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SAMENA TRENDS

FOR SAMENA TELECOMMUNICATIONS COUNCIL'S MEMBERS

BUILDING DIGITAL ECONOMIES

THIS MONTH

FOSTERING INVESTMENT IN DIGITAL DEVELOPMENT

SAMENA
TRENDS

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Fostering Investment in Digital Development

Undeniably, the global digital economy is on a success trajectory, and it has taken tremendous policy, regulatory, and investment efforts to achieve this success. However, we need to physically manifest the transformative power of mobile connectivity to materialize and sustainable digitalization across societal, business, as well as industrial and economic spheres. The journey to digitalization, and thereby digital transformation, requires us to navigate through challenges with a unified approach and aligning our priorities.

Fortunately, we have many things happening within SAMENA Council that directly support such navigation.

SAMENA Council is engaging with regional and global bodies to help enhance national policy and regulatory capacities, and to scale up the impact of innovative digital services, digital economy platforms, localized digital technology, and ensuring general enablement and facilitation for the digital ecosystem. The Council is of the view that it is imperative to remain mindful of advancements and innovations under play in relation to the regional digital transformation trends; how digital users are impacted by such trends in terms of choice and how market dynamics are transforming in terms of market competition and investment sustainability. In other words, the Council believes the digital ecosystem needs to be made sustainable and thus attention is required to allow for end-user choice, fair competition in the digital services platforms (especially those directly boosting the digital economy), and in strengthening ways to accelerate innovation and entrepreneurship.

Another key aspect of the navigating the way forward to digital transformation, is to monetize heavy investments that have already been made in advanced mobile infrastructure, especially in 5G. On this front, in pursuit of greater collaboration among SAMENA Council's technology-provider and telecom operator members as well as other stakeholders both within and outside of the SA-ME-NA region, the Council observes that Fixed Wireless Access technology is a strong option for recovering investment costs -- which can then be redirected more effectively to other required areas in digital transformation. Various possibilities exist in this regard, including home broadband access solution and remote connectivity for underserved or unconnected regions.

Moreover, as effective collaboration among governments, private sector, and international bodies is vital for advancing sustainable development initiatives, the Council, as a part of its advocacy program, continues to identify areas of industry-wide co-operation, including collaboration on leveraging digital technologies to improve access to education, healthcare, essential services, and foster digital innovation in the Arab region. It is imperative to ensure accessibility of digital technologies to all, especially underserved communities within the SA-ME-NA region, through initiatives focusing on digital literacy, connectivity enhancement, implementing broadband financing frameworks (e.g., in pilot countries that SAMENA Council identified earlier this year with UN Broadband Commission and other private-sector stakeholders), and, lastly, by address needs of telecom operators - which fundamentally revolve around incentives in regulatory compliance, efficiencies in regulatory and administrative procedures, and introducing future-centric approaches in spectrum approaches and taxation regimes.

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

There is a lot to be done in 2024. In May this year, as SAMENA Council prepares to host its annual Leaders' Summit 2024 under the theme "Evolving toward Integration, Intelligence & Sustainability in Infrastructure", industry stakeholders to invited to help build momentum on many of these areas by showcasing their capabilities and expertise by leveraging the annual leadership platform.

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RISE Roundtable

SAMENA Council Advocates Focus on Innovation & End-User Choice and Business Enablement for Ensuring Sustainability in Saudi Arabia's Competitive Market

SAMENA Telecommunications Council held its Rising in Industry Sustainability & Efficiencies (RISE) Roundtable in Riyadh under the chairmanship of Communication, Space & Technology Commission (CST) of Saudi Arabia, with private-sector, government-sector, and international ICT development stakeholders taking active part in discussing the Saudi and GCC digital market dynamics.

Bocar BA, CEO of SAMENA Council, acknowledging the valuable contributions from Saudi government representatives, including from the General Authority for Competition (GAC) stated: "As a member of the ITU's Review Board for G5 Benchmark, representing SAMENA Council, I am of the view that your leadership in the RISE Roundtable was a practical display of how regulatory authorities should enable and lead dialogue on industry matters, ranging from innovation & choice to business & ecosystem enablement, in an environment of true collaborative regulation."

Objective for RISE 2024 was two-fold: ***One:*** *Take stock of the innovation under play in relation to the Saudi digital transformation trends, and what it means for digital users in terms of choice, and what it means for existing enterprises in the market as well as those who may be aspiring to enter the Saudi digital services market.* ***Two:*** *how to enable more business, accelerate digital transformation, and re-align with the Saudi Vision, especially on areas that relate to collaborative regulation, market competition dynamics, and overall enablement of local telecom operators, technology providers, and multi-market digital service providers.*

Bocar BA, CEO of SAMENA Council, acknowledging the valuable contributions from Saudi government representatives, including from the General Authority for Competition (GAC) stated: *"As a member of the ITU's Review Board for G5 Benchmark, representing SAMENA Council, I am of the view that your leadership in the RISE Roundtable was a practical display of how regulatory authorities should enable and lead dialogue on industry matters, ranging from innovation & choice to business & ecosystem enablement, in an environment of true collaborative regulation."*

"In view of Saudi Arabia's Vision 2030, fostering fair competition among digital platforms is essential for driving innovation, attracting investment, and advancing economic diversification. Fair competition on digital platforms not only benefits consumers but also supports developers of national applications aimed at preserving local languages and cultures."

Dr. Cosmas Luckyson Zavazava, ITU Director BDT

For Enabling Ecosystem Growth and Sustainable Digital Development

1. Regulators should proactively streamline procedures for infrastructure development, reducing both delays and associated costs, to facilitate a faster service provision.
2. Provide prioritized consideration of needs of Telecom Operators, especially those that have made significant infrastructure investments and have played a visible role in uplifting the digital economy, digital experience, and have shown regulatory compliance (e.g., on cybersecurity).
3. In the interest of the market, reconsider requirements from Telecom Operators, such as unlimited service packages.
4. Support commercial viability of 5G development and making use of 5G investments by engaging cross-sector actors.
5. Boost innovation and new entrepreneurship, localization of services, products, technology, knowledge, and data.
6. Operators' ability to invest in network capacity and manage capital expenditure requirements in this age is a multifarious challenge. It requires immediate reconsideration by the regulators, and government support in the form of investment incentives.
7. Empower new e-commerce and digital-economy boosting digital services and platforms, targeting local needs of the market and its digital users' preferences.
8. Foster localization of technologies.
9. Encourage investment in research institutions, incubators, and innovation hubs in Saudi Arabia, and the GCC region, to nurture a vibrant ecosystem of technology startups and entrepreneurs.
10. Integrate sustainability principles into digital infrastructure development and operations to minimize environmental impact.
11. Encourage the adoption of green technologies and practices to reduce energy consumption and carbon emissions associated with digital services and infrastructure.
12. Promote ethical guidelines and standards for the development and deployment of digital technologies to safeguard against potential harms such as algorithmic bias and privacy violations.

ITU Director BDT, Dr. Cosmas Luckyson Zavazava, in his intervention, expressed the need to foster fair competition to drive innovation. "In view of Saudi Arabia's Vision 2030, fostering fair competition among digital platforms is essential for driving innovation, attracting investment, and advancing economic diversification. Fair competition on digital platforms not only benefits consumers but also supports developers of national applications aimed at preserving local languages and cultures."

CEO of GEO at Yandex, Alexander Baksheev, who was a key participant in the RISE Roundtable, following the stakeholders' meeting, stated: "Honored to participate in the SAMENA Council RISE high-level roundtable on regulating digital platforms. This event marks a significant step toward realizing Vision 2030's goals and prioritizes a regulatory framework that supports a diverse and dynamic digital economy in Saudi Arabia. We discussed how to create a fair, competitive digital ecosystem to foster innovation and consumer choice."

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Mobily, stc Group, Salam, China Mobile, UNDP, Syniverse, Tech Mahindra, Zain Tech, and TMRW Foundation were among the key contributors to the discussion in the RISE Roundtable in Riyadh.

Following the multi-stakeholder dialogue, exchange of ideas and insights among the RISE participants, and in consideration of its own observations and advocacy engagement with global ICT development bodies and think-tanks, SAMENA Council has submitted to the Saudi government stakeholders some recommendations and suggested actions, as follows:

For Fostering Fair Competition, More Choice, Enhanced Innovation

1. Arab countries need to drive greater impact and value from their digital transformation initiatives by promoting an open and competitive digital environment, where pro-competition policies should be adopted by sector regulators.
2. Promote multi-stakeholder dialogue and engagement to ensure diverse perspectives are considered in policymaking and regulatory decision-making processes.
3. Through multi-stakeholder dialogue, develop and implement an optimal set of principles to foster and facilitate competition in the market.
4. Promote fair competition among digital platforms to foster innovation, attract investment, and drive economic growth.
5. Support national application developers in preserving and promoting Arabian language, culture, and tradition.
6. Guarantee free choice for users and developers by limiting all forms of gatekeepers' ability to predefined user options through pre-installation and setting default settings of essential services, such as default search engines, internet browsers, voice assistants, payment platforms, etc.
7. Develop transparent guidelines and definitions of digital platforms and gatekeepers to ensure clarity and accountability in regulatory processes.
8. Ensure enforceability in regulations through robust mechanisms, enabling faster and more effective implementation of regulatory measures, such as to address anti-trust issues, to curb monopolistic control of mobile application ecosystem, and to prevent anti-competitive conduct, in general.

Fixed Wireless Access (FWA)

SAMENA Council Highlights Importance of FWA in Developing Digital Economies and Recovering Investment Costs

Given the anticipated role of Fixed Wireless Access (FWA) in the development of 5G networks within and around the SA-ME-NA and Central Asia regions, SAMENA Council has announced dedicated FWA working group to focus on experience management, business development, and service innovation. This follows the creation of the ELITE FWA Club, which was launched in December 2023 in Dubai, and will receive member support and thought-leadership contributions from SAMENA Council as well as the Industry. ELITE FWA Club aims to provide opportunity for leaders in the ICT sector to delve into critical areas relating to the FWA business, to help foster innovation, customer experience management, and ecosystem maturity while advocating for commercial advancements in the FWA sector.

> *"As the Club meets for the second time, it is important to remind ourselves that, while fiber has set the benchmark for fixed broadband service quality, speed, and reliability, the logistical and financial side of fiber deployment typically remains a feat to overcome. We should leverage unique advantages of fiber and fixed wireless access, for what can be achieved with both may not be achievable with fiber alone"*
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> ***Bocar BA, CEO & Board Member of SAMENA Council***

> *SAMENA Council observes that, within the SA-ME-NA region and the emerging markets, FWA, as an affordable high-speed home broadband access solution, is enabling Operators quickly recover investment costs. In gradually maturing digital economies within the SA-ME-NA region, particularly in the greater GCC region, FWA is contributing to Operator's market share and revenue growth.*

During the second meeting of the Club, held in Barcelona on February 28, Bocar BA, CEO of SAMENA Council, in his keynote speech, drew attention to the need to leverage both Fiber and FWA. "As the Club meets for the second time, it is important to remind ourselves that, while fiber has set the benchmark for fixed broadband service quality, speed, and reliability, the logistical and financial side of fiber deployment typically remains a feat to overcome. We should leverage unique advantages of fiber and fixed wireless access, for what can be achieved with both may not be achievable with fiber alone", stated BA.

SAMENA Council observes that, within the SA-ME-NA region and the emerging markets, FWA, as an affordable high-speed home broadband access solution, is enabling Operators quickly recover investment costs. In gradually maturing digital economies within the SA-ME-NA region, particularly in the greater GCC region, FWA is contributing to Operator's market share and revenue growth. Moreover, there appears to be a direct correlation in making use of 5G investments and empowering other sectors to achieve greater efficiencies through new use cases of wireless technologies.

SAMENA Council appoints Aladdin Baitfadhil of Omantel as Rotating Chairman for Enhanced Telecom Innovation and Community Impact

SAMENA Telecommunications Council, fostering collaboration among stakeholders in the South Asia and MENA regions to address common challenges and drive innovation in the telecommunications industry, has recently announced Eng. Aladdin Baitfadhil, Chief Commercial Officer at Omantel, as the Rotating Chairman to lead the Service Innovation Working Group's activities within the main Fixed Wireless Access (FWA) Working Group.

Aladdin is a seasoned leader with over 18 years of experience in the Information and Communication Technology sector. He has played a pivotal role in driving innovation and growth for the Company.

The appointment is also a recognition of Omantel's success in the 5G rollout, achieving an average 5G traffic yearly growth of 400% during the last three years. Significantly, Omantel is among the highest globally in 5G utilization. In 2023, Omantel won the SAMENA Council LEAD Award for Best 5G Adoption.

In his role leading the Service Innovation Working Group's activities, Aladdin is eager to channel his passion for technology and expertise, aiming for a more focused approach to the transformative impact within communities. Furthermore, it presents a valuable opportunity to share Omantel's knowledge and expertise in the rollout and implementation of 5G with other telecom operators.

Aladdin extends his heartfelt thanks to the SAMENA Council for the trust, emphasizing his full commitment to meeting the expectations of the Council and its members.

SAMENA Council is collaborating closely with Huawei and other valued members of the Council as well as regional entities who have joined or will be joining the FWA Club and its supporting platforms, provided by SAMENA Council. It is important that the ELITE FWA Club members work together and proactively exchange insights and deployment experiences for common benefit.

The Arab States Digital Day at MWC 2024

UNDP and SAMENA Telecommunications Council Forge Digital Alliance to Accelerate Progress on Digital-led Sustainable Development in the Arab States

The United Nations Development Programme (UNDP) and SAMENA Telecommunications Council announced the signing of a Memorandum of Understanding (MoU) to collaborate on advancing Digital for Sustainable Development ("D4SD") initiative in the Arab region.

Effective collaboration among governments, private sector, and international organizations is vital for advancing sustainable development initiatives. In this context, the partnership between UNDP and SAMENA Telecommunications Council under the D4SD initiative aims to leverage digital technologies to address key sustainable development challenges in the Arab region. Through this collaboration, both organizations are committed to working towards promoting digital inclusion, advocating for sustainable development goals, and enhancing connectivity and digitalization initiatives in the region.

The Parties have identified several areas of cooperation under the D4SD initiative including collaboration on leveraging digital technologies to improve access to education, healthcare, essential services, and foster digital innovation in the Arab region. The MoU also aims to work towards ensuring accessibility of digital technologies to all, especially underserved communities, through initiatives focusing on digital literacy and connectivity enhancement.

Both organizations aim to jointly advocate for the promotion of the SDGs, with a focus on green ICT development, reduction of carbon emissions, and engagement with governments, businesses, civil society, and other stakeholders.

The MoU also includes knowledge sharing and capacity building activities and connectivity and digitalization initiatives.

Ms. Marina Walter, Deputy Assistant Administrator and Deputy Regional Director for UNDP in the Arab States, expressed her enthusiasm about the partnership, stating, "This collaboration represents a significant step towards harnessing the power of digital technologies to accelerate progress towards sustainable development in the Arab region. By joining forces with SAMENA Telecommunications Council, we can drive meaningful change and foster innovation that leaves no one behind."

Mr. Bocar BA, CEO & Board Member of SAMENA Council, considers the framework of collaboration between UNDP and SAMENA

Council to be important for building the region's digital economies. He stated, "Digital inclusion can be strongly accelerated by engaging multiple stakeholders and building capacity to adopt and aid new collaborative approaches across multiple areas of digital-development endeavor. This collaboration between SAMENA Council and UNDP can help create such approaches and new outcomes, in support of the region's digitalization needs going forward."

The signing of the MoU between UNDP and SAMENA Telecommunications Council marks the beginning of a promising partnership that seeks to leverage digital technologies for the benefit of the Arab region, paving the way digital innovation and a more sustainable and inclusive future.

MWC Barcelona

SAMENA Telecommunications Council Facilitates Dialogue on Digitalizing Governments & Private Sector

Representing SAMENA Council, as a part of the GSMA Ministerial Program during MWC Barcelona, Bocar BA, CEO & Board Member, conducted a discussion on pragmatic ways both governments and the private sector can drive new value out of digitalization.

Titled "Digitizing Governments and Industry", the session's dialogue revolved around pressing topics such as enhancing digital government services, bridging digital divides, advancing digital literacy, managing data governance, and deploying ethical AI in the public sector. Discussions also touched on the role of green ICT development and the strategic management of digital investments as critical components for sustainable digital growth.

During the session, Bocar BA, as moderator, facilitated a deep-dive discussion on the challenges and opportunities presented by the digital economy, emphasizing on the collaborative efforts required to harness the full potential of digital technologies.

"We need to deeply explore the transformative power of mobile connectivity, a force that is redefining industries and governance across the globe. Our journey towards a fully digitalized global economy is complex and requires us to navigate through challenges with a unified approach," BA stated, reflecting on the session's collaboration-driven objectives.

BA, in support of both governments and the private sector also remarked: "The global digital economy is truly on a success trajectory—and we'd be remiss in not acknowledging the policy, regulatory, and investment efforts that have gone into achieving that.

> *"The global digital economy is truly on a success trajectory—and we'd be remiss in not acknowledging the policy, regulatory, and investment efforts that have gone into achieving that."*
>
> ***Bocar BA, CEO & Board Member of SAMENA Council***

SAMENA Telecommunications Council's role in moderating this session underscored its commitment to facilitating dialogue among key stakeholders in the telecommunications and ICT sectors, aiming to foster a more connected and digitally inclusive future. Later this year, the Council will hold related discussions among industry leaders through its own industry-support platforms.

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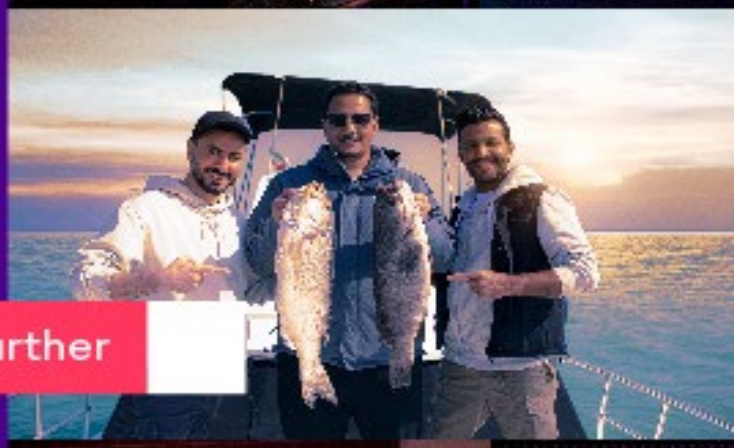


MEMBERS NEWS

stc Recognized in Top 150 Most Valuable Brands in the World and the Most Valuable Telecom Brand in the Middle East

stc Group, an engine of digital transformation, has been acknowledged as the most valuable telecom brand in the Middle East for the fourth year in a row and in the top 10 strongest telecom brands in the Middle East, according to a landmark report from BrandFinance. The group is also the strongest brand in Saudi Arabia. Every year, Brand Finance tests 5,000 of the world's biggest brands, and publishes over 100 reports, ranking brands across all sectors and countries. The world's top 500 most valuable and strongest global brands are included in the annual Brand Finance Global 500 2024 ranking. The report states that stc has shown impressive growth with its brand value increasing by 12% to USD13.9 billion. Being recognized as the 149th most valuable brand, in the Global 500 ranking makes stc the first consumer brand in the Middle East to enter the 150 most valuable brands globally. The group has increased by 10 places from 159 in 2023.In 2023, stc witnessed the highest levels of success the Group has witnessed since its inception. stc saw significant progress in developing digital infrastructure, particularly through the expansion of its 5G network, with 3 billion SAR of added investment. This enabled stc to deploy 5G network capabilities in over 75 cities throughout the Kingdom, equipping over 90% of major cities with 5G technology. Led by a growth mindset, stc is expanding internationally through strategic global acquisitions. One significant acquisition was the 9.9% stake in Spain's Telefónica Group, which was acquired for 8.5 billion SAR (€2.1 billion), making stc Telefónica's largest shareholder. All in all, this achievement came as a result to stc Group growth strategy which is delivering world-class connectivity to Saudi Arabia and beyond. The group growth mindset enables it to identify and deliver cutting-edge technologies, continuously expanding the scale and scope of our product and service offering.

stc Group Receives Contributors Award in Cybersecurity at MWC 2024 in Barcelona

stc Group, a global leader in digital transformation, has been awarded the GSMA T-ISAC Contributors Award at the 2024 Mobile World Congress (MWC) in Barcelona, Spain. GSMA, a lobby organization representing the interests of mobile network operators, selected stc Group among 150 telecommunications and mobile operators worldwide for their contributions and leadership in the field of cyber security. stc Group's achievement marks the first time a mobile operator outside of Europe has won the award. Commenting on the stc Group's prestigious recognition, Abdullah Alowini, Supply Chain VP at stc said: "This award is a testament to stc Group's expertise in telecommunications security, and our commitment to sharing in-depth knowledge for the benefit of the entire mobile cyber security community. We are grateful for this recognition." In 2023, stc Group was selected by GSMA to be one of six companies pioneering the T-ISAC SS7 Operator Focus Group, which focuses on mobile cyber attacks and telecommunications threats that compromise voice and SMS communications. As a result of this program, stc Group's executive team collaborated closely with GSMA on strategy development for intelligence sharing and mitigation of global telecommunications cybersecurity through the development of a comprehensive, protective framework. stc Group is a sponsor of MWC 2024, the largest and most influential connectivity event in the world, which is being held in Barcelona.

stc Group Revenues and Bottom Line for the Year 2023 Reached SAR 72.3bln and SAR 13.3bln

stc announced the annual consolidated financial results for the year ending at 31st December 2023.

- stc revenues for the year 2023 reached SAR 72,337m with an increase of 7.3% as compared to 2022. The growth of revenue was mainly attributed to the increase in commercial unit revenues by 5.1%, carriers and wholesale unit revenues by 1.4% in stc KSA, and the subsidiaries revenues also increased by 23.9%.
- Gross Profit for the year 2023 grew by 1.1% as compared to 2022 reaching to SAR 37,804m.
- Earnings before Interest, Taxes, Zakat, Depreciation and Amortization (EBITDA) for the year 2023 reached SAR 24,683m with a decrease of (1.6%) as compared to 2022.
- Net Profit for the year 2023 increased by 9.2% as compared to 2022 reaching to SAR 13,295m.
- stc distributes SAR 0.40 per share for the 4th quarter of 2023, totaling SAR 1,993.80 million.
- stc Board of Directors recommended a special SAR 1 per share dividends for the year 2023, totaling SAR 4,984.50m. The total dividends for the year 2023 (after approving the special cash dividends by the General Assembly) will be SAR 2.60 per share, which represents 26% of the share's par value.

Commenting on these results, Eng. Olayan bin Mohammed Al Wataid, GCEO of stc Group, said: "The group's strong performance during 2023 comes, thanks to God Almighty, as a clear outcome of implementing the group's strategy in enabling digital transformation and benefiting from it to enhance stc's expansion plans. stc investment plans to deploy the largest 5G network is a clear illustration of its ability to enhance the digital economy and support it efforts to elevate the local content. Furthermore and based on the group's approach to expanding in size and scope, the group through its subsidiaries, acquired many companies specialized in leading digital consulting and innovative solutions, Internet of Things solutions and technologies, as well as communications and information technology. During 2023, the Group has maintained its position as the highest brand in the telecommunications sector in the Middle East region for the fourth year in a row. The GCEO added: "We will continue our commitment to developing our products and services to meet our customers' need, driving sustainable growth, and increasing our shareholders' value. stc Group will continue to be a pivotal contributor to the national economy and a major enabler of digital transformation across various sectors, and we will continue also to lead the digital transformation by providing technical solutions with global standards.

stc, Iliad in Frame for Altice Portugal Takeover

Saudi Telecom Company (stc) and Iliad Group reportedly emerged as potential suitors for Altice's Portugal unit, rivalling private equity company Warburg Pincus to secure a deal for the business which could be worth between €8 billion and €10 billion. Bloomberg reported stc and Xavier Niel's Iliad were invited to the second round of bidding for Altice Portugal along with Warburg Pincus, which is pursuing a deal in partnership with Zeno Partners and Antonio Horta-Osorio, the former chair of banking group Credit Suisse. Sources told Bloomberg several other private equity groups also considered a bid for the unit, including Apollo Global Management and CVC Capital Partners, but have dropped their interest. Altice owner Patrick Drahi is looking to sell the asset in Portugal to reduce a debt load which stands at around €60 billion. Financial Times reported in December 2023 he was seeking around €6 billion, but Bloomberg stated this had since risen. A deal with Altice would deepen stc's presence in Europe, adding to a 9.9 per cent stake in Telefonica and a €1.2 billion acquisition of tower assets in Bulgaria, Croatia and Slovenia. Altice Portugal operates fixed-line, mobile and pay-TV services, and jointly owns a fiber network with Morgan Stanley's infrastructure business.

stc Signs Deal with iBASIS to Boost IoT in MENA

stc Group, a leading digital enabler in MENA, has signed an Internet of Things (IoT)-focused memorandum of understanding (MoU) with iBASIS, an independent provider of communications solutions for operators and digital players worldwide. The aim of the deal, signed last week at the Capacity Middle East event in Dubai, is to better support the provision of a global communication experience via IoT technology in the region. Through this MoU, stc says it will benefit from iBASIS's capabilities and leading position in the field of IoT, enabling developers of IoT technologies in Europe and America to expand their business in the MENA region. By elevating M2M connectivity and enabling international original equipment manufacturers (OEMs) to explore growth opportunities in the MENA region, say the partners, this collaboration will facilitate the growth of IoT technologies, providing IoT developers with flexible communications services for rapid expansion, and thereby contribute to economic growth and the diversification of investment opportunities in the region. In addition, this partnership will, the companies say, drive innovation and digital transformation to help evolve telecom services in the region to meet customers' changing requirements, particularly in the development of the smart device industry. Moreover, they predict that it will further boost the development of new solutions and bolster IoT connectivity in MENA to cater to businesses' growing needs.

stc Group Unveils "tali Ventures" as the Corporate Venture Capital Arm

stc Group, the Kingdom's engine of digital transformation, announces the launch of its Corporate Venture Capital Arm, tali ventures, which serves as a catalyst for innovative startups, leveraging stc Group's ecosystem. This milestone underscores the Group's commitment to propelling technological advancement and fostering a vibrant entrepreneurial ecosystem across its operating markets. tali venture has already made significant strides by investing in startups such as Nile (network equipment solutions), Rewaa (inventory management solutions), and NearPay (digital payments solutions). These initial investments demonstrate the Group's dedication to adopting new technologies, embracing innovative ideas and driving technological transformation. Emphasizing the fund's ambitious vision, the launch of tali ventures marks a pivotal moment in stc journey to empower the world's brightest minds. The Group aims to be a leading force in nurturing entrepreneurial talent and advancing groundbreaking initiatives, by committing to invest in revolutionary startups through collaborating with renowned global funds such as Sanabil and Prosperity7. Therefore, shaping the future of technology and unlock unparalleled opportunities. Focusing on key areas such as AI, fintech, proptech, ICT, Cloud, IoT, cyber security and other digital trends, tali ventures aim to support groundbreaking ventures that have the potential to revolutionize industries. tali ventures empower startups from their inception to growth stage, providing comprehensive support across diverse fields. This holistic approach cultivates innovation from the ground up, nurturing a thriving ecosystem of talent. This launch signifies a continuation of stc Group's efforts to foster innovation through strategic investments. Initiatives like the InspireU program, which incubates and supports over 100 startups, stand as testament to this commitment. Furthermore, STV and stc venture funds have invested in numerous startups, driving economic diversification and growth in line with stc's DARE strategy.

By Using AI, Solutions by stc and US-Based nile Announce a Strategic Joint Venture to Elevate Network Solutions in Saudi Arabia

stc Group has announced by its subsidiary solutions by stc, the pioneer in information technology services in Saudi Arabia and the region, and US-based nile, a leader in enterprise Network as a Service (NaaS), the signing of a term sheet agreement aiming to create a joint venture during "LEAP 2024," the major tech event held annually in the Saudi capital Riyadh. The joint venture between the two companies will be a strategic expansion to enhance their market presence and service offerings. As a part of this venture, both companies will provide secure and comprehensive enterprise network solutions (NaaS) to customers in Saudi Arabia and MEA region. The new NaaS service from Nile increases system reliability and optimizes business operations by offering clients a cost-efficient subscription-based service model and network management powered by AI technology. "This move highlights our commitment to expanding our technical advancements and service offerings. Together, solutions and nile will introduce innovative network services that transform the digital infrastructure landscape across multiple sectors in Saudi and the region, said Omer Alnomany, solutions by stc's CEO." Through this strategic partnership, our new services will optimize operations, cut costs, and drive clients' businesses toward growth, Alnomany added. Commenting on the strategic partnership, Mr. Pankaj Patel, CEO, and co-founder of nile said: "The formation of the JV between solutions by stc and nile signifies a strategic expansion and enhances nile's market presence in Saudi Arabia and the region. The synergy between solutions by stc's regional expertise and nile's innovative approach aims to set new benchmarks for operational excellence in the ICT sector." The announcement of the Joint Venture comes after the two companies announced an exclusive partnership to deliver enterprise networking services to clients. Followed by solutions by stc participation in a global funding round for the next-generation "network as a service" technology developed by US-based Nile, which raised $175 million from various investors last August.

Arabsat Signs MoU with Anexia to Support the Development of Private Cloud Services SES and the GPU Services for Innovative Projects

The Arab Satellite Communications Corporation (Arabsat), the main provider of satellite services in the Arab region, signed a memorandum of understanding with Anexia to enhance the cooperation in the fields of satellite communications, private cloud services, and GPU technology services, and provide integrated solutions to customers by taking advantage of the capabilities of both parties, and sharing common interests. The MoU comes as part of Arabsat and Nexia's efforts to develop satellite private cloud infrastructure, improve data delivery, technical integration, research, and development, and provide advanced cloud services, GPU processing and storage solutions. The MOU also stipulates the importance of supporting innovation projects in the fields of satellite

communications and cloud computing, in addition to providing shared services with enhanced value to customers. The MOU was signed on the sidelines of the 3rd LEAP edition 2024 Conference and Exhibition, the annual global tech event, held at the Riyadh International Convention and Exhibition Center, from 4 to 7 March 2024. "We are happy with this cooperation with Anexia, the region's leader in cloud services in, as it comes within our commitment to maintaining Arabsat's leading position in the satellite sector and digital transformation services.. The MOU also comes as a continuation of our efforts to establish qualitative partnerships to develop satellite services and enable the future of communications in the region and the world. LEAP 24 was the ideal place and time to meet communications and technology pioneers and exchange experiences and knowledge, in addition to opening investment horizons that add value to the satellite sector and the communications industry around the world". Alexander Windbichler, CEO of Anexia, confirmed his happiness at signing the MOU with Arabsat, stressing that it will constitute a real start for upcoming cooperation agreements that enhance the benefit of cloud services, to develop satellite services in line with digital transformation and advanced technology used in the field of satellite broadcasting and communications.

e& Recognized as a 'Great Place to Work' in the UAE

e& has been named a Great Place to Work® by the Great Place to Work Institute in recognition of the company's efforts to fostering a positive, supportive, and engaging work environment for its employees. With a track record in pioneering next-generation innovations and driving positive changes for both employees and customers, e&'s Great Place to Work® certification stands as a natural progression in the Group's journey as a global tech-co, solidifying its position as a destination for exceptional minds and a true champion of a thriving workplace culture. Hatem Dowidar, Group CEO, e&, said: "This recognition is a strong validation of the importance of people in e& and our continuous efforts to empower all our colleagues. Our exciting journey as a tech-co goes beyond embracing new technologies, it's about ensuring that every member of the e& family thrives. This certification signifies that we're on the right track, creating an environment where every employee feels valued, heard, and equipped to contribute meaningfully to our shared success." Ali Al Mansoori, Acting Group Chief HR Officer, e&, said: "At e&, our people are the pillars of our success. This recognition shows our dedication to prioritizing employee happiness, well-being, and growth. We aim to attract top talent by introducing innovative strategies. As we grow, we'll keep raising the bar with new initiatives, ensuring e& stays a Great Place to Work®." As part of its ongoing initiatives to empower its workforce, e& has established a world-class AI competency hub, integrating top-tier internal AI talent with global AI leaders. The company is also focused on accelerating professional growth through leadership development initiatives like the e& Group Organizational Leadership Development (GOLD) Program, the Women Leadership Program, and License to Lead. Simultaneously, e& continues to promote diversity and inclusion, exemplified by the increased representation of women, People of Determination (PoD), youth, and individuals from diverse nationalities within the organization. In terms of ensuring employee wellness, last year, e& piloted a four-day workweek for employees across three departments in the UAE, becoming the first technology company in the country to embrace the global call for workplace flexibility. It also introduced a progressive 3:2 hybrid work model and revamped remote work policies tailored to support new parents. Additionally, the implementation of 'Green Fridays' for remote work contributed to the reduction in the company's carbon footprint while also enhancing employee well-being by easing commuting stress and fostering a better work-life balance. The certification is grounded in genuine feedback from employees surveyed through the Trust Index™, an assessment encompassing five key dimensions: credibility, respect, fairness, pride, and camaraderie. Notably, the survey revealed that a vast majority of e& employees proudly identify with the company, indicating a strong sense of belonging and loyalty. Additionally, they feel a surge of pride when reflecting on the company's achievements, highlighting a powerful shared sense of purpose and collective accomplishment. e&'s exceptional performance in these areas speaks volumes about their success in fostering a culture where employees feel safe, valued, and empowered.

e& UAE Partners With Huawei to Usher in New Digital Era with 10Gbps Nationwide Connectivity

e& UAE has officially signed a Memorandum of Understanding (MOU) with Huawei to deliver a high-quality gigabit experience to the UAE at the Mobile World Congress (MWC) in Barcelona. This historic collaboration is set to usher in a new era of digital connectivity in the country. With a focus on the next generation of 5G-Advanced and 50GPON networks, the collaboration between e& UAE and Huawei will pave the way for a future-forward telecom infrastructure in the UAE. It signals the onset of the intelligent 10 Giga Experience, delivering unmatched speeds, reaching up to 10Gbps for mobile and up to 50Gbps for fixed users across the country. Khalid Murshed, Chief Technology and Information Officer, e& UAE, said: "This partnership we signed with Huawei at the Mobile World Congress sets a new benchmark in mobile and fixed technologies and services in the UAE and the Middle East. We are committed to delivering a premium experience to our customers and contributing to the industry with cutting-edge technologies. Together, we're unlocking the potential of the next generation of networks, delivering unparalleled experiences to individuals and organizations. This undertaking goes beyond connecting them in the digital era to enabling them to thrive in the hyper-connected future. The MOU also lays the groundwork for enhanced computing and storage performance for e& UAE through advanced software, hardware architecture, and application acceleration engines. This visionary approach supports emerging services such as XR, Cloud VR, V2X, 3D video, URLLC, and Industry 4.0, which promise to transform everyday life with intelligent digital solutions and connectivity. Gavin Wang, President, e& Global Key Account, Huawei, added: "We are proud to deepen our partnership with e& UAE. We continue to push the boundaries of user experience, not just in the present but for the digital age to come. This collaboration represents a significant stride in empowering users and propelling the UAE towards a future of seamless, immersive, and transformative connectivity." Ahead of the implementation's official commercial launch, e& UAE, in collaboration with Huawei, has already constructed a robust network foundation for the 10 Giga Experience. In addition, achievements like the Global First 1.6Tbs/Lambda further demonstrate e& UAE's readiness to provide a high-quality gigabit experience, with a 100Tbps backbone ensuring a capacity that spans a decade. With industry advancements such as the mmWave and TDD 3CC in wireless, offering an enhanced experience for the 5G-Advanced era, and the Middle East's first 50GPON in fixed access, homes in the UAE are poised to reap the benefits from the impending network evolution.

e& Will Land World's Largest Subsea Cable in the UAE Powering Next-Gen Connectivity

e& Carrier & Wholesale is set to anchor the 2Africa subsea cable, marking the most extensive subsea cable system landing in the UAE to date. The chosen gateway for this significant development is Kalba, a serene city in the North-eastern part the United Arab Emirates. This strategic choice complements e&'s existing Fujairah cable landing station, fortifying diversity and resilience in UAE's connectivity landscape The 2Africa consortium of Bayobab, centre3, China Mobile International, Meta, Orange, Telecom Egypt, Vodafone Group and WIOCC, is developing an impressive 45,000 km submarine cable system, which is the world's largest subsea cable project, fostering interconnection between Europe, Asia, and Africa. Alcatel Submarine Networks is responsible for the manufacture and installation of the 2Africa cable. The cable is set to deliver essential Internet capacity and reliability across substantial parts of Africa, while also addressing the growing capacity demand in the Middle East. As the designated landing partner for 2Africa in the UAE, e& will lead the development of the necessary infrastructure for the landing station and will be responsible for maintenance in the coming decades. Nabil Baccouche, e& Group Chief Carrier & Wholesale Officer, said: " 2Africa project promises to elevate the overall digital landscape in the region, solidifying the country's position as one of the region's premier ICT hubs. e&'s involvement in this transformative project will significantly enhance the Internet user experience in the UAE, enabling the world's largest content providers and global carriers to deliver cutting edge technology in e& carrier-neutral data center ecosystem, SmartHub." Around 20 subsea cable systems land in the UAE and the majority of these are managed by e&, which boast unique technical expertise, a robust operating structure, a neutral access Data Centre, diverse landing stations, and adherence to global standards.

e& UAE and Yahsat to Bring Satellite Connectivity to Standard Smartphones

e& UAE and Al Yah Satellite Communications Company, the UAE's flagship satellite solutions provider signed a Memorandum of Understanding (MoU). According to this MoU, e& UAE is set to become the first telecom operator to partner with Yahsat under its Direct-to-Device (D2D) strategy. The collaboration includes exploring various initiatives and projects concerning Yahsat's planned D2D ecosystem to enable voice, texting, and data satellite connectivity for standard smartphones. Through this partnership, e& UAE and Yahsat will work together on a range of innovative projects aimed at revolutionizing satellite connectivity. Ali Al Hashemi, Group CEO, Yahsat, said: "We are delighted to announce our MoU with e& UAE, a leading global telecom operator, as the first of many agreements we hope to reach with key industry players as part of our D2D strategyWe are discussing a whole host of areas where we aim to collaborate, which includes developing the ecosystem as part of our recently launched D2D strategy – Project SKY. Masood M. Sharif Mahmood, CEO, e& UAE, said: "This partnership with Yahsat unlocks a new era of global connectivity. We're proud to be the first operator to join Yahsat's D2D vision and leverage our networks to bring seamless, anytime-anywhere connectivity to people everywhere. This is a significant step towards bridging the digital divide and realizing our shared vision of a connected future." The partnership will see the two companies joining forces on Yahsat 's planned Low Earth Orbit (LEO) D2D system, which is designed to provide seamless connectivity (including voice, texting, and data) for standard smartphones. This technology will offer unprecedented levels of connectivity and accessibility for users around the world. The collaboration is the latest step in the implementation of Yahsat's D2D strategy that seeks to empower standard smartphones and Internet of Things (IoT) devices with advanced satellite capabilities in an ecosystem of services and applications that can be accessed anywhere in the world.

etisalat by e& and Cisco Sign MoU to Elevate Connectivity and Collaboration Services for Businesses in the UAE

etisalat by e& and Cisco, two of the leading giants in the telecommunications and technology sectors, announced the signing of a Memorandum of Understanding (MoU) to collaborate on advanced connectivity solutions and services for businesses in the UAE. The MoU outlines the principles by which the companies intend to collaborate on go-to-market activities, serving enterprises and SMB business customers by enhancing engagement, co-developing innovative products, and strengthening managed services capabilities. Masood M. Sharif Mahmood, CEO, etisalat by e& UAE said, "This MoU marks an important step in our vision to create a more connected and sustainable UAE. The agreement is driven by a mutual desire to develop new value propositions and enhance existing solutions. Through our collaboration with Cisco, we endeavor to deliver pioneering connectivity and managed services solutions that enable our clients' digital transformation journeys, and contribute to the success of their business objectives." Reem Asaad, Vice President Middle East and Africa at Cisco said, "Our collaboration with etisalat by e& underscores Cisco's dedication to delivering innovative solutions to businesses in the UAE. Together with etisalat by e&, we aim to enable digital transformation while helping our customers achieve their sustainability objectives. By combining our expertise, we will provide the advanced foundation for businesses to accelerate their journey towards a digitally advanced operations in UAE." This strategic alliance leverages the strengths of both organizations, combining etisalat by e&'s extensive reach and robust infrastructure with Cisco's innovative technology solutions. The collaboration is set to deliver more

efficient and effective advanced connectivity solutions, which shall ultimately enhance customer experience while enabling their growth and transformation. In addition, the collaboration will see the companies working together to develop a broad range of consultancy services for various commercial segments, such as business continuity, disaster recovery, tech-refresh framework, and sustainable tech-enabled solutions. Mahmood added: "We firmly believe that advanced connectivity is vital for enduring business success. With such partnerships, we're poised to help our customers reach their business objectives as well as remain committed to sustainability and digital transformation. This will pave the way for operational efficiency, and growth of various companies, along with a positive impact on the UAE economy and society."

e& Expands SmartHub Data Center Network to Abu Dhabi, Enhancing Digital Infrastructure and Connectivity

e& Carrier & Wholesale announced the expansion of its Tier III SmartHub data center to the UAE's capital Abu Dhabi, providing state-of-the-art infrastructure and connectivity to support the entire region's digital ecosystem. The strategic expansion further solidifies e&'s global network enhancing its ability to serve businesses across various industry verticals. The upcoming data center in Abu Dhabi will be the fifth Tier III data center alongside the existing ones in Fujairah 1 and 2, Dubai, and Kalba. With the new SmartHub location in Abu Dhabi it accelerates digital adoption in the country offering geo-redundancy and added value for customers with low latency and high-speed internet. Nabil Baccouche, e& Group Chief Carrier & Wholesale Officer commenting on the launch, said: "Our footprint expansion is aligned with e&'s long term vision of creating a digitally empowered world through innovation and digitization. With the United Arab Emirates today playing a key role in the global economy, we are committed to delivering world-class connectivity solutions, facilitating global trade and investment. The hi-tech infrastructure and strategic location of Abu Dhabi will be a valuable asset to our customers and the wider business

community." The new Abu Dhabi facility is Uptime Institute Tier III Certified, complying with the highest industry standards of data centre performance and availability with an ESTIDAMA Pearl rating of 4 for sustainable design, construction, and operation, as well as a USGBC LEED Gold certification, adhering to strict environmental standards.

e& and Huawei Sign a Strategic MoU to Build Green and Energy Efficient Networks

e& and Huawei signed a Memorandum of Understanding (MoU) during MWC 2024 to collaborate on building green and energy-efficient networks in the UAE to significantly reduce carbon emissions and contribute to sustainable environmental practices. e& will continue to work with Huawei to achieve network decarbonization across its ICT infrastructure, including radio, core and transport networks, and data centers. The effort to decarbonize the network will adopt a mix of Huawei's energy-efficient technology innovations and intelligent software features, as well as maximizing the use of renewable energy. The companies will also collaborate in hosting a series of knowledge-sharing sessions to exchange insights on climate change and the latest technological advancements and adapt and align network strategies accordingly. In a pioneering move, e& launched its region's first net-zero 5G Massive MIMO site using Huawei technology during COP 28 in December 2023, showcasing a tangible commitment to eco-friendly technology deployment. The partnership is part of e&'s ambition to accelerate the transition to net-zero and underlines the importance of improving network energy performance to meet Net Zero targets. Sabri Albreiki, Chief Technology Officer of e& International, remarked, "Through our strategic partnership with Huawei, we aim to accelerate the decarbonization of our ICT infrastructure by deploying their energy-efficient network equipment combined with energy-saving software features, advanced machine learning capabilities, and renewable energy sources. Signing this MoU with Huawei reinforces our joint commitment to a greener, more sustainable future." Echoing this sentiment, Gavin Wang, President of Huawei e& Global Key Account, stated, " The combined efforts of e& and Huawei exemplify a strong commitment to climate change and sustainable technology. Through our joint initiatives and efforts, we aim to revolutionize the landscape of telecommunications and set new benchmarks for green development." With an eye on the future, both e& and Huawei reaffirm their unwavering pursuit of green development, with ongoing investments and explorations in sustainable projects that align with e&'s 2030 net-zero ambition.

Etihad Etisalat Co. (Mobily) Announces the Signing of a Murabaha Financing Agreement with the Saudi National Bank (SNB)

Etihad Etisalat Co. (Mobily) announces the signing of a Murabaha financing agreement with the Saudi National Bank (SNB). This agreement, characterized by favorable terms and competitive interest rates, is for working capital financing, in addition to an additional medium-term Murabaha financing to facilitate the partial refinancing of existing debt obligations and aligns with Mobily's long-term financial and its capital restructuring strategy objectives. The agreement does not include any mortgages or financial guarantees. Working capital financing in addition to an additional medium-term Murabaha financing for the purpose of partial refinancing of the Company's existing debt obligations. Mobily will use SAR 3.685 billion from the financing agreement to facilitate partial refinancing of the Company's existing Syndicated Murabaha amounting to SAR 5.333 billion. The Company's financial and operational achievements along with its operational efficiency over the past years are key drivers to achieve an investment-grade credit rating and create an added value to its shareholders. This agreement signifies the trust of the financial institutions' partners in Mobily's capabilities and strategies.

Etihad Etisalat Co. (Mobily) Announces an Update Regarding the Potential Offer by Emirates Telecommunications Group Company to Increase Its Shareholding in Mobily

With reference to the announcement made by Etihad Etisalat Company ("Mobily") published on the Saudi Exchange website on 13/8/1443H (corresponding to 16/3/2022G) in respect of the approach from Emirates Telecommunications Group Company P.J.S.C ("e&") to discuss increasing its shareholding in Mobily to 50% plus one share by means of a pre-conditional partial tender offer (the "Potential Offer"), pursuant to the Merger and Acquisition Regulations issued by the Capital Market Authority (the "M&A Regulations"). Mobily announces that it has received a letter from e& stating the termination of discussion and not to pursue the potential transaction related to the possible increase in its shareholding in Mobily. Simultaneously, e& confirmed in its letter that it takes pride in its enduring and prosperous partnership with Mobily, witnessing positive advancements in Mobily's business across all sectors. Previous Announcement Etihad Etisalat Company (Mobily) announces an approach by Emirates Telecommunications Group Company to discuss a potential offer by Emirates Telecommunications Group Company to increase its shareholding in Etihad Etisalat Company (Mobily).

Omantel and CCED Seal Strategic Partnership to Contribute to Oman's Energy Sector Transformation

Omantel, the leading provider of integrated telecommunication and ICT services in the Sultanate of Oman, has recently announced a groundbreaking collaboration with CC Energy Development (CCED), a prominent oil and gas operator in Oman. This strategic partnership marks the initiation of a comprehensive Enterprise Resource Planning (ERP) project aimed at contributing to the further transformation of the operational landscape of Oman's energy industry. At the core of this partnership is a multi-year contract. This contract will witness Omantel deploying cutting-edge cloud-based solutions across CCED's financial, supply chain, and human

capital management domains. By leveraging Omantel's expertise in telecommunications and CCED's industry prowess, the project aims to drive unprecedented levels of efficiency, innovation, business transformation, and competitiveness within Oman's oil and gas sector. Talal Al Mamari, CEO of Omantel, said, "We are thrilled to embark on this transformative journey alongside CCED. This partnership underscores our commitment to driving digital innovation and enabling operational excellence in Oman's energy sector. By harnessing the power of cloud technology, we aim to propel CCED towards greater efficiency, resilience, and success." Walter Simpson, Managing Director of CCED, said, "As a leading player in Oman's oil and gas industry, we recognize the importance of embracing technological advancements to stay ahead in a rapidly evolving landscape. This collaboration with Omantel will optimize performance and create a leaner operation while improving efficiency and productivity." Through the implementation of Oracle cloud solutions, CC Energy Development (CCED) anticipates significant enhancements in operational agility, cost optimization, and resource allocation. CCED ensures compliance with the Ministry of Energy and Mineral (MEM) data residency regulations, adhering to the country's sovereignty requirements. The project is poised to streamline critical processes, enhance decision-making capabilities, and empower CCED to navigate the complexities of the energy landscape with confidence and foresight. The Omantel-CCED partnership stands as a testament to the transformative potential of collaboration between the telecommunications and energy sectors. By leveraging synergies and expertise, both organizations are positioned to chart new territories, redefine industry standards, and contribute significantly to Oman's socio-economic development.

Omantel Group Records 9.7% Rise in 2023 Revenues and an Impressive Net Profit Growth of 13.1%

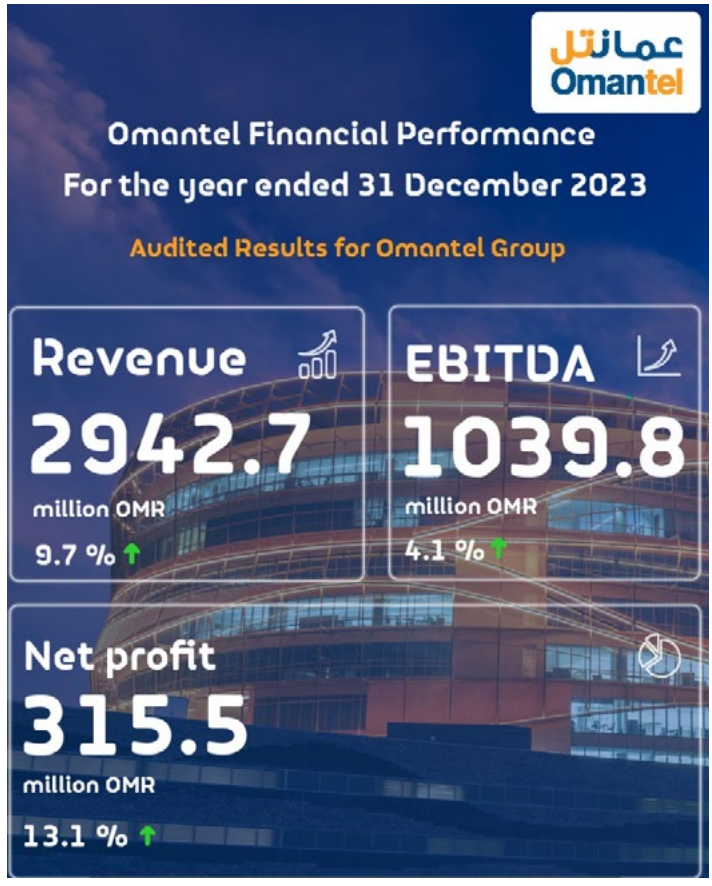
Oman Telecommunications Company Group reported a remarkable growth following the announcement of 2023 financial results, with the Group's revenue (including Zain Group's operations) rising by 9.7% from R.O 2,682.8 million at the end of year 2022 to R.O 2942.7 million. The Group's net profit grew by 13.1% from R.O 278.9 million in 2022 to R.O 315.5 million at the end of year 2023. Omantel Group net profit attributable to shareholders of the Company (after excluding the non-controlling interest) is R.O 74.8 million in year 2023 compared to RO 91.3 million in 2022.

Omantel's domestic operations performance:

At the level of domestic operations, Omantel's revenues grew by 7.3% to reach R.O 606.5 million, compared to R.O 565.5 million reported in the same period of 2022, driven by growth in wholesale transit voice revenue which increased by RO 17.2 million and device revenue which increased by RO 19.3 million. Growth in retail revenue is contributed by Mobile Postpaid revenue which increased by 10.2% and Fixed Broadband revenues which increased by 4.2%. Net Profit of the domestic operations for the year 2023 stands at RO 63.3 million compared to RO 85.7 million in the previous period, a decline of 26.1%. Net profit for the year 2022 included Capital gain on Sale of Towers for RO 28 million (Net of taxes). Excluding the Capital gain from the profit for year 2022, the net profit for year 2023 shows an increase of 9.7% compared to the previous year. This increase was on account of stable EBITDA and a decrease in Finance costs.

Zain Group Performance:

Zain Group revenues year ended 31st December 2023 reached RO 2,361.4 million compared to RO 2,129 million of the corresponding period of the previous year, an increase of 10.9%. EBITDA stands at RO 871.3 Mn, compared to the corresponding period EBITDA of RO 828.6 million recording an increase of 5.2%. Net profit stands at RO 359.7 million compared to RO 276.5 million of the previous period, an increase of 30.1% over the last year. Key operations in Kuwait, Iraq, KSA and Jordan delivered impressive profit growth. The



completion of Tower sales during the year in KSA and Iraq helped in creating value and efficiencies for Zain Group. Omantel Board of Directors recommended to the Company's Annual General Meeting that will be held on 30th March 2024 to distribute a cash dividend of 55 Baiza per share for the year ended 31st Dec 2023 (subject to shareholders approval).

Omantel Leverages Its Partnership with Google Cloud to Offer Predictive Analysis, API Monetization to Businesses and The First in META Google Distributed Cloud Edge Solution

Omantel, the leading provider of integrated telecommunications services in the Sultanate of Oman, is thrilled to announce its monumental collaboration with Google to introduce the first Google Distributed Cloud Edge solution in the META region. This partnership is set to revolutionize the digital landscape, bringing advanced cloud infrastructure and services to the region. The implementation of the Google Distributed Cloud Edge hardware, enables Omantel to deliver unprecedented levels of performance, reliability, and efficiency to its customers. The hardware will be strategically placed at the edge of the network, allowing faster data processing and reduced latency. This technology will unlock a new era of possibilities for businesses and individuals, providing seamless access to cutting-edge cloud services. This milestone collaboration will empower Omantel to stay ahead of evolving customer demands and deliver world-class services. The introduction of the Google Distributed Cloud Edge hardware further solidifies Omantel as a key player in the telecommunications industry, proving its dedication to providing exceptional solutions and driving digital progress in the META region. The strategic partnership between Omantel and Google, signed in May 2023 centers on the implementation of artificial intelligence/machine learning (AI/ML) for prediction models, revenue maximization, network optimization and API Monetization aimed at serving enterprise businesses. “This landmark partnership smartly integrates Google Cloud’s advanced AI/ML technologies into Omantel's prediction models, enabling us to optimize our predictive analytics to identify market trends, customer behaviors, and revenue opportunities,” said Talal Said Al Mamari, Chief Executive Office at Omantel. “This cutting-edge application encourages better decision-making, enhanced customer satisfaction, and increased revenue growth.” “Additionally, the API monetization project has been instrumental in elevating Omantel's service offerings to enterprise businesses. By leveraging Google Cloud's expertise in API

management and monetization strategies, Omantel is devising innovative solutions to cater to the evolving needs of its enterprise customers. The establishment of Google Distributed Cloud Edge, an advanced platform that provides seamless and secure API services, will position Omantel as a pioneer in the region, and will further strengthen its position as a strategic partner for enterprises seeking seamless connectivity and digital solutions,” Al Mamari, added. Omantel is committed to driving digitization, fostering technological advancements, and transforming the telecommunications landscape in Oman. This partnership showcases the power of collaboration, innovation, and agility in creating sustainable and mutually beneficial business opportunities. By leveraging each other's strengths, resources, and expertise, Omantel and Google Cloud aim to unlock new potential in the telecommunications industry and lead the way in digital transformation. Google Cloud has already won four strategic projects in the realm of digital/telecoms for Omantel. For Omantel, the partnership helps streamline its API development, onboard new partners quickly, enhance their omnichannel strategy and start API monetization. It also allows Omantel to use Data and Analytics via Google Cloud’s Data Platform to develop customer and marketing analytics for better visibility. Omantel is also collaborating with Google Cloud to create a cloud space for startups and Digital Natives in Oman to utilize Google Cloud technologies to enhance their development and offerings. Omantel has succeeded, through the integration of its operations, processes, and extensive expertise in the field of communications and digital technology, in establishing its position as a leading telecommunications company within the Sultanate of Oman and beyond. The company's innovative approaches have contributed to providing the latest solutions to various consumer and business sectors. The company aims to deliver an unparalleled, exceptional experience to its subscribers and strives to always exceed their expectations. Omantel works towards contributing to the achievement of Oman Vision 2040 objectives by investing in emerging technologies and providing cutting-edge solutions in modern technology, information and communications technology, such as cloud solutions, ICT solutions, AI, Smart solutions, cybersecurity, and much more, in addition to harnessing its technological capabilities to enhance innovation and leadership in new and advanced technologies.

Omantel Unveils National Initiative to Empower Media Professionals with AI Skills

Omantel announced a national initiative to empower various media professionals in the field of artificial intelligence. The initiative aims to support media professionals in developing media content. The announcement took place on the sidelines of Omantel's Annual "Media Iftar" on Monday evening, attended by Talal Al Mamari, CEO of Omantel, several senior Omantel officials, alongside representatives of various media outlets, economists, and social media influencers. The initiative, to be conducted by Omantel in collaboration with the Omantel Academy, will mark a significant step forward for media professionals in Oman. By empowering media professionals with AI skills and techniques, the initiative aims to enhance their content development capabilities and leverage emerging technologies in their roles. Muna Al Mamari, Digital Press and Media Manager at Omantel, rightly acknowledges the major technological transformations taking place globally and their impact on various sectors, including the media industry, "Artificial intelligence has been at the forefront of recent technological developments, and we recognize the importance of staying abreast of these advancements" she commented. By introducing this training initiative, Omantel aims to equip media professionals with the essential skills and technologies of the digital age. This effort aligns with Omantel's broader strategy of transitioning from a telecom operator to a technology provider, while also supporting the objectives of the National Program for the Digital Economy in Oman. The training program will be conducted by experts from Omantel Academy, and it has several objectives including refining the technical skills of media professionals, familiarizing them with the latest tools and technologies, simplifying their work processes, fostering creativity, and ultimately enhancing productivity. By empowering media professionals with AI knowledge, they will be better equipped to embrace digital transformation and contribute to the evolving media landscape. It is noteworthy that this initiative is one of the projects of the Omantel Academy. More details about this initiative will be announced during the planned official inauguration of the Academy, which aims to provide high-level dedicated training.

Nawaf Al-Gharabally Appointed CEO of Zain Kuwait

Zain Group, a leading provider of innovative technologies and digital lifestyle communications operating in eight markets across the Middle East and Africa, announces the appointment of Kuwaiti national, Nawaf Hisham Al-Gharabally to the position of CEO of Zain Kuwait, effective immediately. With an impressive 25-year track record of success within Zain and the telecom industry across the Middle East and Africa, Al-Gharabally held roles as Zain Group and Zain Kuwait Chief Technology Officer prior to his latest appointment. Al-Gharabally joined the Zain family in 1998, and over the years has developed to become a key member of the organization's executive management team. He possesses extensive experience across a number of disciplines covering mobile technologies, digital transformation, strategy, and management with multiple career highlights notably Zain Kuwait emerging as the first company to successfully launch 5G services in the Gulf region, under his leadership in 2019. Al-Gharabally also led the development and modernization of Zain Kuwait's networks

in recent years, playing a key role in Zain's 5G expansion in Saudi Arabia, Bahrain, and Jordan; and 4G expansions in Iraq, Sudan, and South Sudan. He also played key technology-related senior roles during Zain's presence across 15 countries in Africa between 2005 and 2011. A statement from Zain said, "Promoting an existing Zain leader with such an impressive track record fulfills the company's Group-wide HR policy of capitalizing on and promoting talent from within. The appointment of Nawaf Al-Gharabally reflects the continuous investment in and development of Zainers, and the confidence in the capabilities of existing talents as leaders. The company is confident that his deep understanding of the Zain brand, solid operational and digital innovation expertise, and a strong history of working within the telecommunications sector across the region will prove invaluable in driving Zain Kuwait to new heights."Commenting on his appointment, Al-Gharabally said, "I am honored to assume the leadership of Zain Kuwait, a company which has played an instrumental national role in the telecom, economic and social landscape, pioneering numerous innovations regionally. I'm thankful of the Zain Group Board of Directors and leadership for their trust and confidence, and look forward to continue working with the them and the many talented people we have in Kuwait and across the Group, particularly at this point-in-time when digital transformation is accelerating and changing the way we live and work." Zain Kuwait remains the market leader with an active customer base of approximately 2.7 million. The company recently entered a marketing partnership with Red Bull aimed at appealing to the youth market, while Zain Kuwait's nationwide 5G network has continued to grow having the largest market share of 5G subscribers in the country. The operator continues to expand its offering in the B2B corporate segment, as well as to innovate in digital entertainment and digital services for consumers and businesses alike. Al-Gharabally graduated from Kuwait University in 1998 with a Bachelor's degree in Engineering, and went on to attain an MBA from London Business School in 2021.

Zain Recognizes Top-Performing Players

Continuing to support and encourage local athletes, Zain has awarded the top performing players in the latest rounds of Dawri Zain's Premier League and First Division competitions. The recognition came during the special event held at the Zain Innovation Campus (ZINC) in partnership with the Kuwait Football Association (KFA). In attendance were Zain Kuwait's Chief Corporate Affairs and Relations Officer Waleed Al Khashti, KFA Secretary-General Salah Al Qenaei, Head of the Technical Committee Abdulaziz Hamadah, along with committee members, KFA representatives, and Zain officials. For the Zain Premier League, Zain presented the following players with the 'Best Player of the Round' award (KD 500): Qadisiya SC's Khalid Al Rashidi (7th round), Arabi SC's Bandar Al Salamah (8th round), Arabi SC's Sultan Al Enzi (9th round), Kuwait SC's Mohammed Daham (10th and 13th rounds), Fahaheel SC's Ahmad Raheel (11th round), and Qadisiya SC's Bader Al Mutawa (12th round). For the Zain First Division League, the company presented the following players with the 'Best Player of the Round' award (KD 200): Sahel SC's Mohammed Al Mousawi (6th round), Sahel SC's Hussain Ismail (7th round), Tadamun SC's Waleed Al Tourah (8th round), Yarmouk SC's Abdulrahman Al Hussainan (9th round), and Yarmouk SC's Nasser Al Failakawi (10th round). Before the new season's kickoff, the Kuwait Football Association

formed a special committee to outline the standards and criteria on which the prize winners will be selected. The committee is membered by former international players and experts Abdulaziz Hamadah (committee head), Hamad Al Enzi, Ahmad Mousa, Hussain Hakem, and Hussain Al Mutairi. Zain remains a strong supporter of local athletes and believes that last season's prizes contributed to elevating the league's performance and quality. For this reason, the company has pledged not only to continue this support, but to also add new prize categories to reflect its interest in shouldering the local sports sector. This season, Zain's cash prizes for athletes in the topflight are as follows: Player of the Season: KD 10,000, Best Player in the Round: KD 500 (per round), Season's Top Scorer: KD 5,000, Season's Top Local Scorer: KD 5000, Season's Best Goalkeeper: KD 5,000, Season's Best Coach: KD 3,000, Season's Rising Star: KD 2,000, and Best Photo of Season: KD 1000. For the Zain First Division League, the company also presents a new Best Player in the Round prize of KD 200 (per round). The company also presents a total of KD 10,000 of cash prizes to the winners of the first three places in the Dawri Zain Fantasy League, the first ever local fantasy league game. With this, the total of Zain's prizes for athletes and fans reaches over KD 60,000, the biggest prize pool in the local league's history.

Zain Named "Best Workplaces for Women" in Fast Company Middle East's Inaugural List

Zain Group has been honored in theFast Company Middle East's Best Workplaces for Women 2024 list as the winner of the large Enterprise category; an acknowledgement that signifies more than just an award as it validates Zain's unwavering commitment to driving diversity, equity and inclusion (DEI) into all aspects of the business. Fast Company Middle East is one of the region's leading business media brands, focused on innovation, technology, business, and leadership. The organization hosts awards and events such as Most Creative People in Business, World Changing Ideas, Most Innovative Companies, and Best Workplaces for Women. The inaugural edition of Best Workplaces for Women recognizes companies across the Middle East that are empowering women by creating an inclusive environment, and the presence of Zain Group on the list, among other reputable companies, is an affirmation of the company's corporate leadership in this area. A company statement noted, "Women are such an integral part of the Zain success story. From increasing leadership positions, a revolutionary HR policy and other innovative talent development programs, Zain's focus of integrating women fully into all aspects of the business is proving to be an enormous benefit to the culture and productivity of the company. Zain is proud of the serious stance taken on DEI activities, and this award recognizes not only the impact on just women, but the impact on all the talented 8,000 people Zain employs." Zain Group, under its DEI women empowerment (WE) pillar, has been a pioneering force for women empowerment regionally since 2017. This gender diversity initiative was created at a time when only 14.5% of Zain's leadership comprised of women, and a target was set to increase this percentage of women leadership to 25% by 2025. Three Zain operations have already achieved their WE leadership targets, Zain Kuwait at 26.9%, UAE based ZainTECH at 27.0%, and Zain Jordan at 27.3%. For some time now, women have represented the higher proportion of university graduates in the region, yet this does not translate into positions within the workforce, let alone senior positions. Hence, the issue of women's empowerment

is an important topic for the Zain, which has embedded this issue into the DNA and heart of the company's corporate strategy. Highlighting several examples of why Zain is such an encouraging place for women to work, some of the extended benefits and programs implemented within the company include:

- Significant HR policy changes including extending family leave and baby bonding
- Succession Management under the WE Succeed program upskilling women talents
- Introduction of a Centered Leadership Program targeting women in leadership roles
- Women's Empowerment is embedded into the agenda of the Board of Directors and prominently featured on CEO Scorecards across all Zain operations
- Introduction of the DEI University program with Spain's IR University to bridge the digital skills gap with 12% of all women employees enrolled
- Zain was among the first companies to sign up for the UN Women Empowerment Principles, demonstrating its dedication to ensuring the equal and progressive treatment of women
- WE Disrupt, where 50% of employees will undergo disrupt training, transforming mindsets through awareness programs and curated training sessions on DEI.
- Women in STEM programs focusing on technical rotations, datathons and hackathons, and the development of AI solutions for DEI

Notably, Zain's support of women empowerment also extends to outside the organization, whereby the company in 2021 launched the Women-in-Tech STEM program, targeting the mentoring of 120 female university students in each of its markets studying science, technology, engineering, and mathematics. Ravi Raman, Publisher of Fast Company Middle East said, "Best Workplaces for Women was an initiative we were really proud to launch, recognizing organizations that are striving towards gender equality and we were thrilled with the number of nominations received. This list reflects the massive strides the Middle East is taking to create more inclusive cultures, and we are happy to spotlight their success and congratulate Zain for this inaugural award."

Zain Named 'Best Telecom' and 'Best Corporate Governance' Company in Kuwait by International Finance Magazine

Zain Group, a leading provider of innovative technologies and digital lifestyle communications operating in eight markets across the Middle East and Africa, announces that in recognition of its excellence and market leadership in Kuwait and across the region, the company was presented with two prestigious honors during the 11th annual Excellence Awards ceremony hosted by UK-based business magazine International Finance in Dubai, UAE. Zain was named 'Best Telecom Company' in Kuwait for a fifth time, as well as 'Best Corporate Governance Telecom Company' in Kuwait for 2023. Zain Kuwait's Chief Corporate Affairs and Relations Officer Waleed Al Khashti was presented with both accolades during the event. Zain Kuwait's naming as 'Best Telecom Company' adds to a list of other prestigious recognitions the company has received recently, which serve as a testament to the leadership position it enjoys domestically. The awards shed more light on Zain's outstanding success, digital innovation, and relentless pursuit of excellence to serve the nation's biggest customer base. Zain Group's recognition as the 'Best Corporate Governance Telecom Company' reflects how seriously the company takes this area of its operations. Zain Group's Investor Relations and Corporate Governance framework is a cornerstone of its regional appeal and has attracted ongoing praise and admiration as its exemplary operation provides stakeholders, including shareholders, industry analysts, and regulatory authorities with the utmost confidence of the company's state of being. These awards reflect the strong operational and commercial leadership positions Zain enjoys locally and regionally, further highlighting its excellence in offering best-in-class digital solutions and innovative services to corporate customers and consumers alike. It also sheds light on the company's excellence across other indicators including customer base, revenue, market share, investment in 5G infrastructure, and compliance with the best global practices and quality standards. Zain's Corporate Governance framework helps the company to mitigate risks and facilitates an effective Board oversight over the company's executive management by monitoring the implementation of policies on a daily basis. Corporate Governance promotes strong internal controls to improve integrity of financials and establishes a culture of compliance. This governance structure has helped Zain to win the confidence of the market and attract

global investors. Zain Group's Investor Relations, Sustainability and Corporate Governance departments are committed to raising awareness on issues related to the environment, social, and governance (ESG) matters in response to global trends and best practices. Accordingly, Zain has developed new policies and is working to increase transparency in addition to focusing on social responsibility. Such policies and procedures are flexible and consider both short- and long-term challenges and risks. The International Finance Excellence Awards continues to provide a prominent stage to highlight the region's best industry players. Zain is honored to be recognized with the two accolades and is especially proud of the recognition of excellence among Kuwaiti companies over the years through this platform.

Accenture Ties Up With e&'s Responsible Sourcing Initiative

Accenture has been selected as the strategic partner for e&'s responsible sourcing initiative that aims to embed sustainability into the procurement function and align with its net zero targets and sustainability commitments. Accenture will play a crucial role in advancing e&'s responsible sourcing strategy by developing a three-year roadmap and a robust supplier engagement framework designed to embed sustainability principles across e&'s entire supply chain. This accelerates e&'s journey to achieve a reduction of emissions for all scopes and aligns with the UAE's sustainability goals. Accenture will also work with e& to define the value proposition for investing in responsible sourcing and shape e&'s future technology architecture with sustainability embedded at the core, not bolted on.

Key milestone

Saeed Al Zarooni, Group Chief Procurement Officer at e&, said: "This collaboration with Accenture represents a significant milestone in our dedication to responsible sourcing and sustainability. This strategic relationship will play a crucial role in reshaping our procurement function and driving positive change throughout our supply chain." "By fostering innovation, resilience, and sustainability, we intend to set new industry standards and inspire others to join us on this transformational journey towards a greener, more sustainable future for the telecom and technology industries in the Middle East," added Al Zarooni. The initiative is set to benefit a wide spectrum of stakeholders, including ecosystem partners. Its objectives encompass upskilling talent to meet evolving industry demands on sustainability, stimulating innovation, strengthening supplier collaboration with a focus on growth, advocating circular economy principles, amplifying sustainable value creation that supports local economies and demonstrating dedication to preserving natural and biological diversity.

Embedding sustainability

Angelo Lorusso, managing director and Accenture's client account lead for e&, said: "Accenture is committed to embedding sustainability into everything we do and everyone we work with, and responsible procurement is an essential element in every company's sustainability approach. The long-term value that e& aims for across its stakeholders will serve as a model to others seeking to generate value and impact. The digital foundation we will create together will streamline processes, improve business decisions and embed sustainability across e&'s value chain and all emission boundaries.

AT&T Injects Threat Detection into Network

AT&T launched a security product designed to tackle potential threats before they reach a customer's network, without the need for additional hardware. The AT&T Dynamic Defence platform is embedded into the operator's network and can be activated online "within minutes", targeting SMEs using its internet services. Bloomberg reported the move aligns with a strategy to bolster AT&T's fiber services at a time of falling demand, as customers increasingly turn to mobile solutions. Deployment of security software at the network level means it is "the first line of defence" to protect businesses, AT&T explained. It said the platform can detect threats, filter traffic and execute security controls, offering "a more efficient and less complex approach to cybersecurity protection". AT&T launched the platform in ten markets in the US and plans a wider deployment, with three subscription options available. Rick Welday, head of AT&T Business, said cybersecurity is "a core strength" at

the company, adding it is "setting a new standard of connectivity with security that starts at the network level".

FirstNet Authority to Pump $8B Into Public Safety Network

AT&T unveiled a ten-year, $8 billion investment from the FirstNet Authority to expand and upgrade the nationwide public safety network, which includes the addition of 1,000 mobile sites and a standalone (SA) 5G core. As part of the second phase of FirstNet, AT&T explained the new sites will be added over the next two years. The SA 5G core will improve current functionality by adding specific public safety features to FirstNet and support the transition of public safety's Band 14 spectrum from LTE to 5G. Beginning in March, FirstNet will provide first responders with "always-on priority and pre-emption" across all of the operator's commercial 5G spectrum bands. The FirstNet Authority plans to invest $6.3 billion through its network contract with AT&T and anticipates an additional $2 billion "for ongoing investments in coverage enhancements for public safety". AT&T noted the transition to a full 5G network will enable FirstNet "to keep pace with current evolutions in technology and 3GPP standards-based mission critical advancements". It added it would keep the existing 4G network active during the transition to 5G. AT&T stated it now has 5.5 million connections and about 27,500 public safety agencies and organizations on FirstNet.

AT&T Extends 'Internet Air' to Businesses

AT&T is introducing AT&T Internet Air for Business, a new fixed wireless service for small, mid-size and large businesses, powered by America's most reliable 5G network. This new, flexible solution is both easy to set up and reliable. Whether you're expanding business locations, building network diversity, or supporting business critical applications, it helps you stay connected to customers, suppliers and employees. In just minutes, businesses can easily set up AT&T Internet Air for Business and be up and running. It's plug-and-play with no drilling or coordinating with building management. You don't need a technician to install it. AT&T Internet Air for Business solves multiple business challenges. It can help you establish a primary internet connection where fiber is not available, in remote locations, or when temporary access is needed. It can also serve as a supplemental internet connection to distribute workload or as an alternate connection if primary wired network connection is interrupted. It's available now to qualified business addresses nationwide. Customers can choose from two plans – each at a low monthly rate.

- AT&T Internet Air for Business Standard is $60 plus fees.
- AT&T Internet Air for Business Premium is $100 plus fees and includes a higher level of priority for the first 250GB of data used in each billing period - a benefit when the network is busy.
- Plus, when you have an eligible AT&T Business wireless plan, you can get internet for as low as $30/month, plus fees

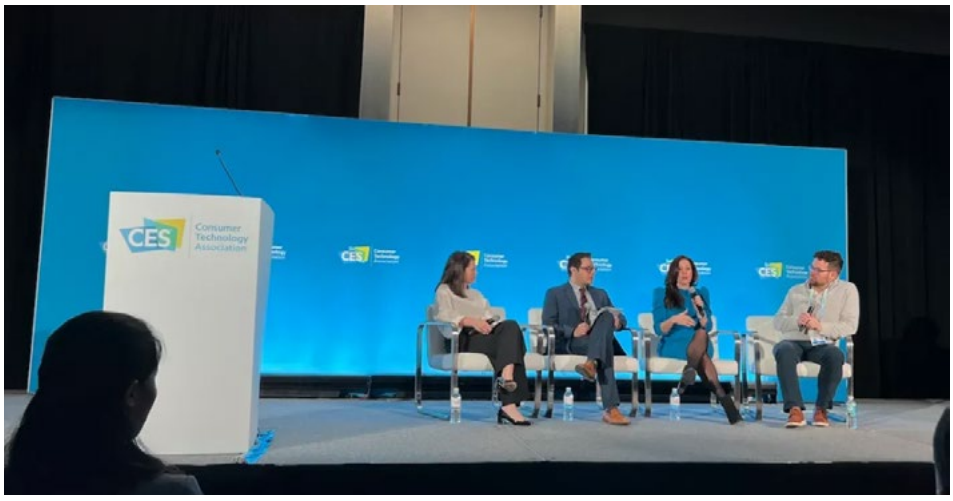
AT&T Elects Former Yahoo CEO Mayer to Board

AT&T appointed former Yahoo CEO Marissa Mayer to its board, effective immediately, to serve on its audit committee, alongside the corporate development and finance committee. Mayer's election brings the number of AT&T directors to 11. She is currently CEO of Sunshine Products, a technology start-up she co-founded in 2018. Mayer served as CEO and president of the board at Yahoo before stepping down in 2017 after Verizon bought it operating business for $4.5 billion. She also worked at Google for 13 years and has been a member of Walmart's board since 2012. AT&T chair Bill Kennard stated Mayer's "extensive background in technology and her deep understanding of how consumers experience and engage with the internet will be a valuable addition to the board".

AT&T and FCC Say Collaboration is Key in Combatting Spam

Members of the telecom industry and the Federal Communications Commission emphasized the need for industry and government entities to collaborate in combating scam calls and texts at CES. "Collaboration is key here," said Amanda Potter, assistant vice president and senior legal counsel for AT&T. Alejandro Roark, chief of the FCC's Consumer and Government Affairs Bureau, noted Federal Trade Commission data showing American consumers reported losing $790 million to scam calls and another $396 million to scam texts in 2022. The Commission took action on preventing both in 2023, expanding its STIR/SHAKEN regime – a set of measures to confirm caller identities – to all providers who handle call traffic, moving to block call traffic from non-compliant providers, and issuing multiple fines in the hundreds of millions. Almost every state has entered an agreement with the agency to collaborate on robocall investigations. In addition, the FCC adopted its first robotext rules and moved to tighten those rules in December, closing the "lead generator loophole" by requiring affirmative consent for companies to send consumers marketing messages. Comments are being accepted on a proposal to institute a text authentication scheme. For AT&T's part, Potter said the company has instituted network filters to block messages that are likely to be illegal. "We're not going to claim success by any means, but when we have these robust network defenses, that does a lot," she said, citing a total of 1 billion blocked texts on the company's networks in July 2023. AT&T also worked

with manufacturers on features allowing consumers to report text as junk when deleting messages, which Potter said has provided extra data to tune spam filters. "We start from a standpoint of maximum flexibility when it comes to messaging," Potter said, in contrast to voice calls, which are more tightly regulated and required FCC intervention for providers to block. "I'm concerned about that being taken away, or perhaps regulation being something of a distraction," she said.



Roark agreed on flexibility being superior to regulation, although the Commission is moving forward with its proceeding on more expansive text authentication rules. The proposed rules include requiring more providers on the traffic chain to block texts from numbers flagged as scammers by the FCC and requiring measurers to verify the identity of texters, similar to the STIR/SHAKEN system for caller authentication. The FCC is also taking comments on how AI factors into robocalls and robotexts, both how it's used to perpetrate them and how the Commission might use AI tools to combat them. At a House oversight hearing in November, FCC Chairwoman Jessica Rosenworcel asked Congress for the authority to collect the fines the Commission imposes – a job currently left to the DOJ – and access to more financial information to help the agency's robocall prevention efforts.

Avaya is Named to the Aragon Research Globe™ for Intelligent Contact Centers (ICC) Report Fifth Consecutive Year

Avaya, a global leader in customer experience solutions, announced it has been named for the fifth consecutive year as a Leader in The Aragon Research Globe™ for Intelligent Contact Centers (ICC) 2024, for the Avaya Experience Platform™ with AI transforming the contact center powering virtual agents and enhancing the customer experience. According to the report, authored by Aragon Research CEO and Lead Analyst Jim Lundy, while demand for the modern contact center is here, the race has only just begun for intelligence within it. "Contact centers have become not only cost centers but experience centers with AI becoming one of the primary technologies to enable better experiences through the use of GenAI," said Lundy. Avaya Experience Platform enables an intelligent contact center for organizations to quickly and easily layer-on innovative cloud technologies delivering an experience that provides their end-users with more options, faster responses, and a more personalized approach. This AI-powered solution allows organizations to interact with customers on channels of their choice – chat, email, social messaging –delivering effortless experiences for customers and employees at every touchpoint – bringing together teams, resources, and insights to maximize contact center performance and experiences. AI is increasingly being leveraged in the contact center with GenAI being used to build virtual agents, some of whom are working alongside human agents to provide call assistance. "Avaya's API-first strategy enables us to bolster connectivity with third-party applications such as those used to build virtual agents while paving the way for a more integrated and flexible ecosystem and delivering an enhanced customer experience," said Jay Patel, Global Vice President of Product Management, Avaya. Avaya innovation supports organizations' existing infrastructure and journey to the cloud. With Avaya, organizations can transform their on-premises communications and contact center capabilities through hybrid cloud deployments so they can experience technology innovation without business disruption. Organizations can quickly improve both customer and employee experiences, as Avaya Call Center Elite voice agents can now leverage advanced functionalities including a personalized unified WebRTC desktop. They can embrace digital channels from the cloud, giving their customers a channel of choice to contact them – all without altering existing call flows – and can easily add the technologies they need to drive better business outcomes. "Avaya's multi-cloud approach, reinvigorated leadership team, and refreshed products make the company one to watch," said Jim Lundy, CEO and Founder, Aragon Research. The Aragon Research Globe is a market evaluation tool that graphically depicts Aragon Research's evaluation of a specific market and its component vendors. Aragon Research examined 15 major providers in a market that focuses on all forms of collaboration and communication based on its three dimensions that enable comparative evaluation of the participants in a given market. "Leaders" are noted as having comprehensive strategies that align with industry direction and market demand and perform effectively against those strategies.

Avaya Selects Zoom's AI-powered Collaboration Platform, Zoom Workplace, to Integrate with Avaya's Communication and Collaboration Suite to Help Enterprises Reimagine Teamwork

Zoom and Avaya have announced a strategic partnership designed to deliver enhanced collaboration experiences to global enterprises. As part of the partnership, Avaya selected Zoom Workplace — Zoom's AI-powered collaboration platform that will include meetings, team chat, scheduler, whiteboard, spaces, and more — to integrate with Avaya's Communication & Collaboration Suite, providing customers with a new, streamlined way to manage their communications environments and workflows. Additionally, Avaya will offer the integrated Zoom Workplace solution and will deliver an enhanced collaboration experience to its base, which boasts some of the industry's largest enterprise customers.

Adding innovation value without disruption

Avaya customers can gain additional value from their existing investments in Avaya private cloud and premise-based solutions while also leveraging Zoom's user experience and interface to power their collaboration needs. "Today's enterprises are seeking to benefit from the latest AI-powered innovations to help differentiate, accelerate, and grow, all while integrating new levels of performance with minimal disruption to existing core systems," said Alan Masarek, Avaya CEO. "By partnering with Zoom, we can deliver on the promise of 'innovation without disruption' for Avaya customers, providing added value to enterprises through world-class collaboration experiences within the Avaya platform." "Zoom was built to offer a sophisticated yet easy-to-use product, and as Zoom has expanded to include hundreds more products and features, as well as generative AI integrated throughout, delivering an exceptional user experience is still core to who we are and something we continue to invest heavily in," Eric S. Yuan, Zoom founder and CEO. "Customers and partners like Avaya continue to look to Zoom to power their collaboration needs because of its speed of innovation and because it just works. We are excited to deliver that same experience to the thousands of Avaya customers who will benefit from a simple yet powerful way to collaborate."

Enhanced collaboration with Zoom and Avaya

Existing Avaya customers will retain their investments in Avaya's solutions and devices while benefiting from Zoom's AI-powered collaboration platform, Zoom Workplace. Working together, Zoom and Avaya's partnership is designed to deliver a joint solution that will provide an enhanced collaboration user experience for Avaya customers, including:

Interoperability between platforms and devices, enabling users to work in Zoom Workplace while also leveraging their existing investments in Avaya's Communication & Collaboration Suite solutions — Avaya Aura and Avaya Enterprise Cloud — without disrupting investments in existing customizations, workflows, or infrastructure.

Access to Zoom AI Companion, Zoom's generative AI digital assistant.

Collaboration solutions such as Zoom Team Chat, Zoom Scheduler, Zoom Whiteboard, flexible spaces, and more.

The new Avaya and integrated Zoom Workplace experience and device interoperability will be available to Avaya customers globally in the coming months. More details around the joint solution will be shared later this spring.

China Mobile Targets 2.4M 5G Sites In 2024

China Mobile aims to deploy an additional 410,000 5G base stations in 2024 to take its total to 2.4 million, despite plans to cut capex. The world's largest mobile operator by subscribers ended 2023 with 1.9 million 5G base stations after adding 480,000 new sites. The total includes 620,000 700MHz sites deployed in partnership with China Broadnet. China Mobile disclosed last week it plans to cut capex in 2024 by 4 per cent to CNY173 billion ($23.9 billion), with investment in 5G networks to drop 21.6 per cent to CNY69 billion. Overall spending on connectivity is forecast to decline 20 per cent to CNY87.4 billion. As a percentage of service revenue, capex is earmarked to fall below 20 per cent from 20.9 per cent in 2023 and 22.8 per cent in 2022. Government figures showed the country's three major operators closed 2023 with 3.4 million 5G base stations. Earlier this week, the GSMA forecast 5G connections in China would top 1 billion this year, after hitting 810 million at end-2023.

China Mobile Launches the World's First 6G Test Satellite

China Mobile, the world's largest telecom carrier by mobile subscribers, has successfully launched the world's first satellite to test 6G architecture, marking a milestone in its efforts to explore integrated space and ground communication technology. The low-earth orbit test satellite is the world's first to employ 6G design architecture, and it was launched on Saturday along with another satellite that comes with China Mobile's 5G technology. The 6G test satellite hosts a distributed autonomous architecture for 6G, which was jointly developed by China Mobile and the Chinese Academy of Sciences' Innovation Academy for Microsatellites. The system, utilizing domestic software and hardware, supports in-orbit software reconstruction, flexible deployment of core network functions and automated management, enhancing the efficiency and reliability of the in-orbit operation of the satellite core network, China Mobile said. Set at an orbit height of approximately 500 kilometers, these experimental satellites offer advantages such as low latency and high data transfer rates compared with high-orbit satellites which travel at 36,000 kilometers. Positioned as a crucial platform for future integrated space and ground networks, low-earth orbit satellites can address telecom signal coverage gaps in terrestrial mobile networks, providing higher bandwidth satellite internet services globally, according to China Mobile. China Mobile said it plans to conduct in-orbit experiments based on these test satellites, accelerating the integration and development of space-to-ground technology industries.

CMI and stc Group partner to modernize IoT aggregation

China Mobile International Limited (CMI) has forged an alliance with stc Group, a global leader in digital transformation, to advance the deployment and implementation of IoT connectivity services for businesses in the region. The partnership was announced on 27 February 2024 at MWC Barcelona, the preeminent global gathering for the telecommunications industry. The collaboration between CMI and stc Group is expected to leverage the strengths of both companies in digital transformation and enable them to provide innovative solutions to regional enterprises. CMI's advanced IoT capabilities enhance the scope and efficiency of smart solutions, driving the integration of IoT technologies across various sectors. With this partnership, stc Group is poised to strengthen its position as a key player in the IoT market and contribute to the growth of the digital economy in the region. stc Group will provide IoT connectivity services to CMI in Saudi Arabia. This collaboration will enhance the benefits to enterprises, ensuring seamless execution to Original Equipment Manufacturers (OEMs) and end customers. By leveraging their combined expertise, CMI and stc Group will facilitate access to cutting-edge IoT capabilities, empowering businesses to innovate and thrive in the digital era. CMI strives to create a partner ecosystem with regional and global carrier partners, empowering local operators to provide convenient services and leverage China Mobile's leading 5G and IoT capabilities. The agreement reflects stc Group's commitment to enhancing and modernizing IoT aggregation, perfectly aligning with the Group's strategic focus on business growth and expansion. With this partnership, stc Group solidifies its position at the forefront of IoT technology, driving the evolution of the industry and paving the way for future developments.

China Mobile International and Batelco Announce Partnership at Capacity Middle East 2024

In a landmark move, China Mobile International Limited (CMI) and Batelco (Bahrain Telecommunications Company) part of the Beyon group, have proudly announced a partnership at the prestigious Capacity Middle East 2024 held in Dubai, UAE. During the event, a Memorandum of Understanding (MoU) was signed by CMI Middle East Managing Director Alex Lee and Batelco Chief Global Business Officer Hani Askar. This collaboration marks a pivotal step in the telecommunications industry, signifying a joint effort between two leading companies in their respective regions. CMI and Batelco have committed to enhancing cooperation in several key areas, including international connectivity, roaming services, and Internet Protocol Television (IPT), among others. Alex Lee, Managing Director of CMI Middle East, expressed his optimism about the partnership, stating, "This collaboration with Batelco is a crucial milestone for us at CMI. We are excited to combine our strengths to enhance the telecommunications landscape, ensuring better connectivity and innovative solutions for our customers globally." Echoing this sentiment, Batelco Chief Global Business Officer, Hani Askar, remarked, "Joining forces with CMI is a pivotal step for Batelco in extending our international reach and capabilities. This partnership signifies our commitment to providing top-notch services and staying at the forefront of the telecommunications sector." "Batelco recognizes the importance of forging partnerships with industry leaders while simultaneously investing in cutting-edge digital infrastructure, including subsea cable systems and advanced data centers. These initiatives are taken to enhance the region's network resilience, data exchange and internet connectivity." CMI has invested heavily in the Middle East region to connect carriers to a reliable, scalable, and resilient network via its extensive global infrastructure. Currently, CMI has 80 cable resources and 230+ PoPs globally, with international transmission bandwidth of over 145T. As a trusted partner that provides comprehensive international information services and solutions to international enterprises, carriers and mobile users, CMI develops diversified 5G solutions for industry applications, provide high quality, all-round and innovative 5G services to our customers. Batelco is the leading provider of innovative digital services and connectivity, and its portfolio of digital business solutions spans global connectivity, global infrastructure, internet, cloud connectivity, hosting, and carrier voice and mobility services. The Company's 31+ points-of-presence are geographically distributed and provide the lowest latency to the region, MENA, and Europe. Key constituents of Batelco's expansive global business portfolio include Global Zone, the carrier-neutral transit zone, Manama-IX, the internet traffic exchange platform, and Batelco Global Network (BGN), Batelco's fully owned and managed diverse terrestrial cable system. This alliance between CMI and Batelco is expected to pave the way for groundbreaking advancements in the telecommunications industry, benefiting customers and stakeholders across the globe.

China Mobile International and Mobily Forge Alliance to Elevate Market Offerings

In a significant development for the global telecommunications industry, China Mobile International Limited (CMI) and Etihad Etisalat Company (Mobily) have entered into an interconnection agreement at Capacity Middle East 2024 in Dubai, UAE on 6 February 2024. This partnership represents a monumental commitment from two of the telecommunications sector's giants to combine their strengths and capabilities, aiming to revolutionize the market with innovative solutions and enhanced services for customers across their respective regions. The collaboration is set to focus on elevating carrier services and delivering innovative solutions directly to customers, tapping into the vast potential of both companies' technological and service capabilities. By improving carrier services, the alliance intends to offer a more seamless, efficient, and enriched customer experience, leveraging advancements in technology and infrastructure to meet the ever-increasing demands of digital consumers. Representatives from both CMI and Mobily have expressed their enthusiasm about this new venture, highlighting its potential to not only enhance service offerings but also to lead the way in digital transformation efforts within the industry. CMI's iConnect ONE (Omni Network Enablement) serves as a comprehensive platform that streamlines

services and offers tailored solutions to meet the evolving demands of carriers globally. This one-stop-shop approach provides convenient access to voice, SMS, mobile, data and other offerings, as well as value-added business services covering roaming, connectivity, empowering carriers to expand their reach new revenue streams. This alliance between CMI and Mobily marks a pivotal moment in telecommunications, with both companies set to redefine connectivity and digital services through their collaborative efforts.

China Mobile and e& Signed a Strategic Memorandum of Understanding at MWC24

China Mobile Communications Group Co., Ltd. (China Mobile) and Emirates Telecommunications Corporation (Etisalat) have solidified their commitment to forging a new era of telecommunications collaboration by signing a strategic Memorandum of Understanding (MoU) during 2024 MWC Barcelona. The signing was witness by Mr. Gao Tongqing, Executive Vice President of China Mobile and Mr. Obaid Bokisha, Group Chief Operations Officer of Etisalat. Mr. Wang Hua, General Manager of International Business Department, China Mobile, Chairman & CEO of China Mobile International Limited, and Mr. Nabil Baccouche, Group Chief Carrier & Wholesale Officer of Etisalat, signed the MoU on behalf of both parties. Under this strategic MoU, China Mobile and Etisalat will embark on a collaborative journey encompassing international business cooperation, submarine cable investment, joint investments, and the promotion of China Mobile's innovative go-overseas products. This partnership aims to establish a mutually beneficial and synergistic strategic relationship, promoting shared growth and development across their operations. China Mobile systematically built new information infrastructure centering around 5G, computility network and capability middle platform, and innovatively created a new information services system equipped with connectivity, computility and capability. We drove cross-disciplinary collaboration in information services to support the further development of the digital economy. In terms of international business, we deepened the synergies between international and domestic markets. We increased the export of high-quality product capabilities and 5G solutions to overseas markets while upgrading our digital infrastructure overseas and further strengthening our international cooperation ecosystem in order to bring more value to our customers. Founded in 1976, Etisalat stands as the UAE's leading integrated telecommunications operator, with operations spanning across 17 countries in Asia, the Middle East, and Africa. The company is renowned for its innovative and reliable telecommunications services, both within the Middle East and on a global scale. Moving forward, both parties will establish an effective communication mechanism to enhance the implementation and progress of the strategic partnership. With a focus on technological innovation, China Mobile and Etisalat aim to create a mutually beneficial landscape characterized by complementary strengths, resource sharing and joint development. This collaboration will drive China Mobile's international business growth, positioning it as a world-class information services and sci-tech innovation enterprise.

Cisco Announces New Strategic Initiatives in Saudi Arabia

Building on their long-standing presence in Saudi Arabia, Cisco announced new strategic initiatives at LEAP 2024. Cisco unveiled the establishing of a new regional head office in Riyadh, and the launch of the new phase of its Country Digital Acceleration Program. The same has been finalized post the regional headquarter license granted by the Ministry of Investment. Vice Minister of Communications and Information Technology, Eng. Haitham bin Abdul Rahman Al-Ohali, commented: "Technology is a key enabler in achieving the Saudi Vision 2030. Investments of global tech players like Cisco play a crucial role in strengthening our technology landscape, and in fostering economic growth and diversification. They help in bringing the necessary resources, expertise, and innovation to propel the Kingdom forward on its path to a diversified, knowledge-based economy, and advance its position as an innovation hub." Since the start of its activities in Saudi Arabia in 1997, Cisco has been at the forefront of delivering technology innovation to the Kingdom, working alongside customers and partners on numerous critical national projects, while investing in talent development. Guy Diedrich, Senior Vice President, and Global Innovation Officer at Cisco said: "Our CDA program and Cisco Networking Academy are powerful platforms that drive co-innovation, unlock co-investment, and train the workforce of the future. As we enter the next chapter of our commitments in Saudi Arabia, we look forward to once again, lend our expertise, resources, and global network, to help the Kingdom's transition into a vibrant, diverse digital economy." Cisco has also announced the continuation of its collaboration with the Ministry of Communications and Information Technology, with a new phase of its ongoing Country Digital Acceleration program. The program's third iteration will align to the goals of the Saudi Research and Development National Strategy, focusing on Health and Wellness, Sustainable Environment & Affordable Supply of Essential Needs, Energy and Industrial Leadership, and Economies of the Future. Reem Asaad, Vice President for Cisco Middle East, Türkiye, Africa, Romania, and the Commonwealth of Independent States (CIS), commented: "Cisco's ongoing investments in Saudi Arabia's growing digital economy contribute to the rapid integration of technology across all sectors to drive innovation, enhance efficiency, and foster economic growth. We're excited to continue our pivotal role in supporting the country's vision to accelerate a digital, sustainable, and inclusive future." Initially launched in the Kingdom in 2016, the CDA program has been supporting digitization efforts across key industries, fostering digital skills, and developing the innovation ecosystem in the country. To date, the program has implemented more than 20 projects of national impact across vital sectors including healthcare, education, smart Cities and government digitization. Some of key projects were realized in collaboration with King Abdullah University of Science and Technology (KAUST), Saudi Authority for Data and Artificial Intelligence (SDAIA), and Vision 2030 Giga Projects. In addition, Cisco continues to foster digital skills, leveraging Cisco Networking Academy – one of the world's longest standing IT-skills-to-jobs programs. To date, Cisco has trained more than 335,000 learners in Saudi Arabia on networking, cybersecurity, programing, and other digital technology skills. "Today's announcements reinforce Cisco's commitment to support the digital ecosystem in Saudi Arabia," said Salman Faqeeh, Managing Director, Cisco Saudi Arabia. "I am proud of what we have achieved through our longstanding presence in the Kingdom, and via our active programs like CDA and Cisco Networking Academy; and I am looking forward to more milestones. With our technologies spanning every IT and business objective, from networking to security, collaboration, monitoring, application development and more; Cisco continues to be at the heart of driving digitization together with our customers and partners."

Cisco and OECD Launch Pioneering Research Initiative on Digital Well-Being

Technology is transforming our lives, changing the way we learn, work, interact with others and get access to all types of services. Depending on our ability to access technology and use it in the right way, technology can improve our sense of well-being and be a real driver of progress. Cisco, a global technology leader committed to fostering an inclusive future for all, continues its efforts to address the digital divide through a new research collaboration with the Organization for Economic Co-operation and Development (OECD). This collaboration aims to help promote a responsible use of technology as well as fairness, inclusion and equitable access in a global digital economy.

Igniting a Global Conversation

As digital transformation continues to reshape every aspect of our lives at an intensifying pace, Cisco and the OECD Centre on Well-being, Inclusion, Sustainability and Equal Opportunity (WISE) are joining forces to examine the complex nature of digital transformation and its role as both a catalyst for progress and a source of potential risks to well-being. "The OECD has a long tradition of work supporting policy makers better understand the digital transformation and develop appropriate policies to help shape a positive digital future. Our initial report, 'How's Life in the Digital Age', highlighted the benefits and challenges of digital transformation, from enhanced access and productivity to issues like the digital divide and personal security threats in people's everyday life and workplace. Our partnership with Cisco helps us take the next step in broadening what we know about the interplay between technology and life to enrich our understanding of well-being in the digital realm," said Romina Boarini, OECD WISE Centre Director. This collaboration aims to create an interactive, dynamic and engaging digital platform for sharing experiences to help develop a detailed picture of how digital technologies influence different aspects of our lives. Grounded in the OECD Well-being Framework, the platform will gather new statistics and people's insights on digital well-being as a whole, including the impact of the digital divide and inequalities in the uptake and use of digital technologies.

Strategic Momentum from Cisco's Country Digital Acceleration Programs

Cisco's involvement in the OECD WISE Centre initiative is an extension of its Country Digital Acceleration (CDA) program, which has a long history of collaborating with governments, industry and academia to foster sustainable, secure and inclusive communities through over 1500 projects in 50 countries.

"We cannot close the digital divide on our own. Governments, industry, educational institutions, non-profits and community leaders must work together in new ways to prioritize our collective well-being for a healthy, prosperous and safe digital life. It's no coincidence that the priorities and the OECD's Well-being Framework resonate so profoundly. This partnership taps into Cisco and OECD's collective expertise in understanding the risks and unlocking the value of digitization across verticals and industries to ultimately power safe and inclusive communities, and resilient economies," said Guy Diedrich, Senior Vice President & Global Innovation Officer of Cisco.

Digital Access is No Longer a Privilege for Some but a Necessity for All

The partnership between Cisco and the OECD builds on existing research into digital well-being. It acknowledges that while digital technologies offer benefits like improved access to education and health information, they also pose risks. Notably, the digital divide, where those lacking digital literacy—a blend of technical, emotional, and social skills—fall behind, becoming vulnerable to mental health risks and safety concerns. Recognizing that broad internet access isn't enough to participate in digital life, the new partnership seeks to rally citizens, businesses, policymakers and workers to develop a balanced approach that ensures technology improves well-being and mitigates potential risks.

A New Industry Study and Knowledge Hub

Cisco and the OECD will conduct research and create a global knowledge hub, capturing data and expanding knowledge on the influence of digital transformation on different aspects of people's lives. This initiative marks a crucial step in understanding technology's role across a broader definition of well-being that covers 11 key dimensions: education and skills, healthcare, jobs and earnings, income and wealth, subjective well-being, smart communities—work-life balance and social connections—environmental sustainability, critical infrastructure, cybersecurity, governance and civic engagement, and housing. The research aims to help users make informed decisions, empower individuals to navigate the digital landscape responsibly, and to promote a healthy relationship with emerging technology. "While we continue to strive for full digital inclusion around the world, we cannot do so at any cost. It is our responsibility to keep well-being top of mind, and this partnership will help us connect with people around the world to learn about their experiences with digital technology—how it influences their social connections, their jobs and work-life balance, and their physical and mental health. Co-building a model and better understanding the role technology plays in everyday life is fundamental to our work at Cisco, and to pursuing our purpose to power an inclusive future for all," said Fran Katsoudas, Executive Vice President & Chief People, Policy and Purpose Officer of Cisco.

The Year Ahead: Hub Launch and Well-being Forum

The partnership will launch its 'Digital Well-being Hub' in the second half of 2024. In November, Cisco will participate in the OECD's World Forum on Well-being, which addresses the value of well-being approaches for improving knowledge, performance and cooperation across the public, private and civil sectors in a context of societal change.

Cisco Completes Acquisition of Splunk

Cisco announced it completed the acquisition of Splunk, setting the foundation for delivering unparalleled visibility and insights across an organization's entire digital footprint. To thrive in the new digital era, organizations must connect and protect all that they do. They need to connect the people, places, applications, data, and devices that power their business while protecting their entire digital footprint from cybersecurity threats, downtime, and other critical business risks. Cisco will bring the full power of the network, together with market-leading security and observability solutions, to deliver a real-time unified view of the entire digital landscape, helping teams proactively defend critical infrastructure, prevent outages, and refine the network experience. "We are thrilled to officially welcome Splunk to Cisco," said Chuck Robbins, Chair and CEO of Cisco. "As one of the world's largest software companies, we will revolutionize the way our customers leverage data to connect and protect every aspect of their organization as we help power and protect the AI revolution." "Uniting Splunk and Cisco will bring tremendous value to our joint customers worldwide," said Gary Steele, Executive Vice President, General Manager, Splunk. "The combination of Cisco and Splunk will provide truly comprehensive visibility and insights across an organization's entire digital footprint, delivering an unprecedented level of resilience through the most extensive and powerful security and observability product portfolio on the market." The adoption and impact of AI are outpacing that of any technology introduction we have ever seen. Effective use of the right data at massive scale is critical to enable the meaningful benefits of AI and help organizations drive outcomes never before possible. To truly reap the benefits of AI, organizations need the infrastructure to power it, the data to develop it, a security platform to protect it, and an observability platform to monitor and manage it in real time. Cisco will be able to do all four together. "Cisco and Splunk is a transformative combination that will allow customers to do things that weren't possible before," said Stephen Elliot, Group Vice President, I&O, Cloud Operations, and DevOps at IDC. "With the close, Cisco has created a unique set of solutions for networking, security, and operations executives in the market. When you add that to their channel and AI investments, customers should be considering the higher levels of business value that can now be unlocked." "Accenture congratulates Cisco on the acquisition of Splunk," said Julie Sweet, Chair and CEO Accenture. "We have enjoyed long-term partnerships with both companies and look forward to the opportunities this collaboration presents to our clients in the future.

Eutelsat OneWeb Services Activated for Enterprise and Maritime in Australia and New Zealand Through Sat One Partnership

Eutelsat Group announces that Sat One, is leveraging its OneWeb LEO constellation for the first-time activation of land-based services across Australia's remote northern and southern regions, maritime services in Australian waters, and commercial service in New Zealand. Satellite service company Sat One and Eutelsat OneWeb have a multi-year, multi-million dollar agreement enabling Sat One to bring high-speed, low latency connectivity to its most remote customers. With Eutelsat OneWeb's LEO now operational in Australia and New Zealand, Sat One has begun providing services to enterprises, including mine sites, and remote communities as well as maritime customers. "Today heralds a new chapter for connectivity, tailored to Australasia's unique landscapes and seascapes," remarked Daniel Fairbairn, Chief Executive Officer of Sat One. "Our agreement with Eutelsat OneWeb enables us to lead the market in providing enterprise grade, resilient, high-speed, low-latency LEO services that stand up to the harsh outback, the wet tropics, and New Zealand's freezing

conditions, as well as the demanding marine environments. We're ensuring that enterprises remain connected and competitive no matter how remote or challenging their operations. Sat One is the One company that customers turn to for Enterprise LEO." Cyril Dujardin, Co-President of Eutelsat Group's Connectivity Business Unit said, "We are delighted to announce the launch of our LEO services for customers in Australia and New Zealand. As a trusted connectivity provider, Sat One understands the complex needs of modern businesses and maritime operations. We are excited by the start of these services and looking forward to building on our partnership with Sat One." The activation follows the launch last month of Eutelsat OneWeb LEO backhaul in Australia by the Australian telecom operator, Telstra.

Eutelsat and NEC XON Seal Agreement for Eutelsat OneWeb Capacity for Connectivity in sub-Saharan Africa

Eutelsat Group, and NEC XON, one of the leading African integrators of ICT solutions and part of Japan's NEC Group, have signed a multi-year, multimillion-dollar deal for connectivity capacity on the Eutelsat OneWeb Low Orbit constellation. The deal builds on the Distributor Partner Agreement between the two companies announced at Africacom in November 20nd follows a period of successful tests undertaken by NEC XON in recent weeks. The agreement enables NEC XON to integrate satellite capacity into its suite of systems, providing secure connectivity for enterprise customers in areas that lack terrestrial connectivity - especially in agriculture, mining, oil & gas and fiber back-up. The service will be launched initially in South Africa, with a view to deploying it in 15 other countries where NEC XON has a local presence. Commenting on the deal, Faried Souma, GM Wireless at NEC XON, said: "The implementation of OneWeb satellite technology provides NEC XON customers with significant benefits - including low latency and high bandwidth capabilities, even in far-flung areas without access to conventional internet connectivity. As a backup solution, OneWeb provides resilience and reliability to ensure business continuity even in the face of natural disasters or infrastructure failures. The technology can be deployed quickly and easily, and for key NEC XON target markets like mining and agriculture, low-latency satellite options are crucial as real-time, data-driven business applications proliferate. They also face severe business consequences if connectivity fails." Ghassan Murat, Regional Vice President AMEA of Eutelsat Group added: "We are delighted to ink this agreement with NEC XON, paving the way for them to become one of our important partners in sub-Saharan Africa. We are gratified to see NEC XON embracing the benefits of OneWeb services as part of its suite of options. NEC XON is one of the fastest growing African ITC integrators, and we look forward to supporting them on their path."

ALOFT AeroArchitects Equips Private Boeing Business Jet aircraft with Eutelsat OneWeb's LEO Satellite Connectivity Service

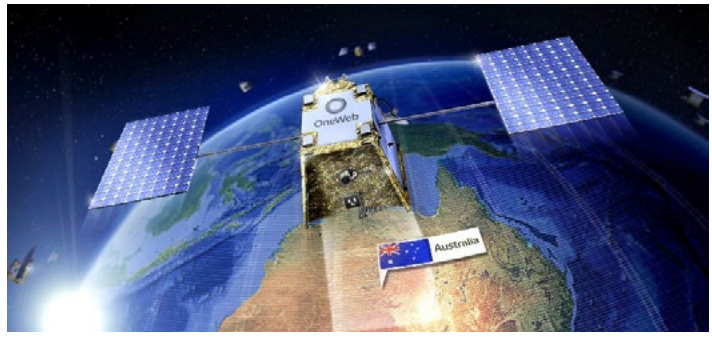
Eutelsat Group announces that ALOFT AeroArchitects, the private Boeing Business Jet operator, has selected Eutelsat OneWeb to deliver high-speed, low-latency broadband connectivity for the ultimate passenger experience. Under the agreement, ALOFT will equip a private BBJ aircraft with Eutelsat OneWeb's revolutionary LEO satellite connectivity service. The service will be facilitated by a new Electronically Steered Array (ESA) terminal being developed by Stellar Blu Technologies and delivered through Eutelsat OneWeb's distribution partner and connectivity expert, Satcom Direct. ALOFT is developing a Supplemental Type Certification (STC) for the 737-platform using its internal engineering, certification, and ODA resources, which is now available for purchase by VVIP 737 operators and MROs worldwide. Eutelsat OneWeb's low Earth orbit constellation of advanced satellites will deliver a reliable, high-speed, low-latency connectivity experience which will enable the VIP passengers to remain as productive, entertained and connected with family, friends, colleagues, and social media as if they were on the ground. "As an innovator in cabin technology integration, ALOFT is ensuring its discerning BBJ customers will experience high-speed internet in the air, no matter where they are flying – just as they do on the ground" commented Jason Sperry, Head of Business Aviation at Eutelsat OneWeb. "The low latency that is inherent in our low Earth orbit network, means that principals and passengers will have access to applications for both passenger productivity and entertainment that to date have been out of reach while inflight." On signing the agreement Colby Hall, Director of Integrated Technology at ALOFT said "Our BBJ customers expect their aircraft to be as comfortable and capable as their homes and offices. This expectation now includes high speed connectivity and being able to remain connected through their personal devices – all the time. Thanks to the connected ecosystem that Eutelsat OneWeb and their partners are deploying in the business aviation market, our VIP customers will be connected, entertained and productive like never before – able to work, stream, trade, as they choose."

Eutelsat and Intelsat Sign $500m LEO Partnership

France-based Eutelsat Group and America's Intelsat have partnered to invest $500 million to advance the OneWeb Low Earth Orbit (LEO) Constellation. The collaboration, which was announced this week, will in begin mid-2024 with a $250 million commitment, has an option of a further $250 million, the company said. Starting mid-2024, Intelsat will integrate OneWeb's LEO Network with its existing GEO and terrestrial networks. This move is expected to deliver unmatched services to customers in networks, government, and mobility industries. Intelsat will cooperate with Eutelsat to develop its Next Generation OneWeb constellation, providing direct design and functionality input to help ensure that the new constellation will meet increasing customer needs. "Today's announcement elevates that partnership to unprecedented heights, bolstering our capacity to offer cutting-edge multi-orbit services and solutions across our diverse portfolio of customers and business segments," Dave Wajsgras, CEO of Intelsat in a press release. Eva Berneke, CEO of Eutelsat Group, highlighted the importance of the collaboration in a press release, saying, "This expanded collaboration with Intelsat underscores a resounding vote of confidence in the prowess of the OneWeb satellite constellation, both today and in the foreseeable future." The Eutelsat Group was formed through the merger of Eutelsat and OneWeb in 2023, becoming the first fully integrated GEO-LEO satellite operator with a fleet of 35 GEO satellites and a LEO constellation of more than 600 satellites to cater to mobile connectivity needs across Europe, the Middle East, and the Pacific. As the partnership evolves, it promises to redefine satellite communication possibilities, offering unprecedented connectivity solutions worldwide.

Eutelsat OneWeb and Telstra Launch Largest Deployment of LEO Backhaul in Australia

Eutelsat Group, and Telstra announce the launch of the largest rollout of Eutelsat OneWeb Low Earth Orbit (LEO) backhaul in Australia. The launch follows the signing of a strategic multi-year agreement last year that will enable LEO capacity delivered to Telstra's most remote mobile customers across Australia to enhance their experience when using real-time applications such as voice and video calling. It follows a successful voice call on-air using Eutelsat OneWeb's LEO solution, the first time a satellite backhaul call has been conducted on a commercial mobile network with a guaranteed quality level of services in Australia. More than 300 remote mobile base station sites currently using satellite backhaul will be connected to Eutelsat OneWeb's LEO solution over the next 18 months. The capability will allow Telstra to expand mobile coverage as it supports new site deployments. Cyril Dujardin, Co-General Manager of Eutelsat Group's Connectivity Business Unit said: "We are delighted to support Telstra in delivering consistent, leading-edge connectivity to its customers in Australia, regardless of location. We are honored to count Telstra among our most trusted partners, with whom we will continue to collaborate to test and deploy current and future technology." Iskra Nikolova, Telstra Executive for Network and Technology added: "Eutelsat OneWeb's LEO solution will help us improve the customer experience in regional and remote areas with lower latency, higher speeds, and a more consistent experience. There's also potential for OneWeb, as a backup backhaul solution, to improve reliability in areas where terrestrial backhaul is susceptible to natural disasters, and where communities find themselves in isolation to have a LEO backhaul that guarantees that level of quality service." Australia is one of several markets now fully operational, as Eutelsat OneWeb completes the roll-out of its ground segment to enable true global coverage.

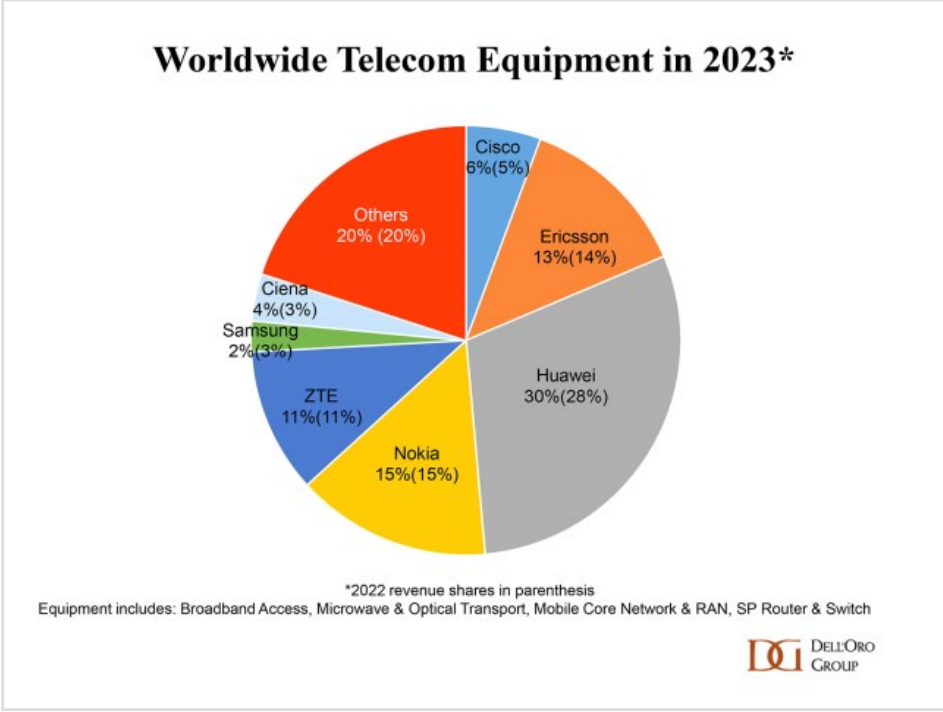


Eutelsat Group Concludes Sale of OneWeb's Stake in Airbus OneWeb Satellites LLC (AOS)

Eutelsat Group has completed the sale of OneWeb's 50% share in the Airbus OneWeb Satellites joint venture. The stake in the Florida-based business, which built the satellites for the OneWeb First Generation constellation, is being acquired by co-owner, Airbus U.S. Space & Defense, Inc. The agreement reflects Eutelsat Group's ongoing management of its assets with a view to optimizing and monetizing its portfolio as part of its debt reduction efforts. Massimiliano Ladovaz of Eutelsat Group said: "We are proud to have partnered with Airbus in this joint venture which has assured the successful build of OneWeb's First Generation constellation, and we are confident the business will continue to thrive by addressing the growing demand for small sats, with a best-in-class, competitive offer. Looking ahead, Eutelsat Group will benefit from being able to call on a more diversified range of suppliers for its future in-orbit needs, including Airbus which remains one of our most trusted partners."

Huawei Tops Worldwide Telecom Equipment Revenue in 2023

Preliminary Dell'Oro Group data indicated Huawei maintained its lead as the top global telecom equipment company by revenue in 2023, despite efforts by the US government and other countries to limit its addressable market and access to the latest chip silicon. The research company noted Huawei's share of global revenue widened to 30 per cent in 2023 compared with 28 per cent in 2022. Nokia's share was flat at 15 per cent while Ericsson's fell from 15 per cent in 2022 to 14 per cent. ZTE was fourth overall, with its share flat at 11 per cent, and Cisco increased its proportion from 5 per cent to 6 per cent. Dell'Oro Group tracks telecom revenue across broadband access; microwave; optical transport; mobile core network; RAN; and service provider router and switch. It stated preliminary figures show overall sales fell 5 per cent in 2023, "worse than expected". The telecom equipment sector enjoyed five consecutive years of growth and stable trends, including up to the end of H1 2023, but began to decrease in H2 2023, which the research company partially attributed to "challenging comparisons in some of the advanced 5G markets" and a "slow transition towards standalone" next-generation networks. By region, North America telecom equipment revenue declined 20 per cent, "faster than expected" due to weak activity in RAN and broadband access. Excluding North America, global revenue grew "as positive developments in the Asia Pacific region were mosftly sufficient to offset weaker growth across Europe". Dell'Oro Group added disruption related to Covid-19 (coronavirus) hoarding and an ongoing supply chain crisis contributed to regional and technology trends. It predicted market conditions would "remain challenging in 2024" albeit with a "less severe" drop than 2023.



Ooredoo Entrusts Huawei with the Preparation of Its Central Network for 5.5G in Algeria and Tunisia

Ooredoo is stepping up initiatives to modernize its network and prepare it for the deployment of 5G in its African markets of Algeria and Tunisia. The company signed a partnership agreement with Nokia in March 2023. The Qatari telecoms group Ooredoo has signed a partnership agreement with Huawei to modernize its core network to 5.5G in some of its markets, including Tunisia and Algeria. Reported by the Qatar News Agency, the initiative will allow the telecoms operator to improve the quality of services provided to its subscribers in the various markets concerned. "With a focus on continuous innovation, Ooredoo is committed to delivering transformative connectivity solutions that will enhance our customers' experiences and meet their evolving demands in the digital age," said Aziz Aluthman Fakhroo, General Manager of the Ooredoo group. Ooredoo's interest in 5.5G comes as the company is still in preparations to deploy commercial 5G in Tunisia and Algeria. In March 2023, the group signed a new partnership agreement with Nokia to make its network 5G-ready in its two African markets. In Algeria, the company declared in November 2023 that it is only waiting for the green light from the authorities to deploy ultra-broadband. In Tunisia, it launched the first tests of the technology in December 2020. The commercial deployment of 5G and 5.5G in Algeria and Tunisia should allow Ooredoo to strengthen its positions in its two markets. In the third quarter of 2023, Ooredoo Algeria held a 25.54% market share, according to data from the Postal and Electronic Communications Regulatory Authority (ARPCE). Ooredoo Tunisia is the leader in its market with a share of 40.9% in the third quarter according to the National Telecommunications Authority (INT). The commercial launch of 5G and 5.5G in its North African markets is also expected to help increase Ooredoo's revenues. The Tunisian and Algerian subsidiaries contributed 1.47 billion Qatari riyals ($403.7 million) and 2.46 billion QAR respectively to the group's revenues for the 2023 financial year. The group generated a figure total business of QAR 23.16 billion.

Huawei and du Sign Strategic Cooperation MOU, Building the 5G Advanced Country

During MWC 2024 in Barcelona, Huawei signed a memorandum of understanding (MOU) on strategic cooperation between Huawei and the leading telecom operator “du” in the UAE. The MOU will continue to lead the digital UAE by building the 5G Advanced country project. Establish a demonstration benchmark for 5G Advanced commercial networks in the Middle East and around the world. Fahad Al Hassawi, CEO of du, Chen Hao, Huawei's Carrier Sales Dept President, Liu Jiawei, Chairman of Huawei UAE, Tao Geng, CEO of Huawei UAE, and members of the management teams of both parties attended the signing ceremony. According to the MOU, the two parties will work together to promote the construction and commercial use of the 5G Advanced network and jointly build the 5G Advanced Country in the UAE. The two parties will establish a 5G Advanced joint innovation center to innovate 5G Advanced technologies and expand the large-scale commercial use of new services in all scenarios, including consumers, homes, and enterprises, and accelerate the incubation of commercial applications such as 24K XR, FWA2, holographic conferencing, and enhanced 5G private networks. Jointly explore the 5G Advanced commercial model, expand the industry ecosystem, and accelerate the positive cycle of business success. Fahad Al Hassawi, CEO of du, said, "As a leading digital telco, du is committed to cooperating with global industry leaders, such as Huawei, to remain at the forefront of digital innovation and provide customers with the ultimate network experience. Huawei's leading technologies will support the realization of du's strategic vision, play an important role in 5G Advanced service innovation and industry digitalization, and jointly accelerate the UAE's digital transformation." Liu Jiawei, Chairman of Huawei UAE, said, "As a global ICT infrastructure and smart device provider, Huawei is committed to supporting du’s strategic vision of digital innovation and providing customers with the ultimate network experience. In the past year, du has developed rapidly in FWA services and has successfully deployed a commercial 5G Advanced network and we believe that the signing of this MOU will deepen the implementation of 5G Advanced technologies, accelerate the incubation of commercial applications, and strengthen our strategic partnership with du." The cooperation between du and Huawei started in 2008 and maintained close strategic mutual trust in the 3G, 4G, and 5G eras. Towards the new phase of 5G Advanced, the two parties will continue to discuss the end-to-end evolution of 5G Advanced networks, incubate new 5G Advanced services in to-C, to-B, and to-H, build ubiquitous high-quality networks, and help du continuously provide the best connection experience and digital services for its customers. Make the UAE the world's leading 5G Advanced country.

Huawei Appoints Derek Hao as President of Huawei's Enterprise Business Group for the Middle East and Central Asia

Huawei, a global leader in ICT solutions, is pleased to announce the appointment of Derek Hao as the President of the Enterprise Business Group (EBG) for the Middle East and Central Asia (ME&CA) Region, effective immediately. In his new role, Hao will be responsible for leading the strategic direction of Huawei's enterprise business in the ME&CA region, driving growth, and fostering digital transformation across various industries. With a wealth of experience in marketing, product and solution sales, and business management, Hao brings a proven track record of success to this key leadership position. Prior to his appointment as EBG President for ME&CA, Hao served as the President of Global Marketing at Huawei Enterprise Business Group, overseeing marketing activities worldwide. His contributions to the success of the enterprise business in the Asia Pacific, Southeast Asia regions have been instrumental in Huawei's global expansion. Steven Yi, President of Huawei Middle East & Central Asia expressed confidence in Hao's ability to lead the Enterprise Business Group in the ME&CA region, saying, "We are thrilled to welcome Derek Hao to this crucial role. His extensive experience, strategic vision, and passion for business transformation make him the ideal leader to drive our enterprise business forward in the Middle East and Central Asia." Hao joined

Huawei in 2005. Throughout his career, he has played pivotal roles in Huawei's business development, earning recognition for his outstanding contributions to the company's success. Speaking about his new role, Derek Hao said, "I am honored to take on the role of President of the Enterprise Business Group in the ME&CA region. Huawei's commitment to innovation and intelligent transformation aligns with the evolving needs of businesses in this dynamic region. I look forward to working closely with our partners and customers to create new value together across various industries and further drive the growth of our Enterprise Business Group and contribute to the digitalization of the Middle East and Central Asia." As Huawei continues to focus on bringing digital to every person, home and organization for a fully connected and intelligent world, Hao is poised to spearhead the efforts in embracing new ICT technologies to pursue technological innovation in various domains, fostering collaborations with customers and partners to accelerate industrial intelligence and transform the digital economy into an intelligent one. Today, over 700 cities and 267 Fortune Global 500 companies have chosen Huawei as their digital transformation partner, and Huawei's EBG now works with more than 38,000 service and operation partners around the world.

Huawei Cloud Unveils Infrastructure of Choice for AI with 10 Innovations

This year's Huawei Cloud Summit demonstrates how Huawei Cloud is the infrastructure of choice for AI applications. With the theme of "Accelerate Intelligence with Everything as a Service," the 500-strong event brought together executives and experts from diverse industries, such as carrier, finance, and more. Huawei Cloud presented 10 AI-oriented innovations and extensive industry expertise in Pangu models. The objective is an AI-ready infrastructure tailored to each industry for a faster journey towards intelligence. Jacqueline Shi, President of Huawei Cloud Global Marketing and Sales Service, said in her speech: "Huawei Cloud is one of the fastest growing cloud service providers in the world. At Huawei Cloud, we're all about pushing boundaries and bringing cutting-edge tech to customers around the world. We have launched a series of local cloud Regions in recent years, such as in Saudi Arabia, Ireland, Türkiye, and Indonesia, giving customers easy access to the best-performing cloud. With over 120 security certifications worldwide, you can be sure your business and data are safe and sound. But it is not just about the tech. We believe in helping our partners grow alongside us, and this goal is now backed by our GoCloud and GrowCloud programs. And let's not forget AI – it is reshaping everything, and we're at the forefront. We're building a solid cloud foundation for everyone, for every industry, to accelerate intelligence." Today's foundation models redefine production, interaction, service paradigms, and business models for traditional applications. They make AI a new engine for the growth of cloud computing. While the potential is vast, implementing AI in line with business objectives requires systematic innovation. Huawei Cloud CTO Bruno Zhang said, "Huawei Cloud will help you with two strategies. AI for Cloud uses AI and foundation models to elevate your experience. They revolutionize software development, digital content production, and more. Cloud for AI makes AI adoption seamless and efficient. Architectural innovation, AI-native storage, and data-AI convergence empower you to train and use AI like never before." At the Summit, Huawei Cloud unveiled ten AI-oriented innovations that make it the cloud infrastructure of choice for AI.

Huawei Certified as a Top Employer in Europe for Fifth Consecutive Year

Huawei was recognized as a "Top Employer" in Europe for 2024. This marks the fifth consecutive year the company has made the list compiled by Top Employers Institute, a leader in human resources management certifications. In addition to being named a Top Employer in Europe, Huawei has also received individual recognition in 16 European countries: Austria, Belgium, France, Germany, Greece, Hungary, Italy, Ireland, the Netherlands, Portugal, Poland, Romania, Spain, Switzerland, Sweden, and the UK. Top Employers Institute has certified more than 2,300 organizations in 121 countries/regions that taken together, employ over 12 million people worldwide. Patrik Rendel, Regional Manager DACH & CEE, Top Employers Institute said: "Top Employers Institute recognizes

Huawei Europe as an employer with fantastic career development opportunities on all levels. Huawei scores 15% above the total of all Top Employers benchmarks." Being named a Top Employer by the Institute list is a recognition of Huawei's commitment to talent across Europe and globally. The company has continued to strengthen its talent development, recruitment and management practices in 2024. Lesley White, Deputy Vice President of Human Resources, Huawei European Region said: "Talent is an essential component of our business strategy in Europe and globally. We are pleased to be recognized as a Top Employer in Europe for the fifth time in a row. Huawei has been established in Europe for more than 20 years, and we realized that it was critical to our business operations and success to demonstrate Huawei's cutting-edge people management practices on a global platform. Through this certification process, Huawei demonstrated how it looks for the unique value in people and works with them in diverse ways to ensure talent attraction, retention and development. We will continue to create more opportunities to support talent in Europe to develop their careers at Huawei." Huawei fosters an environment that encourages innovation both within the company across its European offices and globally, as well as in the broader tech ecosystem in which it operates. The company has several initiatives in this space. The ICT Academy is a partnership between Huawei and universities that aims to share the company's cutting-edge technologies with universities worldwide and cultivate new ICT talents. Huawei also hosts Seeds for the Future, the company's flagship program for digital skills cultivation, and the Huawei Graduate Program, which places university graduates into roles at Huawei to develop and grow their careers. The company recently announced that the Europe edition of Seeds for the Future will be held in Rome, Italy in 2024.

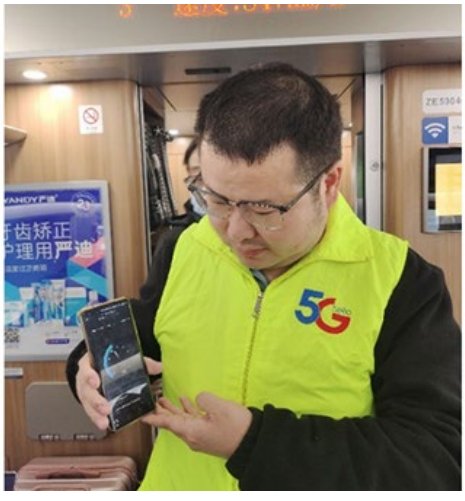
Huawei Expects to See Key Role for sub-3GHz FDD Bands in the 5.5G Era

Frequency division duplex (FDD) technology operating in the sub-3 GHz frequency bands has a key role to play as services evolve into the era of 5.5G (5G Advanced), says Huawei. As technologies and applications such as RedCap are more widely deployed, attention is not just focusing on the mid-bands around 6GHz and higher frequencies such as mmWave to provide the capabilities needed to support the more testing demands of 5.5G, says the company. The deep and wide coverage and large uplink experience provided by the sub-3 GHz frequency bands, which have helped global LTE and 5G operators achieve high levels of satisfaction, will continue to be in demand in the era of 5.5G, according to Fang Xiang, VP of Huawei wireless network product line. These bands which were the foundation of 4G have attributes which can equally well serve the needs of operators in the 5G era and beyond. As new service scenarios place growing demands on network quality, coverage, latency and reliability, FDD can be adapted to support the new services for 5.5G, Fang told Developing Telecoms during MWC 2024. In the 5.5G era, networks need to provide services with multi-dimensional capabilities of large uplink, low latency, and deep and wide coverage, says Fang. The demands of applications such as , while cloud gaming, which has become a top ICT strategy for operators in the Middle East, demands stable 40ms latency. The sub-3 GHz bands have rich uplink and downlink spectrum

resources and wide coverage, says Fang. For improved uplink performance, FDD can support the symmetrical configuration required for 5.5G. Delivering 5-10Gbps in the downlink means aggregating three or even five component carriers (CCs), but the industry already has a 5CC chip that will support the FDD bands. Multi-band serving cell (MBSC) technology as defined in 3GPP Release 18 will provide in future for multiple aggregated bands to build a 100 MHz FDD bandwidth. As well as achieving sub-3 GHz spectral efficiency and performance criteria, Huawei believes operators want to benefit from simplified and green deployments in the . This can include ensuring that new frequency bands are added without increasing the number of base stations or power consumption, and that OPEX is continuously reduced. To address these challenges, Huawei has developed its GigaGreen Radio platform, which comprises a single RAN coupled with FDD massive MIMO designed to facilitate efficient deployment of 100 MHz FDD bandwidth. The GigaGreen FDD 8T8R three-band RF module provides three times the capacity of 4T4R with 7dB coverage and 30% less energy consumption, according to Huawei. A single massive MIMO module combines support for the 1.8 GHz, 2.1 GHz, and 2.6 GHz bands with compact size (995 mm high and 499 mm wide) and a reduced wind load, meaning that with full-band beamforming, operators can upgrade their capacity by four times in the downlink and five times in the uplink, from 5G 4T4R to 5G MIMO.

Huawei and China Telecom Anhui Complete China's First Commercial UC Verification of 1.8+2.1 GHz 8T8R RRU on High-Speed Railway

The Anhui branch of China Telecom Corporation Limited (China Telecom Anhui) and Huawei completed China's first commercial use case verification of 1.8 GHz + 2.1 GHz dual-band 8T8R RRUs in the Tongling section of the Hefei-Fuzhou High-Speed Railway, as part of their efforts to build premium 5G networks for high-speed railways. With the deployment of 5G on 2.1 GHz and 4G on 1.8 GHz, 5G and 4G networks are on a single device, achieving dual-band and dual-RAT coverage. Test results show that compared with conventional 4T, 8T8R improves 5G and 4G coverage by 5 dB and 2.6 dB, respectively, increases average 5G downlink and uplink rates by 18% and 43%, respectively, and boosts the total traffic along the tested route by 42%. All these mean that users on high-speed railways can enjoy optimal network experience regardless of whether they are accessing 5G or 4G. As key national infrastructure, high-speed railways play a critical role in the development of the national economy. Anhui has a large network of high-speed railways and therefore is a key target province for wireless network construction. Construction of Anhui high-speed railway networks faces four major challenges. First, fast-moving trains cause signal frequency shift, which affects network performance. Second, carriages and tunnels block the propagation of signals. Third, the coverage of each base station only lasts for a few seconds. Fourth, the complex terrain and tunnels in mountainous areas in Anhui make it difficult to plan networks. This is very much the case with the Tongling section, which has high requirements on network coverage due to its location on a viaduct and the numerous tunnels along the section. To address these challenges, China Telecom Anhui chose the 1.8 GHz + 2.1 GHz dual-band 8T8R RRU solution to build a 5G network for the Tongling section of the Hefei-Fuzhou High-Speed Railway. The solution has the following benefits:



The solution employs FDD 8T8R and other cutting-edge technologies such as high-gain array, precise beam sweeping, and high-resolution MU pairing. Compared with conventional 4T4R base stations, the solution achieves wider coverage, better user experience, and lower power consumption through 3D multi-antenna beamforming. The solution uses the industry's only true-wideband power amplifier to implement millisecond-level power sharing between the 1.8 GHz and 2.1 GHz frequency bands, thus effectively avoiding power wastage and improving user experience and performance. The solution achieves low-carbon network deployment by enabling 4G and 5G networks to be built at the same site to improve network engineering while reducing energy consumption. After the solution was deployed, the performance of 5G and 4G networks has been significantly improved, allowing users on trains to enjoy smooth entertainment services such as live streaming, HD video, and New Calling, as well as remote work and office services such as video and voice conferencing. Next, China Telecom Anhui plans to deepen its exploration of advanced 5G high-speed railway network technologies to find new solutions that will further improve user experience.

Huawei 'Imagine Wi-Fi 7' Innovative Application Contest Launched in Partnership with IEEE UAE Section

As Wi-Fi becomes an inevitable part of individuals and businesses, the new generation of Wi-Fi promises limitless opportunities for end consumers and businesses. Recognizing the critical role of Wi-Fi in shaping the future, the Institute of Electrical and Electronics Engineers (IEEE) UAE Section and Huawei have joined forces to launch the groundbreaking Huawei 'Imagine Wi-Fi 7' Innovative Application Contest. This collaborative initiative invites ICT practitioners across the Middle East and Central Asia (ME&CA) to share innovative ideas and explore the best implementation scenarios for the latest Wi-Fi generation—Wi-Fi 7. Wi-Fi 7, the successor to Wi-Fi 6, promises unparalleled advancements that redefine wireless communication. It boasts an impressive data transmission rate approximately three times faster than its predecessor, ensuring seamless connectivity for streaming 4K and 8K videos, engaging in VR experiences, or facilitating remote office work. Moreover, advanced techniques such as multi-link operation, multi-AP coordination, and coordinated scheduling between access points (APs) significantly reduce latency, enhancing real-time communication and responsiveness. The transition to Wi-Fi 7 heralds a new era of connectivity, promising substantial benefits for wireless networks. In the Middle East and Central Asia (ME&CA) region, the Wi-Fi 7 wireless campus network upgrade alone is projected to unleash a billion-dollar market opportunity. Huawei, the industry's first Wi-Fi 7 provider, stands at the forefront of this technological revolution. The Huawei 'Imagine Wi-Fi 7' Innovative Application Contest will help accelerate Wi-Fi 7 adoption across ME&CA. The contest invites customers, partners, research institutes, universities, and analysts to actively explore Wi-Fi 7's application scenarios and unique values for businesses and societies. By fostering proactive innovation, this concerted effort swiftly elevates industry awareness and acceptance of Wi-Fi 7. Participants will share their ideas through video submissions, aligning with the ease of digital life. The 'Imagine Wi-Fi 7' contest winners will be celebrated as Wi-Fi 7 pioneers, receiving prestigious awards and certificates jointly presented by the IEEE UAE Section and Huawei. The top three winners will also enjoy an exclusive invitation to the Huawei Tech Carnival Tour in Baku, Azerbaijan, in May 2024. Dr. Eesa M. Al Bastaki, honorary Chair of IEEE UAE Section, President of University of Dubai, said, "IEEE and Huawei have a proud tradition of joint efforts to elevate ICT as the foundation for a connected world. We are proud to join Huawei again in co-organizing the 'Imagine Wi-Fi 7' competition, which aims to unlock the potential of next-generation Wi-Fi. Our members are excited with the Wi-Fi 7's potential, as it heralds a new era in wireless connectivity when demand for new experiences is at an all-time high." Shunli Wang, Vice President of Huawei Middle East & Central Asia, said, "Huawei is grateful for the invaluable support extended by IEEE UAE Section and the University of Dubai for the Imagine Wi-Fi 7 content. We are confident that the Imagine Wi-Fi 7 program will inspire creative thinking and lead to the development of innovative applications that explore how Wi-Fi 7 could revolutionize our professional, personal, and cognitive spheres." Faisal Ameer Malik, CTO, Huawei Enterprise Business Group ME&CA, said, "At Huawei, we are committed to advancing WLAN standards and shaping the future of wireless connectivity. As the industry's leading Wi-Fi 7 provider, we are excited to launch the Imagine Wi-Fi 7 contest, which encourages proactive exploration of Wi-Fi 7's application scenarios and unique values. Our joint effort with customers will contribute to industry innovation and elevate Wi-Fi 7 as the new benchmark for wireless connectivity." As the world's first vendor to launch an enterprise Wi-Fi 7 solution, Huawei's commitment to advancing WLAN standards is unmatched. Ranked No. 1 in cumulative contributions to both WLAN standards and Wi-Fi 7 standards, Huawei has solidified its position as the world's Wi-Fi 7 leader. Notably, Huawei was named a leader in the 2024 Gartner® Magic Quadrant™ for Enterprise Wired and Wireless LAN Infrastructure and received the "Best Enterprise Wi-Fi Network 2023" Award at the Wireless Broadband Alliance (WBA) Industry Awards 2023. The Wi-Fi 7 era has officially dawned, with the Wi-Fi Alliance releasing the Wi-Fi 7 certification standard. Huawei's pioneering efforts position it as the trailblazer for this transformative technology. As Wi-Fi 7 gains momentum, Huawei remains steadfast in shaping the future of wireless connectivity. Huawei continuously promotes the application of the Wi-Fi 7 standard technology in the enterprise market. This enables a continuous upgrade of customers' network experience in many sectors, including education, healthcare, retail, manufacturing, and more. The 'Imagine Wi-Fi 7' contest is part of the company's vision to build the industry ecosystem by driving innovation and openly collaborating with all stakeholders for shared success.

China Unicom and Huawei Pilot Large-Scale 5.5G Network in Beijing

China Unicom Beijing and Huawei have successfully deployed a pilot large-scale 5.5G network in Beijing to provide continuous coverage in three key areas, including Beijing Financial Street in the city center, the landmark Beijing Long Distance Call Building, and multipurpose Workers' Stadium. This first-of-its-kind network is expected to become a benchmark for future 5.5 networks and applications across China thanks to the performance achievements it represents. Testing showed that the network delivered a 10 Gbps downlink peak rate and more than 5 Gbps continuous experience. The network has also achieved high- and low-band coordination and flexible deployment of outdoor and indoor 5.5G equipment, and supports multiple new applications including glasses-free 3D, ultra-high-definition (UHD) real-time broadcast system, and emerging applications in VR, AR and emerging Extended Reality (XR) applications. During tests, the 5.5G network achieved a downlink peak rate of 10 Gbps, and continuous experience exceeding 5 Gbps, surpassing 5G by 10 times. Trials also highlighted how 5.5G implemented high- and low-band coordination under discontinuous coverage to enable seamless handovers and uninterrupted service. The city of Beijing has long aimed to be a global pacesetter for the digital economy This requires leading 5G infrastructure and strong supporting industries. The city expects 5.5G to drive further development of its digital economy. China Unicom Beijing worked with Huawei on projects such as this one since they first began 5G network construction in 2019. To date, this partnership has yielded many remarkable achievements, from gigabit hotspots and the world's largest 200 MHz 5G urban network, to the release of user-experience-based network evaluation standards and smart network operations definitions. Both parties have won GSMA Global Mobile (GLOMO) Awards twice for their world-leading solutions for high-quality 5G network construction and operations. The maturing of the XR industry ecosystem, the convergence of AI-Generated Content (AIGC) and 5G devices, and the scaled adoption of 5G applications in enterprises and public institutions have propelled the live-streaming economy, IoT economy, and digital transformation of industries onto the fast lane, necessitating a greater number of user connections, faster rates, and lower latency in the uplink and downlink of networks. In early 2024, Beijing's new 5.5G network underwent comprehensive evaluations during a 5.5G industry event organized by the Beijing Institute of Communications (BIC). BIC brought in a number of experts from GSMA, TD Industry Alliance (TDIA), Omida, China Media Group (CMG), China Global Television Network (CGTN), People's Posts and Telecommunications News (PPTN), C114, and Naojiti to test the 5.5G network as well as a number of toB and toC applications in the Beijing Financial Street demonstration area built by China Unicom Beijing and Huawei. Demonstration of applications showed that the indoor 5.5G network at the Beijing Long Distance Call Building supported 4 Gbps uplink rates for glasses-free 3D, UHD shallow compression real-time production system, 8K high uplink live streaming, and XR separated rendering, showcasing the technology's potential for digital transformation in media and many other industries.

Nexign Accelerates CSP's Transition to Leaner Operations with Database-Agnostic and Modular BSS

According to TM Forum, cost continues to be the most common reason communications service providers (CSPs) cite for changing BSS suppliers in the market. In particular, 36% of CSPs consider cost to be the most important cause of shifting to another BSS, while technology ranks second in the list. A new generation of full-stack, convergent, and modular Nexign BSS released by Nexign, a leading provider of BSS and digitalization solutions, helps CSPs transit towards leaner operations based on an agile and responsive business model. The updated Nexign BSS is built on a microservices-based and database-agnostic architecture. The new solution, unlike traditional monolithic BSS, puts CSPs on fast track to implementing changes and launching new services. With the ability to select a core database even for high-load components, CSPs can

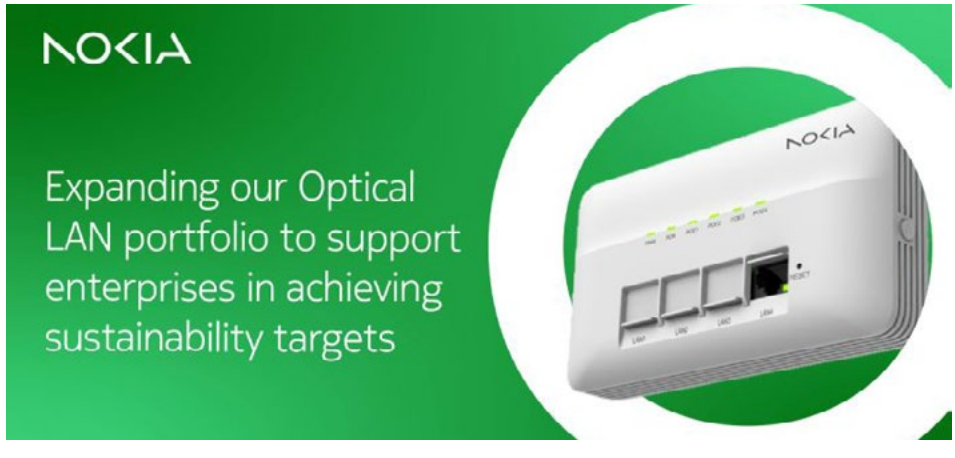
use preferable solutions based on their technological roadmap and budget. The solution components are developed using trusted open-source software, further minimizing the risks of vendor lock-in and significantly reducing Total Cost of Ownership (TCO) for the operator. CSPs can tailor a modular and convergent Nexign BSS to their unique transformation imperatives for business growth and diversification. For instance, they can turn into digital ecosystem enablers, best-in-class connectivity providers or 5G economy frontrunners. With Nexign BSS, telecom operators can swap the legacy monolithic and fragmented systems for a single convergent billing platform for the end-to-end business automation. The service providers launching a new business line can plug-and-play specific modules needed to bring their first offerings to market, such as revenue management or partner monetization. The Nexign BSS core provides the universal monetization engine to let CSPs capitalize on scenarios for any connectivity and digital service, line of business, or network type and generation, including 5G SA. Telecom operators get an opportunity to increase ARPU by providing subscribers with bundles that encompass various telecom services, digital services, and partner products. The inherent low-code/no-code functionality helps CSPs configure new products and business processes without the need to modify software modules or involve a vendor. A unified approach of Nexign BSS helps CSPs serve customers across multiple channels. The solution's open architecture is aligned with TM Forum's Open APIs and key industry standards, facilitating seamless integration of BSS into existing IT landscapes and accelerating the testing and rollout of new products. The platform has deployment options on-premise and in the cloud and supports horizontal and vertical scalability to meet the CSP's requirements for performance and resiliency. Nexign BSS comes with predefined continuous integration and continuous deployment automation. It also streamlines the management of products and product orders with a catalog-driven approach.

Nokia Hails Network Slicing Innovation

Nokia unveiled what it claimed to be the telecoms industry's first Multi-Access Edge Slicing service which it will showcase with UAE operator e& at MWC this month, and how operators can generate new revenues with it. The Finnish vendor said its new service will enable operators to slice across 4G/5G, Fixed Wireless Access (FWA) and Fixed Access (FA), and it can support several use cases and applications simultaneously. As an example, UAE operator e& can enable a 4G/5G smartphone user to send sensitive business information and make a video call, both using different slices of the network at the same time. A family using FWA can use one slice to access services such as HDTV streaming, cloud gaming, meanwhile another slice can be used for work through a laptop. Both slices can be altered to specific requirements such as latency (for online gaming) and bit-rate, QoS and security. Operators using this service can offer "on-demand network slicing", an example was a subscriber could order and activate a slice for a gaming app running at the edge cloud with enhanced network performance and low latency. Olivier Loridan, Senior Analyst at Omdia, said: "Nokia's Multi-Access Edge Slicing is promising due to its seamless integration of MEC and Network Slicing. While the connectivity needs of enterprises and consumers are evolving rapidly, this tailored solution has the potential to address this new demand."

Nokia Expands Optical LAN Portfolio to Support Enterprises in Achieving Sustainability Targets

Nokia announced the launch of a new in-wall ONT for enterprise optical LAN connectivity. The new product delivers gigabit speeds to provide a reliable, fast, and secure broadband connection inside offices, hotels, hospitals, schools, and other enterprise segments. The Nokia ONT is part of Nokia's comprehensive Optical LAN portfolio designed to help enterprises meet environmental, social, and governance (ESG) objectives. With demand for gigabit services, IoT, and file sharing applications growing, enterprises need to establish a local area network (LAN) that can meet



and stay ahead of evolving demands. Delivering a fraction of the complexity, space, energy, and costs of a traditional copper-based LAN, Optical LAN leverages fiber optic cables to provide a future-proof, high-capacity network alternative for in-building and campus connectivity that can help reduce energy costs by roughly 40%. Nokia's new ONT can help enterprises effectively extend the reach of their Optical LAN network to deliver more data capacity to employees using video, voice and data intense applications over the network. The ONT can power additional endpoint devices such as access points or cameras and can be securely mounted in the wall to help save space and reduce the chances for damage or theft. The new Nokia ONT for Optical LAN will be available in 2Q 2024. Geert Heyninck, General Manager of Broadband Networks at Nokia, said: "Optical LAN is the right technology for enterprise connectivity today and in the future. Today, we have more than 600 customers, including hospitality, healthcare, airports, and universities, that are deploying it with great success, and the number continues to grow. Helping to reduce TCO by as much as 50%, Optical LAN provides enterprises with significant operational and sustainable benefits that collectively can help reduce the energy and CO2 emissions of the IT networks they run." Julie Kunstler, Chief Analyst, Broadband Access Intelligence Service at Omdia, said: "Optical LAN simply makes sense for enterprises. It´s environmentally sustainable, using passive components while reducing energy-consuming network elements. Furthermore, fiber-based LANs are adaptable, a key requirement in an ever-changing world. An Optical LAN will provide a future-proof LAN solution for years to come."

Nokia Launches New 25G PON Fiber Modem to Accelerate Multi-Gigabit Broadband Deployments

Nokia announced the launch of a new, symmetrical 25G PON fiber modem. Helping to further accelerate 25G PON deployments, the compact solution can easily be installed on a wall, inside a building, or in an outdoor enclosure to immediately deliver internet speeds that are 20x faster than current gigabit solutions. Once deployed, operators can leverage their existing fiber network to offer new premium residential, business, or anyhaul services that unlock additional revenue streams. Demand for high-speed broadband access is accelerating with end-users increasingly seeking quality multi-gigabit services to power their homes and businesses. From the Metaverse and cloud gaming to cyber security, and Industry 4.0 applications, users want multi-gigabit services that can meet their evolving broadband needs. Nokia's new 25G PON fiber modem allows operators to establish a future-ready network that can immediately address the growing demand for more capacity and enhanced broadband services. The new 25G PON solution enables operators to quickly upgrade their existing GPON or XGS PON network to deliver true 10Gbs speeds and beyond with unprecedented ease. For enterprises, this can help significantly improve business productivity and enhance connectivity to the cloud or value-added applications located in data centers. For consumers and power users, the solution provides immediate access to additional capacity needed to support bandwidth-hungry applications such as AI, gaming, or security. Geert Heyninck, General Manager of Broadband Networks at Nokia, said: "The 25G PON eco-system is growing and with it, the technology that continues to bring concrete business benefits to customers. The market for 25G PON is here and with the new fiber modem, we have a very efficient 25G solution that can support all types of services and applications in the fiber-for-everything era. 25G PON continues to be the easiest, most cost-effective and power-efficient way for services providers to upgrade and maximize the use of their existing fiber network to deliver ultra-fast broadband access." Jeff Heynen, Vice President, Broadband Access and Home Networking at Dell'Oro Group, said: "25G PON deployments and the 25GS-PON MSA (Multi-Source Agreement) Group has grown substantially over the past year. One of the driving factors for the growing interest in 25GS-PON is its ability to coexist with GPON and XGS-PON without having to deploy additional feeder fiber, splitters, or other ODN elements. This past year we've seen large operators like Google indicate plans to make 25G PON service available to its customers while the MSA continues to expand, encompassing a diverse range of service providers, equipment vendors, and component suppliers." The new 25G PON fiber modem complements Nokia's growing 25G PON portfolio, which includes the Lightspan FX, DF and MF fiber access platforms (OLTs) and the industry's first 25G PON sealed fiber access node designed for cable operators.

Nokia and Zayo Achieve New North American Distance Record for 800Gb/S Transmission on Live Network

Nokia and Zayo have announced the successful completion of a live field trial of Nokia's sixth-generation Photonic Service Engine super-coherent optics (PSE-6s), demonstrating a North American transmission record of 800Gb/s over a single wavelength from LA to El Paso on a 1866km link. The companies also achieved a 1 Tb/s transmission on Zayo's LA to Phoenix route over 1004km, also using the Nokia PSE-6s. The field trial showcases the power of Nokia's latest generation of coherent optics and Zayo's state-of-the-art optical transport network—in providing high-capacity solutions to keep up with soaring global traffic demand resulting from an increasingly digitalized world. Zayo currently provides the largest and most modern 400G network in North America with over 250 points of presence (PoPs), covering the most in-demand centers. As Zayo continues to invest in the capacity, capability, and sustainability of its optical network to support transport of new 400GE and 800GE services, the trial performance demonstrates the ability of Nokia's optical technologies to support all three of these areas by increasing spectral/bandwidth efficiency, enabling high-speed client services, and lowering network power consumption. The trial used Nokia's PSE-6s implemented in the 1830 PSI-M compact modular transport platform equipped with production-ready DMAT6 line cards. Using the latest 6th generation technology, the 800Gb/s transmission represents a tripling in reach over current 7nm solutions and sets a new North American distance record over a live network. In addition, the 1Tb/s transmission between LA and Phoenix over 150GHz WDM channels shows the ability to reach even higher capacity per wavelength on high-traffic routes. Aaron Werley, Vice President of Technology at Zayo, said: "As a communications infrastructure leader, Zayo remains at the forefront of network connectivity. We continuously invest in our cutting-edge infrastructure to ensure a future-ready network. The infrastructure projects we have, and continue to complete to advance connectivity between key cities, involves the deployment of new 800G and higher-speed routes. Nokia's PSE-6s coherent technology allows Zayo to offer ever-increasing commercial Wavelength speeds, including enabling our industry-first Waves on Demand offering, so when customers demand innovative, higher-bandwidth solutions, the capacity is there for them." James Watt, Vice President and General Manager, Optical at Nokia, said: "Nokia is very pleased with the performance of the PSE-6s in the trial and its ability to enable 800G everywhere and deliver 1T between key cities over long spans at over 1000km. We are delighted to partner with Zayo on this achievement in preparation for growing network demand. With the PSE-6s, the Nokia optical portfolio pushes the limits of super-coherent performance to deliver massive network scale and service reach while ensuring more sustainable growth."

Nokia to Revolutionize Mobile Networks with Cloud RAN and AI Powered by NVIDIA

Nokia announced that it is collaborating with NVIDIA to revolutionize the future of AI-ready radio access network (RAN) solutions. The collaboration, which further enhances Nokia's anyRAN approach, aims to position AI as fundamental to transforming the future of the telecommunications network business. As AI is poised to change the landscape of telecommunications infrastructure and services within the mobile operator sector, this collaboration aims to deliver incremental value to end users through the introduction of innovative telco AI services. Nokia will collaborate with NVIDIA on Cloud RAN solutions that leverage the NVIDIA Grace™ CPU Superchip for Layer 2+ processing, Nokia's high-performance, energy-efficient In-Line Layer 1 (L1) accelerator technology, and Cloud RAN software. Additionally, Nokia will use NVIDIA GPUs for AI applications and vRAN acceleration, paving the way for AI-RAN. The NVIDIA Grace CPU is based on the latest and most advanced Arm Neoverse V2 CPU reference architecture. It delivers incredible performance, power efficiency, and high-bandwidth connectivity covering all data center requirements. Nokia's customers will benefit from diversity and choice in selecting CPUs for Cloud RAN networks. The announcement is a continuation of Nokia's flexible anyRAN approach that supports any purpose-built, hybrid or Cloud RAN environment. It's designed to help customers get their Cloud RAN services up and running much faster, removing complexity and ensuring openness and flexibility. Nokia's high-performance, energy-efficient In-Line acceleration architecture seamlessly integrates with all leading cloud or server infrastructures. Nokia has successfully performed end-to-end 5G data calls (Layer 3 calls) in multi-vendor setups with several partners. Tommi Uitto, President of Mobile Networks at Nokia, said: "This is an important collaboration with NVIDIA that will explore how artificial intelligence can play a transformative role in the future of our industry. It is a further example of our anyRAN approach that is helping to make Cloud RAN a commercial reality. The strength of our industry collaborations means we can drive efficiency, innovation, openness, and scale by delivering competitive advantage to operators and enterprises." Ronnie Vasishta, Senior Vice President of Telecom at NVIDIA, said: "Bringing the power of NVIDIA's advanced computing to Nokia's platform will deliver more performant and energy-efficient Cloud RAN solutions. Plus, as AI creates unprecedented transformational opportunities across industries, our collaboration with Nokia deepens AI-enabled innovation in radio access networks for improved operational efficiency in telecommunications."

Nokia's anyRAN Broadens Options for Commercial Cloud RAN Deployment

Nokia announced that its Cloud RAN solution will be available commercially in 2024 following the successful completion of multiple trials worldwide with hardware vendors, webscale companies, and chipset manufacturers. Nokia's anyRAN approach enables a fast transition to hybrid environments of Cloud RAN and purpose-built RAN, ensuring consistent performance and interoperability with common software and In-Line acceleration architecture. Nokia has also announced the launch of anyRAN for enterprise in partnership with Cisco, Hewlett Packard Enterprise and Microsoft that will see the companies offer private wireless solutions to enterprise customers1. Nokia has completed global trials with its ecosystem of industry partners to enable its customers to build future-ready Cloud RAN networks that remove complexity and ensure openness and flexibility. This means that mobile operators and enterprises can choose any server and cloud environment, including the Containers-as-a-Service (CaaS) layer, higher-layer processing architectures and associated server hardware providers without supplier lock-in. Underpinning this is Nokia's high-performance, energy-efficient In-Line acceleration architecture that seamlessly integrates with all leading cloud or server infrastructures. Nokia has already successfully performed end-to-end 5G data calls (Layer 3 calls) in multi-vendor setups. Nokia's flexible anyRAN approach supports any purpose-built, hybrid or Cloud RAN environment, helping customers get their Cloud RAN services up and running much faster. Nokia's anyRAN for enterprise offers more choice and flexibility for enterprises through collaboration with best-in-class system integrators and cloud core solution providers alongside providing Nokia's AirScale radio access portfolio to suit their specific requirements. By pre-packaging these solutions together, mobile operators and enterprises will benefit from a faster deployment due to extensive interoperability testing with core suppliers. The collaboration will also enable Nokia to support core vendors' networks and their ecosystems as well as provide access to new segments and markets. The move also aims to accelerate the adoption of 5G in the enterprise sector and support industries in their digital transformation. Tommi Uitto, President of Mobile Networks at Nokia, said: "Last year, we launched anyRAN to give our customers more flexibility with Cloud RAN and we have since made huge strides in making Cloud RAN a commercial reality by completing numerous pilots and trials with the wider industry. We are now extending our reach to private wireless by offering more choices on core with our industry partners. High-quality and reliable RAN solutions are essential for enterprises to support their mission and business-critical applications and enable business growth. The strength of our industry partnerships means we can drive efficiency, innovation, openness, and scale by jointly delivering competitive advantage to operators and enterprises embracing Cloud RAN." At Mobile World Congress 2024, Nokia will showcase its radio leadership with enhancements to its comprehensive AirScale product portfolio. This will include new radios supporting additional bands and bandwidth as well as new ultra-performance plug-in cards for its market-leading baseband products. Nokia will also showcase the latest developments with its best-in-class partners in making anyRAN the most flexible and open RAN offering in the market. Additional demonstrations will also be included on our partner's stands. Visit Hall 3 to experience Nokia's industry-leading technology solutions.

Nokia Expands Compact DAC Private Wireless to Boost Productivity for European Logistics Industry

Nokia announced the availability of Nokia DAC PW Compact for small- medium size businesses and the logistics industry in Europe. Following the launch in the United States last year, Nokia DAC PW Compact will help the logistics industry overcome connectivity and automation challenges in micro fulfillment centers (MFCs) and warehouses with new spectrum variants in Italy, Finland, France, Germany, Netherlands, Norway, Poland, Spain, Sweden and Switzerland and the United Kingdom. Nokia DAC PW Compact provides reliable, secure, and high-performance wireless connectivity for applications, devices, and machines in MFCs, such as autonomous guided vehicles (AGVs), workers' handhelds, machines, asset trackers and sensors. It is designed to meet the specific needs of the logistics market, which is undergoing a major transformation due to the rise of e-commerce and consumer demand which requires faster and more convenient delivery but is also applicable for other industrial small sites. According to ABI Research,

the market size of the logistics sector in Europe is estimated to be 1.05 trillion USD in 2024, and it is expected to reach 1.32 trillion USD by 2029 growing at a CAGR of 4.69 percent during the forecast period from 2024 to 2029. However, the logistics market in Europe is projected to lose 1.03 billion USD of revenue in 2024 due to failing connectivity, caused by using legacy Wi-Fi networks that are not fit for purpose for the high levels for automation and mobility in warehouses. Nokia DAC PW Compact contributes to the digital transformation of industries by reducing energy consumption by up to 60 percent versus equivalent Wi-Fi deployments, as well as OPEX costs. In addition, the solutions' technology helps optimize goods-in/goods-out and any goods movements with seamless handover of AGVs between access points, latency reduction and can support many other use cases such as creating machines digital twins, feeding real time data to workers and accurate real-time asset tracking throughout the supply chain. The solution can also be enhanced with MXIE capabilities to run on this on-prem edge application platform, many industrial digitalization applications supporting key segment use cases. Stephan Litjens, Vice President of Enterprise Solutions at Nokia, said: "As digital transformation takes hold within a wider range of industries where security, scalability, productivity and efficiency are much needed, Nokia DAC PW Compact offers the capabilities of our mission-critical industrial edge (MXIE), simplifies Industrial Digitalization of small-medium size businesses and will help to accommodate the growing and changing needs of the logistics market in Europe."

Nokia Breaks the Mould with mmWave for FWA

Fixed Wireless Access (FWA) is an attractive play for many operators, and Nokia believes its potential can be further enhanced with the arrival of 5G FWA solutions using higher millimeter wave (mmWave) spectrum. 5G mid-band FWA already supports a number of different deployment scenarios. Fixed broadband operators are using it to complement fiber deployments, plugging coverage gaps and quickly building out their footprint to increase market share. Mobile operators are taking advantage of its fast time-to-market and low start-up costs to compete with fixed-fiber services. Like all technologies, FWA comes with its challenges. In a recent operator study, Nokia found that mid-band FWA deployments are leaving 19 per cent of subscribers with low signal levels, resulting in wasted network capacity. Around 29 per cent of capacity in such cases could have been restored to the operator just by having the CPE device correctly positioned, either indoors or using an outdoors device, for optimal performance. Using outdoor antennas rather than indoor CPE at the cell edge could achieve a 62 per cent gain in network capacity, says the company. As FWA users consume around 20 times more data than mobile uses, managing capacity is a key consideration in FWA deployments, to ensure neither FWA nor mobile services are compromised, and to protect an operator's valuable investment in spectrum. Conserving radio resources from the start is far more efficient than later investments to upgrade the network or change devices to regain that lost capacity. Employing 5G mmWave FWA at and above 24 GHz, with its resulting benefits in capacity and performance, is becoming increasingly attractive for operators, says Nokia. mmWave has already been successful at delivering wireless capacity in hot zones and high-traffic urban environments where limited range and signal attenuation don't present a significant problem. This signal attenuation has led to a long-standing belief that mmWave is only for urban areas and it can't really be used in other scenarios. Not so, says Nokia. By advocating the deployment of mmWave as a capacity overlay to mid-band spectrum, Nokia says it can add much needed capacity for FWA subscribers that are within mmWave range from the base station, while freeing up the mid-bands for mobile broadband and more distant FWA subscribers. The operator study mentioned earlier found that 50 per cent of suburban FWA subscribers would be able to connect to and benefit from a mmWave capacity overlay. Nokia is busting the myths around FWA mmWave with their advances in antenna technology and device intelligence. These advances mean that mmWave FWA can be deployed in non-line-of-sight locations (NLOS) and over far greater distances, says Nokia. The company has announced a new outdoor mmWave device, the FastMile 5Gmm Receiver that does exactly this. A 27dBi gain antenna overcomes propagation loss and weak signals. It also scans the environment in 360 degrees, using advanced analytics to create a fingerprint of the radio environment, and directing itself to the best signal that it receives. This means it can connect to signals from any direction, whether they are direct or reflected.

Nokia Commits to Net Zero Greenhouse Gas Emissions By 2040

Nokia announced that it has committed to reducing its total global greenhouse gas emissions (GHG) to net zero by 2040, accelerating its previous target by ten years, and putting it ahead of the Paris Agreement target of net zero by 2050. Nokia will also double down on its existing near-term, or 2030, target. Having already committed to halving its GHG emissions across Scope 1,2 and 3 by 2030 from a 2019 baseline, it announced it will further accelerate the decarbonization of its own operations. Pekka Lundmark, President and CEO of Nokia, said: "Our new emission reduction targets show that net zero is a business priority for Nokia. We already help our telecoms customers to decarbonize by building sustainable, high-performance networks, and we work with a rapidly growing range of enterprise partners to reduce emissions and improve productivity. That journey will only accelerate, as Nokia launches more energy efficient solutions in next generation mobile, fixed, IP and optical networks and in software, silicon and systems. By committing to net zero by 2040 we build on our previous climate targets as we look to create technology that helps the world act together." Nokia was the first telecoms vendor to have its 2030 Science Based Target (SBT) validated by the SBTi in 2017 and was among the first 100 companies across all sectors to do so. It recalibrated its near-term targets in 2021 in line with a 1.5°C warming scenario, committing to reduce its greenhouse gas emissions by 50% by 2030 from a 2019 baseline. This target implied that Nokia would reach net zero by 2050. With this announcement Nokia reiterates its existing near-term target to reduce its greenhouse gas emissions by 50% across its value chain (Scopes 1, 2 and 3), accelerates the decarbonization of its own operations (Scopes 1 and 2) as part of its near-term targets with complete decarbonization its car fleet and facilities, and explicitly sets a new long-term target to reach net zero by 2040 (Scopes 1, 2 and 3) by 2040. To ensure its new long-term target aligns with climate science, Nokia has submitted its net-zero letter of commitment to the Science Based Targets initiative (SBTi), a partnership between CDP, the United Nations Global

Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). Nokia has also defined a net-zero pathway that will help it reduce emissions across its value chain. Key levers in the net-zero pathway include:

Product design and innovation: With more than 95% of emissions resulting from products in use, Nokia continues to improve the energy efficiency of its products and solutions.

- Achieved a 50% reduction in the average power consumption of 5G mMIMO Base stations by 2023 from 2019 baseline.
- Introduced the Quillion chipset, which can help reduce power consumption for broadband access products with 50% less power needed in fiber installations than previous generations.
- Its FP5 network processor offers a 75% reduction in power consumption compared to its previous generation.
- Its latest optical network technology, the PSE-6s, can reduce network power consumption per bit in optical transport by up to 40% compared to the PSE V.

Low-carbon electricity: Nokia is committed to using 100% renewable electricity in its own facilities by 2025 and is working with its supply chain as it transitions to renewables.

- Already achieved 63% renewable electricity in its own facilities in 2022.
- It uses a mix of on-site solar, Power Purchase Agreements, renewable electricity products directly obtained from an energy supplier, and renewable electricity certificates to procure the renewable electricity.
- Energy and material efficiency: Nokia aims to achieve 95% circularity by 2030 in relation to operational waste (waste from offices, labs, manufacturing, installation, and product takeback), driving actions to reduce landfilling.
- In 2023, Nokia announced it would reduce packaging waste for its Fixed Networks Lightspan portfolio. This will lead to a 60% decrease in packaging size and a 44% reduction in the overall weight.
- Carbon removals: Credible, permanent carbon removals and storage may be required to neutralize some residual emissions to reach net zero.
- Nokia is examining credible solutions for carbon removals to support long-term net-zero targets.

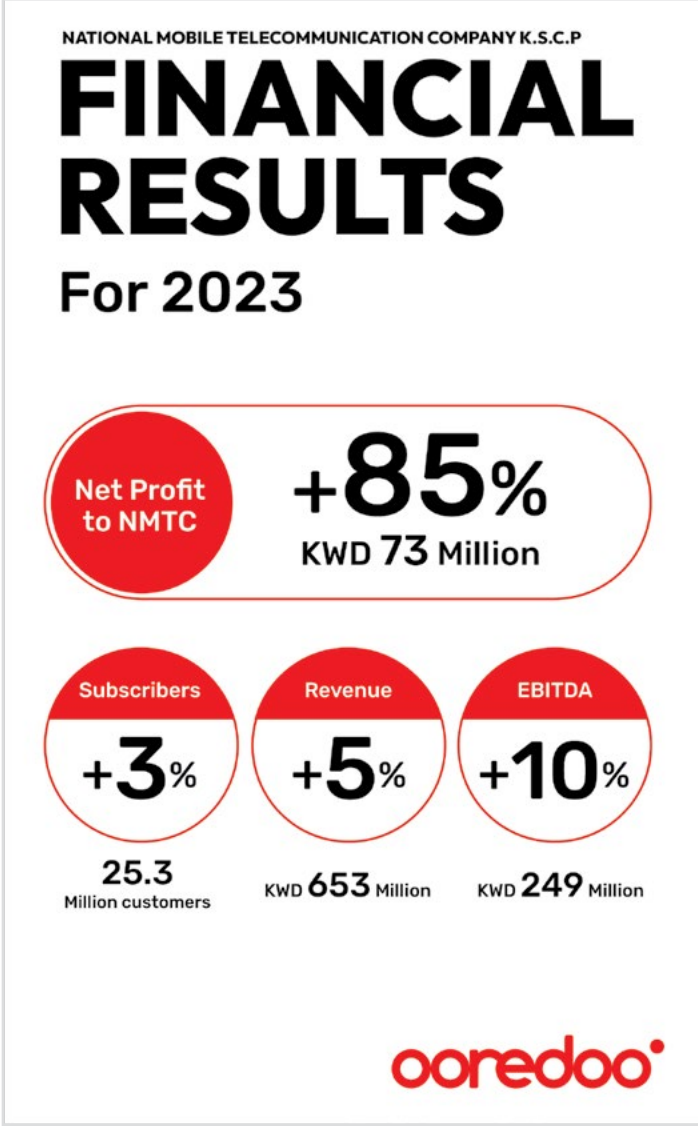
Nokia is one of the few telecommunications vendors with its own fleet of marine vessels, playing a vital role in laying the cables that connect continents. Currently, Nokia-owned Alcatel Submarine Networks (ASN) has an installed base of more than 650,000 km of optical submarine systems deployed worldwide, enough to circumnavigate the globe 15 times. With marine fleets globally still largely reliant on fossil fuels, this presents a unique challenge for decarbonizing Nokia's Scope 1 emissions. Nokia is targeting marine fleet emission reductions aligned with the International Maritime Organization decarbonization pathway and has already invested in more efficient vessels and trialed

Ooredoo Kuwait Group reported EBITDA growth of 10% to reach KWD 249 million in 2023

National Mobile Telecommunications Company K.S.C.P "Ooredoo" (Ticker: OOREDOO) announced its financial results for the year ended 31 December 2023:

Financial Highlights:

- Consolidated revenue increased by 5% to KWD 653 million in 2023, compared to KWD 620 million in 2022. Revenues benefited from efficient operations in Kuwait, Maldives, Tunisia and Algeria.
- Consolidated customer base increased by 3% to 25.3 million in 2023 compared to 24.7 million in 2022.
- EBITDA increased by 10% in 2023 to reach KWD 249 million compared to KWD 226 million in 2022.
- Net profit attributable to NMTC increased to KWD 73 million in 2023 from KWD 39 million in 2022. The growth in Net Profit was mainly from Ooredoo Kuwait, after winning a final court ruling related to recovery of excess regulatory tariff paid amounted to KWD 43.8 million in a case against Kuwait's Ministry of Communication "MOC" and Communications and Information Technology Regulatory Authority "CITRA".
- The consolidated earnings per share were 145 fils for 2023, compared to 79 fils earned in 2022. The Board of Directors recommends a dividend payment of 140 fils per share, subject to shareholders' approval at the General Assembly scheduled for March 2024.



Sheikh Mohammad Bin Abdullah Al Thani, Chairman of the Board of Directors commented: "I'm pleased to announce another successful year for NMTC as the Company reported solid growth in year 2023. Our operations in Kuwait, Algeria and Maldives maintained their growth trajectory and were the main drivers of our improved financial performance resulted from our efficient operations. In 2023, we grew our customer base by 3% to 25 million. Revenues grew 5% YoY to KWD 653 million compared to KWD 620 million in 2022, which represent a healthy acceleration of growth compared to previous years. EBITDA increased by 10% to KWD 249 million compared to KWD 226 million in 2022 with EBITDA margin of 38% in 2023. Net profit attributable to NMTC increased by 85% to reach KWD 73 million in 2023 compared to KWD 39 million in 2022. This improvement was supported by a final favourable court ruling for Ooredoo Kuwait, resulting in the recovery of excess regulatory tariffs paid. Our efforts to enhance operational efficiency have yielded positive results, fuelling growth throughout the company as evidenced by our proposed dividend payment, in which the Board of Directors is recommending a dividend of 140 fils per share for 2023, representing an increase of 100% YoY. Looking ahead, we will continue to enhance operational efficiency to support company-wide growth while providing excellent customer service to maximize stakeholder value." From his side, Abdulaziz Yaqoub Al-Babtain, CEO of Ooredoo Kuwait, shared insights into the company's remarkable achievements in 2023, emphasizing the critical role of collaboration and innovation. He noted, "These outstanding results are a testament to the power of collaboration and innovation, made possible by the dedicated efforts of our team. Our journey wouldn't have been feasible without significant upgrades in our services, customer care, continuous digital adaptation, and innovative infrastructure technologies. Our unwavering commitment to excellence has driven us to surpass customer expectations, delivering the best the industry has to offer." The CEO underscored Ooredoo's commitment to customer satisfaction and technology, leading to accolades such as the Best Loyalty and Rewards Program in the Middle East, the 'Outstanding 5G Industry Partnership' award, and recognition in Forbes Middle East's Sustainable 100 List. Looking forward, Al-Babtain reiterated Ooredoo Kuwait's dedication to empowering Kuwait's future through innovative, customer-centric, and socially responsible initiatives. He expressed gratitude for the team's efforts, stating, "Our substantial investments in advancing the 5G network underline our dedication to excellence, recently earning us the 'Outstanding 5G Industry Partnership' award. These achievements have also garnered Ooredoo Group prestigious recognition at the 2023 International Business Awards, showcasing our commitment to global innovation and excellence." Expressing appreciation for

Ooredoo's tech pioneers, Al-Babtain shared the exciting news of the successful testing of SuperFast 5.5G mmWave technology. He extended his heartfelt gratitude to the team for unlocking a new era of speed, reliability, and cutting-edge connectivity, acknowledging their dedication and hard work that garnered the organization triple win of Stevie Awards for Innovation, Website, and Application. Al-Babtain emphasized that Ooredoo's progress goes beyond technology, with a deep commitment to tailoring services to the diverse needs and lifestyles of valued customers. He concluded by stating, "As the journey continues, we look forward to upgrading the world of our customers."

Review of Operations

The Group's operational performance can be summarised as follows:

Ooredoo – Kuwait: Ooredoo's customer base in Kuwait increased to 2.8 million in 2023, up by 5% compared to 2022. Ooredoo Kuwait reported a 4% increase in Revenue to KWD 246 million in 2023 compared to KWD 236 million in 2022. EBITDA increased by 15% to KWD 82 million in 2023 compared to KWD 72 million in 2022, driven by operational efficiencies across the business.

Ooredoo – Tunisia: Ooredoo's customer base in Tunisia grew by 2% to reach 7.3 million customers in 2023. Revenues increased to KWD 124 million in 2023 compared to KWD 123 million in 2022. EBITDA decreased to KWD 47 million in 2023 compared to KWD 55 million in 2022.

Ooredoo – Algeria: Ooredoo Algeria's customer base increased by 3% compared to 2022 to reach 13.4 million in 2023. Revenue increased by 11% to KWD 208 million in 2023 compared to KWD 187 million in 2022. EBITDA increased by 26% to reach KWD 84 million in 2023 compared to KWD 66 million in 2022.

Ooredoo – Palestine: Customer base in Palestine increased by 2% to 1.4 million customers in 2023. Revenue decreased to KWD 34 million in 2023, compared to KWD 35 million in 2022. EBITDA at KWD13 million in 2023 in line with prior year. During fourth quarter of 2023, there has been severe damage to the network in Gaza, which has negatively impacted Ooredoo Palestine.

Ooredoo – Maldives: Customer base in Maldives increased to 392k customers in 2023. Ooredoo Maldives reported a 9% increase in Revenues to KWD 42 million in 2023, compared to KWD 38 million in 2022. EBITDA increased by 15% to reach KWD 24 million in 2023 compared to KWD 21 million in 2022.

Salam Signed 31 Agreements at LEAP 2024 to Support Saudi Arabia's Digital Transformation Agenda

Salam, the fastest-growing and most innovative Saudi telecommunications brand at the 2023 Global Brands Awards, amplified its impact by signing 31 agreements at the highly anticipated LEAP 2024 event. By deepening relationships with existing partners while pursuing new opportunities, Salam has demonstrated its unwavering commitment to forging an innovative and inclusive future. At LEAP that year, Salam made waves by announcing new partnerships spanning the entire digital spectrum, from cutting-edge network transformations to groundbreaking e-commerce solutions, big data analytics, AI applications and more. Salam's visionary CEO, Ahmed Al-Anqari accompanied with leaders within the organisation, were at hand to sign the various agreements, establishing Salam as a key player in Saudi's dynamic digital ecosystem. Ahmed Al-Anqari, on signing these milestone partnerships, stated: "At Salam, we believe that innovation knew no bounds. Our partnerships are the cornerstone of our success, and together, we are helping shape a future where no one is left behind. In line with Vision 2030, the digital transformation of the Saudi government is an integral part of the overall strategy that aims to enable and accelerate societal transformation. Through these agreements, we can drive progress in Saudi Arabia and beyond while staying true to our people-centered vision." The event hosted over 450 startups, more than 1,000 speakers, and over 170,000 exhibitors from across the globe. The event, known as the "Digital Davos," took place from March 4-7, 2024, at the Riyadh Exhibition and Convention Center. Salam's booth provided an immersive

experience into a future where technology was designed around human needs and business objectives, showcasing Salam's blueprint for a digitally empowered Kingdom through the lenses of connectivity, cybersecurity, cloud management, and emerging technologies. Salam welcomed visitors, partners, and technology enthusiasts from around the world to their booth at LEAP 2024, where the future of digital transformation was showcased.

SES Signs Up Saudi's Aramco for MEO

Satellite operator SES has signed an MoU with Saudi Arabia's giant oil and natural gas producer Aramco. As at 2022 Aramco was the second largest company in the world based on revenue. It is based in Dharan in the kingdom's Eastern Province. The MoU sees SES and Aramco explore potential collaboration opportunities for leveraging high-performance medium-Earth orbiting (MEO) satellite connectivity services, to accelerate Aramco's digital transformation goals with 5G backhauling for their remote sites in Saudi Arabia and across the Middle East. SES is busy adding new MEO craft in the shape of its mPOWER fleet. Its mPOWER 5 and 6 were launched in November 2023 and are coming online about now. mPOWER 7 and 8 will launch this year with 4 more to be launched by 2026. The signing was announced by Adel Al Doulab, VP/Information Technology Infrastructure, Aramco, and Nick Roullier, VP/Middle East & Central Asia, SES, on the side-lines of the Riyadh LEAP 2024 conference, marking what the pair say a is a pivotal step in digitalizing the operations of the energy industry.

Monaco's Public Broadcaster Partners with SES to Launch New HD Channel

TVMonaco, the state-owned public broadcaster of the Principality of Monaco, signed a multi-year agreement with SES to launch and distribute its new HD channel to millions of homes across Europe from SES's prime TV neighborhood at 19.2 degrees East as well as to Middle East and North Africa from MonacoSat-1 at 52 degrees East. TVMonaco delivers high-quality news, sports, talk shows, documentaries and other programming. The channel is designed to be a global broadcast platform with news and information promoting tourism and innovations in Monaco as well as to showcase Monégasque culture. "With its hybrid network and prime satellite locations, SES is the ideal partner to help us deliver the best of Monaco's economy, culture and lifestyle to viewers across Europe, Middle East and North Africa and eventually to the rest of the world," said Nathalie Biancolli, CEO of TVMonaco. "As a new customer, TVMonaco is tapping into our long history of helping public broadcasters expand into international markets to grow their foreign audience and bolster their home country's profile on the global stage," said Norbert Hölzle, Global Head of Media at SES. "Soon viewers in Europe, Middle East and North Africa will have access to the latest news and information about Monaco as a place to do business, visit on holiday or learn about its unique culture."

stc Bahrain Achieves Landmark Success as the First Telecom to Deploy the Revolutionary 5G New Calling Technology

In a landmark success of yet another technological breakthrough, stc Bahrain, the world-class digital enabler, proudly announces its latest innovation – 5G New Calling Technology. As the first telecom operator to achieve this groundbreaking milestone, this service is set to revolutionize the telecommunications landscape, and enrich the communications experience for individuals, businesses and industries with its unprecedented levels of connectivity and clarity. With lightning-fast speeds, improved voice quality, and unparalleled connectivity, the stc 5G New Calling service offers a glimpse into the future of communication technology and is set to redefine the user experience. The 5G New Calling feature allows users to go beyond regular conversations and enjoy interactive HD video chats for better collaboration and connection. Leveraging the advanced 5G New Calling technology, stc Bahrain plans to introduce unique features like video calls with real-time translations, turning speech into text, screen sharing, an interactive visual menu, and Enterprise ID cards. Ahmed Alsharif, Chief Technology and Digital Officer at stc Bahrain said, "Our introduction of 5G New Calling technology is a testament to our commitment to providing cutting-edge solutions that enhance the lives of our subscribers with high-quality calls, instantaneous connectivity with low latency, and seamless multi-device usage. Our 5G New Calling is not just a service; it's a leap into the future of seamless and immersive communication, ensuring our subscribers are at the forefront of experiencing advanced communication services." Transforming the way subscribers connect and communicate, stc 5G New Calling technology will come with a superior audio quality of voice calls with the flexibility to transition effortlessly between devices and enjoy robust and reliable 5G connectivity, making every call a richer and more enjoyable experience.

stc Bahrain Spearheads Connectivity by Integrating Next Generation Wi-Fi 7 Technology to Enhance Customer and Business Experience

In a rapidly evolving digital landscape, stc Bahrain, a world-class digital enabler, proudly announces a revolutionary step forward with the integration of cutting-edge Wi-Fi 7 technology into its services. Wi-Fi 7, also known as IEEE 802be, Extremely High Throughput (EHT) is set to redefine connectivity in the 5G era, allowing stc Bahrain customers and businesses to benefit from this technology by ushering in an era of unparalleled connection speeds, and delivering 5.5G experience to set new speed records in the Kingdom. As the demand for seamless connectivity continues to surge, stc Bahrain brings speed, reliability, and efficiency with its lightning-fast download and upload speeds, enhanced reliability, advanced security, and efficient network management by integrating Wi-Fi 7 technology. The technology is set to revolutionize Bahrain's telecommunications landscape and enrich the communications experience for individuals, businesses, and industries with its unprecedented levels of connectivity. Commenting on the integration, Eng. Ahmed Alsharif, stc Bahrain Chief Technology & Digital Officer said, "In today's fast paced digital era, our commitment to providing the best connectivity services remains a top priority in line with our customers and businesses evolving demands. stc Bahrain is the first to launch Wi-Fi 7 technology in the Kingdom, empowering customers, and businesses with advanced, reliable, and secure communication solutions, further strengthening our position as a leading digital enabler in Bahrain." Moreover, stc Bahrain's introduction of Wi-Fi 7 technology will empower industries such as Healthcare, Education, Retail and Manufacturing when it comes to indoor and outdoor wireless solutions in campus network settings. stc Bahrain is committed to providing the next generation of mobile connectivity, ensuring customers are at the forefront of experiencing advanced communication services.

stc Bahrain Launches AI facial Recognition for eSIM Activation

stc Bahrain has launched what it claims is the first instant mobile eSIM activation service that uses AI-powered facial recognition to authorize users, one month after Bahrain's telecoms regulator issued guidelines for facial recognition usage in telecoms services. Subscribers can use the My stc BH app to buy a new eSIM and download it instantly. The app enables users to choose their favorite number and preferred mobile plan. After that, stc subscribers can activate the eSIM instantly by capturing a live photo using their smartphone's camera for identity verification. Once facial recognition software on the backend verifies the customer's ID, the eSIM is activated and ready to use. The telco says this makes the remote activation process both easier and more secure. It also eliminates the need for users to present or upload documents, visit a physical branch or wait for a delivery agent to come and authenticate and/or register their fingerprint. "By leveraging AI face recognition technology and eSIM capabilities, our existing and new subscribers can get an eSIM number online and activate it without visiting any stc outlet," said stc Bahrain CEO Eng. Nezar Banabeela in a statement. "Our aim is to empower customers by offering a seamless digital experience that enhances convenience and efficiency." stc also credited Bahrain's Telecommunications Regulatory Authority (TRA) for supporting the facial recognition activation service, though it gave no details what that involved. Last month, the TRA issued a position paper updating its official Electronic Solution Requirements document to include use of facial recognition technology. Under the updated guidelines, among other things, telecoms players in Bahrain can only use facial recognition technology for identity verification of subscribers. Telcos must also clearly inform subscribers in advance that facial recognition data will be collected and processed, what specific data is being collected, and that it will only be used for ID purposes during the onboarding process. They must also obtain subscriber consent first and provide an easy opt-out option. Telcos must also enact explicit policies prohibiting the use of facial data for any purposes beyond identity verification, and ensuring that the data is not processed for marketing, surveillance, or any other unrelated purpose. Use of facial recognition also must also comply with relevant data privacy and protection laws.

Syniverse Wins Multiple Juniper Platinum Future Digital Awards

In a landmark success of yet another technological breakthrough, stc Bahrain, the world-class digital enabler, proudly announces its latest innovation – 5G New Calling Technology. As the first telecom operator to achieve this groundbreaking milestone, this service is set to revolutionize the telecommunications landscape, and enrich the communications experience for individuals, businesses and industries with its unprecedented levels of connectivity and clarity. With lightning-fast speeds, improved voice quality, and unparalleled connectivity, the stc 5G New Calling service offers a glimpse into the future of communication technology and is set to redefine the user experience. The 5G New Calling feature allows users to go beyond regular conversations and enjoy interactive HD video chats for better collaboration and connection. Leveraging the advanced 5G New Calling technology, stc Bahrain plans to introduce unique features like video calls with real-time translations, turning speech into text, screen sharing, an interactive visual menu, and Enterprise ID cards. Ahmed Alsharif, Chief Technology and Digital Officer at stc Bahrain said, "Our introduction of 5G New Calling technology is a testament to our commitment to providing cutting-edge solutions that enhance the lives of our subscribers with high-quality calls, instantaneous connectivity with low latency, and seamless multi-device usage. Our 5G New Calling is not just a service; it's a leap into the future of seamless and immersive communication, ensuring our subscribers are at the forefront of experiencing advanced communication services." Transforming the way subscribers connect and communicate, stc 5G New Calling technology will come with a superior audio quality of voice calls with the flexibility to transition effortlessly between devices and enjoy robust and reliable 5G connectivity, making every call a richer and more enjoyable experience.

Tech Mahindra Recognized as a Leader in Everest Group's Retail IT Services PEAK Matrix® Assessment 2024

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions has been recognized as a leader in Everest Group's Retail IT Services PEAK Matrix® Assessment 2024. The PEAK Matrix® provides an objective, data-driven assessment of service and technology providers based on their overall capability and market impact across different global services markets. The assessment is based on Everest Group's annual request for information process for the calendar year 2023, interactions with the leading service providers, customer reference checks, and analysis of the retail IT services market. For the assessment, Everest Group

evaluated 24 global IT service providers, with each profile providing a comprehensive representation of service focus, key Intellectual Property (IP)/solutions, domain investments, and case studies in the retail industry. Sandeep Sharma, Global Practice Head, Retail & CPG, Tech Mahindra, said, "The retail industry is witnessing a transformation as brands embrace advanced technologies to provide out-of-the-box experiences to their customers. At Tech Mahindra, our aim is to be the trusted partner driving this digital transformation and delivering competitive advantage. Our distinction as a leader in Everest Group's Retail IT Services report is a testament to our commitment to addressing evolving client requirements effectively." By leveraging industry expertise along with a deep focus on new-age technologies and a strong partner ecosystem, Tech Mahindra offers end-to-end support to its customers and partners in addressing the dynamic changes and challenges of the retail industry. The organization's current focus is on smart factories, intelligent supply chains, and personalized phygital experiences to enhance value creation. It offers immersive experiences for customers through its stores-of-the-future offer powered by RFID and computer vision for retailers. Tech Mahindra also provides shelf-connected supply chain solution for grocery retailers and uses generative AI for automated content generation, customer experience, pricing, and cost-optimization.

Tech Mahindra to Build a Technology Platform for Proximus

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, announced that it has signed a strategic partnership with Proximus, Belgium's leading digital services and communications solutions provider. Together, the organizations will design and build a technology platform, 'Tech Hub' that will provide next-generation connectivity offerings for business-to-consumer (B2C), business-to-business (B2B), and business-to-business-to-any (B2B2X) segments. With the new 'Tech Hub' platform, consumers and businesses will be able to explore, purchase, and activate the services from Proximus as well as their partner ecosystem with self-service options and take advantage of the range of next-generation digital offerings. Vikram Nair, President, EMEA Business, Tech Mahindra, said, "As the telecom industry continues to evolve, telcos are finding new ways to reinvent themselves and adopt newer monetization streams. Through this strategic partnership, Tech Mahindra will deliver a future-ready platform that will be instrumental in accelerating Proximus's 'Telco to Techco' journey. The partnership will leverage Tech Mahindra's extensive telecom expertise, 5G capabilities, AI proficiency, and cutting-edge IT services to revolutionize customer experience and drive business growth." The 'Tech Hub' platform to be built by Tech Mahindra is powered by Comviva BlueMarble. This is a secure, robust, and scalable platform that employs an architecture that is ready to be deployed on cloud. Antonietta Mastroianni, CDIO, Proximus, said, "We are pleased to partner with Tech Mahindra to build this new innovative platform. At Proximus, we are leading with our superior fiber/ 5G network, that is becoming more software-based and can deliver innovative features 'as a Service', eg 5G

Slicing. Additionally, we are building strong software assets across the Group. This new platform, the 'Tech Hub' will be able to blend these unique assets in new value propositions for our customers, in B2C, B2B and B2B2X. The onboarding, purchasing, and activation will be digital-first and offer a similar experience as the world's leading cloud platforms." Tech Mahindra is a leading provider for communication customers in Europe and is actively engaged with 40+ telcos in the region. In Belgium, Tech Mahindra has established a robust presence since its operations began in the region and is serving customers in the communication, banking, manufacturing, and pharma segments.

Tech Mahindra to power Mobily's Loyalty Programs with Generative AI Driven Automation Capabilities

Tech Mahindra, a leading provider of digital transformation, consulting, and business re-engineering services and solutions, signed a strategic partnership with Etihad Etisalat (Mobily), a leading technology media and telecom (TMT) company in Saudi Arabia, to deliver best-in-class loyalty programs for individual and business customers. With a focus on elevating customer loyalty programs, the partnership will deploy Comviva's GenAI-powered next-generation MobiLytix™ Rewards to revamp Mobily's Neqaty loyalty program. Comviva, a Tech Mahindra company, is the global leader in customer experience and data monetization solutions. Tech Mahindra will utilize its extensive expertise in digital transformation and market presence to ensure the successful deployment of Mobily's loyalty programs. It will provide Mobily with a single platform that supports both earning and redemption points journey for its customers. The implementation, coupled with an intuitive app built on MobiLytix™ and web access channels, will provide a seamless customer experience for both end users and businesses. Additionally, the partnership will provide gamification, digital marketing technology, and advanced business analytics to execute high-impact loyalty marketing programs for Mobily's customers. Ram Ramachandran, SVP & Head – Middle East & Africa, Tech Mahindra, said, "In the rapidly evolving telecom landscape, maintaining customer loyalty is a formidable challenge, accentuated by the industry's intense competition and the quest for innovation. Our partnership with Mobily has the potential to set new benchmarks in loyalty management, and we look forward to the possibilities it presents. By combining our efforts, we aim to create leading loyalty programs on a global scale and pave the way for a brighter future in this rapidly changing landscape." Through this partnership, Tech Mahindra will provide digital transformation capabilities that will evolve with the loyalty system needs, seamlessly integrating with the Mobily ecosystem and third-party platforms. Yousef A. Alsuhaibani, CIO at Mobily, said, "As a leading digital innovator in Saudi Arabia, we are dedicated to positioning Neqaty among the top loyalty programs globally. We are thrilled with our strategic partnership with Tech Mahindra and looking forward to reshaping the landscape of rewards programs for our customers. Together, we are embarking on a journey to build an innovative Loyalty Program that places a strong emphasis on delivering an exceptional and personalized customer experience." Manoranjan (Mao) Mohapatra, Chief Executive Officer at Comviva, said, "Personalizing experiences is key to building consumer trust and successful loyalty programs. Our MobiLytix™ Rewards solution shall unlock the power of data science and enable the delivery of new customer experiences by seamlessly blending advanced AI, gamification, and data-driven insights. We have always been at the forefront of creating cutting-edge loyalty solutions, and this partnership further solidifies our dedication to pushing the boundaries of what's possible." Comviva's MobiLytix™ is one of the leading marketing platforms globally that unifies customer engagement, data science, and intelligent automation capabilities within a single platform to execute campaigns in real-time and at scale. By engaging customers with the right message at the right time across any channel, organizations can improve customer experience, increase customer lifetime value, and drive revenue growth. With over 300 million deployed customer base, MobiLytix™ has a proven track record of customer success.

Zain Bahrain Boosts 4G Coverage with New LTE 900 Layer

Zain Bahrain, a leading telecommunications provider in the kingdom, has announced that it has begun a nationwide upgrade of its 4G network with LTE 900 technology to enhance network capacity and coverage. The deployment of low-band LTE 900 technology is a strategic move by Zain Bahrain to meet the growing demand for data and provide an exceptional end-user experience. The rollout of 4G in 900 MHz spectrum will further enable high-speed connectivity, delivering a seamless and immersive HD video quality experience. The LTE 900 deployment is a continuation of Zain Bahrain's spectrum strategy towards repurposing of spectrum for more efficient and higher capacity technologies. The telco plans to roll out LTE 900 nationwide in the coming months to increase the network capacity and improve overall coverage with a focus on indoor coverage. On the key upgrade, Chief Technology Officer (Technology, Technical Management) Ali Isa Al-Yaham said: "Zain Bahrain is committed to continuously improving its network capabilities to serve its customers better. The deployment of LTE 900 underscores our dedication to providing top-notch connectivity and enhancing the overall user experience." "Customers will enjoy a seamless high-speed data and HD-quality video and calling experience on Zain's upgraded network. We will continue to invest significantly in implementing cutting-edge network technology to please our consumers," he noted. "In addition, Zain Bahrain has deployed LTE 900 at Bahrain International Circuit for the highly anticipated Formula 1 Bahrain Grand Prix Event, resulting in enhanced network performance, faster data speeds, and more reliable connectivity for attendees," he added.

Mobily Digital Hub

موبايلي
Mobily

A Fully Integrated Ecosystem

- World-class International Connectivity
- Tier-certified Data Centers
- Equinix Jeddah Internet Exchange

ARTICLE

Mobily's Role in Enabling Saudi Arabia's Ambitions to Become a Global Digital Hub

As digital transformation and cloudification accelerate both at the business and consumer level, global internet traffic is doubling every two to three years. This requires the availability of state-of-the-art domestic and international connectivity infrastructure, along with data centers where the content is locally hosted and interconnected at internet exchange points (IXPs).

Today's global digital hubs— such as Frankfurt, Singapore, London, Amsterdam, Tokyo, New York, and São Paulo are the locations where carriers, hyperscalers, cloud providers, digital content platforms (OTTs), content delivery networks (CDNs), and gaming platforms are locally hosted and globally connected. And as more participants join a digital hub, the hub's scale and value increases, which in turn boosts its attractiveness and leads to more ecosystem players arriving in that location.

> *Middle East international bandwidth is expected to increase at a compound annual growth rate (CAGR) of 35% in the years leading up to 2028 and we believe the accelerated adoption of emerging technologies such as AI, AR/VR, autonomous vehicles, and robotics will require advanced ICT infrastructure along with domestic and international connectivity.*

The global digital hubs mentioned above also serve as the world's business, financial, and logistics hubs, benefiting from their strategic geographical locations, advanced infrastructure, favorable investment climates, enabling policy and regulatory frameworks, and multicultural environments. These factors are central to Saudi Arabia's ongoing transformation efforts, supported by the third pillar of Saudi Vision 2030, which aims to leverage the Kingdom's unique strategic location to position it as a global hub connecting three continents — Asia, Europe, and Africa.

Middle East international bandwidth is expected to increase at a compound annual growth rate (CAGR) of 35% in the years leading up to 2028 and we believe the accelerated adoption of emerging technologies such as AI, AR/VR, autonomous vehicles, and robotics will require advanced ICT infrastructure along with domestic and international connectivity.

Eng. Thamer Alfadda
SVP
Mobily Wholesale &Carriers

موبايلي Mobily

> *On the international connectivity side, Mobily's submarine cables provide 4 Strategic landing stations in Saudi Arabia that are connected to our robust domestic network, along with 9 cross-border connections to neighboring countries, enabling seamless connectivity to other global hubs.*

As a G20 country and the leading economy in the region, with a relatively large population base, Saudi Arabia is one of the largest generators and consumers of data in the Middle East and Africa and has the critical mass to become a global digital hub in the coming years.

As Saudi Arabia pursues its historical Digital transformation journey, it is vital for us at Mobily to ensure that our ICT infrastructure, platforms, and service delivery capabilities serve as a catalyst for this transformation and attract digital ecosystem players to the Region. In this context, we have established the Mobily Digital Hub as a fully integrated ecosystem of international connectivity, data centers, and internet exchange.

On the international connectivity side, Mobily's submarine cables provide 4 Strategic landing stations in Saudi Arabia that are connected to our robust domestic network, along with 9 cross-border connections to neighboring countries, enabling seamless connectivity to other global hubs. Mobily's tier-certified and carrier-neutral data centers have a total power capacity of more than 122 MW and provide redundant interconnectivity with domestic fixed, mobile, and satellite networks as well as international connectivity through submarine cables, cross-border terrestrial fibers, and connections to global IXPs. Our carrier-neutral internet exchange in our Jeddah (JED1) data center is powered by Equinix, a leading global data center and internet exchange operator, and serves as a strategic gateway for carriers, hyperscalers, cloud providers, digital content platforms, CDNs, and enterprises from various vertical sectors.

Today, as the Kingdom generates growing interest from all over the world, we are accelerating our initiatives around new infrastructure investments, wholesale transformation, partnerships and collaborations, and emerging technologies. We are committed to enable Saudi Arabia's transformation into a global digital hub that connects the world with domestic and regional economies.

In line with Vision 2030 objectives, Mobily will continue to develop state-of-the art digital infrastructure and Comprehensive Solutions to contribute to the Kingdom's ambitions to become a global digital hub that will enable widespread digital transformation across the businesses and consumers while developing a robust digital economy.

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Reshaping Industries with Huawei Cloud AI

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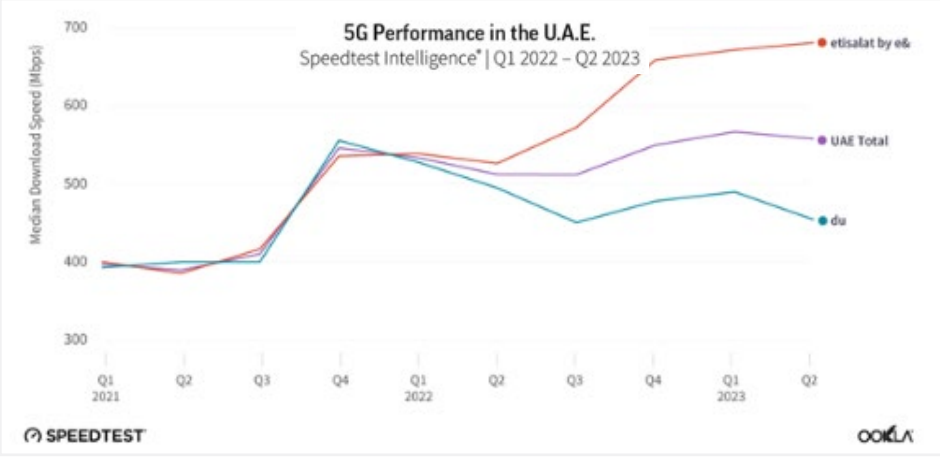
REGIONAL NEWS

UAE Ranks First Globally in 5G Speed

The adoption rate of the sixth version of the Internet Protocol (IPv6) in the UAE reached 50.7 per cent in January 2024, and the level of mobile network coverage continued to be 100 per cent, according to the UAE Digital Economy Council. The UAE ranks first in the Middle East in Internet exchange traffic and the first position globally in fifth-generation network speeds in 2023, according to the council. The UAE was the fastest 5G market globally in Q2 2023 according to Ookla Speedtest Intelligence data, with growing competition between the nation's two network operators helping to drive overall performance in the market to reach a median download speed of 557.63 Mbps. etisalat by e& was the fastest 5G operator globally with a median download speed of 680.73 Mbps. The adoption of the use of digital signatures increased by 216 per cent in 2023, while blockchain was used as well, involving nine banks, six exchange houses, and three insurance companies. The council reviewed as well the developments in digital infrastructure development in the country, and the level of adoption of technological solutions, which have significantly increased in recent months. Omar Sultan Al Olama, Minister of State for Artificial Intelligence, Digital Economy, and Remote Work Applications, said the UAE government adopts a proactive approach based on designing visions and goals, as well as developing and implementing initiatives and projects that lay the foundations of a pioneering digital economy. "This economy combines national skills and technological solutions, forming an advanced model that contributes to achieving the targets of the national strategy for the digital economy, by multiplying the contribution of the digital economy to non-oil GDP over the next decade," he said. Al Olama said the UAE government is intensifying efforts to accelerate the adoption of digital solutions, aiming through its initiatives and projects to envision and shape the digital future, enhancing the UAE's leadership and global competitiveness in various fields. He was speaking at the meeting of the UAE Council for Digital Economy, which is responsible for implementing the digital economy agenda. The meeting was held at the Securities and Commodities Authority in Dubai. The council reviewed the updates regarding several strategic initiatives aimed at supporting and accelerating the implementation of the UAE's strategic objectives for the digital economy, in areas such as infrastructure, digital transactions, e-commerce, financial technologies, stimulating investment in digital sectors, attracting and developing digital skills, supporting SMEs and the latest developments in digital economy statistics gathering and the annual report on measuring the digital economy, prepared in cooperation with the Federal Competitiveness and Statistics Center. The council further reviewed digital services in the federal network, which were launched to include voice-to-text and text-to-voice conversion, translation, analysis of different emotions, extraction of key phrases, language analysis, and services suitable for accessing high-performance computing resources for machine learning, deep learning, and other applications. The council discussed topics such as the government service level policy, data center distribution, and cloud computing deployment in Gulf countries, cloud computing companies in the UAE, as well as the latest Internet network indicators and the performance and coverage of the fifth-generation network in the country.



CST Governor Chaired the Saudi Delegation at the Mobile World Congress 2024

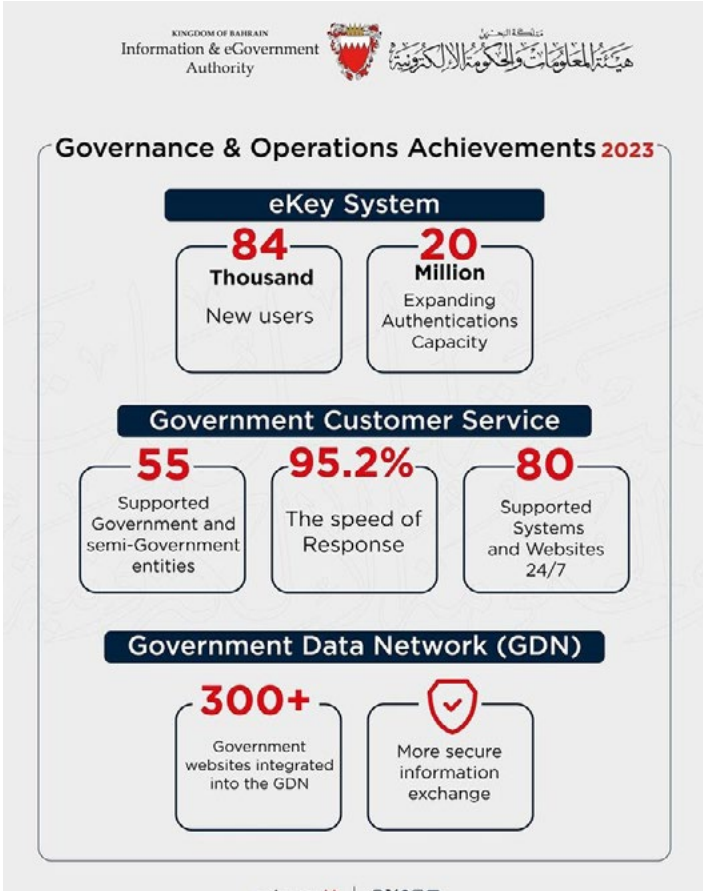
H.E. Dr. Mohammed Altamimi, the Governor of the Communications, Space and Technology Commission (CST), has chaired the Saudi delegation at the Mobile World Congress 2024 (MWC) held in Barcelona. This participation aimed at highlighting the Kingdom's visions and initiatives in the global telecom sector, and promoting the Kingdom's continuous collaborations and goals with international institutions. During the conference, H.E. Altamimi attended the ministerial program which brought together high-level government officials and CEOs of global companies to discuss challenges and opportunities in the sector.

Besides, H.E. held bilateral meetings with his counterparts of regulators bodies, to enhance collaboration and partnerships in the ICT sector while addressing the common challenges and interests. In addition, H.E. visited the accompanying exhibition to explore the latest technologies and innovations that will enhance the sector's services. The MWC is the largest and most influential international event held annually to discuss trends in ICT sector, it includes an exhibition for entrepreneurs and over 2,500 participating entities to showcase the most prominent technologies and launches of the latest products. This year's edition witnesses the participation of more than 90K experts from the public and private sectors.

CST Launches the "Madarik" Program to Enable National Capabilities in Scientific Tracks in Space Sector

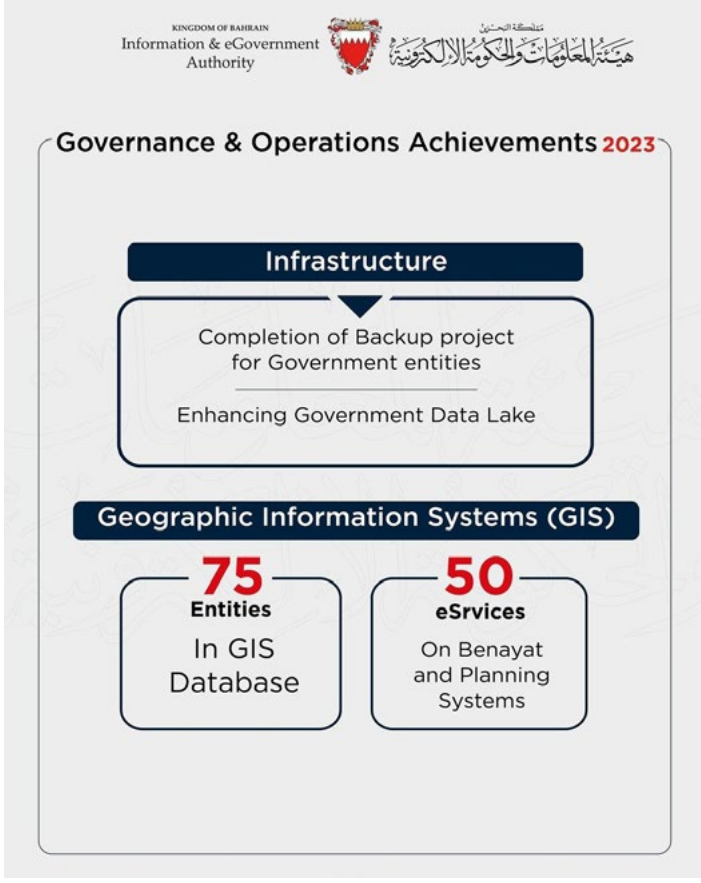
The Communications, Space and Technology Commission (CST) has launched "Madarik" Program which aims to develop national cadres, build a sustainable future, and leverage from global experts to create diverse career paths in the Space sector. In addition to building a foundation in Space Science, in which participants will start a new learning journey and enhance their skills in Space sector. In addition, CST announced that the program will be launched in partnership with the International Space University of France, Georgia Institute of Technology, Thunderbird School of Global Management, BAE Systems, and Al-Yamamah University as education partners. The courses will be conducted in Riyadh, Jeddah, and virtually across Saudi Arabia. Participants can choose from three specialized tracks which are; the Space Business that provides a comprehensive knowledge of the Space economy, and develops the necessary skills that ensure the success of Space projects, the Space Software and Data track introduces the necessary sources of Software and Data, to implement Space related missions and Satellites applications, while the Space Engineering track explores Space Engineering majors, and highlights design, maintenance and control of Spacecraft. The Space Business track targets fresh graduates and experienced professionals in Strategy, Business Administration, Economy, and Law. While the Space Software and Data track attracts fresh graduates and professionals in Computer Science, Data Science, and Cybersecurity. The Space Engineering track focuses on fresh graduates and professionals in Engineering majors. CST invites whoever is interested in joining the "Madarik" Program to consider the admissions requirements, which include: applicants must be Saudi nationality, applicants must have at least a bachelor degree in related fields, proficient in English speaking and writing, and must fulfill all the registration requirements. Noting that applicants must be able to attend the program on the selected time and date from 5 May to 15 Aug 2024.

iGA Chief Executive: Bahrain Achieves Significant Strides in Governance & Operations in 2023



The Information & eGovernment Authority's (iGA) operational and governance achievements for 2023 were revealed by Mohammed Ali Al Qaed, iGA Chief Executive, in line with Bahrain's vision for digital transformation and the enhancement of its Information and Communication Technology (ICT) infrastructure, these achievements were carried with the support of General Shaikh Rashid bin Abdullah Al Khalifa, the Minister of Interior and Chairman of the Ministerial Committee for Information and Communication Technology (MCICT). Al Qaed emphasized the most significant accomplishments, notably improvements to the eKey system which involved substantial updates, expanding its capacity to be able to support 20 million annual authentications and 84,000 new users. Beyond capacity enhancement, these efforts covered infrastructure improvements and heightened security measures, ensuring a safer user experience while accessing government eServices. Al Qaed confirmed the deployment of an updated and more efficient system to enhance customer service, improve response times, and monitor more than 80 systems and websites. This more efficiently monitors the Government Data Network and data centers through the integration of advanced technologies such as the Cisco ThousandEyes network monitoring system with the iGA's Cloud, ensuring higher quality services. These improvements strengthen the Kingdom's technical infrastructure, ensuring business continuity and readiness for future challenges.

With the development of the government data lake, infrastructure, and cloud services, it witnessed significant improvements, streamlining the creation of performance indicators and automated data analysis, thereby strengthening government decision-making, and advancing smart government objectives through data-driven insights. This system was recently used to support the Real Estate Regulatory Authority's National Real Estate DataBank (Aqari), and Tamkeen's national skills' portal (Kawader). Al Qaed highlighted the completion of user files and data backups, a significant iGA achievement that benefited 76 governmental and semi-governmental entities through Microsoft's cloud computing system, enhancing data security and ensuring more convenient access. This project improved government efficiency and mitigated risks associated with data loss. Additionally, over 300 government websites were integrated into the GDN, resulting in faster, more secure information exchange, with the integration level upgraded from second to third tier. Geographic information systems achievements included more than 50 improved electronic services on the Benayat and Planning platforms and new user-friendly services, highlighting iGA's dedication to creating innovative solutions that meet citizens' and residents' needs. The iGA also launched the Botanical Atlas project to study vegetation maps and classify types of agricultural crops through satellite images and field surveys. To bolster the kingdom's digital transformation,



the iGA established strategic partnerships with global ICT companies, including Amazon Web Services (AWS), Cisco, and Microsoft. These agreements provide infrastructure, technological tools, and opportunities for knowledge exchange, and support the iGA's pursuit of eGovernance excellence. A new set of digital policies were implemented in 2023 to advance digital transformation and reinforce data protection, in line with global best practices. These policies lay the foundation for comprehensive cybersecurity and data management, underscoring the kingdom's dedication to cultivating a secure and reliable digital environment for all users. Al Qaed emphasized the iGA's progress in the development of its cloud computing infrastructure through the configuration of a flexible environment conducive to major cloud computing companies such as AWS and Microsoft being able to host government systems, thereby boosting efficiency, accelerating innovation, and improving eServices. The iGA has also trained government employees on Microsoft's AI tools and services, supporting the kingdom's efforts to adopt AI technologies to enhance government services.

Saudi Arabia Launches Digital Transformation Index 2024 Amid e-Government Growth

The latest edition of a framework designed to enhance e-government services and accelerate digital innovation in Saudi Arabia has been launched. The Digital Transformation Index for 2024 seeks to elevate the commitment levels of the public sector to decisions and directives concerning technological evolution. Additionally, it aims to improve the quality of e-government services offered to beneficiaries and contribute to the Kingdom's international leadership in this field, as reported by the Saudi Press Agency. The 2024 index was unveiled during a virtual workshop organized by tje Saudi Digital Government Authority that brought together over 2,000 specialists from 233 government entities, as reported by SPA. The topics covered included refining measurement methodologies, significant revisions to the Digital Transformation Core Criteria document, sharing success stories from DTI 2023, and outlining the roadmap for the ongoing cycle. The document has undergone revisions, now comprising 96 standards, down from the 125 featured in the previous year's version. In 2023, a total of 226 government entities participated in the index, collectively achieving a progress rate of 85.53 percent. Furthermore, 88 such bodies successfully advanced to the innovation and integration stages. In the 2022 index, government agencies advanced by 80.96 percent, compared to 69.39 percent in 2021. Ahmed Mohammed Al-Suwaiyan, governor and board member of the Digital Government Authority, highlighted that the DTI serves as a crucial technological empowerment tool for the transformation journey. He underscored that it reinforces the strategic objectives of e-governance in the Kingdom, aligning seamlessly with the targets outlined in Vision 2030, which aims for Saudi Arabia to emerge as a premier global leader in digital administration. Al-Suwaiyan explained that the DTI seeks to fulfill the requisites of digitization, develop e-governance, and enhance the performance and effectiveness of government entities. According to the governor, this initiative accelerates the pace of digitalization in the Kingdom, enhances beneficiary satisfaction, and improves quality of life. Saudi Arabia has been actively pursuing innovative initiatives to modernize its infrastructure and enhance its technological capabilities. The Kingdom inaugurated the Industrial Artificial Intelligence Academy in February, in partnership with the Saudi Data and Artificial Intelligence Authority and US-based tech firm NVIDIA. The academy highlights the significance of cultivating skilled national talents to compete on a global scale. Its objective is to equip a generation proficient in utilizing industrial AI to revolutionize intelligent environments and processes, while also promoting partnerships with top technical organizations to pioneer cutting-edge technologies. Saudi Arabia ranked first in the Government Electronic and Mobile Services Maturity Index for 2023, issued by the UN Economic and Social Commission for Western Asia, maintaining its lead for the second consecutive time with a high maturity score of 93 percent in the overall index result, according to the authority. The GEMS Index categorizes 17 countries annually based on the advancement of 84 key government services offered to both individuals and businesses through online portals and smart applications, utilizing three sub-indicators. Saudi Arabia has achieved distinction by securing the top position across all categories, accompanied by significant progress in each indicator.

Saudi Arabia Plans US$40 Billion Push into Artificial Intelligence, NYT Reports

Saudi government plans to create a fund of about $40 billion to invest in artificial intelligence, the New York Times reported, citing three people briefed on the plans. Representatives of Saudi Arabia's Public Investment Fund (PIF) have discussed a potential partnership with U.S. venture capital firm Andreessen Horowitz and other financiers in recent weeks, the newspaper reported. Andreessen Horowitz and PIF governor Yasir Al-Rumayyan have discussed the possibility of the U.S. firm setting up an office in Riyadh, according to the report. PIF officials also discussed what role Andreessen Horowitz could play and how such a fund would work, the newspaper said, adding the plans could still change. Other venture capitalists may participate in kingdom's artificial intelligence fund, which is expected to commence in the second half of 2024, the newspaper said. Saudi representatives have indicated to potential partners that the country is interested in supporting a variety of tech start-ups associated with artificial intelligence, including chip makers and large-scale data centers, the report added. PIF and Andreessen Horowitz did not immediately respond to requests for comment from Reuters. Last month, PIF's Al-Rumayyan pitched the kingdom as a prospective hub for artificial intelligence activity outside U.S., citing its energy resources and funding capacity. Al-Rumayyan had said the kingdom had the "political will" to make artificial intelligence projects happen and ample funds it could deploy to nurture the technology's development.

ICT Spend in Middle East, Türkiye and Africa to Top US$238 billion

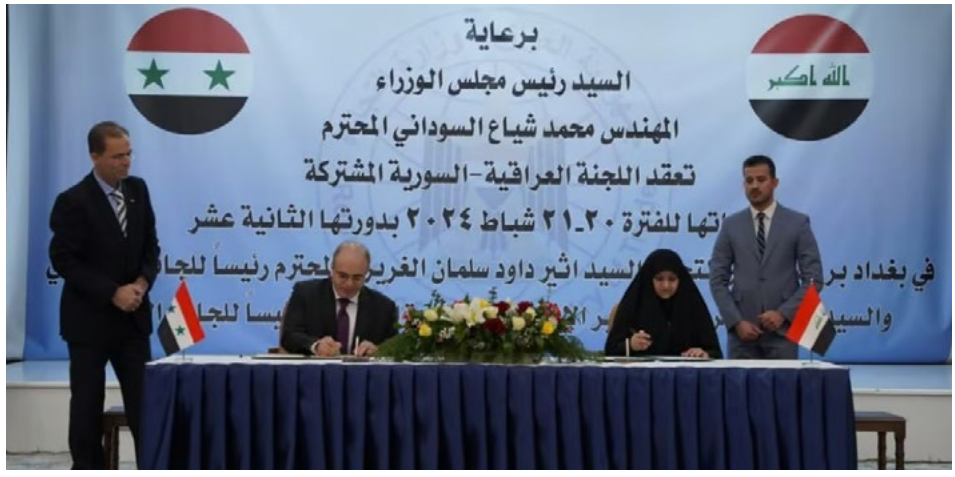
ICT spending in the Middle East, Türkiye, and Africa (META) will top $238 billion this year, up 4.5% over 2023. And with the region's digital economy increasingly taking shape, digital transformation spending will reach $59 billion in 2024 and accelerate at a five-year CAGR of 15% to $88 billion in 2027. This is according to the predictions by International Data Corporation (IDC) as more than 400 senior executives from the region's leading technology vendors, telcos, and IT service providers gathered in Dubai for the 2024 edition of IDC Directions Middle East, Türkiye, and Africa, which addressed the theme "Preparing Your Customers for an AI Everywhere Future." IDC expects AI spending in the region to top $3.0 billion in 2024, up 32% over 2023, with Group Vice President and Regional Managing Director Jyoti Lalchandani explaining that the AI investment priorities of end-user organizations will likely evolve over the coming years as they move beyond their initial focus on reducing costs. Across the META region, there is a clear appetite for AI in general and generative AI (GenAI) in particular, with spending on AI forecast to reach $6.9 billion by 2027," said Lalchandani. "However, many organizations are already questioning whether they are over-pivoting on cost reduction and not focusing enough on how AI can help them to grow their revenues. We expect revenue growth outcomes to take center stage in the next 3–5 years and providers must track this shift carefully with their core buyers to ensure that their AI-related offerings continue to align with the evolving business goals of their customers." IDC President Crawford Del Prete heralded GenAI's emergence as a golden era of innovation that will reshape IT landscapes and customer engagement, predicting that global annual spending on GenAI will surpass $150 billion by 2027. Thomas Meyer, IDC's group vice president for the EMEA region stressed that tech vendors need to develop responsible AI strategies that support their customers in unlocking funding for investments, ensuring ROI, and delivering significant business outcomes for prioritized use cases. IDC Directions Middle East, Türkiye, and Africa takes place annually and is a firm fixture on the ICT industry calendar.

GCC States 'Taking Steps to Enhance Cybersecurity'

Amid increasing cyberattacks, countries in the GCC are taking measurable steps to enhance their cybersecurity systems, according to a new report. The United Arab Emirates (UAE) actively repelled more than 50,000 cyberattacks daily in 2023, according to the UAE Cybersecurity Council. In the first three quarters of the same year, the country successfully prevented over 71 million attempted attacks in total. These findings, highlighted in a report from analysts Frost & Sullivan (F&S), show the exponential growth of the region's cybersecurity landscape – and serve as a sobering reminder of the rising threats that accompany it. As the GCC cybersecurity industry continues to grow – with F&S estimating it to triple in value by 2030 to reach $13.4 billion – countries like the UAE and Saudi Arabia continue to reduce their dependence on oil exports and are instead diversifying into other technology sectors. This shift in economic agenda has made businesses increasingly prone to escalating cyber threats, with regional geopolitical instability further driving vulnerability across key sectors. The detailed report, titled 'Middle East Cybersecurity: Exploring the Middle East Cybersecurity Market Potential', was released ahead of GISEC Global 2024 – the Middle East and Africa's largest and most impactful cybersecurity super-connector, which returns to Dubai World Trade Centre from April 23 to 25. In collaboration with Frost & Sullivan, it aims to identify the challenges and opportunities facing the region's expanding industry. In the UAE and Saudi Arabia, specifically, there has been a dramatic uptick in the adoption of technology across the finance, healthcare, and manufacturing sectors, further boosting the need for cybersecurity and robust regulatory frameworks. Contributing to the existing challenges with increased reliance on technology are issues around awareness and a scarcity of skilled professionals, as well as a lack of clarity among businesses regarding proactively combating cyberattacks. In response to these industry-wide shortcomings, and as the region continues to navigate the global overhaul of technology, countries in the Middle East are taking measurable steps to enhance their cybersecurity posture. Setting up cyber-specific departments and innovation centers, driving awareness through educational campaigns and training programmes, and promoting entrepreneurship through cybersecurity conferences are just some of the ways that the region is equipping the next generation and bridging the existing skills gap. In fact, as per the ITU Global Cybersecurity Index 2020 highlighted in the report, Saudi Arabia has ranked second, and the UAE fifth, among 194 participating countries, indicating that both countries have taken extensive measures in terms of regulatory approaches. As a result, they have become destinations of choice for academics, businesses, research, and innovation, with the UAE government launching the first national Cyber Pulse Innovation Centre aimed at upskilling professionals at Abu Dhabi Polytechnic.

Iraq, Syria Ink a Memorandum of Understanding on Telecoms

Communications Minister Hiam al-Yasiri signed a memorandum of understanding with Syrian Minister of Economy and Trade Mohammed Samer al-Khalil, including cooperation in the field of telecommunications, informatics and post. "As part of the work of the Iraqi-Syrian committee under the auspices of Prime Minister Mohammed Shia Al-Sudani, Minister of Communications Hiam al-Yasiri signed a memorandum of understanding with Syrian Minister of Economy and Trade Mohammed Samer Al-Khalil, which included cooperation in the fields of communications and information technology and postal exchange between the two countries," said a statement by the Ministry of Communications, obtained by the Iraqi News Agency (INA). The statement added that "the memorandum of understanding confirmed joint coordination between the Iraqi Ministry of Communications and the Syrian Ministry of Economy to encourage international connectivity, interconnection and postal services, as well as the implementation of the extension of an international optical cable route across the borders of the two countries to exchange telephone traffic and joint coordination to control digital content and repel cyber-attacks." "The two sides also agreed to form joint technical committees to follow up on the implementation of areas of cooperation and prepare their executive programmes," he said. The Minister emphasized that "this agreement will contribute to the development of services provided to citizens in both countries," underscoring the significance of collaboration between the two nations in the fields of informatics and communications.



Latest RIPE NCC Report Sheds Light on Internet Exchange Points in the Middle East

The RIPE Network Coordination Centre (RIPE NCC) has unveiled a comprehensive report on Internet Exchange Points (IXPs) across Arab countries in the Middle East, marking a significant step forward in the region's digital infrastructure development. The publication aligns with the ongoing efforts of the South Asia, Middle East, and North Africa region's (SAMENA) Telecommunications Council to bolster Internet infrastructure and connectivity. The report offers an in-depth analysis of the IXP landscape, underscoring the uniqueness of each IXP's role and environment within the region. It highlights the absence of a universal model for IXP development, pointing out that IXPs in the Middle East, even those within the same country, serve different purposes and operate under varying conditions. Key findings of the report include the identification of four primary benchmarks for evaluating IXP success: maintaining local traffic within the region, enhancing local interconnectivity to bolster the digital economy, attracting global cloud and content providers, and establishing the region as a hub for exchanging regional traffic. These criteria aim to guide IXP operators and policymakers in assessing and optimizing the effectiveness and impact of their IXPs. The significance of the report extends beyond its analytical insights. It serves as a valuable resource for mobile operators and Internet Service Providers (ISPs), offering guidance on improving peering and connectivity. Enhanced peering arrangements and connectivity are pivotal for the growth and efficiency of networks, ultimately facilitating better service provision to end-users. Furthermore, the report delves into the enabling conditions necessary for IXPs to achieve their objectives, including the importance of supportive laws and regulations. Such frameworks are essential for fostering digital inclusion and attracting foreign content providers and cloud services. As the Middle East continues to advance its digital infrastructure, the RIPE NCC's report stands as a testament to the region's commitment to developing a robust and efficient Internet ecosystem. It promises not only to aid in the immediate enhancement of connectivity and network efficiency but also to pave the way for long-term digital economic growth across the Arab countries in the Middle East.

Mohammed bin Rashid Issues Decree on Unified Digital Platform for Establishing Companies in Dubai

In his capacity as the Ruler of Dubai, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, issued Decree No. (13) of 2024 on the Unified Digital Platform for establishing companies in Dubai. The Decree forms part of Dubai's efforts to enhance its business environment and advance economic growth. The platform seeks to integrate various licensing processes in Dubai including those managed by the Department of Economy and Tourism, the Authorities of special development zones and freezones, including the Dubai International Financial Centre (DIFC), and other relevant entities. The integration is aimed at significantly improving the investor experience in Dubai. By offering a streamlined channel for accessing information, obtaining licenses, and availing other services related to economic activities, the platform seeks to enhance the ease and convenience of investors. The Decree, which applies to all economic activities in Dubai, also aims to regulate the issuance of licenses, permits and approvals in the emirate to enhance clarity and simplicity. It also seeks to help investors overcome obstacles in setting up or operating businesses in Dubai. The Decree seeks to enhance electronic integration between licensing departments and other key entities to avoid duplication of procedures, and support Dubai's digital transformation in line with the objectives of the Dubai Economic Agenda D33 to establish the city as a digital economy hub. In a move that complements the new Decree, H.H. Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of The Executive Council of Dubai, issued Resolution No. (5) of 2024 of the Council, approving the key principles behind facilitating the investor's journey in Dubai. These principles are applicable to the processes for all licenses, permits and approvals related to business activities in Dubai. The Resolution is effective from the date the new Decree goes into effect. According to the Resolution, all licensing entities and federal and local entities tasked with regulating and supervising business activities in Dubai, are responsible for facilitating a smooth journey for investors in Dubai and implementing the procedures required to facilitate this. The Resolution also outlines various measures to provide a smooth experience for investors including

registration on the 'Invest in Dubai' digital platform, unified digital data registration, instant licensing, instant license renewal, one-step fee payment, streamlining of licensing requirements, and the standardization of procedures, rules and conditions. According to Decree No. (13) of 2024, the Department of Economy and Tourism is responsible for operating, managing and developing the 'Invest in Dubai' platform in collaboration with relevant licensing bodies, in line with the digital transformation guidelines set by the Dubai Digital Authority. According to the Decree, all requests related to licensing and permits should be processed through the 'Invest in Dubai' digital platform in accordance with the procedures, requirements, timelines and fees mentioned in the 'Guide', an electronic document developed by the Department of Economy and Tourism, which outlines the requirements for operating a business in Dubai. The Chairman of The Executive Council of Dubai will issue the decisions necessary to implement this Decree, which annuls any other legislation that may contradict it. This Decree is effective from the date of its publication in the Official Gazette.

Arab Advisors Group Announces the date of its 5G Summit in 2024

After its successful 5G Summit in 2023, Arab Advisors Group, the region's leading independent research company, is announcing the date of its 5G Summit 2024 on June 4, 2024, at the Ritz-Carlton, Amman, Jordan. Arab Advisors Group looks forward to achieving more success at its eighteenth conference, which serves as a culmination of a journey that has been privileged to have the patronage of Her Royal Highness Princess Sumaya bint El Hassan since 2009. The company's journey has resulted in collaborations involving more than 100 global companies, hosting over 8,000 executives and leaders in the fields of communications and technology from around the world. It has provided effective media coverage and ideal networking opportunities for all participants throughout its conference editions. For more information about the summit held in 2023 (the 5G Summit), please visit the following website: www.5gsummit.me

GCC Telecommunication Firms Reinventing Themselves as 'Techcos': S&P Global

Telecommunication companies in the Gulf Cooperation Council region are redefining themselves as technology firms to diversify their revenue streams, S&P Global said. In its latest report, the credit rating agency noted that moderate growth prospects for core telecom operations are one of the key drivers which compel these firms to rebrand as techcos. Techcos can be defined as telecommunication companies that focus more on technology. These firms provide connectivity through newer channels, such as cloud computing platforms, making integrating hardware, connectivity and applications easier. According to the S&P Global report, "techcos are gaining ground" in the region, adding: "Rated GCC telcos – including Beyon, e&, Ooredoo, and stc – aim to enhance their techco services and have already expanded their non-telecom businesses over the past few years." According to the report, telecommunication firms in the region provide a plethora of non-telecom services, with cybersecurity, cloud services, the Internet of things, as well as artificial intelligence, and data centers primarily targeting business-to-business customers. Moreover, the GCC region's mature telecom markets, with mobile penetration rates of 130 percent to 210 percent, offer limited organic growth prospects for telecommunication companies. "The GCC telcos we rate are typically major local players, operate in a relatively favorable and stable regulatory environments, and benefit from their leading market positions and well-invested asset base. Even so, they suffer from a decline in some core telecom services, including fixed voice telephone and messaging services," said S&P Global. Additionally, these companies are also offering fintech services aimed at both business-to-business and business-to-consumer customers. "Fintech offerings capitalize on digitalization trends, tech-savvy young populations in the Middle East, and under banking in emerging markets,"

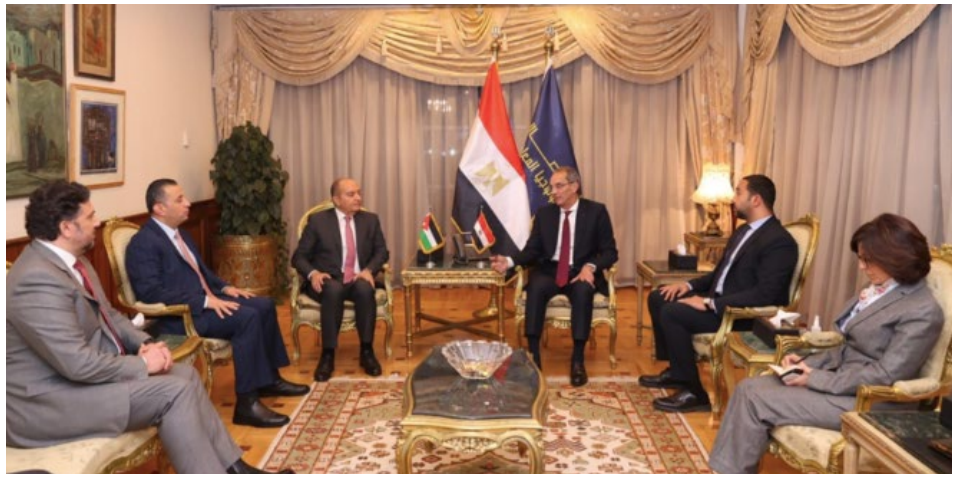
said S&P Global. The report further noted that telecommunication companies in the region are also venturing into media, entertainment and e-gaming sectors. S&P Global also highlighted some recent acquisitions made by telecommunication firms in the GCC region to diversify their businesses. In 2022, Saudi Telecommunications Co. secured significant stakes in systems integrator firms Giza Systems and Giza Arabia Systems. Moreover, last year, UAE-based e& acquired over 50 percent of Careem Super App, an application that provides food and grocery delivery, micro-mobility, digital wallet, as well as fintech services. The study pointed out that GCC governments' digitalization and economic development agendas will support digital businesses and boost consolidated revenues of telecommunication firms. "We estimate non-telecom operations currently contribute about 15 percent to 16 percent to rated GCC telcos' combined revenues," the report said. It added: "While core telecom services will continue to account for most revenues and remain the overwhelming profit generators in the short term, we expect digital businesses will grow at a significantly faster pace." The report noted that telecommunication firms in the region will witness low single-digit growth for telecom revenues and organic growth of 10 percent to 20 percent per year in non-telecom revenues. Mergers and acquisitions could compound organic growth in the non-telecom sector, resulting in much faster revenue accretion from tech-related services, the study stated.

Qatar to Digitize 90% of Citizen Services by 2030

Qatar is set to establish a specialized "center of excellence" dedicated to data and emerging technologies, including Artificial Intelligence (AI), as part of its ambitious goal to digitize 90 per cent of its citizen services by 2030. The initiative, outlined in the third National Development Strategy (NDS3), also includes a revamp of tools for monitoring operational and institutional performance to track progress effectively. The country aspires to position itself as a digital government leader, aiming for a customer satisfaction score exceeding 85 per cent across all services by 2030. The establishment of a Centre of Excellence for data and emerging technologies, particularly AI, will drive initiatives such as developing a comprehensive national data governance and management framework to improve data availability and quality. Emphasis is also placed on advancing system interoperability through enhanced data exchange layers. To enhance government decision-making speed and effectiveness, Qatar plans to transform the design and delivery of services by strengthening central capabilities in innovation and digitization. This includes revamping the service catalogue, establishing Service Level Agreement (SLA) frameworks, launching a one-stop-shop portal, delivering integrated services, improving customer experience, creating innovation labs, and establishing a Centre of Excellence for service design. The government also plans to implement centralized performance tracking and monitoring systems for its services, with the aim of improving customer experience, ensuring quality and efficiency, and promoting continuous improvement. Collaboration with key players, including ICT providers like Ooredoo Qatar, Siemens, and Microsoft, is ongoing to drive digitalization in various fields, such as smart cities and innovative solutions. NDS3 places a strong emphasis on policy alignment across government entities, incorporating input from academia, citizens, residents, businesses, and non-governmental entities systematically. The strategy aims to strengthen accountability in government institutions by enhancing the capabilities, governance, and operating models of independent oversight bodies. Addressing the challenge of limited access to up-to-date information, the strategy emphasizes ensuring easy access to government reports, policy changes, and open public data. The goal is to exceed an 80 per cent adherence to SLAs within and between governmental entities.

Egypt, Jordan to Establish Submarine Fiber Optic Cable Dubbed 'Coral Bridge'

Telecom Egypt and Naitel Jordan signed a cooperation agreement to establish a submarine fiber optic cable connecting Egypt and Jordan and that will be dubbed "Coral Bridge." The cable will extend between Jordan's Aqaba and Egypt's Taba, and is aimed at fulfilling increasing demand on AI applications and data centers, capitalizing on the short distance between its two landing points. The location of the cable is also outstanding given that Egypt is a major crossing between the East and the West, while Jordan is a main doorway to the Levant, Iraq, Arab Gulf, and the intersection between Asia and Europe.



CRA, RIPE NCC Conduct IPV6 Training Course in Capacity Building Initiative

In line with Qatar's Internet Protocol Version 6 (IPv6) Implementation Strategy and as an essential component of the ongoing joint capacity-building efforts, the Communications Regulatory Authority in Qatar (CRA), in collaboration with the Réseaux IP Européens Network Coordination Centre (RIPE NCC), conducted a three-day training course on IPv6 from February 19 to 21. The training course was attended by attendees representing Qatar's IPv6 Taskforce members from Aspire Zone, Qatar Energy, Ministry of Public Health, Hamad International Airport, Sidra Medicine, General Authority of Customs, Carnegie Mellon University-Qatar, Qatar University, Hamad Bin Khalifa University, Qatar Foundation, Ministry of Education and Higher Education, Qatar Airways, and the University of Doha for Science and Technology. The training was designed to equip participants with the essential knowledge and skills required for a seamless and successful transition from Internet Protocol version 4 (IPv4) to IPv6. It provided an in-depth exploration of critical aspects of transitioning to IPv6 such as configuration, deployment, routing, and security. It addressed the significance of IPv6 and its necessity for modern networks. The course offered foundational knowledge on planning IPv6 deployment and addressing strategies. "In line with our commitment to support digital transformation and enhancing the technological infrastructure in the State of Qatar, the importance of the training course offered in collaboration with the RIPE NCC becomes evident. This initiative is a cornerstone in our strategy to building the capacity of our technical staff and enable them to apply the latest global standards in the Information and Communication Technology field", said Ali Al-Suwaidi, director of the Technical Affairs Department at CRA. "By focusing on the transition to IPv6, we aim to achieve sustainability and expand our digital capabilities, while ensuring the highest levels of security and efficiency in network communication. This step is fundamental

for welcoming and integrating next-generation technologies, including the Internet of Things and autonomous vehicles, securing Qatar's leading position in the global digital landscape. We would like to express our profound thanks and appreciation to RIPE NCC for their valuable collaboration and continuous support," he added. "We are thrilled to champion the development of the local community in alignment with our strategic alliance with the Communications Regulatory Authority of Qatar. The strides Qatar is making in the adoption of IPv6 are commendable, and our commitment to bolstering this momentum is unwavering," said Dr Chafic Chaya, regional manager for Public Policy and Government Affairs in the Middle East at RIPE NCC. "By providing our members and the CRA with the necessary technical expertise and services, we aim to facilitate a smooth transition from IPv4 to IPv6 to meet the increasing demand for connectivity and support the growth and development of Qatar's digital infrastructure. The RIPE NCC specialised training covers a wide array of critical subjects, particularly IPv6 and routing security, and is enhanced by pioneering tools such as RIPE Atlas, RIPEstat, RIS and others. We extend our heartfelt thanks to the CRA."

PTA, Malaysian Commission Sign Letter of Cooperation to Boost Telecom Sector

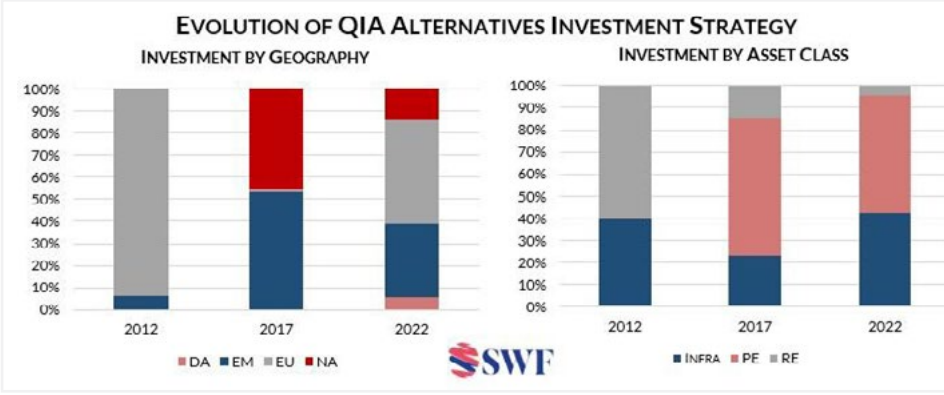
PTA signed a Letter of Cooperation with the Malaysian Communications and Multimedia Commission (MCMC) at the Malaysia Pavilion during the Mobile World Congress 2024 in Barcelona, Spain. MCMC Chairman, Tan Sri Mohamad Salim bin Fateh Din, expressed his enthusiasm that the collaboration between MCMC and PTA is strategically aligned with shared goals and objectives, poised to bring undeniable benefits to both nations. PTA Chairman, Maj Gen (R) Hafeez Ur Rehman, emphasized the significance of cooperation for the advancement of the telecommunications sector. He stated, "Our collaboration with MCMC signifies a strategic alliance to promote the growth of ICTs in both Pakistan and Malaysia." The two sides will collaborate on digital connectivity, proliferation of fixed broadband services, satellite-based telecommunication services, network security and Internet governance; Artificial Intelligence (AI), Internet of Things (IoT) and others. This collaborative effort between PTA and MCMC

is anticipated to drive innovation, economic growth, and enhanced connectivity in both countries.

SKT, Deutsche Telekom, e&, Singtel, and SoftBank Corp Announce Plan to Establish a Joint Venture

SK Telecom, Deutsche Telekom, e& Group, Singtel and SoftBank Corp. held the inaugural meeting of the Global Telco AI Alliance (GTAA) at MWC Barcelona 2024 and announced their plans to establish a joint venture. The meeting was attended by SK's Chairman Chey Tae-won, SKT's CEO Ryu Young-sang, Deutsche Telekom's CEO Tim Höttges and DT's Board Member for Technology & Innovation, Claudia Nemat, e& Group's Group CEO Hatem Dowidar, Singtel Group's CEO Yuen Kuan Moon, and SoftBank's CISO Tadashi Iida. Through the Joint Venture Company, the five companies plan to develop Large Language Models (LLMs) specifically tailored to the needs of telecommunications companies. The LLMs will be designed to help telcos improve their customer interactions via digital assistants and chatbots. The goal is to develop multilingual LLMs optimized for languages including Korean, English, German, Arabic and Japanese, with plans for additional languages to be agreed among the founding members. The joint venture plans to focus on deploying innovative AI applications tailored to the needs of the Global AI Telco Alliance members in their respective markets, enabling them to reach a global customer base of approximately 1.3 billion across 50 countries. Deutsche Telekom boasts about 250 million subscribers across 12 countries, including Germany and the U.S. The e& Group has 169 million subscribers in 16 countries across the Middle East, Asia, and Africa, while the Singtel Group has 770 million subscribers in 21 countries, including Australia, India, and Indonesia. The Joint Venture Company will be established within this year. Compared to general LLMs, telco-specific LLMs are more attuned to the telecommunications domain and better at understanding user intent. By making it easier for telcos to deploy high-quality generative AI models swiftly and efficiently, telco-specific LLMs are expected to help accelerate AI transformation of various telco business and services, including customer service. The LLMs are currently underway with customer service data being used to fine-tune the model for telco-specific questions. This is mainly for tariff and contract models, information on special hardware such as the router, for example (e.g. How do I do a reset?) are rarely found in the general training data of the large models. But it's exactly this content that a telco bot needs to know. So that it is able to understand, summarize and respond to these specific concerns. This targeted training ensures the LLM understands the unique language and needs of telecom operators, paving the way for enhanced, personalized, and efficient customer experiences. "We as telcos need to develop tailored LLM for the telco industry to make telco operations more efficient, which is a low-hanging fruit. Our ultimate goal is to discover new business models by redefining relationships with customers. The Global Telco AI Alliance brings synergy to its members by allowing them to achieve more by working as a team," said Ryu Young-sang, CEO of SKT. "We want our customers to experience the best possible service. AI helps us do that. Already, more than 100,000 customer service dialogs a month in Germany are handled by Generative AI. By integrating telco-specific large language models, our 'Frag Magenta' chatbot becomes even more human-centric: AI personalizes conversations between customers and chatbots. And our joint venture brings Europe and Asia closer together," said Claudia Nemat, Board Member Deutsche Telekom for Technology and Innovation. "This is a monumental step for e& and for the Telco industry at large. From streamlining customer support interactions to enabling personalized recommendations, this multi-lingual LLM will revolutionize how businesses engage with customers", said Dena Almansoori, Group Chief AI and Data Officer, e& group. "In collaboration with our Global AI Telco Alliance partners, we look forward to shaping both the present and future of customer engagement and setting new standards for efficiency and innovation across the telecommunications landscape to better serve our customers and create meaningful impact." "This promises to be a game changer not just for us at Singtel but for any telecom company out there looking to lift their customer experience beyond limited automated responses and generic chatbot interactions. This multi-lingual LLM tailored for telcos will greatly expand chatbot capabilities with relevant responses to customers' technical queries, freeing up service agents to deal with more complex customer issues and we intend to deploy this across the Singtel Group. With leading telcos from three different continents working on this innovative model, this unprecedented effort to scale AI development for the telecom industry would not have been possible had we all decided to go it alone," said Yuen Kuan Moon, Group Chief Executive Officer, Singtel. "Through a powerful alliance with industry leaders, we embark on a mission to revolutionize global communication, elevate service quality, and ignite a new era of technological innovation powered by AI. Together, we have the power to shape the future of telecommunications, empowering communities worldwide with seamless connectivity and boundless opportunities," said Hideyuki Tsukuda, Executive Vice President & CTO of SoftBank Corp.

Qatar's Digital Investments to Soar to US$5.7 Billion By 2026



Qatar's digital investments across 15 priority technologies including AI, IoT and cybersecurity are expected to soar to $5.7bn by 2026, up from $1.65bn in 2022, a new report unveiled by the Investment Promotion Agency Qatar (Invest Qatar) has shown. The joint report was launched in association with the Ministry of Communications and Information Technology (MCIT), titled 'Smarter Qatar: Embracing Emerging Technologies and Innovation, Improving Lives and Driving a Sustainable Digital Economy'. The report showcases Qatar's commitment to harnessing cutting-edge technologies for its smart country transition and emphasizes initiatives to capitalize on the growing global smart city market, projected to approach $7tn by 2030. Released ahead of the inaugural edition of the world's largest technology event in the region, Web Summit Qatar, the report underscores Qatar's conducive ecosystem, which fosters the development of emerging and advanced technologies. This supportive environment is bolstered by significant direct government investments and comprehensive incubation and acceleration programs designed to support entrepreneurs and small and medium enterprises (SMEs). Qatar's dedicated efforts in digital transformation are demonstrated by various initiatives, such as MCIT's TASMU Smart Qatar, which fosters a digitally enabled economy. With a focus on stimulating innovation across key sectors, some 15 priority technologies have been identified for development, including Artificial Intelligence (AI), Internet of Things (IoT) and cybersecurity. Qatar's digital investments across these priority technologies are expected to soar to $5.7bn by 2026, up from $1.65bn in 2022. This initiative spearheads the transformation of vital economic sectors, encompassing transportation, healthcare, tourism and education, unlocking key opportunities for sustainable growth across these pivotal domains. Reem al-Mansoori, assistant undersecretary, Digital Industry Affairs, MCIT, said, "Qatar is a vibrant ecosystem for startups and global businesses, serving as a launch pad for innovating and piloting digital solutions. Positioned as a strategic gateway to international markets, we consolidate vital resources in this report for entities aiming to root their digital operations in Qatar. Emphasizing quality of life, we welcome partners sharing our vision to foster a smarter and more connected Qatar." Sheikh Ali Alwaleed al-Thani, Invest Qatar CEO, said: "Qatar's digital transformation journey has been remarkable; the country has achieved global recognition, leading the Global Entrepreneurship Index in the Arab world and developing world-leading digital infrastructure. "This joint report stands as a testament to Qatar's unwavering dedication and serves as an inspiring blueprint for other countries venturing into their own smart city and smart country initiatives." Building future-ready smart cities: Qatar is home to the world's first commercially available 5G network and is also ranked first for internet adoption globally with nearly a 100% internet penetration rate. The country has also made substantial investments in areas like Msheireb Downtown Doha and Lusail City to create sustainable environments, aligned with Qatar National Vision 2030 (QNV 2030). Lusail seamlessly integrates smart technologies with energy-efficient buildings to intelligent transportation solutions, while Msheireb Downtown Doha weaves smart infrastructure into its fabric to establish a connected and environmentally conscious urban center.

Nokia and Transworld Build Optical Transport Network in Pakistan, UAE and Oman

Transworld Associates (TWA) will use Nokia's optical transport solution to build a new optical network connecting Pakistan, United Arab Emirates (UAE) and Oman as part of its submarine capacity expansion plan. A submarine capacity backhaul system is also being deployed in Karachi Metro. The project will support transformation in the region by accommodating the exponential growth of data and bandwidth links between data centers. The new optical network between Pakistan, UAE and Oman will boast a capacity of 9.2Tb/s, helping to support business and end users as the need for improved connectivity across the region intensifies. The submarine backhaul system will have a capacity of 28.8Tb/s, and will feature a per-wavelength data rate of 600Gb/s. To meet TWA's increasing bandwidth demand, Nokia will provide its 1830 Photonic Service Switch platforms. Powered by fifth-generation super-coherent Photonic Service Engine (PSE-Vs), the solution robustly manages large data volumes and optimizes network performance, while

championing environmental sustainability through its low energy consumption per bit. Nokia will also deploy its state-of-the-art CDC-F (Colorless Directionless Contentionless and Flexgrid) technology to enhance end-user experience, establish a secure and resilient network, and provide higher bandwidth for the webscalers in the region. The network will be capable of handling terabits of traffic with 600Gbps per lambda initially, with future expansions planned to support 1.2T per lambda transmission. Saad Muzaffar Waraich, President and CEO of Transworld Associates, said: "Innovation guides our path as we introduce a cutting-edge network, carefully crafted to be futureproof and seamlessly handle terabytes of traffic. Embracing efficiency, we spearhead a paradigm shift by leveraging the power of Network Management Systems to streamline operational activities. With Nokia's cutting-edge technology, we empower our customers to navigate the market with confidence and seize new business opportunities." Rima Manna, VP Network Infrastructure Middle East at Nokia, said, "Introducing groundbreaking technology in new regions and helping our customers harness the exponential potential of networks is always exciting. Together with TWA, we are ready to establish a new benchmark for connectivity and performance in the region, offering market-leading performance for enterprises, service providers, webscalers and end users."

AI Revolutionizing Oman's Industrial Sector Landscape

The Ministry of Commerce, Industry, and Investment Promotion (MoCIIP) in Oman is spearheading efforts to revolutionize the industrial landscape through the adoption of artificial intelligence (AI) and factory automation technologies. With a focus on enhancing productivity, competitiveness, and sustainability, this initiative marks a pivotal moment in Oman's journey towards economic diversification and technological advancement. Under the banner of 'Factory Automation and Artificial Intelligence', the MoCIIP is committed to empowering private sector entities with cutting-edge technologies to drive efficiency and innovation in manufacturing processes. Mazin Al Siyabi, Director of Technical Assistance at Oman's Ministry of Commerce, Industry, and Investment Promotion, underscored the pivotal role of AI and automation in Oman's industrial landscape. "AI and factory automation are essential for Oman's industrial growth," said Al Siyabi, emphasizing their potential to enhance efficiency and competitiveness. Al Siyabi said initiatives like 'Factory Automation and Artificial Intelligence', are aimed to propel Omani industries forward. "Empowering our workforce with automation skills is crucial," he noted, stressing collaboration with academia and the private sector. Recognizing the pivotal role of these advancements in the Fourth Industrial Revolution, the ministry aims to position Oman as a leading investment destination, aligning with the objectives of Oman Vision 2040. The initiative encompasses two pathways: one targeting new factories built to the highest standards of efficiency, and the other aimed at existing

facilities, encouraging their transition towards operational excellence through the integration of advanced technologies. Key stakeholders in the industrial sector have lauded these efforts, acknowledging the positive impact of supportive policies and strategic interventions in driving sectoral growth. Notably, initiatives such as the Value-Added Localization Program and the launch of the 'Made in Oman' platform underscore Oman's commitment to fostering a conducive environment for industrial development and promoting locally manufactured products. Professor Ghassan Al Kindi, Pro-Vice Chancellor for Research and Innovation at Sohar University, emphasized the significance of AI and automation in enhancing productivity, quality, and competitiveness. He stressed the importance of collaborative efforts between academia, vocational training institutes, and businesses to equip Omani professionals with the skills needed to thrive in the era of automation. Ahmed Al Barwani, Chairman of the Sectorial Skills Unit for the Industrial Sector, hosted by the Omani Industrialists Association, highlighted the unit's role in enhancing workforce skills and fostering a competitive industrial landscape. Through skills accreditation programmes and collaboration with various stakeholders, the unit aims to meet the evolving demands of the industrial sector and contribute to economic growth. Industry leaders like Hilal Al Hosni, CEO of Cimat Global and Abdul Hakeem Al Qasmi, Acting Managing Director of Sohar Sulphur Fertilizers, stressed the transformative potential of AI and automation in optimizing production processes, reducing waste, and enhancing profitability. As Oman celebrates its Industrial Day, the concerted efforts of government and industry stakeholders underscore the nation's commitment to driving sustainable industrial growth through technological innovation and strategic partnerships. With a clear vision and collaborative approach, Oman is poised to emerge as a hub of innovation and industrial excellence in the region.

PTA and ITU Strengthen Ties at MWC 2024

In a significant step towards advancing the telecommunications sector in Pakistan, the Chairman of the Pakistan Telecommunication Authority (PTA), Major General (R) Hafeez Ur Rehman, convened with Ms. Doreen Bogdan-Martin, the esteemed Secretary-General of the International Telecommunication Union (ITU). This pivotal meeting took place on the margins of the GSMA Mobile World Congress 2024, marking another milestone in the ongoing collaboration between PTA and ITU aimed at fostering stronger ties and discussing innovative initiatives destined to shape Pakistan's telecommunications landscape. The discussions between Chairman PTA and the ITU Secretary-General were rich and fruitful, covering a broad spectrum of topics, including the PTA's current and prospective projects, regulatory frameworks, and the latest technological breakthroughs in the field. A highlight of the meeting was the presentation of PTA's Digital Gender Inclusion Strategy and the Parental Guidebook on Child Online Protection. The Secretary-General of ITU, Ms. Bogdan-Martin, commended these gender inclusion efforts, emphasizing the importance of such initiatives in the broader context of telecommunications development. Further solidifying their commitment to cooperative progress, the Chairman extended an invitation to the Secretary-General to visit Pakistan. This gesture aims to pave the way for hosting future regulatory events within the country, thereby enhancing Pakistan's role on the global telecommunications stage. The meeting concluded on a note of mutual agreement to persist in their collaborative efforts and knowledge sharing, underscoring the shared vision of both organizations to drive forward the telecommunications sector in Pakistan.

Jazz Partners with Huawei to Boost Network Capacity

Jazz, Pakistan's leading digital operator, has partnered with Huawei to elevate its long-haul network to a groundbreaking 400G per wavelength capacity with the deployment of C+L band systems, a first-of-its-kind for Long Haul Backbone network deployment in Pakistan. The deployment of 400G per wavelength in the long-haul network shall augment Jazz initiatives regarding cloud-based services, online gaming, live streaming of events, remote medical imaging and diagnostics, fintech, edutech, and numerous smart cities applications, said a news release. Commenting on the development, Khalid Shehzad, Chief Technology Officer at Jazz, said, "The decision to enhance the network capacity underscores Jazz's dedication to staying at the forefront of technological advancement, ensuring seamless connectivity and superior service quality for its subscribers nationwide."

"At Jazz, we've evolved beyond being a mere telecommunications company to a comprehensive tech-co with our DO1440 strategy ensuring we remain relevant to customers every minute of the day. Partnering with Huawei aligns with our

vision, empowering customers beyond traditional communication, fostering their participation in Pakistan's digital transformation and knowledge economy," he added. This strategic collaboration with Huawei introduces a cutting-edge system, capable of supporting 400G per wavelength across a total of 240 wavelengths in C+L band. The significant boost in capacity promises to revolutionize the Jazz long haul network, empowering it to meet the escalating demands of today's digital landscape. Jazz remains steadfast in its mission to deliver world-class telecommunications solutions, setting a precedent for excellence in the industry. Previously, the company introduced industry-leading Voice Over LTE (VoLTE) and JazzFi (WiFi calling service) to elevate customer experience, gaining over 22 million and 3 million customers respectively in record time.

Pakistan Ranked Third with 42.6% Growth in Active Software Developers, according to GitHub

GitHub data released on January 18 ranks Pakistan 3rd in the list of countries showing a surprising jump in the number of active developers over just the past year. In the competitive world of software development, maintaining an active GitHub profile has become pivotal for developers seeking job opportunities. GitHub, a massive platform for collaborative coding, serves as a global hub for software development, hosting both public repositories for open-source projects and closed repositories for project participants. GitHub's Innovation Graph, a quarterly initiative showcasing developer contributions globally. The data provides a broader view by spotlighting the developer landscape of entire countries. The latest figures reveal surprising trends, offering insights into nations making significant progress. During the three months leading up to September 2023, Bangladesh experienced a remarkable surge, with 945,696 developers actively contributing to public GitHub repositories. In the same period in 2022, the number stood at 568,145, marking a staggering year-over-year increase of nearly two-thirds—the most substantial proportional leap recorded globally. It's crucial to consider the dataset's limitations, focusing solely on public repositories, which represent less than half of GitHub's overall activity. However, GitHub analysts suggest that the split between public and private activity remains consistent across countries, with private activity mirroring the fluctuations in public engagement. Despite GitHub representing only a fraction of a country's overall software development landscape, the data signals a rising trend of programming in regions

historically overlooked by the Western tech industry. To pinpoint the fastest-growing countries, Rest of World conducted a comparative analysis of developer figures for the most recent quarter (September through December 2023) against the same period the previous year. Countries with fewer than 500,000 active developer accounts in the most recent quarter were excluded to ensure a focus on substantial contributors. Contrasting this with GitHub's absolute figures, which place the U.S. at the forefront with 20.2 million developers, followed by India (13.3 million), China (6.9 million), and Brazil (5.4 million), reveals a different perspective. While high-GDP nations dominate the overall developer count, emerging tech hubs like Bangladesh and Nigeria exhibit significant growth in relative terms. The surge in GitHub contributors prompts questions about its implications for a country's tech sector. Mike Linksvayer, GitHub's Vice President of Developer Policy, acknowledges the challenge of interpreting these numbers, questioning whether increased public developer activity serves as a leading or trailing indicator for broader development trends. However, the countries highlighted by GitHub's data exhibit other signs of expanding tech talent pools. In Bangladesh, a rising GDP has facilitated increased access to digital tools, propelling the IT sector's growth. Nigeria showcases high-flying startups generating software development projects, backed by venture capital and government investments. While the surge in GitHub contributors may indicate a burgeoning tech sector, its precise implications remain multifaceted. As nations embrace digital technology innovation, GitHub's data offers a glimpse into the evolving global landscape of software development.

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ARTICLE

Blockchain and the Evolution of Traditional Telco Services

Emma Blatch
VP Outsourced Carrier Solutions
Syniverse

The advent of 5G and 5G roaming is revolutionizing the telecommunications landscape, bringing unprecedented speed, low latency, and enhanced connectivity. However, these advancements also usher in a new era of complexity in terms of data management and transaction processing.

The sheer volume of data generated and the multitude of transactions occurring across borders in real time necessitate robust clearing and settlement technologies. These technologies are critical for managing and reconciling vast amounts of data, ensuring accurate billing, and facilitating seamless cross-border transactions.

Moreover, as 5G enables a plethora of new services and applications, from IoT devices to autonomous vehicles, the need for efficient, transparent, and secure clearing and settlement mechanisms becomes even more paramount. Without change, trust, and automation, the industry cannot capture the potential of 5G and IoT roaming.

The new way of doing business needs a clear and open consensus mechanism. It also needs transaction validation and compliance, uniformity in workflows, reconciliation, fraud detection and prevention, as well as visibility online, and faster, better ways to monetize this new traffic.

A little history behind international roaming settlement

International roaming settlement technologies have evolved significantly since their inception. In the late 1990s and early 2000s, international roaming agreements became more common between mobile network operators. These agreements allowed customers to use their mobile phones while traveling outside their home network coverage area to access local networks in other countries. But more importantly, these agreements enabled mobile network operators to charge each other for the use of their networks by their customers when they travel abroad.

However, the evolution of these technologies has not been without challenges. The traditional billing approach, Transfer Account Procedures (TAP), was designed to handle roaming and billing

settlements primarily for voice and SMS data. For more than 30 years, the industry has used TAP for the exchange of records. But this format had many limitations due to its rigid formats and exchange schedules. For one, it has difficulties with the large numbers of events generated by 5G, in particular the growing number of IoT devices. Secondly, with TAP, there is no rating model that can handle these micro transactions. As a result, the records are dropped and revenues are not recognized. In addition, TAP's event-based charging mechanisms are not suited to monetize new business models and could lead to billing errors. Furthermore, TAP cannot support future charging models, especially for 5G Standalone (SA) services.

The introduction of new technologies such as VoLTE and 5G has increased business complexity, leading to new pricing structures and potentially longer negotiation processes that can take months. Developing interoperability for operators offering 5G roaming services can be resource-intensive, time-consuming, and costly. Consequently, the evolution of international roaming settlement technologies continues to be a complex and challenging process.

The transition to blockchain

Blockchain technology can significantly enhance international roaming requirements by providing a decentralized, secure, and transparent platform for data management and transaction processing. By streamlining Roaming Contract Agreements as "smart contracts," blockchain can modernize the process of creating new agreements with existing and new roaming partners. It can automate the operations of the wholesale roaming settlement by reducing the complexity and time involved in managing these agreements. It does this by automating the many manual processes involved in roaming services, such as billing and settlement, leading to increased efficiency and reduced costs.

Without the need for intermediaries or central authorities, blockchain performs as a distributed system that enables secure, transparent transactions and data sharing among multiple parties. Its inherent transparency can help build trust among operators. Every transaction is recorded on the blockchain, providing a clear audit trail. This can help resolve disputes and ensure accurate billing. And through a decentralized design and cryptographic security measures, it can protect against fraud and unauthorized access, enhancing the security of roaming services. The killer feature of an architecture incorporating blockchain is the immutability of the shared transactions. Once a transaction is initiated by the "smart contract," the trusted participants will validate via their own hosted nodes, and the transaction becomes part of the immutable record, chained together with all previous transactions in perpetuity.

Blockchain can enhance the telecom industry by providing solutions for challenges such as spectrum sharing, fraud detection and prevention, international roaming settlement, network operation management, number selection management, and supply chain management. It can also enable new business models and services for telecom operators and customers, such as data access control, device identity, data exchange, and tokenized incentives.

Benefits of blockchain

Blockchain can benefit the end users of telecom services by providing them with more choices, control, transparency, privacy, and value. It can also empower them to participate in the telecom ecosystem as data producers, consumers, and owners. It also provides greater efficiency, security, and cost savings.

In addition, blockchain can streamline the transactional process, save time on settlement and dispute management, and enable telecom companies to manage contracts and financial reconciliations more efficiently.

By providing a clear audit trail of all transactions, blockchain allows for greater transparency of transactions, fostering trust among operators. It allows parties to see the same data values, volumes, and more, for each transaction. All transactions on a blockchain are transparent and immutable. Once a transaction is recorded, it cannot be altered.

Unlike traditional databases, blockchain is decentralized, meaning there's no single point of failure or single source of data to hack. This makes it difficult for hackers to compromise the system. The decentralized nature and cryptographic security measures employed by blockchain technology protect against fraud and unauthorized access.

The automation and efficiency characteristics of a blockchain can also reduce outsourcing and help to minimize associated costs with the settlement process.

How blockchain address monetization

The introduction of blockchain allows businesses to address the challenges of monetization in the new 5G ecosystem, by allowing carriers to move from a retail commercial model to a more wholesale model. Blockchain technology can significantly transform the monetization of mobile roaming applications. One of the main ways it does this is by facilitating the handling of high-volume transactions that occur when millions of people travel internationally or make international calls. Blockchain's distributed ledger technology can streamline these operations, lifting carriers from the burden of manual processes, legal disputes, and unforeseen costs.

Aggregated traffic, with the rise of M2M and NBIoT traffic, represents a vast increase in the number of records being created. Identifying and charging for these smaller packets of data that are routinely overlooked, as they do not fit into TAP charging models, can add up to significant amounts of missed revenue. Aggregating this data and being able to exchange via blockchain is creating new monetization streams, with lower latency and increased efficiencies.

Blockchain and green uses

There are rumblings in the industry about how blockchains are bad for the environment. But this is only the case

for public blockchains like Bitcoin, where a substantial amount of "mining" is performed which uses a lot of power. This is not the case for permissioned networks or for networks like Solana and Ethereum, that validate via staking vs. mining. Blockchain can offer green benefits for the telecom sector by reducing energy consumption, carbon emissions, and e-waste, as well as promoting renewable energy sources and circular economy practices.

The Syniverse Blockchain Solution

The Syniverse Universal Commerce solution was built on a blockchain backbone. The solution was developed with a three-tier approach. There is a UI/UX layer, which represents the various web portals that our customers use to login and view their usage, reports, and stats. The Application layer, which holds the main web content hosting application and APIs supporting the UI/UX layer. And lastly, there's the blockchain layer, which services the smart contract that binds all the components together, including peer validation nodes and distributed ledger. Syniverse employs the IBM Hyperledger Fabric, a modular architecture that delivers high degrees of confidentiality, flexibility, resiliency, and scalability.

Syniverse Universal Commerce on blockchain with Hyperledger Fabric enables an easy transition for operators to meet a new world of challenges within the telecom industry. Fabric allows components, such as consensus and membership services, to be plug-and play. It leverages container technology to host smart contracts called "chaincode" that contain the business rules of the system, like an operator's roaming agreements.

It's also designed to support various pluggable components, and to accommodate the complexity that exists across the entire economy. Starting from the premise that there are no "one-size-fits-all" solutions, Fabric is an extensible blockchain platform for running distributed applications. It supports various consensus protocols, so it can be tailored to different use cases and trust models, making the auditability transparent. Unlike other blockchain-enabled solutions like Bitcoin, Universal Commerce is a private blockchain, so only trusted partners can view transactions they share amongst themselves.

Syniverse Universal Commerce is the latest evolution of clearing and settlement for operators' roaming business. It is the only clearing solution commercially available that's fully compliant with the GSMA's most recent BCE 1.4 standard. Universal Commerce uses blockchain technology to encrypt each transaction, increase transparency, and provide ironclad security to every exchange. It allows organizations to clear, reconcile, settle, and audit wholesale roaming traffic simply and more efficiently.

Syniverse has deployed Universal Commerce for 90% of BCE-compliant international operators. Our Financial Clearing and Settlement solution makes the settlement of roaming costs and revenues open, easy, and fast. It empowers carriers to optimize their cash flow through a unique multilateral settlement pool. This works like a payment hub, offsetting multiple receipts against multiple payments, through a single settlement transaction. It also provides a single ledger, so operators can realize the revenue from many different types of traffic in one place.

Summing up Blockchain

Blockchain is quickly establishing itself as a critical element in charging and clearing for 5G roaming services. Operators can realize significant cost savings through operational efficiencies, and by removing obstructions that block the ability to drive new revenues. It helps businesses in their digital transformations, digitizing current manual, labor-intensive processes. And ultimately, it provides a greater level of security through improved transparency, limiting the ability of bad actors to manipulate transactional records.

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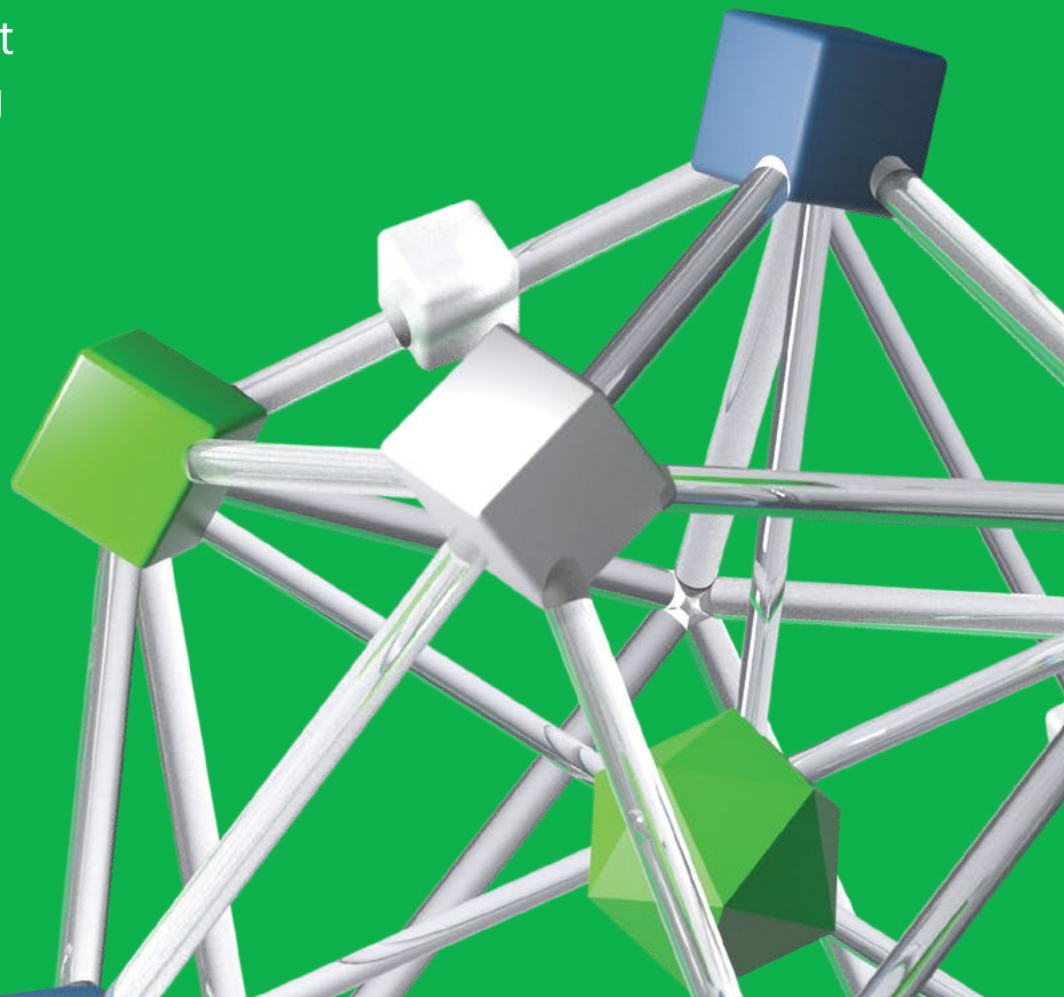

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SATELLITE NEWS

Ministry Proposes More Conditions for Setting Up Satellite Internet

The Ministry of Information and Communications (MIC) has proposed that foreign businesses which want to provide domestic satellite telecommunications services must have a gateway station located in Việt Nam. The information is stated in a draft decree detailing articles and measures to implement the Law on Telecommunications 2023, which is being consulted by the MIC. In the section on providing telecommunications services, the draft paper provides a number of provisions for cross-border services to Vietnamese users. Under the draft decree, the supplier must have a commercial agreement with a licensed domestic telecommunications enterprise. The domestic enterprise will then have to set up a technical plan to ensure information security, perform emergency prevention, and stop providing services at the request of competent state agencies. In case of providing satellite telecommunications services, the supplier must have a plan in which all traffic generated by satellite subscriber terminals in the territory of Việt Nam must pass through the ground gateway station located in Việt Nam and connected to the public telecommunications network, according to the draft decree. This is a new point compared to the decree guiding the Law on Telecommunications 2009. In addition, the establishment of fixed satellite and mobile telecommunications networks must also meet capital and investment conditions, such as: contributed charter capital must be at least VNĐ30 billion (US$1.2 million); and total investment capital in the network must be at least VNĐ100 billion ($4.1 million) in the first three years. During the process of developing the new Telecommunications Law, the MIC evaluated that satellite services with very large coverage areas can operate and provide services without either a technical or commercial presence in the host country, which means they are providing cross-border services. In the context of satellite technology increasingly expanding, they pose a number of potential risks, such as data of users in Việt Nam going directly abroad and being collected and used illegally, the risks of data loss affecting the service users' rights, and network and information insecurity. Therefore, satellite information services development must ensure sustainable market growth and the users' rights, protecting personal information, and ensuring information safety and security. In Việt Nam, the Việt Nam Post and Telecommunications Group (VNPT) is the only unit that owns a satellite information network. This form of connection uses VSAT (very small aperture terminal) with antenna diameters of 1.2-3m and the Vinasat broadband satellite information system to provide services. However, this method has low speed and high cost. The current trend in the world is to transmit satellite internet using low earth orbit (LEO) satellite constellations, like SpaceX is doing with Starlink. Last year, some of this company's devices were brought to test demonstrations at an event in Hà Nội with transmission speeds of 150-200 Mbps. The solution is expected to help provide internet to remote areas that are difficult to reach with conventional cables.

SpaceX to De-Orbit 100 Starlink Satellites After Finding "Common Error"

SpaceX is to de-orbit 100 of its early Starlink satellites after finding a "common error" that could potentially cause failures. In a recent update posted to the company site, the company said it will perform controlled descents of approximately 100 early-version 1 Starlink satellites in the coming weeks and months. "These satellites are currently maneuverable and serving users effectively, but the Starlink team identified a common issue in this small population of satellites that could increase the probability of failure in the future," the company said. It didn't disclose the nature of the issue or how many satellites currently have this issue. SpaceX noted it is in control of the machines and will maintain maneuverability and collision avoidance capabilities during the descent, after which they will burn up in the atmosphere. "The satellites will follow a safe, circular, and controlled lowering operation that should take approximately six months for most of the vehicles," SpaceX said. "Controlled, propulsive de-orbit is much shorter and safer than a comparable ballistic de-orbit from an equivalent altitude." The company promised to provide regular positioning information "multiple times a day" with other satellite and launch companies. Due to the atmospheric drag at Low Earth Orbit (LEO) altitudes – 2,000 km (1,200 mi) or less – satellites will naturally de-deorbit after around five years if not properly maintaining their desired orbit. Starlink satellites generally operate below 600 km. SpaceX said that of the almost 6,000 satellites launched by SpaceX, it has to-date initiated controlled de-orbits on 406. Seventeen of those are currently non-maneuverable and described as passively decaying while "well-tracked", while the rest are in controlled descent or have already de-orbited. According to SpaceNews, the oldest Starlink satellites still in orbit are from 2019/2020. The company has said the de-orbiting won't impact its broadband services.

Uzbekistan Unleashes the Power of Starlink Satellite Internet to Drive Digital Transformation

Uzbekistan is making significant strides towards achieving digital inclusivity by partnering with SpaceX to bring Starlink satellite services to its territory. This collaboration aims to revolutionize internet access throughout the nation, especially in areas with historically limited connectivity. The introduction of Starlink has the potential to be a game-changer for Uzbekistan's economy, education system, healthcare services, and business sectors. With high-speed internet at their fingertips, remote and rural communities can anticipate unprecedented growth and engagement with the digital world. Nevertheless, as Uzbekistan embarks on this technological leap, it must confront two critical challenges. Firstly, affordability is paramount in ensuring that Starlink services are accessible to the average citizen. While innovative services often come with a hefty price tag, economic accessibility is key to bridging the digital divide effectively. Secondly, the environmental impact of deploying a multitude of satellites into orbit cannot be overlooked. The issue of space debris has raised global concerns, compelling countries like Uzbekistan to consider the sustainability and planetary consequences of embracing advanced technologies. In conclusion, Uzbekistan is forging ahead into the future by embracing Starlink and pushing for digital advancement while remaining cognizant of the broader aspects of affordability and environmental preservation. This well-balanced approach may serve as a blueprint for other nations seeking to embark on a similar journey of technological empowerment.

Ofcom Commits to Making More Spectrum Available to Meet the Growing Demand for Satellite Services

Ofcom has published three documents which aim to enable more spectrum access for the growing satellite connectivity sector in the UK. Satellite operators offer a range of broadband services in the UK, such as helping to better connect homes and businesses in hard-to-reach rural areas, as well as on trains, in the air and at sea. We are also proposing to make more 28 GHz spectrum available for use by fixed links. In our decision and further proposals on the 27.5-30 GHz ('28 GHz') band we: set out our decision, following consultation, to make 560 MHz more spectrum available for use by earth station gateways, which are large dishes on the ground that connect a satellite network to the internet; propose to introduce a new mechanism to enable satellite gateway access to the whole band, subject to consultation processes to avoid material impacts on incumbent Spectrum Access licensees; propose to enable some additional spectrum access for satellite land terminals – the dishes and antennas used by customers to connect to a satellite network – and fixed links; and seek views on demand for unused 28 GHz spectrum blocks in London and Northern Ireland. We are inviting feedback on the proposals by 31 May 2024, and plan to publish our decision later this year. We are also inviting input on the possibility of making spectrum in the Q and V bands (37.5-43.5 GHz, 47.2-50.2 GHz and 50.4-52.4 GHz), and E band (71-76 GHz and 81-86 GHz) available for satellite gateway earth stations. This is something which satellite operators who responded to our 2022 Space Spectrum Strategy consultation said will be important to enable future services. We are seeking views by 14 June 2024 and plan to set out our next steps later this year. Finally, Ofcom is proposing to grant an earth station network license to Kepler for its constellation of non-geostationary orbiting (NGSO) satellites. Ofcom has received an application from Kepler to cover its use of terminals – which can be on a building, in the air or at sea. Kepler already has 15 satellites in orbit and plans to launch a total of 140 satellites. It says it will use its network to support a host of applications, from store and forward-based IoT services to real-time data transfer services when the network reaches full deployment. We are inviting comments on Kepler's application, and on our proposal to grant the license, by 29 April 2024. We will take into account all responses to this consultation before reaching a final decision.

TCC Satellite Hi-Speed Broadband Expands Internet Connectivity Throughout Tonga

New internet connectivity via satellite links that can reach even the most remote areas in Tonga, was launched by the Tonga Communications Corporation who are working with Kacific a regional satellite operator. Marketed as 'Broadband Anywhere", TCC promises that the new fast and reliable internet connectivity will expand internet access throughout Tonga. The new product was launched today, 21 March, by the Prime Minister and Minister for Public Enterprises, Hon. Hu'akavameiliku at TCC main office, Fasi-moe-Afi, in Nuku'alofa. TCC CEO Mr. Sione Veikoso said the new product allows internet access from anywhere in Tonga. In launching the service Hon. Hu'akavameiliku made a zoom video call connected to 'Uiha island in Ha'apai, where TCC have set up the broadband satellite in the government school. "The significance of bringing high speed internet to the most remote corners of our Kingdom cannot be overstated," said Hon. Hu'akavameiliku. Students in the remote islands of Tonga, will have advanced knowledge in reach. "Small and medium enterprises, the backbone of our economy will now have the tool to compete on a global stage, opening up new market ...opportunities that [will] contribute to the prosperity of our Kingdom." TCC Chief Technical Officer Mr. Iki Tu'itavake said that there are limitations with the fiber optic cable and mobile base stations, that Tonga has been developing. However, this satellite broadband can provide internet access anywhere in the Kingdom with less expenses, and it is easy to set up. Kacific Sales Director, Mr. Bipin Solanki said 'Broadband Anywhere' is powered by Kacific, a satellite operator providing a high-speed broadband internet service for the South East Asia and Pacific Islands regions.

Intelsat Expands OneWeb Partnership in Deal Worth US$500 million

Global satellite operator Intelsat has agreed to buy more capacity from Eutelsat's OneWeb's LEO satellite constellation to expand Intelsat's multi-orbit business strategy and cash in on growing demand for LEO connectivity. Under a partnership deal announced on Tuesday, Intelsat said it will combine Eutelsat OneWeb's LEO satellite constellation with its geostationary satellite and terrestrial network offerings to deliver "comprehensive customer solutions supporting networks, government, and mobility sectors." The deal, which will commence in the middle of this year, is valued at up to US$500 million over seven years, with a firm commitment of US$250 million now and an optional US$250 million by the end of the contract period. The initial US$250 million includes the US$45 million multi-orbit agreement signed by Eutelsat and Intelsat in March last year. Under that deal, Intelsat integrated OneWeb services and Eutelsat's geostationary high-throughput capacity to support mobile connectivity solutions over Europe, the Middle East, and the Pacific. The new deal expands that coverage globally. "We've been partnering with Eutelsat for quite some time now, leveraging its OneWeb LEO constellation to offer a multi-orbit solution, primarily in commercial aviation," said Intelsat CEO Dave Wajsgras in a statement. "We're now seeing so many additional opportunities for customers to benefit from multi-orbit solutions. We believe it's in Intelsat's interests, Eutelsat's interests, and our customers' interests for us to expand the partnership that's already in place – one that is working well and has strong demand." Meanwhile, Intelsat will cooperate with Eutelsat to provide direct design and functionality input in the development of its next-generation OneWeb constellation, which will start replacing the original LEO satellites as they reach the end of their life around 2027 and 2028. "This expanded partnership with Intelsat represents a strong vote of confidence in the capabilities of the OneWeb constellation, today and well into the future, and it showcases the necessity in today's world for major satellite operators to have the ability to offer multi-orbit solutions to their customers," said Eutelsat Group CEO Eva Berneke. Demand for satellite broadband connectivity has been on the rise over the past couple of years as LEO players like OneWeb and SpaceX's Starlink have come on the scene. Emerging markets in particular have been striking deals with various existing and upcoming satellite players in hopes of bridging the digital divide.

Intelsat and AMN help to Connect Rural Madagascar

Among satellite operator Intelsat's announcements for MWC 2024 is news of a communications service in Madagascar running in 65 communities, providing first-time connectivity to about 100,000 people. Africa Mobile Network (AMN), which builds, owns, operates and maintains mobile network infrastructure, and Intelsat, which operates one of the world's largest and most advanced satellite fleet and connectivity infrastructures, are working to connect 500 sites in Madagascar in the hope of providing first-time phone broadband services to people who live and work across the country. Some 60% of the population lives in rural areas. To reach Vilanandro on the Northwest coast, a city of 1800 inhabitants, took the AMN team over 15 days. Equipment was deployed by using carts pulled by livestock and sometimes canoes to carry terminals and equipment to the final destination. All this would not have been possible without the help of village volunteers, who helped carry equipment on foot to reach the final site location. Since the connectivity has been set up, a local farmer who previously had to wait for postal orders can now check everything online, while the school now has access to a broader range of courses available online. AMN specializes in rural deployment. A combination of Intelsat's satellite backhaul and AMN's unique site design is used to connect the rural communities to telephone services. The ubiquity of satellite and solar power solutions means that no

location is too remote. To date, 65 sites are up and running. The goal is to connect 120 sites by the end of March 2024. At that point, 200,000 people will have access to telecommunication services where no coverage previously had been available from any network operator.

SpaceX Targets Faster Internet with Lower-Orbit Starlink Satellites

SpaceX is seeking regulatory approval to enhance its Starlink satellite internet service by positioning a group of second-generation satellites closer to Earth. The company filed a request with the Federal Communications Commission (FCC) this week to operate some of their satellites within a lower orbit range between 340-360km (211-223 miles) above the Earth's surface. This is some 200km (124 miles) lower than their current orbits. (via PCMag) In its filing, which you can read below, SpaceX said this proposed adjustment aims to improve Starlink's performance, with the company emphasizing benefits such as reduced latency and increased speed for a broad spectrum of users. The company highlighted that these enhancements are not just theoretical; its second-generation satellites have already demonstrated superior performance capabilities, even in the face of maximum atmospheric drag experienced during the initial phases of orbit. SpaceX also outlined other advantages of this lower orbit operation, including the potential for heightened space sustainability. The move to lower orbits was portrayed as a measure to mitigate space traffic and collision risks. Moreover, this strategy simplifies the process of retiring satellites by ensuring they can be de-orbited more efficiently, ultimately burning up in the Earth's atmosphere without leaving traceable debris. Although specific figures on the expected improvements in internet speeds were not disclosed, Elon Musk has previously said that the company aims to reduce latency to below 20 milliseconds, aligning with their broader goals of providing high-speed internet access across the globe, especially in underserved and remote areas where traditional broadband services are either unavailable or prohibitively expensive.

Omnispace Cleared to Bring S-Band satcoms to Brazil

Global communications provider Omnispace has announced that Brazil's National Telecommunications Agency (Anatel) has approved its subsidiary Omnispace Comunicações Brasil Ltda's request to operate its non-geostationary satellite (NGSO) system nationwide. After conducting a public consultation and technical reviews, ANATEL determined that Omnispace meets the requirements to utilize the S-band (1980-2010 MHz / 2170-2200 MHz) in line with the ITU Radio Regulations global Mobile Satellite Service (MSS) allocation and the 3rd Generation Partnership Project (3GPP) n256 band specifications. This mean that Omnispace now has market access to reach more than 735 million people across Latin America, Asia, Africa and the Middle East. Together with partners that have spectrum access in 3GPP 5G non-terrestrial network (NTN) bands, Omnispace says it is poised to deliver access in all major international markets as part of a next generation global 5G NGSO system. Since 2019, Omnispace Comunicações Brasil has demonstrated its NGSO MSS and IoT capabilities on its current system through a series of experimental licenses in Brazil. It has also conducted vehicle tracking and Internet of Things (IoT) pilot projects in the state of São Paulo to test direct-to-device (D2D) communications. Omnispace says it is the first company to successfully conduct mobile satellite tests in the S-band in Brazil and will now be the first satellite operator licensed in Brazil for this band with an operational system.

China to Launch 26,000 Satellites

China will start building this year its own version of StarLink, a satellite internet constellation using low Earth orbit, with plans of launching some 26,000 satellites to cover the entire world led by state-run companies. Now that the military use of satellite-based communications systems for warfare in such places as Ukraine and Gaza is increasing, China will set up its own satellite network to compete with the U.S. as a "space power." The construction of a commercial spacecraft launch site for China's StarLink is underway near the Wenchang Space Launch Site, one of the country's spaceports for big rockets, in the southern province of Hainan. The launch site will be used mainly by the China Satellite Network Group, wholly owned by the Chinese government. The group was founded in 2021 after Beijing informed the International Telecommunication Union (ITU) of its plan in 2020 to launch some 13,000 satellites to establish a high-speed internet network. China Satellite Network will launch about 1,300 satellites, or 10% of the planned number, from the first half of 2024 until 2029, according to Chinese media. This is hoped to pave the way for liftoff by 2035 to establish a network supporting high-speed 6G communications. Top executives of the group come from state-owned, military-industrial complex enterprises linked to China's People's Liberation Army. For example, the chairman is from China Electronics Corp., which is in charge of information technology for military use, while the president is from China Aerospace Science and Technology Corp. (CASC), which develops rockets and other items. Under the leadership of President Xi Jinping, China plans to become a space power comparable with the U.S. by around 2030. It envisions creating its own space station and exploring Mars while launching commercial satellites. The Central Economic Work Conference held in mid-December decided to nurture strategic emerging industries such as the space business, which includes launching commercial satellites. In 2020, China completed the BeiDou Navigation Satellite System, prodding a large number of Chinese companies to shift to it from the Global Positioning System. African and other nations with close ties to China might also consider utilizing these technologies for military and security purposes, including peacekeeping efforts. A sense of crisis about China's moves to create StarLink-like systems is emerging in the U.S. and Europe. The German government blocked a space-related company in Shanghai -- a big shareholder in a Berlin-based satellite startup -- from buying shares in it from other holders. U.S. aerospace giant Boeing has canceled a satellite sales contract with a U.S. startup after it was revealed that a Chinese government-backed entity had invested in the company. Meanwhile, a space company partly owned by the Shanghai municipal government has a plan to put 12,000 satellites into low Earth orbit. The company said it will launch more than 600 of them by the end of 2025. GalaxySpace (Beijing) Technology, a private company founded by people from the internet industry, plans to send up 1,000 low-orbit satellites. Visited by Premier Li Qiang in April 2023, GalaxySpace will step up its project to build a satellite constellation with support from the government. In addition, military-industrial complex enterprises CASC and China Aerospace Science and Industry Corp. are pushing ahead with plans to launch more than 300 and 200 low-orbit satellites, respectively. Chang Guang Satellite Technology, backed by the provincial government of Jilin among others, began sending up low-orbit satellites in 2015 to provide high-definition images to customers. It plans to increase the number of satellites to 138 by 2025.

Mongolia in Talks with SpaceX to Launch First National Satellite

The Mongolian government said that it is in talks with Elon Musk's SpaceX to launch the country's first national telecommunications satellite, its latest move to improve connectivity and develop its "domestic space economy." The satellite, currently being constructed by French company Thales Alenia Space, is tasked with improving Mongolia's disaster management and emergency response, increasing broadband internet access and supporting its scientific research and education among other purposes, the government said in a statement. "Launching our own satellite marks a defining moment for Mongolia's journey towards becoming a spacefaring nation," Mongolia's Minister of Digital Development and Communications Uchral Nyam-Osor said in the statement. "It signifies Mongolia's commitment to fostering a thriving domestic space industry and its pursuit of a digital future driven by cutting-edge innovation," Nyam-Osor added. The talks came after Mongolia granted two licences for SpaceX to operate as an internet service provider using low-orbit satellites last year, which would enable millions of internet users in the country to access high-speed connection via Starlink.

Sateliot to Launch Four 5G Satellites

Sateliot has announced that it has entered into a partnership with SpaceX to launch four new satellites into space in 2024. The company, which counts firms such as Indra, Cellnex and Sepides as partners, said it is the first to operate a low-Earth orbit (LEO) 5G internet of things (IoT) satellite constellation acting as a "seamless" roaming extension of cellular networks, and that with the deployment of these four satellites plus the two already orbiting the Earth, it is entering the first phase of its constellation and opening its commercial phase. The Spanish company has recently raised €13.5m. In addition to the €6m from Banco Santander, €5m has come from a convertible note, and the remaining €2.5m from a participative loan from public company Avançsa. Sateliot said these funds, along with the start of Series B, will allow it to advance its technology development, launch the four satellites and strengthen its team for the complete deployment of its constellation in 2027/2028, providing real-time coverage worldwide. The four satellites comprise cubesats, each 20 x 10 x 35cm in size. They are the size of a microwave, and have a net weight of 10 kilograms. They will orbit at an altitude of between 500 and 600 kilometers, have a lifespan of five years and are said to cover 100% of the planet. Sateliot stressed that the fundamental part of these satellites lies in their interior, supported by their own innovative technology, tested and validated by the European Space Agency (ESA) and mobile communications standards body 3GPP. Complying with such standards is said by the company to be the key to making the craft scalable, and easy to maintain and update, allowing for the progressive deployment of the constellation according to customer demands. The firm believes its offer will start with connectivity services for IoT applications such as agriculture, which only require two daily messages, and end with real-time services worldwide. This way, Sateliot can provide service with its first-phase constellation as opposed to other companies that need to deploy many more satellites for a similar commercial start. Sateliot has already built up a sales pipeline of more than €1bn, with companies boasting a diversified range of use cases and geographies. Sateliot will now begin billing the €187m of binding orders with over 350 clients in more than 50 countries worldwide. With these recurring revenues, the company aims to generate €500m in revenue by 2027 and become a $1bn revenue company by 2030. Commenting on the launches, Sateliot CEO and co-founder Jaume Sanpera said: "We are ready to enter a new dimension, both technologically and commercially. We are closer to becoming the first IoT constellation operating worldwide under the 5G standard, and we will place Spain at the forefront of the New Space revolution."

Algerie Telecom Turns to Satellites to Improve Connectivity

Algérie Télécom is increasing partnerships to improve telecoms services on the national market. The incumbent operator signed a memorandum of understanding with its competitor Ooredoo last January, about two weeks after concluding a similar agreement with Djezzy. Algérie Télécom signed a partnership agreement with Algérie Télécom Satellite (ATS) last week. The two subsidiaries of the Algérie Télécom Group are committed to working together to improve connectivity services for citizens and businesses. As part of this collaboration, both parties will implement a series of initiatives while leveraging each other's skills and expertise. These include the implementation of innovative professional solutions, the integration of cutting-edge technologies and the modernization of telecommunications networks. The partnership is part of Algérie Telecom's global strategy focused on technological innovation and continuous improvement of service quality. To this end, the company has already signed agreements with players in the telecoms sector such as Djezzy and Ooredoo. It is now turning to satellites, because the said technology offers a greater range allowing it to reach even populations living in rural, remote areas and difficult to access for its terrestrial networks. This initiative is therefore expected to help improve the adoption of connectivity services in the country. This should also help accelerate the Algerian government's ambition to develop the "information society" through infrastructure, telecommunications means and the use of ICT. Furthermore, the executive has made improving the quality of connectivity and the generalization of access to high and very high speed Internet one of the priorities of its general policy. As a reminder, Algeria had 50.5 million subscribers to mobile telephone services in the third quarter of 2023, according to statistics from the Post and Electronic Communications Authority (ARPCE). The number of Internet users was 52.2 million.

China Launches First High Orbit Internet Satellite

China launched the first of a new "high orbit" internet satellite series Thursday, apparently to provide internet services to China and surrounding areas. A Long March 3B/G rocket lifted off from Xichang Satellite Launch Center in southwestern China. The China Aerospace Science and Technology Corp. (CASC) announced launch success within an hour of liftoff. CASC's statement revealed the previously undisclosed payload to be High orbit satellite internet-01 (Weixing Hulianwan Gaogui-01). AIrspace closure notices revealed that a Long March 3B/G launch was planned from Xichang for Feb. 29, indicating that a payload was likely destined for geosynchronous transfer orbit. In Chinese, high orbit refers to orbits above low Earth orbit, rather than specifically to high Earth orbit (HEO). Initial Chinese state media reports on the launch provided no details of the satellite. CASC revealed only that the satellite was developed by the China Academy of Space Technology (CAST), a major spacecraft maker. China already operates a series of ChinaSat (Zhongxing) geostationary communications satellites, with CASC directly involved in the joint venture. ChinaSat-26, China's first satellite providing more than 100 gigabits per second (Gbps), was launched in February last year. State media Xinhua reported in November that a first high orbit internet satellite had been completed and would be used to provide coverage for the entirety of China and key areas along the "Belt and Road" initiative. "In the future, China Satcom will promote the construction of satellites with larger, single-satellite capacity. It is expected that by the end of the "14th Five-Year Plan", the total capacity of high-throughput communication satellites will exceed 500 Gbps," Xinhua reported, referring to the period 2021-2025. Notably China also has plans for two low Earth orbit satellite internet constellations. These are the national Guowang program and the Shanghai-backed G60 Starlink constellations. These projects will require a surge in launch rate and launch capacity and could provide contracts for China's commercial launch service providers. The launch was China's 10th of 2024. CASC this week revealed that China will aim to conduct around 100 launches this year. CASC is targeting around 70 launches, with commercial launch entities planning roughly 30 further launches. Major missions include two crewed and two cargo missions to the Tiangong space station. The first half of the year will see the launch of the Queqiao-2 lunar relay satellite. That spacecraft will support Chang'e-6, a first-ever lunar far side sample return mission.

Intelsat and CDL to Deliver Land Mobility Services Throughout India

An expanded connectivity offering from two major names in satellite communications – Intelsat and CDL – is said to hold out the promise of delivering new land mobility services throughout India. Intelsat, operator of one of the world's largest integrated satellite and terrestrial networks, and India-based Cloudcast Digital Limited (CDL), a provider of technology-led satcom solutions and services, have expanded satellite communication connectivity using Intelsat's FlexMove, an end-terminal, fully managed service, to deliver land mobile services to customers in hard-to-reach locations throughout India. CDL's technology services are managed by Planetcast Media Services Limited, a teleport and video platform services provider. Planetcast is also a long-time Intelsat media customer on Intelsat 17 and Intelsat 20, both of which are leading satellites for video distribution services to customers in India. In 2022, CDL and Intelsat introduced Flex services into India, combining Intelsat satellite capacity over the region, a Flex gateway in Noida in India's northern state of Uttar Pradesh, and CDL's In-Flight and Maritime Connectivity (IFMC) licence to deliver FlexMaritime service for vessels traveling in Indian territorial waters. Specifically designed for global commercial maritime trade routes FlexMaritime delivers high-speed, reliable connectivity that powers business at sea. Intelsat explains that the Flex service simplifies the management and delivery of broadband services and connectivity to enterprise and mobility customers around the globe. Indeed, Intelsat and CDL are now expanding the capabilities of the Flex service over India to include the availability of FlexMove. With FlexMove, CDL will deliver service for land-mobile applications, enabling rapid response to support disaster relief operations for border security, police forces, and disaster relief agencies using vehicle-mounted and backpack solutions for communications. Additional Flex services will include the high-throughput enterprise network connectivity solution FlexEnterprise and FlexExec, described as the only network built for business aviation. These multiple approaches will enable the provision of maritime, enterprise, business jet, land mobile and media services to customers in India.

Ofcom Looks to Approve BeetleSat's LEO Broadband Satellites

The UK telecoms regulator, Ofcom, has proposed to grant an Earth Station Network License (ESNL) to NSLComm in support of its plans to launch a new global constellation of 264 satellites in Low Earth Orbit (LEO), which could be used to provide broadband to mobile sites (backhaul), as well as military, aviation, maritime and enterprises. The new BeetleSat constellation is said to be based upon a new type of Ka-band deployable antennas, as developed by NSL Comm based in Israel (the company also has European HQ's in the UK and Spain). The goal is to launch 264 satellites to an altitude of 720km, sitting along 12 orbital planes (each comprising 22 satellites). Each spacecraft is designed to handle data capacity of up to 8Gbps (Gigabits per second), with the network delivering a total capacity of 2Tbps (Terabits per second) once fully deployed. The first test satellite was launched a year ago via a SpaceX Falcon 9 rocket and, under the current plan, the initial batch of satellites for the operational system will be launched during the "second half of 2026". However, in order for the network to become operational in the UK, Ofcom must first grant an ESNL. This would allow the new operator to deploy user terminals – the dishes and antennas used by customers to connect to a satellite network. These can be situated on a building, in the air or at sea. NSLComm has applied to

use the frequencies 27.5 – 27.8185 GHz, 28.4545 – 28.8265 GHz and 29.5 – 30 GHz. At the time of writing, four satellite operators already hold NGSO network licenses, including competing networks related to Starlink (SpaceX), OneWeb (Eutelsat), Telesat and a company that we're not immediately familiar with – Mangata Edge Ltd. Ofcom's preliminary view is that "the Beetlesat constellation should be able to coexist with operators of existing systems without causing undue degradation. However, we encourage all parties to continue cooperating in good faith between now and the launch of the BeetleSat constellation." The consultation on their proposed license approval is set to run until 29th February 2024.

Mongolia Launches Two Nano Sats and a Space Sector Sandbox

Mongolia got a head start this week in its ambition to launch a national satellite with the launch of two domestically manufactured low earth orbit (LEO) nano satellites and a 'sandbox' to develop the local space industry. The two Cubesat satellites – Ondosat-Owl-1 and Ondosat-Owl-2 – were successfully launched on Monday aboard a SpaceX Falcon-9 rocket from the company's Vandenberg Space Force Base launch site. According to a government statement released on Thursday, Ondosat-Owl-1 and Ondosat-Owl-2 were built by Mongolian company Ondo Space, and successfully completed rigorous space environmental testing at Japan's Kyushu Institute of Technology. The Mongolian government also announced it will establish a 'space sandbox' to support continued

growth of its domestic space sector. The 'sandbox' is a "comprehensive new framework to provide regulatory and policy support for companies to conduct testing and R&D in Mongolia, while making use of the country's newly enhanced connectivity and competitive talent pool." Uchral Nyam-Osor, Mongolia's Minister of Digital Development and Communications, said the dual nano satellite network and space sandbox will position Mongolia as a high-value investment and research destination for global companies across the space and technology sectors. "Introducing a regulatory 'sandbox' within a comprehensive legislative framework aimed at facilitating the business landscape for cutting-edge technologies will ensure that the government actively fosters ongoing growth and innovation across key domains such as the space economy, artificial intelligence, IoT, and other emerging technologies," he said in a statement. The Cubesat launch comes as the Mongolian government holds discussions with SpaceX to launch the country's first national satellite: "Chinggis Sat", named after national hero Chinggis Khan. The Ministry of Digital Development and Communications signed a contract with Thales Alenia Space in October 2023 to build Chinggis Sat. No tentative launch date has been announced as yet. Chinggis Sat is a geostationary Ku-band satellite that will provide high-speed internet available throughout Mongolia, including rural areas and underserved nomadic communities, giving them the necessary connectivity to carry out the government's digital transformation ambitions under its Vision 2050 and New Recovery Policy. Mongolia is also tapping other satellite resources to enable that connectivity. Last Friday, SpaceX's Starlink officially launched services in the country, after receiving permission to do so last year.

AST SpaceMobile Attracts Investments from AT&T, Google and Vodafone

AST SpaceMobile has attracted significant investments totaling $206.5 million from industry giants AT&T, Google, and Vodafone. The investment includes $155 million as a strategic infusion and an additional $51.5 million to be drawn from the company's existing senior-secured credit facility. This latest investment round underscores confidence in AST SpaceMobile's technology and its position in the emerging space-based cellular direct-to-device market. The company aims to provide connectivity to the 5.5 billion cellular devices worldwide when they are out of traditional coverage. Abel Avellan, Chairman and CEO of AST SpaceMobile, commented: "Our vision has always been to collaborate with the world's leading wireless companies. This investment signifies tremendous confidence in our ability to ensure the future of cellular is borderless." AST SpaceMobile currently operates the largest commercial communications array in low Earth orbit, the BlueWalker 3 satellite. The company has patented technology

that enables broadband connectivity directly to unmodified cellular devices, adhering to today's cellular standards. In 2023, AST SpaceMobile achieved several historic technical milestones in space-based cellular communications – including 2G, 4G LTE, and 5G calls – demonstrating download speeds of 14 Mbps per 5 Mhz channels directly to everyday smartphones. With agreements with over 40 mobile network operators globally, servicing over two billion subscribers collectively, AST SpaceMobile's technology aims to eliminate cellular connectivity gaps globally. Chris Sambar, Executive Vice President, Head of Network, AT&T, said: "Through our work with AST SpaceMobile, we've already proven the possibilities that satellite has to offer in helping connect more people via text, voice and video. "We're excited to deepen our relationship with this investment as we continue to drive a first-of-its-kind innovation forward and work together to achieve this shared vision of space-based connectivity for consumers, businesses and first responders all around the globe." The strategic investment includes $110 million in 10-year subordinated convertible notes, a $20 million revenue commitment from AT&T, and a $25 million minimum revenue commitment from Vodafone. In addition to the investment, Vodafone and AT&T have placed purchase orders for network equipment, while Google and AST SpaceMobile will collaborate on product development, testing, and implementation plans for SpaceMobile network connectivity on Android and related devices. Margherita Della Valle, CEO of Vodafone, commented: "Vodafone's investment and collaboration with AST SpaceMobile will help make our mobile connectivity services available everywhere for our customers across Europe and Africa. "Customers in remote rural areas, on land or out at sea, will be able to benefit from fast and reliable 5G broadband directly to their existing smartphones without the need for specialist equipment."

Es'hailSat and Viasat Energy Services Announce MENA VSAT Deal

Qatar-based communications satellite operator Es'hailSat has joined forces with managed services network infrastructure group Viasat Energy Services to provide high-speed VSAT services across the Middle East and North Africa (MENA) region. Satellite Today reports that, through a new capacity deal, Viasat Energy Services is securing capacity on multiple transponders on the Es'hail-1 satellite located at the 25.5 degrees East hotspot. It will also use teleport services from Es'hailSat's facility in Doha, Qatar to provide the VSAT services. Es'hailSat says its robust data services and expansive teleport infrastructure spanning over 50,000 square meters provide a strong foundation for Viasat Energy Services to enhance its capabilities and serve customers across the MENA region. The deal follows an initial agreement between the two companies in 2023. This collaboration targets a number of industries requiring reliable high-speed connectivity in remote and challenging environments including government, maritime, and oil & gas. Viasat Energy Services, part of global communications company Viasat, provides optimized industry solutions and secure communications infrastructure, and assists industrial companies in achieving the business value of digital transformation by ensuring seamless connectivity across diverse operations and remote locations. It was formed In 2021 when, RigNet, a secure managed networking solutions and specialized applications developer, merged its capabilities with Viasat.

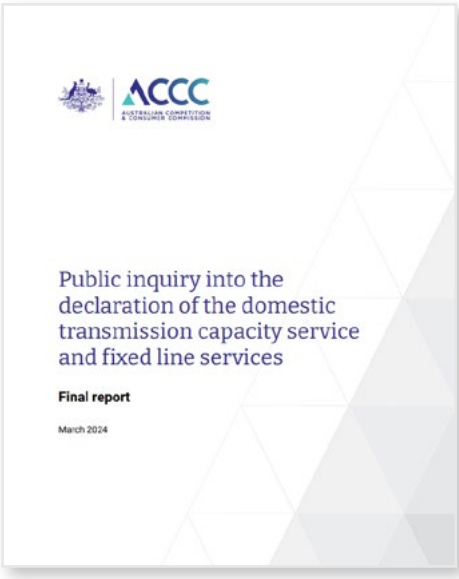
WHOLESALE NEWS

Lifecell 5G in Roaming Available Now in 47 Countries

Lifecell subscribers have been able to use 5G mobile Internet in roaming for almost a year. The operator provided this option for lifecell roaming in 47 countries, if the smartphone supports this standard. Now in Australia, Austria, Argentina, Belgium, Bulgaria, Great Britain, Hong Kong, Greece, Denmark, Dominican Republic, Estonia, Israel, Iceland, Spain, Italy, Kazakhstan, Canada, Qatar, China, Cyprus, Kuwait, Latvia, Liechtenstein. , Netherlands, Germany, Norway, United Arab Emirates, Oman, Portugal, Romania, Saudi Arabia, Singapore, Slovakia, Slovenia, Taiwan, Thailand, Turkey, Hungary, Finland, France. Sweden, lifecell subscribers with 5G gadgets can take advantage of this generation of communication. The list of countries where the new communication standard will be available to lifecell subscribers is constantly increasing, a detailed list can be found on the lifecell website. Since May 2023, when 5G roaming became available to lifecell subscribers, almost 200,000 people have used this opportunity. The top 5 countries where the most lifecell subscribers use 5G are Germany, Romania, the Czech Republic, Spain and Turkey /strong>. The largest amount of GB per 5G subscriber in Germany is about 14 GB, in Turkey this indicator is about 10 GB, in the Netherlands – 9 GB. The rather high rates of mobile Internet consumption in roaming are influenced by the possibility of using tariff Internet from the lifecell promotion “Gigabytes without borders”. The most popular devices on which lifecell subscribers use 5G are Apple smartphones. Among them: iPhone 14 Pro Max, iPhone 13, iPhone 13 Pro Max, iPhone 12 Pro Max, iPhone 12, iPhone 14 Pro, iPhone 13 Pro, iPhone 12 Pro, iPhone 15 Pro Max, iPhone 14. The smartphone is gaining popularity among Android users Galaxy A53 5G, which is used to connect to the 5G network. In 2019, lifecell and Ericsson Ukraine deployed a demo segment of the fifth generation network and conducted a successful speed test, during which a peak data download throughput of 25.6 Gbps was achieved in the ultra-high frequency band of 28 GHz. In 2020, the operator rolled out a 5G test segment at its central office to explore the technology’s capabilities.

ACCC Inquiry Leads to Wholesale Telecoms Revisions

New telco rules are on its way following the Australian Competition and Consumer Commission (ACCC) report reviewing its telecoms regulations. Launched in May 2023, the ACCC began a combined public inquiry into whether nine wholesale telecoms services that support the provision of broadband, voice and data transmission services should continue to be regulated. At present, telecoms services in Australia are typically unregulated unless the services are declared. The decision to declare a service is based on the ACCC being satisfied that said declaration would be in the best interests of its citizens. The nine declared services included in the inquiry were, domestic transmission capacity service, wholesale line rental, local carriage service, wholesale ADSL service, unconditioned local loop service, line sharing service, fixed originating access service, fixed terminating access service and domestic mobile terminating access service. As part of the inquiry, the ACCC investigated how recent developments, including the completion of the National Broadband Network (NBN) and declining use of Telstra’s copper network, have changed how telecoms services are accessed as well as how competition is protecting its citizens. The ACCC has decided it will allow the currently declared unconditioned local loop and line sharing services to expire on 30th June 2024. “While these two legacy network access services once enabled greater competition on Telstra’s fixed line network, the number of consumers and businesses using them is fast approaching zero due to migration to networks such as the NBN,” said Anna Brakey, commissioner at the ACCC. In addition, the regulator also found that other parts of Telstra’s fixed line network continue to show bottleneck and natural monopoly characteristics for voice and broadband services. This is particularly prevalent in in regional and remote areas, as well as outside the NBN fixed line network. As a result, the ACCC will extend the declarations of wholesale line rental, the local carriage service and the wholesale ADSL service for a further five years. “In the absence of alternative services that can compete as close substitutes to these fixed line services, we decided that extending their declarations was in the long-term interests of consumers. These services will promote



competition outside the NBN fixed line network," added Brakey. While the ACCC says it will extend the declaration of the domestic transmission capacity service for a further five years, it will remove regulation in geographic areas where competition is effective. "Competition in regional and remote areas is often limited due to the significant initial investment needed to set up transmission capacity infrastructure," said Brakey. "Continuing to regulate transmission capacity infrastructure will not only promote competition in regional and remote areas but will likely lead to more efficient use of this infrastructure." At the same time, it will simplify the description of domestic transmission capacity service, so it accurately reflects changes in technology since it was last updated. The ACCC will also extend the declaration of the fixed originating and terminating access services until 30th June 2029. The service descriptions for the fixed originating and terminating access services will be updated to reflect the latest industry developments. "As there are no close substitutes to fixed line voice services, declaring the fixed originating and terminating access services will promote competition by preventing fixed network operators from exercising market power in setting unreasonable terms of access," concluded Brakey.

New Mobile Roaming Alerts for UK Holidaymakers

UK mobile customers will be better protected against unexpected roaming charges while using their phone abroad and at home, under new rules announced by Ofcom. Following the UK's exit from the European Union, EU 'roam like at home' rules – and UK law requiring mobile operators to alert customers of roaming charges when they start to roam – have ceased to apply. Since then, many operators have voluntarily continued to send their customers alerts. However, a review by Ofcom found that the quality of information being provided can be inconsistent and unclear. Our research found that nearly one in five (19%) holidaymakers are unaware they could face extra charges when using their phone abroad, and a similar proportion (18%) said they do not research roaming charges before travelling. To make sure all mobile customers are given the information they need – when they need it – Ofcom is introducing new protections. From 1 October 2024, mobile providers need to notify customers when they start roaming. Providers also need to provide clear, free to access information so customers can make informed decisions about whether – and how – to use their mobile phone abroad. This includes ensuring customers understand any roaming charges, including:

- any fair use limits or time limits that apply;
- that they can set a spend cap to limit their spend; and
- where to find additional information about roaming.

ACCC Extends Wholesale Price Controls to Superfast Fixed-Line Broadband Networks

Australians on broadband plans provided by non-NBN fixed-line networks should benefit from more stable pricing and greater competition between retailers, following the ACCC's decision to make a final wholesale access determination for the declared superfast broadband access service (SBAS). TPG and Uniti Group Limited (Uniti) are the two largest suppliers of the SBAS. Their networks combined cover more than one million premises, primarily in apartment buildings and new residential housing estates. In many areas they are the sole fixed-line broadband network operator. The access determination sets maximum

wholesale prices and other important terms and conditions for retailers to access the networks. The regulation will apply if the network owners and retailers cannot reach satisfactory commercial agreements. "We have made this access determination so the one million or so Australians who rely on these networks for internet at their homes or businesses can select from a broader range of retailers and offers that can better meet their needs," ACCC Commissioner Anna Brakey said. "The final regulation we've settled on contains specific price terms, benchmarked against NBN Co's pricing, that will enable consumers and businesses to find retail offers that are similar to, or better than, those available on the NBN." Regulated monthly prices for the 25/5 and 50/20 Mbps speed tiers will give retailers greater certainty over the access costs they pay. Because of the benchmarking against equivalent NBN access costs, retailers will be able to develop consistent product offerings to consumers across all networks. The changes will put downward pressure on the wholesale cost to access the entry level 25/5 Mbps service and the popular 50/20 Mbps service. The ACCC expects the regulated price terms for the 50/20 Mbps speed tier will also constrain wholesale prices for higher speed tiers. The access determination will also regulate connection, transfer, and appointment charges for SBAS networks, which will make it easier for households to switch retailers and will limit their potential exposure to missed appointment fees or other ad hoc charges. "We're confident that our final decision strikes the right balance between protecting the long-term interests of consumers and allowing the network providers to earn the revenues required to continue to invest and improve their networks over time," Ms Brakey said. The new access determination will come into force on 1 September 2024 and apply until 1 March 2027. The ACCC consulted extensively with the SBAS providers, retailers, industry, and consumer groups throughout its inquiry.

Telefonica Chief Likens API Impact to Roaming

Jose Maria Alvarez-Pallete, President and CEO of Telefonica, argued the GSMA Open Gateway API initiative could unlock billions in fresh revenue for operators, delivering an impact not felt since the introduction of roaming almost 40 years ago. The operator executive and GSMA chair told Mobile World Live the move to open APIs to developers is a no-brainer because it uses elements of 5G and fiber networks which already exist, meaning there is little to no cost involved. He believes there is a "massive market" for operators willing to take a leap of faith, explaining exposing the capabilities of networks "in a standardized manner is relatively simple" if there is agreement among service providers. Alvarez-Pallete noted when operators collaborated on roaming 37 years ago, "we changed the world", predicting the Open Gateway initiative would have the same impact. Figures released by the GSMA during MWC Barcelona 2024 show the initiative is gathering pace, with 47 operator groups already on board. Alvarez-Pallete noted fiber and 5G are no-longer simply telecommunications networks, instead effectively being "something much more powerful, some massively decentralized supercomputer". "So at the end of the day, exposing the capabilities of this thing to everybody to make sure that we are able to monetize elements of the network" operators are "building anyhow", means they can exploit those to generate revenue.

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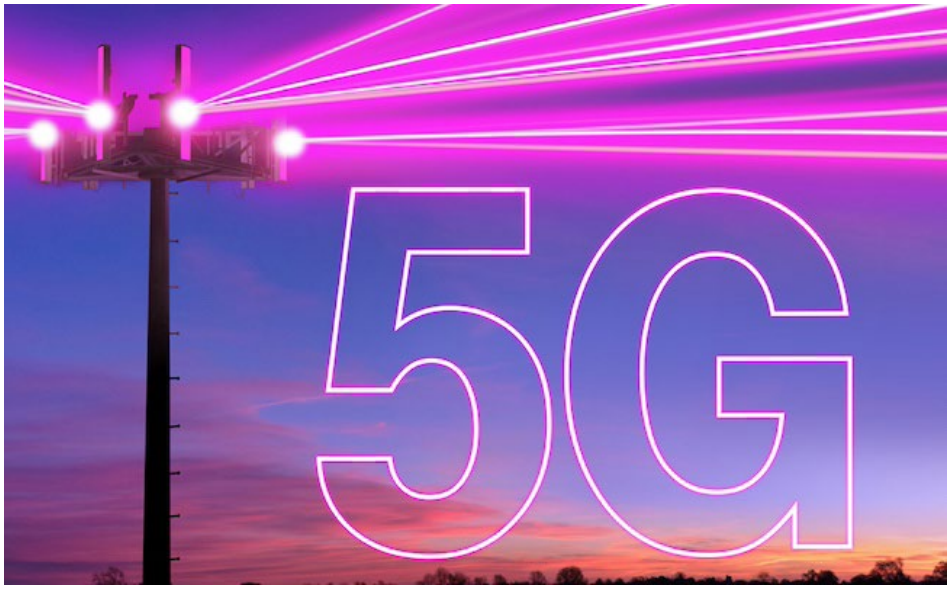
TECHNOLOGY NEWS

T-Mobile US Targets 2.5GHz 5G Boost

T-Mobile US finally gained Federal Communications Commission (FCC) approval to deploy 2.5GHz spectrum it won in an auction in 2022, most of which it plans to deploy over the next few days to boost performance on its 5G network. The operator stated it would add the spectrum to almost 11,000 sites covering nearly 60 million customers over roughly 300,000 square miles, with the remainder of the spectrum to be deployed as new towers are built. It detailed the plan on 6 March, a little over a week after the FCC approved access despite an objection by AT&T due to concerns the allocation "would exacerbate a 5G spectrum imbalance and deepen concerns about long-term wireless competition". T-Mobile agreed to divest some of the 2.5GHz spectrum in Hawaii as a condition for the FCC's approval. The spectrum was in limbo after the FCC lost its allocation authority in March 2023. T-Mobile stated customers would experience an immediate boost in 5G performance. In addition to faster data rates, T-Mobile previously stated it would be able to extend the reach of fixed wireless access service by using the spectrum. CEO Mike Sievert said the spectrum can be deployed immediately due to years of planning.

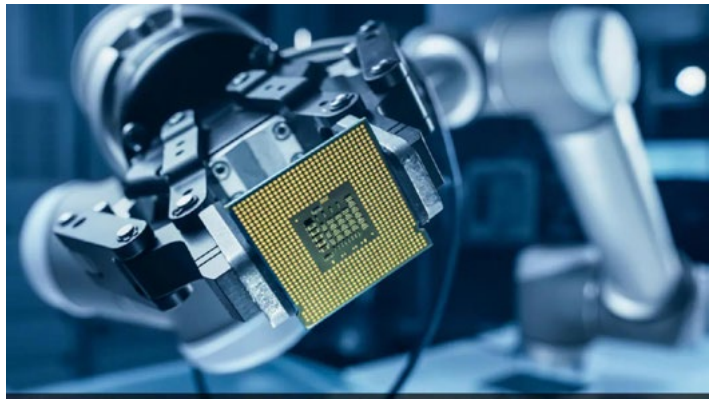


Malaysia Successfully Tests First 5.5G Technology in Southeast Asia

Maxis, one of the oldest and largest telecommunications companies in Malaysia, announced on February 23 that it and Chinese tech giant Huawei have successfully staged the first 5G-Advanced technology trial in Malaysia and Southeast Asia. The '5G-Advanced Trial Showcase' included a live speed test to demonstrate 5G-Advanced's capabilities to achieve ultra-fast peak speeds of up to 8Gbps. 5G-Advanced, also known as 5.5G, promises up to 10 times improvement in speed, connected devices, and latency compared to 5G. Chairman of the Malaysian Communications and Multimedia Commission (MCMC) Tan Sri Mohamad Salim bin Fateh Din said that this 5.5G trial demonstrates the potential of Malaysia's telecommunications sector to contribute meaningfully to advancing communications connectivity. He expressed his hope that more industry players will pioneer innovative technologies that will help Malaysian enterprises move up the value chain through next-generation commercial and industrial solutions. This will position Malaysia as a front-runner in telecommunications globally, he added.

India to Begin Domestic Chip Production with $15.2 Billion Investments

India has approved the construction of three semiconductor plants worth 1.26 trillion rupees ($15.2 billion), as the country aims to become an electronics global leader and decrease its reliance on chips from abroad. The announcement of the project ties into the "Make in India" initiative, which was launched in 2014 to transform India into a global hub for design and manufacturing. The first of the plants will be built in Dholera, Gujarat, by a partnership between Tata Electronics and Powerchip Semiconductor Manufacturing Corporation, with the companies jointly investing almost $11 billion. The new plant will focus on mature 28nm technology, which is widely used in industries such as automobiles, consumer electronics, and defence. The second plant will be set up in Morigaon, Assam, with an investment of $3.26 billion by Tata Semiconductor Assembly and Test Pvt Ltd. This site, by contrast, will focus on "indigenous advanced semiconductor packaging technologies including flip chip and integrated system in package technologies" in the automotive, electric vehicles, and electronics industries. India's third plant will be built in Sanand, Gujarat via a nearly $1 billion investment from a partnership between CG Power, Japan's Renesas Electronics Corporation, and Thailand's Stars Microelectronics. This plant will also produce chips for consumer, automotive, and power applications. "This is a big decision for the country and a key accomplishment towards making India



a self-dependent country," Indian Electronics Minister Ashwini Vaishnaw told Reuters. "India already has deep capabilities in chip design. With these units, our country will develop capabilities in chip fabrication. Advanced packaging technologies will be indigenously developed in India." India, who does not yet have a chip making plant, estimates that its semiconductor industry will be worth $63 billion by 2026, rivalling that of market leader Taiwan. It is estimated that the three plants will create a total of 80,000 jobs–20,000 in advanced technology and 60,000 indirect positions.

Telecom Egypt Trials 5G, 1.2 Tbps DWDM and 50G PON

Telecom Egypt released a barrage of announcements at Mobile World Congress this week covering two 5G partnerships, Africa's first 1.2 Tbps fiber connection and a 50G PON trial. Telecom Egypt and Huawei said they have formed a strategic partnership to deploy 5G network. Under the partnership, Huawei will offer its latest network solutions including 5G wireless, 5G service-oriented core and 5G-ready transport network. Huawei said it has collaborated with Telecom Egypt to established 5G sites in hotspot areas across Egypt. Meanwhile, Telecom Egypt also announced with Ericsson that they have successfully trialed 5G across several key locations in Egypt's New Administrative Capital using 2.6 GHz

spectrum. For that trial, Ericsson deployed a 5G non-standalone (NSA) solution using 4G/5G radios from the Ericsson Radio System connected to Ericsson's Evolved Packet Core (EPC) and Unified Data Management (UDM). On the fiber network front, Telecom Egypt also said it successfully collaborated with Huawei to complete the trial of what they claim is Africa's first 1.2-Tbps single channel DWDM connection. The 1.2-Tbps channel uses Huawei's concentrated wavelength division optical fiber technology, which Huawei says increases the bandwidth of existing fiber networks. The 1.2Tbps coherent solution – which will be utilized in Telecom Egypt's live network "soon" – will deliver the transmission reach, spectral efficiency, latency, and system energy consumption to support the telco's 5G network, Huawei said. The technology can also support applications such as metro, short-haul, and data center interconnect (DCI) on a single wavelength. Telecom Egypt and Huawei also announced that they have completed what they're billing as the first 50G PON trial in Africa. The test results demonstrated that the upload and download rate of Huawei's 50G PON prototype meet the standard requirements. The test also verified the capability of managing 50G PON ONTs and supporting the G/10G 50PON combo function. The test also verified that 50G PON is compatible with Telecom Egypt's existing fiber optic network, and works seamlessly with the optical distribution network (ODN) on optical devices, paving the way for future development. Huawei said the technology will enable Telecom Egypt's broadband offerings to support UHD video, virtual and augmented reality and industrial digitization.

5G Momentum Continues with 1.6 billion Connections Worldwide, Rising to 5.5 billion by 2030, According to GSMA Intelligence

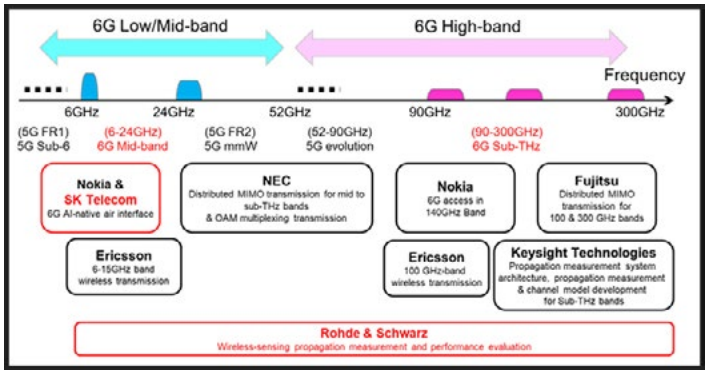
Industry opportunities driven by developments in 5G Standalone, 5G-Advanced, enterprise IoT and AI, GSMA Open Gateway and new revenue realization through the BCE standard. New figures from GSMA Intelligence (GSMAi) show 5G connections are expected to represent over half (51%) of mobile connections by 2029, rising to 56% by the end of the decade – making 5G the dominant connectivity technology. 5G has been the fastest mobile generation rollout to date, surpassing one billion connections by the end of 2022, rising to 1.6 billion connections at the end of 2023 and 5.5 billion by 2030. As of January 2024, 261 operators in 101 countries had launched commercial 5G services, and more than 90 operators from 64 markets have committed to rollouts. Of the 261 commercial 5G services available, 47 are provided by 5G Standalone (SA) networks, with a further 89 planned deployments near-term that will take advantage of network slicing, ultra-reliable low-latency communications support and the simplified 5G SA network architecture. The growth of available 5G SA networks, and improved support for private & dedicated networks, will support a massive number of connected devices and help to realise the global IoT vision for the enterprise. GSMAi data shows the enterprise segment now counts 10.7 billion IoT connections (versus 10.5 billion consumer connections) and this momentum is expected to continue, with enterprise connections more than doubling to 38.5 billion by 2030 and smart buildings and smart manufacturing accounting for 34% and 16% of total enterprise connections respectively. Beyond 5G SA, the availability of 5G-Advanced with 3GPP Release 18 will be another key 5G milestone in IoT delivery, providing the catalyst for new 5G investment throughout 2024 and into 2025. GSMAi data shows over half of operators expect to begin deploying 5G-Advanced within a year after commercial availability of 5G-Advanced solutions, driven by priority use cases such as 5G multicast services and low-cost IoT support. GSMAi predicts a fourfold rise in mobile data traffic between now and 2030 with expansions in 5G coverage and capacity playing a prominent role, showcasing the importance of continued infrastructure investments. It is predicted that monthly global mobile data traffic per connection will grow from 12.8 GB in 2023 to 47.9 GB in 2030. The increasing use of Generative AI (GenAI) – 56% of operators are currently testing applications – will also likely fuel this growth. This will be driven by applications including the use of GenAI-enabled chatbots for customer service efforts or the continued growth of AI-generated video and music content. Peter Jarich, Head of GSMAi, said: "The early success of 5G was driven by enhanced mobile broadband (EMBB) and EMBB-related network traffic requirements. Yet, while consumer requirements will continue their trajectory, we're now seeing use cases beyond that. Opportunities are now appearing in areas including API monetisation and 5G RedCap for enterprise IoT – all supported by 5G-Advanced and 5G SA networks. 5G SA brings home 5G's early promise, particularly where slicing, low-latency and massive IoT capabilities tied to enterprise service needs can be met. 5G-Advanced will only extend that further."

Singtel Claims World-First with App Slicing Tech

Singtel teamed with Ericsson and Samsung to unveil what it claimed is the world's first live implementation of app-based network slicing, designed for services requiring higher data performance. The Singapore-based operator stated app owners would be able to activate a dedicated, customized slice of its 5G network to boost the performance of their wares and improve user experience. Singtel claimed the offering is unique from other slicing technologies, which are only able to provide a differentiated network experience to subscribers' lines and not selected apps. The implementation uses a network slicing technology known as User Equipment Route Selection Policy (URSP) with Application Detection Control and was tested on the operator's entertainment application CAST during the live streaming of the recent Australian Open tennis tournament. USRP runs on Ericsson's dual-mode 5G core and channels data traffic through a dedicated optimal path between smart devices and Singtel's network. Samsung configured USRP for its Galaxy S24 Ultra smartphone and plans to extend rollout to other devices. Singtel stated the technology enables a host of use cases and can be beneficial for apps catering to workplace productivity, enterprise communications, and gaming and media streaming, in addition to AI, and augmented and extended reality. Tay Yeow Lian, MD of networks at Singtel Singapore, said data consumption and processing will soar due to 4K video and AI, meaning demands on operator networks will increase and so strain app performance. "We're proud to be the first in the world to deploy this slicing technology on our 5G network to deliver the best app performance even when there is high network congestion," he added.

DOCOMO and NTT Team Up with SK Telecom and Rohde & Schwarz for 6G Research

There is little doubt that 6G is still many years from commercial reality, but interest in the nascent technology is nonetheless growing steadily throughout the telecoms ecosystem. This week, Japanese telecoms giants NTT DOCOMO and NTT have announced that their pool of 6G research partners is growing, with South Korean operator SK Telecom and electronics testing specialist Rohde & Schwarz stepping into the fold. The new partners will help collaborate on various 6G trials currently taking place in Japan focused on exploring potential frequency bands for the new technology. More specifically, SK Telcom will join an existing trial by DOCOMO, NTT, and Nokia aiming to explore the use of AI to "tailor radio interfaces for various propagation environments". A press release from Nokia gave further detail, describing the collaboration as focusing on developing a '6G AI-native air interface (AI-AI), a critical next-generation technology that could greatly boost network performance while increasing energy efficiency'. This includes created a future proof-of-concept for 6G AI-AI systems, which can then be tested under real-world conditions. "For Nokia to create a world-class 6G system, it's critical we get input from the service providers that will one day deploy 6G. SKT, NTT and DOCOMO are among the most innovative service providers in the world, which gives us the perfect partners to design the networks of the future," explained Peter Vetter, President of Bell Labs Core Research at Nokia. Given SK Telecom's ambition of transforming from a telco to an AI company, their interest in this project with Nokia and the Japanese operators is hardly surprising. Rohde & Schwarz, meanwhile, will use their measurement-system design technology to evaluate wireless-sensing solutions in real-world environments. DOCOMO and NTT are already conducting various 6G spectrum trials with Fujitsu, NEC, Nokia, Ericsson, and Keysight Technologies, aiming to play a integral role in the development and standardization of the 6G technology. Nokia, for example, has already conducted successful beamforming trials in the 140GHz band, with the next steps set to explore more specific applications using sub-terahertz spectrum in indoor environment. Fujitsu, on the other hand, has been trialing distributed MIMO (Multiple Input Multiple Output) technology in the 100GHz and 300GHz bands.



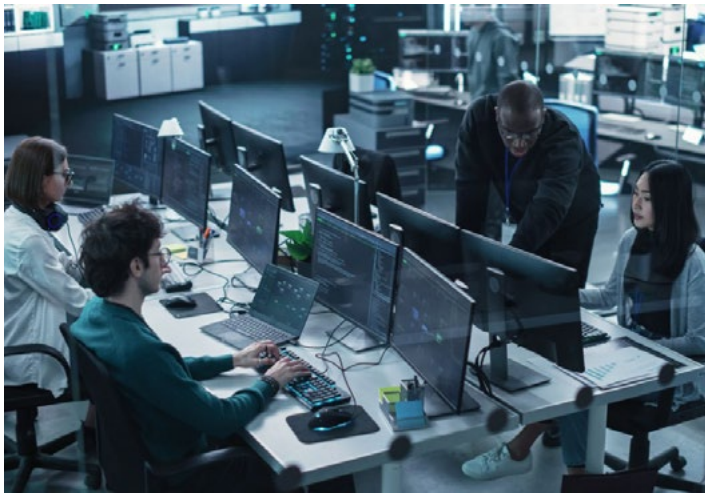
China is Testing 6G Technology in Space

6G connectivity is far from commercialization, but that is not stopping nations from carrying out a series of tests to gain an edge against other competing regions. Samsung, for instance, has been conducting tests of a similar nature, but this standard is not expected to go mainstream until 2030. Similarly, China Mobile does not see a 6G launch anytime soon, but that has not stopped the carrier from performing its own benchmarks through a satellite launch. China Mobile's 6G satellite will be orbiting at a height of just 500 kilometers and will be intended to deliver high data transfer rates at a lower latency There is no official name of the 6G satellite, but China Daily reports that it is the world's first low-earth orbit test satellite to employ 6G connectivity. Before its inception, another satellite was launched by China Mobile, which supported the 5G standard. The latest one was developed thanks to the tag team of the carrier and the Chinese Academy of Sciences' Innovation Academy for Microsatellites. The satellite supports various autonomous features specifically designed to drive 6G. Both the software and hardware have reportedly been developed domestically, supporting in-orbit software reconstruction, flexible deployment of core network functions, and automated management. According to China Mobile, all of these features combined allow for an efficient and reliable in-orbit operation of the satellite core network. The 6G test satellite operates at an orbit height of just 500 kilometers, and the reason for that is simple. At a lower height, these satellites can deliver optimized data transfer speeds and low latency, compared to other satellites that travel at 36,000 kilometers. This hardware can provide a steady ground for future integrated space and ground networks, addressing issues such as coverage reliability while also exploring the possibility of offering higher bandwidth satellite internet services globally. China Mobile intends to conduct more in-orbit tests but has not provided a launch timeline for the 6G standard. As it stands, the successor to 5G is not slated to arrive before several years, but that does not mean that extensive testing cannot be carried out to prepare for the future.

Samsung, Princeton Team on 6G Development

Samsung Electronics' R&D organization partnered with US-based Princeton University to advance 6G wireless and networking systems by seeking to bridge the gap between academic research and real-world applications. The South Korean company's Samsung Research America unit stated it is now a founding member of Princeton University's NextG Initiative Corporate Affiliates Program to lead 6G R&D. Princeton University's School of Engineering and Applied Science founded the NextG Initiative in 2023 to boost adoption of cloud and edge networks, intelligent sensing and network resilience. The corporate affiliates program was formed to drive technological advancements and encourage cooperation between academia, industry leaders and governments. Ericsson, Intel, MediaTek, Nokia Bell Labs, Qualcomm Technologies and Vodafone Group are also affiliates.

EY and Dell Launch EY Edge Technologies Lab



EY has joined forces with Dell Technologies to launch the EY Edge Technologies Lab which will demonstrate and test local edge-based computing system applications due to their advantage over central cloud processing for specific Industry 4.0 applications. The companies say the lab comes with the ability to create prototypes within a week and will demonstrate how Generative AI and edge technology can reduce manual effort and improve the efficiency and accuracy of data integration tasks. The lab's goal is to change the way organizations experience and envision their business outcomes and data strategy by helping create real-time industry-specific use cases and prototypes for edge-centric solutions, seamlessly integrating the technology into business operations. It will also helps demonstrate the competitive advantages of embedding AI at the edge, in conjunction with EY.ai, the company's new unifying platform combining its business experience with AI. The Lab will also help leaders understand how having the right edge and data strategy impacts the convergence of IT and operational technology – a trend that's helping to drive rapid adoption of edge computing. Initially, the lab will focus on manufacturing, life sciences, healthcare, consumer products and utilities – creating edge-centric use cases, like deploying an IoT solution for a client's manufacturing process. EY will use Dell's NativeEdge, an edge operations software platform, combined with edge computing technologies such as the Dell edge gateway, Dell PowerEdge servers and Dell OptiPlex desktops to provide for various industry use cases. In collaboration with Microsoft, PTC, GE Digital, Snowflake and others, the development work at lab is also supported by EY Technology Strategy & Transformation team members, providing virtual interactions with clients. EY continues to step up its AI game. Last week it announced EY announced alliance with Reveal to offer legal sector clients AI-powered solutions to advance data discovery and compliance needs. "With the Lab, we're putting the power of edge directly into the hands of leaders, offering them the opportunity to explore, experiment, and harness live data insights in unexpected ways that will have a substantial impact on their business growth," said EY Global TMT industry market leader Greg Cudahy. "Through our collaboration with the EY organization, businesses will be able to harness the power of edge technology with a transformative platform approach," added Dell Technologies SVP of edge solutions Gil Shneorson. Dell's involvement in the edge lab makes the new EY lab of more interest to telcos looking at how edge networking and compute will play out. The US IT giant realized early on that the telco sector was ripe for disruption given network virtualization, APIs and the arrival of edge and AI. Last year, Dell signaled its intent by investing €2m to create an Open Telecom Ecosystem Lab in Cork – its first outside the EU. Ireland used to host around 25% of Europe's data centers and while that figure has changed as more facilities are announced, the nation has proved important for Dell given its presence in that DC sector. The Cork facility provides an innovation testbed for telecoms and technology leaders across EMEA, connecting leading engineers at Dell with telecom providers. Partners can test and deploy open telecom solutions at the heart of 5G and 6G networks. The telco lab also helps develop applications for smart manufacturing and Industry 4.0, smart mobility solutions and digital cities.

Japan to Launch Flying Solar 5G Stations in 2025

Japan is developing flying solar 5G stations that will fly to the stratosphere to provide wider internet coverage worldwide. These high-altitude platform stations (HAPS) will link more remote areas previously unreachable online. Telecom group Softbank demonstrated its capabilities by facilitating a 5G call between Japan and Rwanda. The world is becoming more interconnected via the Internet, sharing the benefits of online services to more people. However, there are still spots on Earth that cannot establish wired and wireless connectivity. Fortunately, countries like Japan are developing new technologies to help us link with the rest of the world. This article will discuss how these flying solar 5G platforms function. Later, I will share other ways we're helping more people connect to the Internet. The HAPS unmanned platforms will fly at roughly 18 to 25 km in the stratosphere to provide sky and sea connectivity. In October 2023, Softbank said it successfully tested 5G transmission from the stratosphere. It enabled a video call between 5G smartphones in Japan and Rwanda. Nowadays, the company is working with the Rwandan government to launch the technology in Africa. Top Japanese telecom NTT and satellite broadcaster Sky Perfect JSAT formed a joint venture called Space Compass. It will invest tens of billions of yen (10 billion yen equals $70.2 million) in this project over the next 10 years. Space Compass is working with NTT Docomo to accelerate development. Statista says there were 5.3 billion internet users worldwide as of October 2023. That accounts for 65.7% of the global population. Nikkei Asia says it is a next-gen solution to reach the remaining 34.3%. Also, the recent agreement at the World Radiocommunication Conference will promote Japanese business expansion abroad. Japan proposed frequencies that countries will adopt as the global standard and will facilitate HAPS operations. The flying solar 5G stations will use 1.7 Gigahertz, 2 GHz, and 2.6 GHz, which form the core of cellular communications. The 700 to 900 megahertz "platinum" band will enable improved mobile services. They will operate in Europe, Africa, the Americas, and Asia. "For Japanese companies to establish a global presence, it's effective to narrow down fields where they excel in as well as markets and make Japanese technology the de facto standard through public and private partnerships," said Narutoshi Sakano, director of the Center for Public Policy Research at the Fujitsu Research Institute. The Land of the Rising Sun also achieved an amazing Internet feat last year. In late 2023, it sent 22.9 petabits of data per second through a single optical fiber. That is over 20 times the amount of data the world sends per second! Global internet traffic encompasses all online activities, such as video streaming, online gaming, file downloads, web browsing, etc. Interesting Engineering says Japan's National Institute of Information and Communications Technology (NICT) was the brains behind this innovation. The organization combined several technologies that utilize space and wavelength in optical fiber communications. The website compared the process to widening roads, using various lanes and traffic signals to make the internet faster and transmit more information. The researchers discovered each core in the fiber cable could transmit data at a speed between 0.3 to 0.7 petabits per second. Other internet providers rely on a single data-transmitting core. Conversely, NICT had 38 cores in its cable. Each can send data in three modes, totaling 114 spatial channels. These increase the amount of data passing through the fiber using independent data channels across different wavelength bands. Also, each mode has 750 wavelength channels across the C, L, and S bands, resulting in a bandwidth of 18.8 terahertz. Their combined speed reaches 22.9 petabits per second. Surprisingly, NICT hints they could further optimize their connectivity, boosting the speed from 22.9 to 24.7 petabits per second. Interesting Engineering says this makes NASA's internet speed seem like a dial-up connection in comparison. Japan is developing flying solar 5G stations that will launch in 2025. It will provide internet access to areas that cannot establish cable or Wi-Fi infrastructure. Soon, everyone can benefit from the Internet, opening more opportunities and improving lives. More importantly, it will help us stay in touch with everyone.

Japanese Government Pledges $307m to NTT, Intel, and SK Hynix for Chip Project

The Japanese government has announced it will provide roughly $307 million in subsidies for a semiconductor project backed by NTT, Intel, and SK Hynix. The chip specialists from Japan, the US, and South Korea, respectively, are set to collaborate on the development of optical semiconductor technology, a field that potentially offers higher data processing speeds and lower energy consumption than its electrical counterparts. Under the current plan, the companies plan to begin producing related products by 2027. "We hope the (project), by enabling faster communications and realizing reduced power consumption, will be a game changer in the future," Ken Saito, minister of economy, trade and industry. The move comes as one of the West's latest instances of government intervention aimed at increasing domestic chip competencies and lessening reliance on China. Japan has quietly been bolstering its position in the international semiconductor industry over th past year, typically investing indirectly in domestic chip production and adjacent technologies in efforts to carve out a niche on the world stage. Last summer, for example, the Japan Investment Corporation (JIC) – a government-backed fund overseen by the Ministry of Economy, Trade and Industry – announced the takeover of esoteric microelectronics specialist JSR for $6.4 billion. JSR produces photoresists, chemicals crucial for the photolithographic process used when making microchips. The company is the global leader in the photoresist market – perhaps the only aspect of the global chipmaking economy in which Japan plays a vital role. In addition to this acquisition, in October the government announced $1.3 billion in subsidies for US firm Micron to set up a semiconductor firm in Hiroshima. Then, in December, the JIC also moved to takeover Fujitsu's semiconductor packaging arm Shinko Electric Industries for around $4.7 billion. According to JIC CEO Keisuke Yokoo, the government fears that Japan's medium-sized enterprises in the microelectronics sphere will not be able to compete in the long-term with giants from rival nations in the US and China, hence requiring government support to remain competitive on the international stage.

GSMA, IBM Team to Prepare Telecoms for AI Era

The Japanese government has announced it will provide roughly $307 million in subsidies for a semiconductor project backed by NTT, Intel, and SK Hynix. The chip specialists from Japan, the US, and South Korea, respectively, are set to collaborate on the development of optical semiconductor technology, a field that potentially offers higher data processing speeds and lower energy consumption than its electrical counterparts. Under the current plan, the companies plan to begin producing related products by 2027. "We hope the (project), by enabling faster communications and realizing reduced power consumption, will be a game changer in the future," Ken Saito, minister of economy, trade and industry. The move comes as one of the West's latest instances of government intervention aimed at increasing domestic chip competencies and lessening reliance on China. Japan has quietly been bolstering its position in the international semiconductor industry over th past year, typically investing indirectly in domestic chip production and adjacent technologies in efforts to carve out a niche on the world stage. Last summer, for example, the Japan Investment Corporation (JIC) – a government-backed fund overseen by the Ministry of Economy, Trade and Industry – announced the takeover of esoteric microelectronics specialist JSR for $6.4 billion. JSR produces photoresists, chemicals crucial for the photolithographic process used when making microchips. The company is the global leader in the photoresist market – perhaps the only aspect of the global chipmaking economy in which Japan plays a vital role. In addition to this acquisition, in October the government announced $1.3 billion in subsidies for US firm Micron to set up a semiconductor firm in Hiroshima. Then, in December, the JIC also moved to takeover Fujitsu's semiconductor packaging arm Shinko Electric Industries for around $4.7 billion. According to JIC CEO Keisuke Yokoo, the government fears that Japan's medium-sized enterprises in the microelectronics sphere will not be able to compete in the long-term with giants from rival nations in the US and China, hence requiring government support to remain competitive on the international stage.

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REGULATORY NEWS

United Nations Adopts Global AI Resolution

The United Nations (UN) General Assembly adopted a draft resolution designed to ensure the use and development of AI align with human rights values, a step it hopes will prevent fragmentation of ethical frameworks governing the technology. The UN news agency revealed the non-binding resolution was agreed and adopted without a vote, with the document proposed by the US and backed by more than 120 member states. Adoption of the AI resolution is expected to complement other UN efforts to meet broader global development goals, including promoting digital transformation and narrowing the technology divide. In the draft, the General Assembly explained the resolution can be a guiding principle for the "human-centric" use of AI that protects "the enjoyment of human rights and fundamental freedom for all". The document also noted "improper or malicious" design and deployment of AI systems, including those contradicting international law, would hinder progress towards achieving global development targets. The UN news body reported the General Assembly called on all member states and stakeholders to withdraw or cease the use of AI "that are impossible to operate in compliance with international human rights law", urging "the same rights that people have offline must also be protected online, including throughout the life cycle of AI systems". Linda Thomas-Greenfield, US Ambassador to the UN, said the resolution "lays the groundwork for AI systems that leave no one behind". Last week, the European Parliament approved a provisional, binding law governing use of AI in the continent.

ITU Announces $9 Billion Connectivity Funding Commitments

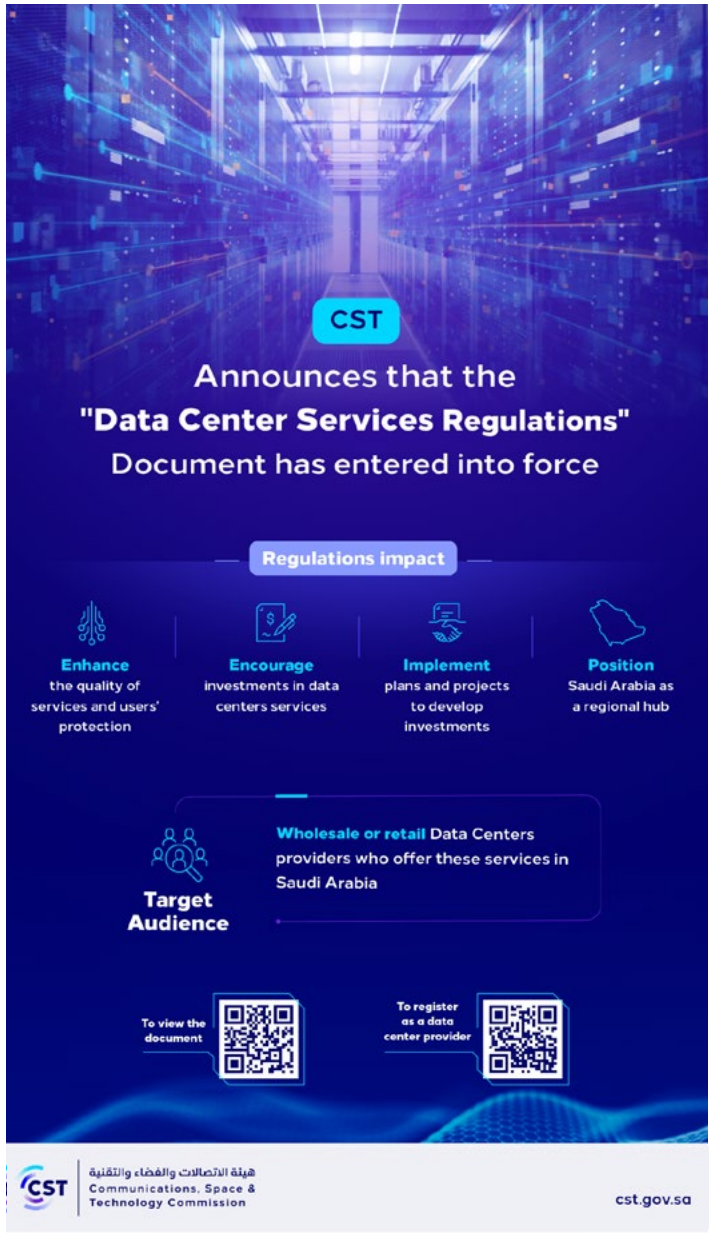
ITU Secretary-General Doreen Bogdan-Martin has announced over US$9 billion in investment commitments from mobile operator groups to extend global connectivity. The announcement was made at MWC 2024. The new industry commitments raise to over US$46 billion the total current value of planned investment in infrastructure, services and support to ITU's Partner2Connect Digital Coalition Partner2Connect was launched by ITU in September 2021 to engage all stakeholders to mobilize and announce new resources, partnerships and commitments for universal and meaningful connectivity globally. The commitments announced at MWC include US$6 billion from technology group e& (Etisalat and) between 2024 and 2026 for accessible and affordable network connectivity and digital services across countries in the Middle East, Africa and Asia. There's also a commitment of over US$1.4 billion from China Telecom to roll out fiber-to-the-home (FTTH), providing high-quality information and communication services to over 80 million people in remote administrative villages across China. US$1.1 billion comes from Qatar-based multinational telecommunications company Ooredoo for connectivity in developing markets ranging from North Africa to the Indian Ocean. In addition, US$600 million will come from multinational telecommunication services company Veon for building the infrastructure of Ukraine, in order to aid the provision of connectivity and digital services essential to the reconstruction of the country. According to data from ITU, 2.6 billion people remain offline worldwide. ITU has called for US$100 billion in overall investments by 2026 to provide the expertise and resources required to extend universal, meaningful connectivity and sustainable digital transformation to every corner of the globe. In addition to infrastructure, Partner2Connect commitments can support other critical needs including building digital skills and increasing digital inclusion. The new commitments from e&, China Telecom, Ooredoo and VEON are expected to be implemented over the next two to five years. Alongside the new commitments, the UN Digital Agency also announced that it now has over 1,000 industry, academia and organizational members in addition to its 193 Member States. This milestone marks the largest, most diverse membership in the agency's history.

Saudi Arabia's 'Data Centre Services Regulations' Comes into Force

The Communications, Space, and Technology Commission (CST) of Saudi Arabia has announced that the "Data Centre Services Regulations" document has come into force on January 1, 2024. This move is part of the CST's broader strategy to drive digital transformation across various sectors within the Kingdom. The primary objective of these regulations is to cultivate an environment conducive to the anticipated growth in the data centre sector. It also aims to foster the development of the Kingdom's IT infrastructure, promoting digital transformation, and creating an attractive environment for technology investments, including attracting multinational companies. The document seeks to stimulate investments in data centers, ensure fair competition, and optimize the use of information technology infrastructure. Notably, it also emphasizes the importance of promoting advanced and environmentally friendly data centers. CST officials underscored the expected benefits, including elevated service quality, enhanced user protection, and increased appeal for data center service providers. This is anticipated to attract quality investments, encompassing cloud computing, gaming, video streaming, and content delivery networks. The initiative aligns with CST's broader mission to localize and enhance digital services within Saudi Arabia. Anticipated to play a pivotal role in implementing strategic plans, the regulations are poised to strengthen the Kingdom's regional hub status, making it an attractive destination for investors and entrepreneurs. The scope of the regulation is directed at both wholesale and retail data center service providers delivering services within Saudi Arabia. Moving to the registration process, Service Providers are mandated to register with the Communications, Space, and Technology Commission (CST) falling under distinct categories: Qualifying, Limited, Standard, and Advanced. Each category is subject to specific requirements and criteria, notably emphasizing the inclusion of energy management and sustainability plans, aligning with the Kingdom's commitment to environmental responsibility. Furthermore, the registration holds a validity period of three years, with the provision for renewal. A notable aspect is the absence of fees for both obtaining and renewing the registration, indicating a supportive regulatory environment aimed at fostering growth and participation within the data center industry. These measures underscore Saudi Arabia's strategic intent to create a transparent and accessible framework for data center operators, encouraging compliance with industry standards and environmental considerations.

Obligations of registered service providers

- Service Providers must maintain valid registrations, certifications, and commercial registrations.
- Responsibilities include physical security, transparency in financial fees, SLAs, and quality standards.
- Liability provisions, customer notifications, and cooperation in case of data center shutdown.
- General rules
- Separate registration for Cloud Computing Service Providers.



- Compliance with Telecommunications Service regulations if applicable.
- Data Center information must be accurate and updated with CST.
- CST has the right to inspect and review compliance.
- Non-compliance may result in penalties, including revocation or suspension of registration.
- Service Providers must abide by laws and regulations in Saudi Arabia.
- Dispute resolution and language considerations.

Qatar Achieves Third Highest Score Globally in ICT Development Index 2023

The State of Qatar achieved the third-highest score globally in the Information and Communication Technology (ICT) Development Index (IDI) for 2023, released by the International Telecommunication Union (ITU) in late December 2023. The ITU IDI 2023 covers 169 economies and is a comprehensive assessment of internet connectivity among them, reflecting their digital development. It consists of 10 indicators, divided into two main pillars: Universal Connectivity and Meaningful Connectivity, measuring respectively how many are connected to telecommunication services and the quality of the connectivity. These indicators are evaluated on a scale from 0 to 100 points, where a total score of 100 points indicates that an 'ideal state' of connectivity has been achieved. According to the ITU IDI 2023, the State of Qatar secured the third position with a total score of 97.3, slightly behind the State of Kuwait, which topped the score with a total score of 98.2. The Republic of Singapore secured the second position with a total score of 97.4. President of the Communications Regulatory Authority (CRA) Eng. Ahmad Abdulla AlMuslemani reflected on the ITU IDI 2023 results, stating, "Our outstanding score in the ITU Index highlights our dedicated efforts at CRA, in partnership with the Ministry of Communications and Information Technology and the telecom Service Providers, towards the development of the ICT sector. This performance demonstrates our steadfast commitment to enhance the stature of the State of Qatar as a frontrunner in the field of telecommunications, ensuring that consumers have access to high-quality telecom services, while constantly pursuing innovative solutions." He added, "Qatar's top score highlights the strong correlation between digital development and economic growth. This achievement seamlessly aligns with Qatar National Vision 2030 and one of its goals, to diversify the Qatari economy and secure a stable, sustainable business environment." Qatar's advanced network technology is recognized as one of the best in the world, contributing significantly to its high score. The report states that 100% of the population in Qatar are covered by at least a 3G mobile network and 99.8% are covered by at least a 4G/LTE mobile network. Moreover, the report highlights that 99.6% of individuals in Qatar own a mobile phone. Individuals using the internet in Qatar stand at 99.7%, with 95% of households having internet access at home.

FCC Adopts Rules to Improve Routing of Emergency Calls, Texts

The Federal Communications Commission (FCC) approved rules to precisely route wireless emergency phone calls and real-time texts, a move which now requires mobile operators and cable MVNOs to implement location-based routing nationwide to connect to emergency call centers. In a statement, the US regulator explained wireless emergency calls on IP-based networks have historically been routed to emergency call centers based on the location of the mobile tower handling the communication, but in some instances the nearest tower may be in a neighboring area instead of the caller's location. The FCC noted in such cases, calls need to be redirected to the correct center, which can delay response times and waste resources during emergencies. Under the new rules, all wireless service provides are required to use location-based routing nationwide for wireless calls and real-time messaging to the call centers. With this approach, the FCC argued emergency voice calls and texts will be routed based on the actual location of the call instead of that of the mobile tower which typically handles it. The FCC stated the end result is millions more wireless callers will connect with emergency responders without the need for transfers or delays. Chair Jessica Rosenworcel said some of the largest operators in the US started using location-based routing technology in their networks "so we know it works". "Now we look forward to having it work everywhere," she noted.

Swisscom to Acquire Vodafone Italia for €8bn

Swisscom has announced a binding deal to acquire Vodafone's Italian business unit for €8 billion (£6.8bn). After the deal's completion, Swisscom will merge Vodafone's Italian unit with Fastweb, Swisscom's Italian subsidiary to create Italy's second-largest fixed-line broadband operator behind Telecom Italia (TIM). This, they said, will create around €600 million in savings through increased scale and a more efficient cost structure. As part of the transaction, Vodafone will provide some service to Swisscom for the next five years. "The industrial logic of this merger is very strong," said Swisscom's CEO Christoph Aeschlimann in a press release. "Fastweb and Vodafone Italia are an ideal fit to create high added value for all stakeholders," he continued. The deal will allow Swisscom to reinforce its Italian operations, a market it has been operating in since 2007 through Fastweb. For some time, Vodafone has been reshaping its operations globally. In October last year, the company sold 100% of its Spanish unit to Zegona Communications for €5 billion, and are currently in proceedings to merge business with Three in the UK. "Today, I am announcing the third and final step in the reshaping of our European operations," said Vodafone's CEO Margherita Della Valle in a company announcement. "Going forward, our businesses will be operating in growing telco markets – where we hold strong positions – enabling us to deliver predictable, stronger growth in Europe." Additionally, the company's announcement stated that it also intends to focus on its B2B sector, which it says is its "biggest opportunity", to focus on. Vodafone also stated that from 1st April this year, it will move most of its central operations to a a fully commercial model, allowing them to respond quickly and flexibly to demand changes. The deal is subject to standard regulatory approval, and is expected to close in the first quarter of next year. Also on this date, the company will be reorganized into five business divisions: Germany; European Markets; Africa; Vodafone Business; and Vodafone Investments. A personnel change will be implemented to reflect this, including Philippe Rogge stepping down as Vodafone Germany CEO.

Spanish Govt Buys 3% Stake in Telefonica, Eyes 10%

The Spanish government says it will look to increase its stake in the country's largest mobile operator, seeking to counter the influence of Saudi Arabia's stc. In September last year, Saudi Arabian telco group stc bought a 9.9% stake in Spain's Telefonica for $2.25 Billion, a move that made them the company's largest shareholder. At the time, stc said the move was simply the latest step in their newly diversified investment strategy, calling Telefonica a "compelling investment opportunity" and emphasizing that they had no intention of taking a controlling stake in the business. Nonetheless, the stake acquisition was controversial, with the Spanish government quickly outlining concerns surrounding loss of control of what they view as critical infrastructure. Telefonica is not only the country's largest telecoms operator, but also provides crucial connectivity services to government organizations and, perhaps more importantly, the military. By December last year, the Spanish government had announced a plan to acquire a 10% stake Telefonica to offset stc's influence within Telefonica, a move they said was ""in line with other large European countries, such as France and Germany, which have and are increasing their shareholdings in big and strategic telecommunications operators". The government's plan suggested the stake would be built incrementally, with the first 3% acquisition via state holding company SEPI. "The entry of the SEPI, a shareholder with a long-term commitment, will provide Telefonica with greater shareholder stability to achieve its objectives, contributing to safeguarding the strategic capabilities of a company that is strategic for (Spain's) national interests," said SEPI in a statement. Now, the government has confirmed its intentions to increase this stake to 10%, saying it will do so gradually through various instruments over the next two months. "It will be done as quickly as possible, in the shortest possible time, provided that it doesn't affect (Telefonica's) share price," said government spokesperson Pilar Alegria.

Polish Telco Operators Want 26 GHz Band to Be Allocated For 5G No Earlier Than in 2026

Polish operators want the 26 GHz band to be allocated for 5G networks no earlier than in 2026, Poland's watchdog for telecommunications and postal markets, Office of Electronic Communications (UKE), said in a Tuesday's release following a consultation. According to the telcos, it is too early to allocate this band because there are still major constraints on the availability of equipment for the commercial launch of services. "The services will be implemented through single base stations and at a later stage as clusters of cells," UKE stated. The consultation suggests that the entire available resource should be distributed without combining distribution with other bands. Operators also called for the 700 MHz band to be distributed as soon as possible. UKE in October 2023 settled the auction of frequencies earmarked for 5G in the 3400-3800 MHz band. Blocks of 100 MHz each were won by A (3400-3500 MHz) - Polkomtel for PLN 450 million (EUR 104.4 mln), B (3500-3600 MHz) - P4 for PLN 487.095 million (EUR 113.1 mln), C (3600-3700 MHz) - Orange for PLN 487.095 million (EUR 113.1 mln) and D (3700-3800 MHz) - T-Mobile for PLN 496.837 million (EUR 115.3 mln).

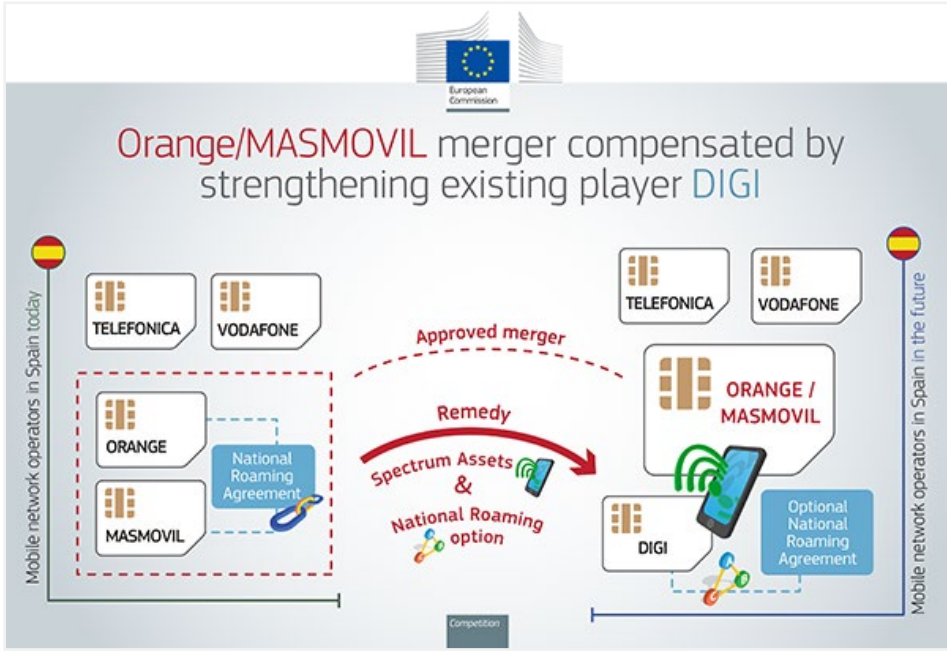
GSMA Presses for European Reform

The GSMA argued critical reform of European laws are necessary to position the region as a technology frontrunner by 2030, a rank it argued had been lost due to various barriers to digitalization. In a manifesto released on 20 March 2024, the GSMA asserted barriers to the growth and competitiveness of the telecoms sector in the European Union (EU) have hindered the progress of the digital economy. It highlighted a need to address “systemic challenges” around market fragmentation, regulation and investment, and called on EU politicians to “embrace a new digital infrastructure framework” which promotes financial input and market harmony. Laszlo Toth, head of Europe and CIS at the industry association, said “urgent action to secure the continent’s digital future has never been more imperative”, as the region faces “significant geopolitical, economic and societal shifts”. “This manifesto represents a commitment to partnership and progress, laying the groundwork for Europe to reclaim its position as a global leader in digital technology and innovation”. The GSMA argued an overhaul is required to deliver universal 5G coverage in Europe by 2030, highlighting the achievements of mobile sector initiatives covering factories, farming and city management in terms of fueling “economic growth” and sustainability. It recommended EU politicians take action around spectrum costs and availability, levelling the regulatory playing field and “updating historically based rules to reflect current realities”.

FCC Issues Satellite-to-Mobile Service Framework

The US Federal Communications Commission (FCC) adopted final rules to create a regulatory framework for satellite-to-mobile services, part of a plan to extend the reach of wireless networks to remote areas. Its supplemental coverage from space (SCS) framework is designed to enable partnerships between wireless operators and satellite service providers to deliver coverage in areas without terrestrial mobile connections. The FCC stated the framework is “the first step in establishing clear and transparent processes to support these services”. It enables satellite service providers operators collaborating with terrestrial operators to seek authorization to operate space stations “on certain licensed, flexible-use spectrum currently allocated to wireless services, provided they satisfy certain licensing prerequisites, including having a spectrum lease from a terrestrial licensee within a specified geographic area”. Once authorized, satellite service providers could connect wireless operators’ customers outside typical coverage areas. FCC chair Jessica Rosenworcel stated the rules are part of the FCC’s “single network future” vision. “The opportunities are vast,” she noted. “In this decision, we bring satellite and wireless communications together. We do this because their convergence can accomplish more than either network can do on its own.” The rules also include an interim requirement for terrestrial service providers to route all SCS emergency service calls to a public safety answering point by using either location-based routing or a specialist call center. Along with the SCS, the FCC also adopted a proposal to seek comment on public safety issues and sought comment on issues associated with the protection of radio astronomy services. There are numerous satellite-to-phone services in various stages of development from companies including Lynk Global, AST SpaceMobile and Starlink. Charles Miller, co-founder and CEO of Lynk Global, applauded the FCC’s rules, telling Mobile World Live the “technology has the potential to help pull the next billion people out of poverty by extending affordable access to mobile connectivity around the globe”.

European Commission Approves Orange–MásMóvil Merger



After an in-depth investigation was opened into the potential transaction in April last year, the European Commission has approved the creation of a 50:50 joint venture (JV) between France's Orange and Spain's MásMóvil. The JV's approval was conditional on Romania's Digi (the largest MVNO in Spain) acquiring spectrum from MásMóvil in order to become a new fourth mobile operator. The initial investigation was concerned that the transaction would restrict market competition by creating the largest operator in Spain in terms of customers and reducing the number of players in the market from four to three. To combat these concerns, Digi, which also has operations in Portugal, Italy, and Belgium, finalized a spectrum transfer agreement with the two Spanish firms in December last year, worth €120 million. The spectrum acquired is set to be 2x10MHz in the 1,800MHz band, 2x10MHz in the 2.1GHz band, and 20MHz in the 3.5GHz band. As a result of this, Digi can take the place of a fourth MNO in the Spanish market, providing a solution to the market's competition problem. Orange CEO Christel Heydemann has emphasized that the deal will allow increased scale, innovation, and investment in Spain as a result of the "stronger and more sustainable" unified player. "The commitments offered by the parties will enable Digi, the largest and fastest-growing mobile virtual network operator in Spain, to replicate the strong competitive pressure exerted by MásMóvil," EU antitrust chief Margrethe Vestager said in the announcement's press release. "They will ensure that consumers in Spain continue to benefit from a competitive telecom market, in terms of prices, quality and 5G connectivity," she continued. However, Kester Mann, Director of Consumer and Connectivity at CCS Insight, warned that the deal's approval will mean the spotlight is turned towards Vodafone and Three in the UK. "Both parties will hope that the news represents a shift in position from the region's regulators as they seek approval to combine," he said in a LinkedIn post, but warned that the UK Competition and Markets Authority will not be won over easily.

Ofcom Probes Virgin Media Over Landline Migration

Across the UK – and, indeed, across many parts of the world – steps are being taken to migrate customers away from traditional analogue landlines to IP-based digital landline services. While for the vast majority of customers this process will cause little disruption, for a number of vulnerable customers who rely more heavily on the older system, the switch could be more problematic. Perhaps the largest issue is related to IP-based services reliance on a consistent power supply; if power supply is disrupted, such as during a storm, this can leave customers unable to contact emergency services. Concerns related to these issues saw Ofcom call on operators to pause their landline migration process back in December last year, asking the operators to review their processes. Ofcom has gone one step further, launching an investigation into Virgin Media to examine whether they have been treating vulnerable customers appropriately. "This investigation relates to concerns about Virgin Media's compliance with two areas," explained the regulator in a statement. "First, our rules require that Virgin Media must take all necessary measures to ensure uninterrupted access to emergency organizations. Second, our rules also require that Virgin Media establish and comply with effective policies and procedures for the fair and appropriate treatment of vulnerable consumers." Virgin Media defended itself, saying it has been working with Ofcom and the government to ensure the switch-over takes place smoothly and are following best practices. "Last December we signed a Government-led charter and have paused all landline migrations, carried out an end-to-end review and will make further improvements to the measures we already have in place before switchovers restart," said the company in a statement. "While telecoms companies like us have a crucial role to play in this switchover activity, it's essential that telecare companies and local authorities also step up and meet their responsibilities to ensure everyone receives the support they need. We're cooperating fully with the regulator's investigation and will continue to work closely with the rest of the industry and other parties."

Early Warning System in Coastal Areas Complete: TRA Oman

Telecommunications Regulatory Authority (TRA) of Oman has announced the successful implementation of an early warning system in coastal regions in a collaborative effort with Civil Aviation Authority and service operators. Additionally, TRA has granted Starlink Muscat a Class 1 license to offer telecommunications services via satellite systems, marking a significant stride in enhancing connectivity and emergency response capabilities. At TRA's annual media brief on Tuesday, Omar Hamdan al Ismaili, CEO, unveiled the authority's ambitious agenda for 2024, which includes conducting 29 field surveys across several wilayats to evaluate the quality of telecommunications services available to consumers. "This initiative reflects TRA's commitment to elevating service standards and ensuring easy access to advanced telecommunications," he said. A key focus for TRA is augmentation of Oman's telecom infrastructure through the expansion of 5G networks and fiber optic connectivity, alongside expediting the shift from traditional copper networks to more advanced technologies. Such advancements are geared towards fostering sustainable growth within the sector while maintaining affordability for consumers. According to Ismaili, telecommunications companies are at the forefront of artificial intelligence (AI) and laying down essential infrastructure. Efforts are being concentrated on establishing robust data centres that facilitate high-speed data processing, crucial for AI services and the exploration of new technologies. He highlighted the sector's financial health, noting a 12% revenue increase in 2023, reaching RO851mn. The sector's workforce comprised 4,167 employees, boasting Omanization rate of 94%. Additionally, the number of postal companies saw a 31% growth, with total revenues of licensed postal firms touching RO20.7mn, up 14% from 2022. Looking ahead, TRA aims to enhance telecommunications services across various sectors, including education, healthcare, tourism, industry and transportation, while underscoring its commitment to environmental sustainability, innovation and scientific research. "The transition from 3G to 4G and 5G services, along with the allocation of new frequency bands to operators, is set to revolutionise communication services in Oman." TRA data indicates a positive trend in the communications sector in 2023, with mobile phone subscriptions increasing 3%, mobile broadband 5%, fixed telephone services 3%, and fixed broadband 5%, indicating a continued upward trajectory in Oman's telecommunications landscape.

EC Hits Apple, Alphabet, Meta with DMA Probes

The European Commission (EC) opened investigations into Apple, Alphabet and Meta Platforms over alleged unfair market practices, outlining concerns the three technology giants fell short of conforming with its Digital Markets Act (DMA). In a statement, the EC explained the probes will target anti-steering rules imposed by Apple and Alphabet on their respective online marketplaces designed to deter app developers from freely promoting services outside their ecosystem, on top of "self-preferencing" methods deployed by the companies to favor their own offerings. The authorities said its investigation against Alphabet will determine whether Google search results "may lead to self-preferencing in relation to Google's vertical search services" over similar rival offerings, with Google Shopping and Google Flights cited as examples. The probe will also study Apple's "design of the web browser choice screen", as Safari was set as the default browser app on its devices. Under the proceedings, the EC said it will investigate whether the iPhone-maker complies with its DMA obligations, including to enable users to "easily change default settings" or uninstall any software apps on iOS, as well as allow customers to choose alternative default services. It will also investigate Apple's new app store practices. For Meta Platforms, the EC will look into the company's recently introduced "pay or consent" model, which requires users to subscribe to ad-free versions of its social media platforms or consent to having their data tracked. Speaking at a press conference announcing the probes, Margrethe Vestager, EVP in charge of digital policy at the EC described the cases as serious and were "emblematic of what the DMA is supposed to deliver when it comes to choose for consumers".

Kazakhtelecom, Power International Holding Sign Agreement in Principle for Purchase of Mobile Telecom Services

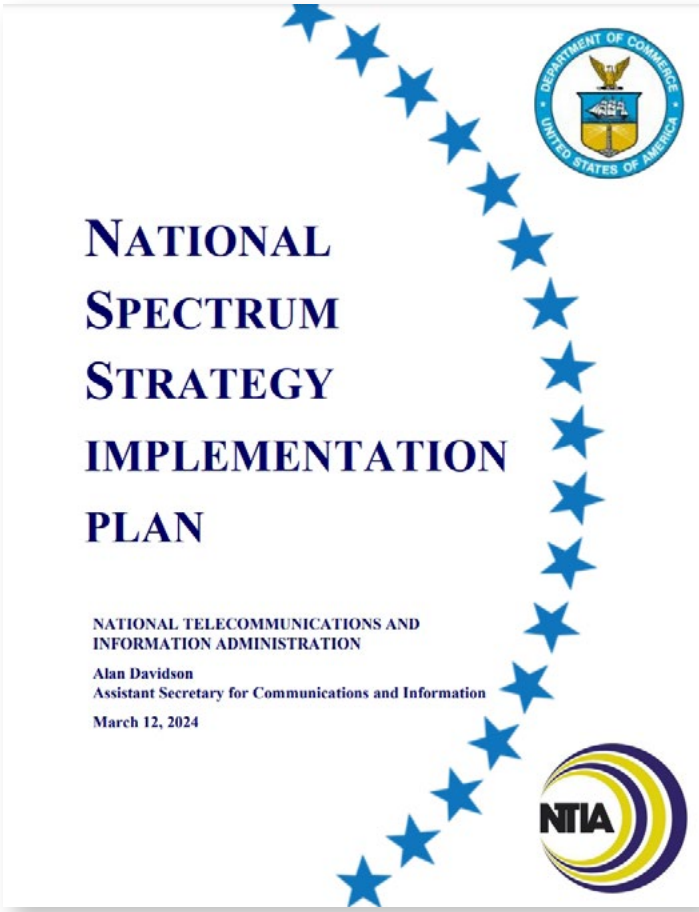
Power International Holding Company signed an agreement in principle to acquire Mobile Telecom Services (MTS) in Kazakhstan, owned by Kazakhtelecom (National Telecommunications Company). Kazakhtelecom, Kazakhstan's largest telecommunications operator, intends to sell one of its mobile assets, Mobile Telecom–Service LLP (Tele2/Altel brands) to the leading conglomerate of the Middle East, Qatar Power International Holding. The relevant tripartite agreement on principles (Samruk-Kazyna JSC) was signed by the parties during the official visit of the President of Kazakhstan to this Arab country. Recall that talks about the sale of one of the operators belonging to the Kazakhtelecom Group of Companies have been going on in Kazakhstan for quite a long time, however, a specific decision on this issue has not yet been announced. However, on January 20 of this year, at a meeting of the State Commission on Economic Modernization, it was decided to sell Mobile Telecom-Service LLP and in Qatar Kazakhtelecom, Samruk-Kazyna and Power International Holding, within the framework of the signed agreement, agreed on the main terms for the purchase of a 100% stake in MT-S LLP. "We have only recently entered into negotiations and, of course, this agreement only fixes our intention to make a deal with Power International Holding and, in the future, it will be necessary to discuss and consolidate all the terms and procedure of purchase and sale, so it is too early to talk about specific numbers, the amount of the transaction, etc. We are satisfied that such a reputable and stable company as PIH acts as a strategic investor, besides, it is very well known in Kazakhstan, the holding has many projects in our country and all of them are quite successful," said Kuanyshbek Yessekeyev, Chairman of the Board of Kazakhtelecom JSC. Important to note that Power International Holding is a Qatari conglomerate covering various sectors of economy. The company employs about 65 thousand employees and has implemented about 1,100 different projects worldwide. On this occasion, Mohammed Moutaz Al-Khayyat, Chairman of Power International Holding, expressed his pleasure to sign this acquisition agreement and expand PIH's business in Kazakhstan due to its promising investment opportunities and advanced business environment. Al-Khayyat expressed his appreciation to the Amir His Highness Sheikh Tamim bin Hamad Al Thani for his continued support to the Qatari private sector and its international expansions. In line with Power International Holding strategic expansion goals, CEO Ramez Al-Khayyat highlighted the acquisition's role in broadening the company's technology offerings. He expressed the company's commitment to advancing the tech sector in Kazakhstan through the deployment of innovative communication technologies. PIH will unleash its power in the use of advanced data analytics on customer behavior, network infrastructure performance, digital payments and market trends to introduce new digital products & services in the market with the ultimate objective to bring joy and satisfaction to the people of Kazakhstan. As you know, in 2019 Kazakhtelecom became the owner of a 100% stake in MT-S. Today it is the largest mobile operator in Kazakhstan, with almost 7 million people using telecom and digital services. The company is one of the participants in the consortium, which is implementing a project in our country to deploy the fifth–generation communication standard. Last year alone, about 800 5G base stations were built in almost 20 cities of the republic, and the total number of base stations is over 7 thousand.

Italy's Treasury Submits bid for Telecom Italia Unit Sparkle

Italy's Treasury said late on Wednesday it had submitted to Telecom Italia (TIM) (TLIT.MI), opens new tab an offer to buy 100% of the telecoms group's submarine cable unit Sparkle. In a separate statement, TIM said its board of directors would examine the Treasury's offer at a meeting on Feb.7. Statements from the Treasury and the company did not give a value for the proposed offer, but a person briefed on the matter said it would value Sparkle at up to 750 million euros ($810 million), including debt and variable components. TIM added that the Treasury's proposal includes an option to negotiate a different structure of the deal with a potential improvement of its financial terms, if TIM retains a minority stake in Sparkle for a certain period. The sale of Sparkle, whose network extends over 600,000 km, is part of TIM CEO Pietro Labriola's plan to part ways with the former phone monopoly's fixed network assets to cut its debt pile.

NTIA Releases Implementation Plan for National Spectrum Strategy

The National Telecommunications and Information Administration has released the implementation plan for the Biden administration's National Spectrum Strategy, which aims to kick off working groups on three candidate bands this month and have technical work to be completed by the end of next year. The implementation plan sets out times lines milestones and responsible agencies for study of 2,786 megahertz of spectrum that was identified in the NSS, which was released last November. NTIA noted that part of what will be studied is whether airborne radars and other federal systems in the lower 3 GHz band could be repacked, compressed or relocated to allow commercial user of the band—which may be encouraging to wireless operators who would like to see additional full-power access in 3 GHz airwaves, rather than an extension of the lower-power, shared CBRS framework. "The U.S. is in the midst of an intense competition for global leadership in the wireless space," said Alan Davidson, who is Assistant Secretary of Commerce for communications and information as well as NTIA administrator. "The Implementation Plan offers a roadmap to realize the vision of the National Spectrum Strategy and meet the global challenge before us." However, the implementation plan is reflective of the massive amount of collaboration that needs to be done to assess and potentially clear a band of federal users or share a band, rather than a straight path to additional spectrum allocations. While a final report and recommendations on the first candidate band are expected to be delivered as soon as November of this year, that band is 37 GHz, rather than a lower frequency that would be more attractive for propagation purposes. Final reports and recommendations on the lower 3 GHz and spectrum in the upper midband at 7-8 GHz aren't expected until late 2026. And of course, action on any recommendations on reallocation and auction of additional spectrum would require that Congress reinstate the FCC's auction authority. "We are encouraged by the Administration's National Spectrum Strategy Implementation Plan, which comes at a crucial time as America continues to trail other countries in freeing up mid-band spectrum for 5G networks," said Meredith Atwell-Baker, CTIA's president and CEO. "We are pleased to see the Administration restore NTIA leadership over spectrum studies, right the course on the lower 3 GHz band, and set up a critical review of the 7/8 GHz band. It is vital that the Administration now move quickly to start these studies as we need decisive action on reallocating spectrum to secure our global economic competitiveness and innovation leadership. We look forward to working closely with the Administration, NTIA, FCC, DoD, Congress, and other stakeholders to take the necessary steps to build the spectrum pipeline America needs." The National Spectrum Consortium (NSC) called the implementation plan "robust" in emailed comments and added: "Approaching spectrum policy as a zero-sum game will no longer work. As we continue to digitize our infrastructure, spectrum is an increasingly important resource to a number of industries and federal agencies alike. NTIA is taking on a huge challenge to set up the wireless future of this country, and this plan lays out a collaborative, innovative path to navigate



many competing interests on behalf of all Americans." "We hope to see diverse industry engagement in this process and look forward to supporting the NTIA's work expediting delivery of the 37 GHz to market, focusing on Dynamic Spectrum Sharing, and creating a long-term collaboration framework for engaging with public stakeholders," said Tamara Smith, spokesperson for avocacy group Spectrum for the Future, which represents a number of players in cable, private wireless and spectrum-sharing enablement. "That said, a multi-year, multi-stakeholder analysis has already confirmed that sharing the lower 3 GHz is possible. Additional study of the band for exclusive, high-power use will only delay the inevitable finding that this band should be made available on a shared basis. The Defense Department has warned that to do otherwise would cost taxpayers hundreds of billions of dollars and take decades to complete, so it is unfortunate to see this process being dragged out further," Smith added in emailed remarks. Meanwhile, Senate Republicans preempted the release of the implementation plan with the release of a new bill yesterday, which would require NTIA to identify at least 2,500 megahertz of midband spectrum between 1.3 GHz-13.2 GHz that could be reallocated for commercial use and stipulates that at least half of the identified spectrum must allow for "full power commercial licensed use cases."

EU Telcos Join Forces Against Gigabit Infrastructure Act

Industry groups representing European telecoms operators have warned that the European Commission's proposed Gigabit Infrastructure Act (GIA) could penalize companies and damage the sector. The European Telecommunications Network Operators Association (ETNO), the European Competitive Telecommunications Association (ECTA), the GSMA, and GigaEurope have released a joint statement outlining their concerns on the draft proposal, which comes ahead of an EU meeting next week when lawmakers will draft the final legislation. The GIA was first proposed by the European Commission in February 2023, with the legislation aimed at reducing the costs of deploying gigabit-capable networks and simplify the rollout process. The GIA is part of a wider EU goal of deploying gigabit-capable infrastructure across the EU by 2030, in line with the EU's Digital Decade program. However, the joint statement from the industry associations has disputed the proposed GIA's effectiveness, saying that the current negotiations "risk turning it into a measure that penalizes telecoms operators, without producing any real benefit in terms of administrative simplification". The statement takes two main issues with the draft text. Firstly, the European Commission's suggestion of eliminating the 'tacit approval' clause, which currently would allow operators to push through with their deployment if local municipalities do not respond to a request for a construction permit within a reasonable timeframe. The clause is controversial, with some EU companies considering it an intrusion on the rights of third parties and private property owners, but the telecoms organizations argue that to remove the clause is to remove a "key measure that would speed up network rollout". Secondly, a proposal added by the European Parliament to impose price caps on calls and messages within the EU, which the group says is unnecessary due to the market's competitive nature. The joint statement argues that the provision of digital networks is "critical for the prosperity of the whole of Europe, providing the backbone of a modern, efficient and sustainable economy for European citizens". It is clear that most citizens would agree with this sentiment, but this statement is masking the real motivation from the operators: a cheaper and easier way to roll out their networks. The end of the statement makes clear that the "EU telecom industry" would rather retain the current laws on the subject than implement the new ones, saying that retaining the regulatory status quo would be "less damaging".

FCC Updates Spectrum Rules to Facilitate Broadband Access on Ships and Aircraft

The Federal Communications Commission last week adopted updates to its rules for the 70 GHz, 80 GHz, and 90 GHz spectrum bands to facilitate broadband access on ships and aircrafts, in addition to backhaul service for 5G. This action will promote the efficient use of spectrum and will provide opportunities for the development of new broadband service options. The adopted Report and Order establishes new rules and updates existing rules for the 71–76 GHz, 81–86 GHz, 92–94 GHz, and 94.1–95 GHz bands. The new rules authorize certain point-to-point links to endpoints in motion in the 70 GHz and 80 GHz bands to facilitate the use of these frequencies for access to broadband services on aircraft and ships. They also permit the use of smaller and lower-cost antennas to facilitate the provision of backhaul service in the 70 GHz and 80 GHz bands. Finally, the Report and Order changes the link registration process in the 70/80/90 GHz bands to require certification of construction of registered links, which will promote more efficient use of this spectrum and improve the accuracy of the link registration database. The Commission also adopted a Further Notice of Proposed Rulemaking to seek comment on the addition of another type of link as part of maritime operations otherwise authorized in the Report and Order, and the inclusion of Fixed Satellite Service earth stations in the light-licensing regime for the 70 GHz and 80 GHz bands.

Polish Regulator Says Nobody Wants 26GHz

Poland's regulator the Office of Electronic Communications (UKE) has issued industry communication to explain why the country's 26GHz band – slated for use in 5G networks – has not yet seen an auction or distribution, essentially saying there was low market interest in this band and 42GHz. UKE first consulted on 26GHz way back in July 2020 as part of the National Broadband Plan and the 26 GHz band was meant to be distributed by 31 December 2022. To be fair even that slippage was not the worst given the 3.6GHz bands were meant to be distributed by 30 July 2020. In response to the 26GHz consultation most telcos recommended that the band should be allocated no earlier than in 2022-2023. According to CMS Law, most recently, in response to a parliamentary question (4 January 2023), the Secretary of State for Digitalization indicated that "Regarding this band (26GHz), there is currently no demand from entities operating in Poland, and full use of these frequencies is envisaged after 2023." UKE has now confirmed the lack of demand. No doubt the Poles watched South Korea closely after the government cancelled SK Telecom's 28GHz license, citing a lack of investment. The telco had been given the right to use the 28GHz band in 2018 and was required to install a total of 15,000 units of network equipment by May last year – it managed under 2000 and told the government it had no plans for more. The move followed the government cancelling all local operator 28GHz licenses in January 2023. SKT was given the six-month challenge but didn't make the mid-year deadline. The South Korean government said it is currently seeking new operators for the 28 GHz band. Last October UKE successfully concluded its auction of 5G-capable 3.5GHz licenses following an intensive process spanning two days and 16 rounds of competitive bidding. The auction covered four licenses, each granting access to a 100MHz of spectrum falling within 3.4GHz to 3.8GHz. Deutsche Telekom's Polish NatCo paid PLN 497m (€112m) for 'Block D', offering spectrum in the 3.7GHz–3.8GHz frequency range. Network-sharing partner Orange Poland paid PLN 487m for Block C in the 3.6GHz–3.7GHz range. Polkomtel's Plus, won Block A (3.4GHz–3.5GHz) and Iliad-owned P4 (Play) won Block B (3.5GHz–3.6GHz). The 24.25-27.5 GHz frequency band was rated as one of the "pioneering frequency bands" for 5G by the EU Commission Implementing Decision No. 2019/784 of 14 May 2019 on the harmonization of this band for terrestrial systems. In its 2020 consultation, UKE found "significant limitations in the availability of the required systems and equipment for the commercial launch of services, and therefore the impossibility of ensuring the principle of competitiveness." Now UKE is once more asking the industry to suggest a new deadline for commercial services in 26GHz – in the light of the current availability of systems and equipment – plus what services and where do the operators want to deploy. The regulator also asks whether the entire part of the band available to "civilian users", i.e. the 24.3-27.3GHz range, be allocated at once. UKE has also asked the operators their intentions for 42GHz currently allocated to fixed service point-to-multipoint (PMP). "he World Radiocommunication Conference WRC-19 has identified the 40.5–43.5GHz frequency band on a global scale for IMT family systems. In March 2020, CEPT decided to develop a new ECC Decision on the harmonization of the 40.5-43.5GHz frequency band for terrestrial systems enabling the provision of wireless broadband communications services. The regulator wrapped up the communique be asking the operators whether it needs to start work on making other frequency bands available for IMT-2020 purposes, and if so, which ones? Operators have until 16 February to respond to UKE.

Xavier Niel's NJJ to Buy Turkcell's Ukraine Unit

NJJ Capital, the investment company owned by French billionaire Xavier Niel, has agreed to buy Turkcell's Ukrainian operations, including mobile operator Lifecell, for at least $500 million. The agreement was initially signed in December when Turkcell agreed to transfer over all shares in the businesses to NJJ for an undisclosed price. At the time, the three business units – mobile operator Lifecell, contact center specialist Global Bilgi, and telecoms tower firm Ukrtower – were valued at UAH 12.7 billion ($335.5 million), UAH 47.2 million ($1.2 million), and UAH 1.9 billion ($50 million), respectively. The deal "makes sense", according to Niel, due in part to his existing telecoms operations in neighboring Poland through French telco Iliad, given the large amount of roaming traffic between the two countries. For Lifecell in particular, Niel noted that the sale was relatively cheap, saying "it's an asset we're not paying very much for compared to its profits". The final price for the acquisition will not be revealed until the deal has closed, but it should be at least $500 million, according to an NJJ spokesperson. The deal is still subject to regulatory checks, including the go-ahead from the Ukrainian competition authority. Niel appears to have started this year with a renewed appetite for M&A, this month also showing an interest in purchasing Altice Portugal. The company is part of the Altice Group and is owned by another French billionaire, Patrick Drahi, who announced

his intention to sell off the unit last summer. The unit has attracted a number of potential buyers, including Saudi-based STC and others who have asked not to be identified. –Three non-binding offers for the business are thought to have been received. No decisions have yet been made of yet and discussions remain ongoing.

Malaysia Gears Up for Second 5G player as DNB Hits Coverage Target

Malaysia's wholesale 5G network operator Digital Nasional Bhd (DNB) now covers just over 80% of populated areas, clearing the final criteria for the creation of a second 5G operator. According to the Bernama news agency, Communications Minister Fahmi Fadzil said on Wednesday that 5G network coverage in Malaysia reached 80.2% in populated areas as of December 31. Last year, the government began making plans to transition from the current Single Wholesale Network (SWN) 5G model to a Dual Network (DN) model. As part of that plan, the government had said it would wait until DNB's 5G network covers 80% of populated areas. Fahmi said now that the coverage target has been achieved, the Special Task Force on 5G will meet on Friday to work out the specific roadmap for setting up the second 5G operator, the report said. "The government will not take long to consider and make an announcement of a shift from single to dual 5G network coverage. After that, the dual 5G [network coverage] can be implemented if the terms agreed by the task force are achieved," Fahmi was quoted as saying. Last month, according to media reports, Fahmi Fadzil said the second 5G operator will be strictly commercial, with no government ownership. The Ministry of Finance (MOF) holds a 30% stake in DNB, while the rest is split between the country's five operators: Telekom Malaysia, Maxis, U Mobile, YTL and CelcomDigi (via Infranation). Once the second 5G operator is officially greenlighted, the MOF has the option to exit DNB. Under the terms of share subscription agreements signed last month, DNB's operator stakeholders will be able to decide among themselves who stays in DNB and who moves over to the second 5G operator, although MCMC has the final say. In related news, Bernama also reported Wednesday that the Malaysian government decided to place DNB under the purview of the Ministry of Digital. This follows last month's cabinet reshuffle that saw, among other changes, the Ministry of Communications and Digital split into separate entities. Prime Minister Anwar Ibrahim said at the time that the digital sector in Malaysia needs a dedicated ministry, partly because digital transformation is a major plank of the unity government, but also because the digital sector itself is rapidly evolving.

Wi-Fi Alliance Begins Wi-Fi 7 Certification

The Wi-Fi Alliance has begun the certification process for Wi-Fi 7, ushering in a new era of wireless connectivity. Wi-Fi CERTIFIED 7 provides confidence to end-users they'll benefit from new features designed to enhance performance and connectivity across various environments. The latest iteration of Wi-Fi promises significant advancements, catering to emerging technologies such as multi-user augmented reality (AR), virtual reality (VR), and extended reality (XR). The certification, a result of extensive collaboration within Wi-Fi Alliance, ensures global interoperability and a robust device ecosystem. Wi-Fi 7 is poised for rapid adoption, with over 233 million devices expected to hit the market in 2024 and a staggering 2.1 billion devices projected by 2028. Early adopters include smartphones, PCs, tablets, and access points, with customer premises equipment and AR/VR equipment gaining traction.

Key features include:

- 320 MHz channels, enabling ultra-wide channels for multigigabit speeds
- Multi-Link Operation (MLO), facilitating simultaneous data transmission and reception over multiple links
- 4K QAM, achieving 20 percent higher transmission rates than its predecessor
- 512 Compressed block-ack, improving efficiency and reducing overhead
- Multiple RUs to a single STA, enhancing spectrum efficiency through improved spectrum resource scheduling flexibility
- Triggered Uplink Access to accommodate latency-sensitive streams
- Emergency Preparedness Communication Services (EPCS) for seamless emergency service experiences

Wi-Fi 7's introduction has garnered support from industry leaders, with companies like Broadcom, CommScope, RUCKUS Networks, Intel, MaxLinear, MediaTek, and Qualcomm forming the testbed for certification. This ensures that Wi-Fi CERTIFIED 7 devices meet the highest standards. Kevin Robinson, President and CEO of Wi-Fi Alliance, said: "This certification underscores our relentless commitment to delivering cutting-edge technology that redefines the way users experience Wi-Fi." As the Wi-Fi 7 ecosystem expands, companies like Airties, Boingo, Broadcom, RUCKUS Networks, Intel, MaxLinear, MediaTek, and Qualcomm are at the forefront, actively participating in the certification process. Metin Taskin, Co-CEO of Airties, highlighted the potential of Wi-Fi 7 to support broadband service providers' plans and improve overall user experience: "Wi-Fi 7 provides unprecedented capacity and spectrum efficiency to support far more connections and immersive applications. "By embracing smart Wi-Fi software that is truly standards-based, open-source, and hardware-agnostic, ISPs can gain maximum flexibility and control over subscribers' home broadband experience."

A SNAPSHOT OF REGULATORY ACTIVITIES IN THE SAMENA REGION

Algeria

With the ongoing digital transformation push across Africa, connectivity investments are surging continentwide. Algeria's Minister of Post and Telecommunications, Karim Bibi Triki, announced, a substantial rise in the country's international bandwidth capacity to 9.8 Tbit/s. This marks a significant increase from 7.8 Tbit/s in 2022, 2.8 Tbit/s in 2021, and 1.5 Tbit/s at the start of 2020. According to the Ministry, the enhancement aims to provide increased flexibility, emphasizing the strategic role of international bandwidth in ensuring and maintaining Internet services. The initiative is part of a broader strategy to augment Algeria's international bandwidth capacity, coinciding with the deployment of a telecommunications infrastructure modernization and development program. The primary objective is to anticipate the escalating Internet demand and ensure ultra-high-speed access. As per the "Digital 2023" report by international consultancy Datareportal, the median mobile Internet connection speed in Algeria via cellular networks reached 13.40 Mbps, marking an over 17% increase in the 12 months leading up to the start of 2023. Fixed-line Internet speeds reached 11.01 Mbps, rising by 1.23 Mbps compared to 2022. The bandwidth expansion to 9.8 Tbit/s will facilitate the adoption of new technologies such as 5G, the Internet of Things (IoT), and other emerging services. (February 9, 2024) www.wearetech.africa

Bahrain

Mohammed bin Thamer Al Kaabi, Minister of Transportation and Telecommunications, participated in the inaugural meeting of the Innovation and Entrepreneurship Alliance for Digital Development's Digital Innovation Board, held in Geneva, Switzerland, on March 19-20. Minister asserted that the International Telecommunication Union (ITU)'s choice of the kingdom as a member of the Digital Innovation Board was based on the solid relations between the two sides, as well as Bahrain's landmark achievements in the fields of Information and communication technology locally, regionally and globally. He indicated that the kingdom's accession to the ITU in 1975 and its membership in the ITU Council for 2023-2026 confirm its keenness to support ITU, especially in the fields of innovation and digital development, to achieve sustainable development goals. Al Kaabi added that the kingdom's accession to the Digital Innovation Board would contribute to consolidating and supporting innovative technical projects, as well as enhancing Bahrain's position as a major center for innovation and leadership in the region. It is worth noting that the establishment of the Digital Innovation Board is part of the ITU's efforts to provide strategic guidance and support for its member states to foster innovation and entrepreneurship in digital development. It aims to accelerate innovation capacity and create linkages at the national, regional and global levels. (March 21, 2024) www.bna.bh

TRA, Bahrain, pursuant to Article 29 of the Telecommunications Law, the Individual License for International Telecommunications Facilities has granted W.L.L license to Alliance Networks on the 30 January 2024. (February 20, 2024) www.tra.org.bh

The Information & eGovernment Authority (iGA), in cooperation with the Bahrain Center for Strategic, International, and Energy Studies (Derasat), has announced the launch of the annual Customer Satisfaction Index (CSI) of 2022 and 2023 on the services and mobile applications provided by the Information & eGovernment Authority (iGA). The study, which will be conducted and managed by Derasat's Opinion Polls and Surveys Directorate, will cover a sampling of the Bahraini community to measure their level of customer satisfaction with the eGovernment services provided through iGA's eChannels. Lulwa Sami Ebrahim, iGA Director of Communications and Marketing, stated that this study showcases the iGA's commitment to enhancing the users experience and understanding their feedback relating to information, eServices, and digital applications offered through the different eChannels. It supports the reengineering of these services to improve the quality of government work, in line with directives of General Shaikh Rashid bin Abdullah Al Khalifa, the Minister of Interior and Chairman of the Ministerial Committee for Information and Communication Technology (MCICT). Lulwa Sami highlighted the iGA's continued focus on providing accessible channels for users to share their feedback on eServices and apps, noting that this study is just one of several approaches the iGA has adopted to achieve this goal. She also reaffirmed the community's role as an integral partner in the journey of development and improvement.

She added that the upcoming study reinforces the community partnership and cooperation between the iGA and various academic and national organizations involved in such research, and that they are crucial for maintaining impartiality. The director expressed iGA's pride in its collaboration with 'Derasat', which is expected to enhance the quality of eChannels in the Kingdom of Bahrain, meeting the government's aspirations and users' needs. Fatema Mohamad Al Doseri, Derasat Director of Opinion Polls & Surveys, said that Derasat's participation in this study underlines its role in supporting decision makers with precise and up-to-date information. "It offers statistical support for eService providers, in line with the major advancements that the Kingdom is experiencing and its comprehensive digital transformation." (January 10, 2024) www.bna.bh

Bangladesh

Bangladesh will gear up its broadband speed to 10 GBPS by 2041 from existing 10 Mbps to meet the growing demand for high-speed connectivity amid the country's rapid digital transformation. Bangladesh Telecommunication Regulatory Commission (BTRC) is formulating a National Broadband Policy-2021, incorporating 20 Mbps as minimum internet speed from the existing 10Mbps, officials said. Being instructed, the BTRC is working to upgrade the broadband policy by setting a target to increase the speed of broadband connectivity to 30 Mbps by 2023 (short term), 2 Gbps by 2031 (midterm) and 10 Gbps by 2041 (long-term). Later, the government formulated a policy in 2011 fixing the speed to 512kbps, 1 Mbps in 2013, 2 Mbps in 2015, 5 Mbps in 2016, 10 Mbps in 2018 and 20 Mbps in 2021. In framing the policy, the BTRC took initiatives including forming national taskforce committee and determining the scope of work, holding coordination meetings with A4AI and a2i and other stakeholders, forming a team to review the draft policy, preparing a sector-wise short outline, organizing seminars to collect inputs and setting short, mid and long-term targets. (March 15, 2024) www.daily-sun.com

Nearly seven million new internet users were added in 2023 in Bangladesh, bringing the total number of subscribers to 131 million by the year's end, according to data recently released by the country's telecom regulator. Data from the Bangladesh Telecommunication Regulatory Commission showed the user base includes some 118.49 million mobile internet users and 12.88 million broadband internet users. Last year witnessed an increase of 10.61 million mobile users, bringing the total number of mobile users in the country to 190.81 million. Subscribers of mobile operators GrameenPhone, Robi Axiata, Banglalink Digital Communications, and Teletalk Bangladesh stood at 82.20 million, 58.67 million, 43.48 million, and 6.46 million, respectively, at the end of December, data show. (February 13, 2024) www.tbsnews.net

The telecom regulator issued guidelines on the usage of radio frequencies, apparatus and equipment by Internet Service Providers (ISPs). The Bangladesh Telecommunication Regulatory Commission (BTRC) said the instructions were issued to streamline, restructure, and bring an order the frequency allocation process under the ISP license and make the overall process transparent. The ISPs have been providing wireless internet services through the allocated ISM (Industrial, Scientific and Medical) band. Various important organizations (banks, embassies, international organizations, industrial plants, etc.) require wireless connectivity as an alternative to the wired core connection used for data communication, which is provided by wireless ISPs. The ISM radio bands are frequencies reserved internationally for the use of radio frequency (RF) energy for industrial, scientific and medical uses other than telecommunications. BTRC said the instruction would provide a clear understanding among ISP operators about the requirement of authorization and related application processes for the use of frequencies. The BTRC instruction states that ISPs can get allocations of ISM Band (2.4000 -2.4835 GHz and 5.7255.875 GHz), 5 GHz Band (4.900 -5.725 GHz) and Microwave. The directions said that ISPs should be subject to prior approval of BTRC or should import through BTRC-listed vendor organizations as per prevailing norms, if any type of wireless equipment is required to be imported. "In cases of purchase from the local market instead of import, the concerned ISPs should comply with the guidelines, and the BTRC would notify details of the equipment as per Annexure-Kha," it said. All ISPs who have previously been listed in the ISM band or have received permission to use the frequencies in the ISM band should re-apply for the same in light of the issuance of this directive. (January 11, 2024) thefinancialexpress.com.bd

Egypt

The number of mobile subscriptions in Egypt increased by 6.1 million in 2023 compared with 2022, to 106.2 million, according to the Egyptian Ministry of Communications and Information Technology in its quarterly report issued in March. The ministry's ICT Indicators Quarterly Bulletin for Q4 of 2023 showed an increase in mobile subscriptions from 99.38 million in December 2022 to 106.21 million subscriptions in December 2023. The bulletin also showed that Egyptian mobile internet users – including voice and

data subscriptions and data-only subscriptions – also increased by six million from 71.74 million to 77.93 million subscriptions in the same time frame, representing an 8.6 per cent increase. In recent years, Egypt has experienced a significant rise in mobile internet usage, a trend experts attributed at the time to the coronavirus pandemic and the subsequent implementation of social distancing measures. Between 2019 and 2022, the country saw a staggering 77.9 percent increase in mobile internet subscriptions, surging from 39 million to 69.4 million. In January 2024, the Egyptian population reached 105.8 million, while the current population census is 106.1 according to the Central Agency for Public Mobilization and Statistics (CAPMAS).

(March 14, 2024) www.english.ahram.org.eg

Telecom Egypt secured a 5G license from the country's telecoms regulator for $150 million, putting it on course to launch services powered by the technology. The operator stated the National Telecommunications Regulatory Authority (NTRA) granted it a license valid for 15 years to support the country's digitalization ambitions. Telecom Egypt stated 5G "will ultimately benefit the entire economy and improve Egypt's international ranking in the ICT sector". It added the network technology would enable domestic enterprises to better analyze large volumes of data and scale up their operations. CEO and MD Mohamed Nasr identified 5G as "the backbone of future technology development", offering the potential to revolutionize businesses and everyday life when used in conjunction with technologies including fiber. He said being the first operator to receive the license solidifies its infrastructure and ability to provide mobile services. The Egyptian government reportedly first readied plans to issue 5G licenses in October 2023. In May 2023, the state sold a 9.5 per cent stake in Telecom Egypt under a wider privatization push.

(January 18, 2024) www.mobileworldlive.com

Iran

The World Bank announced that Iran is ranked 73rd among 217 countries and autonomous regions in terms of the electronic-government index. The World Bank has reviewed the state of digital development in the world, ranking 217 countries and autonomous regions in the world in terms of the e-government index. The electronic government development in Iran has been more than 144 governments and less than 72 governments. Algeria, Egypt, Cuba, India, Iraq, Jordan, Lebanon, Libya, and Pakistan are among the countries that are less developed in terms of electronic government than Iran. The scores of some other countries that are ranked higher than Iran are France, Germany, Japan, Kuwait, China, Qatar, Turkey, and the US. According to this report, 79 percent of Iranian people use the Internet which is much higher than the global average. 66% of people use the Internet on average globally. The amount of Internet usage in Iran is also higher than West Asia's average which is 76%.

(March 13, 2024) www.en.mehrnews.com

Jordan

Fixed voice communication services subscriptions totaled about 493,000 until the last quarter of 2023, with the home and trade sectors accounting for 67% and 33%, respectively. Published on its website, the statistical report of Telecommunications Regulatory Commission (TRC) addresses Jordan's telecom sector indicators for the last quarter of the year 2023 for fixed and mobile phone services, broadband Internet packages and leased line provision. Volume of fixed telephone traffic was about 11 million call minutes recorded during the last quarter last year, with local traffic at 88% and 12% for international destinations. On the other hand, the report indicated that the technology-based fixed Internet broadband subscriptions amounted to 805k until the end of the last quarter of the year 2023. (March 29, 2024) www.menafn.com

Jordan has progressed by eight positions in the Government Artificial Intelligence (AI) Readiness Index compared to the year 2022. According to a statement from the Ministry of Digital Economy and Entrepreneurship on Tuesday, Jordan ranked 55th out of 193 countries for the current year, compared to the 63rd position out of 181 countries for the year 2022. Jordan secured the fifth position among Arab countries, surpassing Bahrain, Egypt, Kuwait, and Tunisia, according to the report prepared by Oxford Insights. The Government AI Readiness Index is based on measuring three key pillars: Government, Technology Sector, and Infrastructure. It relies on 39 sub-indicators and 10 dimensions, including innovation capability, size, adaptability, digital capacity, governance, vision, data availability, infrastructure, human capital, and data representation. With this achievement, Jordan has reached the first target of its strategic plan for Artificial Intelligence and its executive plan (2023 and 2027), approved by the Cabinet in October 2022. Jordan has succeeded in achieving an improvement of over 20 percent in the global index of government readiness for artificial intelligence. This aligns with Jordan's vision to become a leading and competitive country in the field of artificial intelligence by creating a stimulating environment to attract AI companies and promote investment in this field.

(January 10, 2024) www.techpoint.africa.com

Kuwait

Assistant Undersecretary of the Ministry of Information for Media Services and New Media Sector, Saad Al-Azmi, announced the launch of the new digital platform (51) on May 12, which will integrate all of the Ministry's content digitally. Al-Azmi's statement came during a press conference held to announce the details of the platform and its launch, which will coincide with the anniversary of the launch of Kuwait Radio on May 12, 1951, in cooperation with Fasttelco. He stressed that the team will persist in their efforts until the upcoming launch, ensuring diverse content, including Ramadan programs, on Kuwait TV's digital platform until the transition to the new platform (51), whose goal is to embrace modern media technologies. Al-Azmi described the platform as a gateway to innovative digital content, transcending traditional methods and offering effortless access to television and radio content. It enables users to enjoy timeless archival pieces and live broadcasts of all Kuwait TV channels and radio stations. Emphasizing its family-friendly design, he highlighted adherence to Ministry of Information regulations and the platform's reflection of Kuwaiti cultural values and creativity in media, art, awareness, sports, and drama. It is projected to generate a substantial return of KD 5.050 million over five years, along with 10 percent of net advertising profits and subscriptions. Additionally, the Ministry will retain ownership of its archive and trademark, ensuring control over platform content. On her part, Nouf Al-Mashaan, representing Fasttelco, emphasized the significance of collaboration between the private and government sectors in advancing services. Leveraging their technical expertise and infrastructure, she highlighted their leadership position in delivering an unparalleled media experience. Al-Mashaan noted that their project opens doors to Kuwait's rich visual and audio archive, accessible worldwide, promoting not only Kuwait's history and culture but also the Arabic language. She expressed pride in cooperating with the Ministry of Information and other government agencies, underscoring their commitment to exploring opportunities for a prosperous media future aligned with a common vision. (March 12, 2024) www.kuwaittimes.com

The Chairperson of Kuwait Communication and Information Technology Regulatory (CITRA) has affirmed significance of a memorandum of understanding (MoU) CITRA has recently inked with Huawei. Omar Al-Omar, in a statement, said the MoU is crucial for boosting CITRA's strategic initiatives, digital innovation and skills, pushing forward the digital economy and developing infrastructures of future smart cities. Al-Omar said the MoU he had signed with Steven Yi, President of Huawei Middle East and Central Asia, recently in Barcelona, Spain, aims at enhancing mutual cooperation and contributing to the development of information and communications in Kuwait. Kuwait is currently "considered the top in the world with respect of phones' operations." Al-Omar said, noting widespread usage of state-of-art technologies and the reasonable prices in the country. Huawei provides "adequate solutions" to the operators and meet all their needs, he said, alluding in particular to the G5.5 technology that had been tested in Kuwait. "Soon, we will work out agreements to operate this technology as we had done previously with respect of G5 and G4 technologies." he revealed. On Security concerns, he indicated that the National Cybersecurity Center was activated a few months ago, affirming CITRA's support for efforts to protect clients' data. Moreover, he affirmed necessity of laws and legislation for facing such challenges. "Cyber criminals make use of loopholes in the social media and communications to launch their attacks thus new strategies are needed to confront such crimes," he added. Meanwhile, Yi expressed satisfaction for expanding the cooperation with CITRA and elevating the competition ability in the sector of information technology and communications in Kuwait as well as boosting the national digital economy. Enhancing the digital economy is necessary to create a dynamic and competitive market, Yi said, also noting the need for sponsoring the culture of innovation at this level. Furthermore, he underlined the need for developing infrastructures of future smart towns as a pivotal issue for attaining neo-Kuwait vision 2035. (March 8, 2024) www.kuna.net.kw

Communications and Information Technology Regulatory Authority (CITRA) called on mobile and fixed subscribers to update their data to ensure the continuity of their access to services from companies. The Manager of the Competition and Operators Affairs Department at the authority, Khaled Al-Qarawi told KUNA that the registration list of subscribers to communication services were obliged all licensed companies to urge their customers to update their expired personal data and information registered with the companies. Al-Qarawi emphasized the importance of maintaining the continuity of service to subscribers during the update phase, adhering to protocols set by mobile and virtual telecommunications providers. He emphasized the significance of public awareness of the registration list for mobile and fixed telecommunications services on the TRA website and urged them to avoid fraud. (February 5, 2024) www.kuna.net.kw

Kuwait's Public-Private Partnership Projects Authority, in collaboration with the Ministry of Communications (MoC), has invited local and international companies and consortiums to submit qualification applications for a major fixed telecoms network development project. The process seeks to establish 'a collaborative venture between the public and private sectors with the overarching goal of enhancing fixed networks', and encompasses various facets including the design, financing, construction, operation, maintenance, and transfer of ownership of new fixed infrastructure, whilst the chosen bidder will also be handed the responsibility of operating the existing fixed network currently operated by the MoC, with a focus on its improvement and expansion of high speed broadband services into additional regions. The existing Kuwaiti telecoms operators are excluded from the tender. Through a formal agreement with the MoC (alternatively referred to as the Ministry of Transportation), the winning bidder will undertake the modernization and

enhancement of the fiber-optic network in areas currently lacking fiber coverage. This initiative is set to be accomplished within five years from the date of the public-private partnership agreement, with the ultimate aim of extending coverage to 90% of homes and businesses. Other key goals include ensuring that the network supports speeds exceeding 10Gbps, enhancing customer services, offering job opportunities, providing training for Kuwaitis in the ICT sector, and reducing the operational costs of the MoC. (January 9, 2024) Arab Times

Oman

The Ministry of Commerce, Industry and Investment Promotion (MoCIIP) signed an agreement to establish, operate and manage an integrated Cloud Call Centre with the Labbik Telecom Services to improve services offered to the Ministry's customers. The step will help speed up the process of responding to reports in the call center and enhance operational efficiency through the use of modern technology. The agreement was signed by Dr Saleh Said Masn, Under-Secretary of the Ministry of Commerce, Industry and Investment Promotion for Commerce and Industry, and Khalid Saleh al Husaini, founder and CEO of Labbik Telecom Services. The agreement constitutes an important step towards modernizing the infrastructure of the Ministry's cloud communication services by developing the call center that connect the ministry's directorates in all governorates in a professional manner with the center hub (the Cloud Call Centre). (March 11, 2024) www.omanobserver.om

Data released by the National Centre for Statistics and Information (NCSI) showed a 9.7 percent growth in postpaid mobile phone subscriptions, totaling 1.78 million subscriptions. Prepaid mobile phone subscriptions also saw a 1.5 percent increase, reaching a total of 5.19 million subscriptions. Among these, 3.93 million were from operators, and 1.26 million were resale subscriptions. This resulted in a 3.5 percent overall rise in the total number of mobile phone subscriptions by the end of 2023, reaching a total of 6.98 million subscriptions. (February 4, 2024) www.timesofoman.com

The Telecommunications Regulatory Authority (TRA) has issued a third-class license to Oman Lens Company to establish a ground station connected to a satellite network. Oman Lens will use the first-of-its-kind license to establish a ground station connected to the satellite network, for monitoring, tracking, and controlling satellites belonging to the Star. Vision Aerospace Limited network. The license will contribute to providing imaging services from space for use in some applications, such as mapping, environmental monitoring, resource management, agriculture, and disaster management. (January 22, 2024) www.omanobserver.om

Pakistan

The Federal Minister of Information Technology and Telecommunication Shaza Fatima Khawaja and President and Group CEO of PTCL Hatem Bamatraf discussed the rollout of 5G technology, right-of-way issues, and the important aspect of fiberization within the telecommunications sector. During the meeting, the Minister emphasized the significant role of the telecommunications sector in the national economy. She said that efforts are underway to expedite work on matters such as 5G and other matters related to the telecom sector. The PTCL President expressed a desire to further strengthen bilateral ties between Pakistan and the UAE. (March 21, 2024) en.wenews.pk

The adoption of mobile broadband technologies is on the rise in the country as PTA reports that around 10.3 million (a total of 10,342,191) Pakistanis are using next-generation mobile technologies (3G and 4G LTE). The total number of cellular subscribers, on the other hand, has reached 136.6 million users (136,630,891 to be precise). According to the telecom indicators made public by PTA, Mobilink is still the largest cellular network operator in the country with 38.37 million users (losing 5,619 users in the process), followed by Telenor which enjoys 36.7 million subscribers. Telenor and Zong were the only operators to gain customers, 214,857 and 287,312 respectively, while rest of the telcos lost a total of 353,374 subscribers. On the mobile broadband side, Telenor is the first telco to hit the 3 million 3G users mark. Warid has also made significant progress during the past month and now boasts 60,923 LTE users. Zong's LTE adoption is off to a slow start with 7,621 total users as of February 2015. (March 18, 2024) www.techjuice.pk

The Pakistan Telecommunication Authority (PTA) has recognized the congestion issues in the existing frequency bands supporting Wi-Fi, leading to a compromise in the quality of service. In response to this challenge, the PTA is contemplating the potential designation of the 6 GHz band for license-exempt use. This move is aimed at supporting advanced Wi-Fi technologies like Wi-Fi 6E and the upcoming Wi-Fi 7 generations. The 6 GHz band is considered advantageous for Wi-Fi due to its ample bandwidth and availability of cleaner channels. By designating this band for license-exempt use, PTA aims to enhance the wireless experience, especially for data-intensive applications such as streaming and cloud-based services. This step aligns with the

global trend towards adopting advanced Wi-Fi standards to meet evolving connectivity needs. To ensure optimal utilization of the 6 GHz band, PTA is closely monitoring the commercial availability of Wi-Fi 6E-enabled devices. These devices include routers, laptops, access points, and more. The authority is also conducting field trials to ensure the co-existence of other services operating in the 6 GHz band, emphasizing the importance of harmonious spectrum usage. PTA's proactive efforts extend beyond Wi-Fi 6E, as the authority is contemplating the adoption of future Wi-Fi generations, including Wi-Fi 7. These initiatives underscore PTA's commitment to positioning Pakistan at the forefront of wireless connectivity. By embracing the latest Wi-Fi standards and anticipating future technological developments, PTA aims to empower citizens and businesses to leverage the full potential of cutting-edge wireless technologies in the evolving digital landscape. (February 6, 2024) www.newsguru.pk

Pakistan Telecommunication Authority (PTA) invites comments/ feedback on draft framework for Mobile Virtual Network Operator (MVNO) services. The draft consultation framework is available at PTA website (https://www.pta.gov.pk/en/data-&-research/consultation-papers). Comments (through email or in print form) on the draft MVNO framework may be submitted at faheemahsan@pta.gov.pk or Director General (Wireless Licensing), PTA Headquarters, F-5/1, Islamabad. The deadline for responding is 8th February, 2024. The draft framework may contribute in further growth of telecom sector of Pakistan by providing opportunities of new investments. (January 22, 2024) www.pta.gov.pk

In line with its ongoing commitment to enhancing the technical capacity of Pakistan's telecom industry, Pakistan Telecommunication Authority (PTA) successfully organized a two-day workshop on 'IPv6 Transition' and 'Routing Security' in collaboration with the Asia-Pacific Network Information Centre (APNIC), the Internet Society (ISOC), and the Pakistan Network Operators Group (PKNOG). The workshop featured esteemed foreign speakers and witnessed active participation from professionals in the telecom industry, underscoring the collective commitment to staying abreast of technological advancements. Speaking on the occasion, Chairman PTA, Major General (R) Hafeez Ur Rehman said that PTA is well aware of the importance of capacity building therefore it is working closely with international stakeholders for the capacity building of the telecom industry. The successful execution of this capacity-building workshop signifies a significant step towards achieving PTA's broader goals of fostering innovation, ensuring cybersecurity, and positioning Pakistan's telecom industry as a leader on the global stage. (January 18, 2024) www.pta.gov.pk

Qatar

The Communications Regulatory Authority (CRA) has published the resolution results of telecom consumers' complaints received in 2023 to mark World Consumer Rights Day, observed annually on March 15. In 2023, CRA received 1,344 complaints and inquiries from consumers about telecom services in Qatar. CRA evaluated complaints based on a set of criteria to determine their validity to CRA's complaint process; 535 were valid complaints and CRA resolved around 98% of the total valid complaints received. Also, CRA is working with the telecom service providers Ooredoo Qatar and Vodafone Qatar to finalise the related investigation of the remaining ones. The statistics indicate that 73% of all received complaints were related to mobile services and the highest percentage were related to postpaid billing, packages and service disconnection. As for fixed-line services, the statistics indicate that they were 27% of the total complaints, and the most received complaints were related to Internet, landline, and TV service interruptions and billing. Amel Salem al-Hanawi, director of Consumer Affairs Department at CRA, said: "We mark World Consumer Rights Day by reaffirming our ongoing commitment to ensuring that telecom consumers in the State of Qatar have their rights protected. Also, in line with CRA's keenness to enhance transparency, we will continue publishing and sharing the data related to consumers' complaints. "CRA ensures protecting consumers' rights by developing necessary regulatory instruments to effectively regulate the telecommunications sector, granting the telecom service providers the necessary licenses, determining the necessary obligations on them, monitoring their compliance with these obligations, and resolving consumers' complaints if not resolved by the service providers or if consumers are not satisfied with the provided resolution."
(March 18, 2024) www.gulf-times.com

In line with Qatar's Internet Protocol Version 6 (IPv6) Implementation Strategy and as an essential component of the ongoing joint capacity-building efforts, the Communications Regulatory Authority in Qatar (CRA) in collaboration with the Réseaux IP Européens Network Coordination Centre (RIPE NCC), conducted a three-day training course on IPv6 from February 19 - 21, 2024. The training course was attended by attendees representing Qatar's IPv6 Taskforce Members from Aspire Zone, Qatar Energy, Ministry of Public Health, Hamad International Airport, Sidra Medicine, General Authority of Customs, Carnegie Mellon University-Qatar, Qatar University, Hamad Bin Khalifa University, Qatar Foundation, Ministry of Education and Higher Education, Qatar Airways, and the University of Doha for Science and Technology. The training was thoroughly designed to equip participants with the essential knowledge and skills required for a seamless and successful transition from Internet Protocol version 4 (IPv4) to IPv6. It provided an in-depth exploration of critical aspects of transitioning to IPv6 such as configuration, deployment, routing, and security. It addressed the significance of IPv6 and its necessity for modern networks. The course offered foundational knowledge on planning IPv6 deployment and addressing strategies. Furthermore, it encompassed additional

relevant topics on IPv6 that are crucial for telecom network infrastructure. (February 25, 2924) www.cra.gov.qa

In a recent report by the International Telecommunication Union (ITU), Qatar has solidified its position as a global leader in information and communication technology (ICT) development. The "Measuring digital development: The ICT Development Index 2023 (IDI)" report, assessing progress in 169 countries, revealed Qatar's outstanding performance in key indicators, placing it third worldwide. The IDI, introduced by ITU in 2009 and serving as a crucial tool for policymakers, has resumed publication after a six-year hiatus, employing a new methodology developed through an inclusive and iterative process. Qatar's ICT Development Index of 98.7 percent places it just behind the UAE (100 percent) and the United States (99.1 percent). The assessment includes indicators such as internet usage (99.7 percent of the population in Qatar), households with internet access (95 percent), and mobile network coverage (100 percent for 3G and 99.8 percent for 4G/LTE). Mobile phone ownership in Qatar stands at an impressive 99.6 percent. The report emphasizes the significance of digital connectivity for inclusive and sustainable development, praising Qatar's robust digital infrastructure. Dr. Cosmas Luckyson Zavazava, Director of ITU's Telecommunication Development Bureau, stressed the importance of prioritizing digital connectivity to ensure universal and meaningful connectivity. Globally, the report highlighted that 5.4 billion people, equivalent to 67 percent of the world's population, used the internet in the assessed year. Disparities were noted, with higher internet usage in regions like Europe, the Commonwealth of Independent States, and the Americas compared to lower usage in Africa. (January 2, 2024) www.edgemiddleeast.com

Saudi Arabia

The Digital Regulatory Academy (DRA) held a training program on forming and implementing public policies and digital regulations, provided by international experts, aiming to qualify leaders in policy making and digital regulations, obtain the necessary skills to apply international best practices and achieve excellence and regulatory maturity to keep pace with rapid changes. The 4-day training program was attended by beneficiaries from 13 governmental entities and the ICT service providers in Saudi Arabia. During the program, participants were introduced to the policy-making process, its main stages, as well as institutions responsible for its formulation, implementation and analysis. In addition to learning about its main concepts and theories, and developing the trainees' research skills, as the program contributes to providing them with the necessary skills in policy research, collecting and screening data, and analyzing stakeholders. Along with developing their critical thinking and communication skills to discuss its issues. The program is part of the Digital Regulatory Academy initiatives that seeks to develop national capabilities, expand leaders' expertise in the field of digital regulations and public policy, and ensure a collaborative coordination between regulators and international institutes through strategic partnerships to leverage from the best expertise and enhance the quality of services. (March 20, 2024) www.cst.gov.sa

The Communications, Space and Technology Commission (CST) issued "GameMode" report of Q4 2023, which compares the quality of telecom service providers performance in Saudi Arabia for the most popular online games, which revealed an improvement in the performance of online games by 39% compared to Q4 of 2022. The report also showed an increase in the performance of download speeds of online games across popular gaming platforms in Saudi Arabia, where it revealed that "STC", "Mobily" and "Salam" shared the leading position in the performance of download speeds on STEAM by achieving 100%. The report stated that "Mobily" and "Salam" companies were leading on PlayStation by 100%, while "Mobily" also topped the list in XBOX by 100%. In addition, the report demonstrated that "STC" and "Mobily" showed the highest performance of the average response time in 8 games, namely Call of Duty, EA Sports FC, Apex Legends, VALORANT, Rainbow Six Siege, PUBG MOBILE, Among Us and Battlefield. While "STC", "Mobily" and "Salam" were leading in Rocket League. However, "STC" was the top in 5 games: Fortnite, Counter Strike, Dota2, World of Warcraft and League of Legends, while "Mobily" took the lead in PUBG and Halo Infinite. The report also included a series of guidelines for improving the quality of Internet connection for online games, as well as home network setup and network devices efficiency guidelines. It also highlighted the steps to participate in achieving the objectives of "GameMode" initiative, by registering for a "Meqyas fixed internet" device, which allows the user to know the internet performance of the most popular apps and online games. The report keeps up with the latest games and includes performance indicators in its periodic editions, which is published quarterly. The "GameMode" initiative increases competitiveness among telecom service providers to provide the best experience for players while raising the level of transparency in the market by publishing data and indicators' results, along with enabling investors and interested parties to view market performance indicators in Saudi Arabia. (March 15, 2024) www.cst.gov.sa

Sri Lanka

The Ministry of Education says arrangements have been made to revise the IT curriculum in state schools. Minister of Education Susil Premajayantha announced that the pilot project in this regard will be launched on March 19, 2024. He further said that under the pilot project, steps have been taken to introduce Information Technology, including Artificial Intelligence, in the education system of state schools from Grades 08 to 13. Minister Premajayantha said that Microsoft has partnered with the ministry to provide the necessary assistance in this regard. He pointed out that the introduction of the new IT Curriculum will enable imparting the subject knowledge according to international standards. "When making changes in the field of education, it is essential to provide children with modern technical knowledge. Especially in the fields of Nano Technology, Biotechnology, genetic Engineering, and Artificial Intelligence," the education minister added. (March 14, 2024) www.newswire.lk

Tunisia

African countries are working hard to deploy 5G. Technology has the potential to accelerate digital transformation with new applications in several areas, including transport, health, education and agriculture. Tunisia now has a roadmap for the commercial deployment of fifth generation (5G) mobile technology. The plan was unveiled on Monday March 18 by Nizar Ben Neji (photo), Minister of Communication Technologies, during a workshop organized for this purpose. According to the roadmap, the licensing and commercial launch of 5G are planned for September and November 2024 respectively. The government has tasked the National Frequency Agency (ANF) with identifying and providing frequency bands required. For its part, the National Telecommunications Authority (INT) will be responsible for studying the economic feasibility of launching ultra-broadband and determining the price of the license. The advent of 5G is part of the implementation of Tunisia's "National Digital Transformation Strategy 2025". This strategy aims in particular to accelerate the digitalization of administration, secure national cyberspace, ensure digital sovereignty and establish a climate of digital trust essential to the implementation of digitalization projects. "5G will represent an important qualitative leap in strengthening the infrastructure to be able to absorb the developments of different digital applications in various strategic areas such as digital health, smart industry, smart agriculture, distance education, intelligent transportation and other areas," the Ministry of Communication Technology said. (March 21, 2024) www.agenceecofin.com

United Arab Emirates

The Telecommunications and Digital Government Regulatory Authority (TDRA) has unveiled the second phase of the "U Ask" platform, the virtual assistant available on the unified digital portal U.ae. In this phase, the implementation of generative AI is extended to government portals in alignment with the updated version of the Unified Design Language System (DLS). This development follows the remarkable success of the "U Ask" platform on U.ae. H.E. Eng. Majed Sutaln Al Mesmar, TDRA Director General, emphasized the significance of leveraging the expansive opportunities offered by generative AI to enhance government services. He said: "The utilization of artificial intelligence, especially generative AI, presents a significant opportunity to enhance efficiency in government operations. TDRA has been a pioneer in implementing this technology, and we are committed to extending this experience. H.E. Al Mesmar added: "We thank the government entities collaborating with TDRA in adopting cutting-edge technologies, such as generative AI. We reiterate our readiness and eagerness to consistently collaborate with them to realize the 'We the UAE 2031' vision, which stipulates the establishment of Forward Ecosystem, and in line with the wise leadership directives that people's happiness is the central emphasis of governmental efforts." H.E. Mohammad Al Zarooni, TDRA Deputy Director General for Information and Digital Government Sector, said: "U Ask uses generative AI and answers questions related to government services in a conversational form, allowing seamless integration on any government portal using the DLS version 2.0. U Ask supports multilingual conversations with over 57 languages. The "U Ask" platform on every government website provides answers to questions for which answers are available on the respective website, pertaining solely to the information accessible within it. It does not just answer queries; it anticipates user needs, providing intelligent suggestions for the questions that may follow, making interactions more intuitive, efficient, conversational and user-friendly. U Ask won Gartner Eye on Innovation Awards for Governments 2023. The award recognizes governmental initiatives that make innovative use of data and emerging technologies to advance tangibly their digital government ambitions at the local and regional levels.

(March 424) www.tdra.go

REGULATORY ACTIVITIES BEYOND THE SAMENA REGION

Australia

Telecommunications company Medion Australia Pty Ltd (Medion) has paid a $259,440 penalty for failing to comply with customer identification rules, resulting in a number of people falling victim to SIM-swap scams. An Australian Communications and Media Authority (ACMA) investigation found Medion failed to complete a required customer verification check for more than 1,600 SIM-swap requests and one password reset request. These compliance failures led to nine known cases of people having their SIMs swapped illegally, five of whom suffered financial losses totalling over $160,000. SIM-swap scams occur when a scammer takes control of a person's mobile number by using the individual's personal details to request a new SIM. Under industry rules introduced in 2022, telcos are required to conduct a multi-factor identity authentication check before undertaking high-risk customer requests such as SIM-swaps, changes to accounts or disclosure of personal information. ACMA Chair Nerida O'Loughlin said that the rules had been very effective in stamping out SIM-swap fraud, which made Medion's non-compliance stand out. "SIM-swap fraud can cause significant harm as scammers may then be able to gain access to your online banking accounts and other personal information. In this case, criminals have taken advantage of Medion's compliance failures," she said. "The rules have now been in place for well over 12 months, so telcos have had more than enough time to ensure they have robust verification processes." In addition to the financial penalty, the ACMA has accepted a comprehensive two-year court-enforceable undertaking from Medion committing the company to appoint an independent consultant to review its compliance with the customer ID rules and to make improvements where needed. Medion must also report regularly to the ACMA on its progress.

(January 17, 2024) www.acma.gov.au

Azerbaijan

Telecom regulator, the Information and Communication Technologies Agency (ICTA), held discussions with telecommunications operators and providers operating in the country the regulatory framework in the field of internet telecommunications services. Nail Mardanov, acting head of the agency said, providing information on the necessity and importance of shaping the regulatory environment, improving regulation and supervision institutions, the impact on international ratings, as well as the measures taken in our country in the field of regulation. Nail Mardanov also delivered information about the work done by the regulatory body and informed that the analysis of the preparation level of the regulatory framework in the field of internet telecommunications services has been conducted by ICTA. Afterwards, presentations were made by ICTA staff on the preparation level of the regulatory framework in the field of internet telecommunications services. It was reported that in the analysis, a number of indicators from 60 international rating tables were used. After the presentation, discussions were held with representatives of operators and providers, and their opinions and proposals were heard. During the discussions, issues that are necessary to be addressed in Azerbaijan, as well as the opportunities for public-private partnerships, were also discussed. It was also noted the necessity of continuous exchange of views around the mentioned issues. ICTA declares once again that it is fully open to suggestions and discussions around the analysis posted on the official website.

(March 4, 2024) www.azernews.az

China

Data from China's Ministry of Industry and Information Technology (MIIT) reportedly showed operators had deployed 3.4 million 5G base stations at end-2023, with the three major mobile players adding 278 million package customers across the year. More than 80 per cent of administrative villages nationwide have 5G connectivity, telecoms portal C114.net reported. Operator statistics for December 2023 showed the big three ended the year with a combined 1.4 billion 5G package customers. China Mobile had 794.5 million, an increase of 180.5 million; China Telecom 318.7 million (50.7 million); and China Unicom nearly 260 million (47 million). The number of 5G subscribers with compatible handsets reached 805 million, MIIT reportedly estimated. Only China Mobile releases 5G network customer numbers in its quarterly numbers: it ended Q3 2023 with 425 million and is due to release Q4 2023 figures in March.

(January 23, 2024) www.mobileworldlive.com

Ecuador

Telecom regulator presented its 2024 plan for this year. The document presented by Arcotel, which is subject to changes, indicates there is a lack of competition in the telecommunications market and so it proposes working on regulation to improve the situation. According to the regulator's latest statistics, as of December Claro had the largest mobile market share with 51.9% of lines, followed by Movistar with 30.3% and state-owned CNT with 17.8%. In fixed internet, the leader was Megadatos with almost 30%, followed by CNT (16%) and Claro (10.5%), according to figures compiled by Arcotel at the end of the third quarter of 2023. An update of the national spectrum plan is expected for December with the aim of adding the latest modifications to the ITU radiocommunications regulations approved at the CMR2023 event, among other things. Ecuador still has to resolve the issue of renewal of mobile concessions. In December, telecoms ministry (Mintel) head César Martín met with Claro and Movistar to push for progress in the contract renegotiation process. Arcotel also plans to advance with the detection and control of stolen or lost devices. The plans also include new quality standards for telecommunications services, international recognition and regulation of electronic signatures, as well as technical interconnection standards and changes in the procedures for the return of remaining balances from top-ups of mobile service subscribers. Subscribe to the leading business intelligence platform in Latin America with different tools for Providers, Contractors, Operators, Government, Legal, Financial and Insurance industries.

(February 8, 2024) www.bnamericas.com

Germany

German Regulator, the Bundesnetzagentur imposed fines totaling €1.435 million for unsolicited marketing calls compared with €1.15 million. "Many companies are still not complying with the legal requirements when making telemarketing calls. This resulted in the Bundesnetzagentur having to impose particularly high fines in 2023," said Klaus Müller, President of the Bundesnetzagentur. "One bright spot, however, is the fall in the number of complaints. This is also the result of the consistent approach taken by the Bundesnetzagentur against unwanted sales calls." The reason for the high level of fines in 2023 are the many extreme cases of unsolicited marketing calls in which companies or their representatives deliberately ignore the statutory requirements. As in previous years, the majority of the proceedings were brought against companies operating in the energy market and against the call centers commissioned by them. In 2023, in proceedings for the energy sector alone, the Bundesnetzagentur imposed a fine of €285,000 in each of three proceedings and a fine of €275,000 in another. A particular feature of these cases, apart from the high number of consumers as injured parties, was the fact that the actual reason for the call was often initially concealed. At the start of the conversation, the callers would pretend to be from the energy supplier of the person they were calling, or as a price comparison site, so as to gain the trust of the person called and subsequently request them to disclose personal data such as the meter number or meter reading. The Bundesnetzagentur is already aware of such patterns of behavior from previous years, but they continued in a more serious form in 2023.

(January 19, 2024) www.bundesnetzagentur.de

Ghana

Ghana's cabinet has approved the establishment of shared neutral 4G and 5G networks for all telecommunications operators in the country to enhance Internet connectivity. Minister of Communications, Ursula Owusu-Ekuful, has said the network would also pave the way for other telecommunication companies to invest in the country. The Minister of Communications said the government is ready to partner with the private sector to deliver 4G and 5G networks in the country. The minister added that there were currently private telecommunication operators that were interested in partnering and building the 5G network infrastructure in the country. "The government will auction the 5G spectrum since it is one or two companies that can buy such spectrum," Minister of Communications, Ursula Owusu-Ekuful, stated. "Auctioning the spectrum will only create more difficult situations for the citizenry with the dominance of one or two telecommunication entity," she said. In 2015, MTN Ghana won the bid for its 4G spectrum for $67 million. The company was preparing its 5G pilot in 2022 but announced a suspension with no reason given.

(March 22, 2024) www.techlabari.com

Hong Kong

The telecoms regulator will collaborate with government sectors and invite public service organizations to join the SMS Sender Registration Scheme to combat fraudulent messages and scam, said director-general of communications Chaucer Leung Chung-yin. Under the scheme, senders are required by the Office of the Communications Authority to utilize registered SMS identities prefixed with "#" when sending text messages to mobile subscribers. Initially launched with the telecoms sector, the scheme will expand its scope to include the banking sector. Leung said that more government departments are expected to join, with the police and the Immigration Department already in and the Efficiency Office showing interest.

(January 25, 2024) www.chinadailyhk.com

India

The Department of Telecommunications (DoT) announced it will hold a spectrum auction starting May 20 this year. A total of 10,523.15MHz of spectrum worth 963.17 billion Indian rupees ($11.65 billion) will be put up for sale. Spectrum in several frequency bands, including 800MHz, 900MHz, 1800MHz, 2100MHz, 2300MHz, 2500MHz, 3300MHz and 26GHz, will be available for service providers to purchase. Significantly, the government is not offering 700MHz spectrum in the auction. In the last auction, Reliance Jio, India's largest service provider, acquired pan-India 700MHz spectrum, which it uses to offer 5G standalone (SA) services. According to the Notice Inviting Applications (NIA) issued by the DoT, the interested companies need to apply by April 22. This would be followed by a mock auction on May 13 and May 14 before the actual auction starts on May 20. A company must have a Unified Access Services Licenses (UASL) or Unified License (UL) to bid for the spectrum, the NIA specifies. However, a company can also give an undertaking that it will acquire a UASL/UL license to participate in the auction. Even as the government goes ahead with the auction, it is aware that the response will be subdued. "The next spectrum auction will be a limited auction because an already large part of the spectrum required by the industry was auctioned last year," said Ashwini Vaishnaw, Minister for Communications and IT. A key reason for anticipated muted response is that the service providers invested a significant amount in acquiring the 5G spectrum in an auction held in 2022 but have yet to start monetizing it. The top two telcos, Reliance Jio and Bharti Airtel, have launched 5G services but have yet to announce tariffs for them. It is safe to say that they have a significant inventory of yet-to-be-utilized spectrum, as Jio and Airtel together have just a little over 100 million 5G subscribers. On the other hand, Vodafone Idea is likely to commercially launch 5G services only later this year. However, Airtel and Vodafone Idea will bid for their expired spectrum. Last month, the government approved a fresh spectrum allotment to these two telcos to avoid service disruption in circles (service areas) where their 20-year lease had come to an end. This was allowed only until the auctions are held. Airtel is likely to renew its spectrum in 900MHz and 1800MHz frequency bands in six circles of Uttar Pradesh (East), Uttar Pradesh (West), Assam, Bihar, West Bengal, Odisha, and Jammu and Kashmir. Vodafone Idea's license is, meanwhile, coming to an end in West Bengal and Uttar Pradesh (West). During the last auction in 2022, the government earned INR1.5 trillion ($18.19 billion). It has decided to hold one spectrum auction every year to ensure telcos are never short of spectrum.(March 11, 2024) www.lightreading.com

The Union Cabinet chaired by Prime Minister approved auctions in eight spectrum bands for mobile phone services at a base price of Rs 96,317.65 crore to improve the quality of telecom services and coverage for consumers. The Ministry of Communication has announced auctions for spectrum in 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2300 MHz, 2500 MHz, 3300 MHz and 26 GHz frequency bands. The said spectrum will be offered with a validity period of 20 years. "A total of 10,523.15 MHz is being offered with a valuation of Rs. 96,317.65 crore," said the official statement.

(February 8, 2024) www.economictimes.indiatimes.com

Ireland

Media regulator Coimisiún na Meán has named the 10 services formally designated as video-sharing platform services to be bound by new online safety rules. After a designation process which was completed in December 2023, the designated services are Facebook, Instagram, YouTube, Udemy, TikTok, LinkedIn, X, Pinterest, Tumblr and Reddit. The draft online safety code, which is currently subject to public consultation, can be applied to these services. In a statement, Coimisiún na Meán said: "The finalized Code will form part of Ireland's overall online safety framework, taking effect from February this year. "This framework will make a range of online services legally accountable for how they keep people safe online. This framework is based on the Online Safety and Media Regulation Act 2022, the EU Digital Services Act and the EU Terrorist Content Online Regulation."

(January 11, 2024) www.irishlegal.com

Malaysia

A final determination on the mandatory standards for quality of service (MSQoS) related to 'Wireless Broadband Access Service' has been issued by the Malaysian Communications and Multimedia Commission (MCMC). Previously, the regulator last month had confirmed its intention to establish two sets of 'Key Quality Indicators' (KQI), namely the 'Mandatory KQI' – which monitor and enforce the parameters in the standards – and the 'Monitoring KQI' – which keep track of the parameters for improvement purpose. With the final determination having now been published, the new MSQoS will come into effect from 1 April 2024. (January 5, 2024) www.commsupdate.com

Namibia

The Namibian telecoms watchdog has revoked UCOM Mobile's telecoms license due to unpaid license fees totaling NAD19.3 million (US$1 million). The Namibian reported there had been multiple attempts to reach a payment agreement which did not materialize. CRAN chief executive Emilia Nghikembua said the move was to ultimately protect consumers and maintain competition in the Namibian market. "The non-payment of spectrum fees and hoarding are serious violations of license conditions and grounds for cancellation," said Nghikembua. UCOM Mobile was also found guilty of "spectrum hoarding" according to the regulator, by not effectively using its assigned frequencies for mobile services. (January 18, 2024) www.developingtelecoms.com

The Netherlands

The Netherlands is one step closer to licensing its 3.5GHz spectrum after the Dutch government finally published the regulations governing the auction. If all goes well, it will be concluded by this summer and operators will be able to start using their frequencies before August 1. The auction has been held back by lengthy delays, caused partly by disputes with satellite operator Inmarsat, which was using some of the spectrum for its operations. (February 14, 2024) www.lightreading.com

Nigeria

The Nigerian Communications Commission (NCC), has called on telecommunications operators (Telcos), to adopt data-driven and intelligent solutions to enhance network performance, coverage, and capacity. The NCC stated this in its latest survey report on Machine Learning (ML) and Data Analytics, The survey, which stressed the need for the increased adoption rate of Machine Learning and Data Analytics among telecoms operators, said the telecoms industry has contributed so much to Nigeria's Gross Domestic Product (GDP) and has impacted the economy to a level that calls for protection of the industry, hence the need for the survey. The study looked at the current and future landscape of machine learning and data analytics adoption in mobile communications network planning and optimization within Nigeria. Utilizing a cross-sectional approach, the research incorporates surveys, focus group discussions, and key informant interviews to uncover trends, challenges, and opportunities in the telecoms sector. (March 14, 2024) www.thisdaylive.com

The Nigerian Communications Commission (NCC) has confirmed that telecoms operators, MTN and Globacom, have reached an agreement to resolve interconnect debt issue between them. This was announced by the Director of Public Affairs of the commission, Reuben Muoka. "In granting the approval, the Commission was deeply conscious of the potential impacts of the decision on consumers and therefore continued to engage both parties to facilitate a resolution which prioritizes and protects consumer interest and the seamless operation of the national telecoms network," NCC said. With the development, Glo subscribers will not be barred from making calls to MTN, and neither will MTN subscribers have any issues calling Glo network as earlier announced by the telecommunications industry regulator last week. While the notice from NCC last week had stated that Glo was owing MTN interconnect fees, industry sources later confirmed that Glo had actually paid off the debt in question. (January 19, 2024) www.authorityngr.com

Poland

Poland's regulator the Office of Electronic Communications (UKE) has signed an agreement with the cities of Rzeszów and Wrocław as well as the Union of Polish Metropolises (Unia Metropolii Polskich) to educate local governments in the use of 5G to build private networks. From a wider perspective the initiative is intended to help the municipalities to effectively manage spectrum, while also convincing potential investors and local communities about the benefits of Smart City applications. The Union of Polish Metropolises represents the 12 largest cities in the country. The regulator emphasized that the agreement is open to all local government units, including smaller ones that do not always have adequate human resources and substantive knowledge. Telko.in reported that UKE President Jacek Oko wants to put the dedicated local government private 5G network band to work so will now share practical 5G knowledge in the field. Before UKE decided to allocate the 3800-4200MHz band for private 5G networks (of which the first 100MHz for exclusive use by local government units for their own needs), Oko said UKE representatives held many talks with local government officials and organizations associating local government units.

(January 17, 2024) www.mobileeurope.co.uk

Romaina

Romanian regulator, the National Authority for Management and Regulation in Communications (ANCOM) has gazetted a new national digital services law – which applies EU regulations on digital services – that will come into force three days after publication. The new law establishes the national measures necessary for the application of the digital; services regulation, designates the coordinator of digital services (ANCOM) and adopts the sanctioning regime applicable in case of non-compliance with the obligations established by the regulation on digital services or by law. At the same time, the law also creates a mechanism through which public authorities or institutions that have "competences in certain sectors or fields of activity" can issue orders for the removal of certain content considered illegal under national rules. The first part of the law covers off "intermediary service providers." This basically includes transmission services like internet exchange points, wireless access points, virtual private networks, DNS services, first-level domain name registries, registrars for domains, the certification authorities that issue digital certificates, VoIP telephony and other interpersonal communication services. It also includes caching services like CDNs, reverse proxies or content adaptation proxies and hosting services such as cloud services or web hosting, plus paid referral services or services that allow the sharing of information and content online, including file storage and sharing. According to the law, intermediate service providers who have their main place of establishment or residence in Romania or their legal representative is established in Romania have the obligation to send ANCOM, within no more than 45 days from the date of starting to offer services, information which will include the identification data of the supplier and its contact data in order to communicate effectively with public authorities, announcing any changes as well. ANCOM's obligation to inform also applies to suppliers who offer intermediate services on the date of entry into force of the law, the 45-day term being calculated from this moment. The form, content and conditions under which the information will be provided are included in the draft decision on the information procedure for intermediate service providers, which are currently under public consultation.

(March 21, 2024) www.mobileeurope.co.uk

Switzerland

The Federal Department of the Environment, Transport, Energy and Communications (DETEC) has issued 38 licenses to local radio and regional television stations for the period 2025 to 2034. The majority of the licenses are going to the incumbent. Most of the existing license holders will also be awarded the contract for the new period. In one TV and two radio coverage areas, the license is being awarded to a new applicant. In the coverage areas, Geneva (Léman bleu), Vaud – Freiburg (la télé), Bern (TeleBärn) and Eastern Switzerland (TVO), the existing broadcasters will have their licenses renewed. In Zurich – Northeastern Switzerland, TeleZüri was assessed to have presented the best application. However, under the 2+2 rule, where one company cannot be granted a license for more than two TV or radio stations, Tele Züri cannot be granted the concession. Of the remaining three applications, existing licensee Tele Top was deemed to have the best proposal. In the Biel/Bienne coverage area, the recently established Canal B, sister channel to Canal Alpha, today's concessionaire in the Arc Jurassien coverage area, won out against TeleBielingue. (January 12, 2024) www.broadbandtvnews.com

Thailand

The National Broadcasting and Telecommunications Commission (NBTC) has announced the One Region, One MVNO scheme, aiming to establish more MVNOs as an alternative to the three mobile operators in the country. Under the plan, four new MVNOs are expected to launch by 2026. NBTC Chairman Sarana Boonbaichaiyapruck disclosed that the regulator is also aiming to implement free nationwide access to state digital services by 2026. (January 5, 2024) The Bangkok Post

United Kingdom

The UK's Competition and Markets Authority (CMA) outlined plans to launch an in-depth phase two investigation into a proposed tie-up of Vodafone UK with 3 UK unless the companies provide meaningful solutions to concerns related to the deal. Vodafone and 3 have five working days to respond to the CMA's concerns, following an initial assessment which found the deal could lead to higher prices for customers and lower investment in mobile networks. "These warrant an in-depth investigation unless Vodafone and 3 can come forward with solutions," the CMS stated. The CMA launched its phase one investigation in January, conducting a 40-day review to identify if the deal may lead to a substantial lessening of competition. It explained the initial probe found Vodafone and 3 each provide important alternatives for mobile customers and had made significant investment in their networks over the years, including on the rollout of 5G. The CMA noted a concern the combination would reduce rivalry among operators to win new customers, decrease motivation to keep prices low and lessen the incentive to improve networks. It also raised concerns the merger may make it difficult for smaller MVNOs including Sky Mobile, Lebara and Lyca Mobile to negotiate good deals for their own customers. (March 22, 2024) www.mobileworldlive.com

Ofcom is proposing changes to the license conditions for Digital Television Additional Services. These services are broadcast on Freeview and usually consist of text or data – for example, they are used to broadcast software that allows a viewer to watch channels delivered via the internet – such as the Channel box service. Under the current license conditions for these services, a warning must be displayed letting viewers know they are about to view material delivered over the internet, which may not be regulated in the same way as other television services. However, the current wording of the license condition means that a warning must be displayed even if the service is licensed by Ofcom and therefore subject to our content standards rules. Ofcom thinks this could be confusing to viewers, so it's proposing to update the license condition so that warnings are not required if the licensee holds an Ofcom broadcast license.

(February 22, 2024) www.broadbandtvnews.com

Britain's antitrust watchdog has launched an investigation into the $19 billion merger between Vodafone's UK operation and CK Hutchison's Three UK, reviewing whether the deal will hurt competition. The tie-up announced last year will reduce the number of mobile networks in Britain from four to three. The Competition and Markets Authority (CMA) has 40 working days to complete its initial investigation, which is likely to lead to an in-depth, phase two probe lasting 24 weeks. "This deal would bring together two of the major players in the UK telecommunications market, which is critical to millions of everyday customers, businesses and the wider economy," said CMA Chief Executive Sarah Cardell. "The CMA will assess how this tie-up between rival networks could impact competition before deciding next steps." The companies pledged to invest 11 billion pounds ($14 billion) to create "one of Europe's most advanced standalone 5G networks" in an effort to win over politicians, unions and competition authorities. Vodafone UK Chief Executive Ahmed Essam, who will lead the combined group, said consumers would benefit. "We look forward to continuing the constructive conversations (with the CMA) now that the formal process has begun," he said. Regulators have previously blocked some deals that reduce the number of networks from four to three. A 2016 British merger between Three UK and Telefonica's O2 was stopped by the European Commission because it was considered likely to result in higher prices.

(January 26, 2024) www.reuters.com

United States

Federal Communications Commission (FCC) chair Jessica Rosenworcel proposed relaunching a rural wireless broadband plan which would distribute up to $9 billion for 5G in underserved areas of the US. The 5G Fund for Rural America was unveiled by the FCC in 2019, but Rosenworcel stated the new plan would be based on more granular data from the agency's improved national broadband coverage map, which indicates more than 14 million homes and businesses in rural areas lacking 5G coverage. In 2020, the FCC agreed rules to create the 5G Fund for Rural America by using a reverse auction process to allocate $9 billion from its Universal Service Fund, but decided to wait until the new broadband maps were created. "For the first time in our history of supporting wireless networks through the universal service system, this agency has

comprehensive data about where service is and is not all across the country," Rosenworcel stated. If adopted by a vote of the full Commission, the proposed draft order would relaunch the 5G Fund for America. An initial multi-round reverse auction would dish out up to $9 billion for voice and 5G broadband services "to rural areas of the country unlikely to otherwise see unsubsidized deployment" of compatible networks. Rosenworcel stated the fund would also include up $900 million in incentives for incorporating open RAN in 5G networks. The FCC stated a second order would cover several additional steps to improve the program, including "modifying the definition of areas eligible for the auction and ensuring that areas in Puerto Rico and the US Virgin Islands that meet the criteria would be included; increasing the budget for Phase I of the 5G Fund auction and the Tribal reserve budget, a set-aside portion of the fund to support connecting Tribal communities; and requiring 5G Fund support recipients to implement cybersecurity and supply chain risk management plans as a condition of receiving support". (March 21, 2024) www.mobileworldlive.com

The Federal Communications Commission is making it illegal for robocalls to use AI-generated voices. The ruling, issued on Thursday, gives state attorneys general the ability to take action against callers using AI voice cloning tech. As outlined in the ruling, AI-generated voices are now considered "an artificial or prerecorded voice" under the Telephone Consumer Protection Act (TCPA). This restricts callers from using AI-generated voices for non-emergency purposes or without prior consent. The TCPA includes bans on a variety of automated call practices, including using an "artificial or prerecorded voice" to deliver messages, but it wasn't explicitly stated whether this included AI-powered voice cloning. The new ruling clarifies that these recordings should indeed fall under the law's scope. "Bad actors are using AI-generated voices in unsolicited robocalls to extort vulnerable family members, imitate celebrities, and misinform voters," FCC Chairwoman Jessica Rosenworcel said in a statement. "State Attorneys General will now have new tools to crack down on these scams and ensure the public is protected from fraud and misinformation." Although state attorneys general could already go after the bad actors behind robocalls based on the scam or fraud they're perpetrating, this new ruling gives them the power to hold scam artists accountable solely because they're using an AI-generated voice. Scrutiny of AI voices in robocalls has ramped up in recent weeks. In January, some New Hampshire residents received a call that appeared to use AI to impersonate President Joe Biden's voice, and it told them not to show up at the polls for the state's presidential primary. An investigation has since linked the robocall to two Texas-based companies: Life Corporation and Lingo Telecom. The FCC issued a cease-and-desist order to Lingo Telecom, which transmitted the call.
(February 8, 2024) www.theverge.com

The Federal Communications Commission (FCC) has adopted updates to its rules for the 70, 80, and 90 GHz spectrum bands in the US to include broadband access on ships and aircraft, in addition to backhaul service for 5G. In a statement, the regulator said that the new rules authorize certain point-to-point links to endpoints in motion in the 70 GHz and 80 GHz bands for the use of these frequencies for access to broadband services on aircraft and ships. According to the FCC, the rules will promote efficient use of spectrum, and also permit the use of smaller and lower-cost antennas to facilitate the provision of backhaul service in the 70 GHz and 80 GHz bands. "Finally, the Report and Order changes the link registration process in the 70/80/90 GHz bands to require certification of construction of registered links, which will promote more efficient use of this spectrum and improve the accuracy of the link registration database," added the FCC. In November, the Biden Administration released a National Spectrum Strategy for the US, which aims to open up additional wireless spectrum for advanced technologies - despite the fact that spectrum auctions in the US have been in limbo since March, when the authority of the Federal Communications Commission (FCC) was allowed to lapse. More than 2,700 MHz of spectrum is being studied by the US government, which could be reallocated for purposes including wireless broadband networks, satellites, and drones. The proposal also suggests improved spectrum management.
(January 27, 2023) www.datacenterdynamics.com

The Federal Communications Commission updated its rules, and proposed additional updates, to improve communications network reliability, resiliency, and transparency during disasters and outages. The rule changes will increase participation in, and enhance the use of, the FCC's Disaster Information Reporting System (DIRS), in which service providers report on their operational status during emergencies. Certain types of communications providers are required to report network outages to the FCC's Network Outage Reporting System (NORS) on an ongoing basis. To address gaps in NORS, the FCC adopted rules that:

- Require cable communications, wireline, wireless, and interconnected Voice over Internet Protocol (VoIP) providers to report daily infrastructure status information when DIRS is activated for geographic areas in which they provide service.
- Suspend NORS reporting obligations when providers are required to report in DIRS during a disaster, so they are not obligated to report twice.
- Require DIRS filers to provide a single, final summary DIRS report to the Commission within 24 hours of the deactivation of DIRS

(January 26, 2023) www.benton.org

Vietnam

Viettel Group announced it has officially won the Ministry of Information and Communications' auction for the 2500-2600 MHz band for 5G usage in Vietnam. Under the new spectrum license, Viettel will have rights to the 2500-2600 MHz band for the next 15 years, and can use the band for both 4G and 5G services. No financial details were disclosed, although earlier media reports have said the starting price for the 2500-2600 MHz band was VND3.9 trillion (US$158 million). The MIC kicked off an auction for the 3700-3800 MHz band on Thursday, and is expected to hold a third auction for the 3800-3900 MHz on March 19. The starting price for both of those bands is VND1.89 trillion. According to VNEconomy, each bidder is only allowed to win one band. Viettel said the 2500-2600 MHz band would give it an advantage over the other two bands, as it offers slightly wider coverage. Viettel also said that 5G devices it has researched and produced support the 2500-2600 MHz band. According to Viettel, only 17% to 20% of devices in Vietnam currently support 5G connectivity. Viettel said it plans to launch the national 5G network "in the shortest possible time." Earlier, Nguyen Van Son, director of Viettel Telecom's Mobile Centre, told the state Vietnam News Agency that Viettel plans to focus its 5G deployments in locations where there is both high demand and a high concentration of 5G-compatible devices, such as "industrial zones, export processing zones and innovation centers." An October 2023 report from VNMedia said that the 2500-2600 MHz auction winner will be required to deploy at least 3,000 5G broadcasting stations using the band within two years after they receive the license. They must also commit to launching commercial 5G services using the band within the first 12 months. VNA reports that the MIC has set a target to provide 5G coverage to 99% of the population by 2025, with minimum data speeds of 100 Mbps. (March 18, 2024) www.developingtelecoms.com

The Ministry of Information and Communications has reportedly urged the country's telcos to find new growth opportunities in digital as the sector's growth continued to slow down in 2023. According to the Vietnam Economic Times, Minister of Information and Communications Nguyen Mạnh Hung said in an interview that the growth of telecoms operators has not kept pace overall with the country's GDP growth. While Vietnam's GDP growth in 2023 was just over 5% – missing government targets and down from 8% the previous year – Hung said that Viettel's domestic telecoms business increased by 2-5% in the last few years, while VNPT has only seen 2-3% growth, and MobiFone 4-10%. Hung said that he expects telcos to be growing their businesses between 5% and 10% per year. Hung claimed the sluggish growth was due to a saturated telecoms market with core voice and SMS revenues being cannibalized by OTT services, while telcos have not yet found a suitable growth business to replace those revenue streams. The minister urged telcos and digital technology businesses to throw their R&D efforts into developing digital applications for industries, which would also count under the government's "Make-in-Vietnam" policy.

(January 29, 2024) www.developingtelecoms.com

Zimbabwe

The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ) says internet service provider Starlink has not applied for an operating license. Over the past several months, some individuals and companies have been advertising Starlink Internet services but POTRAZ warned that those caught distributing and advertising Starlink Internet Services' gadgets will be arrested. Many have already installed Starlink internet gadgets which provide cheap and fast-speed internet. POTRAZ deputy director of economic tariffs and competition Vengesai Magadzire said the nation should know that Starlink is yet to submit its application papers. Magadzire was addressing villagers in Chikomba West constituency during a consumer awareness campaign at the weekend. He said: As the regulator, POTRAZ is mandated to license operators in Zimbabwe but now Starlink has not submitted its application for the license. We are waiting to hear from it and once it submits Potraz will do what is required. A Chinese mining company operating in Mashonaland Central Province, San He, was recently fined US$700 for using Starlink in Zimbabwe. According to the National Prosecuting Authority of Zimbabwe (NPA), the San He Mining company in Guruve was ordered to pay a US$700 fine by a Bindura Magistrate for contravening the Postal and Telecommunication Act. Zimbabweans are increasingly eager to ditch local internet service providers for Starlink due to their poor service and high cost of data packages. Developed by Elon Musk's space exploration company SpaceX, Starlink is a satellite internet network that provides high-speed broadband internet services.

(February 26, 2024) www.pindula.co.zw

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