Kingdom utilizing the same highly resilient model. The new design of the Data Centers has received Tier III Certification for Design & Construction from the global authority "The Uptime Institute" and are fully compliant with local regulations. These projects represent the first phase of its New Era "Next Generation" Data Centers. Phase1 of this ambitious program is now complete, with new Data Centers in Jeddah and Madinah already online, and today sees stc's 3rd new Data Center being commissioned in Riyadh. stc has embraced state-of-the-art design and construction techniques, which is set out to advance the Kingdom's Infrastructure architecture. stc's vision is realized through the rapid deployment of multiple cutting-edge Data Centers specifically tailored to meet the ever-increasing requirements of this giant company. This exciting announcement comes as part of stc's ongoing achievements to enable digital transformation within the Kingdom and further the country's National Transformation Program 2020, in line with the Saudi Vision 2030. Nasser Al-Nasser the stc CEO stated "Yesterday we announced $500 Million investment with Ali Baba Cloud and eWTP, and to today we announce investing about SAR 1 Billion in these 3 Data Centers. The successful completion and transformation of stc's mission critical offering, will enable the next step in digital services to be delivered throughout the Kingdom. This first milestone achievement is only the beginning". Haithem M. Alfaraj the stc Senior VP of Technology and Operations stated "stc has reached a major milestone in providing next generation Data Centers, that will meet the current demands for digital infrastructure, with the flexibility to grow and mature with the digital evolution" stc's current network transformation and new Data Center program will fundamentally change the mission critical hosting space within the region, improving the agility and speed-to-market of the new services being rolled out in support of the Kingdom's National Transformation Program 2020, and the Kingdom's 2030 vision. stc's successful achievement in this program has exceeded all expectations, and STC has already started Phase 2 of the program that will deliver an additional 4 new Data Centers in strategic locations throughout the Kingdom. stc's major objective is to fundamentally transform the Kingdom's network architecture, moving towards advanced digital software services, and provide resilience enhanced mission critical white space to hosting customers and hyper-scalers. It also aspires to further improve operational efficiencies and scalability, reduce latency, and implement cloud services, artificial intelligence and automation.

stc Tests MENA's First ORAN on Live Network

In collaboration with its partners stc Solutions and Altiostar, becomes the first operator in the MENA region to run live ORAN session's. ORAN is a revolutionary technology that promises to change the landscape of wireless service offering. ORAN runs on virtualized and modular software cloud-based technologies, delivering solutions in a quick and efficient manner. The test of ORAN marks another milestone in stc's drive towards excellence, strengthening its position as the leading operator in the MENA region, having previously been the first operator to launch commercial 5G services in 2018. With ORAN stc will provide the foundation for next-generation wireless networks, improving the quality of many real-time services and enabling an endless number of use-cases in a fully virtualized network infrastructure, aiding interoperability, diversity and open ecosystem. ORAN will keep stc in line with its strategic drive for a bright digital future aligning with its DARE strategy and being an essential ingredient of Kingdom's drive towards digitization which is an instrumental element of Kingdom's 2030 vision. Eng. Khaled Aldharrab, VP, Infrastructure, stc, said: "Open RAN is a large and crucial part of stc's future virtualized infrastructure. This technology is promising to change the way we currently think of Network solutions, providing: Openness, disaggregation, speed, efficiency and reduced time to market. The future of Cloud-Native, modular software and Micro-services will go far in addressing the customers high expectations and delivering our future vision.

stc Demos 5G FDD/TDD CA/Spectrum Sharing on Live Network

Saudi Telecom Company (stc) has announced a milestone in its 5G commercial network development, demonstrating new radio (NR) time division duplex (TDD) and frequency division duplex (FDD) carrier aggregation (CA) using Ericsson Spectrum Sharing (ESS) and a single MediaTek Dimensity 5G chipset, reports SatelliteproME. stc demoed a 5G non-standalone (NSA) data call aggregating 20MHz FDD spectrum (shared with 4G LTE using ESS) and 100MHz TDD spectrum in live network conditions in Riyadh. Additionally, NSA Dual Connectivity was enabled in order to aggregate two more LTE carriers using 40MHz total bandwidth. stc's announcement added: 'The combination of NR FDD 700MHz and NR TDD 3.6GHz provides benefits in both coverage and capacity enhancements. Using NR FDD 700MHz with ESS solutions enables spectrum sharing between 5G NR and LTE for more efficient spectrum usage and NR coverage extension of mid-band TDD. The tests seamlessly showed that aggregating 5G connections can provide users with greater throughput and enables stc to efficiently manage 5G higher capacity. The 5G NR CA unlocks new sources of spectrum in both the mid-band and low-band radio frequencies. NR CA will allow advanced RAN coordination, higher Peak Rate Throughput, extended coverage and increased efficiency while maximizing the use of spectrum assets.' TeleGeography notes that rival Saudi operator Mobily trialed 5G/4G spectrum sharing in the 800MHz/1800MHz bands using ESS technology in September 2020.

stc Successfully Tests 5G New Radio Live Site Using mmWave Technology Band n257 with 800MHz Bandwidth

stc announced another milestone in its 5G commercial network development, demonstrating New Radio (NR) with 8 carrier aggregation (CA) using Nokia advanced mmWave technology and on a single Qualcomm 5G chipset. The company established the 5G Non-standalone (NSA) data call by aggregating 8CC x100MHz on mmWave spectrum (26Ghz) on live network conditions in Makkah City. mmWave spectrum can provide numerous high-capacity, low-latency 5G applications that will fuel economic growth and societal benefits in the kingdom and around the world. Moreover, 5G NR mmWave will support new and enhanced mobile experiences with fiber-like data speeds. It is a key spectrum for future 5G densification to address the capacity demand in hotspots and mass event areas. Haithem Alfaraj, SVP, Technology and Operations, stc, said: "Stemming from our vision, we adopt leading next generation technology to reinvent customers' experience. The achieved results of 5G mmWave testing mark a significant milestone in stc 5G journey and underpins stc determination to constantly evolve to be at the forefront of digital service providers in the region and globally" Khalid Hussein, Head of stc Customer Business Team at Nokia, said: "This is indeed a remarkable feat in terms of 5G speed and throughput together with stc. Our mmWave technology has enabled the fastest 5G speed in the country and this achievement demonstrates the capacity of our commercially deployed 5G solutions. We are excited to have achieved this to deliver incredible 5G experiences to people and businesses in the country and continue to work with them for the evolution of stc's 5G network."

'Elevator to Success' - Batelco's Youth Development Program Launched

Batelco has launched the "Elevator to Success" youth development program in collaboration with INJAZ Bahrain, Brinc, and Clever Play. The four participating entities signed a Memorandum of Understanding (MOU) during a virtual meeting held on the 2nd of December. The MOU was signed by Batelco General Manager Corporate Communications & CSR Shaikh Bader bin Rashid Al Khalifa, INJAZ Bahrain Executive Director Hana Sarwani, Brinc MENA CDO & MP Yasin Aboudaoud and Clever Play Co-Founder & CEO Shaikha Latifa Alkhalifa. It was announced during the meeting that the "Elevator to Success" is a 4-year training program that aims at closing the skill gap between graduates and employers. This will be achieved through early engagement at the beginning of the students' university education journey and through focusing on entrepreneurial and IOT skills. Throughout the program students will be provided with mentorship, professional certification, and guaranteed on-job training. Commenting on the initiative, Shaikh Bader bin Rashid Al Khalifa, General Manager of Corporate Communications & CSR at Batelco said: "It brings us great pleasure to establish this youth development program, in cooperation with INJAZ Bahrain, Brinc and Clever Play." "As a national company, we are committed to supporting the training and development of Bahraini students and preparing them for the Kingdom's labour market and even support their ambitions as potential industry leaders." "We are developing this program as a prototype and hope that it proves successful. Its measure of success will be the employment rate of students who complete the program successfully. We hope to create a development framework that can be adapted by other organizations." "Our community support focusses on initiatives that have positive impact on the society, with a key pillar being education which is in line with Batelco's social responsibility strategy. We look forward to the success of this youth-centric program and its objectives which are designed to benefit the Kingdom as a whole in support of the 2030 vision, which has education and training among its priorities," Shaikh Bader concluded.

Etisalat Becomes First Telco in UAE to Join AWS Direct Connect Service Delivery Program

Etisalat announced it has joined the AWS Direct Connect Service Delivery Program to offer fast, private, and secure connectivity for accessing AWS cloud services. This enables Etisalat's customers to accelerate adoption of AWS cloud solutions by using high performance and secure direct connectivity, providing customers with more choice in line with Etisalat's multi-cloud strategy. As an AWS Consulting Partner, Etisalat will support customers in their journey to move to the AWS cloud by delivering high-speed, dedicated connectivity, ensuring low- latency, consistent network experience, and robust security for customers leading to high performance levels and availability. Salvador Anglada, Group Chief Business Officer, Etisalat said: "We are proud to be partnering with AWS to become the first telco in the UAE to offer cutting edge cloud connectivity solutions to all our customers. Etisalat's expertise with AWS services will help customers in build-

ing a hybrid cloud environment. This is also a testimony to Etisalat's commitment to its vision of 'Driving the digital future to empower societies' and supporting all customers in their digital journey." Zubin Chagpar, Head of Middle East and Africa, Public Sector, AWS said: "We welcome Etisalat to the AWS Direct Connect Service Delivery Program. As a leading telco in the region, this creates more opportunities to help organizations in the UAE to accelerate their digital transformation by migrating critical applications even faster to AWS. We look forward to continuing to work with Etisalat to bring more solutions that enable fast and secure cloud adoption." AWS is enabling scalable, flexible, and cost-effective cloud solutions from startups to global enterprises. To support the seamless integration and deployment of these solutions, AWS established the AWS Service Delivery Progra to help customers identify AWS Consulting Partners with deep experience delivering specific AWS services.

Etisalat Digital and FAB Collaborate on Smart Building IoT Project

Etisalat Digital and First Abu Dhabi Bank (FAB) announced a strategic partnership to deploy a cloud-based IoT Smart Building solution, providing FAB 'anytime anywhere' access and ease of operations across its entire portfolio. This is the first deployment of a portfolio-wide IoT smart-building management system for any of the UAE banks. The IoT solution – to be implemented across FAB's buildings and data center – meets the bank's requirements to integrate the existing legacy system into a state-of-the-art IOT platform, built and hosted in the Etisalat Cloud. It includes a series of software applications and dashboards addressing alarms, fault detection, predictive analysis and centralized monitoring. Salvador Anglada, Group Chief Business Officer, Etisalat, said: "We are honored to collaborate with FAB, the UAE's largest bank, to implement our Urban Intelligence solutions. By utilizing our cloud-based IoT Smart Building Platform, all assets and systems within FAB's buildings will be integrated and centralized into a single platform, providing 'anytime anywhere' access and ease of operations across its entire portfolio. This facilitates efficiency in maintenance and operations and reduces utility spend when operated by a team of energy engineers and specialists from our 24/7 IOT command centre." Banks own multiple buildings and also operate branches across the country, which require extensive facilities management, maintenance and operations. Etisalat Digital's Urban Intelligence solutions and IoT platform enables advanced and predictive analytics, which in turn provides unique insights into the buildings operations and empowers a truly smart facilities portfolio. Vikas Anand, Executive Vice President and Head of Group Operations, First Abu Dhabi Bank, said: "Technology is a proven differentiator for FAB, and once again the bank is delighted to be a pioneer across the UAE's banking industry. Customers and businesses are increasingly expecting 'anytime anywhere' access and ease of operations across all elements of their life. It's only apt then that the UAE's largest bank embraces a cloud-based IoT Smart Building solution befitting the standards that our business and customers require. We are honored to collaborate with Etisalat, one of the world's leading telecom groups – and, like us, immensely proud of its Abu Dhabi roots – to implement its Urban Intelligence solutions. We look forward to a strong and successful relationship in this regard."

Etisalat Becomes First in the Region to Adopt Blockchain Technology in HR

Etisalat announced a new initiative that aims to empower employees with Blockchain-powered digital HR credentials, becoming the first to implement this cutting-edge digital technology in the region. Implemented in partnership with Chaintrail.com, Etisalat is providing lifetime access to all HR letters, empowering employees with tamper-proof data at their fingertips. The objective of the blockchain implementation is to ensure all employees can generate, access and utilize credentials 24/7 and 365 days, while credential verifiers can do the same without any dependence on manual intervention. Dena Ali Al Mansoori, Group Chief Human Resources Officer, Etisalat, said: "The future of work is here. Our world changed in 2020 and Etisalat's overall strategy to 'Drive the Digital Future to Empower Societies' has never been more important. Making this digital future a reality and bringing the technologies of the future to all our customers across our markets

unites and fuels us. The HR team is focused on bringing that reality within Etisalat to empower our employees, increase engagement, organizational efficiency, and create an incredible employee experience." "Implementing Blockchain technology in HR ensures employee data is under their control and is secure and accessible anytime, anywhere. Deploying these technologies efficiently and responsibly across our communities and within our organization is a top priority. Etisalat has some of the most talented and innovative minds in AI, Robotics, Blockchain and other technologies and as our society continues to transform digitally, we will continue to focus our efforts on these capabilities as part of our recruitment and talent strategy in 2021 and beyond." This is a classic example of how Etisalat is implementing and benefiting from Blockchain on top of helping government and private organizations on the adoption of this emerging technology, such as in the blockchain trade finance platform UAE Trade Connect or the 'Shahada' Blockchain platform for digitizing education certificates. In addition to Blockchain, Etisalat HR has also soft launched an 'HR Virtual Assistant', a chatbot equipped with a complete set of FAQs and HR policies. In the next phase, 'HR Virtual Assistant' will be enhanced with a comprehensive interface for all Etisalat employees and will serve as an omnichannel in providing all HR services such as applying for leave and claims, requesting letters and other employee-related requests. Etisalat has also successfully implemented Robotic Process Automation (RPA) into HR processes, enabling HR teams to streamline processes resulting in faster and more accurate data or request verification. Some of the RPAs verify educational claim, sick leave and business travel as well as job postings. On the learning front, Etisalat offers iQra, a mobile first, AI powered learning platform, available for all employees and offers the highest quality digital learning from any device, anywhere they are based. In line with UAE's paperless initiative and strategy, reward and recognition certificates are automated and digitized this year, eliminating unnecessary delays on arranging hard copy certificates. The digital certificates such as Monthly Excellence, Outstanding Project Contribution Award and Long Service Award are instantly generated and emailed to employees.

Mobily Expands Managed Services Partnership in Saudi Arabia

Mobily Saudi Arabia has extended its managed services partnership with Ericsson for a further five years. The deal covers fully managed end-to-end operations and optimization services with Ericsson Operations Engine in Saudi Arabia's Western region in addition to Ericsson Charging System, PS Core and Intelligent Network (IN). The new extension includes Cloud VoLTE and Evolved Communication, a solution that delivers voice and communication services across different types of devices and accesses. Ericsson will also provide network optimization services, combining network expertise with its state-of-the-art cognitive software to deliver a better customer experience and ensure a superior return from network assets. The deal also includes the deployment of Ericsson Operations Engine that supports Mobily to increase operational network efficiency and further enhance customer experiences for its subscribers. Alaa Malki, Chief Technology Officer at Mobily, says: "Expanding our long-term partnership with Ericsson is in line with our strategy to focus on our core business of providing world-class communications and the best possible service to our growing customer base. The agreement covers network and IT operations and field maintenance for our mobile networks, including access and core technologies. This will ensure that our subscribers can enjoy the digital transformation with great quality and speed as part of a superior customer experience." Ericsson will support the service provider to create sustainable differentiation by evolving from a network-centric operation focus to a user-experience-centric operation focus anchored by Ericsson Operations Engine. Ekow Nelson, Vice President of Ericsson Middle East and Africa, says: "The extension of our managed services partnership underlines the strength of the business collaboration that we have built together since many years. Ericsson has proven capabilities in managing and operating multi-technology networks and we will use our AI-based data-driven approach, Ericsson Operations Engine, to boost Mobily's network performance and operational efficiency." This renewed agreement reinforces the partnership between Ericsson and Mobily and reiterates Ericsson's long-term commitment to working with Mobily.

Omantel and ASYAD Group Successfully Launched 5G Based Innovative ICT Solutions at the Drydock

In a new step that reflects Omantel leading role in digital transformation and the enormous capabilities provided by the 5G technologies, Omantel, the leading integrated telecom & ICT services provider in the Sultanate, in cooperation with ASYAD Group, the Middle East`s integrated logistics provider, announced the successful Proof of Concept trials to provide video surveillance 'video as a service' and high-speed internet for vessels docking at the drydock over 5G technology. The trials are part of the existing cooperation between ASYAD Group and Omantel to benefit from ICT solutions in streamlining the operation of ASYAD Group companies. The Special Economic Zone at Duqm has been selected for these two trials as they play a key role in the economic diversification efforts in the Sultanate in addition to the presence of a large number of local and international companies that can benefit from such solutions. Commenting on this, Eng. Baha Mohammed Redha Al Lawati, Vice President Enterprise Unit at Omantel said, "The Proof-of-Concept trials reflect our unparalleled technological capabilities and the key role played by Omantel as enabler for digital transformation in the Sultanate. This will enable the adoption of innovative solutions to different challenges facing enterprises and the enhancement of video surveillance services, in addition to providing ultra-high internet speeds for ships docked at the dry dock. The trials also mark the first use of the 5G technology in providing smart video surveillance services and analytics in the Sultanate for enterprise customers. "We are confident that such solutions can be rolled over to various sectors and industries in the Special Economic Zone in Duqm and the rest of the Sultanate which will help in overcoming different challenges facing various business sectors", he added. On his part, Dr. Sultan bin Zayed bin Muhammad Al Hinai, Acting Vice President of the Technology Support Unit atASYAD Group, said, "We are proud of this cooperation with Omantel and the positive results of the two trials. The 5G based services will undoubtedly contribute to enhancing the digital transformation within ASYAD Group. This forms the first use of 5G technology in smart video surveillance and providing high speed internet services for our clients and business partners from various international shipping companies who carry out their annual fleet and giant ships maintenance here". "The Proof-of-Concept trials are part of ASYAD Group's efforts to benefit from new technologies to boost the Group's competitiveness globally and to provide practical solutions that enhance the quality of the services and offer an unmatched experience. This step will contribute to strengthening the Drydock's role in logistics and increase the efficiency of its services. The results, which exceeded expectations, reiterate the importance of the steps taken by ASYAD Group towards digital transformation and deployment of state-of-the-art technologies across the Group." he concluded. 5G is a key enabler for the adoption of the fourth industrial revolution (4IR) technologies such as Internet of Things "IoT", Artificial Intelligence, Blockchain and Big Data. In addition to the unparalleled data transfer speeds that 5G technology provides and offers ultra-low latency and an instantaneous response to a higher number of connected devices. 5G is also expected to recolonize the services provided by many sectors, including education, health, transportation and entertainment, in addition to being an integral component of future smart cities. Omantel is the leading telecommunications company in the Sultanate and the main provider of integrated communications services to individuals, companies and government agencies. The company is making serious efforts to promote prosperity and growth in all sectors while introducing a new business concept, and bringing global content and entertainment.

Orange Jordan CEO Emphasizes Roles of Technology, Telecom Sector in Equipping Kingdom for Crisis

Orange Jordan signed an agreement with the Ministry of Digital Economy and Entrepreneurship (MODEE), to continue supporting the five knowledge centers that were established under Orange Community Digital Centers, in addition to establishing 3 new digital centers under the European Union-funded "Innovate Jordan" Program. Innovate Jordan is a joint project between the EU and Orange Jordan's Innovation Space project, which aims to empower youth digitally and provide the necessary training to help them find job opportunities or start their own businesses. This agreement is a continuation of the partnership between Orange Jordan and MODEE, as the company is executing the Orange Community Digital Centers in Mafraq, Ma'an, Mleih in Madaba, Irbid, and Tafila. The new centers will be established in Jerash, Zarqa, and Madaba, bringing the total number of the executed centers in cooperation with the ministry to 8 centers, with an aim to increase the number of these vital programs that provide digital training, as well as enhance youth's innovation and leadership skills.

Minister of Digital Economy And Entrepreneurship, H. E Ahmad Hanandeh, stressed on the importance of the digital centers established by Orange in partnership with the Ministry, as it bridge between youth in the different

governorates and the needed digital skills in the labor market and the entrepreneurial sector. Mentioned the importance of empowering youth and providing them with the necessary tools to play an effective role economically and socially. CEO of Orange Jordan, Thierry Marigny, expressed his appreciation for partnering with the Ministry in order to offer youth required digital skills in labor market or develop entrepreneurial projects that support the socio-economic development, pointing out that Orange is making use of its digital and technical resources in implementing these programs as part of its CSR, and based on its role as a leading and responsible digital provider and the Kingdom's digital partner. Marigny added that the company intends to expand Orange Community Digital Centers after it has succeeded in achieving a remarkable impact on the lives of the beneficiaries and their communities, and it is committed to supporting youth in Jordan across the Kingdom to contribute to the advancement of different sectors, this is reflected by the company's various programs, including Orange Coding Academy and the startup Accelerator Program (BIG).

stc Kuwait Forms Strategic Partnership with Tecnotree

Kuwait Telecommunications Company - stc, a world-class digital leader providing innovative services and platforms to customers enabling the digital transformation in Kuwait, announced a strategic partnership with Tecnotree to deliver stc's Enterprise Digitalization Program (EDP). The digital transformation project will provide stc's enterprise customers with a seamless and personalized omnichannel experience. In its statement, stc mentioned that the three-year partnership supports the Company's vision to become a world-class digital leader in innovative telecom services and platforms across the region. The step forward will contribute to enhancing the customer experience through innovative solutions, facilitating business processes efficiently and expediting customer service responses across the various channels used by the Company. The EDP aims to transform stc's legacy BSS infrastructure with an open ecosystem composed of multi-speed digital architecture, enabling the company to rapidly deploy new capability models and integrate both partner and third-party digital channels into a single framework. Tecnotree's vast experience in driving digital transformation engagements globally will underpin the program. As stc's partner on this journey, Tecnotree brings unique capabilities to the project via its Digital BSS Suite 5 products, including Tecnotree Surge, an award-winning Digital Accelerator Platform that publishes TM Forum certified APIs. The two companies will use these tools together to help stc transition to a digital service provider of the future, enabling it to compete in the new digital telecom paradigm. On this occasion, engineer Fahad Abdulrahman Al Ali, Chief Technology Officer at stc, expressed his happiness in forming the strategic partnership, which serves as an additional step taken by the Company to widen its offerings, range of innovative digital solutions, and build the infrastructure of its 5G network. He added, "Upgrading our digital services will provide our customers with enhanced connectivity solutions, thereby accelerating the deployment of smart applications and promoting digital transformation. This initiative builds on stc's commitment to continuously offer its enterprise customers with less restricted solutions that accelerate digital transformation with an aim to increase productivity and operational efficiency." Upon completion, the multi-phased transformation project will upgrade stc's current systems to state-of-the-art IT architecture and processes that will allow delivery of seamless and personalized omnichannel customer experiences via leveraging intelligent insights. This will enable stc to become a full digital ICT player and system integrator, whilst also expanding its services & solutions beyond mobility. Commenting on the strategic partnership, Tecnotree CEO, Padma Ravichander, said, "The Telecom industry today stands at the cusp of digital transformation where digitalization has become a core necessity to compete and survive. We are delighted that our Digital BSS Suite 5 has been selected by stc, as they embark on a digital transformation journey to become a digital leader. We are confident that our vast experience in driving digital transformation and superior deployment capabilities for telecom service providers globally will augment stc's capabilities allowing them to emerge as leaders in the digitally connected ecosystem. Through this partnership, we will deliver visible results that will set new industry standards and benchmarks."

stc Kuwait Receives 6 Awards During Arab Media Forum

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 received 6 awards during the 8th edition of the Kuwait Creativity Award 2020 forum. The awards were presented by the Arab Media Forum in appreciation of stc's unique TVC productions, creative advertising concepts, as well as other initiatives introduced while implementing its effective CSR agenda. The Company released a statement indicating that the honoring was officially announced during the ceremony held by the forum's organizing committee. Held under the patronage of Secretary-General of the League of Arab States, Ahmed Aboul Gheit, creative individuals, sponsors, participants, and volunteers were honored, with stc amongst the top of the list. stc added, "These recognitions come in appreciation of the various initiatives and continuous support stc has projected towards the Kuwaiti community throughout 2020. Despite the unprecedented circumstances witnessed locally and worldwide due to the novel Coronavirus outbreak, stc continued to implement and adapt its effective CSR agenda." The Company highlighted that the honorable recognition was accepted by Danah AlJasem, General Manager of Corporate Communications at stc, on behalf of the Company. The award also served as a token of appreciation for the innovative and creative ideas implemented through the Company's CSR program, which included a range of sponsorship and community-based initiatives. In her role, Danah AlJasem said, "Accepting the awards this year felt unlike the previous years since this recognition was the first of its kind under our new identity, stc, following our rebranding exercise. The awards come as a testament to the dedication and hard work placed forth by stc throughout the year, in addition to the steps taken to implement the digital transformation strategy and enhance the range of innovative offerings to both individual and corporate customers." AlJasem added, "During 2020, we were keen to enhance our leadership role in the local market by offering an array of new-to-market and pioneering telecom services, leveraging the strong infrastructure and wide coverage of stc's 5G network. Throughout this time, we did not overlook our vital role of supporting and giving back to the Kuwaiti community." In relation to stc's CSR agenda, AlJasem said, "In line with our CSR strategy, we focused, in our various activities, on the diversity and breadth of what we offer to the community. Our goal was to blend innovation in all that we do by collaborating with creative agencies. Having said that, we are keen to continue supporting our society, as well as various sectors, such as healthcare, sports, technology, and education, in addition to implementing our internal initiatives that engage the stc family." In her concluding statement, AlJasem extended her gratitude to the Arab Media Forum organizers, with a special thanks to Madhi Al-Khamees, General Secretary of the Ara Media Forum. stc launched several community-based initiatives and awareness campaigns during 2020. These included joining the people of Kuwait in welcoming the holy month, sponsoring the Kuwaiti Football Association in its various activities, supporting the Kuwaiti Association for Learning Differences (KALD), and launching 5G LIVEBUS, a safe and innovative bus supported by super-fast 5G connectivity. The Company also released several TVCs throughout the year that were recognized during the forum, which included a TVC introducing stc's new brand identity, "Her Love is Known" produced by Doors Production in celebration of Kuwait's national day, and "Ramadan Lives On" produced by Wunderman Thompson.

Zain Receives Six Awards at Arab Media Forum's Creativity Award

Zain announces it has received six creativity awards at the Arab Media Forum's 8th Creativity Award -that recognizes creativity by Kuwaiti organizations - in three categories: TVC Creativity, PR Creativity and Best Government App. The event organized virtually over video conferencing, was held under the patronage of Secretary-General of the League of Arab States Ahmed Aboul Gheit and witnessed the presence many creative personalities in media and advertising from across the region, as well as many actors, artists, and public personalities from the GCC and the wider MENA region. During the virtual ceremony, Zain received a total of six awards, four of which came under the TV Commercial Creativity category for its most celebrated TVCs of the year: Ramadan TVC, National Celebrations TVC, Eid TVC, and its recent TVC on the heroic role of mothers during the pandemic. Zain also received an award in the Best Government App category for "Shlonik" app, which the company developed during the pandemic along with the Ministry of Health and the Central Agency for Information Technology (CAIT). Lastly, Zain's flagship operation in Kuwait received the PR Creativity award, which was presented to Zain Kuwait's Chief Corporate Communications and Relations Officer Waleed Al Khashti. Zain won a TVC Creativity Award for its television commercial (TVC) to mark the commencement of the Holy Month of Ramadan, which immediately amassed significant interest on social media platforms, with the 2.35 minute-long commercial being the most searched and viewed Arabic content across social media platforms at the time, exceeding 12 million

views on YouTube within its first week, and almost 40 million views to date. The concept behind Zain's Ramadan TVC, which is entitled 'Zain's Consolation', and has also become known as 'God will not forsake us', is based on offering a message of hope in the midst of the current exceptional circumstances brought on by the Coronavirus pandemic. The shocking effects of the virus across the globe made the TVC's comforting words to resonate even more deeply with highly appreciative viewers. Words such as, "God will not forsake us" and "He'll make us richer than to need anything" within the accompanying soundtrack to the commercial offered an air of hope and optimism for people enduring hardships during this difficult time. 'Zain's Consolation' did face technical challenges when being produced. Major national lockdowns around the world made it difficult for crew members to communicate, travel, and film the footage. Crew members had to excuse themselves for the project, though the Zain team overcame these challenges to ensure the project was completed and the message of hope was shared. The TVC's original idea was generated by Zain's team in Kuwait, while the videography crew members originated from Egypt. The TVC was produced by Joy Productions in Kuwait and directed by Samir Aboud from Lebanon. The lyrics were written by Heba Hamada, and the music was composed by Kuwait's Bashar Al Shatti, while the TVC's music arrangement was performed by Michel Fadel, the mix and master by Rabea Saydawi with vocals by Rama Rabbat. Zain also won a TVC Creativity Award for its National Day TVC, which reached over two million views during the first 10 days of its launch on the company's official YouTube channel in commemoration of Kuwait's national celebrations. As it does every year in February, Zain the company produces a TVC celebrating Kuwait's National and Liberation days. The production, which reflected national values and pride, featured a number of Kuwait's most prominent personalities who helped raise the name of Kuwait in various areas, and showcased many of Kuwait's historical achievements from both the past and the present. Zain's national production was honored to feature many prominent Kuwaiti personalities who contributed to shaping the country's art, sport, and cultural scenes. The TVC's idea centered around showcasing many of Kuwait's historical feats from both the past and present, such as holding the first parliament in the Arabian Peninsula, being the first Asian Arabian country to reach the World Cup finals, building the first café that gathered the people with their rulers to discuss political and economic issues,

producing "Bas Ya Bahar", which is the first GCC film to receive 9 international awards, being the first GCC country to establish an official television station, and many more other honorable achievements. Zain takes this opportunity to express its gratitude to everyone who contributed in making this national production a success, especially the TVC's stars: singer Abdullah Al Ruwaished, Kuwait National Football Team's star Jasem Yaqoub, media presenter Majed Al Shatti, and actress Mariam Al Saleh. Zain also thanks the entire team of young Kuwaiti talents who worked behind the scenes, including lyricist Yousef Al Shatti, historian Fahad Al Abduljalil, Director Salim al Turk, Composer Bashar Al Shatti, Music Distributor Rabea Saydawi, Turkish musician Ismael Tonch Blak, Joy Production's team headed by Mai Al Saleh, and PH All Over Group's team. This recognition comes in light of Zain's distinguished advertising and media involvement, and further showcases the company's role as a leading private sector company launching distinguished marketing and advertising campaigns all year round. Zain will continue supporting this very important field which carries significant and informative messaging to the public at large and the communications world as a whole, whether through traditional or modern media tools.

AT&T Communications Chief Executive Officer Discusses Closing the Digital Divide with Ustelecom Members

Jeff McElfresh, Chief Executive Officer of AT&T Communications, spoke at the USTelecom Broadband Investment Forum. He discussed the country's digital divide, touching on the following areas:

Current state of broadband: Since 1996, U.S. providers have invested nearly $2 trillion to build and operate advanced networks. And over the past 5 years (2015-2019), AT&T invested more than $125 billion in our U.S. wireless and wireline networks, including capital investments and acquisition of wireless spectrum and operations. It's no coincidence that the U.S. led the world in 4G. And we're now seeing a repeat performance for 5G, with 5G networks from 3 carriers already live. The benefits of all this investment and innovation are striking. Compared to 2015, industry broadband speeds are up 16% while costs are down 20%.

Digital Divide: But this good news doesn't apply to every American. There is a deep gap separating those with and without broadband internet access. The latest FCC figures estimate that about 14.5 million Americans lack access to fixed broadband at speeds of at least 25/3 Mbps. This is the case even though broadband providers are rapidly pushing faster services into more and more areas. While some 98% of Americans in urban areas do have access to broadband networks, this is true for fewer than 80% of rural Americans. That 14.5 million figure only captures the issue of fixed broadband availability. It does not include consumers who rely entirely on their mobile phone for internet access. Still, availability is a major concern, as is affordability. The barrier to access for millions of other Americans is the cost of broadband service and equipment.

Lessons from COVID: Half of U.S. adults say the internet's been "essential" during the pandemic. 60% of Americans have been able to work from home thanks to high-speed internet. 50 million students transitioned to remote learning. Yet some 17 million students remain effectively locked out of instruction because their families lack access to internet connectivity or adequate devices at home. This "homework gap" is the crisis within the COVID crisis.

Steps needed to close the digital divide:

1. Urge Congress to fully fund the Broadband DATA Act.
2. Revamp our universal service programs with direct appropriations from Congress.
3. Let those who engineer and build broadband networks decide which technology delivers the best solution.
4. Keep the light-touch regulatory approach that's served our country so well.

That light-touch regulatory approach has encouraged sizable private investment in U.S. networks in the past and can in the future, as well. In that regard, McElfresh said AT&T intends to continue investing in its fiber infrastructure and may double the number of business, residential and wireless cell tower locations served with fiber over the next 5 years.

BT and TIM Sign Preliminary Agreement for the Sale of Two Selected BT Business Units in Italy

BT and TIM announced they have signed a preliminary agreement on the acquisition of selected BT business units in Italy serving public administration and Small & Medium Enterprises (SME) by TIM. The public administration business unit provides communications services to a number of ministries and agencies of the national government, as well as regional and local governments. The SME business unit offers connectivity and cloud services throughout Italy. The planned transaction will enable TIM to expand its supply of communications and connectivity services, accelerating digitalization of the public affairs at central, regional and local levels in the country. With the planned integration of the SME business unit, TIM would further diversify the offer of secure and efficient ICT and cloud solutions for small and medium businesses. The agreement also includes customer support for the SME business unit, delivered by BT's contact center in Palermo. The planned transaction is part of BT's ongoing transformation of its Global unit as it sharpens its focus on delivering next-generation networking, cloud and security services to multinational organizations. BT will retain a strong presence in Italy serving large enterprises and multinational companies, including access points to its global network and data centers. The two business units included in the planned transaction generated revenues of approximately €90 million during the fiscal year ended in March 2020. The planned transaction is subject to consultations with trade unions and regulatory clearance. It is expected to complete by the end of the first quarter of 2021.

Cisco to Acquire iMimobile to Embed Omni-channel Engagement into Customer Experience as a Service

Cisco and IMImobile PLC announced that they have reached an agreement on the terms of a recommended cash offer pursuant to which Cisco will pay 595 pence per share in exchange for each share of IMImobile, or an aggregate purchase price of approximately USD $730 million assuming fully diluted shares, net of cash and including debt. The exchange rate used for the conversion of £ into USD is 1.3438, derived from Bloomberg, as at 16:00 on 4 December 2020. IMImobile provides software and services which allow enterprises and organizations to stay constantly connected to their customers through enhanced interactive channels including social, messaging and voice. Following completion of the acquisition, Cisco will be able to offer customer-facing businesses with an end-to-end customer interaction management solution and rich customer experiences, along with the ability to drive faster and smarter interactions and orchestration throughout the lifecycle journey of the customer. As more people work remotely or from home, enterprise customers are

increasingly moving towards delivering Contact Center as a Services (CCaaS). Cisco's Webex Contact Center solution coupled with IMImobile's software and services will offer a solution that is:

- Intelligent: Using AI along the entire customer journey to create super agents and augmented frontline employees.
- Contextual: Providing the customer data needed to personalize interactions.
- Collaborative: Empowering employee collaboration in order to deliver 10x better customer experiences.
- Omnichannel: Connecting with customers in their channel of choice—text, social or voice—throughout the customer journey
- Programmable: Giving the business the ability to orchestrate workflows and personalize customer journeys

"A great customer relationship is built on consistently enjoyable interactions where every touchpoint on every channel is an opportunity for businesses to deliver rich, engaging and intuitive experiences," said Jeetu Patel, senior vice president and general manager of Cisco's Security and Applications business. "We look forward to working with IMImobile to help create a comprehensive CXaaS solution for the market—one that gives businesses a platform to provide delightful experiences across the entire customer lifecycle journey. "We are excited to join Cisco and become part of one of the world's leading technology companies as they seek to enable great customer experiences," said Jay Patel, IMImobile CEO. "We believe there will be a world of dynamic, always-on connections between global businesses and their customers and the combination of our respective technologies will enable to us make every interaction matter more for our clients."

Websprix to Deploy Cisco Routed Optical Networking Solution with Cisco 8000 to Help Shrink the Digital Divide in Ethiopia

Cisco announced that WebSprix, an IT solutions and services provider in Ethiopia, has selected Cisco's Routed Optical Networking solution set to launch in the first half of 2021. The Cisco Routed Optical Networking solution, part of Cisco's overall Converged SDN Transport Architecture, will provide a revolutionary reduction in network cost and simplify management of the network. Ethiopia's population of 115 million makes it the second largest in Africa, yet fewer than 270,000 people have fixed broadband internet access. In addition, many businesses are ready to take advantage of high-speed internet, but the infrastructure for widespread adoption hasn't been available. Over the past decade, WebSprix has been building the strong information technology infrastructure critical for Ethiopia to achieve robust economic growth. This new solution will significantly expand the reach and services they provide. The Cisco Routed Optical Networking solution will converge the IP and optical layers into a simpler, more operationally efficient network, granting streamlined planning, design, activation, troubleshooting, and management. Reducing the number of devices in the network enhances resiliency, increases availability, and optimizes fiber capacity. WebSprix will be the first ISP in Ethiopia to offer high-speed broadband internet access, IPTV, and voice services together. The Cisco Routed Optical Networking solution with the 8000 series routers will enable WebSprix to offer these services at a low cost, while maintaining outstanding customer service. Websprix's Cisco Routed Optical Networking solution design will utilize the Cisco 8200 series routers with 400 GbE ZR/ZR+ coherent optics to build a high-speed network backbone that traditionally would have required building and managing a separate optical network. The ZR/ZR+ optics will allow long distance fiber connections to terminate directly on the router without the need for a separate optical layer or a sacrifice in router port density. "We knew we could trust Cisco both as an innovator and a partner in our success, because of its commitment to bridging the digital divide and leadership in the industry," said Dawit Birhanu, CEO and Co-founder, WebSprix. "The Cisco Routed Optical Networking solution paired with Cisco 8000 series routers with 400 GbE optics will enable us to build a network that will have a transformational impact on Ethiopia, and serve as a model for connecting the estimated 3.8 billion citizens around the world that are still without access to high-speed internet." "As a company, our goal is to hasten global problem solving to benefit people, society, and the planet," said Bill Gartner, Senior Vice President and General Manager, Optical and Optics, Cisco. "It's truly an honor to see the technology and innovations we create empowering WebSprix to not only improve their business, but also positively influence humanity. As an early adopter of the Cisco Routed Optical Networking solution, WebSprix can continue to help build a stronger information infrastructure in Ethiopia and boost economic growth."

Eutelsat Launches Nationwide Satellite-Based Service in UK

France-based satellite operator Eutelsat has announced the launch of a new service, available nationwide in the UK, via its next generation KONNECT satellite. This new offering is being marketed by Eutelsat's own direct operation, Konnect Europe (UK), and targets those users – both residential and business – that are unable to connect via fiber-based services. At launch, three residential packages are on offer, with the entry-level service ('Easy') costing GBP29.99 per month (USD40.3) per month and offering an average downlink speed of 22Mbps, with a maximum of 30Mbps reported for the service. At the other end of the scale, the premium 'Max' tariff increase speeds to an average of 75Mbps (maximum 100Mbps), with the price rising to GBP69.99. All of Konnect's tariffs offer unlimited usage allowances and have not setup costs. Commenting on the launch, James Soames, Marketing Director Konnect Europe said: 'Connecting reliably to broadband, particularly in rural areas, has been a real pain point for internet users in the UK including those who can't access services from terrestrial networks. With the huge switch to working from home this year, this kind of fast, affordable and easily available service is needed more than ever. This new launch offers connectivity for everyone to superfast broadband packages wherever you live. It opens up exciting new opportunities for anyone struggling to achieve a reliable internet connection, whether for business or pleasure.'

Facebook Claims Cell Coverage Breakthrough

Facebook detailed work on a prototype base station capable of covering a larger area than traditional macro sites, pitching it as a cost-effective way to boost rural access. In a blog, Facebook communications systems lead Abhishek Tiwari said SuperCell is designed to be mounted on towers up to 250 metres high and uses high-gain, narrow-sector antennas to increase "mobile data coverage range and capacity". Testing showed a single SuperCell can provide mobile data to an area up to 65-times larger than a traditional rural macro base station mounted on a 30-metre tower in the same environment. In trials, the system delivered two-way voice and video call traffic to a range of 38km, with data rates of up to 7.8Mb/s in the downlink and 1.2Mb/s up over 40km. Facebook estimated each SuperCell could replace 15 to 25 traditional macrocells or "hundreds" of small cells, providing coverage to the same number of people with a 33 per cent lower total cost of ownership. While the company doesn't believe "there's a silver bullet for connecting the world", Tiwari said the system could make a substantial impact in certain rural areas, particularly sub-Saharan Africa. He added tech giant isn't planning to manufacture the SuperCell itself, instead hoping its trials will "provide a playbook for the telecom industry to bring the technology to market and help expand mobile coverage in rural areas in a way that is sustainable and cost-effective".

UNICEF & Facebook Launch a Digital Campaign to Promote Life-Saving Immunizations

The COVID-19 pandemic has disrupted life for many, including children in need of lifesaving, routine immunizations. In countries like Pakistan, additional roadblocks as a result of the pandemic have been compounded by an existing hesitancy in some communities to vaccinate children as well as global disruptions to the delivery of immunizations. That's why Facebook's Data for Good team recently worked in partnership with the United Nations Children's Fund (UNICEF) to better understand constraints to vaccine adoption in Pakistan with the objective to help the development sector have better insights for effective, local outreach. The campaign reached 7.2 million people in Pakistan, with post-campaign survey results showing that those exposed to the campaign were more inclined to vaccinate their children at a healthcare

center. "Interruption of health services due to COVID-19, has resulted in a large number of children missing out on their routine immunization increasing the risk of outbreaks of diseases in Pakistan, says Aida Girma," UNICEF Representative in Pakistan. As the services have now resumed, collaboration with Facebook is helping us reach the most vulnerable children and those who were missed, through improved data services and an aggressive awareness campaign, she adds." Working with the UNICEF Pakistan Country Office, Facebook leveraged its Insights to impact and amplify the immunization campaign from the Government of Pakistan's Facebook Page. The project was conducted in three stages and featured a campaign with the hashtag #VaccinesWork, which sought to promote the continuation of vaccinations for children during COVID-19, particularly at health care centers. An accompanying video campaign also featured easy-to-understand animations with guidelines on how to encourage vaccinations during the pandemic. "To support UNICEF in their effort to increase routine immunization, we leveraged insights from the Facebook platform and tested the effectiveness of various types of content. Overall, the results of this effort demonstrate the Facebook platform's potential to disseminate public health information as well as the importance of working with partners like UNICEF to achieve positive health outcomes for communities" said Kadeem Khan, Associate Research Manager, Facebook Data for Good.

HUAWEI

Huawei's 5G Telco Cloud Solution Won NFV Innovation Award at Asia Communication Awards 2020

Huawei was awarded the NFV Innovation Award at the Asia Communication Awards (ACA) 2020 held online by Total Telecom, a world-renowned international telecommunications media company. Huawei 5G Telco Cloud Solution features hyper-converged NFVI infrastructure, container-based microservice architecture, and stateless design. Cloud is the foundation of 5G networks. The telecom industry has reached a consensus on moving towards the cloud native. Technologies such as container, microservice, and DevOps have attracted wide attention and are facing many technical challenges. As 5G enters the large-scale deployment phase, it brings new growth opportunities for carriers, and poses higher requirements on service flexibility, platform efficiency, operation agility, and SLA reliability of cloud-based networks to support the growing digitalization requirements of industries. Huawei's 5G Telco Cloud is the industry's first full-stack cloud-native commercial solution for 5G SA networks. Based on Industry-leading dual-stack convergence, microservice architecture, and stateless design, it helps carriers smoothly evolve to 5G SA networks, facing challenges such as high network complexity, high TCO, and multi-RAT coexistence during 5G SA networks deployment. It fuels the digital transformation of the 5G industry, enables more agile and reliable services, and accelerates business success.

Dual-stack convergence: Both OpenStack VMs and Kubernetes containers are supported on the Telco Converged Cloud (TCC) platform. VMs, VM-based containers, and bare-metal containers can be deployed on demand, meeting different requirements. Unified resource management (URM) improves resource utilization by 30%. The seamless batch upgrade on the infrastructure layer provides easier O&M than the commonly used live migration does. In addition, lightweight TCC is provided for small-scale, fast deployment in edge scenarios.

Microservice architecture: The container-based microservice architecture used by the Telco Cloud Solution features small granularity and is lighter weight than VMs. Microservices can be assembled as required to provide differentiated services. The microservice-centric architecture makes slicing orchestration more flexible, precise, and efficient, helping carriers quickly respond to the changes of vertical industries and applications.

Stateless design: Virtual network functions are horizontally divided into the session database layer, stateless service processing layer, and service load balancer layer. Each layer can be independently scaled, effectively improving resource utilization. The stateless service processing layer supports fast service scaling and dynamic load balancing. N-way redundancy is tolerant for multiple faults and backs up user data in real time. The A/B testing solution ensures online upgrades without service interruptions, achieving carrier-class reliability. Launched in 2011, the Asia Communication Awards are organized by Telecoms.com, a well-known media agency, to commend carriers, equipment vendors, solution providers, and consulting firms that have made outstanding contributions and innovation in the Asia telecoms industry.

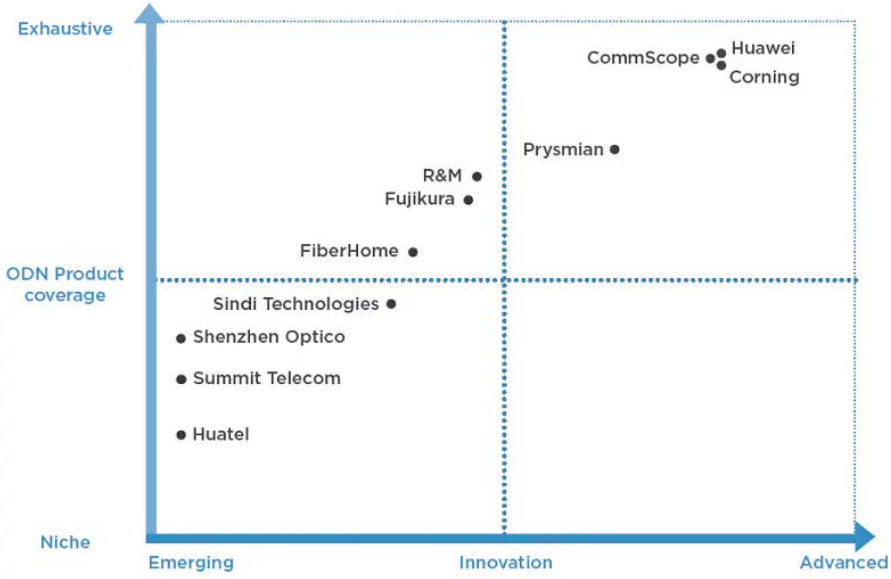
Huawei: Middle East Becoming a Global Reference for Digital Resilience and Sustainability

Ambitious investments in digital infrastructure have created unprecedented opportunities in the Middle East, while helping the region to rebound swiftly from the challenges of 2020, according to Huawei's top executive in the region. Charles Yang, President of Huawei Middle East, recently highlighted the company's key takeaways from the year as the global ICT solutions provider sought to help governments and enterprises bring digital to more people at a time when it was needed most. The Middle East was relatively well prepared from an ICT standpoint for the disruptions caused by the COVID-19 pandemic, noted Yang, with many countries having been early global adopters of infrastructure such as 5G. "That foundation of connectivity enabled many countries to cope with a surge in data traffic as a result of work, education, shopping, and even health services moving online," said Yang, who estimated that the Middle East's data traffic increased in volume by around 40 per cent over the year. Earlier this summer, experts at McKinsey noted that in a matter of just eight weeks, the world vaulted five years forward in consumer and business digital adoption as a result of the COVID-19 pandemic. As was evident during the recent GITEX Technology Week—the region's foremost tech and innovation conference—the Middle East has benefitted from strong public leadership, clear ICT development agendas, and the encouragement of foreign direct investment in the technology field. "At the same time, each country must continue to stimulate growth and address the impact of the pandemic. So as nations continue to mature in both connectivity

and computing capabilities in 2021, they must consider how to maximize the long-term value creation from those projects," said Yang. In particular, Huawei contends that talent development, technology synergy, and open collaboration will be pivotal to harvesting business and social value in 2021. "We have found many partners in government and in the private sector who share the realization that talent is really the enabling factor in digital transformation, not just the technology itself," noted Yang. It is also why over the past 20 years, Huawei has helped the Middle East cultivate around 100,000 ICT talents, training local experts in building scenario-specific applications that benefit society. This local talent, according to Yang, must now be empowered to create deeper synergy between connectivity, cloud, AI, computing, and industry applications. These five domains are now coming together to create historic opportunities in the region. To support those efforts, Huawei is planning to invest approximately USD100 billion globally in technology research and development in the coming five years. Yang believes that such programs will not only support Huawei, but the wider ecosystem of governments, academia, and enterprises embracing digital transformation in the Middle East. "Even with today's best talent and technologies, what is most important to spurring future innovation is maintaining an open and cooperative ICT ecosystem, regardless of the country or a particular company's country of origin," concluded Yang. "That belief in shared success has helped make the Middle East a global reference for digital resilience and sustainability during this challenging year, and will no doubt be inherited even after the pandemic is over." In the past 30 years, Huawei has deployed approximately 1,500 networks in 170 countries, with its equipment and services covering more than three billion people today.

Huawei DQ ODN Named Leading Innovation by IDATE DigiWorld

The ODN: Market Driven by Innovation report released by IDATE DigiWorld rated the Huawei DQ ODN as a leading innovation thanks to its fast fiber deployment and enhanced digital management for optical distribution network (ODN). As a renowned analyst organization, IDATE DigiWorld observes and reports on the progress of FTTH/B network deployment all over the world. Their latest white paper analyzes the development trend and potential of the ODN industry, and evaluates more than 50 global mainstream ODN vendors in terms of product and solution innovation and integration capabilities, providing a reference for telecom operators to select vendors and solutions. The Huawei DQ ODN solution was recognized as a leading innovation, indicating that Huawei's innovation and investment in the ODN field has been highly recognized by the industry. Global fiber networks are key to achieving FTTH/FTTB, and the speed of their deployment is accelerating. IDATE reported that global FTTH/FTTB deployment will continue to grow at a compound annual growth rate (CAGR) of 7.8% in the next few years. However, factors including the slow network construction speed and high O&M costs of ODN products and solutions can directly affect operators' investment, which has laid the path for pre-connection and digital technologies to become new trends for the ODN industry. Operators have a strong preference for suppliers with leading innovation and solution integration capabilities that allows faster and cheaper FTTH/B rollout. Huawei released the QuickODN solution in February 2019, aiming to accelerate fiber deployment by leveraging innovative pre-connection technologies. In the following year, Huawei upgraded the solution to Digital QuickODN (DQ ODN), helping operators quickly build quality, visualized, and manageable ODNs. With its innovative pre-connection technologies, QuickODN provides operators with an end-to-end splicing-free network construction solution, slashing network construction investment. On top of this, DigitalODN leverages AI image recognition and optical iris technologies to automatically collect ODN link topology and loss information, achieving visualized resource management and 100% accuracy. This realizes fast service provisioning and precise fault locating, helping operators reduce OPEX. Currently, more than 80 global operators have adopted Huawei's ODN products, empowering more than 100 million lines with precise planning, fast deployment, and digital O&M. Huawei will continue to provide innovative ODN products and solutions to help customers reduce network construction costs, improve efficiency, build cutting-edge ODNs, and realize commercial success.



Source: IDATE DigiWorld

Huawei and ICPC Successfully Held the Huawei Cloud Scheduling Challenge

The ICPC 2020-2021 semi-finals (Northern Eurasia Region finals) kicked off on December 12! As part of the event, Huawei and NERC held the Cloud scheduling challenge on the Codeforces platform, attracting more than 8000 outstanding program design and algorithm experts from 38 countries. Contestants have demonstrated solid programming and application skills throughout this wonderful industry competition, providing workable solutions in a short time address scheduling challenges from various technical paths. "Over the past several years, Huawei has become one of the ICPC's key partners in the Northern Eurasia region," said Matvey Kazakov, Executive Director of ICPC Northern Eurasia. "The renewed ICPC Challenge format, particularly the NERC Challenge, is now one of the most valuable collaborations between the ICPC community and businesses. During the NERC Challenge, ICPC contestants get an opportunity to solve some of the real-life problems that Huawei faces, while Huawei collects new ideas from many of the brightest brains in the world today. We are absolutely sure this is a win-win partnership, and we look forward to the exciting new challenges presented by businesses to the ICPC community. We are also extremely grateful to the Codeforces platform for hosting the NERC Challenge." "In the future, communications, connections, and AI computing will be ubiquitous. Cloud, edge computing, and Big Data collaboration will introduce greater value to people's lives and industries," said Dr. Zhou Hong, President of Huawei's European and Russian Research Institutes. "The NERC Huawei Challenge held by Huawei Cloud BU and ICPC is a unique innovation model that enables outstanding programmers and algorithm enthusiasts to participate

in global ICT challenges. Huawei will continue to open up its research platform and world-class challenges. Together, we can build a better connected, intelligent world." Zhang Yuxin, the CTO of HUAWEI CLOUD, also shared expectations for the event. "The future will be a fully connected, intelligent world. Cloud is the cornerstone of the intelligent world and serves as the 'fertile soil'. The cross-industry scenarios, large-scale distribution computing, massive data, cross-device-edge-cloud, and full-stack features of the cloud introduce brand-new technical challenges from chips to applications. We share these technical challenges with global programmers, hoping to stimulate innovative thinking, drive the rapid development of technologies, and embrace the digital world of the future," Zhang added. The ICPC is the world's largest and most influential university programming competition. Since 1970, more than 60,000 university students from 115 countries and regions have participated in the competition every year. To date, more than 400,000 ICPC alumni have gone on to become the core elite of various high-tech companies, universities and research institutes, and start-ups around the world.

ISESCO, Huawei Morocco Sign Agreement to Support Remote Education

To support the continuation of remote education, the headquarters of the World Islamic Educational, Scientific, and Cultural Organization (ISESCO) organizes an agreement signing ceremony in partnership with Huawei Morocco in Rabat. The ceremony, which was held at ISESCO's headquarters in Rabat, saw the presence of several prominent figures of the educational sector in Morocco. The agreement includes 200 tablets that will be distributed in a number of Moroccan schools to facilitate and ensure the effectiveness of remote learning, according to a press release from Huawei Morocco. press release. During the event, the Director-General of ISESCO in Morocco, Dr. Salem Ben Muhammad Al-Malik, reaffirmed the organization's desire to cooperate and establish a partnership with its member states' civil society organizations. He said ISESCO wants this cooperation to operate within the framework of its new vision and strategy to help member states develop technology and innovation. Al-Malik also expressed happiness ISESCO's partnership with Huawei Morocco. He argued that modern technology is the way to overcome the challenges the world is facing today. The COVID-19 pandemic, he explained, has revealed the importance of technology in confronting present and future challenges. Al-Malik concluded by citing distance learning as an instance of how technology h For his part, the Managing Director of Huawei Peng Cui, expressed the company's pride in collaborating with ISESCO. He said that the company has put considerable efforts in promoting educational and cultural projects and training programs across Morocco. Cui noted that Huawei has been in Morocco for 20 years, during which time it has implemented numerous projects and programs in a number of regions of the kingdom and sponsored thousands of Moroccan students. Huawei Morocco's chief also stressed that the company is eager and poised to contribute its experience and resources to making a notable success out of its cooperation with ISESCO. In April 2020, ISESCO launched its "ISESCO Digital Platform" to raise awareness about COVID-19. The initiative allows users to learn about prevention measures, health, and education issues while bringing credible knowledge and technological tools to both ISESCO member states and international users. The organization has also announced its plans to launch an educational platform to help Moroccan parents and families to better raise their children by developing a healthier approach to education culture. In June 2020, Morocco's minister of Education Saaid Amzazi chaired a progress update meeting to review the 14 ICT Academies that Huawei had established in Moroccan universities in efforts to enhance the quality of Morocco's ICT education. Huawei's Academy program, which encourages Moroccan students to become Huawei-certified for global industry chains, trains over 700 students per year. Amid the COVID-19 pandemic, Huawei's Academy also adopted Morocco's remote education policy and launched a campaign called "Go Digital." By June of this year, 1,300 Moroccan students had participated in Huawei's contests, events, and roadshows, including 100 who have been certified, the company revealed in a press release. Huawei Morocco has also donated 172,000 medical masks, along with an integrated system of equipment and programs for the organization of remote meetings in three administrative sites. According to the company, its system has helped the Moroccan health sector to speed up and improve the analysis of certain medical examinations.

Huawei Upgrades Optical Networking 2.0 Solution to Create Better Business Opportunities for Operators

Huawei announced it will further upgrade its Optical Networking 2.0 (ON2.0) solution at Huawei's 7th Optical Network Innovation Forum, which featuring new speed, new sites, new smart O&M, new schema and new services. This solution will help operators develop innovative services and thrive. The global pandemic has seen home networks undergo a radical transformation, from serving as a source of entertainment to being a way for working and learning from home. This consequently places higher requirements on user experience. Along with this, enterprise digitalization has also led to a pressing need for a deterministic experience. Optical networks are key to guaranteeing optimal and assured user experience, and in 2019, Huawei released the 5G-oriented ON2.0 solution that features three new technologies: new speed, new sites, and new smart O&M, which aim to build an experience-centric service transmission network. In 2020, Huawei upgraded its ON2.0 solution to promote the evolution of the all-optical network industry and help operators build all-optical metro architectures that provide a superior service experience. New speed: By maximizing fiber capacity, an optimal cost per bit can be achieved. Huawei's 800G optical module supports an adjustable line rate ranging from 200 to 800 Gbit/s and 20% longer transmission distance using a unique Channel Matched Shaping (CMS) algorithm. The Super C-Band solution provides up to 120 channels and supports smooth evolution to Super C+L. As a result, Huawei has helped global operators build over 120 200G commercial networks. Sites are simplified to reduce TCO. On the electrical layer, Huawei's Liquid OTN solution reduces per-site latency by 70%, and supports 100-fold more connections by breaking bandwidth into 2M hard slices. On the optical layer, Huawei's new compact OXC product OSN 9800 P32C is flexible enough to fit various scenarios. It also slashes physical footprint by 90% and power consumption by 60%, eliminating the need for internal fiber connection. Currently, around 1000 OXC products have been deployed across more than 60 global commercial networks. New smart O&M: An all-optical autonomous driving network that utilizes Huawei's iMaster NCE for simplified O&M, while the ASON2.0 solution ensures always-on services with 99.999% network availability. Huawei's iMaster NCE has so far been deployed in 130 optical networks by leading operators in Italy, the Netherlands, Saudi Arabia, Thailand, Singapore, Indonesia, the Philippines, and South Korea. New schema: Optical networks are extended to the edge to build a stable all-optical metro architecture. The key is extending OTN to CO and subCO to achieve one-hop to cloud, guarantees bandwidth, lower latency and higher availability, connecting homes, companies, mobile users and campuses directly. New services: Premium service experience can be enabled by high quality optical connections. The OTN premium private line solution offers differentiated SLA services and features bandwidth on demand, low latency, short time to market, and high availability. Until now, more than 70 optical networks for private line services have been built worldwide. Huawei also debuted the OTN premium home broadband solution to bring enterprise-class premium experience to home users. This solution provides a deterministic home service experience through an all-optical gold pipe in addition to increasing the ARPU of home users. "Optical networks should play an important role in 5G, home broadband, private line and cloud. An end-to-end target network for all-optical cities is the foundation for providing all premium services, so let's work together to embrace the next gold decade of optical network industry," said Richard Jin, President of Huawei's Transmission and Access Network Product Line.

Nexign Listed as Representative Vendor in Gartner Market Guide for CSP Business Support System Solutions

Nexign (a part of ICS Holding LLC), a leading Business Support System (BSS) and Internet of Things (IoT) solutions provider, announced that Nexign has been included in the October 2020 Market Guide for CSP Business Support System Solutions by Gartner, the world's leading research and advisory company. This report has replaced Gartner Magic Quadrant for Integrated Revenue and Customer Management for CSPs (IRCM), which Nexign was proudly a part of during the two consecutive years in 2018 and 2019. This year Market Guide defines "the BSS solutions landscape with vendors focusing on 5G, IoT, monetization, business model changes and the need for cost optimization in CSPs". According to Gartner 2020 Market Guide for CSP Business Support System Solutions, "vendors were selected based on their competitiveness as seen by the competitors. Answers received for this vendor survey question — "List your top 5 competitors in the CSP market" — from the 30 vendors surveyed for this research formed the basis to identify the vendors included in this research." This year we are honored to be recognized as one of 18 representative vendors on the BSS market worldwide by the new Gartner Market Guide for CSP Business Support System Solutions. Nexign helps CSPs to drive digital transformation, unlocking extensive opportunities for rapid business development and revenue enablement. We believe that our inclusion into this Market Guide is a result of continuous work for delivering the efficient solutions to our customers. It also demonstrates the

independent and reliable overview of Nexign's strong position on the global BSS market, » - says Yulia Poslavskaya, CMO of Nexign. Key findings of this report include

- "BSS transformation is crucial for growth and transition to future business operations; however, lack of vision, complexities of legacy systems and hype around 5G and cloud-native operations are proving to be challenging to deal with."
- "BSS product vendors are increasingly aligning their offerings to 5G-related requirements, with many continuing to put little focus on the broader transformation needs of CSPs or the optimum approach for best return on investment."
- "CSPs have to deal with multiple priorities associated with products, operations and network transformation to be able to evolve a platform approach, which calls for a robust sourcing and partnering strategy."

مجموعة الاتصالات الفلسطينية
PALTEL GROUP

Jawwal, the First Mobile Operator to Offer eSIM in Palestine

The Palestinian Telecommunications Company- Jawwal Palestine, is proud to announce the launch of Palestine's first eSIM service using Monty Mobile's GSMA accredited (SAS-SM) consumer eSIM solution. The shift from physical SIM to the digital eSIM is set to transform the mobile industry, giving subscribers a convenient one-click service and offering new business opportunities. This new launch allows smartphone owners with the latest Apple iPhones, iPads, Samsung, and many others, to sign up for Jawwal's eSIM service simply through scanning the eSIM activation (QR) code and start using the new SIM card immediately, enhancing further the overall customer experience.

PCCW Global

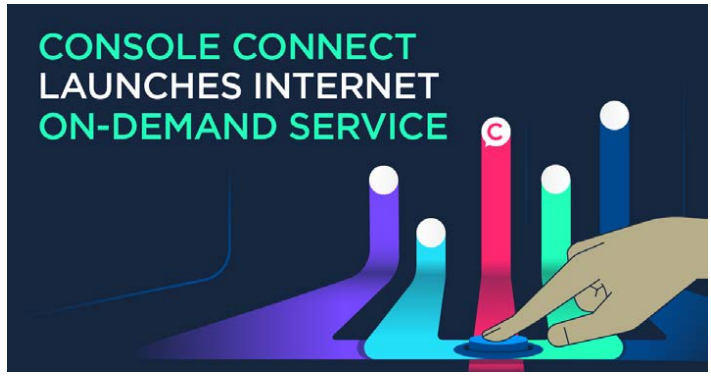
PCCW Global Scores a Hat-Trick at Telecom Review Excellence Awards

PCCW Global, a leading international telecommunications service provider, won big at the Telecom Review Excellence Awards 2020, collecting three prestigious industry awards including Best Global Operator, Best Carrier Enterprise Service, and Most Innovative Product for Console Connect - the world's first platform for Software-Defined Interconnection®. The big win follows hot on the heels of PCCW Global picking up the Most Innovative Product or Service Award also for Console Connect at AfricaCom 2020. PCCW Global's entry for the Best Global Operator award detailed the company's competitive advantage of directing highly focused attention to providing service automation by investing heavily in new technologies and gearing the company's network towards agility, scalability and on-demand services. In addition, the award affirms the value and status of PCCW Global's market-leading tier 1 network, and recognizes PCCW Global's involvement in both the Pakistan & East Africa Connecting to Europe (PEACE) and the Mauritius and Rodrigues Submarine Cable (MARS) projects. The Best Carrier Enterprise Service and Most Innovative Product awards recognize PCCW Global's Console Connect digital platform for delivering a real game-changer for business, automating process of connecting to cloud-based, business-critical applications and geographically distributed offices, partners and clients and making the process simple, predictable and secure. Console Connect's core value proposition addresses the fact that while businesses want to be innovative and

agile by taking advantage of the new and disruptive technologies available via the major cloud service providers, the public Internet has too many shortcomings for large-scale implementation of business-to-business applications, including security challenges, inconsistent quality, network delays and excessive technical complexity. Console Connect incorporates network automation capabilities that enable users to manage access to PCCW Global's dependable, high-speed global private MPLS network, allowing them to quickly spin up virtual private connections, bypassing the insecure and unpredictable public Internet and directly connecting to cloud application providers, partners and business locations. The Console Connect digital platform provides a new level of speed and agility which can be accessed in a few clicks with a simple, easy-to-use web portal, or which can be integrated directly into enterprise applications via an API. The platform provides robust and secure enterprise-wide access to partner infrastructure and the world's leading cloud service providers including Amazon Web Services, Microsoft Azure, Google Cloud, Tencent, Alibaba, IBM and Oracle cloud services. The Telecom Review Excellence Awards were held in conjunction with the Telecom Review Leaders' Summit, one of the largest C-level industry gatherings. Every year, the Summit brings together leaders of the ICT industry and Governments representatives from around the world. This year's event and awards were held both virtually and in person at The Meydan Hotel in Dubai. Mr. Sameh Sobhy, Managing Director, Middle East, Turkey, Africa, PCCW Global, said, "We are extremely pleased that our efforts to keep on growing, developing and bringing new, innovative products and services to market is being recognized both by our peers and industry experts. What is especially important for us is the overall interest in our Console Connect digital platform, which now sits at the very heart of our service infrastructure and product offerings."

Console Connect by PCCW Global Launches Internet On-Demand Service

PCCW Global is pleased to announce that its industry-leading global Internet access service is available on-demand via the award-winning Console Connect digital platform. Console Connect's Software-Defined Interconnection® platform now offers high-performance Internet access across the same global tier 1 IP network relied upon by the world's largest content and hyperscale cloud providers, ISPs and MNOs. Capable of carrying traffic at more than 14Tbps and with extensive global peering, PCCW Global's AS3491 network is consistently ranked among the top 10 worldwide for both IPv4 and IPv6 by Dyn IP Transit Intelligence. The Internet On-Demand (IO-D) service is now available to Console Connect users via their existing access ports, enabling them to provision global Internet access whenever they need it. The IO-D service can be accessed initially via hundreds of key data centers throughout Europe, Asia and North America. Other locations will be added and new service features rolled out in 2021. By combining the new IO-D service and direct connections to all major cloud providers in all regional zones, businesses can experience greater network security and performance for their cloud environments and applications. The Console Connect platform is already available in more than 400 data centers across 47 countries, bringing together a growing ecosystem of integrated public cloud, SaaS, IoT, IX, carrier and enterprise partners such as DE-CIX, Cloudflare, Anexia, RingCentral, Google Cloud, AWS, IBM Cloud, Microsoft Azure, Alibaba Cloud, Tencent Cloud, Oracle Cloud and more. Users can self-provision, manage and monitor their interconnections in real-time via the secure Console Connect platform or API. Mr. Michael Glynn, Vice President of Digital Automated Innovation, PCCW Global, said, "Using the power of Software-Defined Interconnection®, Console Connect is reimagining how customers experience popular and trusted network services. With Console Connect Internet On-Demand, we have put businesses in the driving seat with high-performance global Internet connectivity, giving them control over one of the world's largest, fastest and best-connected networks." The high quality of service and low latency of the underlying PCCW Global IP network means that the IO-D service is suitable for carrying performance-sensitive data, and can meet the demands of sectors such as gaming, government and finance. Customers can protect their Console Connect IO-D access with a range of security services from PCCW Global, including Anti-DDoS, Managed Firewall and Managed Router.



Tech Mahindra Recognized as Global Leader on Climate Change and Water Security

Tech Mahindra Ltd, a leading provider of digital transformation, consulting and business re-engineering services and solutions, has been recognized as a leader in sustainability by global environmental non-profit, Carbon Disclosure Project (CDP). Tech Mahindra has secured a place on the prestigious 'A List' for tackling Climate Change and strategizing Water Security under the environmental themes covered by 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. Sandeep Chandna, Chief Sustainability Officer, Tech Mahindra said, "As a company with purpose, Tech Mahindra is committed towards delivering innovative solutions which will not just improve sustainability credentials but will also reinforce the overall business philosophy. Our emphasis on green ecosystem, clean energy and optimum use of resources helps us in accelerating our transition towards a low carbon economy while also creating sustainable value for our stakeholders. The recognition on the CDP A List for climate and water is yet another validation of our sustainable commitment, practices and principles of the organization." Tech Mahindra has taken ambitious emission targets, approved by the SBTi (Science-based Targets Initiative) to reduce its absolute scopes 1 and 2 GHG (Greenhouse Gas) emissions 22% by 2030 and 50% by 2050 from baseline year 2016. The company has joined Business Ambition for 1.5°C to hold a rise in global temperature below 1.5°C and has also taken a target to increase its renewable energy to 50% by 2025. Tech Mahindra is also working closely with partners and customers to help them increase energy savings, digitize and automate operations and create collaborative work environments addressing the need for sustainable practices. This includes solutions like Micro Grid as a Service, Smart city solutions, Smart grid, Smart Data Hubs, Smart Street light, Smart bin, Smart Energy Management, and Smart metering and analytics. Tech Mahindra has also implemented the 4 R's for water strategy- reduce, recycle, recover and reuse to decrease dependency on sources of water that are threatened by overuse. Paul Simpson, CEO of CDP, said: "We extend our congratulations to all the companies on this year's A List. Taking the lead on environmental transparency and action is one of the most important steps businesses can make and is even more impressive in this challenging year marked by COVID-19. The scale of the risk to businesses from climate change, deforestation and water insecurity is enormous, and we know the opportunities of action far outweigh the risks of inaction. Leadership from the private sector will create an 'ambition loop' for greater government action and ensure that global ambitions for a net zero sustainable economy become a reality. Our A List celebrates those companies who are preparing themselves to excel in the economy of the future by taking action today."

Tech Mahindra Business Process Arm Recognized as a 'Leader' in Nelsonhall 2020 NEAT Evaluation

Tech Mahindra, a leading provider of digital transformation, consulting and business re-engineering services and solutions announced that its Business Process Outsourcing arm has been recognized as a 'Leader' in NelsonHall 2020 NEAT Evaluation (NelsonHall Vendor Evaluation and Assessment Tool). Recognized for its Customer Experience services in Telecom and Media industry, Tech Mahindra has been delivering customized experience through stack of proprietary platforms and frameworks in analytics, automation, and agent augmentation. NelsonHall, the leading global IT (Information Technology) and business process services research and analysis firm, has also acknowledged Tech Mahindra for delivering innovation, customized user experience (UX), transformation and digital content production through in-house agencies including BIO, BORN Group and Mad*Pow. Additionally, Tech Mahindra has also been positioned as a "Leader" in 2 out of 3 market segments of the respective NEAT evaluation "CX Improvement Focus" and "Cost Optimization". It has also been identified as a 'High Achiever' in the "Revenue Generation" segment. Ritesh Idnani, President, Business Process

Services, Tech Mahindra, said, "Customer experience is at the core of our business strategies and Tech Mahindra has been consciously taking efforts to build such skills to enable clients in achieving superior business outcome. Telecom and Media is one of our largest business verticals and being positioned as "Leaders" by NelsonHall in their recent report, reflects on the transformational work done for our respective clients based on our AAC (Automation, Analytics and Consulting) model. In line with our TechMNxt charter, the acknowledgement also highlights the synergy between Tech Mahindra and our portfolio companies (BORN Group, BIO Agency and Mad*Pow) in terms of collaboration and delivery of our digital & technology driven solutions.". The NelsonHall NEAT helps sourcing managers save time and money while enhancing the quality of their sourcing decisions in business process and IT outsourcing. The NEAT sits at the front-end of the vendor screening process and consists of a two-axis model: assessing vendors against their "ability to deliver immediate benefit" to buy-side organizations and their "ability to meet future client requirements".

Ivan Kotzev, Lead CX Services Analyst with NelsonHall, said, "With telecom clients demanding a shift to self-service and next-gen automation, Tech Mahindra BPS offers a combination of domain-specific IT expertise with deep CX sub-process knowledge. Its capabilities in digital consulting, brand experience management, and customer behavior insights positions it very well to deliver the hyperdigital customer support of tomorrow." Tech Mahindra Business Process Services provides next-generation digital CX and back office services across multiple industries, which include Communication, Media & Entertainment, Retail & Consumer Packaged Good (CPG), Healthcare & Life Science, Banking & Financial Services, Transport, Hospitality & Logistics and Manufacturing & Utilities. The approach is to understand the customer's world, and partner more collaboratively to increase business value, deliver transformational benefits, bring in efficiency drivers through platform-based solutions, automation via robotics and artificial intelligence, and ultimately focus on helping them gain success in an increasingly digital and disruptive world. As part of the TechMNxt charter, Tech Mahindra has a deep focus on leveraging cutting-edge technologies to deliver enhanced experience to the customers and address real world problems that can meet the evolving and dynamic needs of customers.

Zain KSA and Nokia Record Indoor 5G Speeds of 1.9Gbps during Trial

Finnish vendor Nokia has achieved what it claims is a record indoor 5G speed in the Middle East, having registered a downlink rate of 1.9Gbps during a successful trial of its next generation AirScale Indoor Radio System (ASiR) at the headquarters of mobile network operator (MNO) Zain Saudi Arabia (Zain KSA). In a press release regarding the development, it was noted that the trial had leveraged the Nokia 5G AirScale, which is an enhanced indoor solution with a centralized and scalable architecture. The speeds recorded were said to have been achieved at 3.5GHz 'including multi-band ASiR-pRRH and with E-UTRAN New Radio – Dual Connectivity (EN-DC)'. Commenting, Eng. Abdul Rahman AlMufadda, Zain KSA's chief technical officer, said: 'In line with Zain KSA achieving a pioneering position in the regional and global telecoms map by rolling out the largest 5G network in the Middle East, Europe, and Africa and fourth largest in the world, it is imperative for us to provide first class coverage for both indoor and outdoor environments. Nokia deployed its 5G indoor solution quickly, with minimal disruption and achieved incredibly high-speeds during this trial.' Meanwhile, as part of the press release regarding the trial, it was also noted that the MNO's 5G network now covers 50 cities across the Kingdom, enabled by more than 4,600 towers. As previously reported by CommsUpdate, the cellco launched commercial 5G services in October 2019, with the first phase of the rollout being implemented through a network of 2,000 towers that covered an area of more than 20 cities.

China Mobile | International

iCONNECT IoT

The Internet of Things (IoT) is growing and transforming our lives and businesses. iConnect offers managed IoT connectivity with our comprehensive SIM portfolio, a cost-effective connectivity management platform, IoT roaming, and a suite of dedicated IoT solutions to serve industry-specific business needs.

Medical | Logistics | Manufacturing | Security | Utilities

IoT China SIM

The iConnect IoT China SIM makes seamless connectivity possible for IoT deployment within mainland China.

IoT Global SIM

Managed IoT connectivity targeted for global IoT deployment. The iConnect IoT Global SIM makes seamless connectivity possible for global IoT deployment.

IoT CMPaaS

iConnect's cost-effective Connectivity Management Platform (CMP) enables network operators to easily adapt to domestic and global IoT business needs.

IoT Roaming

iConnect IoT Roaming offers seamless connectivity for roaming to the China Mobile network.

IoT Solutions

Full suite of dedicated IoT products and solutions to serve industry-specific business needs.

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ARTICLE

5G Technology Gives Internet of Things Fresh Impetus

"CMI is expanding its business from communication services to information services and refocusing its business from mobile market to accelerate digital transformation in the economy and society," said Andrew Niu, Chief Partnership Officer at CMI.

The Internet of Things (IoT) has in recent years worked its way into most aspects of everyday life, so much so that its true value is diluted by familiarity. But it's arguably the single biggest technological advance of the past 25 years, one that has transformed all aspects of industry, the ways cities work and the way we live our lives.

Each generation of network technology from 1G to 4G has heralded a swathe of new innovation, products, lifestyle changes and even new industries. IoT and the networks it sits on have created efficiencies, improved healthcare, helped to reduce waste and brought financial inclusion to hundreds of millions worldwide. All by allowing information to be sent and received from objects and devices using the internet.

The new 5G technology will drive a variety of applications, particularly in the IoT and machine-to-machine (M2M) areas. By mid-year 2020, more than 80 countries and territories either had 5G installed or are in the process of installing it.

The roll-out of 5G in a growing number of countries around the world, which began in 2018 and is ongoing, and the broader appetite for the technology reflects companies' and governments' recognition of what's at stake. According to McKinsey & Co., the potential economic impact of IoT by 2025 will be as much as US$11.1 trillion per year. The existence and efficacy of the 5G network will be critical for that.

To help break that huge sum down a little, McKinsey research on 5G deployment in mobility, healthcare, manufacturing, and retail showed that these four commercial domains alone could boost global GDP by US$1.2 trillion to US$2 trillion by 2030.

5G ten times faster

IoT merges physical and virtual worlds, creating smart environments. The role of 5G is to effectively supercharge that process with ultra-high bandwidth, and low latency connectivity not only between individual users, but also with connected objects. 5G can also serve as the "eyes and ears" for artificial intelligence systems, by providing real-time data collection and analysis.

The 5G networks operate at roughly 10 times the speed of 4G LTE networks – and there's the potential to become faster over time. Its ultra-low latency means that it can support advanced applications, such as autonomous driving, with precision – no longer will your navigation device say to turn right just after you've passed the road on the right. The low latency is expected to help virtual and augmented reality applications take off.

Countries and territories with infrastructure that's not up to speed with 5G will become less competitive. So, the need for it is paramount. The new 5G technology will drive a variety of applications, particularly in the IoT and machine-to-machine (M2M) areas. By mid-year 2020, more than 80 countries and territories either had 5G installed or are in the process of installing it.

In Europe, the EU implemented its 5G Action Plan to meet the challenge of making 5G a reality for all citizens and businesses in member states by the end of 2020. That implementation plan has this year been impeded to an extent, not just by Covid-19, but also conspiracy theories around the network towers.

Handling zettabytes of data

Against this backdrop, China Mobile International (CMI) seeks to go large, capitalising on the growing digitalisation of a whole array of things. By mid-year, it had almost 850 million IoT connections, nearly twice that of a year earlier.

Globally, the number of devices connected to the Internet, including the machines,

"We see four key growth engines – customer, home, business and new business markets – all of which offer tremendous opportunities thanks to the penetration of new-generation information technology. Fully leveraging 5G, cloud, artificial intelligence and data centers will not only support this transformation, but also meet people's needs for a more fulfilling digital life."

sensors, and cameras that make up the IoT, continues to grow at a steady pace. International Data Corporation (IDC) estimates that there will be 41.6 billion connected IoT devices, or "things," generating 79.4 zettabytes (ZB) of data in 2025. This estimate for connected IoT devices compares with 8.6 billion in 2018. (One zettabyte is a 1 followed by 22 zeroes.)

Large amounts of this data will likely be generated by video, other categories such as industrial and medical will generate more data over time, according to the IDC. There is an obvious direct relationship between all the "things" and the data these things create. The key is to be able to convert this data into meaningful information. IDC projects that the amount of data created by these connected IoT devices will see a compound annual growth rate (CAGR) of 28.7% a year from 2018 to 2025.

"CMI is expanding its business from communication services to information services and refocusing its business from mobile market to accelerate digital transformation in the economy and society," said Andrew Niu, Chief Partnership Officer at CMI. "We see four key growth engines – customer, home, business and new business markets – all of which offer tremendous opportunities thanks to the penetration of new-generation information technology. Fully leveraging 5G, cloud, artificial intelligence and data centers will not only support this transformation, but also meet people's needs for a more fulfilling digital life."

CMI's infrastructure is designed to cope with this volume of data at the speed required by having plenty of room for scaling up. Its iConnect IoT runs on a dedicated network infrastructure, offering 2G, 3G, 4G and NB-IoT global roaming, plus IoT SIM cards, with connectivity and lifecycle management, along with integrated device management and billing services. CMI will shortly add 5G to its suite of network offerings, having been granted a licence in June.

iConnect connectivity management

An important feature of iConnect is that its connectivity management platform offers a single-contract, single-platform approach to comprehensive IoT connectivity. It's a one-stop solution that's the simplest way to gain access to the market – one contract with one carrier that provides global connectivity through one platform. It's an approach that works well with enterprise customers.

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

CMI IPX supports the latest 5G roaming, 2G, 3G and 4G roaming, SMS interconnection gateways and VoLTE services. CMI works with 495 roaming partners globally and have secured IPX on-net coverage with 80 operators. CMI covers almost 98% of Asia Pacific as the region's IPX hub with the most extensive coverage.

It's important to stress that with each new connection, there's a responsibility to navigate and manage new security vulnerabilities and privacy concerns. CMI has some of the most security systems in place anywhere, while it complies fully with local data privacy regulation in whichever jurisdictions it operates.

Drivers of data growth

In terms of IoT usage, besides video, use of household and wearable devices is set to grow strongly in the near-term. In the longer term, use of drones will likely grow, particularly in the business space, such for agriculture or maintenance work in hard-to-access places. But industry and autos will see the fastest data growth rates, with CAGR of 60% a year from 2018 to 2025, according to the IDC.

The more remarkable thing is that the data collating capacity will run to so-called rich data that includes images, audio and video – i.e. more complex data sources – which will draw on artificial intelligence.

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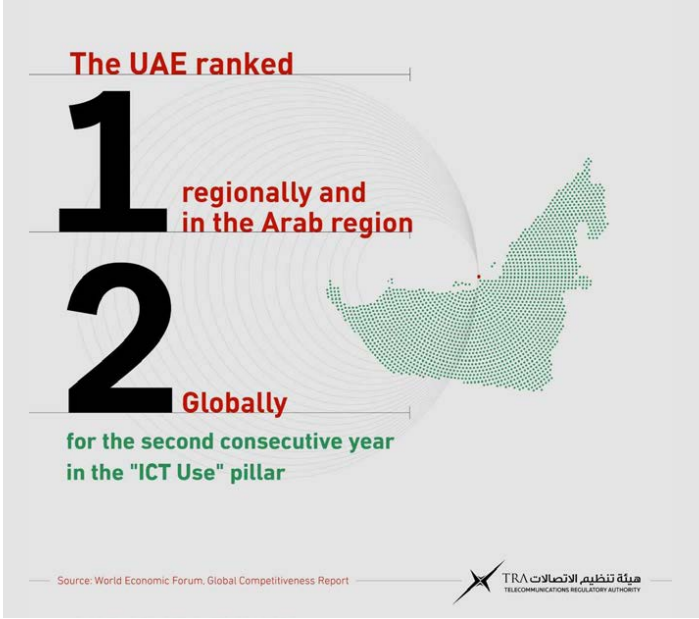
CMI IPX has launched 32 roaming connections for China Mobile and we support all China Mobile 5G roaming, with the largest 5G coverage and over 130 million 5G subscribers globally. We were also first to market with optimized IoT roaming connectivity, supporting 5G roaming since last year and planning for NB-IoT roaming soon.

REGIONAL NEWS

UAE Ranks Global 2nd in Telecom Sector Quality

The UAE concluded 2020 by achieving global leadership in telecom sector quality and evolution, where the country maintained the first place in the Arab region and regionally, and came second globally for the second consecutive year in "Use of telecommunications/ICTs", which measures the efficiency and evolution of the telecommunications sector in countries around the world as part of the Global Competitiveness Report issued by the World Economic Forum. This achievement also reflects the efforts of the Telecommunications and Digital Government Regulatory Authority (TDRA) in implementing the directives and vision of UAE's wise leadership to up the readiness of the telecommunications sector to leverage modern technology in the country, especially 5G, where the UAE ranked 1st in the Arab Region and 4th globally in launching and using 5G networks. All this thanks to the cooperation and coordination with mobile operators to deploy and operate 5G networks, and the continued work and collaboration with service providers in the country (Etisalat and du) to develop the telecommunications infrastructure in keeping pace with future requirements, thus contributing to the on-going global leadership of the UAE in this sector. Commenting on this milestone, Hamad Obaid Al Mansoori, TDRA Director General, said, "We conclude this year with such proud achievement, emphasizing the significance of the ICT sector in the strategic thinking of our wise leadership, based on the belief that spearheading the telecom sector paves the way for excellence and leadership in all various vital sectors, meaning enabling digital transformation and easing conditions for providing AI-based services and solutions, and big data. We have all been walking in the path of development, prosperity and digital knowledge, and today we are moving at a faster pace relying on a highly-advanced digital infrastructure. Al Mansoori also added, "Today we live in the year of preparing for the next fifty, as envisaged by the wise leadership to be a year of innovation, creativity and overcoming the impossible, a year for developing a great plan and strategy that meet the aspirations of the Emirati people. During this year, government and private entities and even individuals worked in a team spirit to present the best creative ideas to chart the future of the country for the next 50 years. Most of those ideas were based on the ICT sector, confirming the importance of what we have accomplished in the sector, and pushing us further in achieving more achievements." The report touched on the performance of world's countries during COVID-19, and how social distancing was the immediate response in countries to confront the pandemic. Consequently, the telecommunications and digital services sector had an important role in countries' ability to remotely manage their economic and vital sectors and continue business efficiently. Economies that have relied on advanced telecommunications infrastructure, technology, and the provision of digital services over the Internet have been less affected than others by the dire conditions the world has experienced. The report pointed to the central role of regulatory frameworks in mitigating the effects of the pandemic, as countries with robust regulatory frameworks were more successful in dealing with the pandemic, and the UAE ranked fourth globally in "digital legal frameworks", according to the report. The continuing leadership of UAE's telecommunications sector despite the exceptional circumstances of this year witnessed is evidence of the resilience, development and efficiency of the telecommunications sector in the UAE, which has passed the recovery stage moving towards development of prosperity. TDRA developed plans and strategies that contribute in bolstering the telecommunications sector infrastructure, believing in the pivotal role that this sector plays in achieving the national agenda of UAE Vision 2021. Companies operating telecommunications services in the country have allocated a monumental budget for investment in infrastructure amounting to AED 36 billion, which made the country own an infrastructure among the best in the world in terms of providing "fiber" services and coverage in general. All of this comes in preparation for the upcoming entitlements of UAE Centennial. "The evolution of the telecom infrastructure was a key enabler that contributed to business continuity of vital and commercial sectors in the country during the past months, as well as raising UAE's readiness for future changes and technology, while enabling the UAE to easily adapt to variables, adopt smart techniques such as distance learning and remote working, provide services ensuring the natural pace of work, and provide opportunities for growth and progress. The UAE ranked first in the world in 12 global competitiveness indicators that measure the quality and development of the telecommunications sector in the countries of the world, and ranked among the top five countries in 30 global competitive indicators by the end of 2020.



ITU and the National Cybersecurity Authority of Saudi Arabia Launch a New Global Program to Keep Children Safe Online

The International Telecommunication Union (ITU) and the National Cybersecurity Authority (NCA) of the Kingdom of Saudi Arabia have entered into a strategic partnership and launched a global program on "Creating a Safe and Prosperous Cyberspace for Children". The program will foster innovative policies, ensure upgrading of skills, promote global dialogue and strengthen global efforts to implement the ITU Child Online Protection (COP) Guidelines, launched in June 2020. The new strategic partnership aims to develop and implement child online safety policies among governments, industries, and civil societies to increase skills development and knowledge sharing with all relevant stakeholders, including children and their families. It will do so by creating a national, regional and international set of measures and programmes that will ensure child online protection while empowering children with the necessary cyber skills to fully benefit from the online environment. "Ensuring children's online safety has become more pressing than ever before," said ITU Secretary-General Houlin Zhao. "This new global program strengthens the partnership between ITU and the Kingdom of Saudi Arabia, to reduce online crimes targeting children and provide parents, teachers, educators and children with the necessary safety digital skills to face online risks. ITU appreciates the Kingdom of Saudi Arabia's commitment to protecting children in cyberspace, as represented by the Crown Prince initiative for Safe Children in the Cyber World." Khalid Al-Sabti, Governor of the National Cybersecurity Authority (NCA) of the Kingdom of Saudi Arabia, noted: "Creating a safer and more secure cyberspace while empowering children is a top priority for us, in line with H.R.H Crown Prince Mohammed Bin Salman's Global Initiative for Safe Children in the Cyber World – announced earlier this year during the Global Cybersecurity Forum (GCF). We worked hand in hand with ITU to design this comprehensive global program and we are anticipating a meaningful impact on increased international cooperation and coordination on child online protection." The partnership will contribute to ITU's mission of ensuring cybersecurity at the international level. As a result, governments will benefit from child online protection policies based on the new 2020 COP Guidelines and other tools developed by ITU and COP partners. "This is a landmark collaboration to address child online safety at the global level," said Doreen Bogdan-Martin, Director of the ITU Telecommunication Development Bureau. "While promoting connectivity and the use of digital tools by children, the global program sponsored by the National Cybersecurity Authority (NCA) of the Kingdom of Saudi Arabia will help ITU and partners of the Child Online Protection initiative to build capacity and empower national stakeholders, including children, with digital safety skills."

Egypt Aims to Localize Tablet Manufacturing

Egypt's Prime Minister Mostafa Madbouly announced, that the government aims to localize the manufacturing of tablet computers to be used for educational purposes. It came during Madbouly's meeting with Minister of Education Tarek Shawky, Minister of Communications and Information Technology Amr Talaat, and Minister of State for Military Production Mohamed Ahmed Morsi. Minister Talaat indicated that negotiations are currently underway with one of the major international companies specialized in this industry to establish tablet production lines in Egypt. "This will allow tablets to be manufactured locally to cover demand, with an export opportunity as well," he added. The Communications Ministry announced earlier its intention to establish a new technology factory with huge investments that will create 500 job opportunities. In September, Egypt's Minister of Education said that his ministry has 'ambitious plans' in the coming period to provide all students in Egypt with digital learning resources. He noted that students in Grades 10 to 12 have access to such resources, with the ministry set to extend these services to the whole 12 million students from Grade 4 to 9.

TRA, Abu Dhabi Digital Authority and Smart Dubai Government Hold a Press Conference on UAEPass in the Private Sector

The Telecommunications Regulatory Authority (TRA) held a virtual press conference on the adoption of digital identity (UAEPass) in the private sector, in the presence of representatives from Abu Dhabi Digital Authority, Smart Dubai, and the Dubai Blockchain Center, as well as representatives of TRA strategic partners from the private sector. The press conference held on the sidelines of GITEX Technology Week 2020, addressed enhancing cooperation with the private sector in order to adopt UAEPass in transactions and services. The participants in the conference discussed the importance of cooperation with the private sector to activate the digital identity, digital signature and digital vault. They discussed the role of digital identity in enabling the provision of digital services in a smooth and rapid manner. The conference also addressed future services that can be obtained using the digital identity. In his opening speech, Eng. Mohammad Al Zarooni, Director of Policies and Programs Department at TRA said: "GITEX Technology Week 2020 is an indicator of returning back to normal in the UAE, as economic activities and exhibitions are back to confirm the UAE's leadership in recovery as it was a leader in adaptation and business continuity even in the most difficult circumstances. The UAE, under the guidance of its wise leadership, has been proactive in adopting solutions, projects and initiatives that provide the best services and raise the happiness of the UAE community." Al Zarooni added that the UAE community happiness has always been the main goal of all TRA initiatives, including UAEPass. He said: "Our primary goal has always been the happiness of the UAE people and meeting their aspirations by providing easy and affordable services, and this is what we were able to achieve through UAEPass, which reduces visits to customer service centers, with paperless transactions, and no wasting time on the roads and queues. Today, UAEPass services can be used in various sectors, a user can open a bank account or complete a business transaction in a simple click." Moreover, TRA announced that the number of UAEPass accounts exceeded 950,000 accounts, whose holders can benefit from more than 219 digital service portals in various emirates of the country, including websites, smartphone applications, digital signature and digital stamp services. This achievement comes only two years after the launch of UAEPass. UAEPass is the first national digital identity for citizens, residents and visitors, which allows them to obtain all services in the various UAE sectors. It enables them to digitally sign and verify documents, in addition to requesting digital copy of documents issued to them and use them to obtain government services. UAEPass was launched in GITEX Technology Week 2018, as a collaboration between TRA, Abu Dhabi Digital Authority and Smart Dubai, in order to provide a unified digital identity solution for all service providers, while maintaining a high degree of confidentiality, ease of use. The project is supported by strategic partners, namely: Federal Authority for Identity and Citizenship, Dubai Electronic Security Center, and all digital entities in the UAE.

E-Commerce Sales in Dubai to Hit US$27 Billion by 2022

E-commerce sales in Dubai are expected to rise 23% to $27 billion in 2022, said a top official, noting that the shift in the consumers' trends and behaviors after the pandemic is expected to raise use of e-marketing channels 10%. Ahmed Mahboob Musabih, Director General of Dubai Customs, was speaking on the sidelines Gitex Technology Week 2020 in Dubai. Musabih stated that there is a good opportunity for Dubai to turn into an e-commerce central hub for African, Gulf, Middle Eastern and South American markets. One of the projects that Dubai Customs is showcasing in Gitex Technology Week 2020 is the Cross Border e-Commerce Platform; the collaborative blockchain-based e-commerce platform, which caters to the needs of all stakeholders in the ecommerce supply chain. Dubai was ranked as the fastest-growing e-commerce market in Mena thanks to a very advanced technological infrastructure and the growing number of tech-savvy consumers, he said. "This year has been announced as the year of preparing for the next 50 years, and we are well prepared for that through a number of outstanding projects including the Cross-border e-commerce platform. It is the first of its kind in the region that supports all stakeholders in the supply chain. This will reduce cost on e-commerce that result from returned goods, storage and transportation by 20%," Musabih concluded.

GCC Payments Industry Set to Leapfrog Other Economies in 2021

Increased digitalization and major shifts in the fintech landscape, accelerated by the global coronavirus pandemic, will see the GCC payments industry leapfrog other major economies in 2021. Dalal Buhejji, financial services director at the Bahrain Economic Development Board, said: "There is no doubt Covid-19 has catalyzed digitalization across the region, and the way Gulf citizens spend has changed for good." In 2020 the Arab Monetary Fund launched 'Buna', a cross-border payments platform for the Arab World, while the GCC countries launched the GCC Payments Company, which will build and operate a cross-border, multi-currency, real-time system across the region. Consumers are also becoming increasingly comfortable with digital payments. In September 2020, the Saudi Arabian Monetary Authority (SAMA) advised that the country's cashless transactions target of 28 percent by the end of 2020 had already been significantly exceeded with e-transactions making up 37 percent of all financial transaction in the kingdom. A similar result emerged in the UAE, where a survey by Dubai Police, Dubai Economy and Visa earlier this year revealed that 68 percent of respondents in the UAE have reduced shopping in-store since the outbreak of the pandemic, while 49 percent shop more online. In Bahrain, transactions on payments platform BenefitPay are reported to have increased by a staggering 367 percent so far this year, crossing the BHD1.5 billion ($3.99bn) threshold in November. With the festive season approaching, it looks likely that the value of transactions will exceed $4bn by year end. Buhejji added: "While no-one could have predicted a pandemic, the Gulf has been well prepared. In Bahrain we laid the groundwork for coping with this shift in consumer behavior when we brought in a number of tech-friendly laws and regulations, introduced a commercial 5G network and brought AWS' first data center in the GCC to the kingdom. "Where previously the Gulf may have been typecast as late adopters of emerging technologies, statistics like these show we are not only closing the gap between us and other regions, we will soon be leapfrogging them. It's a very dynamic time for the entire Gulf ecosystem."

IBM Opens its First-Ever Security Operations Center in Saudi Arabia

US multinational IBM Security announced the official opening of its first security operations center in Saudi Arabia. The Riyadh center will offer IBM's private and government sector clients in the Kingdom the option of managing their security operations around the clock via the company's staff and local infrastructure. The new facility will focus on supporting clients responding to cybersecurity incidents as well as helping manage emerging threats through real-time analysis and early warning notification of security events. IBM Security analysts and experts will assist clients with expedited incident investigations and remediation plans. According to a recent IBM study, data breaches on companies in Saudi Arabia cost firms $6.53 million on average per breach — higher than the global average of $3.86 million per breach. IBM Managed Security Services manages more than 150 billion security events daily on average. "The launch of IBM's security operations center in Saudi Arabia is a critical investment not only in helping our clients respond to ever-increasing cybersecurity incidents but also in providing them with local data residency to support their preferences and industry requirements,"

Hossam Seif El-Din, IBM Middle East and Pakistan general manager, said in a statement. "We are seeing a lot of new threat actors looking to take advantage of the confusion and uncertainty surrounding COVID-19. Therefore, we are also looking to use the new center to drive education and awareness to help clients defend themselves from potential threats," he added. The rapid shift to remote workforces amid the pandemic health crisis and a corresponding increase in attacks by cyber criminals have combined to create unparalleled cybersecurity challenges for organizations across the globe. According to IBM Security X-Force, there was 40 percent increase in security incidents in the first three months of 2020 globally compared with the same period in 2019. The opening of the new IBM Riyadh facility comes after a survey commissioned earlier this year by cybersecurity firm Tenable found that 95 percent of businesses in the Kingdom last year experienced a cyberattack. In addition, 85 percent of Saudi respondents to the study said that they had witnessed a dramatic increase in the number of attacks in the past two years. Companies said they had suffered loss of customer or employee data, ransomware payment demands and financial loss or theft.

Tunisia's First-Ever Open Data Hackathon Taps into Digitalization's Potential for Greater Development Impact

The role of government is rapidly evolving, and open data has the potential to be an important impetus of this change. With this in mind earlier this year Tunisia's first-ever national open data hackathon, brought together 170 participants comprising 38 different teams with the support of the World Bank. In preparation for the hackathon, transport, culture and health government representatives identified issues that could be solved using data and technology. Moez Guerfal, a hackathon participant, said: "We have been working as a team and have learned to share ideas and efforts as team members looking for digital solutions to the specific problems faced by citizens and civil servants." The hackathon brought citizens, innovators, the private sector, and civil society together using a GovTech approach, a whole-of-government concept, that focuses on two core elements: putting citizens at the center of the reform process; combining innovative public sector reforms and the use of digital technology to promote efficiency and high-quality service delivery.

Tunisia, a member of the multilateral Open Government Partnership, is now implementing its third consecutive Open Government Action Plan. This will make data available to the public in open and machine-readable format. In addition to the National Open Data Portal, there are now data portals for numerous public agencies, including the Ministry of Agriculture, Ministry of Culture, Ministry of Transport, and Ministry of Industry. Tunisian government officials are increasingly recognizing that enhanced data analytics can lead to an integration of data analysis into policymaking. This can in turn pave the way for: improved coordination; more informed and evidence-based decisions; and simplified administrative procedures and processes. More accessible government data can allow providers to tailor public services to citizens' needs , thus improving policy outcomes. Open data can also enhance the accountability of institutions and provide citizens with more tools to scrutinize government.

Saudi Arabia: Establishing a Digital Hub for The MENA Region in Cooperation with Global Partners

stc Group said that it intends to establish a premier digital hub for the MENA region, in cooperation with regional and international partners. This is expected to create an ecosystem of advanced technology services that will establish Saudi Arabia as a leading business hub in the region, and meet the expected future growth in services and investments in the ICT sector. This will be achieved by taking advantage of the Kingdom's strategic location at the intersection of three continents' , and promoting investment in international connectivity services and data centers to leverage the Group's various assets, services, and advanced technologies. A number of next generation multi-terabit cables are currently in the planning stages to meet the very high cloud and content demands predicted in the future, and the first of those to come to the region will land with stc. Existing assets, which stc will bring to this initiative, include its extensive international submarine cable network, which already offers the highest connectivity to the world for the region. This is achieved through stc's investment in a state of the art optical mesh, which ensures continuous service availability in the event of any cable outages by offering low latency to Europe from the Red Sea, and from the Gulf, and by leveraging the terrestrial cross border network. stc's optical terrestrial network connects to all neighboring countries, allowing it to offer faster connectivity to customers in many countries than they can achieve through the submarine cables. The Group's future investments are expected to strengthen Saudi Arabia's position as the natural home for the region's digital services. The Kingdom has an enviable combination of infrastructure assets today, making it the first among G20 countries in terms of digital competitiveness during the past 30 years, according to a report by the European Center for Digital Competitiveness, which is based on the report of the World Economic Forum, in line with Vision 2030 which is the country's roadmap to becoming a hub connecting the three continents for multiple sectors. This world class digital ecosystem could achieve this goal and turn this vision into reality. stc Group is a primary investor partner of the 2Africa submarine cable project, which will deliver very high capacity interconnectivity between the three continents. The Group will land this submarine cable in the Red Sea, and will extend it into the Gulf, linking multiple countries. It will also will facilitate multi-terabit connection to the North West region of Saudi Arabia, in support of the Kingdom's ambitious plans for Neom project, and onwards to Jordan.

Orange Morocco Chooses Neural Technologies Fraud Solution to Protect Revenues

Neural Technologies, a provider of revenue protection and Digital Transformation solutions, is to deliver its Revenue Assurance and Fraud Management solution to Orange Morocco. The new partnership will help Orange Morocco to detect and prevent fraud in the African and Middle Eastern markets where it serves its 22 million customers. With nearly three decades of experience in the risk and revenue management fields, Neural Technologies was selected as the solution provider of choice. Yassine Belidri, IT manager Mediation & Provisioning from Orange Morocco says, "Neural's background and references in the market, very good knowledge of the end users' needs, and flexible and intuitive interfaces are what put Neural above its competitors." Using advanced Orange Morocco Artificial Intelligence (AI) and Machine Learning (ML) capabilities, Neural Technologies offers sophisticated fraud detection processes that can adapt to new threats as they arise in real-time before revenue is lost. "Identifying and quickly responding to fraud is critical to our business to provide a safe and secure service to customers and avoid revenue loss," adds Belidri from Orange Morocco. "We needed an automated process to detect fraud which is why we selected Neural Technologies' fraud management solution to identify and prevent fraud in real-time to protect our business. Neural's technical offer provides the best quality, and its experts are always on hand to offer support and answer questions to meet our needs." Ang Liang, COO at Neural Technologies comments, "It is a challenging time for telecommunications providers who are at the forefront of dealing with an increasing number of risks and threats. Dealing with high volumes of new threats requires an automated and intelligent solution that offers the maximum protection to financial systems." Neural Technologies Revenue Assurance and Fraud Management solution is already being delivered to Orange Morocco and the full implementation will be complete by March 2021. It will help range Morocco to address frauds such as SMS Spams, payment frauds, SIMBOX and adapt to new sophisticated threats that arise in real-time.

Pakistan Ministry of IT Successfully Pitched 3 Start-Ups from Ignite NIC Program in GITEX Summit

GITEX Technology Week serves as home to tech startups. Amid visa and COVID-19 restrictions, the Ministry of Information Technology and Telecommunication successfully pitched 3 startups from Ignite NIC Program. Among the participating startups – WALEE, Pakistan's largest and fastest growing influencer and social commerce platform, that enables businesses to discover, contract, collaborate and pay influencers who market and sell for them at scale. Today, 50,000+ influencers and businesses across 250+ cities are on Walee.pk. SE Drop (Save Every Drop) is another startup showcased at the mega event, offering two product lines – one: wastewater recycling systems to deal with water scarcity and second: natural, alcohol and chemical-free disinfectants. While the third startup, encore pay is a fintech which provides a digital payments platform to financial institutions including banks, telecoms and payment networks. All three Ignite NIC Program startups attracted interest from the public and private entities. Walee discussed with major global and regional brands, PR, social and digital agencies to implement scalable solutions for a 2021

rollout via www.walee.ae. SE Drop attracted interest from Dubai Electricity and Water Authority (DEWA), Dubai Municipality, Fujairah Municipality, UAE and private investors from Bahrain and Turkey for the collaboration in wastewater recycling management systems. GITEX-veteran, encore pay, reconnected with clients and partners from Middle East and Africa, and also received positive traction for its product suite from leads in new locations, as well as VC interest. Notwithstanding the pandemic, GITEX 2020 was the only major in-person technology event to go live this year with more than 1,200 innovative tech enterprises, startups and government entities from 60 countries; over 200 of the most active investors and VCs from 30 countries; and over 350 speakers from 30 countries.

Precautionary Measures Taken to Safeguard UAE's Digital Infrastructure Against Cyberattacks

The National Cybersecurity Council said it is constantly and regularly overseeing, in cooperation with security teams in the UAE, the digital infrastructure and systems of the country, and is taking all precautions and procedures necessary to safeguard the UAE's digital infrastructure, stop cyberattacks and ensure quick recovery. In a statement, the Council calls upon all organizations in the government and private sectors to follow the guidelines issued by UAE security teams in order to respond to this type of attacks. The Council also advises to promptly apply necessary updates to the systems and take all measures that would protect all networks. The Council, while affirming its readiness to provide all the required support to any entity affected or seeking advice and support, invites all entities to reach out to the national computer emergency response team (aeCERT) or relevant security teams, Recently, cyberattacks have witnessed an unprecedented development, with them becoming increasingly complex and frequent. During the past days, SolarWinds has dominated the news headlines as the most recent victim of advanced cyberattacks, where threat actors injected a malicious code in an update for SolarWinds Orion, resulting in a series of cyber incidents for the entities that downloaded the update worldwide. "Hence, the Cybersecurity Council would like to note its acknowledgement of the SolarWinds attack, where it has proactively worked on the case in collaboration with relevant entities in the UAE, in order to investigate and assess what happened. It has been shown that some UAE-based entities were attacked, and as such necessary measures were taken to deal with these incidents and secure constituencies," said the statement. "In parallel, the teams involved began communicating with SolarWinds and global partners from security organizations and technical service providers to follow progress on the matter, obtain information and actions to contain the incident," added the statement.

Bangladesh's Mobile Users Reach 168.36 Million

The total number of mobile phone subscribers reached 168.36 million in November going up by 2,98,000 from October, according to a report of the Bangladesh Telecommunication Regulatory Commission (BTRC). Robi Axiata Ltd, the second-largest mobile operator of the country, added nearly 2,00,000 new subscribers during the period while market leader Grameenphone added only 8,000. The mobile operators altogether added 9,00,000 new subscribers in October 2020. Although the operators maintained positive growth in their subscriber base in November, they lost 2,01,000 mobile internet users during the same period. At the end of November, 101.90-million subscribers were using internet on their mobile devices compared to 102.10 users in October, the BTRC report mentioned.

Five Companies in Bahrain Licensed to Offer Telemedicine Services

FIVE companies have been licensed to offer telemedicine services in Bahrain. The move from the National Health Regulatory Authority (NHRA) comes amidst the Covid-19 pandemic and aims to support digital healthcare systems in the country. Telemedicine is the distribution of health-related services and information through telecommunications technologies. It connects patients to healthcare services through interactive videos, remote monitoring or electronic consultations. NHRA health facilities department head Dr. Hessa Al Dosari said offering healthcare remotely was vital to ensure continuous care for patients during the coronavirus pandemic. “Services in these licensed companies vary from specialized to general,” Dr. Al Dosari said in a statement yesterday. “All companies licensed to practice telemedicine services adhere to the requirements, the most important of which is that practitioners of the profession must be licensed by NHRA. “All (NHRA) policies must be in place that clarifies the role of both the center and the doctors affiliated to it, in addition to the rights and duties of the patient. “Policies on how to deal with consultations and respond to complaints must be ensured." Dr. Al Dosari added that the service provider must abide by professional ethics in treatment and in maintaining the confidentiality of patient details. She said telemedicine was not applicable to restricted drugs. The GDN reported in May that Bahrain's first NHRA-licensed telemedicine service went online through Doctori.

Saudi Arabia Showcasing Global Leadership in 5G Experience Delivery

Over the past two years, Saudi Arabia has been at the forefront of the regional 5G landscape and has displayed leadership — both in number of 5G subscribers as well as 5G coverage of the population. The Saudi 5G users have been experiencing a great 5G experiences (in terms of both high bandwidth and low latency) and the telcos are accordingly raking in much higher ARPUs over 5G as compared to 4G. These results are now visible even at the international level where KSA's 5G investments are resulting in dominant positions in global rankings. In the just released report by OpenSignal (December 2020), KSA has stood on the second rank globally — and first within the Arab world — (amongst the 15 leading 5G markets surveyed) on a host of parameters. As these above finding show, users in Saudi Arabia are receiving the second highest real world 5G download speed (at 272.8 Mpbs) — behind only South Korea (which is enjoying 351.2 Mbps). This has ensured that the Saudi users experience the second highest bandwidth improvement — that by a factor of 9.1 times — which using their 5G services as compared to 4G. This too is only behind Thailand's 14.7 times improvement. Thus, from whichever angle it is evaluated, the Saudi 5G layout has established a formidable legacy and stamped its authority on the global footprint. It has taken a lot of planning and efforts from the telco stakeholders in Saudi Arabia to be able to foster such a dominant 5G position on the global map. Right from a supportive regulatory framework, to committed and proactive operators — all participants have played a part in this success. A few key reasons that have propelled Saudi 5G to its current position are analyzed here:

Generous Spectrum Allocations and Release

The Saudi operators were amongst the first wave globally to receive their 5G spectrums. Following an auction in March 2019, the regulator, Communication and Information Technology Commission (CITC) allocated equal amounts 100 MHz spectrum in the C-band range (between 3.4GHz – 3.8GHz) to all the three operators. This band is best suited for 5G development.

Supportive Regulatory Regime

In December 2018, the royalty fee that the telcos pay to the government was reduced from 15% to 10%. The fee reduction simulated the telcos to invests in expanding their infrastructure and make it '5G ready' suitably meet the growing demands for broadcast in the Kingdom.

Proactive Experience Tracking & Reporting

The CITC has inaugurated the 'Meqyas' is an initiative to proactively study, track and report on the various telecom parameters (such as total download bandwidth, gaming latency, network coverage etc.) from across the Kingdom. These reports, published quarterly, analyze Saudi Arabia's fixed and mobile broadband performance and thus motivate the telcos to perform better — thus improving the overall service quality across the Kingdom.

Competitive and Consumer Benefit Tariffs – Simulating Healthily Competition

The KSA has a very healthy and competitive tariff regime where the consumers are the ultimate winners. The telcos have been offering new innovative tariff structures to the consumer – moving away from offering only 'connectivity' to offering 'experiences' – loaded with video and gaming bundles. Further, the telcos are also launching 5G plans with multiple contract durations which is allowing users from all segments to enjoy the services — by easing the pressure on long commitments. All these above factors have ensured that the Saudi 5G roll-out can be considered successful and offers insights to be replicated elsewhere. The key drivers — as learnt from the Saudi analysis — for an effective 5G deployment is to develop sophisticated and richer consumer offers, backed up by high-performance networks and rapid, accurate service provisioning.

Sample Benchmarking from 'Meqyas' Quarterly Report

Source: Q3-2020 Report for Internet Speeds and Digital Content Access Speed in the Kingdom "Meqyas"

Saudi Arabia Looking to Adopt Egypt's E-Invoicing Model

Saudi Arabia is looking to adopt the electronic invoicing model implemented by Egypt which managed to be the first country in the MENA region to require taxpayers to issue electronic tax invoices. The Governor of the General Authority of Zakat and Tax (GAZT), Suhail bin Mohammed Abanmi, commended the efforts exerted by Egypt in this regard during a virtual meeting with the Egyptian Minister of Finance, Mohamed Maait, according to a statement on Sunday. Maait said that the e-invoicing system is a key step towards automating the tax declarations system, facilitating procedures for taxpayers, and combating tax evasion. Egypt is keen to share its experiences and provide technical support to help Saudi Arabia implement the e-invoicing system, he noted. On 15 November, the Egyptian Tax Authority required 134 companies of the top corporate taxpayers to issue electronic tax invoices. The second phase of making e-invoices obligatory, which will begin on 15 February 2021, will include 350 companies, while the third phase, which will start on 15 May 2021, will include the remaining top corporate taxpayers.

Oman's Innovation System Adjudged Best in Arab World

An innovation system aimed at students of higher education institutions in Oman has won the award for the best Arab government project for the development of education in the first edition of the Arab Government Excellence Award. Held under the supervision of the Arab Administrative Development Organization, a non-profit entity affiliated with the League of Arab States, over 5,000 government applications from several Arab countries vied for the award. Oman's innovation system aims to support and encourage innovators to use technology, provide them incentives, protect their intellectual property rights and help them find supportive bodies to establish new startups that add value to the national economy. The innovation system, which was launched by the Ministry of Manpower (formerly), aims to support the higher education sector - namely the technical and vocational colleges - through an open data portal linked to the sultanate's digital transformation strategies and its National Innovation Strategy. The portal has been designed to provide services to beneficiaries currently numbering 174,000. The services include an innovation acceleration program, innovation lab and a registration service aimed at enhancing students' participation with their entrepreneurial ideas and registering innovation requests. Oman's innovation system has also ensured sustainability by training more than 3,000 specialists and holding 100 workshops. Additionally, there are innovation units that have been established in technical colleges with the provision of the required resources and big data. With this, the culture of innovation has now spread to over 15 colleges and 45,000 students.

Telenor Launches Easypaisa QR Payments Service in Pakistan

Pakistan financial services provider Telenor Microfinance Bank, which operates the digital payments platform Easypaisa, has launched the Easypaisa QR payments service on the local market. Easypaisa QR code facility service users will be able to make payments using their smartphones. To use the service, customers should log in to their Easypaisa App, tap on the QR scan to initiate the scanner, scan the code, enter the amount of the bill, tap on 'next', check their payment details, and tap on pay now. Easypaisa also reports that, during the COVID-19 pandemic, more than 12,000 QR merchants have been on boarded on the digital payments platform to provide QR payment options to customers. In addition, under a current promotional campaign, Easypaisa customers can perform QR transactions of PKR 100 or more using the QR payment feature, to participate in lucky draw after which 4 customers will win a smartphone while one winner will receive a heavy bike.

5G Mobile Subscriptions to Reach 130 Million in MENA by 2026

A report by Ericsson Mobile Services expects the number of 5G subscriptions to reach 130m in the Middle East and North Africa (MENA) region by 2026, which represents 15% of the total mobile subscriptions. The commercial deployment of 5G technology began in the region in 2019 and 2020, with subscriptions to the new technology expected to reach nearly 1.4m by the end of 2020, especially in the Gulf Cooperation Council countries (GCC). Fady Pharaon, President of Ericsson Middle East and Africa, said during a virtual conference, on Monday, that the MENA region is expected to witness the highest growth rate in the monthly use of mobile data services over the next five years. This will lead to a 7-fold increase in the total traffic of data between 2020 and 2026.

BLOCKCHAIN

THE INTERNET OF TRUST ENHANCING CUSTOMER EXPERIENCE AND OPTIMIZING COSTS

New Business Models | Cost Optimization | Trusted Automation

CAPABILITIES

- Consent Management
- Digital Decentralized Identity
- Automated Reconciliation
- Automated Fraud Mitigation
- Reliable Auditing

SOLUTIONS

Consent as a Service | Identity as a Service | Cross Carrier Operations
Mobile Number Portability | Interconnect Wholesale | Roaming Agreements

85 Billion
Spam calls adversely impacting customer experience globally

$19.3 Billion
Is the market potential of the Self Sovereign Identity solution for operators

$36 Billion
Fraud losses that the telecom industry is struggling with globally

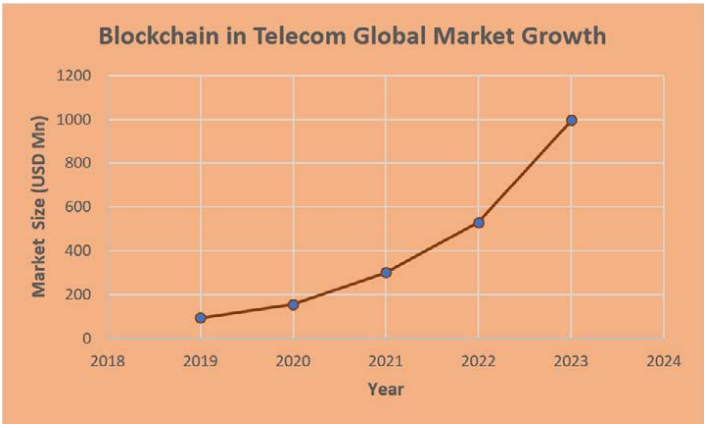
ARTICLE

Blockchain: Driving Revenues and Minimizing Spends for the Global Telecom Industry

Blockchain is a decentralized ledger that maintains immutable record of transactions that have ever happened in the network. Through encryption and consensus mechanism, blockchain provides high level of security and trust among the stakeholders.

From managing consent and preferences to stopping unsolicited communication to managing digital identities for KYC to eliminating fraud emanating in roaming and interconnect billing, blockchain has emerged as the 'go-to' technology to solve – age-old industry issues, drive growth, launch new products and services, and better still drive disruption in the industry. As one of the front-runners in driving global digital transformation agenda, blockchain is poised to bring new revenue streams and optimize costs for telecom operators and thereby create a significant impact.

Telecom operators are at the cusp of bringing-in a transformative change in the way we embrace technology. The same has been evident by the live implementations globally. In fact, the telecom sector is credited with implementing one of the biggest implementations of blockchain technology in the world with Telecom Regulatory Authority of India (TRAI) impacting more than



Source: Markets and Markets

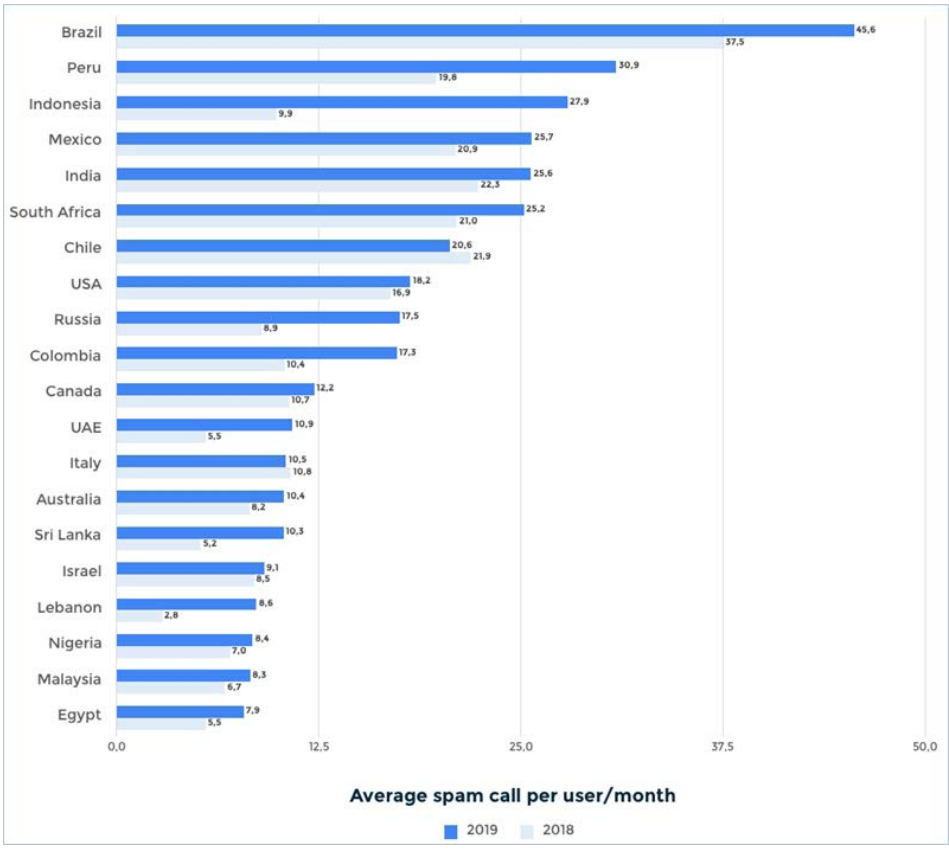
Rajesh Dhuddu
VP and Practice Leader
Blockchain and Cybersecurity
Tech Mahindra

1 billion telecom subscribers in India. With the ever growing spam communication across the globe, operators realize that they need to collaborate amongst themselves to manage this menace.

Up until 2016, about 230 Million subscribers in India had opted out from receiving commercial communication including unsolicited spam, both text and voice, but still they continued to receive it. The number was increasing by the day since unregistered telemarketers continued to spam customers by obtaining their consent through fraudulent tactics. The impact was not only limited to adverse customer experience but also led to financial losses for telecom subscribers, for example, the spammers would send unsolicited advice on buying and selling stocks to gullible traders resulting in significant losses.

Post implementation of this platform across operators, the subscribers are empowered to control the communication based on their preferences and consents. The platform allows subscribers to modify the preferences dynamically in real time, thereby enhancing the customer experience. Blockchain platform brings all operators to the decentralized ledger so that real time secured data exchange can happen across the stakeholders. The platform keeps the customer at the center and does communication based on the customer preferences and consents. Moreover, the platform leads to reduction in subscriber complaints and cost of compliance.

For the telecom sector, no time is more apt than now to leverage this opportunity and change the business model by providing 'Self-Sovereign Identity'(SSI-as-a-service) to their customers as it acts a gateway between businesses and subscribers.



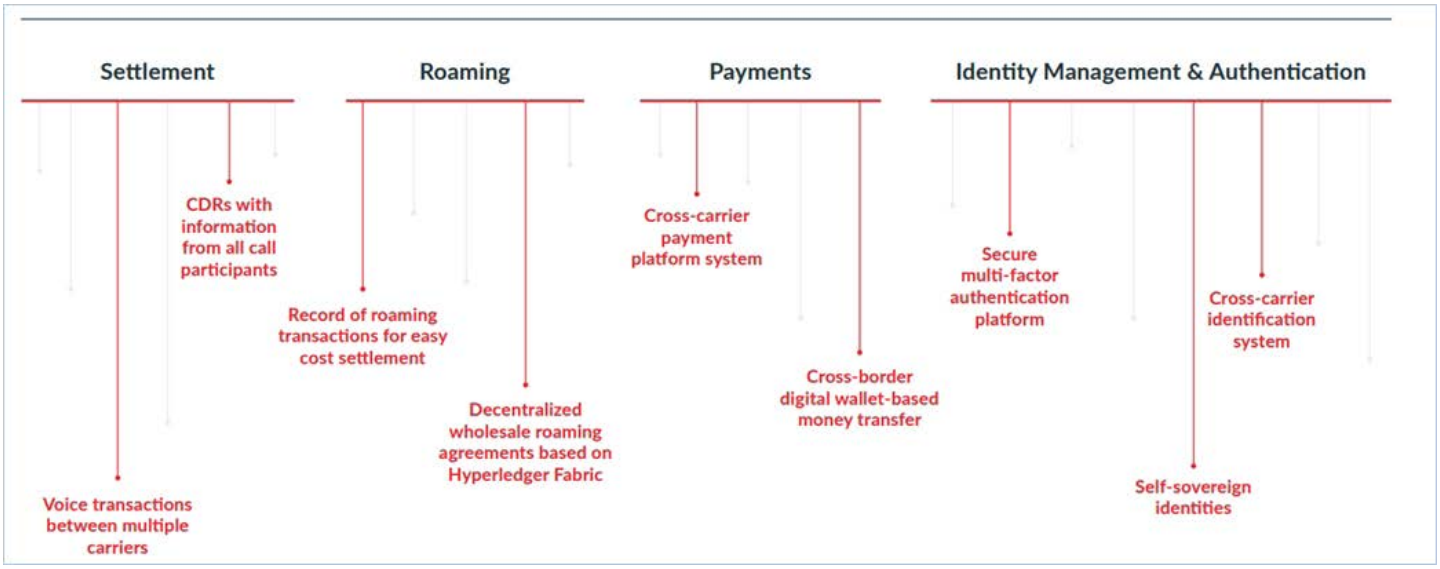
Source: Truecaller

Blockchain is a decentralized ledger that maintains immutable record of transactions that have ever happened in the network. Through encryption and consensus mechanism, blockchain provides high level of security and trust among the stakeholders. Due to these features, blockchain is secure from cyber-attacks. Additionally, it provides seamless and secure data exchange thereby enhancing operational efficiencies.

Though there are plethora of use cases that the operators can explore, the industry is prioritizing the implementation of use cases that bring in new revenue streams and reduce cost of operations. These include identity as a service, mobile number portability, interconnect wholesale reconciliation and fraud mitigation, and roaming settlements and frauds.

Operators are solely responsible for efficient management of their customer data and related challenges that may come with ineffective management or leakage of the same such as identity thefts, frauds, data breaches, and regulations. In this digital world, social media is so engraved in our lives that we are forced to give away our personal identifiable information such as name, date of birth, and address by trusting the service providers. For the telecom sector, no time is more apt than now to leverage this opportunity and change the business model by providing 'Self-Sovereign Identity'(SSI-as-a-service) to their customers as it acts a gateway

Blockchain in SSI gives full control to the identity owner by virtue of public key cryptography and opens plethora of opportunities for telecom sector. Additionally, it provides immutable trail of all the transactions including but not limited to creation, issuance, submission, and verification of identities.



Source: Accenture

between businesses and subscribers.

SSI provides a secure onboarding, credential issuance, authentication, and credential verification platform. It enables secure next generation logins such as password-less authentication enabled by biometric thereby reducing identity thefts, frauds, and breaches. Moreover, it empowers the identity owner to selectively disclose identity attributes that could be verified by zero knowledge proofs. This feature helps in reducing possibilities of data breaches. Since customer is the identity controller and not any third party, it complies with several regulations such as GDPR.

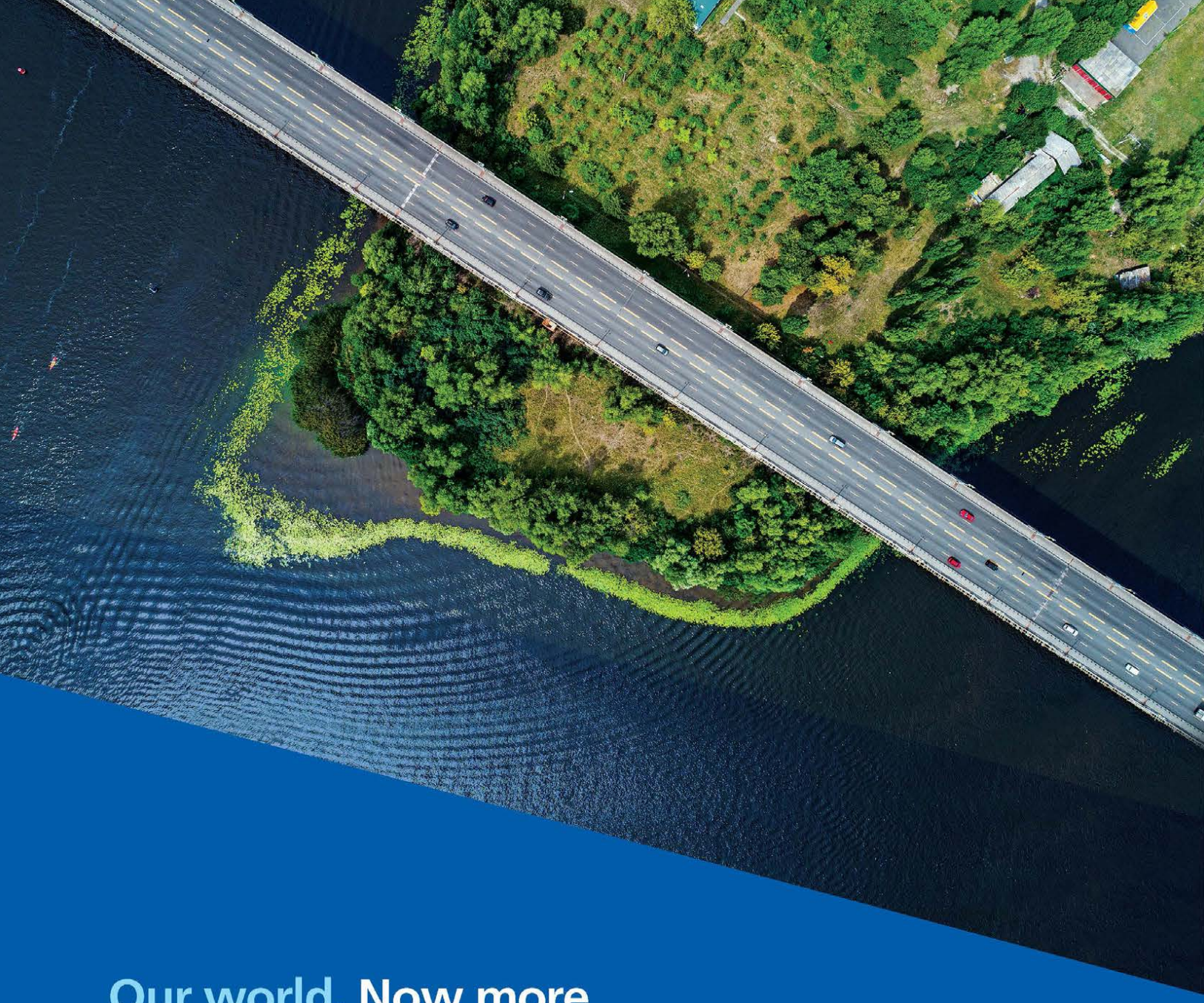
SSI would be a $19.3 Billion industry by 2023. With the platform potential of SSI, operators will not only remain communication service providers but also identity service providers. Blockchain in SSI gives full control to the identity owner by virtue of public key cryptography and opens plethora of opportunities for telecom sector. Additionally, it provides immutable trail of all the transactions including but not limited to creation, issuance, submission, and verification of identities. Hence, it ensures enhanced security of identities with full control to the identity owners.

Blockchain technology thrives on network effect. It means that the global operators must join hands in exploring and implementing use cases leading to business benefits. The operators should deliberate on their blockchain strategy, operating model, data governance & sharing standards, business models, partnerships, alliances, regulatory frameworks and core competencies.

With the evolution of eSIM, telecoms can provide eSIMs that offer virtual identities for devices, data, and users. These virtual identities can be leveraged to perform transactions among users, organizations, and connected devices. SSI will likely to be adopted in phases rather than in big bang. Telecom sector plays a crucial role in becoming agents of SSI adoption and acting as a bridge between subscribers and enterprises/governments.

Another major challenge that the telecom industry is grappling with are fraud losses worth $36 billion emanating from ineffective cross-carrier reconciliation. The billing reconciliation, dispute identification, dispute confirmation, dispute analysis & resolution, and CDR reconciliation are time consuming and cost intensive processes. With the estimated return on investment of 37% on the write offs due to these processes, operators can leverage blockchain for real time CDR reconciliation to enhance the visibility across the value chain and thereby reducing the cost of operations and frauds.

Blockchain technology thrives on network effect. It means that the global operators must join hands in exploring and implementing use cases leading to business benefits. The operators should deliberate on their blockchain strategy, operating model, data governance & sharing standards, business models, partnerships, alliances, regulatory frameworks and core competencies. They should implement use cases centered on their customers and subscribers by ensuring it leads to enhanced efficiencies and improved revenue streams.



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SATELLITE NEWS

UAE Satellite Falcon Eye 2 Launches into Space

The UAE's latest satellite, Falcon Eye 2, lifted off into space in the early hours of Wednesday from French Guiana Space Centre. A Soyuz rocket carried the satellite into orbit at 5.33am UAE time. It will operate as an Earth-observation satellite and provide images for critical missions, emergency relief, regional security and peacekeeping operations. It will also monitor environmental changes and alterations to geographical features. The satellite, which weighs 1,190 kilograms, separated from the rocket at 6.33am and was placed in a near-circular orbit 611 kilometers above Earth. As part of the Falcon Eye program, two identical satellites were built for the UAE Armed Forces. The first was Falcon Eye 1, which was lost in space last year after the Italian Vega rocket that carried it failed. The launch of Falcon Eye 2 was delayed a few times in the past couple of months because of bad weather and the Covid-19 pandemic. "We are proud in this moment and I'd like to thank my crew and to the Emirates for working side by side with their partner for five years," Khalifa Al Rumaithi, chairman of Falcon Eye program, said during a live stream by launch service provider Arianespace. "I confirm that tonight we've been successful with the Soyuz launch and Falcon Eye is in its targeted orbit," said Stephane Israel, chief executive of Arianespace. The spacecraft will provide high-definition images from around the world for military and civilian use. "The Falcon Eye system added lots of abilities to support the country's mission by maintaining the security of the country and the stability of the region," a senior official with the Falcon Eye project said. "It is really considered to be a capability owned by a few countries worldwide." The project began five years ago and the satellite was built by Airbus Defence and Space and Thales Alenia Space, in Toulouse, France. The UAE Space Agency oversaw its development. A diverse team that included Emirati, French and Russian officials was present for the launch. Many experienced engineers and technicians from the UAE Armed Forces are part of the Falcon Eye program. An Emirati team in France oversaw the project from there. "I'm honored that my country provided me with the chance to be part of this high technological program," an engineer said during the live stream. Another said it was exciting to see how the satellite "will bring value to our country". Philippe Pham, senior vice president of Earth observation, navigation and science at Airbus Defence and Space, said his team would hand over control of the satellite once they ensured it was fully operational. "We are proud to lead the industrial team and to be part of a very high-resolution Earth-observation mission for the UAE," he said. "Falcon Eye is a state-of-the-art satellite. But it's not just a satellite, it's a full space system, including the ground segment and the imagery processing capabilities. It will deliver top-quality observation imagery for the customer." Airbus trained the Emirati team to operate the satellite's systems. This will enable ground control in Abu Dhabi to retrieve images and intelligence reports. Michel Roux, Falcon Eye program director at Airbus, said this had been one of their longest launch campaigns because of the delays caused by the pandemic. "We started early this year, but the campaign had been stopped for several months," he said. "This is the year of Covid-19 and with lockdown, travel restrictions and the difficulty to work normally, it created several delays."

Abu Dhabi's Strata Seeks More Satellite Manufacturing Contracts as It Taps into Space Sector

Abu Dhabi's Strata, the manufacturer of composite plane parts, is seeking new space work packages in the UAE and abroad to produce satellite parts, in a move to further diversify its business at a time of uncertainty for global aviation. The company, owned by Mubadala Investment Company, is in talks with European satellite manufacturers on 3D printing and producing some components in the UAE, Ismail Abdulla, chief executive of Strata, told The National on Tuesday. Strata is also in discussions with the Mohammed Bin Rashid Space Centre (MBRSC) for additional projects after an agreement to make parts for the MBZ-Sat. "Our space ambitions are to be a local manufacturer of space systems in the UAE and for other entities in the world," he said. "The major aim is to localize space manufacturing, that's a step up for us in this market, and to diversify work packages." Strata's pivot into the space supply chain is part of Abu Dhabi's focus on high-technology manufacturing and the UAE's wider space ambitions. The move also underscores the company's efforts to diversify its operations following an earlier foray to produce personal protective equipment (PPE). This comes as the Covid-19 pandemic plunged the global aviation industry into its worse crisis but also drove demand for PPE. Strata's venture as a satellite parts maker builds on its aerospace experience as a supplier for the world's biggest planemakers Boeing and Airbus, Mr. Abdulla said. Its diversification into space is linked with the UAE's own plans to localize space manufacturing and the country's ambitious space plans. "We have the infrastructure, the footprint and some knowledge to build on so we want part of that story," Mr. Abdulla said. The executive said the company's plans to diversify into health-tech are progressing with the setup of a steering committee composed of Mubadala's healthcare unit, Strata and Cleveland Clinic Abu Dhabi to identify products in high demand that can be made locally. "Pace-makers are highly demanded, based on these discussions, and we're looking at opportunities for partners to bring in their expertise and we start manufacturing in the UAE," he said. Mr. Abdulla insisted that aerospace is still an important part of Strata's plans. The distribution of Covid-19 vaccines on a global scale will boost passengers' confidence in air travel, he said. "It will send the right signal for people who didn't want to travel because of Covid-19, it will give them the courage and comfort to take the vaccine and travel," he said. Given the lag time after the aviation industry recovers, it could take about two to four years for aircraft orders to pick up, he said. Next year will be "busy" for Strata, when it hopes to finalize aerostructures and space deals as it engages with several companies, he said. "2021 will be a solid year for Strata, the discussions we are having now are very positive and lots of entities are engaging with us to introduce in-country value," Mr. Abdulla said. In terms of financing requirements, Strata has secured loans from local banks for working capital this year and the next, he said, declining to provide details. The executive described his outlook for 2021 as "challenging but optimistic". The comments came after Strata said it delivered its first Boeing 787 vertical fin – a component that provides stability to the aircraft – to the Chicago-based planemaker. The delivery, made on December 2, marks the first 787 vertical fin fully assembled outside of Boeing's US facilities, Mr. Abdulla told an online press briefing. "With the Covid-19 pandemic, we faced some complications and challenges, but the team was able to deliver and finish the work on time," Mr. Abdulla said during the conference. "Now we celebrate the production of the 787-vertical fin during the most difficult time for the industry." Some 50 engineers and technicians are working on the 787 vertical fin production line and, once production ramps up, this will increase to 75 workers by the end of 2022. Strata Plus, the company's expanded manufacturing plant in Al Ain that assembles the 787 vertical fins, will also see robots working on the shop floor in future. Among Strata's research and development plans with Boeing, one project will be to introduce robotic drilling in vertical fin production, Mr. Abdulla said. Challenges of completing production during the pandemic included the logistics of sending Strata employees for training in Boeing's facilities in the US and applying strict health and safety regulations in its Al Ain plant. "When it came to the production line, the curveball with the pandemic was historic," Mr. Abdulla said. Strata signed the contract with Boeing for production of the 787 vertical fins in 2016 during the UK's Farnborough airshow. The vertical fin will be installed on 787 fuselages at Boeing's North Charleston facility in South Carolina starting in early 2021. To date, Strata has begun assembly of an additional five 787 vertical fin shipsets, it said in a statement on Tuesday. As part of Strata's 10-year partnership with Boeing, the UAE supplier also makes 777 empennage ribs, 787 vertical fin ribs and composite empennage ribs for Boeing's new 777X airplane.

Taiwan, Japan Partner to Develop Small Satellite

Taiwan and Japan are working together to develop a miniaturized satellite that is scheduled to be launched into space in 2022 and would validate two key technologies to be used in Taiwan's space program, a National Space Organization (NSPO) official said. The satellite, called the 6U Fast Validation CubeSat, is a joint venture between the space organization and the University of Tokyo's Department of Aeronautics and Astronautics, NSPO Deputy Director-General Yu Shiann-jen said. As part of the third phase of Taiwan's space program, it is designing high-resolution optical remote sensors and optical-mechanical systems that would be installed on high-resolution optical remote sensing satellites, Yu said. To make sure the two technologies can be used in space, the NSPO partnered with the University of Tokyo to design the 6U Fast Validation CubeSat as a validation platform, Yu said. The small, cost-effective satellites are ideal for academic use, Yu said. The 6U, or "six units" CubeSat, is expected to be 36.6cm long, 22.6cm wide and 10cm high. The completed 6U CubeSat is scheduled to be launched to the International Space Station in mid-2022 and be deployed at an orbital altitude of approximately 380km to 420km, Yu said. The University of Tokyo is in charge of the design of the CubeSat itself, while the NSPO is designing the remote sensors and optical mechanical systems. Two Japanese space service companies — Edge Lab Co Ltd. and Space BD — would be responsible for sending CubeSat into space, the NSPO added. The NSPO has said that it also plans to sign memorandums of understanding with Czech institutions to conduct space research.

Japan To Launch Satellite Made of Wood

Japan plans to orbit the world's first artificial satellite made out of wood in an out-of-the-box solution to the growing problem of space junk that's making low Earth orbit (LEO) a more dangerous place for astronauts. This stunning concept was announced by logging and construction company Sumitomo Forestry and Kyoto University, Japan's second-oldest university and famous for producing world-class researchers. Japan's and the world's first wood satellite has a tentative launch date set for 2023. The partners said they'll conduct research on using wooden materials in space environments. This project is part of their plan to promote technologies using wood in extreme environments on Earth and space. They'll also conduct research on building wooden structures in space environments as a first step to erecting future Japanese bases on the Moon or a space station in Earth orbit. Sumitomo Forestry plans to develop wooden construction materials highly resistant to the elements, as well as temperature changes and sunlight, to make these ambitious projects possible. Choosing wood for a satellite's body comes with many advantages compared to using aluminum, aluminum alloys, or kevlar. For one, wood doesn't block electromagnetic waves or the Earth's magnetic field, as does aluminum. This advantage enables satellite equipment such as antennas and

attitude control mechanisms to be stored inside the wooden satellite's shell, allowing for a simpler structure. Also, when a wooden satellite de-orbits and re-enters the Earth's atmosphere, it will burn-up completely compared to metal satellites, some of whose metal parts will survive re-entry to strike the Earth's surface. On the other hand, a wooden satellite will be destroyed by the fiery re-entry without releasing harmful substances into the atmosphere. Sumitomo Forestry and Kyoto University face almost insurmountable challenges in producing the special wood capable of surviving space's extremely destructive environment. This means their wood must remain stable despite the presence of radiation and the vacuum of space. Experts acknowledge the most important properties of any new material to be used in space are strength and stiffness. Some types of wood exhibit these properties on Earth, but engineering wood to survive space is another matter altogether. The wood to be developed by Sumitomo Forestry and Kyoto University will have to maintain its size and shape, or dimensional stability, despite extreme temperature changes. Aluminum alloys, kevlar, and other materials used in space are among the most advanced materials ever developed.

Filipino Satellite Makers Arrive in Japan For Testing Phase of Cubesats Maya-3, Maya-4

The first batch of scholars of the Space Science and Technology Proliferation through University Partnerships (STeP-UP) has arrived in Japan for the testing phase of their own cube satellites. The scholars, who are under the Space Technology & Applications Mastery, Innovation and Advancement (STAMINA4Space) program led by the University of the Philippines (UP) Diliman, have been in the East Asian country as early as Dec. 21, as per the said program's announcement on Facebook the next day. Under the said program, they were able to build the first locally made cube satellites, which were named Maya-3 and Maya-4. The scholars were trained in the first-ever Master's in Engineering in Electrical Engineering program, with a special focus on nanosatellite engineering, at the UP Electrical and Electronics Engineering Institute with the help of its partner, the Kyushu Institute of Technology (KyuTech) in Japan, according to UP's release on Nov. 23. Maya-3 and Maya-4, which weigh barely over a kilogram each, "can contribute considerably to the country's economic, territorial, and disaster risk reduction efforts," UP stated. Also under the STAMINA4Space program, which is funded by the Department of Science and Technology (DOST), the first Filipino-made nanosatellite named Maya-1 returned only last month after two years of orbiting the Earth. The said program "aims to continue and build up the research and capacity building activities from the PHL-Microsat Program on satellite development and operation in the country," as stated by UP on its website. The Philippines started investing in space programs back in 2012, an effort that eventually led to the establishment of the Philippine Space Agency last year, DOST Undersecretary for Research and Development Dr. Rowena Cristina Guevarra noted in her Dec. 8 talk at the Space Engineering International Course at KyuTech.

Ethiopia Launches Second Chinese-Backed Satellite

An Ethiopian official disclosed Ethiopia has launched its second Chinese-backed satellite. Yishrun Alemayehu, Deputy General Director of Ethiopia Space Science and Technology Institute (ESSTI), said the satellite which was launched on Tuesday has high advanced resolutions and capable pictures to capture pictures in a clearer way. The satellite abbreviated as ET-Smart-RSS was launched from China Wenchang spacecraft launch site. "Preliminary design was conducted in Ethiopia, while detailed and technical works were undertaken in collaboration with Chinese experts in China through zooming and other platforms," Alemayehu told the state-owned daily newspaper Ethiopian Herald. "The 8.9 kilograms nano satellite is a great achievement of Ethiopia in a number of ways. The institute will keep on working to further strengthen the effort in technology transfer and human development," he further said. The satellite preliminary design was done in Ethiopia, while the technical and detailed design was conducted by a joint Ethiopian-Chinese engineers' team. In December 2019, Ethiopia launched its first ever satellite abbreviated as ETRSS-1 with support from the Chinese government. The 72 kg multi-spectral remote sensing satellite, which is stationed in 700 km away from earth, is monitoring the environment and weather patterns for better agricultural planning, drought early warning, mining activities and forestry management of the country. In recent years, China has forged partnership in developing Ethiopia's space science sector, whereby it has closely worked with Ethiopia's Ministry of Innovation and Technology (MoIT) to train Ethiopian space engineers as well as help in the launch of micro-satellites.

Russia Lifts 36 UK Telecom Satellites into Orbit

A Soyuz rocket blasted off from the Vostochny Cosmodrome in Russia's Far East, putting into orbit 36 UK telecommunications and internet satellites, the Roscosmos space agency said. The launch was the first and only one to take place from the cosmodrome this year, Roscosmos told AFP. The rocket took off at 1226 GMT, the space agency said, carrying satellites made by the British-based company OneWeb. Nearly five hours later space agency chief Dmitry Rogozin said that all the satellites had reached their intended orbit. "The mission has been successfully completed. Congratulations!" he said on Twitter. Originally planned for April, the launch was delayed after OneWeb collapsed and was forced to declare bankruptcy. Last month, the UK government and Indian telecommunications giant Bharti took control of the company, investing 500 million U.S. dollars a piece. The London-headquartered company is working to complete the construction of a constellation of low earth orbit satellites providing enhanced broadband and other services to countries around the world. OneWeb's first six satellites were launched by a Russian-made Soyuz rocket from the space center in Kourou in French Guiana in February 2019. The company launched 34 more in February this year from the Baikonur launch site in Kazakhstan, then another 34 in March. OneWeb plans for its global commercial internet service to be operational by 2022, supported by some 650 satellites. "Today's launch will be the first fully commercial spacecraft launch from the Vostochny Cosmodrome," Roscosmos said earlier in the day. "It will also be the first launch operated by the European launch services provider Arianespace for the company OneWeb from the first Russian civilian spaceport." The Vostochny launch site is one of the country's most important space projects, designed to reduce reliance on the Baikonur space center Russia currently rents from Kazakhstan.

Helical Antenna Deployed for Satellite IoT Network

The first helical antenna system from Oxford Space Systems (OSS) has been deployed in low earth orbit (LEO) for an IoT satellite. The antenna is used in a CubeSat developed by Nanoavionics for a constellation to link the Interne of Things (IoT) run by UK-based Lacuna Space. Lacuna Space, also based near Oxford, UK, is building a constellation of IoT gateways in LEO that enable ground-based sensors to connect to the internet from remote areas using an open source low power wide area network (LPWAN) protocol. The OSS deployable helical technology allows the antenna to be stowed efficiently for launch and provide optimized RF performance from an orbit of 500km. The successful deployment of the OSS helical antenna was confirmed when signals were received by ground stations as expected, finalizing the commissioning phase of the satellite. Lacuna is using a second OSS helical antenna on a PSLV rocket launched from India. The satellite is currently undergoing the same sequence of in-orbit tests. “This represents a key milestone for OSS as it continues to execute the strategy to be the leading global deployable antenna company for Space. Not only is this our first successful deployment of an antenna, but our second successful hardware deployment this year and our fourth in total. We continue to develop and deliver our range of antenna products which give leading performance capabilities with low launch mass and small stowage volumes," said Sean Sutcliffe, CEO of OSS. “Through a combination of well proven mechanical principles, thorough material characterization and innovative design, the OSS team have developed a cost-effective and highly scalable antenna which can be customized to operate over a wide frequency range. We are proud to contribute to Lacuna Space's ambition to build an IoT Gateway and we look forward to working together toward a full satellite constellation," said Juan Reveles, CTO. CEO, this satellite will greatly boost the Lacuna network capacity and extend customer trials to additional market segments. Examples for applications include pre-dictive maintenance and tracking of heavy machinery in remote areas. Automating the dispatch of replacement parts, scheduling resources where needed and minimizing down time. “It is great to announce another successfully commissioned satellite on our path to the full constellation. Our plans have been somewhat delayed by the COVID-19 pandemic but despite the challenging times, we were able to proceed and this latest mission entered the network in under 10 months from Lacuna Space placing the satellite order. Now, as the launch back-log is flowing again, we are expecting several additions to the demonstration network in the near future," said Rob Spurrett, CEO of Lacuna Space.

Satellite Broadband on the Boom

Satellite broadband services took a step forward in recent days with Germany handing over frequencies to SpaceX and rival player OneWeb launching three dozen new satellites. German telecoms regulator the Bundesnetzagentur on Friday announced it has issued spectrum usage rights to SpaceX for its Starlink satellite system. The Elon Musk-owned company plans to provide satellite broadband across the world via a network of many thousands of satellites. To date, there are around 1,000 Starlink satellites in orbit, but the firm has secured permission from the FCC for a fleet of 12,000, and that's just the initial phase of the deployment. The company has launched a trial satellite broadband service in North America and is aiming for a full launch next year. Germany will be an important European market for Starlink, since it has a fair-sized addressable market of homes and businesses without high-speed broadband access. BNetzA has allocated spectrum both for the satellite network and for several earth stations in Germany that effectively function as gateways to the Internet. It did not specify how much spectrum it has awarded Starlink, nor the frequency bands, but confirmed that the initial allocation is for a period of one year only, since it relates to a brand-new satellite network; this will enable it to make regulatory adjustments ahead of a longer-term frequency allocation. "We created the spectrum-related legal framework so that broadband Internet can be provided via satellite in Germany," said BNetzA President Jochen Homann, in a statement. "This is the first spectrum assignment for a mega-constellation of satellites with a very large number of low earth orbiting satellites," the regulator added. It confirmed that there are certain conditions attached to the spectrum allocated to Starlink designed to ensure interference-free operation and co-existence with other services in the same and adjacent frequency bands. It will publish more details on the spectrum allocation in the upcoming issue of its Official Gazette later this week. Starlink was also among the list of winners in the Australian mmWave spectrum allocation process last week. The Australian Communications and Media Authority (ACMA) revealed it had awarded spectrum licenses in the 26 GHz and 28 GHz bands to all 15 companies that applied for them, including the country's major telcos, equipment makers and a handful of satellite companies: Starlink, OneWeb's WorldVu, Inmarsat, Viasat, O3B/SES and New Skies Satellites. There are a number of companies taking a punt on satellite broadband services – the ACMA's list is far from exclusive – and the headlines are coming thick and fast for some, particularly the UK's OneWeb. OneWeb, which was famously bailed out by the UK government and Bharti Global to the tune of $500 million the autumn, has launched an additional 36 satellites, taking its total in orbit to 110. The company said the latest launch will put it on track to offer services to customers starting with the UK, Alaska, Northern Europe, Greenland, Iceland, the Arctic Seas and Canada next year, followed by a global expansion in 2022. "Each launch moves us closer to our goal of building this much needed global, secure, trusted, enterprise-grade broadband network, powered from space. We look forward to offering our commercial services to global users," said Neil Masterson, CEO of OneWeb, in a statement. The statement included banalities from the government about its role in proceedings, plus the usual comments about the global demand for broadband and the impact of Covid-19 from Sunil Bharti Mittal, Founder and Chairman of Bharti Enterprises. "OneWeb's system will help meet existing and future demand by delivering broadband connectivity to communities, towns, and regions left unconnected or under-connected," Mittal said. That there is a market for satellite broadband is not in doubt. But regulatory hurdles, technology standards and economics are all hurdles that have yet to be fully overcome. And, as those involved in this market well know, history is littered with the remains of satellite companies that couldn't quite make it work. Times have changed since the high-profile failures of the 1990s, but this is not an easy market to conquer.

Spacex to Launch Satellite Broadband in Greece Next Year

Starlink, the broadband satellite internet service of SpaceX, is expected to launch in Greece in the first quarter of next year. A report from Kathimerini says that the firm has already applied for a licence from the National Telecommunications & Post Commission (Ethniki Epitropi Tilepikoinonion kai Tachydromeion, EETT). The Starlink service will have a nationwide footprint and offer download speeds of up to 150Mbps. While existing Greek ISPs such as Cosmote use VDSL to provide speeds of up to 200Mbps, there are many areas which lack coverage.

Spacex Satellite Internet Starlink Being Tested in Remote Areas of Canada

Elon Musk's new satellite internet service is being tested by some Canadians in rural and remote parts of the country. It's supposed to give them a good quality, high-speed internet connection, but it's not cheap and some say the low-orbit Starlink satellites are ruining their view of the night sky. When Vernon Kejick got a first taste of Starlink satellite internet on the Pikangikum First Nation, his initial review was succinct. "All I can say is it's a lot faster than what I had before," he said. Kejick's response highlights a long-running disparity that may finally have met a resolution. Starlink, the new high-speed internet service provided by Elon Musk's U.S.-based SpaceX firm, and recently approved by the CRTC, does have drawbacks. It's expensive. And stargazers fear it will ruin the night sky. But for users in rural and remote areas who've long struggled to obtain internet access on equal footing with Canadians in urban areas, Starlink is offering hope. The service was recently made available to select users for "beta testing," with the promise of wider availability in 2021. In Pikangikum, a fly-in community of 2,800 residents in northwest Ontario, Kejick said he'd become accustomed to download speeds of only 2 megabits per second — a fraction of the 50 megabits per the second the federal government considers a standard minimum for broadband. At work, Kejick couldn't open large email attachments. He described the service as "deplorable." At the end of November, Pikangikum became the first Indigenous community to get connected to Starlink, with 60 dishes reserved for homes and businesses in the community in the initial phase of installation, and potentially another 40 by the end of December. Now, Kejick said his devices have been reaching 144 megabits per second. Not only can he quickly download attachments, Kejick said his wife has finally been able to chat with relatives in the Philippines over FaceTime. "It's as if you're sitting in the same room," he said. In Pikangikum, however, Starlink could offer more fundamental changes. Kejick, a victim services advocate with the Ontario Ministry of the Attorney General, said he hopes victims of crime will now be able to testify virtually, lessening the burden on them. Members of the remote Ojibwe community hope the faster internet will remove barriers to access virtual healthcare services and education, too. "It's doing everything that people are asking it to do," said David Brown, CEO of FSET Information Technology in Kenora, Ont. His firm had been working with Pikangikum for several years to try to improve their connectivity. When he heard about Starlink, Brown jokingly promised his staff he would directly contact SpaceX's Musk — who recently surpassed Microsoft founder Bill Gates as one of the world's richest people, second only to Amazon CEO Jeff Bezos. Brown didn't reach Musk, but he did secure dozens of dishes for Pikangikum. FSET recently helped install the first batch. And the result, Brown said, was better than he expected. Starlink is "a wonderful thing," he said. "It's going to change the world for people." Across Canada, only 40.8 per cent of rural communities have access to adequate broadband, according to federal data. Greg Rekounas, a database administrator who has long worked from home, said he contacted various service providers and could never find suitable broadband for his house on New Brunswick's Kingston Peninsula, near Saint John. The quality of his home connection suffered under the strain of increased streaming and surfing during the pandemic. So when he heard about Starlink, he signed up in November to become one of the company's Canadian beta testers. Rekounas received an email saying he'd been selected, and received the installation kit within days.

China to Build Over a Million New 5G Stations Next Year

Chinese telecom carriers have managed to build more than 600,000 new 5G base stations this year, in addition to about 100,000 5G stations built in 2019, said Wu Hequan, an academic at the Chinese Academy of Engineering. The country's telecom carriers are likely to build more than a million new 5G base stations next year. That would bring the total number of 5G base stations in China to more than 1.7 million by the end of 2021, Wu told the China Daily. "As the construction of 5G networks accelerates, the cost of building each 5G base station will go down. Even if Chinese telecom carriers earmark the same amount of 5G investments in 2022 as they have done this year, they can build far more 5G base stations next year than this year," Wu explained. "I believe Chinese telecom carriers will build more than one million 5G base stations next year, though the specific construction targets will have to wait for the telecom carriers' official announcements," he added. According to him, 5G services are at the moment available in all Chinese cities at prefecture level and above. China's Ministry of Industry and Information Technology said in October the country will continue to build 5G networks "moderately" ahead of schedule.

Sateliot received ITU's OK to Launch Smallsat Constellation Comprising as Many as 100 Small Satellites

The International Telecommunication Union (ITU) has given Sateliot the green light to start coordinating the frequencies of its smallsat constellation with telecoms operators. Sateliot is thereby taking a further step toward their goal of democratizing the Internet of Things (IOT) with 5G coverage through a constellation of as many as 100 nanosatellites; devices that will function as telecommunication towers from space providing an extension of coverage to telecommunication companies where terrestrial networks cannot reach. Once this first procedure with the body in charge of defining the use of the terrestrial and satellite spectrum has been completed, the company will start a round of talks with the space operators and the relevant public administrations to ensure the compatibility of their frequencies so that telecommunications companies can access the roaming service provided by the smallsats. The ITU is not the only body that has endorsed Sateliot, as the 3GPP (3rd Generation Partnership Project) working group for non-terrestrial IoT networks — which brings together leading representatives of the telecommunications industry and other non-governmental organizations for the definition of the new 5G standard — has recently agreed to take Sateliot's proposal up for discussion for final decision at the next meeting scheduled for January. In particular, the company proposes to include in the definition of the standard a scenario for LEO nanosatellite networks providing IOT services. The space sector is experiencing a new paradigm in which the size of electronics, costs and times are being reduced, giving rise to a real "democratization of space," with more competitive innovation cycles and more possibilities of deploying not one but tens or hundreds of satellites progressively to provide services on a global scale. In defining the standards, it is important to take into account that, if previously only large geostationary devices the size of a bus, developed over decades and priced between 100 and 500 million, it is now possible to offer connectivity through satellites the size of a microwave, developed in a matter of months and priced between 1 and 5 million. This means that New Space is configured as one of the great motors of the economy, due to its high added value, its capacity to generate employment and large investments in the coming years, which will be called upon to drive the recovery. In fact, in Spain alone in 2019, this sector moved nearly one billion euros and contributed 0.5% to the national GDP. Moreover, Spain is in the top five European countries by number of employees in this industry, according to TEDAE figures.

Hybrid 5G/Satellite Testing Facility to Open in UK Next Year

A facility for testing 5G and satellite technology is to be created at the Harwell Campus in Oxfordshire, with £3m in government funding. The engineering hub, which is due for completion in 2021, will provide a base for UK researchers and businesses to experiment, and will allow teams to test the benefits of hybrid 5G and satellite communications networks. The hope is that once the technology is demonstrated, the techniques can be rolled out to other businesses across the UK. The center is being backed by a European Space Agency contract, and will be carrying out a project to see whether rural communities can be connected to 5G in the most affordable way possible. Currently, the limited range of 5G antennas means the networking standard will be mostly confined to high density population areas like cities, meaning that many rural locales will lose out, at least in the short term. Huawei initially provided much of the infrastructure needed to supply 5G, but the UK Government ultimately banned its involvement due to the firm's close ties with the Chinese State. This last minute change could threaten to delay the nationwide rollout of 5G. "This year staying connected has taken on a new profound importance – from keeping in touch with loved ones and competing in Zoom quizzes, to helping us tackle Covid-19," said science minister Amanda Solloway. "This new state of the art facility backed by Government funding will enable our brightest researchers and engineers to better understand how 5G can help connect us all, creating new business opportunities, while delivering green efficiencies across the UK." Elodie Viau, director of telecommunications at ESA, said: "ESA's novel 5G Hub will showcase how space technology enables connectivity, partnering with industry to foster innovation in the realms of autonomous vehicles and smart cities, and to enable machines to exchange information with one another via the Internet of Things." "Adding satellites to existing terrestrial 5G infrastructure is essential to ensure a reliable and safe telecommunications network that supports such connectivity, which in turn promotes a seamless and more environmentally friendly experience. Investing in space improves life on Earth." This UK is keen to be a global leader in 5G due to the potential billions in economic gains that this could provide. Last month, the Government acquired bankrupt firm OneWeb which is launching a satellite constellation up into space with the ultimate goal of beaming broadband-speed internet back down to Earth.

Spacex Secures FCC Rural Broadband Funding

Aerospace company SpaceX was awarded almost $1 billion from a Federal Communications Commission (FCC) rural broadband fund, boosting the company's plan to deliver internet connectivity from a fleet of Low Earth Orbit (LEO) satellites.

It received $885.5 million in a reverse auction for the FCC's Rural Digital Opportunity Fund (RDOF), a $9.2 billion pot the US regulator stated would help deliver high-speed broadband to more than 5.2 million unserved homes and businesses. Chairman Ajit Pai hailed the auction as "the single largest step ever taken to bridge the digital divide". SpaceX will receive the funding in monthly instalments over the next decade: it is required to cover a total of 642,925 locations across 35 states. The win is significant because there was previously a debate over whether the company should be allowed to participate due to concerns over its ability to provide low-latency service: the FCC reluctantly approved its inclusion in June. Other winners include rural internet provider LTD Broadband ($1.3 billion); cable operator Charter Communications ($1.2 billion); and the Rural Electric Cooperative Consortium utility group ($1.1 billion). The RDOF is distinct from a $9 billion 5G Fund for Rural America unveiled in 2019, which is yet to be allocated. CNBC previously reported SpaceX launched a public beta of its Starlink service in October.

Rocket Lab Successfully Launches Satellite for Japanese Startup Synspective

Rocket Lab has completed its 17th mission, putting a synthetic aperture radar (SAR) satellite on orbit for client Synspective, a Tokyo-based space startup that has raised over $100 million in funding to date. Syspective aims to operate a 30-satellite constellation that can provide global imaging coverage of Earth, with SAR's benefits of being able to see through clouds and inclement weather, as well as in all lighting conditions. This is

Synspective's first satellite on orbit, and it took off from Rocket Lab's launch facility on the Mahia Peninsula in New Zealand. It will operate in a sun synchronous orbit approximately 300,000 miles from Earth, and will act a a demonstrator of the startup's technology to pave the way for the full constellation, which will provide commercially available SAR data avails both raw, and processed via the company's in-development AI technology to provide analytics and insights. For Rocket Lab, this marks the conclusion of a successful year in launch operations, which also saw the company take its key first steps towards making its Electron launch system partially reusable. The company did have one significant setback as well, with a mission that failed to deliver its payloads to orbit in July, but the company quickly bounced back from that failure with improvements to prevent a similar incident in future. In 2021, Rocket Lab will aim to launch its first mission from the U.S., using its new launch facility at Wallops Island, in Virginia. That initial U.S. flight was supposed to happen in 2020, but the COVID-19 pandemic, followed by a NASA certification process for one of its systems, pushed the launch to next year.

Viasat Acquires Rignet, Expands Satellite Service Range

Viasat's global satellite mobility services offering now includes a major off-shore component. The company agreed to acquire RigNet, a provider of networking services to the oil and gas industry, in an all-stock deal valued at $222 million including assumption of debt. RigNet's successful track record, global footprint, deep customer relationships and emerging technology expertise in areas like machine learning and artificial intelligence (AI) make this transaction an ideal fit as we launch our integrated global broadband platform. The deal immediately adds more than 650 customers at 1,200 onshore and offshore sites and 11,000 IOT devices to the Viasat portfolio. The customer base also offers broad geographic diversity. With more than 50 countries covered the footprint can help Viasat as it looks to a broad deployment of its solutions under the global coverage of the upcoming ViaSat-3 constellation. Viasat President and CEO Rick Baldridge also suggests that Viasat will take advantage of RigNet's efforts in digital transformation services, including machine learning and artificial intelligence. By combining the strong gains in bandwidth efficiencies expected from the impending ViaSat-3 constellation and RigNet's portfolio of services, Viasat will become a leading vertically-integrated energy communications provider with deep domain and customer expertise. Baldridge notes that "diversification into other verticals is a key aspect" of Viasat's plan to deliver profits from the ViaSat-3 constellation. Expansion into this industry was inevitable and RigNet offers an entry at a compelling price point and allows Viasat to have an immediate impact in that segment. Moreover, the RigNet offerings, particularly in its AI-powered video monitoring and IOT segments, deliver outsized benefits to customers and the provider alike. Baldridge describes them as "technologies help the customers save money in their core operations, more than the cost of the communications. So it is a win for the customers and for us." Beyond the existing oil and gas industry customers, Viasat and RigNet see expansion into adjacent industries including mining, shipping and maritime.

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WHOLESALE NEWS

ARCEP Adopts New Decisions on Fixed Broadband Wholesale Market

French telecoms watchdog ARCEP has adopted a series of decisions, updating the regulatory framework for the fixed broadband sector following the completion of a market analysis program that lasted more than a year and included dialogue with operators, the competition authority and the EC. According to ARCEP, the decisions are aimed at facilitating the migration from the legacy copper network to fiber whilst maintaining pro-investment regulation and energizing the business market. The watchdog notes that it is aiming to complete the switchover from copper to fiber within the next ten years and to that end has opened the possibility of a commercial switch-off prior to the technical switch-off, with the new regulations setting the terms and conditions for doing so. Although fixed line incumbent Orange France has confirmed its intention to begin deactivating the copper network from 2021, ARCEP notes that the telco's plans are 'far from fully established' and has encouraged the operator to provide clarity on its plans as soon as possible. The decisions include several asymmetric regulations that apply only to the provider with significant market power (SMP), namely Orange France. These were the definition of several relevant markets, including obligations for the SMP, and the imposition of maximum tariffs that Orange can charge for access to its copper local loop during the period from 2021 to 2023. The relevant markets are: a separate civil engineering market, for the wholesale provision of access to physical civil engineering infrastructure for the deployment of communications networks; wholesale access provided at a fixed location (Market 3a), including unbundling of the local copper loop and sub-loop and passive offers for the provision of optical fiber; wholesale central access provided at a fixed location (Market 3b); and wholesale quality access provided at a fixed location (Market 4), including offers specifically intended for corporate end user sites or network elements. ARCEP also adopted a decision to implement symmetric regulation of the fiber market, with the regulator having determined that there is healthy competition in the segment. Highlighting the progress in the fiber market, the regulator noted that the availability of fiber-to-the-home (FTTH) products has risen from 11% in 2017 to nearly 88% in Q2 2020.

Cityfibre Confirms Wholesale Deals with Four More ISPs

British pure fiber provider CityFibre has announced the signing of wholesale deals with four more ISPs, with these to offer services over its fiber-to-the-premises (FTTP) network. In a press confirming the development, CityFibre named its new ISP partners as Air Broadband, HighNet, Triangle Networks and Trunk Networks, saying that each has committed to acquiring 'significant volumes' of new customers in towns and cities across its networks. All four ISPs are reportedly already mobilizing in preparation for what CityFibre termed 'imminent' consumer launches, with it also noted that some of the four – though it did not specify which – have chosen to do so under newly-created consumer brands. In terms of initial coverage areas, Air Broadband will at first provide services over the CityFibre network in Cambridge, Ipswich, Bury St Edmunds and Lowestoft, while in Scotland, HighNet will launch consumer services in Inverness before expansion across other Scottish markets. In the South of England, Triangle Networks will offer its services in Milton Keynes, with Trunk Networks to begin by marketing its full fiber services in Eastbourne and Worthing, before adding new locations across the South. Commenting on the matter, CityFibre CEO Greg Mesch said: 'CityFibre has always set out to be the spark that will drive competition in the market – at both the infrastructure and retail layer. As we welcome four more partners to our growing full fiber networks, we are seeing that competition brought to life. In just over two years, we have created a competitive ecosystem for ISPs that will result in greater choice for ISPs, better services for consumers and a better outcome for the entire country.'

Zong 4G Introduces Matchless Saudi Arabia International Roaming Offer

Country's connectivity and digital services leader, Zong 4G, has introduced a matchless international roaming offer for customers traveling to the Kingdom of Saudi Arabia. The offer is in continuation of Zong 4G's industry-leading international roaming solutions to help Pakistanis stay connected with friends and family back home on their travels abroad. Through the offer, Zong 4G's prepaid customers can get 35 minutes and 1 GB of data at an affordable price of just PKR 999 + tax. The extended validity of 90 days also makes Zong's KSA international roaming bundle better than any other offer currently available in the market. "Saudi Arabia is like a second home to Pakistanis besides being a religious center," said Zong 4G's official spokesperson. "Pakistanis frequently travel to KSA for work, or for Hajj and Umrah. Facilitating their connectivity with their loved ones in Pakistan as they travel is Zong 4G's priority. We will continue enhancing our roaming portfolio through more innovative products and services for our customers." Zong 4G's international roaming offers have been helping traveling Pakistanis to never lose connection with their friends and family back in the home country. Especially during the first Covid-19 crisis and now amid the pandemic's second wave, these offers have proven instrumental for traveling Pakistanis. Prior to the Saudi Arabia bundle, Zong has introduced prepaid roaming offers for China, Saudi Arabia, UAE, Turkey, and other countries.

Wi-Fi Roaming Survey Finds Support for WBA Standard

Seventy-nine percent of service providers, equipment manufacturers and enterprises have or plan to adopt the Wireless Broadband Alliance's OpenRoaming Wi-Fi standard, according to a Wi-Fi roaming survey from WBA. The organization describes the standard as initiative to make "the world [into] a single, giant Wi-Fi network, allowing billions of people and their devices to connect automatically and securely to millions of Wi-Fi networks."

Wi-Fi Roaming Survey

Other findings in the report:

- 95% of respondents in the communications industry said that Wi-Fi 6 or Wi-Fi 6E will be important to their business and 65% say that they have deployed or will deploy Wi-Fi 6/6E by the end of 2021.
- 67% said that the convergence of Wi-Fi 6 and 5G would be very important or critical to their future business plans.
- Roaming is the top monetization strategy for 2021 and 45% put it in their top three. It is followed by offload (38%) and analytics (32%).
- Fifty-seven percent believe that multi-access edge computing (MEC) will lead to new use cases for Wi-Fi.
- Fifty-six percent say the smart cities sector is the top target as a primary vertical use case for Wi-Fi. This is followed by retail (39%) and education or campus networks (39%)

The technology has moved into the spotlight, according to the organization. "There was a time, not so long ago, that when we discussed the potential for Wi-Fi roaming or the convergence of Wi-Fi 6 and 5G, we were met with blank stares," WBA CEO Tiago Rodrigues said in a press release. "Now, it's the complete opposite. Across the comms industry, we're seeing excitement building around these trends. 2020 has been a difficult year for everyone and this reinforces the role of Wi-Fi during the pandemic to keep everyone connected." It's easily possible to guess what Rodrigues meant by 2020 being a difficult year. He also more directly addressed the ongoing COVID-19 pandemic. Lockdowns have shifted traffic from offices to homes and many cellular and broadband providers are experiencing "massive, sustained" increases in residential traffic. He credits Wi-Fi in these areas with keeping the situation from becoming bleaker for businesses and people.

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TECHNOLOGY NEWS

Gigabit Connectivity Now Available to Over a Quarter of UK Premises, OFCOM Reports

Gigabit connectivity is now available to one in four UK premises, according to data published by local telecoms regulator OFCOM in its 'Connected Nations 2020' report, which analyses the availability of broadband and mobile services across the UK and each of its nations. A total of 7.9 million homes and businesses (27% of the country's total) were reported to be able to sign up to a broadband service capable of offering downlink speeds of up to 1Gbps as of 1 September 2020, though the regulator noted that in most UK nations, gigabit-capable coverage remained higher in urban areas than rural ones. Meanwhile, full fiber broadband is now said to be available to 5.1 million homes (18%), up eight percentage points (or 2.1 million premises) when compared to September 2019, with OFCOM noting that this was 'the highest year-on-year increase seen so far' in terms of access to full fiber technology. With regards to access to superfast broadband – defined as a connection offering downlink speeds of at least 30Mbps and up to 300Mbps – OFCOM noted that 96% of premises are now able to take up such a service, and it estimates that around 60% of the homes and businesses able to have done so. At the other end of the scale, OFCOM reported that 0.6% of the UK's premises (around 190,000) still lack access to a 'decent' broadband connection (i.e. one offering 10Mbps download and 1Mbps upload speeds). However, it has suggested that the broadband universal service obligation (USO) launched in March 2020 will help in this regard, while saying it expects around 16,000 properties could receive a universal service connection, without additional costs needing to be met by the customer. Away from fixed broadband, the Connected Nations 2020 report also offered up information regarding the nation's mobile connectivity. According to OFCOM's findings, the number of mobile base stations providing 5G services had risen ten-fold, to around 3,000 across the UK at 1 September 2020. Of these, 87% were in England, 7% in Scotland and 3% in both Wales and Northern Ireland. Mobile coverage was, meanwhile, reported to be 'generally stable', with the nation's four mobile network operators – EE, O2 UK, Three UK and Vodafone UK – each estimating they provided outdoor coverage to between 98% and 99% of premises, while geographic coverage was said to range between 79% and 85%. OFCOM noted, however, that the Shared Rural Network (SRN) program which all four cellcos agreed to in March 2020 is expected to extend geographic coverage, particularly in rural areas, by 2025.

Teltronic Supplies TETRA Communication System in Oman

Teltronic says it has supplied tech consultancy Indra with a TETRA (terrestrial trunked radio) digital radio communications system at Duqm airport in the Al Wusta region of Oman. The new system will allow communication among runway, terminal and emergency and security staff, contributing to significantly improve the operations at the airport. Teltronic has designed an integrated and customized system that meets safety and reliability needs for the airport environment, where there is a high density of users in a limited area, and there are different operational groups, requiring maximum coordination levels. Teltronic deployed its Nebula infrastructure, whose components are designed and manufactured at the company's facilities in Zaragoza, Spain. The system includes a Switching Control Node (SCN), responsible for providing network intelligence; radio access to ensure coverage to the whole complex; and a Network Management System (NMS) to configure and operate the system. The system includes almost 100 hand portable and mobile radios that, in order to reinforce security levels to the maximum, provide end-to-end encryption, guaranteeing the complete privacy of both voice and data communications between the sender and receiver of messages.

South Korea's 5G Network Speeds Up in H2

South Korea's 5G download speed and overall quality improved in the second half of the year from the first half as the country races to deploy nationwide coverage of the latest generation network, according to a report. The average download speed on the high-speed network from the country's three major mobile carriers -- SK Telecom Co., KT Corp. and LG Uplus Corp. -- stood at 690.47 megabits per second (Mbps) in the second half of the year, up 33.91 Mbps from the first half, according to data from the Ministry of Science and ICT. SK Telecom had the fastest average download speed at 795.57 Mbps, followed by KT at 667.48 Mbps and LG Uplus at 608.49 Mbps. The country's average 4G LTE download speed reached 153.1 Mbps, more than four times slower than the average 5G speed. The ministry publishes data on mobile network quality biannually to encourage network investment by mobile carriers. South Korea was the first country to commercialize 5G in April last year and has quickly built up a significant 5G user base of nearly 10 million as of end-October, around 14 percent of the country's total 70 million mobile subscriptions. The network, however, has faced quality issues, such as limited coverage and slower-than-expected speeds, prompting more than half a million 5G users to switch to 4G LTE through August this year, according to Rep. Hong Jung-min of the ruling Democratic Party. The latest report found that the network's quality and accessibility improved compared to the first half of the year. Users could stably connect to the latest generation network on average 90.99 percent of the time in public locations equipped with 5G, compared to 67.93 percent of the time in the first half of the year. Devices also switched to 4G LTE from 5G during downloads 5.49 percent of the time on average compared to 6.19 percent in the first half of the year. Average 5G latency, however, stood at 30.62 milliseconds, similar to 34.59 milliseconds on 4G LTE, according to the report. Hong Jin-bae, director general of the ICT ministry's telecommunications policy bureau, said in a briefing that the relatively high latency on 5G is likely due to South Korea's use of non-standalone 5G, which requires support from 4G LTE. "We are encouraging mobile carriers to transition to standalone 5G, and while they have yet to make announcements, we understand that such plans are making progress," Hong said. Coverage for the latest generation network grew as the number of subway stations across the country equipped with 5G network by the three carriers rose to 424 on average as of November, compared to 313 in July. The report also found that public facilities, such as malls, theaters and hospitals, which had 5G coverage by the three carriers reached 3,486 on average across 85 cities. South Korea is aiming for nationwide 5G coverage by 2022, and the three major carriers have promised to spend up to 25.7 trillion won ($24 billion) in total to update network infrastructure by that year.

Vodafone to Test 5G Mobile Networks in Egypt

Vodafone CEO Nick Read has said that the company intends to start experimenting with 5G mobile networks in Egypt's New Administrative Capital due to its modern infrastructure. According to a statement by the Egyptian presidency, this came during a meeting between Egyptian President Abdel Fattah El-Sisi and the CEO of the global group. The statement said that the meeting discussed joint cooperation with Vodafone in the communications and information technology sector. This is in light of the group's experience in communications and digital transformation and reliance on technological systems in managing new facilities and cities, which represent a fundamental pillar within the framework of the state's plan for digitalization and comprehensive development in Egypt. Read said that the balanced path that Egypt had taken in dealing with the coronavirus contributed to preserving economic, commercial and service activity in the country and to achieving positive growth rates. Vodafone would explore opportunities to experiment with fifth generation (5G) mobile networks in the New Administrative Capital due to its modern infrastructure and the presence of the Misr Informatics University, which is the only one of its kind in the Middle East and Africa. Read said that Egypt was one of the most important markets for Vodafone global and played a major role in supporting digital transformation and financial inclusion in Egypt to achieve Vision 2030, adding that the Egyptian market added significantly to Vodafone's global presence in Africa. It was possible for Vodafone Egypt to become the center of the African continent and lead the digital transformation with its expertise, he said. President El-Sisi said that the state was keen on constructive cooperation with international companies with long-standing experience as partners for development in Egypt, including the promotion of Vodafone Group's global investments in Egypt.

Softbank Corp Selects Nokia for Standalone 5G Core

Nokia has announced that Japanese mobile network operator (MNO) SoftBank Corp has selected the vendor's cloud-native 5G Core software to enable the launch of standalone (SA) 5G services in Japan. In a press release, Nokia said the solution will 'help support new consumer and enterprise use cases, such as immersive experiences (VR/AR/MR), fixed wireless access, video surveillance and analytics, cloud robotics and connected vehicles with a standalone 5G Core in global markets. While delivering greater scalability and reliability, Nokia's cloud-native 5G Core will also allow the MNO's subscribers to benefit from 5G's improved performance when it comes to lower latency, increased bandwidth and massive device connectivity. SoftBank will reportedly deploy the Cloud Mobility Manager and Cloud Mobile Gateway products to support massive scale, performance and reliability required for the delivery of 5G services, it said, as it looks to move into the next phase of its 5G transition.

Telefonica Pilots Open RAN in Live Operation

Telefonica Deutschland claims it has become the first German network operator with Open RAN in live operation on its mobile network. In a pilot phase with Japanese vendor NEC, Telefonica is converting three O2 mobile sites in Landsberg am Lech in Bavaria, and from autumn 2021 the company plans to roll out the new technology, which breaks up vendor dependency in the RAN, on a larger scale in the O2 network. According to Telefonica, Open RAN is more software-based, which will significantly simplify and accelerate base station upgrades, while less fixed infrastructure will need to be replaced or exchanged, as updating the software will largely suffice. All of Open RAN's components will be modular and flexible, leading to cost savings of up to 30% in the RAN. 'Our goal is to offer our customers the most technologically advanced and best network. With Open RAN, we are focusing on the future and are technological frontrunners in Germany,' commented Markus Haas, CEO of Telefonica Deutschland, adding: 'In addition, Open RAN offers us maximum flexibility in deployment and also in the subsequent replacement of system-critical components. On the basis of such technological approaches, we can secure and further accelerate digitization in Germany.'

NEC Sets Up Open RAN Lab in India

Japan-headquartered NEC set up an open RAN laboratory in India to strengthen its capabilities and accelerate global deployment of 5G. In a statement, the vendor said the facility will speed development of its "5G open ecosystem by pre-integrating partners' open RAN components to form end-to-end commercial products according to customer-specific needs". "The lab also will be responsible for post deployment troubleshooting, life-cycle management" and ongoing integration. Initial partners include Altiostar, GigaTera Communications and MTI. NEC said it plans to expand its ecosystem by adding new partners to "accelerate operators' commercial adoption of open RAN". Last month, the company established a global open RAN center of excellence in the UK to support its project delivery capability. The company said the center is responsible for business and product development support, project execution and technical support, and is designed to help operators worldwide introduce open RAN. NEC's 5G business took a significant stride when Rakuten Mobile selected it as an equipment supplier in mid-2019. In June, Japanese operator NTT announced it would acquire about a 5 per cent stake in NEC for JPY60 billion ($577.2 million) and establish an R&D alliance covering next-generation network technologies.

Docomo, Qualcomm Launch Sub-6GHz 5G CA

NTT Docomo and Qualcomm claimed a global first after activating carrier aggregation (CA) on the operator's 5G network using two sub-6GHz spectrum bands, delivering peak downloads speeds of 4.2Gb/s on Snapdragon 865-equipped devices. In a statement, the companies said the commercial CA deployment combined 100MHz of spectrum in the 3.5GHz band and 100MHz in the 4.5GHz band to boost 5G performance and network capacity. Docomo CTO Naoki Tani said the operator is "pleased to begin delivering this advanced and groundbreaking mobile technology to our customers nationwide". He added the pair's efforts had established "a new standard of possibility for the industry" which, in turn will "help initiate a new era of connectivity in Japan". Durga Malladi, general manager of 4G and 5G at Qualcomm, added: "By providing access to breakthrough technologies like 5G carrier aggregation, we are enabling consumers and companies throughout Japan to access faster connectivity, enhanced capacity and better reliability." Docomo launched its 5G service in late March and aims to have 2.5 million subscribers by end-March 2021.

O2 UK Announces Successful O-RAN Tests

British mobile network operator (MNO) O2 UK has successfully piloted the integration and operation of Vilicom's Open RAN (O-RAN) infrastructure, it has announced. In a press release regarding the development, O2 UK said that it had enhanced indoor mobile connectivity for its business customers over Vilicom's Connectivity-as-a-Service (CaaS) network platform. The company claims to be the first MNO to work with Vilicom to trial this technology and it reportedly plans to connect the pilot rollout to its live network next year. Vilicom's infrastructure is said to have been developed in partnership with Mavenir using its Cloud RAN technology 'aligned to the JOTS Neutral Host In-Building connectivity model', and unlike legacy solutions, is a fully digital business model. Meanwhile, it has been suggested that the CaaS network platform will streamline operations, rapidly reducing the cost and space requirements of inbuilding 4G and 5G public and private mobile connectivity for the UK's industries and businesses. O2 UK's business customers within the coverage area of Vilicom's CaaS network are expected to benefit from an enhanced network service, including improved voice quality and data speeds. Commenting, O2 UK's CTO Brendan O'Reilly said: 'Mobile connectivity is playing a vital role in rebuilding Britain and O-RAN technology presents an opportunity to provide better mobile coverage across the UK. We continue to invest in delivering the best possible network and are excited to be working with Vilicom to enhance indoor coverage for our business customers. O-RAN integrations such as this are an integral part of our commitment to deliver the best network experience for our customers, where they need it most.'

T-Mobile CR and AGC Glass Test Transparent Glass Antennas

Prague-based T-Mobile Czech Republic and AGC Glass Europe have successfully completed initial tests of a new type of antenna for what are being termed 'WAVEATTOCH' mobile networks — which are designed to be installed directly on glass facades or windows of houses. With T-Mobile CR looking to improve coverage and increase the capacity of mobile networks, including 5G, the deployment of WAVEATTOCH is seen as a means of achieving this, especially in historic city centers, where the standard placement of conventional antennas on the walls of houses is unsuitable. In a press release, the mobile network operator (MNO) noted: 'The antennas were tested together with another original solution – WAVETHRU thermal insulation window glass, the surface of which is specially modified for easier passage of the mobile signal. The WAVETHRU reduces the attenuation of the mobile signal ten to a hundred times (depending on the frequency band of the signal) while maintaining all its key thermal insulation properties. The novelty has the potential for use not only in the construction industry, but also in other buildings where thermal insulation glass with a metallized layer is used – for example, in modern railway wagons.'

Free Mobile Boosts LTE-A Speeds up to 780Mbps

Free Mobile, a subsidiary of the Iliad Group, has begun an upgrade of its LTE-A network to enable it to offer maximum download speeds of 780Mbps, reports UniverseFreebox, citing a company source. The higher speeds, which are available across selected areas of France, have been made possible through the rollout of 4×4 MIMO and 256 QAM technologies. In order to access the higher data rates, customers in coverage areas require a compatible handset. Previously, the theoretical maximum speed offered by Free Mobile was 450Mbps.

5.5G, From Internet of Everything to Intelligent Internet of Everything

At the recent 2020 IEEE Global Communications Conference (IEEE GLOBECOM), upon invitation, William Xu, Huawei Director of the Board and President of the Institute of Strategic Research, delivered a keynote speech entitled The Future of Intelligent Connectivity: Challenges and Directions. IEEE GLOBECOM is one of the major annual academic conferences organized by the Institute of Electrical and Electronics Engineers (IEEE) to promote comprehensive innovation of communications. In his speech, Mr. Xu described 5.5G as "the next step towards realizing our vision for the mobile industry, which is to meet the requirements for the transformation from the Internet of Everything to the Intelligent Internet of Everything." He also called upon the entire industry to embrace academic diversity and openness and expand the collaboration between industry, academia, and research institutes to jointly promote the development of basic theories and technologies.

5.5G Is the Next Step for the Mobile Industry

The development of 5G depends on investment in the short term, ecosystem in the medium term, and technology evolution in the long term. During 5G's rapid commercial scale-up, the feedback from both within the industry and from vertical industries promotes the upgrade and expansion of 5G applications to provide more diversified connections with improved quality and "bring the society from the Internet of Everything to the Intelligent Internet of Everything". "5.5G is the next step in our vision for the mobile industry," said Mr. Xu. It is an enhancement and extension of the three standard 5G scenarios defined by the ITU — enhanced Mobile Broadband (eMBB), Massive Machine-Type Communications (mMTC), and ultra-reliable low-latency communication (URLLC). 5.5G will further transcend these three application scenarios with three newly introduced capabilities — Uplink Centric Broadband Communication (UCBC), Real-Time Broadband Communication (RTBC), and Harmonized Communication and Sensing (HCS), going beyond the original three application scenarios to six to meet various industry requirements. Mr. Xu went on to highlight the three technological requirements to develop 5.5G. "5.5G is originated from 5G and therefore must be compatible with all 5G devices. We must optimize the usage patterns of sub-100 GHz spectrum resources to support on-demand flexible deployment across frequency bands. 5.5G must also be deeply integrated with AI to improve air interfaces, networks, and services while meeting the requirements for diversified networks and energy consumption management."

Rise to New Challenges and Push the Limitations of Theoretical Frameworks

Driven by strong requirements imposed on AI, connection speeds will increase by 20 times and computing capability by nearly 100 times by 2030. This means enormous challenges for the mobile industry in continuously improving connectivity and computing capability. Mr. Xu also emphasized the urgency and importance of finding new theories and building the mathematical foundations that can break through the theoretical framework to enable more data to be exchanged within limited bandwidth and increase connectivity and computing efficiency. New technologies, such as semantic communications, AI federated learning, and approximate computing, have already shown the society their potential in enabling them to achieve this. Semantic communications seemed unattainable for more than 70 years until machine learning made it not only a possibility but also an emerging topic of development. If realized, the "Shannon theory" of semantic communications will enable the transfer of a terrific amount of information only with a few bits. AI federated learning enables algorithm training to be widely distributed onto a startling number of nodes to achieve a higher performance, avoiding the transfer of local data to ensure privacy. As the adoption of 5G continues to scale up, the convergence between communications and computing will steadily grow to accelerate the maturity of AI federated learning. Approximate computing offers the industry a new way of balancing power consumption and performance with an approach different from traditional computing. This technology will significantly improve energy efficiency with well-balanced accuracy and approximation.

Academic Diversity and Openness Promote the Development of Basic Theories and Technologies

Connectivity constitutes the cornerstone of the ICT industry, and we can never overestimate the power of connectivity. Now, the society is so dependent on the connectivity that it has already become a necessity in our lives and the fabric of our society. The Intelligent Internet of Everything requires all parties to promote the technological development of 5.5G and other technologies together through collaboration between industry, academia, and research institutes. We must continue to uphold this idea of openness and diversity to build and share digital ecosystems. Before concluding his speech, Mr. Xu also called on the industry to seize the opportunity of digital transformation and build an intelligent world together.

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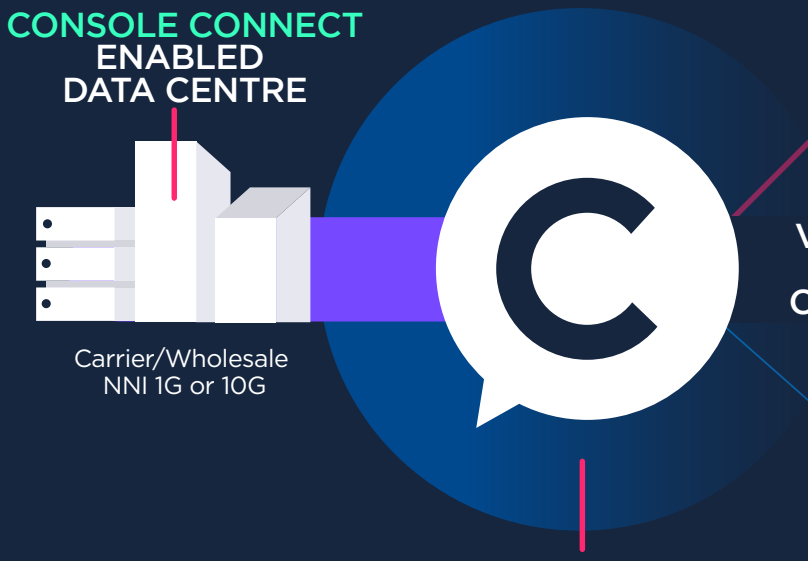

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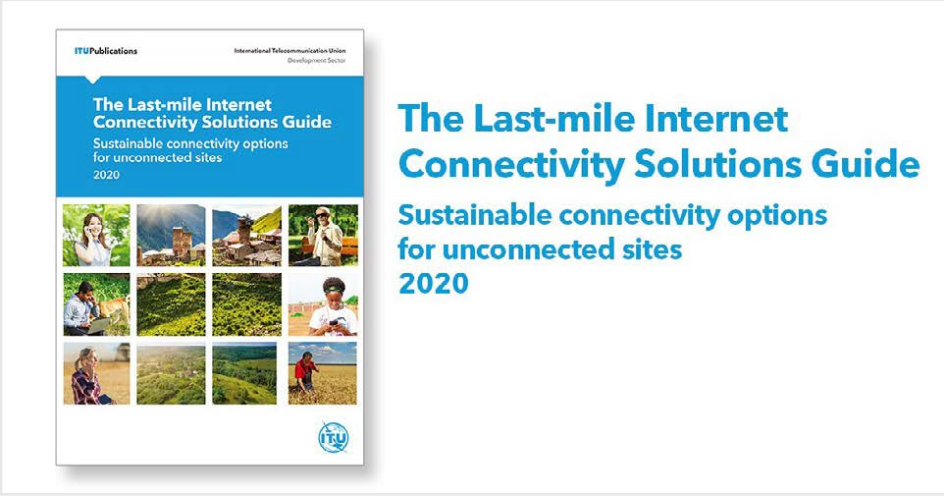
REGULATORY NEWS

ITU Launches Open Research Group on Autonomous Networks

The International Telecommunication Union (ITU) – the United Nations specialized agency for information and communication technologies (ICTs) – has launched a new Focus Group to support the emergence of ICT networks able to control their behavior autonomously in the interests of efficiency. Participation is open to all interested parties. The ITU Focus Group on 'autonomous networks' will lead an exploratory 'pre-standardization' study to determine how ITU standards will support the realization of autonomous networks and their evolution in years to come. "ITU standards incorporate the latest advances in technology whilst taking account of the associated implications for business dynamics to allow industry players to advance together," said ITU Secretary-General Houlin Zhao. "Innovation towards autonomous networks calls for an evolution that is viable both technically and economically and ITU standards have a long history of enabling such an evolution." Networks are growing in sophistication to enable highly interactive new communication experiences and innovations in fields such as digital health and intelligent transport systems. IMT-2020/5G and future networks will be versatile all-round players able to meet the requirements of a very diverse set of ICT applications. This versatility is made possible by major advances in cloud computing and network virtualization – the software revolution reshaping the networking business – but this versatility also introduces significant network complexity. Artificial intelligence (AI) and machine learning are expected to play a key part in managing this complexity, especially in meeting new demands on network management and control as these demands exceed the capabilities of humans as well as pre-defined automated processes. "As the demands on communication networks have grown through increased user subscription and new service expectations across industry sectors, network operators must find new ways to address these pressures while at the same time controlling operational cost," said the Chair of the Focus Group, Leon Wong, Research Engineer at new ITU member Rakuten Mobile. The complexity of the latest network architectures has created the motivations for autonomous networks, but these architectures also create the conditions necessary to integrate 'creative intelligence' techniques into 5G and future networks. "Creative intelligence techniques can provide a new layer of abstraction, introducing an evolution mechanism as a catalyst for autonomy," said Wong. Autonomous networks would display the 'self' properties: the ability to monitor, operate, recover, heal, protect, optimize and reconfigure themselves. These networks could autonomously adapt and improve management and control, but also self-evolve through online experimentation to enable better compositions of controllers and controller hierarchies. The Focus Group will study the creative intelligence techniques that leverage this online experimentation, elaborating foundational concepts such as 'exploratory evolution', 'emergent behavior', and 'real-time responsive experimentation'. It will study the meaning and characteristics of autonomous networks, providing definitions and terminology to build clarity around the concepts underpinning creativity in autonomous networks. It will propose technical enablers for evolution in autonomous networks to support networks' dynamic adaptation to future ICT environments and use cases. And it will demonstrate architecture concepts and develop associated guidelines to enable higher levels of autonomy through real-time responsive experimentation. The group is expected to make a key contribution to the coherence of innovation towards autonomous networks by offering an open platform for the collaboration of standardization and open-source communities and all industry players and academia active in the field. ITU Focus Groups accelerate ITU studies in fields of growing strategic relevance to ITU membership. They establish a basis for related international standardization work in ITU Study Groups. The ITU Focus Group on 'autonomous networks' will report to ITU-T Study Group 13 (Future networks and cloud) , maintaining the momentum built by the ITU Focus Group on 'machine learning for future networks including 5G'.

New ITU Publication to Help Policy-Makers to Extend Internet Access and Use to Unconnected Communities



Despite the meteoric growth of the Internet and broadband connectivity, 3.7 billion people remain offline and are excluded from the direct benefits of the global digital economy, says a new publication just released by the International Telecommunication Union, The Last-Mile Internet Connectivity Solutions Guide: Sustainable connectivity options for unconnected sites. While there are multiple constraints on Internet access and use, the Solutions Guide addresses those posed by gaps in infrastructure coverage and service affordability. The low return on investment in network deployment in sparsely populated areas means that, in many developing countries, connectivity is largely limited to urban areas, leaving rural and remote areas totally cut off. Moreover, even when telecommunication networks are present, access to the Internet may be limited by prohibitively high prices, and lower-income individuals and families may be priced out of connectivity. Offline populations are particularly concentrated in least developed countries (LDCs), where according to latest ITU data, only 19 per cent of individuals were online in 2019. Regionally, in Africa and Asia-Pacific, less than half the population is online: 29 and 45 per cent respectively. "The time is ripe to rethink the positioning of broadband infrastructure development and deployment in national priorities," said ITU Secretary-General Houlin Zhao. "This Solutions Guide is an important step towards helping regulators and policy-makers everywhere unlock the infrastructure investments needed to achieve universal and affordable broadband." A number of ITU programmes will use this guide to help design and implement sustainable connectivity solutions, including Giga – a joint initiative between ITU and UNICEF to connect every school to the internet, and every young person to information, opportunity and choice. As Giga works with countries to develop their country plans for school connectivity, the Solutions Guide and forthcoming diagnostic toolkit will be essential in helping to determine the most appropriate solutions. "Giga welcomes the Last Mile Connectivity Solutions Guide as an important resource in its efforts to work with governments to connect every school to the internet," said Doreen-Bogdan Martin, Director of the ITU Telecommunication Development Bureau. "The fact that 3.7 billion people are still offline underscores the urgency of advancing universal connectivity and this Solutions Guide is an indispensable tool that will facilitate the efforts of ITU membership and stakeholders to extend broadband access to all citizens and communities, wherever they may live."

What does the Solutions Guide offer?

Written from the perspective of localities and users in areas without Internet access, the Solutions Guide contains tools, service interventions and policy solutions that can help policy-makers to select and customize appropriate solutions to extend Internet access to their localities, taking into account their unique characteristics. The guide is divided into four main steps that outline the planning and policy development phases of interventions to encourage infrastructure deployments:

1. Identify digitally unconnected and underserved regions;
2. Review options from existing solutions;
3. Select sustainable solutions that best fit the given situation;
4. mplement interventions to extend sustainable connectivity service.

The guide draws on lessons learned by governments, service providers, technology vendors, international organizations, multilateral development banks, bilateral donors, academia and others over the past 30 years. It is intended to be a living, active guide that is continuously updated and revised. In addition to the Solutions Guide, ITU is developing a range of resources to help Member States address last-mile connectivity challenges, including a database of case studies and interactive last-mile connectivity diagnostic and decision-making tools. It also offers capacity-building services and assistance on design, planning and implementation, including identifying unconnected areas and providing expert guidance on the selection of sustainable technical, financial and regulatory solutions.

What is last-mile connectivity?

Last-mile networks, also known as access networks, are defined as places where the Internet reaches end users and end-user devices. This sets them apart from middle-mile networks (also known as backhaul), which connect a national backbone network (or core network) to a point in outer regions or geographic areas, thereby extending service for broader distribution to the last mile. National backbone networks are high-speed, high-capacity networks connecting a country's larger population centers and are usually the first point of connection for international Internet traffic.

ITU And UN-Habitat Partner to Accelerate Digital Transformation of Cities and Communities

Cities are home to 3.5 billion people, half of humanity, and this figure is projected to rise to 5 billion by 2030. Government, industry, academia and civil society are working together to accelerate the digital transformation of cities and communities to meet today's challenges and challenges to come. A new Memorandum of Understanding (MoU) between the International Telecommunication Union (ITU) and the United Nations Human Settlements Program (UN-Habitat) highlights their mutual commitment to collaborate in support of the innovation required to achieve the New Urban Agenda and the United Nations Sustainable Development Goals (SDGs). ITU is the United Nations specialized agency for information and communication technologies (ICTs). UN-Habitat is the United Nations program for human settlements and sustainable urban development. The MoU supports the collaboration of ITU and UN-Habitat to advance human rights, promote social inclusion and achieve sustainable urban development. It supports the organizations in encouraging responsible investment and financing for smart city projects as well as inclusive dialogue around the support offered by digital technologies and related standards and guidelines. The leadership of ITU and UN-Habitat welcomed the new MoU at a Virtual Forum on the Digital Transformation of Cities and Communities, co-organized by ITU and UN-Habitat on 7 December 2020. "From climate change to the COVID-19 pandemic, ICTs offer new solutions to the challenges facing cities and communities across the world," said ITU Secretary-General Houlin Zhao. "With this new collaboration agreement, ITU and UN-Habitat are committed to reducing spatial inequality and poverty in communities - as well as strengthening climate action in urban environments - to promote social inclusion and achieve sustainable urban development." UN-Habitat Executive Director Maimunah Mohammad Sharif observed that: "Digital technologies and data offer new ways for urban managers to make informed decisions and strategic choices. We need to build digital capacity and digital public infrastructure to ensure that the benefits of the digital revolution leave no one behind. By bringing together UN-Habitat and ITU, we have the potential to build the real people-centered smart cities of the future." The MoU is a new step in the collaboration of ITU and UN-Habitat, building on initiatives such as United for Smart Sustainable Cities (U4SSC), an initiative supported by 17 United Nations partners with the aim of achieving SDG11: 'Make cities and human settlements inclusive, safe, resilient and sustainable'. This shared experience is now supporting a UN system-wide effort led by UN-Habitat to develop an Urban Monitoring Framework to strengthen the links between the national and local monitoring and reporting processes supporting sustainable urban development. The effort benefits from cities' experience with U4SSC Key Performance Indicators for Smart Sustainable Cities based on ITU standards, indicators that have been adopted by more than 100 cities to evaluate their progress towards smart city objectives and the SDGs. The world's three leading standards bodies ITU, the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) have established a Joint Task Force to coordinate international standardization for smart cities. The Joint Task Force will engage all stakeholders to ensure that standards bodies capitalize on synergies to develop comprehensive standardization solutions for smart cities. ITU standardization work for 'Internet of Things (IoT) and smart cities' is led by ITU-T Study Group 20. The standards developed by the group provide technical foundations for smart city innovation, helping cities to innovate efficiently and at scale. An important aspect of this work is the development of standards supporting sustainable urban development.

ITU Calls for Rural Coverage Action

International Telecommunication Union (ITU) Secretary-General Houlin Zhao pointed to connectivity gaps in rural areas as one of the most pressing global issues in the wake of Covid-19 (coronavirus), calling for accelerated network infrastructure deployments to address the problem. Commenting on an ITU report on mobile connectivity in developing nations, Zhao said swifter deployment of infrastructure is "one of the most urgent and defining issues of our time". He noted the pandemic had made the issue more pressing, given a large portion of people are working and studying from home. ITU data showed rollouts of mobile networks have been slowing gradually since 2017, with the body stating coverage this year is "only 1.3 percentage points higher than 2019". It cited a gender divide, lack of skills and affordability as other obstacles to "meaningful participation in a digital society". This was found to be especially true in developing markets "where mobile telephony and internet access remain too expensive for many". The ITU revealed 19 per cent of people living in rural areas in the least developed countries were covered by a 2G network only, while 17 per cent lacked any access to mobile coverage.

CITC, ITU's Spectrum Innovation Webinar Tackles Pressing Policy Issues

The "Radio Spectrum for IMT-2020 and Beyond: Fostering Commercial and Innovative Use" event, co-organized by the International Telecommunication Union (ITU) and the Communications and Information Technology Commission (CITC) of Saudi Arabia, concluded with a wide participation of dozens industry experts from over 20 countries. The speakers gave their thoughts on the latest spectrum innovations and opportunities for policy makers, to over 5000 virtual attendees. The three-day webinar came at a critical time for digitalization and spectrum management. The COVID-19 pandemic has moved work, education, healthcare and social life onto digital platforms, which require large amounts of spectrum uptake and strong digital infrastructure. Minister of Communications and Information Technology Abdullah Alswaha, acknowledged the importance of addressing the growing global digital divide, saying, "We are potentially looking at a polarization between the connected and unconnected worlds. "Today, lack of digital infrastructure means that kids might not receive the right education while households could be prevented access to basic healthcare, clean water and energy, among other needs. This is why it is so critical for us to come together as the greatest thinkers and doers in the world in the spectrum arena and find policy solutions to our times' challenges." The speakers explored the potential of 5G, vehicular communication systems, unlicensed technologies, satellite communications, and other exciting developments in the ICT sector. Ajit Pai, Chairman of the United States Federal Communications Commission (FCC), spoke about how these new technologies will impact our future. "Everyone's talking about 5G because of its potential to grow our economies and dramatically improve people's lives around the world. "Soon these next generation technologies, the wireless networks of the future, will affect every aspect of our economy and society, from businesses to homes, from transportation networks to power grids and from hospitals to manufacturing." One of the most interesting innovations in the sector is the progress and integration of satellite communication systems. "Satellite communication has now entered the mainstream, in terms of its commercial sweet spot, and it is ready to be considered alongside terrestrial technologies such as fiber, microwave, Wi-Fi and mobile, to drive global broadband adoption," stated Rupert Pearce, CEO of Inmarsat, a leading British satellite telecommunications company. Overall, the webinar stressed on the need for a global standard and multilateral cooperation in spectrum management and integration, in line with the ITU's newly launched worldwide technology standards IMT-2020. The UN's specialized agency for ICT was represented by its Secretary-General Houlin Zhao, who thanked CITC for hosting the event. He went on to state, "I call on all of you to join us and make the most of this historical moment to deploy technologies like 5G that promises to improve people's lives on a scale never seen before."

South Africa Moves to Establish New 'Super-Regulator'

As part of its ongoing commitment to rationalize government entities under its state-owned enterprises (SOE) plan, South Africa's Department of Communications and Digital Technologies has announced plans to streamline a number of prominent bodies, including telecoms regulator the Independent Communications Authority South Africa (ICASA). MyBroadband cites the government department as saying: 'The state signal distributor SENTECH will be merged with Broadband Infraco to form one state broadband infrastructure company. Domain name authority ZADNA, the Film and Publications Board, and ICASA will merge to form one regulator.' Additionally, the 'Universal Service and Access Agency of South Africa will be repurposed to establish a state-owned digital fund company,' it said.

The online journal goes on to point out that the President has signed performance agreements with all his Cabinet ministers, outlining the targets they will have to meet. These reportedly include:

- 80% of the population must have access to the internet by 2024
- policy direction in relation to 5G must be issued by December 2021
- a reduction in the cost of data must be achieved
- monitoring of ICASA and ensuring that the regulator is adequately resourced to license 4G spectrum
- repositioning of the State Information Technology Agency (SITA) to drive the use of local technologies
- completion of decoder rollout and switching-off analogue transmitters for the Broadcasting Digital Migration project by 2021, and rearranging of spectrum radio frequencies
- release of special dividend by 2023.

Consultation Process with Asia Internet Coalition (AIC) & Its Members

The Rules titled "The Removal and Blocking of Unlawful Online Content (Procedure, Oversight and Safeguards), Rules 2020" have been notified by the Federal Government vide notification dated 27 November 2020. These Rules have been framed as a statutory requirement under Section 37(2) of the Prevention of Electronic Crimes Act 2016 (PECA). A comprehensive consultation process was carried out by the Consultation Committee formed on the directions of the Prime Minister of Pakistan. During the process, key local and international stakeholders were invited in the interest of broad-based consultation, active engagement and open dialogue including Asian Internet Coalition (AIC) and its members i.e., Google, Facebook, Twitter etc. The Committee held meeting with AIC on 19 June, 2020. During the meeting, the Committee and the AIC exchanged views on the AIC submitted response on the consultation framework. Besides, AIC members Facebook, Google and Twitter were also approached for consultation individually, as desired by the AIC. Google and Facebook participated in the consultation process on 26th and 29th June 2020, respectively. Hence, AIC's stance that meaningful consultation was not carried out is misleading and against the facts. Since timelines were to be followed by the Committee for finalization of its report based on the Honorable Islamabad High Court order dated 12-09-2019 and Federal Government directions vide Consultation Committee notification dated 28th February 2020, the process could not be kept open-ended and prolonged indefinitely. Therefore, after due consultation, the final report of the Committee was submitted to the Federal Government, considering all reasonable concerns and recommendations of stakeholders, remaining within the legal provisions and the tenets of the Constitution of Islamic Republic of Pakistan and the PECA 2016. The right to freedom of speech and expression has duly been included in Chapter 2 of the Rules, in accordance with Article 19 of the Constitution of Islamic Republic of Pakistan. PTA wishes to dispel prejudiced and wrong impression being created regarding the Rules. It is reiterated that the Rules in no sense aim to harm the business environment in Pakistan rather would pave the way for better investment opportunities for tech companies while remaining compliant with local laws. PTA, as telecom sector regulator, shall continue to support all tech companies and stakeholders in realizing digital transformation goals, within the bounds of the country's laws and relevant rules.

Loon Pushes FCC for E-Band Access

Alphabet subsidiary Loon pressed the US Federal Communications Commission (FCC) to allow it to tap spectrum between 70GHz and 90GHz (E-band), aiming to overcome resistance from operators seeking to use it for 5G backhaul. Documents showed the company argued its case in a series of recent meetings with FCC staff, stating the regulator could adopt new rules opening the frequencies to air- and sea-based connectivity services which rely on "antennas in motion" without risking significant interference with fixed terrestrial systems. It stated existing data provided sufficient evidence for the move without waiting for fresh coexistence research. "Authorizing antennas in motion will not distract the FCC from, or delay deployment of, 5G", Loon argued, stating the move could boost rural rollouts. It added an existing registration framework could be used by terrestrial and aerospace players to coordinate usage, and backed dynamic spectrum sharing to "enable even more efficient and innovative use". Loon's comments were part of a consultation process launched by the FCC in June. Industry group CTIA previously dismissed Loon's proposal as "premature", insisting "significant additional engineering analysis" was required to prove services using antennas in motion would not interfere with fixed backhaul. Verizon pressed the FCC to focus on updating rules for fixed wireless 5G backhaul and delay approval for antennas in motion until new interference studies are completed.

Govt Greenlights Framework for License-Free Wi-Fi

India's Cabinet has approved the Department of Telecommunications' (DOT's) proposed regulatory structure for the provision of broadband services through public Wi-Fi networks. The program, dubbed the Prime Minister's Wi-Fi Access Network Interface (PM-WANI), aims to accelerate the take-up of broadband services nationwide by enabling the use of public Wi-Fi networks to deliver fast and stable connectivity, with deployment encouraged by exempting providers from licensing fees. Under the PM-WANI framework, Public Data Offices (PDOs) will establish Wi-Fi hotspots to provide last-mile connectivity to subscribers by procuring bandwidth from ISPs. In practice, the government expects PDOs to take the form of local shops and small businesses that will serve their local communities. PDOs are not required to hold a license or to register the business with regulatory authorities, and will not need to pay fees to the DoT. Public Data Office Aggregators (PDOAs), meanwhile, will aggregate PDOs and provide services relating to accounting and authorization for PDOS. PDOAs are similarly exempt from holding a license but are required to register, albeit with no registration fee. Finally, the PM-WANI scheme requires application providers to develop applications to register users, help customers find PM-WANI hotspots and to authenticate subscribers. As with PDOAs, these app providers will just be required to register and are not subject to license fees. The initial registry of PDOAs and application providers will be established and managed by the Centre for Development of Telematics (C-DoT). In a statement from the DoT the ministry noted that approach is intended to be business friendly, with the removal of licensing requirements in particular aligning with the government's policy goals of improving ease of doing business. The DoT went on to elaborate on the PM-WANI's goals: 'COVID-19 pandemic has necessitated delivery of stable and high speed broadband internet services to an increasingly large number of subscribers in the country including areas which do not have 4G mobile coverage. This can be achieved by deployment of Public Wi-Fi. Further, the proliferation of public Wi-Fi will not only create employment but also enhance disposable incomes in the hands of small and medium entrepreneurs and boost the GDP of the country.'

Singapore Issues Digital Licenses to Open Up Banking

Singapore's central bank issued only two of three possible wholesale digital banking permits but awarded full licenses to a partnership between booking company Grab and Singtel, along with internet platform Sea. In a statement, the Monetary Authority of Singapore (MAS) said digital wholesale banking licenses went to an affiliate of Ant Group and a consortium comprising Greenland Financial Holdings Group, Linklogis Hong Kong and Beijing Cooperative Equity Investment Fund Management, which "were assessed to be demonstrably stronger across the criteria". MAS noted since digital wholesale banks were introduced as a pilot, it will review whether to grant additional licenses in the future. It had planned to issue up to three wholesale permits. The central bank received a total of 14 eligible applications and expects the new digital banks to start operations in early 2022. MAS MD Ravi Menon said: "We expect them to thrive alongside the incumbent banks and raise the industry's bar in delivering quality financial services, particularly for currently underserved businesses and individuals. They will further strengthen Singapore's financial sector for the digital economy of the future." The monetary authority had hoped to issue the licenses in June, but delayed to allow companies and authorities to focus on tackling the impact of Covid-19 (coronavirus).

Zimbabwe Plans to Invest in ICT Improvements in 2021

Zimbabwe is to allocate a significant sum of money to infrastructure improvement in the ICT sector over the coming year. According to the website Biztechafrica, the country's Finance Minister Mthuli Ncube recently announced that the government has allocated $89 million to the ICT sector and was making infrastructure improvement a top priority. He was speaking during a 2021 national budget presentation in Harare late last week. The money, which will be invested in the sector during 2021, will, he said, mainly target rollout of optic fiber and digital television services as well as access to online public services by citizens. Even though progress has been made for the past decade to improve the country's ICT infrastructure, its digital economy is still lagging behind, mainly because of poor connectivity, Ncube said. Thus, the government aims to facilitate deployment of broadband infrastructure and investments in last-mile connectivity by industry players that will, as he put it, "ensure affordable, accessible, ubiquitous and reliable ICT services that support an inclusive digital economy". Ncube said priorities will include the implementation of measures that create an enabling environment for private sector investment and full implementation of ICT infrastructure sharing, as well as a full roll out of an e-government program. The proposed ICT investment will be greeted warmly by end users and businesses but, given the country's economic woes and associated planning issues, a detailed plan and timetable will no doubt also be welcome.

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Afghanistan

The acting head of the Afghanistan Telecom Regulatory Authority (ATRA) has pledged to accelerate work on the World Bank-funded 'Digital CASA (Central Asia and South Asia) Afghanistan' program. The main goals of the five-year, USD51 million project are to provide Afghans with more affordable internet access, to attract private investment in the ICT sector and to improve the government's capacity to deliver digital government services to the public. In a statement from the regulator, acting ATRA Chairman Omar Mansoor Ansari said: 'ATRA will take crucial steps together with the Ministry of Communications and Information Technology (MCIT) and World Bank as an important shareholder of the project to ensure that citizens have access to the best and most satisfactory telecom and internet services. ATRA has [completed the] basic works of this project, such as issuance of optical fiber expansion licenses, encouraging investors and controlling prices, and is also ready to have an important role in implementing the project through comprehensive coordination.' As noted by TeleGeography's GlobalComms Database, Afghan authorities and the World Bank completed the first phase of the program – the Project Preparation Grant (PPG) stage – in December 2018, including amongst other things a fiber-optic cable survey of the Wakhan Corridor and the development of an Environmental and Social Management Framework (ESMF) for Digital CASA Afghanistan. (December 4, 2020) commsupdate.com

Algeria

The Regulatory Authority for Post and Electronic Communications (ARPCE) notified the procedures required by the laws and regulations in force and following the deliberations of its Board at its meeting held on December 2, 2020, it granted the authorization of provision of radiolocation and / or radiolocation services by satellite as well as geolocation services by radio, to the following: 1. SPA ALGERIA TELECOM SATELLITE (ATS); 2. SPA ALGEOFLEET; 3. SARL I2B; 4. SARL EURO SOFT; 5. EURL DZ LYNX SYSTEM; 6. EURL DIGILINX; 7. Eurl GEO PS; 8. EURL DATAFIRST TECHNOLOGY; 9. EURL IT DASERVICES; 10. EURL WEB GPS OFFICE; In this context, the Regulatory Authority invites natural and legal persons who have filed incomplete files of authorization applications for the provision of radio-positioning and / or radio-positioning by satellite as well as geolocation services by radio, to complete and update their files with the missing documents as requested by its services. Also, the Regulatory Authority recalls that the radiolocation and / or radiolocation services by satellite as well as geolocation services by radio, can only be provided after obtaining the relevant authorization, under the legislation in force. (December 28, 2020) arpce.dz

Bahrain

The International Internet Society, a non-profit organization that sets standards and Internet policies in the world, has ranked Bahrain as 19th country in the world with the best Internet services. The Kingdom's classification was based on the feedback of the society's branch in Bahrain, and the speed of its "Internet growth" in particular, as well as its reliability, sustainability and ability to meet the requirements of data preservation and exchange. Likewise, the society based the ranking on the Internet's performance during this coronavirus (COVID-19) pandemic, such as for work, remote study, e-commerce, and others. Just last month, Bahrain commemorated 25 years since the Internet was first introduced in the country in 1995 and which served as a momentous day in the history of the technology and telecommunications industry in the Kingdom. According to the bahrain.bh portal, Bahrain has been ranked fourth worldwide in the Telecommunication Infrastructure Index (TII) as per ITU reports. Everyone in Bahrain has access to mobile with a subscription rate of 140% of the total population. Estimated Internet users in Bahrain are 98%, which is ranked

third globally. The number of mobile subscriptions has reached 2.09 million lines, and fixed-line is 225,759 lines and 2.16 million Internet subscriptions. Today, the Fourth Generation (4G) network covers all territories in Bahrain. It has finalized all preparations to launch the Fifth Generation (5G) network. Free of charge Internet access is available in most of the public areas in Bahrain such as at touristic areas, public malls, and public facilities. In line with the Digital Empowerment initiative, all educational institutions in Bahrain are connected. Internet access is provided to all students and tutors at public and private schools in Bahrain, as well as universities and other educational institutions. The Bahrain branch of the International Internet Society also received a "megabit" rating that guarantees its distinction among 19 branches of the society spread around the world. This allows the Kingdom to expand its activities and highlight its progress in various fields of information and communication industry, digital products and electronic services. The President of the World Internet Society-Bahrain Branch, Ahmed Atiyah Al Hujairi, said that the advanced global assessment obtained by the society's branch in the Kingdom reflects the development of the Internet industry in the country. It is due to the efforts of the government and the relevant bodies in the Ministry of Transportation and Communications, the Information and eGovernment Authority and others, as they invest in this field, particularly in increasing, promoting and developing the Internet as infrastructure in global technology to enrich people's lives and a useful force in society. Al Hujairi noted that the leading global reputation of the Internet sector in Bahrain would shed more light on the opportunities emerging from this sector, which has become a major component of the Fourth Industrial Revolution and its basic applications, such as artificial intelligence, the Internet of things, and others. This is in addition to the fact that the Internet sector in the Kingdom has become a decisive factor in the development of the other sectors including education, health, industry, tourism, transportation, among others. The International Internet Society, which has offices in Washington and Geneva, boasts a membership base that includes more than 130 organizations and more than 55,000 individuals, as well as more than 90 branches around the world.

(December 29, 2020) newsofbahrain.com

Transportation and Telecommunication Minister Kamal bin Ahmed Mohammed said that 5G nationwide coverage is almost achieved, having reached 95%. "This achievement is an important milestone towards enhancing readiness for next-generation ICT services such as the Internet of Things, Machine-to-Machine communications and other emerging technologies," the minister said. The latest achievement is another accomplishment during the prosperous era of His Majesty King Hamad bin Isa Al Khalifa, and under the directives and follow-up of His Royal Highness Prince Salman bin Hamad Al Khalifa, the Crown Prince and Prime Minister, he added. "This achievement also solidifies Bahrain's position as a country that enjoys a robust and widely accessible fixed and wireless telecommunications infrastructure. It is part of the efforts to consolidate the Kingdom's digital economy, the development of the digital transformation process in all sectors, and the development of new sectors such as artificial intelligence. This should enable the communication and information technology sector to better support growth in all sectors of the economy and boost its contribution to economic growth," the minister told Bahrain News Agency (BNA). He highlighted the importance of strengthening smart communication infrastructure and adopting regulations that would encourage innovation and investment in the promising telecommunications sector, especially since Bahrain is today among the first countries to provide 5G services on a large local scale in the world. The telecommunication companies today have a prominent role in developing the sector and preparing it for a new information world with broader and more comprehensive features. The Telecommunications Regulatory Authority follows up the implementation of the projects with companies and ensures their readiness while ensuring an appropriate regulatory environment for the availability of modern technologies in Bahrain. "We are continually striving to ensure that the Kingdom of Bahrain maintains its position among global leaders in this crucial sector. This includes ensuring the availability of ubiquitous national high-speed broadband, deploying commercial 5G services and enhancing readiness for next-generation ICT services such as the Internet of Things and Machine-to-Machine communications," the minister said. The achievement of nationwide 5G coverage is a reflection of the government's efforts and vision to put at the forefront of its priorities the availability of a robust and widely accessible digital infrastructure in the Kingdom. It will support the growth of the digital economy and enhance Bahrain's readiness to harness the power of ICT and innovation for a more promising future, he added. "We trust that the ability to generate, use, and ultimately export innovation will be central to the ambitions to grow and diversify our economy towards high value-added sectors such as content development and Artificial Intelligence (AI)." The International Telecommunication Union ICT Development Index (IDI) has ranked Bahrain as the leader in the Arab world and 31st globally, which reflects the significant progress Bahrain has achieved in this sector since the liberalization of the telecommunications sector. The telecom sector in Bahrain attracted a total investment of BD 787 million (over $2 billion) between 2009 and 2019 and the telecom sector GDP contribution was 3% (2019).

(December 15, 2020) newsofbahrain.com

Bangladesh

The Bangladesh Telecommunication Regulatory Commission has drafted a set of instructions on issuing registration certificates for local assembling and manufacturing of telecommunication service-related equipment other than mobile phone handsets. The registration certificate issuance process for local assembling and manufacturing of mobile phone handsets has already been

enacted by the commission. The scope for manufacturing and assembling of the equipment in the country would also attract foreign investments along with creating job opportunity. As per the instructions issued on Monday, the commission would issue two types of certificates — 'A' and 'B' — for assembling, manufacturing and setting up factory for making the products for local and international markets. Category 'A' entities will have to set up testing laboratories while it would not be a requirement for the entities to be certified as category 'B'. However, having contract with any 'A' category certificate-holding entity would be a must for the category 'B' entity for the testing quality of the equipment which would be manufactured in the category 'B' entities. The commission in its draft instructions proposed Tk 15 lakh and Tk 10 lakh as enlistment fee for category 'A' and category 'B' entities respectively while the certificate renewal fee has been set at Tk 7.5 lakh and Tk 5 lakh for category 'A' and 'B' entities. The annual fee has been set at Tk 2.5 lakh for both categories and they would enjoy a five-year exemption from paying annual fee. With a view to encouraging technological production, the government has been providing a huge tax break for the firms located in hi-tech parks. The entities located in the country's hi-tech parks are waived from paying any income tax in the first seven years of their operations. Such entities would enjoy 70 per cent tax waiver for three years after the seven-year tax holiday. Since the issuance of a huge tax break for the mobile handset assembling in the budget for the fiscal year 2017-2018, the telecom regulator formulated policy to issue license for the assembling of mobile phone handsets. The BTRC has so far granted registration to 11 entities to assemble and manufacture handsets in the country. Of them, 10 entities have already started assembling and manufacturing handsets in the country. In FY20, total 1.5 crore mobile handsets were assembled locally against 80 lakh handsets in FY19.

(December 8, 2020) newagebd.net

The government of Bangladesh approved a Tk 693.2 crore project to set up the country's third submarine cable to meet the fast-growing demand for connectivity. With the installation of the new submarine cable, Bangladesh will get 6 terabytes per second of bandwidth that will boost internet speed and help launch 5G services in the country. The country now uses 1,600 Gbps bandwidth, which was 300 Gbps at the end of 2016. It also has a bandwidth capacity of 2,600 Gbps from two submarine cables. The third undersea cable will add another 7,200 Gbps, according to the Bangladesh Submarine Cable Company Limited (BSCCL), which will implement the project by June 2024. The cable, SEA-ME-WE-6, starts from Singapore and goes up to France through the Indian Ocean, the Arabian Sea and the Red Sea, said Mamun-Al-Rashid, Planning Commission Member of the Physical Infrastructure Division. It will have core landing stations in Singapore, India, Djibouti, Egypt and France. The Bangladesh branch will stretch to the cable landing station at Cox's Bazar through the Bay of Bengal. The country will have to set up 13,275 km core submarine cable network and 1,850 km branch submarine cable network. At the beginning of 2018, the government had asked the state-run BSCCL to take steps to get connected with the third undersea link. Once the project is implemented, it will be possible to meet the growing demand of uninterrupted modern broadband internet services across the country, said Shamsul Alam, Member of the General Economics Division (GED) under the Planning Commission. It would also be possible to export the extra bandwidth to the neighboring states of India (Seven sisters) and Bhutan. Besides, Saudi Arabia also expressed their eagerness to procure bandwidth from Bangladesh. The country's first submarine cable SEA-ME-WE-4 was launched in 2005 and the second one, SEA-ME-WE-5, was launched in 2017. These two submarine cables are being operated through a separate consortium. The lifespan of the first submarine cable is 20 years, which will end in 2025. As the first submarine cable is 15 years old, the rate of service disruption is higher due to maintenance-related reasons. The BSCCL's revenue rose to Tk 250 crore in fiscal 2019-20 from Tk 103 crore in fiscal 2016-17 on the back of a boost in bandwidth usage through undersea cables, according to its annual report for 2020. Also, at meeting of the Executive Committee of the National Economic Council (ECNEC), which was chaired by Prime Minister Sheikh Hasina, three other projects involving Tk 1,422 crore were approved. (December 5, 2020) dhakatribune.com

Egypt

Egypt's information and communication technology (ICT) sector grew by 15.2 percent in 2020, becoming the most growing among other sectors, despite the COVID-19 repercussions, the cabinet's media center revealed in a report. The report showed that the sector's share in Egypt's GDP rose to EGP 108 billion in FY 2019/2020 (4.4 percent), up from EGP 93.5 billion (3.8 percent) in FY 2018/2019. The ICT sector's exports increased in 2020 to $4.1 billion, up from $3.6 billion in 2019 (growing by 13 percent). Investments in the sector rose by 35 percent to EGP 48.1 billion, up from EGP 35.4 billion in FY 2018/2019, stated the report. The report said that 1,336 ICT companies have been founded with a total capital of EGP 1.34 billion. The report demonstrated that Internet users to population ratio increased to 57.3 percent in FY 2019/2020, up from 47.6 percent in FY 2018/2019. It also noted that the sector's infrastructure development cost recorded $400 million in the second half of 2020, which helped in increasing the Internet speed to 33.2MB per second by the end of November. Concerning digital transformation efforts, the report said that 34 digital governmental services have been provided through Egypt's Digital Platform, which was established in July. The report showed that 544,400 Egyptians have subscribed to the platform thus far. The platform helped them to obtain the governmental services they need via mobile phone applications, postal offices, communication centers and service centers. It added that

472 requests have been submitted on the platform to receive governmental services. On artificial intelligence and ICT industry development, the report noted that five innovation centers were established at Egyptian universities, 22 ICT companies have been prepared to start working in the domestic market, and 29 start-ups have been incubated through the entrepreneurship and technology center. The report also highlighted international institutions' commendations to Egypt's ICT sector.

(December 28, 2020) english.ahram.org.eg

The National Telecom Regulatory Authority (NTRA) has launched its digital portal for licensing and import approval services, through which all procedures related to telecommunications can be completed electronically. The new portal allows users to submit applications for permits and licenses, complete customs release procedures, and access the authority's services with ease. Other services include spectrum licensing, type approvals, and the issuance of import permits for telecommunications equipment and devices. This comes as part of the NTRA's keenness to raise the efficiency of the services it provides to users and facilitate ways to obtain them, in line with the Egyptian government's shift towards digital transformation. The new online portal for import services works to ease access and shorten the time period to obtain services. Importers, whether companies or individuals, can choose the services they want to obtain through the portal, submit the necessary documents, carry out the payment process, and follow up on the status of implementation of services until they are obtained. NTRA CEO Hossam El-Gamal said that the launch of the new digital portal comes in line with the state's drive to achieve digital transformation, and adopt advanced technologies. These will be adapted to develop business performance and build a digital work system to serve users supported by financial inclusion mechanisms. The authority has made all its services available to customers, including 37 services for importers. The NTRA has updated its official website to facilitate access to the import services it provides, as well as for users to submit complaints on telecommunications services, and follow up on market and quality indicators. (December 2, 2020) dailynewsegypt.com

Kuwait

The RIPE Network Coordination Centre (RIPE NCC), in collaboration with the Communications and Information Technology Authority in Kuwait (CITRA), successfully organized the 4th edition of the RIPE NCC Government Roundtable dedicated to Arab ICT Ministries and regulators in the Middle East region which was held virtually under the theme, “Cooperation for better connectivity". The event was attended by high level representatives from several Arab countries, including ministers and regulators. The meeting, which was opened by H.E. Saleem Al-Ozianah, Chairman and CEO of CITRA, H.E. Hamad Almansoori, Chief of Digital Government and General Manager of Telecommunications Regulatory Authority in the United Arab Emirates, H.E Dr. Mohamad Tamimi, Governor of the Communications and Information Technology Commission in Kingdom of Saudi Arabia, Hans Petter Holen, Managing Director of RIPE NCC and Christian Kaufmann, Executive Board Chairman of RIPE NCC, discussed keyways and collaborations to drive in more development and economic growth for the Arab region's Internet sector. During the event, participants discussed the current opportunities and challenges posed by the management of Internet resources and infrastructure in the Middle East - especially during emergencies such as COVID-19. They also discussed how to adopt a more collaborative approach with governments and regulators and looked at the latest RIPE NCC statistics and figures. In his opening speech, H.E. Saleem Al-Ozianah, Chairman and CEO of CITRA, stressed the significance of such high level discussions and dialogues and pointed out the importance of hosting such a quality-focused event in Kuwait, which reflects CITRA efforts towards enhancing the Internet in line with Kuwait's government commitment for digital transformation, which is the foundation of the "New Kuwait 2035" development strategy. H.E. Al-Ozianah added: “Innovative regulations and technical collaborations are needed to respond to the changing landscape caused by the global pandemic and address the urgent need for affordable and secure access and better use of Internet and its digital services. We recommend the RIPE NCC for its tireless efforts to support our country and the region. No matter how much we can do by ourselves on a national level, it is never enough; we need regional and international cooperation." H.E. Hamad Almansoori, Chief of Digital Government, Director General of the Telecommunications Regulatory Authority in the United Arab Emirates, pointed out “Regional and international cooperation has never been as necessary and urgent as it is now. We are witnessing a turning point in the history of ICT. The whole world is facing the same risks from the pandemic and has the same hopes for returning to normalcy. Therefore, RIPE NCC represents an important framework for working together for common goals by having better Internet infrastructure to accelerate the assimilation and application of the concepts of the Fourth Industrial Revolution, which until yesterday seemed futuristic, but are in fact, a part of our current life." H.E Dr. Mohamad Tamimi, Governor of the Communications and Information Technology Commission in Kingdom of Saudi Arabia, highlighted the importance of collaboration: “ The importance of the continuous collaboration and cooperation between the RIPE NCC and the regulators in the region is evident through such constructive meetings that aim to discuss the organizational and technical challenges of managing Internet number resources and building the related digital capabilities; thus promoting the smooth growth of the Internet and the stability of its services for the benefit of our countries and the world at large." Hans Petter Holen, Managing Director of RIPE NCC, announced the publication of the “RIPE NCC Internet Country Report: Gulf Region”, which

examines challenges, growth and trends of Internet routing and infrastructure in eight Arab countries including Kuwait. He stated: "Over the years, the RIPE NCC has remained steadfast in its commitment to work closely with various governments and provide them with the necessary training and knowledge to address today's digital challenges. We recommend the work that CITRA is doing and look forward to continuing our work together to harness the Internet for the greater good and for everyone." Christian Kaufmann, Chair of RIPE NCC Executive Board said: "This Roundtable Meeting is very important for us to share information and updates but also to understand the needs of governments and regulators in the region and how to support them. I also want to stress out the importance of the RIPE NCC Dubai office to facilitate technical support and capacity building in the region. He added: "It is one of our fundamental goals to connect people, therefore we take sanctions in the region very serious as a Board, and these issues have our full attention and support." The first panel discussion of this virtual roundtable, which was titled "The RIPE NCC and Arab Governments Cooperation" was led by Chafic Chaya and Hisham Ibrahim from the RIPE NCC. It discussed the collaboration of RIPE NCC with Arab governments and regulators investigated the status of the Internet infrastructure in the Arab countries. The second panel discussion was led by Chris Buckridge and Marco Hogewoning from the RIPE NCC, which tackled the topic of Internet Governance: Regulations to Support Technology and highlighted the importance of Digital Cooperation, Government Engagement, and Internet Regulations that Support Technology. The meeting was attended by H.E. Loutfi Bashareef, Minister of Information Technology and Telecommunications of Yemen; H.E. Ahmad Al-Hananda, Minister of Digital Economy and Entrepreneurship in Jordan; H.E. Dr. Ishaq Sidr Minister of Information & Communications Technology in Palestine; H.E. Dr. Ali Nasser Al-Khoieldi, CEO of the Communications and Media Commission in Iraq; Mirjam Kühne, RIPE Chair and Niall O'Reilly, RIPE Vice Chair, in addition to high level delegations and representatives from Governments and Regulatory Authorities from kingdom of Saudi Arabia, Kuwait, United Arab Emirates, Bahrain, Oman, Qatar, Yemen, Iraq, Lebanon and Egypt. The roundtable event served as a successful follow-up to the previous year's events held in the region. The RIPE NCC and CITRA have expressed their commitments to continuously support the development of Internet infrastructure in the region through their joint-initiatives and efforts. The RIPE NCC endeavors to maintain stable and resilient Internet connectivity through its provision of IP address registration, maintaining key infrastructure, and contributing to the security of Internet routing. The online event falls in line with the RIPE NCC's strategy to support governments with the needed technical expertise to serve their wider Internet community.

(December 20, 2020) ripe.net

Nepal

A committee formed by Nepal's telecoms regulator the National Telecommunications Authority (NTA), the Ministry of Communications & Information Technology (MoCIT) and telecom operators has identified possible frequency bands for use by the country's 5G networks, reports Nepalitelecom.com. The National Frequency Management Forum has advocated earmarking spectrum in low-band, mid-band and high-band ranges for 5G networks, while the authorities could also make existing 2G, 3G and 4G licenses technology neutral to enable existing frequency allocations to be used for 5G services. In the lower range, the committee has recommended assigning 10MHz to 20MHz of frequency bandwidth in the 900MHz, 1800MHz, 2300MHz and 2600MHz bands, the first three of which are already in use. For the mid-range frequencies, 100MHz of spectrum could be allocated in the 3300MHz, 3600MHz and 4700MHz bands, all of which are not currently used for existing mobile networks. Finally, for the high band, also called mmWave spectrum, the committee recommended providing between 800MHz and 1GHz of bandwidth in the 26GHz range.

(December 16, 2020) commsupdate.com

Oman

Oman's total fixed internet subscriptions rose 6.9 per cent to touch 506,091 at the end of November 2020 compared to the same period for 2019. Of this, fixed broadband internet connections, which have more than 256 kilobytes speed, rose 6.9 per cent to 504,049 at the end of November 2020, according to the latest data released by National Centre for Statistics and Information (NCSI). The number of active mobile broadband subscribers rose 12.1 per cent to 5.31 million at the end of November 2020 compared to the same period of 2019, whereas total fixed telephone lines fell by 0.7 per cent to 591,316. According to the NCSI report, the number of voice-over-internet protocol (VoIP) lines surged by 11.8 per cent to 236,906. Further, analogue fixed connections fell by 8.6 per cent to 298,361 at the end of November 2020 compared to the same period of the previous year, whereas ISDN channels fell 2.4 per cent to 47,823. Total number of mobile subscribers fell 1.1 per cent to 6.22 million until the end of November 2020 compared to the same period of 2019. Out of this, postpaid mobile connections increased by 26.8 per cent to 976,772, and pre-paid mobile

connections fell 5 per cent to 5.24 million at the end of November 2020. Also, the number of subscribers of resellers rose by 11.9 per cent to 1.05 million at the end of November 2020 compared to the same period of 2019. (December 22, 2020) timesofoman.com

Asila bint Salim al Samsamiyah, Under-Secretary for Investment Promotion of the Ministry of Commerce, Industry and Investment Promotion recently launched the digital platform markeetex, in coincidence with the 50th National Day. Markeetex is the first integrated digital marketing platform specializing in the provision of electronic commerce and logistics. The platform displays a wide range of products as well as after-sale and delivery services inside and outside the Sultanate. Asila bint Salim al Samsamiyah, Under-Secretary for Investment Promotion of the Ministry of Commerce, Industry and Investment Promotion, said that the launch of the electronic platform markeetex comes as part of the 'Made in Oman' campaign and is aimed at promoting local products which contributes to supporting the national economy. She added that the ministry targets to place the Sultanate on the electronic platform map from local to global digital platforms. In this initiative markeetex has introduced a special section for the Omani products to help entrepreneurs to display their products and enable consumers to identify local products especially during the COVID-19 pandemic, she said. It is noteworthy that the 'Made in Oman' campaign is organized by the Ministry of Commerce, Industry and Investment Promotion in collaboration with Oman Chamber of Commerce and Industry (OCCI), Public Establishment for Industrial Estates (Madayn), Small and Medium Enterprises Development Authority, the Consumer Protection Authority. The campaign is aimed at promoting Omani products and encouraging local and international consumers to buy Oman products.
(December 1, 2020) omanobserver.om

Pakistan

Pakistan Telecommunication Authority (PTA) has published independent cellular Quality of Service (QoS) Survey results of 4th Quarter (Q4) of 2020 on PTA website (www.pta.gov.pk/en/consumer-support/qos-survey). In order to measure the performance and service quality of 2G (GSM), 3G (UMTS / HSPA+) and 4G (LTE), of Cellular Mobile Operators (CMOs), independent Quality of Service (QoS) survey was performed using newly procured automated QoS monitoring and benchmarking tool "Smart-Benchmarker" from 23rd November to 11th December 2020 in Kabirwala, Hyderabad, Islamabad, Karachi, Lahore, Quetta and Peshawar. After detailed analysis of the survey results, voice and SMS services of CMOs were found below the minimum required licensed standards whereas, data services of all CMOs were found satisfactory and up to the mark. Based on the survey results, CMOs have been directed to rectify the identified anomalies and take corrective measures for improvement of voice, SMS and data services up to the licensed standards, within 30 days. (December 30, 2020) pta.gov.pk

Pakistan Telecommunication Authority (PTA) said it selected an international consultant to auction the remaining spectrum of 3G and 4G services in the country that is estimated to raise Rs27 billion. PTA completed the evaluation process for the selection of the international consultant for spectrum auction of 1800 MHz and 2100 MHz bands as per directions of ministry of information technology and telecommunication. After detailed evaluation of financial bids, in the presence of five technically qualified bidders – three were physically present while two joined the meeting via video link – Frontier Economics Limited has been declared successful. PTA evaluated the proposals and finalized the consultant in accordance with PPRA rules. After the completion of further formalities, the successful consultant is expected to formally sign a contract. The budget documents for 2020/21 showed that the government envisaged to raise Rs27 billion through auctioning of 3G/4G spectrum during the current fiscal year. Sources said the process of 5G services has not yet kick-started and it might take a couple of years because it requires a lot of spade work to transform the whole infrastructure of cellular mobile companies. The spectrum of 1800 MHz is used for 4G services so this remaining spectrum will be used for improving 4G services in Pakistan. All existing telecom players that will make efforts to win this upcoming spectrum auction are going to bring desired improvement in quality of 3G/4G services in the country. The improvement of 4G services is required immensely for providing data services in the country. The advertisement for hiring of consultant/consultancy firm was published in national and international newspapers on September 30 and also published on PTA and Public Procurement Regulatory Authority (PPRA) websites. In response to the advertisement, PTA received 12 bids from consultants/consultancy firms till the deadline – November 17. The mobile data traffic in Pakistan increased over 400 percent to 1.75 gigabytes per user per month in 2018 from 0.34Gb/user/month in 2016. 5G tests and trials have already been started in Pakistan and the government identified 2600, 3500 MHz and millimeter wave bands for the trial purpose, according to the PTA. Mobile services continued to lead the sector by providing reliable and affordable connectivity. Mobile sector showed a steady growth in subscribers on its networks and increased subscriber base to 163.5 million at the end of FY 2019, showing a year-on-year growth of 7 percent. (December 28, 2020) thenews.com.pk

The Universal Service Fund (USF) has decided to award contracts worth approximately Rs8.81 billion to provide high-speed mobile broadband services to more than six million people in un-served and under-served areas of Punjab, Sindh, Balochistan and tribal areas (erstwhile Fata) of Khyber Pakhtunkhwa. The contracts were won by Telenor, Ufone and Jazz and optic fiber cable contracts were awarded to Pakistan Telecommunication Company Limited (PTCL). In its recent meeting, the USF board, chaired by IT Secretary Shoaib Ahmed Siddiqui, stressed the

need for giving special attention to the tribal districts of Khyber Pakhtunkhwa that were earlier considered troubled and dangerous due to presence of terrorists and criminal elements there. After establishment of peace in these districts, the USF board approved award of contracts under the optic fiber cable program to PTCL for Bajaur, Mohmand, Khyber, Orakzai, Kurram, Frontier Region Peshawar and Frontier Region Kohat. The optic fiber cable projects are valued at approximately Rs4.65bn that aim to lay 1,466km of optical fiber cable to provide high-speed mobile broadband services to an un-served population of approximately 5.01 million people. Projects to lay optic fiber cable has also been approved for Naushahro Feroze, Shaheed Benazirabad and Khairpur districts in Sindh. The board approved award of contracts under the Next Generation Broadband for Sustainable Development program worth around Rs4.7bn to Telenor, Ufone and Jazz that will benefit an un-served population of approximately 0.98 million and an approximate un-served area of 86,773sq-km. Telenor is being awarded the contract for Chagai and Nushki districts in Balochistan that will serve an un-served population of around 0.16m in 170 un-served muazas and an approximate un-served area of 47,872sq-km. Ufone is being awarded the contract for Gwadar, Kech and Panjgur districts in Balochistan that will benefit an un-served population of approximately 0.48m in 377 un-served muazas and approximately 34,899sq-km of un-served area. Similarly, Jazz is being awarded the contract for Jhelum and Chakwal districts in Punjab that will benefit an un-served population of approximately 0.34m in 263 un-served muazas and an approximate un-served area of 4,002sq-km. Meanwhile, federal Minister for IT and Telecommunication Syed Aminul Haque in his message congratulated the chairman of the USF board, the CEO and other board members on presenting record broadband projects. He said that the Ministry of IT and Telecommunication and its subsidiary departments had a significant responsibility to enhance connectivity to the population amid social distancing due to Covid-19 and an environment of online learning and digital businesses. During the meeting, special focus was given to far-flung areas of Balochistan and the tribal areas of Khyber Pakhtunkhwa. Addressing the meeting, the federal Secretary of IT and Telecommunication and Chairman of USF Board, Shoaib Ahmad Siddiqui, said that the main objective of these projects is to provide facilities to those living in the remote areas with either no access to internet or struggling with poor connectivity. He also said that the Ministry of IT and Telecommunication is working expeditiously to accomplish the vision of Digital Pakistan. Moreover, he said, after establishment of peace in the most backward areas like Gwadar, Chagai, Kech and other dangerous tribal areas, the substantial amount of subsidy for optic fiber cable contracts is a proof that the Ministry of IT and Telecommunication is leaving no stone unturned to provide information and communication technologies (ICTs) to every citizen of Pakistan. Referring to the board meeting on Oct 19, he said that the board had approved projects worth over Rs5.11bn for the provision of mobile phone connectivity and broadband services to the remote and backward areas of Sindh, Balochistan and Khyber Pakhtunkhwa. Thus, he added, in the first half of the current financial year, the USF board has approved a record number of projects worth over Rs13.92bn to transform the lives of over 10 million people and this is a testament to the excellent performance of the Ministry of IT and Telecommunication and the Universal Service Fund. (December 21, 2020) dawn.com

Pakistan Telecommunication Authority (PTA) has completed evaluation process for the selection of an international consultant for spectrum auction of 1800 MHz and 2100 MHz bands as per directions of Ministry of Information Technology & Telecommunication (MoIT&T). The advertisement for hiring of consultant/consultancy firm was published in national and international newspapers on September 30th, 2020 and also published on PTA and PPRA websites. In response to the advertisement, PTA received 12 bids from consultants/ consultancy firms till the deadline i.e., November 17th, 2020. After detailed evaluation of financial bids, in the presence of five technically qualified bidders (three were physically present while two joined the meeting via video link), Frontier Economics Limited has been declared successful. PTA evaluated the proposals and finalized the consultant in accordance with PPRA rules. After the completion of further formalities, the successful consultant is expected to formally sign a contract. (December 17, 2020) telecoalert.com

Saudi Arabia

Saudi Communications and Information Technology Commission (CITC) signed three memoranda of understanding (MoUs) with global telecommunication firms - Ericsson, Nokia and Huawei, the authority said in a statement. The three global firms will provide support and strengthen CITC's objectives of enabling the Kingdom's digital transformation drive and nationalization of technologies in accordance with leading global practices in information and communication technology. The MoUs also include synergy in dealing with global organizations of telecommunications standards, as well as holding training courses for CITC's employees, the statement added. Furthermore, the entities will participate in global workshops, and organize educational, and training programs in the latest technologies, including artificial intelligence and cloud computing.
(December 21, 2020) argaam.com

Houlin Zhao, Secretary General of the International Telecommunication Union (ITU), hailed Saudi Arabia's efforts and its remarkable initiatives in various fields, including the launch of a new platform to enhance international cooperation in the digital fields. He described the Kingdom's telecommunications market as the largest in the Middle East region. Zhao made the remarks while addressing the three-day webinar titled "Radio Spectrum for IMT-2020 and beyond: Fostering Commercial and

Innovative Use", co-organized by ITU and the Communication and Information Technology Commission (CITC) of Saudi Arabia. The webinar, which concludes on Thursday, focuses mainly on the latest spectrum innovation and best practices for policymakers. Zhao praised the regulatory maturity of the telecommunications and information technology (CIT) sector in the Kingdom. "As per the classification of ITU, CITC is one of the most regulated and developed CIT bodies in the world," he added. More than 70 high-ranking officials and specialists from various governmental, private, and academic agencies interested in modern wireless technologies from 20 countries around the world are attending the virtual event. The webinar is being convened as part of unifying global efforts and visions in the field of the frequency spectrum, and to activate its role in promoting digital transformation in the Kingdom and the world. Inaugurating the event on Tuesday, Minister of Communications and Information Technology Eng. Abdullah Al-Swaha highlighted the role of digital infrastructure, calling it the lifeblood of the global economy after the coronavirus pandemic. He also stressed its importance in the success and resilience of the economy. Al-Swaha underscored the Kingdom's keenness to cooperate with ITU and its global partners in the field of the spectrum to enhance the benefits from it. He stressed the importance of the meeting of decision-makers in the field of spectrum in the seminar to discuss this important resource.
(December 12, 2020) saudigazette.com.sa

The Communications and Information Technology Commission (CITC) will provide more than 10 gigahertz (GHz) to improve the commercial and innovative use of the Kingdom's radio spectrum by 2025, said Mohammed Al Tamimi, Governor of CITC. "The Saudi telecom regulator is working on setting up a new outlook for commercial and innovative use of radio spectrum," Al Tamimi said on the sidelines of a webinar on "Radio Spectrum for International Mobile Telecommunications (IMT)-2020 and beyond: Fostering Commercial and Innovative Use". Saudi Cabinet lately approved launching public auctions for the commercial uses of radio spectrum.
(December 9, 2020) argaam.com

Turkey

The launch of eSIM technology, which is produced entirely with domestic and national means, was hosted by the Information Technologies and Communication Authority. Minister of Transport and Infrastructure Adil Karaismailoğlu, Deputy Minister Dr. Ömer Fatih Sayan, Head of Information Technologies and Communication Institution Ömer Abdullah Karagözoğlu and bureaucrats attended. Minister of Transport and Infrastructure, Adil Karaismailoğlu, said in his speech, "Due to the epidemic, restrictions on going out, distance education-trade and the obligation to work, demand and capacity use in digital access and communication have increased. The growth rate of our informatics industry in 2020; It approached 14%. As of the last month of 2020; Our fiber line length exceeded 413 thousand kilometers, and the number of fixed broadband subscribers exceeded 15.8 million. The number of fiber subscribers in fixed infrastructures approached 3.8 million. "More than 92% of the 82.8 million mobile subscribers started using the 4.5 service in the last three years." Drawing attention to the importance of domestic and national production, Karaismailoğlu said, "In the upcoming period, we will send our new communication satellites Türksat 5A and Türksat 5B, as well as our first domestic and national satellite, Türksat 6A, to space, and we will take important steps in communication and communication at the local and national point. In addition, in today's program, we are proud to introduce the 100% domestic and national eSIM application developed by our own engineers to the public". Stating briefly about the benefits provided by eSIM technologies, Minister Karaismailoğlu said, "The eSIM infrastructure has been developed in accordance with international standards, with domestic and national means, and we have taken our place among the countries that develop the necessary software within the scope of eSIM. Thus, Turkey's sensitive data will be fully in control of Turkey. "eSIM will have a wide range of uses, from smartphones, wearable technologies, machine-to-machine communication (M2M) to many industrial products." Deputy Minister of Transport and Infrastructure Dr. Ömer Fatih Sayan also mentioned the importance of eSIM in his speech. Sayan said, "We are taking another important step in mobile communication by using eSIM, which can now be installed remotely, instead of the existing physical SIM cards used in mobile telecommunications for more than 25 years. eSIM brings many benefits and advantages not only for the information and communication sector but also for all other sectors. Because today we are in an age where almost everything can be connected to the internet. We increasingly use mobile technology in transactions that we are connected to anytime anywhere. Therefore, eSIM will provide great convenience in our lives in every area from the white goods in our home to the devices in our workplaces". Speaking about satellite earth stations, Sayan said, "We aim to make our country the center of satellite earth stations. With the" BTK Satellite Valley Project ", the installation of three satellite earth stations in Konya has been completed. In Ankara, we started the process of installing two satellite earth stations. We invite international satellite operators to invest in our country". In his speech, Ömer Abdullah Karagözoğlu, President of Information Technologies and Communication Institution, said, "The eSIM application brings along important facilities and advantages both for the industry and consumers in communication between machines. eSIM offers a technology that can be installed and managed remotely on a secure chip. "Operator profile information can be uploaded and managed remotely via software without a physical SIM card inserted in the devices." Karagözoğlu also mentioned that it provides a level of security and protection equivalent to the entire level of security provided by physical SIM cards. Following the opening speeches, Minister Karaismailoğlu

had a meeting with Kule AŞ Technical Operations Director Burhan Kandemir, ERG Traffic Road Safety Manager Mustafa Akbaş from Ankara-Niğde Highway Main Control Center and Captain Orhan Kasap, Captain of Malta Flagged Ship "Atlantis Alhambra" on the phone with the eSIM application. (December 24, 2020) btk.gov.tr

End-to-End Domestic and National 5G Communication Network Project 6th Workshop and Executive Board Meeting was held online with the support of HTK, BTK, OSTİM and TÜBİTAK. Deputy Minister of Transport and Infrastructure Dr. Ömer Fatih Sayan stated that the use of domestic and national technologies in 5G works is of great importance and reminded President Erdoğan's words "We cannot switch to 5G without establishing a local 5G technology infrastructure." Drawing attention to the targets set in this way, Sayan said, "As a part of the National Technology Move, we continue our work in line with our goal to be among the first countries to switch to 5G and beyond technologies with domestic and national products and this vision set by our President. 2023 our vision is situated, science, have competence in technology and innovation, producing added value of a Turkey always people mainly in the direction of the target, which can increase based on the power of their brain, an approach that values the citizens and we are continuing our work in accordance with the new Turkey's soul, "he said. Within the scope of the "End-to-End Domestic and National 5G Communication Network Project" carried out by HTK member companies and supported by the TUBITAK Presidency, Sayan provides local support of critical network hardware and software specific to this technology such as 5G new radio, 5G core network, 5G administrative support software, 5G virtualization platform. and said that it was developed using national means. Emphasizing that they target foreign markets by exporting domestic products as well as getting a share from the domestic market, which is only 1.6 billion lira annually and whose volume is increasing every year, Sayan said, "The annual telecom market size in the world is estimated to be around 200 billion dollars. "We should evaluate 5G technologies and the interaction of 5G with vertical sectors and take our share from this cake and thus contribute to the reduction of our country's current account deficit." BTK President Ömer Abdullah Karagözoğlu stated that mobile operators have a lot of work to ensure the success and continuity of locally and nationally developed products. Karagözoğlu said, "While I appreciate the support of our operators in this project so far, I would like to remind you that their duties are not over. I ask them to see the development and use of the products in question as a part of the business and to continue their support increasingly." Drawing attention to the importance of using domestic products primarily in the supply of products by the operators, Karagözoğlu said, "Our development and use of domestic and national products is of vital importance not only economically, but also in terms of ensuring the security of our country in cyber space. We prepared a draft regarding the changes planned to be made in the procedures and principles regarding the examination and supervision of hardware and software investments, and presented them to the public opinion. After the speeches, 5G demos were held in laboratories in Türk Telekom-Ümraniye, Turkcell-Kartal, Vodafone-Maslak, HAVELSAN-Ankara. Later, data was shared over 5G by connecting to the 5G Base Station Radiolink on Yuşa Hill, Istanbul Anatolian Side, and Istanbul Technical University (ITU) Teknokent on the European Side. (December 16, 2020) btk.gov.tr

United Arab Emirates

The 8th edition of 'Sada Al Barq' exercise for the National Emergency Telecommunication Plan, organized virtually by the Telecommunications Regulatory Authority (TRA) has concluded. It was attended by telecom service providers in the UAE including Emirates Telecommunication Group Company (Etisalat), Emirates Integrated Telecommunications Company (du) and Al Yah Satellite Communication Company (Yahsat). This exercise comes under the framework of the initiative "Telecom business continuity in emergency, crisis and disaster", which serves TRA's strategic goal in the UAE and helps implement a regulatory framework that stimulates competition and develops the quality of services provided. The exercise, organized by TRA as the driving force of the UAE telecom sector, was attended by trained teams from Etisalat, du and Yahsat. The exercise was conducted in a hypothetical scenario to gauge the sector's readiness to deal with unexpected, unusual and concurrent events. Commenting on this exercise, Hamad Obaid Al Mansoori, TRA Director-General, said, "For the 8th consecutive year, we conduct this key exercise with our strategic partners, reflecting our joint work as a national team to ensure the continued effectiveness of the telecom infrastructure and access to services by customers in every part of our beloved country. This year, as with every year, we see the importance of this harmony in the distribution of roles to ensure a coordinated response among stakeholders, whether in anticipating risks or in responding to them to achieve a rapid recovery and mitigate potential impacts." He stressed that the UAE demonstrated this year that it is highly capable of addressing risks, adding, "We have demonstrated with undisputed proof that our efforts over the past years have paid off in a way placing the UAE among the most advanced nations in terms of resilience and continuity of different aspects of life, despite the ferocity of the pandemic and mounting concerns. Thanks to the vital infrastructure of the telecom sector, more than a million students were able to continue their education remotely, while hundreds of thousands of employees were able to work from home, and people could do their shopping from e-commerce platforms." TRA said that 'Sada Al Barq' has gauged the sector's readiness to handle unexpected, unusual and concurrent events, in order to show the efficiency of procedures and viability of operations with emergencies and crises, and demonstrate the ability to deal with unusual and concurrent circumstances.

(December 30, 2020) wam.ae/en

Telecommunications Regulatory Authority (TRA) has designated an additional 500 MHz radio spectrum of 6 GHz band (specifically 5925-6425 MHz) to Wi-Fi for indoor use at an EIRP of 250 mW under class authorization. With this latest addition, the UAE has become the first country in the MENA region to release additional 500 MHz of radio spectrum frequency in the 6 GHz band to the total spectrum of approximately 11.5 GHz (in 2.4, 5, 5.8 & 60 GHz bands) already available for Wi-Fi. "This will significantly boost the speed of indoor wireless networks in the UAE, helping to keep up with the increasing use of wireless services by individuals, companies and different business sectors for day-to-day activities, and to accommodate new applications which drive demand for faster speeds and greater reliability," TRA said, adding that Wi-Fi is a critical investment that connects people to workplaces, businesses, education and healthcare. Interestingly 99% of homes in the UAE have internet access as per ITU database published in June 2020, and Wi-Fi plays an essential role in providing connectivity between users' routers and the increasing number of wireless-enabled consumer electronics devices in their homes including TVs, smart appliances, games consoles, and portable/mobile devices such as smartphones, tablets, remote controllers, 3D visors, laptops etc. The latest (Wi-Fi) standard promises theoretical peak data speeds of 10 Gbps (Gigabits per second), as well as better management of spectrum in congested environments, faster latency, improved power efficiency and various other changes. Commenting on this decision, Hamad Obaid Al Mansoori, Head of the UAE Digital Government and TRA Director-General, said, "The current situation has stressed the importance of having reliable Wi-Fi systems in our homes. This reliability on Wi-Fi networks has been driven by the increasing demand of internet use in remote-working, education and data-intensive activities such as multimedia streaming on multiple devices at the same time." Al Mansoori highlighted that the UAE always endeavors to strengthen the telecommunications infrastructure and the efficiency of its national resources. He added, "We look forward towards satisfying the UAE society and businesses' increasing expectations of Wi-Fi networks. We will ensure optimal use of the spectrum while encouraging innovation and investment in Wi-Fi, and other wireless technologies." In its endeavor to contribute towards the "Digital UAE", the TRA prepared a Spectrum Outlook for the period 2020–2025, which overlays the roadmap for making the available spectrum resources for different emerging wireless technologies. The decision to increase the radio spectrum is aligned with the 'Outlook' and as a result of engaging all stakeholders in the decision making through a public consultation process.

(December 28, 2020) wam.ae/en

The Telecommunications and Digital Government Regulatory Authority (TDRA) conducted a workshop entitled "Sustainability in ICTs", under its sustainability efforts and in line with UAE Vision 2021: towards achieving a 'Sustainable Environment and Infrastructure'. The workshop, attended by representatives from a number of international and local entities operating in the field of ICT, aimed to discuss relevant challenges and learn about practices of technology solution providers to reach 100% sustainable products. It also highlighted the efforts of organizations in preserving UAE's environment, and educating the public on best practices to realize an effective consumption of tech products. During his keynote speech, Eng. Saeed Belhoul, Chairman of Sustainability Committee and Director of E-Government Operations at TDRA, said: "Under the guidance of the wise leadership, we are striving in the UAE to be among the best nations in various fields and sectors, and that includes sustainable development. The UAE government is working to ensure environmental protection and strike a balance between economic and social development in line with the UAE National Agenda 2021, which states achieving a sustainable environment in terms of air quality, preserving water resources, increased reliance on clean energy and implementing green growth plans. In terms of infrastructure, the National Agenda aspires for the UAE to be among the best in the world in the quality of airports, sea ports and road infrastructure, as well as enhancing the quality of electricity and telecommunications, making the UAE a forerunner in the provision of smart services." Eng. Belhoul confirmed that TDRA seeks to create the desired positive impact on all stakeholders by maintaining a sustainable ICT business model, adding: "TDRA is keen to ensure a sustainable ICT sector for future generations by embedding sustainability as a core individual value and continuously integrating it into the business model, in order to achieve the 17 Sustainable Development Goals (SDGs), which the international community has agreed to achieve by 2030." Speakers at the workshop addressed the significant increase in e-waste, with 53.6 million metric tons of e-waste reported worldwide in 2019, an increase of 9.2 million tons in five years. The workshop stressed the importance of recycling e-waste and making use of the contained raw materials, as the value of raw materials in global e-waste generated in 2019 was estimated at $57 billion. Speakers emphasized that by adopting the Connect 2030 Agenda, ITU Member States have set a global ITU e-waste target for 2023 to increase the global e-waste recycling rate to 30% and to raise the percentage of countries with an e-waste legislation to 50%. They have also committed to reducing the volume of redundant e-waste by 50%. The workshop noted the importance of using digital technologies to monitor, mitigate and adapt to climate change; protect human health and the environment from hazardous waste; and adopt energy-efficient digital solutions to reduce carbon emissions. The workshop also discussed the importance of achieving a sustainable future in the UAE. Speakers at the workshop also provided an overview of sustainability, global environmental issues, the importance of using technology for a better future, and the future of technology in a sustainable world. TDRA has a number of plans and policies in business continuity and sustainability, as the telecommunications sector forms the cornerstone of various activities and areas such as economics, education, health, security and defense. Therefore, sustaining these sectors is driven essentially by sustaining the telecommunications sector. TDRA has sought to implement best corporate sustainability practices, providing a framework for integrating the sustainability approach into decision-making, plans and daily business of TDRA. TDRA has been able to overcome the challenges it previously faced in measuring the impact of sustainability, strengthening its social, environmental and economic role in supporting the UAE government's efforts to conserve resources for future generations.

(December 21, 2020) zawya.com

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Albania

Telecoms sector watchdog the Electronic and Postal Communications Authority (AKEP) has published a consultation document on cost modelling for mobile services as it looks to set a new glidepath for mobile termination rates (MTRs). To-date, AKEP has relied on a benchmark of MTRs of BEREC countries based on a pure long run incremental cost (Pure LRIC) model to calculate cost-oriented MTRs. The regulator notes, however, that whilst this approach has so far proved an efficient way to determine MTRs for Albania, it intends to develop its own cost model that accurately reflects Albania's market conditions and characteristics. The initial consultation document – referred to by the regulator as a Model Reference Paper (MRP) – explains AKEP's key modelling principles and the parameters upon which the new model will be based. AKEP's proposed methodology is based upon a bottom-up LRIC (BU-LRIC) approach, and the regulator has invited comments from industry stakeholders on the model it intends to develop. (December 3, 2020) commsupdate.com

Australia

A total of 15 companies have secured new spectrum in the 26GHz and 28GHz bands, the Australian Communications and Media Authority (ACMA) has announced, saying that this first 'major' allocation of 5G millimeter wave (mmWave) spectrum paves the way for 'faster and more reliable internet for metropolitan and regional Australia and innovative new uses for digital technology.' In a press release regarding the matter, the ACMA confirmed the identities of the winning bidders as: Dreamtilt, Field Solutions Group, Inmarsat, MarchNet, Nokia, NBN Co, New Skies Satellites/SES, O3B/SES, OptiComm, Optus, Starlink (SpaceX), Telstra, Viasat, Vocus and WorldVu (One Web). It noted that a number of the successful applicants intend to provide wireless broadband services across all states and territories and across urban, regional and rural areas, while highlighting the fact that there had been 'considerable uptake from fixed satellite service providers across Australia, including from existing providers and new entrants to the Australian satellite market'. According to the ACMA, the mmWave spectrum has been allocated through area-wide apparatus licenses (AWLs), a new class of license that it said 'represents the first step in the series of 5G-ready allocations in these mmWave spectrum bands. Using these new area-wide licenses, applicants were reportedly able to identify the regions and amount of spectrum they would seek to use, while the regulator confirmed that spectrum which was not allocated in the initial application round in the 26GHz (24.7GHz-25.1GHz) and 28GHz (27.5GHz-29.5GHz) bands will be made available for allocation in January 2021. Earlier this week, meanwhile, the ACMA opened applications for an auction of spectrum licenses in the 26GHz band (25.1GHz–27.5GHz in major population centers) in April 2021. A further allocation round for spectrum in the 26GHz band, covering regional and remote Australia, will then follow at the conclusion of that auction. (December 18, 2020) commsupdate.com

Australia's telecoms authority opened the application process for an auction of 5G spectrum in the 26GHz band it plans to conduct in April 2021. In a statement, the Australian Communications and Media Authority (ACMA) said applications for the mmWave spectrum will be accepted until 21 January 2021. It plans to auction 2.4GHz of the band across 27 geographic blocks. The 26GHz auction is the first time high-band 5G spectrum will be made available in the country, complementing the 3.6GHz band which Telstra, Optus and TPG Telecom (previously Vodafone Australia) are using. In a statement, ACMA member James Cameron said the mmWave spectrum will enable a wide range of new services which will benefit Australian businesses and consumers. "It is important for smart farming, robotics, telemedicine and other emerging technologies". A second auction of low-band 5G spectrum is planned for late 2021, ACMA said. In August, the government announced it would restrict operators to bidding for a maximum of 1GHz of the 2.4GHz on offer in the mmWave process. (December 2, 2020) mobileworldlive.com

The Australian Communications and Media Authority (ACMA) introduced rules requiring operators to detect, trace and block scam calls, a problem it stated had cost consumers AUD35.6 million ($26.2 million) so far in 2020. It stated the Reducing Spam Calls Code was developed alongside operators and the Communications Alliance. It requires operators to "detect, trace and block spam calls" alongside offering "information to assist their customers" in managing and reporting incidents. Other stipulations include sharing information about scam calls with other operators and report them to authorities. ACMA said the code builds on recent scam reduction and awareness activities including the introduction of measures to fight mobile number fraud earlier this year and the release of consumer resources. Operators said

they blocked more than 30 million scam calls over the last 12 months during trials of methods to combat the problem. "The code is a unique and ground-breaking contribution to global regulatory efforts to prevent the harms caused by scammers", Fiona Cameron, chair of the ACMA's Scam Telecommunications Action Taskforce, said. "It is a holistic, end-to-end framework for effective scam reduction activity". Operators face penalties of up to AUD250,000 for failure to comply with the new code. (December 2, 2020) mobileworldlive.com

The Australian Competition and Consumer Commission (ACCC) opened a public consultation on remedies offered by Google to alleviate competitive concerns raised by a proposed acquisition of Fitbit. In a statement, ACCC chair Rod Sims said feedback will assist in deciding "whether the behavioral remedy proposed is capable of addressing our competition concerns regarding the transaction". Submissions from industry and consumers on the long-term effectiveness and enforceability of Google's suggested actions are due by 9 December. The company pledged not to employ users' health data for advertising purposes for ten years, to address ACCC concerns over the access Google would gain to "unique and substantial" details. Google also committed to maintain access for third parties including health and fitness apps to data collected on wearable devices, and maintain interoperability between non-Fitbit devices and Android smartphones, again for periods spanning a decade. All pledges would be enforceable by a court and Sims emphasized the body "has not decided whether ot not it will ultimately accept any undertaking". The company offered similar commitments to the European Commission to gain its clearance for the $2.1 billion acquisition: the Commission last month extended the deadline for issuing its decision into early 2021.
(December 1, 2020) mobileworldlive.com

Brazil

The National Telecommunications Agency (ANATEL) has confirmed that it approved the takeover of Sercomtel Telecomunicacoes by the Bordeaux Fundo de Investimento em Participacoes Multiestrategia (Bordeaux Multi-Strategic Investment Fund) on 7 December. The watchdog notes that the deal had previously been given the green light by the Administrative Council for Economic Defence (Conselho Administrativo de Defesa Economica, CADE). The Bordeaux Fund is now free to complete its takeover of 99.99% of the regional operator. As previously reported by TeleGeography's CommsUpdate, in August Bordeaux was crowned as the winner following the privatization auction for Sercomtel. The auction involved a modest upfront fee of BRL50 million (USD9.1 million) alongside an additional BRL80 million commitment. Subsequently, in November Bordeaux was named as the winning bidder for Copel Telecom, following an 18-round auction. Copel confirmed that the final bidding price reached BRL2.395 billion.
(December 8, 2020) commsupdate.com

Burkina Faso

The Regulatory Authority for Electronic Communications and Posts (ARCEP) has launched a public consultation on the allocation of spectrum for the provision of fixed internet services. The regulator has invited comments from stakeholders regarding a range of issues, including: the frequency bands, technologies and duplexing mode (FDD or TDD) to be used; the amount of spectrum and the size of the frequency blocks to be made available; the geographic coverage of licenses; and the method adopted for allocating frequencies. The consultation will run until 5 January 2021. According to ARCEP, the consultation has been prompted by a number of applications for frequencies in recent years, following an earlier decision to suspend allocations due to congestion in some spectrum bands earmarked for fixed wireless connectivity. ARCEP is considering using the following frequencies for WiLL internet services: 1900MHz-1920MHz; 2300MHz-2400MHz; 2500MHz-2690MHz; 2570MHz-2620MHz; 3300MHz-3400MHz; and 3400MHz-3600MHz. It has urged service providers to consider the availability of affordable terminals when selecting a band.
(December 2, 2020) commsupdate.com

China

The Cyberspace Administration of China (CAC) reportedly set out draft regulations designed to restrict collection of personal user details by apps. Reuters reported CAC opened a public consultation on the proposed rules, seeking feedback by 16 December. The news agency stated the body is concerned about data protection and potential mismanagement of information by app companies. CAC reportedly argued the personal details collected by apps often went beyond the scope of their use. The guidelines are expected to cover close to 40 categories of apps, including messaging, payments, shopping and taxi-booking services. China's move to tighten app practices is tipped to be part of broader government efforts to curb tech giants' dominance by outlining rules to tackle anti-monopolistic behavior. (December 2, 2020) mobileworldlive.com

Costa Rica

The Superintendency of Telecommunications (SUTEL) has reportedly launched a consultation into spectrum suitable for 5G use. The frequencies under discussion include: 700MHz, 2300MHz, 3.3GHz-3.4GHz, 26GHz and 28GHz. The report says that the regulator is keen to gauge industry stakeholder feedback on subjects such as new operator participation; minimum bandwidth requirements; and the possibility of a 5G wholesale network deployed by state-backed Grupo ICE. The consultation was launched on 25 November and will run for ten days.

(December 1, 2020) El Financiero

Cyprus

Four bidders are confirmed for Cyprus' upcoming 5G mobile spectrum license auction scheduled for 17 December 2020, namely Cyta (Cytamobile-Vodafone), PrimeTel, Epic and Cablenet. Six 2×5MHz lots in the 700MHz band and eight 50MHz lots in the 3.6GHz band are up for grabs, via four concessions stipulating deployment of 5G networks covering 70% of the population alongside all major highways by 31 December 2025. The auction is being conducted by the Department of Electronic Communications, currently under the Deputy Ministry of Innovation. Department of Electronic Communications head George Komodromos told the Financial Mirror that delays in the process were caused by extensions granted to interested parties for credit facilities because of the 'very high' reserve price for each license – CYP6 million (USD12.4 million) – while further application extensions had been granted after authorities received new guidelines from the EU on cybersecurity.

(December 9, 2020) The Financial Mirror

Ethiopia

There will be no fourth operator licensed in the Ethiopian telecoms market for at least ten years following the initial introduction of competition, Addis Fortune reports, citing comments made by Brook Taye, a senior advisor at the country's Ministry of Finance (MoF). With a tender for two new licensees having officially gotten underway last week, the winning bidders will each receive 15-year concessions. According to Taye, the current plans are for a 'two plus one approach' to be followed once the market is opened up, and he noted that during earlier consultation meetings regarding the country's liberalization plans, prospective bidders had requested between three to five years before any further entrants were permitted. However, it would appear a longer period is being envisaged by the authorities, with Taye noting that a market dynamics study conducted by the MoF and the Ethiopian Communications Authority (ECA) had concluded that the market could work with three operators for a decade, with the advisor saying: 'With fair and equitable profit the market can absorb three companies for ten years.' Meanwhile, in return for the grace period it was noted that the winning bidders will be subject to coverage requirements, with these including reaching 98% of the population with voice and text message services within five years. Failing to achieve these coverage targets will, Brook said, 'result in a sanction'.mAs previously reported by CommsUpdate, a request for proposals (RFP) for the award of two new telecoms licenses was launched by the ECA last week, with interested parties given until 10 December to submit a request for the documentation and state their intent to take part in the bidding process. Following this, 25 December has reportedly been set as a deadline for the receipt of questions and suggestions regarding the RFP from would-be bidders, with the MoF and ECA expected to respond to those in January 2021. A final version of the RFP, which will incorporate comments from the bidders, will then be released 29 January, with a final bid submission date of 5 March having been set. According to Brook, meanwhile, with the way in which the bid document outlines the technical and financial requirements said to be very objective and easy to measure, he said the bid evaluation team aims to complete the selection process and announce the winners less than a month after the closing date. 'We expected to announce the winners in March,' the advisor added.

(December 3, 2020) commsupdate.com

A request for proposals (RFP) for the award of two new telecoms licenses in Ethiopia has been launched by the Ethiopian Communications Authority (ECA). In issuing its tender notice the ECA noted that companies interested in receiving the RFP documentation, which contains 'all details and instructions pertaining to the submission of proposals, including the qualification criteria and conditions for eligibility to participate', must send a written request by 10 December 2020. Beyond that, the ECA has confirmed that it will accept applications for one of the new licenses, made in accordance with the guidelines presented in its RFP documentation, until 5 March 2021. As previously reported by CommsUpdate, under a framework for the liberalization and development of the Ethiopian telecoms sector, the ECA plans to award two nationwide full service licenses through a competitive bidding process.

(December 1, 2020) commsupdate.com

Fiji

The Minister for Rural and Maritime Development, Inia Seruiratu, has said that the bill to amend the Telecommunications Act is 'long overdue' and that work needs to be done to address problems of unconnected areas across the country by strengthening the Universal Service Scheme. While moving the motion to debate the bill to amend the Telecommunications Act 2008 in parliament, Attorney General and Minister for Economy Aiyaz Sayed-Khaiyum said that the government has identified 300 sites in Fiji that do not have any connectivity – fixed or mobile – and that under existing legislation, the provisions to redress that are slow. Sayed-Khaiyum is arguing for an amendment to the Telecommunications Act to make it easier 'to move quickly in connecting the 5% of Fijians who face issues regarding connectivity'. Whilst some progress has been made in recent years – by working with mobile, radio and TV companies to share infrastructure in some areas – much more needs to be done. The Attorney General is quoted as saying that amongst other things, they 'are looking at one tower with many transmitters for these unconnected areas rather than having many towers in one small area because companies will not have to fork out that much money'.

(December 11, 2020) FijiVillage

France

The telecoms watchdog ARCEP has adopted a series of decisions, updating the regulatory framework for the fixed broadband sector following the completion of a market analysis program that lasted more than a year and included dialogue with operators, the competition authority and the EC. According to ARCEP, the decisions are aimed at facilitating the migration from the legacy copper network to fiber whilst maintaining pro-investment regulation and energizing the business market. The watchdog notes that it is aiming to complete the switchover from copper to fiber within the next ten years and to that end has opened the possibility of a commercial switch-off prior to the technical switch-off, with the new regulations setting the terms and conditions for doing so. Although fixed line incumbent Orange France has confirmed its intention to begin deactivating the copper network from 2021, ARCEP notes that the telco's plans are 'far from fully established' and has encouraged the operator to provide clarity on its plans as soon as possible. The decisions include several asymmetric regulations that apply only to the provider with significant market power (SMP), namely Orange France. These were the definition of several relevant markets, including obligations for the SMP, and the imposition of maximum tariffs that Orange can charge for access to its copper local loop during the period from 2021 to 2023. The relevant markets are: a separate civil engineering market, for the wholesale provision of access to physical civil engineering infrastructure for the deployment of communications networks; wholesale access provided at a fixed location (Market 3a), including unbundling of the local copper loop and sub-loop and passive offers for the provision of optical fiber; wholesale central access provided at a fixed location (Market 3b); and wholesale quality access provided at a fixed location (Market 4), including offers specifically intended for corporate end user sites or network elements. ARCEP also adopted a decision to implement symmetric regulation of the fiber market, with the regulator having determined that there is healthy competition in the segment. Highlighting the progress in the fiber market, the regulator noted that the availability of fiber-to-the-home (FTTH) products has risen from 11% in 2017 to nearly 88% in Q2 2020.

(December 21, 2020) commsupdate.com

Ghana

The National Communications Authority (NCA) has granted additional temporary spectrum at no cost to MTN and Vodafone to improve their service to customers. The extra 5MHz of frequencies was initially made available to the two cellcos in April 2020 for a three-month period to address a surge in usage during the COVID-19 lockdown. In anticipation of increased demand during the election period and Christmas season, the extra spectrum has again been made available to prevent congestion and keep costs reasonable for consumers.

(December 1, 2020) commsupdate.com

Greece

Vodafone Greece emerged as the top spender in a Greek auction of spectrum earmarked for 5G, which raised a total of €372.1 million after six rounds of bidding. In a translated statement, regulator Hellenic Telecommunications and Post Commission said the sale was expected to yield "significant benefits" for the industry, paving the way for investment in critical infrastructure, and development of new products and services. It tipped 5G to boost the country's digital transformation, "improving business competitiveness, and contributing decisively to economic development and social prosperity". The auction covered spectrum in the 700MHz, 2GHz, 3.4GHz to 3.8GHz and 26GHz bands, with three bidders participating. Vodafone

Greece bid €130.1 million to secure 14 blocks in the 3.4GHz to 3.8GHz range; two blocks of 700MHz; four blocks of 2GHz; and two blocks of 26GHz. Cosmote spent €123 million for the same number of blocks in the latter three bands and 15 blocks at 3.4GHz to 3.8GHz. Wind Hellas committed €119 million for ten blocks from 3.4GHz to 3.8GHz; two at 700MHz; four at 2GHz; and one in the 26GHz band.

(December 18, 2020) mobileworldlive.com

The Greek government will hold its auction of 5G-capable spectrum, with frequencies in the 700MHz, 2GHz, 3.4GHz-3.8GHz and 26GHz bands up for grabs. All three incumbent cellcos – Cosmote, Vodafone and Wind – have already been cleared to participate in the sale, which is expected to be completed on the same day. Kathimerini reports that the auction is expected to net the government EUR367.3 million (USD445 million).

(December 15, 2020) commsupdate.com

Hungary

Hungarian operator DIGI Hungary was confirmed to not be participating in the country's upcoming spectrum auction, with its three main rivals Magyar Telekom, Telenor, and Vodafone Hungary registering. In a statement, Hungary's telecoms regulator Nemzeti Media- es Hirkozlesi Hatosag (NMHH) said it registered the three operators on December 17, after they submitted formal interest in November 10, with the bidding process expected to commence early next year. The regulator pledged after the auction it will detail publicly what operators paid, and for which frequencies in the 900MHz and 1,800MHz bands. DIGI Hungary previously said preliminary conditions set by NMHH to qualify for the auction in the above band were "obstacles" that prevented it from participating. The operator launched a petition, collecting 80,000 signatures to allow it to take part.

(December 21, 2020) developingtelecoms.com

India

The Indian government has approved plans for the next round of spectrum sales, with a total of 2,251.25MHz to be put up for auction in March 2021, the Economic Times writes, citing a government statement. The frequencies span the 700MHz, 800MHz, 900MHz, 1800MHz, 2100MHz, 2300MHz and 2500MHz bands – with the 5G-compatible 3300MHz and 3600MHz ranges notably excluded from the sale – and have been valued at a total of INR3.92 trillion (USD53.3billion), based on the reserve prices set for the airwaves. Full details of the auction will be published along with a Notice Inviting Applications later this month. The high reserve prices are expected to limit participation in the auction, although the reduction in potential competitors for the airwaves may encourage cellcos to purchase crucial frequency blocks at the reserve prices. Each of the three-remaining privately-owned cellcos – Reliance Jio Infocomm (Jio), Bharti Airtel, and Vodafone Idea Limited (VIL, offering services under the Vi brand) – have licenses due to expire in the next few years, but the auction is unlikely to see the intensity of bidding witnessed in the 2015 auction. Several participants in that sale were facing 'must-win' situations where failure to secure spectrum in certain circles would have forced them to shut down operations in those areas, and the scarcity of available frequencies at the time forced operators to battle for airwaves, driving up prices. In the upcoming sale, however, there is sufficient spectrum available that operators should not need to fight over the frequencies. Instead, the stressed financial status of the trio – in particular Vi – is likely to be the deciding factor in participation. As such, the government will allow winning bidders to submit a down payment of 25% to 50% of the end price, with the balance to be cleared over 16 annual instalments after a two-year moratorium. In a separate development, meanwhile, the government has announced plans to restrict the vendors that can supply telecom equipment to operators in India. The Hindustan Times writes that the Cabinet approved the plans as part of a national security directive. Under the policy, the government will curate a list of 'Indian trusted sources' that will be permitted to sell to operators in India. The move has been interpreted as a strike against Chinese vendors ZTE and Huawei, as tensions between Beijing and Delhi have escalated in recent years. Additionally, though, the restriction may incentivize operators to source equipment from India-based suppliers, in line with the current administration's major policy goal of establishing India as a hub for telecom equipment research, development and manufacturing.

(December 17, 2020) commsupdate.com

India's Department of Telecommunications (DoT) has accepted recommendations from sector watchdog the Telecom Regulatory Authority of India (TRAI) on ensuring the availability of adequate numbering resources for fixed line and mobile services. As such, the DoT has instructed service providers to modify the dialing pattern for calls from fixed to mobile numbers, requiring all calls from fixed lines to mobiles to be prefixed with a '0'. The DoT's order also requires operators to implement a system to play a message regarding the change whenever a fixed line customer dials a mobile number without the new prefix. The measures – which are set to take effect from 15 January

2021 – will free up additional numbering resources for mobile services by enabling the exploitation of underutilized blocks of numbers that were previously usable only for fixed lines. The regulator stressed that the move does not represent a transition to an eleven-digit numbering scheme, a measure which has been proposed several times but has met with opposition from stakeholders. (December 1, 2020) commsupdate.com

Indonesia

The Indonesian government kick-started its selection proves for companies aiming to secure 30MHz of 2300MHz (2360MHz-2390MHz) for mobile services, and cut XL Axiata and Indosat Ooredoo after evaluation. TeleGeography's CommsUpdate reported, the Telkomsel, Smart Telecom (Smartfren), and Hutchison 3 Indonesia (Tri) were successful in passing the Ministry of Communication and Information's (MCI) requirements. The regulator stated the five operators applied for documents to participate, but at the deadline only four had submitted applications with Indosat Ooredoo not taking action. XL Axiata did not pass the watchdog's 'Administrative Evaluation of 2.3GHz Radio Frequency Band User Selection in the Range of 2360-2390MHz for the Need for Organizing Cellular Mobile Networks', whereas Telkomsel, Smart Telecom and Hutchison 3 Indonesia did. The regulator announced last month it would award spare spectrum to operators in the 2.3GHz band, as part of plans to push digital transformations, and in turn, boost economic, social and government sectors.

(December 15, 2020) developingtelecoms.com

Ireland

The Department of the Environment, Climate and Communications (DECC) has released an update detailing the progress on the country's National Broadband Plan (NBP), under which the state has committed to ensuring all citizens have access to high-speed broadband. In its update, the DECC said that National Broadband Ireland (NBI), the company tasked with delivering the NBP, has made 'significant progress' in 2020. According to the government department NBI subcontractors are currently surveying fiber routes to assess whether existing poles can be used, assessing underground ducting and the extent of tree trimming required to avoid disturbance of the fiber cables as they are placed on overhead poles. With regards to progress in this area, as of 23 November 2020 more than 136,000 premises across 26 counties were said to have been surveyed, ahead of a full year survey target of 120,000. Meanwhile, work on the deployment of fiber-to-the-home (FTTH) infrastructure was confirmed to have gotten underway in several areas, namely: Carrigaline, Fountainstown, Ballinhassig, Monkstown, and Upper Rochestown (in the county of Cork); ranmore, Clarinbridge, Claregalway, Furbo and Barna (Galway); Ballinagh, Corlurgan, Araghan, Poles, and Caughoo (Cavan); townlands outside Limerick City including Mungret, Patrickswell, Crecora, Castleconnell and Caherconlish (Limerick); and areas around Ballinasloe such as Kiltomer, Oatfield, Annagh, Kilconnell, and Ahascragh (Galway). Almost 8,000 premises are targeted to be passed with fiber and connectable to a broadband service by the end of the first year of the NBP Contract (i.e. 31 January 2021), while a pilot test and trial phase for connections will run between this month and next month in Carrigaline, County Cork. ISPs are expected to be able to provide services directly to customers 'early in 2021'. Also, of note, Broadband Connection Points (BCPs) will reportedly be used to provide connectivity and help communities to quickly access free public high speed broadband in advance of the main deployment under the NBP. Planned BCP locations were identified by local authorities and include schools, library hubs, and local sports facilities. According to the DECC, the BCP delivery project is 'now well underway', with connectivity being provided to each of the sites by NBI. NBI has installed equipment at 201 locations to facilitate BCPs for public access Wi-Fi. Vodafone Ireland is, meanwhile, said to be enabling these buildings with the necessary indoor and outdoor Wi-Fi under a contract with the Department of Rural and Community Development. As of mid-November, 59 BCPs had been connected by Vodafone Ireland.

(December 8, 2020) commsupdate.com

Italy

Italy's top court has annulled a EUR74.3 million (USD90 million) fine levied against Telecom Italia (TIM) in 2017. The penalty was imposed by markets regulator Commissione Nazionale per le Societa e la Borsa (Consob) for the alleged failure to notify authorities of a move by main shareholder Vivendi to take effective control of TIM. According to a Reuters report, the court found that the regulator had not followed the proper procedure when making its ruling.

(December 15, 2020) commsupdate.com

Malaysia

The telecoms regulator again penalized mobile operators for not properly verifying the identity of prepaid subscribers, fining five companies a total of MYR750,000 ($184,539). The Malaysian Communications and Multimedia Commission (MCMC) imposed fines of MYR250,000 on Digi, MYR200,000 on Maxis, MYR150,000 on U Mobile, MYR100,000 on Tune Talk and MRY50,000 on YTL Communications. It based the action on discoveries made during audits carried out in three states between August and October 2019. In early October, it fined six mobile operators a total of MYR700,000 for similar registration errors. The regulator has increased its action against operators in 2020, issuing fines totaling MYR3.5 million (including the prepaid penalties), which it stated is 19 per cent higher than it imposed on the industry in 2019.

(December 9, 2020) mobileworldlive.com

The Netherlands

The Authority for Consumers and Markets (ACM) launched an investigation into competition in smartphone-based contactless payments, examining whether limitations on access to NFC functionality on some devices violates domestic laws. In a statement, ACM noted many phones use NFC technology for contactless payments, but some devices "only allows the software developer's own payment app" to use the capability. It plans to investigate whether this breaks competition laws by hindering innovation and reducing user choice in payment apps. If breaches are found, ACM said it could issue penalties including fines, though it added it would close the case if no problems are uncovered. The regulator previously flagged the issue in a report on the Dutch payment market issued on 1 December, calling on major technology companies including Apple, Facebook, Amazon, and Ant Group to "maintain a level playing field for payment services" on smartphones and smartwatches. In June, the European Commission opened an investigation into allegations Apple restricted access to NFC on iPhones and refused competitors access to its Apple Pay service.

(December 4, 2020) mobileworldlive.com

Nigeria

The Nigerian Communications Commission (NCC) has announced that all mobile subscribers in the country will be required to provide their service provider with a valid National Identification Number (NIN) between 16 December and the end of 30 December 2020, in order to update their SIM registration records. The decision follows a directive issued last week suspending the registration of new SIM cards by mobile network operators (MNOs) while the NCC embarks on an audit of the Subscriber Registration Database. Soon after, a meeting was held between the Ministry of Communications and Digital Economy, the NCC, the National Information Technology Development Agency (NITDA), the National Identity Management Commission (NIMC) and representatives from all service providers in the industry, during which it was agreed that operators would immediately require all their subscribers to provider their NIN. After the deadline, all SIMs without NINs will be blocked from the networks, and any violations of the directive will be met by sanctions, including the potential withdrawal of an operator's license. (December 17, 2020) commsupdate.com

The communication regulator ordered mobile operators not to activate, sell or register new SIM cards until the completion of an assessment into whether providers have complied with data regulations. In a statement, The Nigeria Communications Commission said the suspension would be for the duration of an audit of operators' current bases and new registrations would only be allowed "where absolutely necessary" with permission from the government. Failure to comply, the regulator added, would be met with "strict sanctions" including the possible withdrawal of operating licenses. Ensuring the identification of mobile users has been a priority of Nigerian authorities for several years, with SIM registration rules first put in place during 2011. MTN's local unit received a massive fine for contravening rules in 2015. In January, Nigeria imposed further regulations requiring users to complete digital identification procedures with government agency National Identity Management Commission and provide the details to their mobile network provider. Nigeria has four major mobile operators, with GSMA Intelligence figures for Q3 estimating MTN as the largest with 75 million connections, followed by Glo Mobile (54 million), Airtel's local operation (44 million) and 9Mobile (13 million).

(December 10, 2020) mobileworldlive.com

Peru

Peru's Ministry of Transport and Communications (MTC) announced electromagnetic waves emitted from radio broadcasting and telecom antennas in the city of Cusco, are below the legal international limit. In a statement, MTC said it carried out field tests during the weekend (December 19-20) in different locations in the city to find its results. Specifically, engineers were sent to record waves in Cerro Picchu, in the district of Lucre, in Quispicanchi, and in the Plaza de Armas in Cusco. MTC found "non-ionizing radiation" from the main telecommunications services does not exceed 1% of the maximum reference levels established for international environmental quality standards. It is considered non-compliance when it exceeds 100%." Angel Paz, general director of Communications Inspections and Sanctions said: "The public must be sure that electromagnetic waves do not have negative effects. The MTC makes constant measurements and we have verified that all signals are within the allowed standard. This gives security to continue installing more antennas to help reduce the digital divide".

(December 27, 2020) developingtelecoms.com

Peruvian telecoms watchdog the Supervisory Agency for Private Investment in Telecommunications (OSIPTEL) has issued a new order requiring service providers to use a standard template for contracts for a range of services to ensure that they are easy for customers to read and understand. The short contracts break down the relevant information into standardized and numbered sections, with explanations written in a 'simple and friendly way'. All new contracts must also include a consumer rights booklet from OSIPTEL, which includes similarly simplified information on subjects such as billing, number portability and cancelling a contract, as well as contact information for the regulator. Under the terms of the order (Resolution No. 311-2020-GG/OSIPTEL), operators are required to prepare contracts using the new standard template for each of their tariffs and submit them to the regulator before marketing the services, and must do the same for any scheduled modifications to the plans. The regulations also ban providers from adding extra clauses to their contracts. The standard templates must be in use by all companies by 4 March 2021. OSIPTEL has established standardized contracts for the following types of service, with variations depending on the contract type (i.e., pre-paid or post-paid): pay-tv, fixed telephony, multi-service bundles, mobile, mobile internet and fixed internet.

(December 7, 2020) commsupdate.com

The Ministry of Transport and Communications (MTC) has published draft rules to regulate the sharing of active telecommunication infrastructure. The proposals look to establish a set of standards regarding procedures, conditions and requirements for the approval of infrastructure sharing agreements. The MTC notes that the regulations would reduce the cost of investment and network expansion and promote the development of networks in underserved rural communities. Further, the MTC added that greater levels of infrastructure sharing would also reduce the environmental impact of installing new infrastructure such as antennas. The ministry stressed that the regulations do not extend to spectrum, however. Meanwhile, regional news portal TeleSemena cites the Ministry's accompanying report as saying that the current status quo would generate long-term disadvantages for the sector by widening the infrastructure gap and escalating costs through the duplication of networks and inefficient use of infrastructure. On the other hand, regulation of infrastructure sharing would widen access to service, stimulate competition and provide for more 'orderly' growth of networks, the MTC argued.

(December 1, 2020) commsupdate.com

Portugal

After weeks of bitter acrimony and legal threats, Portugal´s three mobile network operators have all reluctantly submitted applications to take part in the country's impending 5G spectrum auction. According to Reuters, Nos, Vodafone and MEO all filed their applications for the auction shortly before the 26 November deadline. Meanwhile, a report from local new site Observador quotes a spokesperson from small cell wholesale provider Dense Air Portugal, confirming that the company has also registered its interest in the bidding process. It remains to be seen whether Grupo MASMOVIL-backed Nowo will follow through with its threat to take part in the auction, however. The prospect of cableco/MVNO Nowo entering the MNO fray prompted Altice Portugal administrator Joao Zuquete da Silva to hit out at 'parasitic investment operators' who seek to capitalize on the work of companies that have been investing in the Portuguese economy for several decades. As previously reported by CommsUpdate, the National Communications Authority (Autoridade Nacional de Comunicacoes, ANACOM) unveiled its 5G auction rules last month, prompting anger from the trio of incumbents. One of the most contentious rules concerns ANACOM's desire to encourage new market entrants to participate in the bidding process, by setting aside an allocation of spectrum (900MHz/1800MHz) and granting newcomers nationwide roaming access for a period of ten years.

(December 2, 2020) commsupdate.com

Romania

The National Authority for Management and Regulation in Communications (ANCOM) has announced that the EC has raised no objections to its view that the wholesale markets for broadband internet access services at a fixed location require no regulatory intervention. The regulator's position was based on an analysis of market developments between 2015 and 2019 that concluded the market for fixed broadband internet access services remains competitive, with no specific regulation required for the upstream wholesale market and insignificant use of the local loop. Thus, ANCOM's conclusion was that no regulations are required in the markets for local access at a fixed location and, respectively, in the market for central access provided at a fixed location for mass-market products. The EC indicated ANCOM will need to permanently monitor the retail market for broadband internet access services, in order to intervene with ex-ante regulatory matters in the event of a significant changes in the market and its competitive landscape. The Authority will therefore monitor market developments, particularly regarding internet access services with speeds above 100Mbps. ANCOM will also pay special attention to geographical variations in operators' pricing strategies, in order to assess the need to define relevant sub-national markets, while it will monitor potentially significant changes that would require a more detailed definition of the product market, particularly the ability of rival operators to compete effectively with RCS&RDS in the high-speed internet access service segments.

(December 17, 2020) commsupdate.com

The National Authority for Management and Regulation in Communications (ANCOM) has published its 2021 Action Plan for public consultation. Among the major projects scheduled for next year are the 5G spectrum auction in the second quarter, the transposition into secondary legislation of the European Electronic Communications Code (EECC), the implementation of the Infrastructure Law, and the revision of the legislative framework regulating electronic communication services. Interested parties are invited to submit their comments and suggestions by 4 January 2021.

Transposition of the EECC

Following the transposition of provisions of the Directive on the establishment of the EECC into the primary legislation, ANCOM intends to review the regulations regarding the general authorization regime for the provision of electronic communications networks and services, the procedure for granting radio frequency usage rights, the management and administration of numbering resources, regulations regarding communications to the Single National Emergency Call System, as well as security measures to be taken by providers and the reporting of incidents with a significant impact in networks and services.

5G Spectrum Management

By the end of Q1 2021 ANCOM intends to adopt a decision on the procedure and rules for granting spectrum usage rights in the 700MHz, 800MHz, 1500MHz, 2600MHz and 3400MHz-3800MHz frequency bands. The auction, which was originally planned for Q2 2019 but delayed to give the government time to establish network security requirements and approve license fees and payment conditions, is now scheduled to take place in Q2 2021.

Implementation of Law No, 159/2016

To further implement the Infrastructure Law, in the first part of next year the authority plans to set indicative tariffs for access to the passive infrastructure of network operators, with the aim of supporting the development of broadband networks and the physical infrastructure elements necessary to support them. ANCOM intends to build an inventory of public electronic communications networks and the associated physical infrastructure elements (ATLAS Project), which will largely rely on data received from network operators. The regulator will also analyze the conditions for access to the physical infrastructure built with the participation or support of the central or local public administration authorities or financed, totally or partially, from public funds.

Regulation of Electronic Communications Services

In addition to transposing the EECC into the secondary legislation, ANCOM plans to review the wholesale market for high-quality access services provided at a fixed location to reassess the need for regulatory measures. It will also re-assess the collection and use of statistical data in the field of electronic communications. (December 8, 2020) commsupdate.com

South Africa

Six telecommunications companies submitted applications in response to the invitation to apply for access to South Africa's International Mobile Telecommunications spectrum, the Independent Communications Authority of South Africa said. Submissions were received from MTN Group Ltd., Vodacom Group Ltd., Telkom SA SOC Ltd., Cell C Pty Ltd., Rain Networks and Liquid Telecoms South Africa Ltd., ICASA said in a statement on its website. An application from Women Building a Better Society reached the authority after the cut-off time and it wasn't accepted. ICASA has made available the IMT spectrum bands in the 700MHz, 800MHz, 2600MHz, and 3500MHz bands. The regulator intends to conduct an auction for the licensing of high demand spectrum by no later than March 31, it said.

(December 29, 2020) bnnbloomberg.ca

South African President Cyril Ramaphosa has signed performance agreements with all of his cabinet ministers, detailing the targets they will need to meet over the medium-term. With reference to the mobile sector, Stella Ndabeni-Abrahams, the Minister for Communications and Digital Technologies, has been tasked with issuing a 'policy direction' for 5G by December 2021. In addition, the minister must ensure that 5G rollouts are underway by March 2024. The document also states that Ndabeni-Abrahams must cut the current cost of mobile data by 50% by 2024, with a view to ensuring that South Africa is in the 'top ten' African countries in terms of pricing for 1GB of data. Finally, President Ramaphosa has asked the Minister to guarantee that 80% of the population will have access to some form of internet connectivity by 2024. (December 9, 2020) commsupdate.com

The Independent Communications Authority of South Africa (ICASA) has approved the amendment of the ICT COVID-19 National State of Disaster Regulations to extend the validity period of the temporary assignment of radio frequency spectrum from 30 November 2020 to 'no later than 31 March 2021', by which date the regulator plans to complete the country's auction of high demand spectrum. All licensees which have been assigned temporary spectrum and wish to continue using it for the extended period will be required to pay prescribed spectrum license fees. In releasing the initial temporary spectrum to meet high demand for services during the emergency/lockdown situation, ICASA did not require any spectrum fee payments, but its chairperson Keabetswe Modimoeng now explains: 'We are aware that licensees generated and reported revenue growth during this period. We have therefore resolved that, in addition to fulfilment of the obligations imposed with the release of temporary spectrum, the extended use of spectrum must be at a fee as provided for in the amended regulations.' ICASA plans to license the 700MHz and 800MHz bands ('digital dividend' frequencies currently occupied by TV broadcasters), alongside spectrum in the 2300MHz, 2600MHz and 3500MHz bands. Specifically, ICASA plans to award 60MHz (2×30MHz) in the 700MHz band, 60MHz (2×30MHz) in the 800MHz band, 40MHz in the 2300MHz band, 170MHz in the 2600MHz band, and 116MHz in the 3500MHz band.

(December 1, 2020) commsupdate.com

South Korea

The Ministry of Science and ICT (MSIT) has published a detailed policy plan for the reallocation of frequencies which are currently used for 3G and 4G services, but are scheduled to expire in June 2021. The pricing for the spectrum remains some way above what the nation's three mobile network operators (MNOs) – SK Telecom, KT Corp and LG Uplus – had hoped to pay. With both sides having been locked in a fierce debate over the pricing for some months, the MNOs had proposed paying KRW1.65 trillion (USD1.5 billion) for the frequency reallocations. Now though, the MSIT has suggested a price almost double that – KRW3.17 trillion – and even then, that figure could rise dependent on how many 5G base stations each operator rolls out by 2022. Indeed, according to the policy plan, while operators would face the KRW3.17 trillion charge if they can each construct 120,000 5G base stations by the aforementioned date, the figure would rise to as much as KRW3.77 trillion were they to deploy between 60,000 and 80,000 sites; for reference, according to government data, as of August 2020 each of the three MNOs were said to have installed between 40,000 and 50,000 5G base stations over the past two years. Commenting on its plans, the MSIT was cited as saying: 'As the value of LTE frequency fluctuates based on 5G investment, the redistribution price was determined based on the level of 5G base station instalment.' (December 1, 2020) The Korea Herald

Spain

Spain will invest 4.3 billion euros ($5.15 billion) on deploying next-generation 5G telecoms technology and extending broadband coverage by 2025, the government announced recently. . A total of 883 million euros is already in next year's budget, which parliament is set to approve in the coming weeks and includes investments to extend broadband to rural areas. "The goal is that everyone, regardless of where they live, enjoys the benefits of these advances in connectivity under a plan which is particularly relevant for rural Spain"," Maria Jesus Montero, a government spokeswoman, said after a weekly cabinet meeting. Spain also expects companies will invest around 24 billion euros on 5G technology in the country by 2025, Montero added. Spain's 5G rollout would require 6 billion euros in infrastructure investment, the head of domestic market leader Telefonica's Spanish business said last week. Industry body GSMA estimates telecoms operators worldwide will spend 78% of a projected $1.14 trillion in capital expenditure over the next five years on 5G.'

(December 2, 2020) zawya.com

Sweden

Sweden's Post and Telecom Agency (Post & Telestyrelsen, PTS) has confirmed that the process of frequency assignment in the 3.5GHz and 2.3GHz bands will resume on 19 January 2021. In November the regulator decided to pause the 5G spectrum license auction after an Administrative Court in Stockholm upheld Huawei's appeal against license conditions which barred winning bidders from using its equipment in their 5G networks. Since the Court of Appeal has now decided that the PTS' conditions regarding Huawei shall apply pending the judicial review of PTS' decision, the authority will resume the auction. The PTS stated that it has been in contact with the participating players and announced that the auction will begin on 19 January, adding that: 'the frequency allocation in the 3.5GHz and 2.3GHz bands is crucial for 5G development in Sweden and affects the digitalization of society. Therefore, PTS holds the auction despite the fact that the conditions must be tried legally.' (December 21, 2020) commsupdate.com

Sweden's Court of Appeal is allowing the country's 5G spectrum auction to proceed despite an earlier legal challenge from Chinese vendor Huawei, which had led to the postponement of the sale last month. On 10 November the Post and Telecom Agency (Post & Telestyrelsen, PTS) halted the auction after an Administrative Court in Stockholm upheld Huawei's appeal against the license conditions which barred winning bidders from using its equipment in their 5G networks. The clause had been included against Huawei and another Chinese vendor, ZTE, due to security concerns. In a statement the PTS says that it welcomes the Court of Appeal decision, adding: 'With this ruling, there are conditions for conducting the auction in the near future. However, PTS needs to contact the participating actors. This means that the auction will not now start in December.'

(December 17, 2020) commsupdate.com

Switzerland

The Competition Commission (Wettbewerbs-kommission, WEKO) has opened an investigation into state-owned full-service provider Swisscom. In a statement from WEKO, the regulator noted that there was a risk that Swisscom may exclude competitors from the market though its current fiber network expansion program. Elaborating on its concerns, WEKO explained that the infrastructure development 'changes the structure of the network in areas that it is expanding on its own in such a way that competitors no longer have direct access to the network infrastructure.' Consequently, end users could be restricted in their choice of providers and products. WEKO added that – based on the information currently available to it – it 'appears credible' that Swisscom is abusing its dominant market position and, as such, the regulator has prohibited Swisscom from denying access to continuous lines to competitors as a precautionary measure. The regulator has launched an investigation to determine in depth the extent to which Swisscom is abusing its market position. For its part, Swisscom has rebuffed the accusation and has confirmed that it will file an objection against the precautionary measures imposed by WEKO. Defending its position, the provider claimed that it was engaged in 'intensive competition' with alternative providers in the construction and operation of broadband networks, and that it offers a wide variety of wholesale options for its competitors. Regarding WEKO's accusations, Swisscom stated that its expansion of fiber-to-the-home (FTTH) infrastructure relies on point-to-multipoint architecture and therefore still enables competition. The rollout method is also faster and more cost-efficient, Swisscom argued, adding that both end-users and wholesale customers will benefit from the upgrade by purchasing wholesale upstream products. Swisscom is currently in the process of expanding its FTTH network with the goal of doubling the number of connections to more than 3.0 million by 2025. By that date between 50% and 60% of Swiss homes would have access to bandwidth of up to 10Gbps, whilst 30% to 40% of the households would have access to download speeds of between 300Mbps and 500Mbps.

(December 18, 2020) commsupdate.com

United Kingdom

The telecoms regulator OFCOM has announced that four applicants have qualified to participate in the upcoming 700MHz and 3.6GHz-3.8GHz spectrum award process. The companies have been named as EE, Hutchison 3G UK, Telefonica UK (operating as O2) and Vodafone. Last month 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'. To that end, the regulator said it planned to 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. The frequency bands are likely to be used by mobile network operators to deliver a range of services, including 5G mobile. (December 21, 2020) commsupdate.com

The telecom regulator OFCOM has launched a consultation on a proposed approach to ensuring

continued protections for customers with only a fixed voice service. Prices for such customers have been protected since 1 April 2018 through voluntary commitments from fixed line incumbent BT, which the regulator accepted in 2017. As well as an initial price cut of GBP7 (USD9) to line rental, BT also capped overall increases to line rental and call charges at the rate of inflation (CPI) for a period of three years. With these voluntary commitments set to expire on 31 March 2021, however, OFCOM has now said it believes that price protection for voice-only customers 'remains necessary to address [its] previous concerns from [its] last review in 2017, which included lack of competition in the market and poor value for money for this group of customers. In line with this, BT has again made voluntary commitments, including the continuation of an inflation-linked control (CPI+0%) on the basket of line rental and call charges for voice-only products, as well as a commitment to an annual CPI+0% limit on prices for its Home Phone Saver product and a safeguard cap of CPI+2.5% for its line rental product. Meanwhile, with BT also having said the latest commitments would last for five years, it added that the measures will apply to all voice-only products and services taken by customers, regardless of the technology used to deliver the service, as well as any new products or services introduced throughout the five-year commitment period that are offered on a voice-only basis. Further, BT has said it will provide information to OFCOM on its compliance with the commitments on an annual basis. Having considered these commitments, OFCOM said its provisional view is that they would offer 'sufficient' protection for voice-only subscribers, and as such has proposed to accept them. It is inviting comments on the matter from interested parties by 21 January 2021, and has said it expects to issue a decision in March, ahead of the expiry of the existing commitments. (December 11, 2020) commsupdate.com

The telecom regulator OFCOM has launched a consultation on its spectrum management strategy for the 2020s, proposing action in three main areas which it believes will 'build on [its] existing approach of relying on market mechanisms where possibly and using regulatory levers where necessary'. In the first area, OFCOM has said aims to support wireless innovation by making it easier to access spectrum, while secondly it has said it aims to ensure the licensing regime fits local and national services. With regards to the latter area, the regulator has suggested that it will consider further options for localized spectrum access when authorizing new access to frequencies. Finally, OFCOM has signaled its intent to promote spectrum sharing, saying in this area it will encourage: use of better data and more sophisticated analysis when assessing the conditions for sharing; wireless systems to be more resilient to interference from their neighbors; and an efficient balance between the level of interference protection given to one service and flexibility for others to transmit. Interested parties have been given until 26 February 2021 to make submissions to the consultation. (December 8, 2020) commsupdate.com

United States

Several mid-Michigan communities will get a total of $5.6 million to fund high-speed broadband internet service to more than 4,300 rural homes and businesses over the next 10 years. The money comes from the Federal Communication Commission's Rural Digital Opportunity Fund Phase 1 auction. Locally, nearly half of that funding will go to Clare County, which will receive more than $2.6 million to provide service to 1,941 customers. Companies with the winning bids were Point Broadband Fiber Holding, Mercury Wireless and Charter Communications. Point Broadband will get the majority of the money - nearly $2.5 million - to provide service to 1,476 homes and businesses in the county. In Michigan, the auction allocated $362 million in support of expanding broadband to 249,263 unserved homes and businesses. Nearly all locations in the state that were eligible for the auction will be receiving access to broadband with speeds of at least 100/20 megabits per second, with 80 percent of those getting gigabit-speed service. "This historic auction is great news for the residents of so many rural Michigan communities, who will get access to high-quality broadband service in areas that for too long have been on the wrong side of the digital divide," FCC Chairman Ajit Pai stated in a press release. "We structured this innovative auction to prioritize bids for high-speed, low-latency services to deliver the best results for rural American, and the results show that this strategy worked." Gladwin County will receive more than $1.3 million to serve 499 residences and businesses, with Point Broadband Fiber Holding again getting most of that. Other mid-Michigan communities getting funding are: Midland County, $1 million to serve 1,345 customers; Clinton County, $462,000 to serve 482 customers; Montcalm County, $14,432 to serve 39 customers; Isabella County, $51,800 to serve 87 customers; and Mecosta County, $3,308 to serve 10 customers. Gratiot County did not have any bidders participate in the FCC auction. (December 27, 2020) themorningsun.com

US lawmakers are expected to include USD1.9 billion funding for the Federal Communications Commission's (FFC's) 'rip and replace' scheme as part of USD900 billion COVID-19 relief bill, Reuters reports, citing two sources briefed on the matter. The scheme, approved by the FCC earlier this month, requires operators to

remove from their networks equipment that the US government considers a national security risk. The FCC's order featured a reimbursement program to support the replacement of relevant equipment by smaller providers, and was initially expected to cost 'at least USD1.6 billion'. The new bill reportedly expands the eligibility for financing to providers with ten million or fewer subscribers, although operators with two million or fewer subscribers are to be prioritized. In June this year, a separate order formally identified Chinese vendors Huawei and ZTE as security threats, barring operators from using money from the USD8.3 billion Universal Service Fund (USF) to purchase equipment from the firms. Meanwhile, the relief bill also includes funding of USD3.2 billion for an emergency broadband benefit for low-income Americans, and USD7 billion to increase access to broadband. Reuters quotes a fact sheet on the legislation as specifying that the bill 'establishes a temporary, emergency broadband benefit program at the FCC to help low-income Americans, including those economically challenged by the COVID-19 pandemic, get connected or remain connected to broadband.' Other initiatives supported by the bill include the expansion of broadband infrastructure to underserved Americans in rural areas and to minority communities, and the development of more accurate broadband availability maps to allow the FCC to better allocate government funding for broadband development.

(December 21, 2020) commsupdate.com

Zimbabwe

Data and internet services are expected to continue driving the telecoms sector growth, according to regulator Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ). This comes as businesses in Zimbabwe have embraced digitalization, accelerated by the outbreak of the Covid-19 pandemic. The pandemic has necessitated use of digital platforms to reduce physical interaction as part of measures to reduce the spread of the disease. According to a POTRAZ 2020 third quarter report, there was a surge in use of Internet and data services during the period as the market shifts to digital platforms. With no immediate solution on sight for the pandemic, it is anticipated that data usage will continue to remain critical going forward. "The Covid-19 pandemic has demonstrated the critical importance that telecommunications infrastructure plays in keeping businesses, governments, and societies connected and running," said POTRAZ director-general Dr Gift Machengete in an update. "The sector has been critical in keeping the global economy moving under the lockdown by providing business-critical connectivity and resilience, facilitating work-from-home arrangements and keeping individuals and societies connected and informed, with access to essential services during mandated social isolation. As a result, many telecom players providing broadband have benefited from a surge in the traffic of data as shown in this report. "Data and Internet services will continue to drive industry growth," he said. According to the third quarter report, mobile internet and data grew by a 43 percent to record 14,878 terabytes from 10,407 terabytes recorded in the second quarter of 2020. The report also shows that in-bundle data constituted 95,1 percent of total mobile Internet and data usage, up from 94,1 percent recorded in the second quarter of 2020 as consumers will always seek to maximise their utility with the cheaper promotional bundles instead of out-of-bundle data rates. Econet maintained its market dominance adding another 8,9 percentage points to command 69,7 percent of total market share, while NetOne lost 9 percentage points to close the quarter with 29,1 percent of market share, while Telecel catered for the remaining 1,2 percent. During the quarter under review, active Internet and data subscriptions grew by 5,6 percent to reach 8 726 904. As a result, the internet penetration rate increased to 59,9 percent from 56,7 percent recorded in the previous quarter. POTRAZ also highlights that a huge growth in equipped international Internet capacity was recorded in the third quarter under review following expansion by Liquid, TelOne and Dandemutande. "As demand for Internet and data increases due to the adoption of e-learning, telecommuting, e-health, IAPs will need to continue expanding their bandwidth capacities to meet the demand," reads part of the report. Just like any other sector of the economy, the performance of the telecoms sector going forward will largely hinge on the general economic environment. Availability of foreign currency, exchange rate and inflationary pressures will have a direct impact on service tariffs for the sector.

(December 30, 2020) herald.co.zw

The government has allocated ZWL8 billion (USD89 million) to improve ICT services in the country in 2021. The funds will go towards the rollout of fiber-optic networks, improving access to online public services, and the development of digital TV services. State-owned cellco NetOne is also investing USD18 million on the rollout of 4G equipment in 2021 financed by a USD71 million loan from China Eximbank. Meanwhile, the Universal Services Fund will contribute USD6 million to deploy ten base stations in rural areas which will be shared by the country's three mobile operators. Biztech Africa quotes Finance Minister Mthuli Ncube as saying: 'In order to improve access to ICT services, the government will facilitate deployment of broadband infrastructure and investments in last mile connectivity by industry players that will ensure affordable,

accessible, ubiquitous and reliable ICT services that support an inclusive digital economy.'

(December 1, 2020) commsupdate.com

The Postal and Telecommunications Regulatory Authority of Zimbabwe (Potraz) has issued guidelines that seek to enhance child online safety in the country. Child online safety has become important than ever before in this Covid-19 era, where internet usage has increased significantly, and e-learning is becoming the order of the day. Potraz director-general Dr Gift Machengete said children were among some of the most vulnerable internet users, and there was need to ensure that they were protected. "While the internet has brought about convenience owing to rapid digital transformation, it has also brought about a plethora of challenges," said Dr Machengete in a speech read on his behalf by the authority's head of consumer affairs and publicity George Manyanya. "Children are exposed to various vulnerabilities and there has been an increase in the misuse of technology. Several children are accessing various sites even without their parents' consent. "We are providing these gadgets to children, but they are accessing sites like tinder, house party, Instagram, Facebook and tik-tok even without their parents or guardian's consent. Some are exploited by others and become victims, leading to cyberbullying, cyberstalking and cybergrooming." He added: "Owing to the need to protect children online, The International Telecommunications Union (ITU) in June 2020 revamped its Child Online Protection Guidelines to incorporate and stay abreast of the ever-changing ICTs landscape and launched new guidelines which we are in the process of adopting. "While we are happy to launch these today, we must be cognizant of the fact that technology is disruptive and evolving, hence we need to sustain these protection mechanisms in line with the International Standards, which means we will continue launching as and when necessary. "The ITU Child Online Protection (COP) guidelines provide a holistic approach to respond to all potential threats and harms children and young people may encounter online. It is everyone's responsibility to protect children from these harms. Close monitoring would minimize issues of abuse, neglect, discrimination and exploitation of children. Dr. Machengete said the newly developed COP guidelines were important for all stakeholders to utilise for the benefit of children who were increasingly joining online services. "Remember, these children are more vulnerable online since they are young and have little experiences," he said. "It is important to appreciate that some children are especially vulnerable, particularly migrant children or children living with a form of disability." It is estimated that at least one third of all Internet users today are children and young people, and UNICEF estimates that 71 percent of young people are already online.

(December 1, 2020) herald.co.zw

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