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**Etisalat Group:
setting global benchmarks
in digital innovation and transformation**

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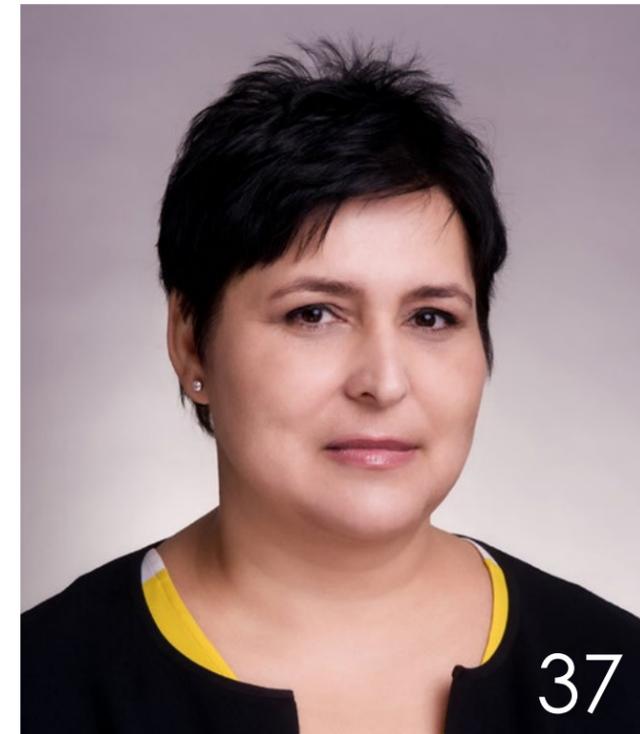
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Editor's Note

Dear Reader,

Welcome to the latest edition of Teletimes International.

This month, we look forward to the telecom industry's largest event, the GSMA Mobile World Congress which will take place in-person (after a break of one year) in Barcelona at the end of this month. As always, Teletimes is a supporting partner to the event and I along with the Teletimes team will be present at the event where we look forward to meeting with our partners and contributors. A pre-event report about MWC is inside this edition for your perusal.

This edition features an editorial about Etisalat's efforts that have contributed to UAE ranking first in a number of ICT indicators and improved the global competitiveness of the country. Etisalat has done a commendable job on its network speed as one of the fastest on the planet that has helped respond to the new normal and digital transformation amongst other notable achievements.

You will also find in this edition an exclusive interview with Aloysius Cheang, Chief Security Officer at Huawei UAE about Digital Transformation in the Middle East. Another piece that I would recommend is from the Ericsson Consumer Lab about how 5G is already changing smartphone use behavior.

As always, you will find many more articles and the latest news & updates from the major ICT players across the globe inside this edition. Your feedback is welcome on info@teletimesinternational.com.

I may be contacted directly @ +34 658 66 22 22 (cell & whatsapp) in Barcelona.

Enjoy reading and stay safe!

Khalid Athar
Chief Editor

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Connected Impact

Returning to MWC Barcelona 2021

Teletimes Report

The last 12 months have been a learning experience for all of us. Many have suffered great hardship or made sacrifices, personally and professionally. It seems that each day brings a situation never encountered before that requires the adoption of new behaviours or to adjust to new restrictions on our usual way of doing things.

The GSMA has shared its health and safety plan, Committed Community, for MWC21 Barcelona. Committed Community takes a multi-layered approach to health and safety, and it impacts everyone involved in the event. Developed in coordination with and approved by Catalan health authorities, the plan relies on several partners with specialised expertise.

The GSMA and Fira de Barcelona are delighted to share that Quirónprevención is the official medical services provider for MWC Barcelona 2021.

The internationally trusted company is headquartered in Barcelona. It will work with the GSMA, Fira de Barcelona, and all MWC21 stakeholders to ensure everyone's health and safety involved for MWC21. Quirónprevención will staff the onsite medical testing facilities



and coordinate with Catalan health authorities. The theme of this year's event is Connected Impact. The programme will explore how AI, 5G, Big Data, and IoT will shape the future and continue to transform lives. It's time to reconnect, rebuild — and reimagine a more connected world. Organisations, brands,

startups, consultants, investors, and telecom operators will gather to encourage thought leadership, discover ground-breaking innovations, and connect with the industry's most important decision-makers.

"They say that times of crisis accelerate



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progress and innovation. The impact of this global pandemic has proved no exception to that thinking. The rate of change is phenomenal, and this will be a feature in the MWC programme.” said John Hoffman, CEO GSMA Ltd. “There’s nothing that beats building relationships in person, and I am consistently encouraged by the collective desire to come back together.”

Sustainability— ahead of the curve in the mobile industry

The 2021 event aims to be carbon-neutral, much like the 2019 edition, which was officially certified by AENOR International. That certification secured the event as the world’s largest carbon-neutral tradeshow. The GSMA is working to further reduce the event’s environmental impact and carbon footprint as part of its overall leadership on climate action.

Thought Leaders

With over 600 keynote and conference speakers, the GSMA is excited to welcome leaders representing a wide range of industries to the MWC21 stage, including mobile, healthcare cloud, and finance :

- Julie Sweet, CEO, Accenture
- Shuky Sheffer, CEO, Amdocs
- Zina Jarrahi Cinker, Director General, AMPT
- Yang Jie, Chairman, China Mobile
- Mats Granryd, Director General, GSMA
- Arvind Krishna, CEO, IBM
- Eugene Kaspersky, CEO, Kaspersky
- Ana Maiques, CEO, Neuroelectrics
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- Raffaele Anneschino, President & CEO, Viacom Networks International
- Nick Read, CEO, Vodafone Group
- Xu Ziyang, Executive Director & President, ZTE



4YFN

4YFN (Four Years From Now) 2021, the GSMA’s key innovation platform, will be in the heart of MWC Barcelona for the first time this year. Combining these two influential events recognises the critical role startups play in fulfilling the potential of mobile technology. Taking place at Fira Gran Via from 28th June to 1st July 2021, this move creates value and fosters broader networking for all attendees of the world’s largest connectivity event, connecting everyone and everything to a better future.

Mobile technology is central to futureproofing our economy, and innovation and startups are at the heart of this pursuit. Sir Ronald Cohen is among an impressive list of 150 speakers, including:

- Iker Marcaide – Founder and CEO, Zubi Labs
- Ana Maiques – Founder and CEO, Neuroelectrics
- Mattias Ljungman – Founder and CEO, Moonfire Ventures and co-founder, Atomico
- Aron Schwarzkopf – Co-founder and CEO, Kushki
- Oscar Hugland – Co-founder and CEO, Epidemic Sound
- Yossi Vardi – 4YFN Chairman

Over 400 international startups will exhibit their latest products in the Innovation Market and, 200 startups will pitch their ideas in the 4YFN Discovery Area, hoping to attract the attention of leading funds, VCs, and CVCs. “The world is changing at unprecedented speeds. The mobile ecosystem must seize this moment to be a force for change –

contributing to society and the planet so that we are proud of what we pass on to future generations,” said Pere Duran, 4YFN Series Director. “There are many inspiring examples of startups working to tackle some of the world’s most pressing issues and, this year, the event aims to encourage a more inclusive tech ecosystem, to accelerate and to celebrate those startups poised to make a real positive impact.”

A new summit, the 4YFN Investor Programme, is dedicated to knowledge-sharing among the investor community. Also new for 2021, the 4YFN Impact Programme will include a dedicated summit and awards ceremony – the 4YFN Impact Awards Finale shining a spotlight on the best digital startups from around the globe making a positive contribution towards The Sustainable Development Goals.

This year, TIME joins Mobile World Live as its Official Media Partner in Barcelona, together with CNBC, Euronews, The Financial Times and The Wall Street Journal’ Barron’s Group. MWC’s Featured Media Partners include C114, TechNave and The Record.

Its supporting media partners includes Amanz Media, CACF, Caixin Global, CIO Application Europe, CIO Review, ITP.net, Communications Today, Comnews, Connect World, Convergencia, Digital TV Europe, European Sting, The Fast Mode, Innovator Magazine, IoTNow, Jumpstart, Khronos, Mediaplanet, Microwave Journal, Mobile Business, Mobile Magazine, PhoneWorld Magazine, STL Partners, Telecom Review, Telemidia, Telesemana, Teletimes International, VanillaPlus and ZonaMovilidad. ■

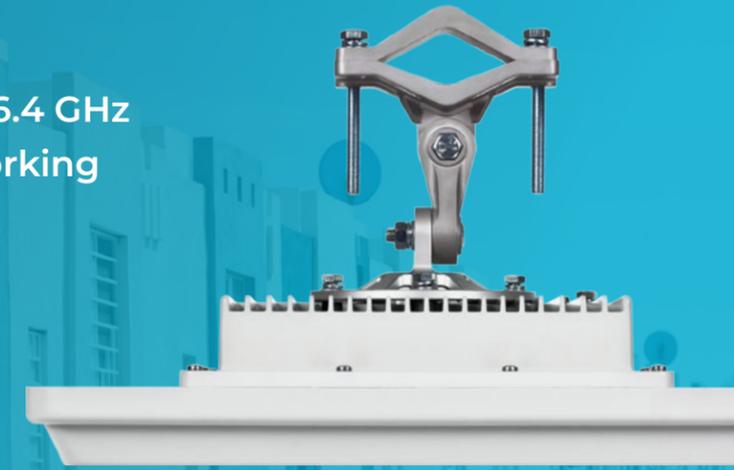
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Etisalat has contributed to the UAE ranking first in a number of ICT indicators increasing the global competitiveness of the country

- Etisalat's fastest network on the planet has helped respond to the new normal and digital transformation

- Etisalat Group: setting global benchmarks in digital innovation and transformation

- Etisalat is an integrated ICT solutions provider driving the digital future to empower societies

'Connectivity' has gained significant relevance last year with the entire mobile ecosystem showcasing how it can transform lives. During Mobile World Congress this year, Etisalat's focus will also be about highlighting the achievements and the resilience its network displayed in providing value to the society and deliver the 'new normal'.

COVID-19 became a key protagonist for change in this hybrid world, the pandemic has demonstrated the critical importance that telecommunications infrastructure plays in keeping businesses, governments, and societies

connected and running. With the new normal created by the pandemic, the digital maturity in the sector has evolved in every aspect of the business while in products and services tailored value propositions take precedence for hyper connected consumers and digitally fueled governments/businesses

Etisalat Group is one such operator across its operations in Asia, Middle East and Africa pressed the fast forward button to becoming a complete integrated ICT solutions provider. The company's vision to 'Drive the Digital Future to Empower Societies' has geared it to support and

serve the entire community making it possible for businesses to work remotely, millions of students to enjoy distance learning and all citizens have access to vital services. Its network joined one of the most robust and digitally equipped showcasing infrastructure preparedness and ability to adapt and implement during today's extraordinary times.

With a robust financial performance and becoming the fastest network on the planet, has helped the brand respond immediately to the 'new normal' of the pandemic, providing solutions and flexibility in a way that connected



"Thanks to the UAE's wise leadership and vision in encouraging us to compete globally to achieve the fastest network in the world and other significant global milestones in today's extraordinary times surpassing many of the top international brands."

Hatem Dowidar, CEO, Etisalat Group

emotionally with consumers.

Milestone results in 2020

The positive growth and results are a reflection of our years of preparation on the infrastructure front as well as business continuity. Etisalat has been preparing for different kinds of calamities that might happen showing resilience and remaining committed towards the communities we serve minimising impact on our operations and uninterrupted services to our customers.

Eng. Hatem Dowidar, CEO, Etisalat Group said: "Etisalat Group's first quarter results are a continuation of the strong performance the company has achieved over the past year due to the resilience and agility shown across our business operations. The company generated record results in the new hybrid scenario helping consumers adapt to a new work-and-learn-from-anywhere reality while continuing to deliver innovative services subscribers require and demand.

"Our teams rallied to support our customers with technology playing a central role in keeping our society, economy and lives connected. Digital evolution is the future where telecom operators are the key players to enable the transition and be the exemplary adopters of digital transformation. Stemming from this conviction, Etisalat will continue its efforts to align its business with the digital mandate it has undertaken, by shifting the operating model, investing in future technologies, generating new revenue streams and by acquiring and disseminating digital capabilities across its markets."

New telecom bond issuance completed

The successful completion of a bond issuance from Etisalat was another strong point this year which highlighted the growing confidence of international investors in the UAE economy.

Etisalat successfully completed the bond issuance of one billion euros to refinance the maturing bond tranche it had issued in 2014 for the acquisition of a controlling stake in Maroc Telecom worth one billion euros to refinance the maturing bond tranche it had issued in 2014 for the



acquisition of a controlling stake in Maroc Telecom.

Etisalat Group issued bonds in two tranches, the first is a 7 years tranche amounting to 500 million euros with an annual yield of 0.4%. The second tranche for a period of 12 years amounts to 500 million euros with an annual yield of 1%.

The refinancing decision aims to diversify the company's sources of funds and extending the repayment schedule of existing debt while taking benefit of improved cost of funding thereby maximizing shareholders value. The bond issuance was very successful as it witnessed a remarkable demand from local and international investors with being 6 times oversubscribed.

This high demand reflects investors' confidence in Etisalat Group's performance, strong financial profile and credit ratings; Aa3 stable (Moody's)

and AA- Stable (S&P Global), one of the highest rating in the industry.

Hailed as the strongest brand in the MEA region for 2021

Thanks to Etisalat's strategy over the last few years and recent achievement of becoming the fastest network on the planet, the brand was in a position to respond immediately to the 'new normal' of the pandemic, providing solutions and flexibility in a way that connected emotionally with consumers.

"This is a historic achievement for Etisalat to be recognised on such a global platform among the best in the world and the region. Our efforts to bring innovation and digital transformation for all our customers have also led to Etisalat being ranked as the strongest brand on a global scale. The previous year has demonstrated our strength and commitment in delivering uninterrupted high quality services to all

our customers adding value to our brand while focusing on our vision to 'Drive the digital future to empower societies' realising our digital ambitions to reality," Dowidar added.

When COVID struck in 2020, Etisalat led from the front ensuring business continuity, robust e-governance, enablement of smart cities and remote learning, to help drive the digital future. Staying relevant and enabling the fastest network on the planet, Etisalat has earned its place as the region's strongest brand, ready to deliver on its ethos of 'Together Matters'.

With the most valuable telecom portfolio in the region, Etisalat also broke the \$11 billion mark, turning its sights on transforming into a truly global player.

The Group scored a Brand Strength Index (BSI) score of 87.4 out of 100 and a corresponding AAA brand strength rating – the only brand in the region to achieve

this rating. It put Etisalat among the top 25 brands globally in the strongest brands index. Etisalat achieved this global brand strength through its continuous efforts and investments in accelerating value to its consumers across markets with the launch of many successful innovative global branding initiatives.

This recognition put Etisalat up 17 spots in the global 500 brand value ranking from 225th to 208th and is ranked among the top five strongest telecom brands across global markets and the strongest telecom brand in the MEA region.

For the fifth year in a row, Etisalat has retained its title of the most valuable telecom portfolio of brands, touching over AED 40 billion, including Etisalat Misr, Mobily, Ufone, Maroc Telecom and PTCL, and is also the only telecom brand to retain AAA brand rating.

Provide an experience of a lifetime at Expo 2020 Dubai

As the official telecom and digital services partner, Etisalat aims to provide an experience of a lifetime with the fastest, smartest and most connected sites on earth. This will be the first expo to witness the 5G revolution and is the first major 5G commercial site in the MEASA region offering advanced digital and telecom services to millions of visitors experiencing



memories of a lifetime.

"Etisalat has become a key regional and international player in 5G especially with one of the biggest world expo powered by 5G to be held this year", added Dowidar.

The upcoming Expo 2020 Dubai is being seen as an event that will foster global trade and bring countries together to come up with real-life solutions to business challenges worldwide. The UAE has been lauded by the participating countries for its technological infrastructure to host such

massive world events. As the country's leading telecommunication company, Etisalat is the preferred premier digital services and telecommunications partner of Expo 2020 Dubai and it is prepared to deliver the 5G connectivity for the millions of delegates and visitors participating in the event.

Etisalat's services in the 5G network will play an important role ensuring that the massive security and logistical readiness is in place for the mega world expo.

Commenting on Etisalat's participation, Dr. Ahmed Bin Ali, Group Senior Vice President, Corporate Communication, Etisalat, commented saying, "As the Official Telecommunications and Digital Services Premier Partner of Expo 2020 Dubai, Etisalat is proud to have supported Pavilions Premiere and the debut of Terra – The Sustainability Pavilion. We delivered state-of-art telecommunications and digital services, providing a superior visitor experience thanks to the fastest network on earth."

Innovative customer service strategy and adoption of the digital-first marketplace has been the key driver for Etisalat's success and growth in leading the 5G revolution and the successful launch of global brand-building initiatives. Etisalat has tirelessly led digital innovation in the country by working on several digital initiatives in infrastructure, entertainment, and smart cities. ■



Telcos and 5G are the main drivers of digital transformation - Etisalat Intl. CTO

The telecoms industry and 5G play a major role in supporting digital transformation as businesses move towards more collaborative and immersive remote working, said Hatem Bamatraf, Chief Technology Officer, Etisalat International, during the Telecoms World Middle East 2021.

"The pandemic has accelerated digital transformation globally with a shift in investment opportunities and changes in online behaviours. Remote working infrastructure, new online services, technology skills and cyber security are now common investment priorities for governments, corporates, and SMEs. These changed investment priorities are accelerating the digital transformation of society," said Bamatraf.

Bamatraf, who delivered a keynote opening presentation titled 'Shaping a new future for businesses and consumers with 5G and advanced technologies', underscored 5G's huge potential as a game changer for several industries. 5G offers exciting new revenue prospects but telcos need to go beyond connectivity to achieve good return on investment, he stressed.

Recent analysis has estimated that by 2025 there will be around \$4.7 trillion of revenue generated and associated in some way by 5G or advanced connectivity. Around \$1.6 trillion will be directly due to connectivity, and the remaining \$3.1 trillion will be hardware, software, services, platforms, etc.

The two-day virtual event on 15th and 16th June brings together CEOs and key decision makers of the leading regional operators to discuss the current landscape, their growth strategies, and investing for their future.

Etisalat chief executives participated in panel discussions and live interactive sessions moderated by global and regional experts. Mohamed Almarzooqi, Vice



President, Synergy and Operation Support, Etisalat International, shared his insights into 'Next generation networks with the power to transform how industries operate'.

Antonio Ricciardi, Senior Vice President, Consumer Intelligence and Engagement, Etisalat, meanwhile took part in a panel discussion on 'Unlocking value with the next generation of customer value management'.

At a session titled 'Building digitally connected infrastructure in the Middle East and Africa', Abdulrahman Alhumaidan, Senior Director, Fixed Access Network Planning and Design, Etisalat, discussed the opportunities and challenges of building a digitally connected national infrastructure, the impact of 5G on national infrastructure, and the investment and regulatory framework. ■

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Huawei has a strong history of providing global communication services

Opens largest Global Cyber Security and Privacy Protection Transparency Center in China

By: *Khalid Athar*

Technology has been around for several decades now, and it's become an integral part of our daily lives. It can do everything from keeping us on track to running a business smoothly. The downside is that the technology poses challenges in cyber security and privacy protection because hackers are constantly looking for new ways into your personal information.

Cybersecurity is important because it protects all categories of data from theft and damage. This includes sensitive data, personally identifiable information (PII), protected health information (PHI), personal information, intellectual property, industry secrets and more.

Keeping the importance of cybersecurity in perspective, Huawei Technologies, the leading global provider of information and communications technology (ICT) infrastructure and smart devices looks forward to collaborating with stakeholders as it works together through technological innovation while also improving standards/certifications which will govern how people use their device day-to-day.

Huawei has a strong history of providing global communication services. Supporting 1,500 carrier networks in 170 countries and regions over the last 30 years, Huawei is dedicated to helping people around the world connect with each other through their innovative products

that improve lives globally every day.

The latest step taken by Huawei in the direction to provide increased cybersecurity is the opening of its largest Global Cyber Security and Privacy Protection Transparency Center in China.

The Center has opened to regulators, independent third-party testing organizations, standards organizations and its customers so that they can view how their products are made and will be used to increase transparency, provide more information on how Huawei deals with cybersecurity issues, and address privacy concerns. The company believes that this will help it gain trust from international partners, governments, enterprises, and consumers.

The Center provides customers with a platform for security testing and verification, advice on Huawei products from technical experts. The Center also offers consulting services to help you choose the best solutions.

The Huawei Innovation Centre serves three functions: demonstration and experience, communication and innovation, as well as security validation service providers.

Service Providers can test their hardware or software under the supervision at HICC using an IoT-ready device lab by contacting us directly in order to book time slots if needed!

Huawei's security Centers are becoming more and more popular. The company has opened seven of them in countries all over the world, including China, Canada, Germany, Italy etc., where customers have praised Huawei for its openness when it comes to cyber-security issues.

In total 700 customer exchanges were carried out at these centres from 2010 onwards – proving that they're a major boon for industry standards, organizations as well as individual companies who need higher levels of protection than is typically available on average networks

Huawei's Global Center for Cyber Security is oriented towards customers, partners, and suppliers all over the world. The opening of this center takes into account regulatory authorities in different parts of the world as well as standards organizations that will allow Huawei to better serve their needs with stronger commitments in cyber security while providing a foundation for cooperation on future issues based on shared values.

Cyberspace is becoming more complex than ever as 5G and AI continue to grow in the industry. With people spending a greater portion of their lives online, new cyber security risks arise due to this increased connectivity.

Organizations like GSMA have also been working with other stakeholders such as 3GPP for NESAS Security Assurance Specifications and independent certifications that have seen

wide acceptance throughout the telecoms industry which will help bring an end towards these rising threats faced by cyberspace today.

At an event that was conducted for the launch of this session, Huawei also released its Product Cyber Security Baseline, the culmination of over a decade of experience in product security management, incorporating a broad range of external regulations, technical standards, and regulatory requirements.

Ken Hu, Huawei's Rotating Chairman has said at the opening of the Dongguan center that "Cyber security is more important than ever".

He further commented, "As an industry, we need to work together, share best practices, and build our collective capabilities in governance, standards, technology, and verification. We need to give both the general public and regulators a reason to trust in the security of the products and services they use on a daily basis. Together, we can strike the right balance between security and development in an increasingly digital world."

"Of course, our cyber security assurance systems were not developed in a vacuum. They're also the result of regular engagement, joint research, and joint innovation with our customers, partners, regulators, and standards organizations around the world. That's what this Cyber Security Transparency Center is all about. Two years ago, we opened a similar center in Brussels. At the time I talked about our ABC principle for security at Huawei: Assume nothing. Believe nobody. Check everything. The idea is that both trust and distrust should be based on facts, not feelings, not speculation, and not baseless rumor.



We believe that facts must be verifiable, and verification must be based on standards." Hu added.

During his keynote, Hu also mentioned that on a global scale, with increasing cyberattacks, all industries are taking cyber security more seriously. In the public sector, new laws, regulations, and standards are being introduced on a regular basis. In the past two years alone, more than 180 cyber security laws have been passed in 151 countries.

During the opening, Dr. Mohamed Hamad Al Kuwaiti, Head of Cyber Security, UAE, delivered a keynote on the importance of cyber cooperation for a resilient and vibrant digital future. "A public-private partnership will be critical to build collaboration among private, public and government entities so as

to establish a globally trusted digital oasis in the UAE," he said.

Mats Granryd, Director General of GSMA, spoke at the opening of Huawei's new center. "The delivery of existing and new services in the 5G era will rely heavily on the connectivity provided by mobile networks and will fundamentally depend on the underlying technology being secure and trusted," he said. "Initiatives such as the GSMA 5G Cybersecurity Knowledge Base, designed to help stakeholders understand and mitigate network risks, and NESAS, an industry-wide security assurance framework, are designed to facilitate improvements in network equipment security levels across the sector."

Sean Yang, Director of Huawei's Global Cyber Security and Privacy Protection Office said, "This is the first time we've shared our security baseline framework with the entire industry, not just core suppliers. We want to invite all stakeholders, including customers, regulators, standards organizations, technology providers, and testing organizations, to join us in discussing and working on cyber security baselines. Together, we can continuously improve product security across the industry."

Huawei has made it their mission to connect the world, and also ensure that all of these connections are safe. They have built over 1,500 networks across 170 countries with three billion users on them without a major security incident being reported yet – but they're not stopping there! **T**



Interview: Khalid Athar

Digital transformation in the Middle East is thriving

Aloysius Cheang, Chief Security Officer at Huawei UAE speaks to Teletimes at GISEC'21

Khalid Athar: What products and solutions did Huawei showcased at GISEC this year?

Aloysius Cheang: At this year's GISEC, Huawei highlighted how to achieve shared success in cybersecurity through technology innovation and bridging the cybersecurity divide via open standards and technical collaboration.

As a company, we are dedicated to creating inclusive values and providing affordable, user-friendly, reliable products and services. Huawei is continuously working with customers, industry partners, and academia to achieve win-win cooperation, develop pervasive intelligence, and build a fully connected, intelligent world.

During the event, Huawei showcased solutions that aim to add new value for industries in both public and private sectors including Huawei Smart Government Solutions and Smart Energy.

Huawei also showcased its cloud services including Intelligent Twins, Cloud Native 2.0, Enterprise Intelligence (EI) Experience Center that is key to accelerating digital transformation and reshaping enterprises' business operation and value creation models.

Huawei experts also touched on 5G and its role in empowering industries and cybersecurity as a whole. During the Telecom Cybersecurity session, the Organization of the Islamic Cooperation – Computer Emergency Response Team (OIC-CERT), announced the launch of a 5G security working group for all stakeholders, which Huawei is co-chairing.

KA: What is the significance of this event in the region and why is it important to Huawei?

AC: Digital transformation in the Middle East is thriving. As the importance of digital technology continues to rise, so are the requirements of

"At this year's GISEC, Huawei highlighted how to achieve shared success in cybersecurity through technology innovation and bridging the cybersecurity divide."

cyberspace. As such, we must engage the entire digital ecosystem through openness and collaboration to harness unified international standards and mitigate challenges in the cyber ecosystem. There is an inherent need for a greater understanding of digital technologies as well as international policies and joint efforts to overcome any cyber threats.

GISEC 2021 is the most influential event in the MENA region, and it's a global platform

"Huawei's top-down cybersecurity governance structure supports the success of its business in the Middle East and around the world."

that brings together world-class cybersecurity innovators, enterprises, and governments under one roof to collaborate, share ideas and explore new ways on how to achieve a safer cyberspace for all.

It is an ideal platform to showcase our solutions that are developed based on security-by-design and privacy-by-design principles, guided by the Zero-Trust model as we continue to ensure smart cities are also safe cities.

KA: What is Huawei's cybersecurity strategy

and how is it helping to build an end-to-end cybersecurity assurance and privacy protection system?

AC: Cybersecurity is a key enabler for Huawei's business overall. Huawei's top-down cybersecurity governance structure supports the success of its business in the Middle East and around the world. The Global Cyber Security and User Privacy Protection Committee (GSPC) is Huawei's highest cybersecurity management body. Within that, the Global Cyber Security and User Privacy Protection Officer (GSPO) is an important member of the GSPC, and reports directly to the CEO of Huawei. The GSPC is in charge of developing Huawei's security strategy and plans, manages, and oversees how departments such as R&D, supply chain, marketing, sales, and so on, structure their security teams and ensure security in their business activities.

The system covers all departments, geographies, and processes. In key regions and countries such

as the UAE, a dedicated Chief Security Officer (CSO) is appointed to support business on the ground as well as reporting back to the GSPO and the GSPC in the HQ. The CSO will facilitate effective communication between Huawei and its stakeholders, including governments, customers, partners, and employees.

Over the past two years, we have reviewed our approach to security and privacy, analyzed the directions in which new technologies are heading, and the current and future challenges facing our customers. As a consequence, we



have enhanced our cybersecurity and privacy frameworks. These frameworks guide how we drive process transformation, solutions, security engineering capabilities, security technologies and standards, independent verification, our supply chain, and personnel management. This has enabled us to proactively enhance our end-to-end cybersecurity assurance capabilities and build resiliency.

KA: What are some of the best practices for governments and businesses in addressing today's cybersecurity challenges? What initiatives does Huawei have in place to support regional and global bodies?

AC: As societies have become increasingly dependent on the internet, new cybersecurity vulnerabilities have emerged. Due to this,

companies, government entities and individuals can all fall prey to cyber threats. In order to address today's cybersecurity challenges, collaborations between governments and private enterprises are key.

Huawei has been working closely with its stakeholders such as healthcare providers, educational institutions, and government

entities to combat cyber threats. For example, during the event, Huawei showcased its Huawei Smart Government Solutions, which enable governments around the world to transform from traditional mode of operation to the next-gen digital smart, safe and secure cloud-based operation. Separately, we also displayed Smart Education Solutions that are transforming the education sector around the world for a smart, fully connected, intelligent world.

KA: What can be done to further strengthen the cybersecurity landscape in the region and what role do you foresee Huawei playing to fill the current gaps, in building a digitally secure future?

AC: We believe in value creation, together with our customers so that it is a shared success. We believe that there's a need for us to work together with the local ecosystems, to help nurture ecosystems, to build more expertise in terms of talent development, and to drive standards and best practices. It is important to set some kind of baseline cybersecurity strategy or hygiene that should be practiced by small and medium enterprises.

There is a need for us to proactively contribute to the industry and this is what we have set out to do right now, basically to give a call to arms to the UAE to establish it as the region's trusted cybersecurity hub. That is one of the objectives as we join the OIC-CERT and co-lead OIC-CERT's effort to define 5G security best practices and standards for OIC member states.

KA: Going into the next decade of innovation and hyper-connectivity, how is Huawei helping to accelerate the UAE's digital transformation journey through its cybersecurity expertise?

AC: As a leading global provider of ICT infrastructure and smart devices, Huawei plays an active role in the digital transformation of

"As societies have become increasingly dependent on the internet, new cybersecurity vulnerabilities have emerged."

industries to bring digital to every person, home, and organization. While digital transformation initiatives accelerate across the world, we feel we have a clear responsibility to ensure that cybersecurity and privacy protection remain a top priority. We have thus implemented and maintained a comprehensive, end-to-end cybersecurity assurance system.

There are three pillars of cybersecurity today: people, processes, and technology. Huawei already has the technology in place. We are now focused more than ever on building the people

and processes to match up to the technology, especially focusing on capacity building.

Many Gulf countries including the UAE are trendsetters for new technological standards. Nations like the UAE have been frontrunners in transitioning to a connected, intelligent era. Huawei is committed to training around 10,000 professionals in the UAE alone in the next three years, helping them to be future ready. Today we are doing this across the Middle East and around the world.

Building and fully implementing an end-to-end global cybersecurity assurance and privacy protection system is one of Huawei's most crucial strategies for the country and the region. We are referencing industry best practices to build a system that is sustainable, reliable, and compliant with applicable laws and international best practices and standards in cybersecurity and data privacy protection. This system covers everything from policies, organizational structures, processes, and management to technologies and standard practice.

Huawei transparently collaborates with governments, customers, and partners as we build a vibrant digital eco-system and establish the UAE as a digital trusted hub to tackle cybersecurity and privacy challenges and meet our customers' demands while nurturing a vibrant ecosystem through technical excellence and innovation in an open and transparent environment that will uplift the entire profession and bring maturity to the new digital order. ■

HUAWEI CLOUD with Bepin Global to provide cloud and intelligence to Middle East Enterprises

HUAWEI CLOUD with Bepin Global will provide ubiquitous cloud and intelligence to Middle East enterprises.

Bepin Global has been HUAWEI CLOUD's strategic system integration partner globally since 2019. Under this new agreement, the companies are now extending their partnership to the Middle East, combining their capabilities to better serve the burgeoning GCC cloud market. Bepin Global's professional services delivery capabilities, coupled with their multi-cloud management platform "OpsNow", will play a strategic role in delivering the highest

quality experience for Huawei Cloud's customers.

Countries across the GCC have witnessed an acceleration in cloud adoption, primarily due to the rise in remote work. According to International Data Corporation (IDC), the GCC public cloud market is expected to be more than double in value, touching \$2.35 billion by 2024 at a cumulative annual growth rate (CAGR) of 25 percent. In line with the growing demand for cloud services across the region, Huawei launched its cloud service in the Middle East in 2020 to provide ubiquitous cloud and intelligence for all scenarios, which includes smart public

services, smart enterprise development, and smart city governance.

HUAWEI CLOUD customers in the Middle East will be able to benefit from Bepin Global's position as a world "leader" as per Gartner's 2020 Magic Quadrant for Public Cloud Infrastructure Professional and Managed Services. Combined with Bepin Global's OpsNow multi-cloud management platform, enterprises across the region can manage all of their public cloud infrastructure in one place as well as ensure agility by solving organizational challenges quickly and easily. ■

Making strides to diversify and enrich the region's cloud services market

Omar Akar, VP and Managing Director - Cloud and AI Business Group, Huawei ME



Investments in the region's digital economy are already starting to rebound in the first half of 2021 as many countries in the Middle East recover from the challenges of the last year. Analysts expect spending on IT to rise across the board year on year, with investment in both public and private cloud services anticipated to grow in the double digits. The events of the last year have actually turned an even brighter spotlight on the incredible benefits of cloud-based solutions to spur employee productivity, business continuity, and new value creation.

It has been a particularly exciting year for Huawei in the Middle East. We are now at an inflection point in our cloud business, and are doubling down on our efforts in the region to support organizations in their digital transformation journeys.

This all stems from an accumulation of ICT expertise over more than 30 years. That breadth of experience is now directed at bringing digital to every person, home, and organization for a fully connected, intelligent world. As part of that mission, we believe that it is critical to provide the ultimate computing power to deliver ubiquitous cloud and intelligence to the world.

To that end, one of the changes that our customers and partners will have seen is how Huawei is positioned in the cloud market. Over the last year in particular, we have evolved our cloud offering within a dedicated business group within Huawei—the Cloud and AI Business Group. This group still brings to market the same innovative cloud solutions that organizations have always expected from Huawei, but does so through a more focused approach and service offering. This is often represented through the Huawei Cloud brand, which originally debuted in 2017 as the umbrella for many of Huawei's cloud services.

In 2020, HUAWEI CLOUD joined the global fight against the COVID-19 pandemic. HUAWEI CLOUD services were provided

in various regions across Asia, Europe, and Latin America, allowing us to work with partners and research institutes to weather these challenging times together.

Today, a key element of our work is in diversifying the cloud services ecosystem within the Middle East. This enables the delivery of a rich catalog of industry-specific software as a service (SaaS) solutions that can accelerate the digital transformation of enterprises across the region. Through the Huawei Cloud brand, we have already implemented the ecosystem strategy of 'co-creation, sharing, and win-win', using Huawei Cloud as the foundation to build a 'black soil' for cloud ecosystem development.

We are enhancing synergy between cloud, AI, and connectivity to provide public cloud services and hybrid cloud solutions that deliver several layers of added value, especially in terms of stability, reliability, security, trustworthiness, and sustainability. HUAWEI CLOUD has launched more than 220 cloud services and 210 solutions, and earned over 80 industry recognized security certifications. HUAWEI CLOUD works with more than 19,000 partners, including more than 13,000 consulting partners and more than 6,000 technology partners, and has brought together 1.6 million developers. To date, over 4,000 applications have been launched on the HUAWEI CLOUD Marketplace.

In the Middle East specifically, over the last year and a half alone, we now have 66 SaaS partners working with us in the cloud realm, focusing on seven general enterprise solutions ranging from OA Collaboration to Customer Service & Call Center, Traditional Enterprise Applications, Security, AI Applications, Audio & Video, and Professional Services. To date, we also work on industry-specific scenarios in finance, education, healthcare, and various other fields. We continue to diversify this ecosystem and welcome more partners to hold hands with us.

This expansion of the ecosystem is being met by an expansion of our own availability zones (AZs) within the Middle East. This will enable us to offer customers more choice in the market, and address their data locality requirements working with a single end-to-end partner. We have done this rapidly and successfully in geographies such as Asia Pacific, Latin America, and Africa. This is an ongoing effort, and today we are only scratching the surface of the potential we see in the Middle East.

That is, in short, where we see the Middle East's cloud services market at the halfway point in 2021. This is a region full of potential, with a deep-seated desire from governments and enterprises alike to leverage cloud services in realizing their ambitions. By applying a laser-like focus to diversifying and enriching the region's cloud service market, there is no ceiling to what can be accomplished.

Cloud is another area where we're pushing technology to its limits to bring the benefits of innovation to everyone. We want HUAWEI CLOUD to serve as fertile ground for the intelligent world to flourish. To make this happen, we provide stable, reliable, secure, trustworthy, and sustainable cloud services that enable our customers to develop applications more easily and do more with their data. ■

Huawei hosts Saudi Core Partners Conference 2021

Huawei held its virtual Saudi Core Partner Convention 2021, under the theme of "Safety & Quality First, Digitalization Leads Innovation, and Collaborate to Win-Win", the conference brought together Huawei's key partners in the Kingdom of Saudi Arabia. The convention mainly focused on the importance of partnerships and open collaborations as they play a key role in creating a win-win situation for all parties.

At the event, Huawei reiterated its commitment to strengthening cooperation and increase investment in developing the ICT ecosystem in Saudi Arabia. The company also held discussions on promoting

communication and collaboration with its partners, and highlighted the need to build a healthy ICT industry in Saudi Arabia that secure, reliable, and competitive at the conference.

Heguixue, Vice President, Huawei Technology Investment Saudi Arabia, said: "As we prepare for a post-pandemic era, we've set stringent Quality & Network Safety standards are in place for various procurement categories, which will enable us to deliver exceptional quality of solutions and services to our customers. Safety of network and humans comes first which will never be outweighed by commercial interests. Cyber security and

privacy protection are our top priorities, and we are committed to building trust and high quality into every ICT infrastructure product and solution."

Gary Harvat, Chief Operations Officer of Seder Group Trading and Contracting Co, said: "Throughout the years, Huawei has made a significant impact on the Saudi Arabia telecom services to benefit the community, therefore it's an honor to be part of this global team. Digital transformation has played a vital role in improving quality and efficiency, and at Seder, we are continuously committed to work with global partners such as Huawei to provide the best in quality services." ■

Huawei champions sustainability transition at the Responsible Business 2021 summit

The recent Responsible Business 2021, a virtual event organized by Reuters Events, served as a platform for providing business-critical, actionable insights. Speakers from governments, international organizations, and businesses shared their views about the international agreements, commitments, and measures towards the global sustainability transition.

With sustainability becoming the business itself and not a separate agenda, opportunities are arising from green new deals that are intended to drive economic growth while simultaneously addressing climate change issues. In the Middle East specifically, analysts at strategy& suggest that governments and corporate leaders already realize the opportunities presented by sustainability initiatives, and that a new circular economy model in urban areas could generate savings in the region of USD138 billion by 2030.

Industries like ICT have been at the forefront, providing enabling technology for a greener world. ICT-enabled power savings and carbon emission reductions will far exceed the industry's own, helping greatly conserve energy and reduce emissions worldwide.

"Carbon neutrality, circular economy, energy efficiency or waste management are at the heart of this much needed sustainability transition," said Catherine Chen, Huawei Corporate Senior Vice President and Director of the Board. In her keynote, she emphasized the importance of reducing carbon emissions and fostering the use of renewable energy and highlighted the Huawei Smart PV solution which is being widely used in more than 60 countries. "All in all, when deployed in large ground-based power plants, Huawei smart PV solutions can help cut power generation costs by 7%. When used in enterprise campuses and households, they can increase power yields by 2% and reduce power consumption costs", she stated.

As a responsible corporate citizen, Huawei is



committed to minimizing its environmental impact in production, operations, and throughout the lifecycles of its products and services. The main objective is to cut carbon emissions, promote renewable energy, and contribute to more regenerative economic systems. In 2020, Huawei worked with 93 of its top 100 suppliers to set a carbon emission reduction target. The PV power plants on Huawei campuses generated 12.6 million kWh of electricity. 1.55 billion kWh of clean energy was used, reducing carbon emissions by more than 620,000 tons. The device recycling program was expanded to cover 48 countries and regions, and recycled more than 4,500 tons of electronic waste. Huawei was among the top 5% of the Carbon Disclosure Project (CDP) 'A List' companies, out of the 9,000 companies scored by CDP on their climate change disclosures in 2020.

The event featured renowned leaders and high-level government officials including HRH The Prince of Wales, Virginijus Sinkevičius, Commissioner Environment, Oceans and Fisheries, European Commission, and Sanda Ojiambo, Executive Director, UN Global Compact, among others.

"Responsible Business 2021 clearly articulated the pressing demand for businesses to re-think parts, if not all, of their business. The event also provided a great platform for new definitive actions, new ways of collaborating and open innovation among all stakeholders. Companies like Huawei can play a vital role in ensuring the just transition and can serve as a role model for companies to transform their businesses," said Liam Dowd, Managing Director, Reuters Events Sustainable Business. ■

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'Public-private sector trust is key in global cybercrime fight' according to experts at GISEC 2021

Regional and global industry leaders outline shared strategy to combat sophisticated cybercriminals



Regional and global cybersecurity leaders used day one of GISEC 2021, the Middle East's and Africa's most influential and connected cybersecurity event, to outline the need for greater collaboration, knowledge sharing and trust building between public and private sectors to tackle increasingly innovative and sophisticated cybercriminals.

His Excellency Dr. Mohamed Al-Kuwaiti, Head of Cyber Security, UAE Government, delivered the opening keynote of the 9th edition of GISEC, which runs at Dubai

World Trade Centre (DWTC) until 2nd June, and reinforced that it is a case of when, not if, governments and corporations will fall victim to a cyberattack. However, he called for collaborative efforts to identify new threats, anticipate the severity of attacks and limit reputational and operational damage.

"Cybercriminals will still find creative ways to breach our systems and platforms, and we want to be able to detect those malicious activities early, proactively, take swift action and minimise the impact,"

said Dr. Al-Kuwaiti in his opening address.

"Technology is only one solution. As threats become ever more sophisticated there is a need for international collaboration to govern behaviour in cyberspace and enhance the security and trust that is essential to the functioning of a global digital economy.

"We need that collaboration to build a resilient cybersecurity platform. Global collaboration will drive the digital benefits for all, including small nations that need more support.

"We can do more. There are bad actors who are leveraging the same technologies that we are using to benefit humanity; they are leveraging them for bad means and to attack us all. We need to put our heads together to combat that."

'Dare to share'

Dr. Al-Kuwaiti's views were echoed by Craig Jones, Cybercrime Director, INTERPOL, who shared his experiences in an on-stage interview along with Colonel Saeed Al Hajri, Director, Cyber Crime Department, Dubai Police. Jones said that INTERPOL is working with countries to create knowledge sharing platforms in order to collaborate on best practices, and operations platforms to identify joint approaches that can monitor and eventually catch cybercriminals.

"We have to protect ourselves. We have to identify those vulnerabilities, share information, share trust in order to target criminals, impact them and prevent crime," said Jones.

Jones gave insight into how public-private partnerships have produced positive results in Nigeria by collapsing a criminal network responsible for phishing attacks.



"We need that trust and to also work out how we change that policing model to a 'dare to share' approach," added Jones.

Colonel Saeed Al Hajri, Director, Cyber Crime Department, Dubai Police, added:

"We are working hard, through bilateral relations, police-to-police connections. Global connections and police-to-police intelligence sharing is key."

"We are working closely with the private

sector – protecting them from attacks. We are giving them the knowledge they need to protect their businesses, their assets, their homes.

"Of course, we need to do more. Our messages to businesses, to individuals, is to keep anticipating what is next, keep innovating, we have the competency. Let us work together."

Meanwhile, Aloysius Cheang, Chief Security Officer, Huawei UAE, stressed the need for cross-industry collaboration to enhance systematic cybersecurity governance and unify cybersecurity standards.

"The topic of building a trusted digital oasis has been a key theme for today and as mentioned by His Excellency Dr. Al-Kuwaiti, a joint approach is needed to protect our digital ecosystems. As societies have become increasingly dependent on the internet, new cybersecurity vulnerabilities have emerged. Companies, government entities and individuals can all fall prey to cyber threats. Collaboration between governments and private enterprises is key to address today's cybersecurity challenges." ■

Syed Zulfiqar Ali

Dubai Electronic Security Centre launches 'TIRS' Cybersecurity Platform at GISEC 2021

The Dubai Electronic Security Centre (DESC) has launched a new cybersecurity platform, known as 'TIRS', which translates to 'Shield' in English, at GISEC 2021.

Speaking at the Government Stage, Ghaith Alsuwaidi, Deputy Director, Security Systems for DESC, unveiled the new platform which, designed entirely by a team of UAE nationals, scans Dubai government websites to detect vulnerabilities within departments, delivers top line data and issues a safety score out of five.

The platform also creates a threat report to inform participating entities on critical weaknesses, enabling them to take appropriate action to resolve any security gaps. Once the threat is identified and dealt with, DESC will confirm the action taken within the TIRS system.

"TIRS is one of the key pillars monitoring Dubai's cyberspace, through the Dubai Cyber Index Platform. We continuously scan government websites and based on the security of the government entities we give them a score out of five. It ensures the security of government websites and introduces competitiveness in terms of website security, all the time making Dubai's cyberspace safer," said Alsuwaidi, adding that the TIRS scoring will be a parameter on the Dubai Cyber Index by the end of this year.

Meanwhile, Dr. Marwan Al-Zarouni, Director, Information Security Services, Dubai Electronic Security Centre (DESC), stressed that Dubai's agility, emphasised by the launch of the TIRS platform, will enable Dubai to remain ahead of the curve in protecting its cyberspace.

"In Dubai we are not isolated from the world when it comes to regulation, and we participate in global programmes and contribute to policy making. We are one of the first cities to mandate that all cloud providers to any government bodies need to be compliant to our security standards," said Al-Zarouni. "Being agile enough to



change and create policy quickly to match new threats and trends is a key strength for us."

UAE Cyber Resilience Report Revealed

UAE-based cybersecurity advisor, Digital14, launched its Cyber Resilience Report: The UAE Threat Landscape 2021, during GISEC.

Cyber defence experts evaluated and analysed multiple digital assets in the UAE to give an in-depth understanding of the country's threat landscape.

Digital14's research revealed an exponential surge in phishing and ransomware with 1.1 million phishing attacks in 2020. F Joshua Knight, EVP Cyber Defence, Digital14, said, "Traditional cyber security

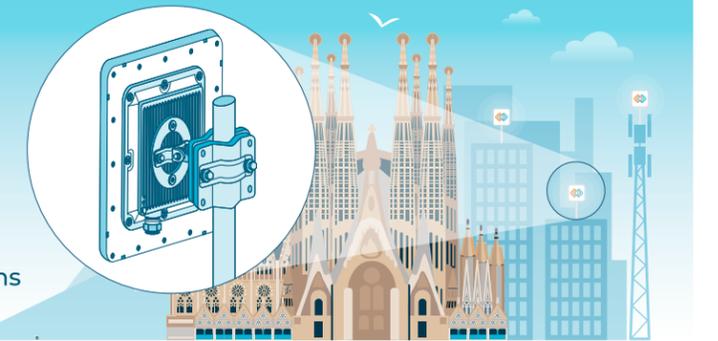
approaches are no longer enough. Traditional perimeter-based network defence, for example, is obsolete. Not only does the perimeter no longer exist in our newly connected environments, but organisations must also recognise that their networks have most likely already been breached."

Key findings of the report include:

- In 2020, 249,955 vulnerabilities were found in 800,315 unique instances
- Significant numbers of old vulnerabilities, some dating back to 2000, have yet to be remediated within UAE organisations' networks. These can easily provide an entry point for devastating cyberattacks
- Ransomware increased with a 33% rise in the number of new ransomware families compared with 2019

Fixed Broadband Wireless Solutions

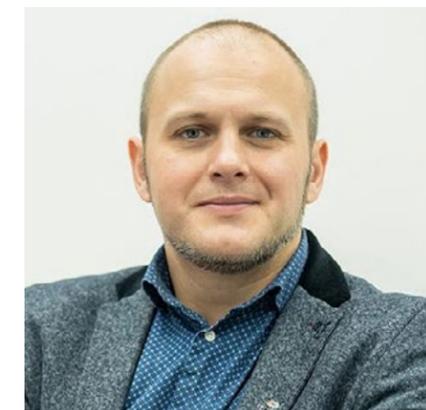
- High capacity
- Long range
- Unlicensed and mmWave bands
- Reliability in the most adverse climate conditions



Infinet Wireless to introduce its state-of-the-art solutions at MWC 2021

Infinet Wireless to showcase its key solutions for the modern dynamic world, ever-evolving and altering after the COVID-19 pandemic, at Mobile World Congress 2021 (MWC), the world's flagship mobile industry and technology event. Aimed at eliminating the Digital Divide and meeting the requirements of businesses going through digital transformation, Infinet Wireless will be showcasing its solutions at Stand 1D36 in the Fira de Barcelona venue from June 28, 2021 to July 1, 2021. Additionally, the company will present its new corporate video, displaying its updated approach in accordance with the unprecedented current era and demonstrating the full range of its cutting-edge products.

First and foremost, Infinet Wireless is planning to show its leading-edge flagship family of Quanta solutions. These are the fully future proofed, spectral efficient solutions, utilizing Octopus SDR (Software Defined Radio) technology and addressing the needs of telecom. The Quanta family is intended to be deployed in the scope of wireless Point-to-Point networks in 5 GHz, 6 GHz, and 70 GHz frequency bands. Some models provide up to 750 Mbps throughput, which is absolutely remarkable. They can operate as part of the last-mile access environment, and as a backhaul solution.



The Quanta 70 product was welcomed into this flagship family back in December 2019, when it was released to the international market. The potential of the solution to guarantee steady connectivity at a long distance was already embraced last year by the local telecom operator, whose engineers managed to achieve up to 22 Mbps throughput over a distance of 51 km between two Moscow-region towns of Klin and Dubna.

Moreover, the company's professionals will introduce the groundbreaking InfiLINK Evolution (Point-to-Point) and InfiMAN Evolution (Point-to-Multipoint) base

stations, the robust wireless broadband solutions with extensive networking functionality. They are designed specifically with Wireless Internet Service Providers needs in mind, and are compatible with previous generation wireless Infinet products. With their help, it is possible to both deploy new infrastructures and expand coverage of the current ones.

"Sharing our insights and experience with Mobile World Congress this year is priceless," highlighted Dmitry Okorokov, the CEO at Infinet Wireless. "The COVID-19 pandemic has made everyone realize that bridging the digital gap is vital; Infinet Wireless aims to overcome this obstacle in order to help businesses and customers better fit this future which has unexpectedly come, and thrive", he concluded.

Infinet Wireless experts will be delighted to welcome the attendees of Mobile World Congress at Stand 1D36 in the Fira de Barcelona venue from June 28, 2021 to July 1, 2021. They will be sharing some momentous thoughts on digital transformation by means of fixed wireless broadband connectivity, and discussing Infinet Wireless application in various industries and within different vertical markets. ■

Global CISO's build strategies for 'guarding the digital vault' at GISEC 2021

GISEC Inspire panel maps strategies for increasing female cybersecurity participation

International chief information security officers (CISOs) met to discuss and map out strategies to protect financial institutions from cyberattacks on the final day of GISEC 2021, the Middle East's most influential and connected cybersecurity event at Dubai World Trade Centre (DWTC).

The main stage discussion, chaired by Nathan Swain, former Security Advisor for the UK Government, explored different tactics in dealing with cyber threats.

Mohammed Darwish Aza, Chief Information Security Officer, Emirates NBD, said, "Threat intelligence is a key

indicator of every feed that you have in the organisation. It helps us make decisions from a strategic perspective, and I believe one of the spaces that really needs to improve is intelligence around third-party suppliers - seeing what their posture is on a day-to-day basis. Conducting a threat audit on a yearly basis won't help you to understand what the overall defence is for your suppliers, and what the latest attack patterns are."

Viktor Polic, CISO, Head of Information Security and Assurance Services, International Labour Organisation, said that education would be critical. He said:

"If you look up at the sky at night, you see new satellites, which will one day be connecting the remaining 4 billion people on the earth, who are without internet - hyper-connectivity and Starlink. With people constantly trying to bridge the digital divide, even with AI and 6G, I think we are going to see quick adoption. We need to match innovation in technology with innovation in people."

Strategies for increasing female cybersecurity participation discussed at GISEC

A GISEC Inspire panel discussion



highlighted the overarching challenges women face in the world of cybersecurity and explored what still needs to change in the industry.

Hessa Salem Al Nadhi, CISO, Department of Culture & Tourism Abu Dhabi highlighted the need for governments and the private sector to encourage women of all ages to explore careers in cybersecurity.

"The majority of women don't consider cybersecurity as a career because they aren't aware of the many opportunities in the field," said Al Nadhi. "Leaders and businesses need to empower both genders to enter the cyber world, whilst helping develop the skills of the younger generations and helping to close both the gender and the skills gap in the sector."

Inass Farouk, Marketing Director, Microsoft UAE, said that only 24% of the global cybersecurity workforce is made up of women, according to the latest cybersecurity workforce study by (ISC)², which shows that there is still a lot to do in order to attract more women into the industry. "Attracting women to the

industry at a young age is crucial," she said. "Providing them with a STEM education and a better understanding of STEM-led careers is key to bringing about change and increasing the number of women in cybersecurity."

SolarWinds CEO delves into Orion security breach

Visitors to the GISEC main stage heard from Sudhakar Ramakrishna, President and CEO of SolarWinds, who discussed how the firm learned that threat actors were in its systems eight months prior to December 2020, when it was reported globally that the Orion security breach allowed thousands of its clients to be hacked.

According to Ramakrishna, attackers managed to get inside SolarWinds' build environment and place a backdoor in 2019, which was then wrapped into its legitimate software without detection. The updated software was distributed to as many as 18,000 organisations leading to follow-on attacks on about 100 companies and nine government agencies.

"Since the initial attack, it has been a whirlwind of learning about the breach, understanding what we need to do and obviously implementing the lessons learned," Ramakrishna said. "The cyberattack that we faced, and other large technology companies are also facing, should be of great concern. As I am sure you will attest from certain recent attacks, no single company is immune to these attacks, especially if they are to be carried out by nation states which are incredibly patient, incredibly persistent and who have many more resources available than any one company must protect itself."

Dubai Police raise awareness on everyday cyber threats

Captain Khalid Tahlak, Head of Social Crime, Dubai Police, briefed GISEC visitors on how the public can safeguard themselves against a range of online scams. He highlighted how bogus charity campaigns, online blackmail and phishing attacks were all commonly used to catch out unwitting citizens, adding that the over-sharing of private information caused a lot of people to fall victim to cybercrime. ■

OIC-CERT launches 5G security working group at GISEC 2021 in collaboration with Huawei



The Organisation of the Islamic Cooperation – Computer Emergency Response Team (OIC-CERT), a leading international cybersecurity platform, has launched a 5G security working group at GISEC, the Middle East and Africa's most influential and connected cybersecurity event, to ensure end-to-end cybersecurity for OIC member states.

The 5G security working group will be tasked with increasing awareness on the importance of 5G security among OIC members, develop a common 5G security framework for risk assessment and management and develop an open standard that can be used to mitigate any technical difficulties in rolling out the 5G.

Engr. Bader Al-Salehi, Chair of OIC-CERT, outlined the group aims to contribute to the global development of 5G by forming a trusted global ecosystem, adding: "Before 5G technology can be deployed, we need to ensure that the security challenges of this technology can be overcome. We believe that this initiative by the OIC-CERT will help resolve some security issues and accelerate 5G implementation, especially within the OIC community."

The collaboration will strive to provide best practices, guidance and promote

standardisation on an open and transparent platform to accelerate the seamless, cost-effective roll out of 5G among OIC member states.

Dato' Ts. Dr. Haji Amirudin Bin Abdul Wahab, CEO of CyberSecurity Malaysia, Permanent Secretariat of the OIC-CERT, and Malaysia representative, will co-chair the 5G security working group together with Huawei.

"Huawei has an excellent track record of empowering secure and resilient digital transformations in the UAE and the rest of the world. Together with Huawei, we are dedicated to providing expertise in cyber crisis management and develops capabilities to mitigate cyber threats by leveraging on global collaboration," said Abdul Wahab.

Fellow co-chair, Aloysius Cheang, Chief Security Officer of Huawei UAE, commented: "Huawei is dedicated to helping partners in the region address cybersecurity challenges while building cutting-edge networks. This collaboration is a direct reflection of our ongoing commitment. We are honoured to work with the OIC-CERT to provide guidance to the global cybersecurity ecosystem." ■

Remote working has made life 'easy' for cybercriminals

The new work-from-home culture has made life easy for hackers thanks to common mistakes being made by everyone from big corporations to individuals, according to experts at GISEC.

Paula Januszkiewicz, CEO of CQURE, pinpointed how a lack of server message block signing, trusting solutions without having the knowledge to break them, misusing service or privileged accounts and falling for "hipster tools", means hackers can make quick money in the remote working era.

Matthias Schraner, a former FBI hostage negotiator and now CEO of the Schraner Negotiation Institute, set out key steps for organisations to negotiate with cybercriminals.

"I've been in a lot of difficult hostage negotiations; I've also worked undercover for six years dealing with various criminal organisations and been part of some high-value illegal transactions. One of the main things you come across with hostage takers is high demand, no cooperation. 'If I don't get my getaway car, I will kill the hostage', 'if I don't get the money, I will not restore your system'.

"Don't waste time trying to solve the problem yourself. Companies underestimate danger and believe that their IT teams will be able to solve the problem. Every hour that passes while they try to figure out a solution will cost the business."

Companies should consider setting up a negotiating team and establishing proof of life, according to Schraner. "The team should comprise an internal commander and an external expert, who is not emotionally invested in the company. If the chief negotiator is emotionally involved, he or she will make mistakes; any thoughts about injustice and morality need to be set aside.

"Ransom is mostly paid in cryptocurrency such as bitcoin," he added. "If a business wants to pay, first it needs to be able to pay, but it is not possible to buy huge amounts of bitcoin instantly, it can take few days. We recommend companies have a contingency fund for this. The negotiator will agree the payment details." ■

ITU World Telecommunication and Information Society Day 2021 ICTS for Sustainable Development

By: Naveed Khalid Butt, Group Regulatory Officer - PTCL & Ufone

The annual World Telecommunication and Information Society Day (WTISD) was observed on May 17th. The day emphasizes the need of connecting the world through technology across geographical boundaries and socioeconomic barriers. The United Nations' special agency, International Telecommunication Union (ITU) has adopted the Connect 2030 Agenda to help connect the entire world by 2030 in order to leverage ICTs for catalyzing a fast paced sustainable development.

The theme of WTISD this year "Accelerating Digital Transformation in Challenging Times," is aptly chosen as the world continues to face the frightening specter of Covid-19 pandemic. During these testing times, the information and Communication Technologies played a crucial role by bridging physical distances created by the pandemic and facilitating continuation of educational, economic and social and cultural activities in the online sphere. Moreover, the pandemic underscored the urgency of democratization of ICTs and emphasized the need of making digital inclusion a top strategic priority for Pakistan.

ICTs impact all spheres of life and work by ushering in an era of swift, smart and organized operation to supplement growth and development. Owing to the great potential of technology, the United Nations envisages rigorous co-opting of ICTs for its sustainable development goals (SDGs).

Pakistan has still a long way to go to improve its standing in terms of internet inclusivity and digital footprint. The country ranks 90th amongst 120 countries and one of the lowest in South Asia, on the 'Inclusive Internet Index 2021 of the Economist Intelligence Unit (EIU). The official figures putting Pakistan's tele density at nearly 85 percent post an encouraging picture however, the broadband internet penetration stands at 46.5 percent, which means more than half of the country's population remains without access to internet.

The government of Pakistan announced its 'Digital Pakistan' vision two years back to improve digital infrastructure and connectivity as well as to encourage investments in digital businesses, innovation and entrepreneurship. Needless to say, Pakistan requires radical policy shifts and rigorous action and implementation on ground to materialize its vision of connecting all of its citizens across socio-economic, cultural and gender barriers. It should begin by developing national and international partnerships, synergies and cooperation for exchange of technology, infrastructure and expertise in the field.

Notwithstanding, there are multiple factors which also need to be accounted for in order to foster growth of information and communication technologies. The telecom sector has reached a concentration point in terms of growth as economic disparities, gender barriers and geographical distances continue to pose hurdles in pushing services penetration any further. A large section of the population, dwelling below the poverty line cannot afford pricey 3G/4G phones while disproportionate taxes on telecom services also make them unaffordable for low income groups. While much is being done in terms of enhancing access, the affordability of the available services remains a challenge. It will require radical interventions at policy level to bring these services within the grasp of the poor.

Meanwhile, the telecom sector is leveraging its joint fund the Universal Service Fund (USF) under the guidance of the Government of Pakistan to push penetration across unserved and underserved regions of the country. Pakistani network, Ufone is taking the lead on connecting remote rural parts of Balochistan that have hitherto remained disconnected and off the country's mainstream socio-economic system, resulting in an abject economic disenfranchisement.

Ufone is collaborating with USF to bring



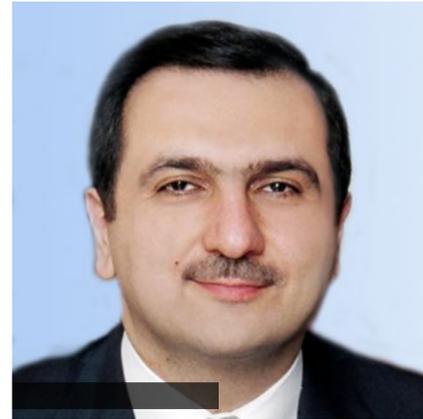
cellular and high speed internet services to more than 2.3 million people scattered across a dozen districts of Balochistan, including Sibi, Kalat, Khuzdar, Chaghai, Awaran Lasbela, Kharan, Dera Bugti, Bolan, Gawadar, Kech, Ziarat and districts near Coastal Highway. Today, more people in Balochistan enjoy quality telecom services at par with the rest of the country and even more will follow in future.

Besides connecting Balochistan to the outer world, the projects will open up a host of opportunities for the economic advancement of the province. The people here have long faced dearth of health, education, commerce and trade infrastructure, which digital technology can compensate for through digital innovation. Moreover, the access to cellular services and high speed internet will smoothly dovetail with the economic opportunities offered by the on-going developmental projects under China-Pakistan Economic Corridor (CPEC).

We at Ufone strongly believe that a better connected Balochistan has the potential to emerge as the future hub of ecommerce, trade and development in the region. It is a dream that we strive hard to materialize vis-à-vis our larger commitment to Balochistan as the largest national telecom player in the province. ■

The UAE positioned to become digital education leader as digital tools availability for teachers 88%

ADL Report



Since the COVID-19 outbreak, life has been difficult for parents and children alike. Daily routines have been upended by mass disruption, and school closures have affected billions of learners worldwide, leading to the rapid, sudden expansion of digital learning. Arthur D. Little (ADL), the leading management consultancy firm with the longest-standing presence in the Middle East region, expound this viewpoint in their latest report entitled *Accelerating post-pandemic e-learning: An opportunity to establish a sustainable digital education system*. The document highlights the success that school systems have enjoyed when mitigating negative closure impacts through digital tools, explaining the essential framework for successful new normal education and why digitalization is fundamental for establishing a sustainable, high-class education system.

As per the report's findings, the availability of digital tools has reduced the negative repercussions of the pandemic on schools overall, laying the foundations for governments, schools, and education companies to converge remote learning and technology use moving forward. While countries are at different stages of digital learning progression, some have fared more favorably than others, as reflected by country-specific data that has been recently published. In terms of the UAE, post-pandemic e-learning is highly likely, especially when considering the country's notable digital education system status at the global level. The availability of online learning support platforms

nationwide is already at 70 percent, while the availability of teacher resources on digital tools has reached 88 percent – higher than the US, Sweden, Austria, and Italy, where remote learning shifts have been successful.

"The vitality of uninterrupted digital learning became apparent almost immediately when COVID-19 emerged. As education communities now look ahead to the future while referring to recent leanings, they can take full advantage of opportunities that lay ahead, transforming their schooling systems to ensure all concerned parties benefit from newfound performance capabilities," said Dr. Raymond Khoury, Partner at Arthur D. Little, Middle East. "From a UAE standpoint, the country is excellently positioned to accomplish this, as emphasized by the statistics mentioned above. The 70 percent of online learning support platforms is 15 percent above the global average listed by Organization for Economic Co-operation and Development (OECD) and the 88 percent for digital teacher resources is 24 percent above the global average."

Accelerating post-pandemic e-learning: An opportunity to establish a sustainable digital education system comprehensively explores how countries can transition from remote to digital learning, providing recommendations for others to apply as they seek to position themselves for sustainable success. Arthur D. Little also offers actionable insights to help governments and schools better adapt

to the new normal post-COVID-19 as part of a specially developed framework, one that enables a sustainable long-term transition to digital learning and accommodates specific requirements in terms of governance, culture, pedagogy, and infrastructure and technology.

"For governments and schools, a holistic digital learning approach is a topmost priority over the coming period. Leaders are required to ensure not only appropriate investment allocation and pursue a digital education strategy that accommodates every concerned player, but also that digital skills are taught with the same level of importance as others and data governance requirements met," explained Dr. Khoury.

The report concludes with several next steps for digital education stakeholders to carry out as they seek to use COVID-19 digitalization to their advantage and establish leading digital education systems:

- *Guidance and resources should be provided to schools for them to implement digital education successfully.*
- *School leaders should consider themselves digital education role models and facilitate education and learning amongst staff.*
- *Establish an ICT teacher position that creates a single point of contact for staff to prepare for digital classrooms.*
- *Work with the broader education ecosystem to adapt to new and emerging educational needs.* ■



Technology is growing at an exponential rate that shows no signs of slowing down. If anything, the recent upending of the global market due to the pandemic has only incentivised its rapid development — and investors should keep a watchful eye.

The 2021 Technology and Innovation Report by the United Nations Conference on Trade and Development (UNCTAD) takes a deep look into the decade-defining technological trends. With Industry 4.0 in full swing and the swift digitalisation happening globally, the report mentions 11 pillars in frontier technology that are expected to lead this technological revolution: Artificial Intelligence (AI), Internet of Things (IoT), 5G, big data, blockchain, 3D printing, robotics, drones, gene editing, nanotechnology, and solar photovoltaic (PV).

With that in mind, it would be wise to put investments into core industries that will see a lot of movement as a result of these frontier technologies. This can be an especially fruitful time to think ahead, as countries start pouring more resources into digital adoption.

The Globalisation of 5G

The 5th generation for mobile networks, or 5G, started its worldwide deployment in 2019, just before the coronavirus pandemic. The wireless technology has completely overtaken its predecessor in terms of performance, boasting much lower latencies, faster data delivery and transfer speeds, more consistency in connectivity,

and expanded capacity. Because of this, adoption has been continuous despite the hurdles of the past year. IEEE.org's report on major vendors reveals Samsung and Huawei have already led the global 5G movement, with market shares at 34.4% and 33.2% respectively. These numbers are expected to rise exponentially over the next five years.

In Rakesh Lakhani's editorial piece on 5G as the future, he highlights how the pandemic arguably pushed the integration and attractiveness of the technology as consumers seek out more connectivity. In a world where remoteness has become normalised and digital resources are entwined within our daily lives, Lakhani notes how this level of connectivity goes beyond recreational commercial products and can impact crisis management, medical response, and business solutions in ICT.

Taking Stock in Technology

Much of the world has gone mobile. Beyond that, technology permeates every industry on a global scale. There's no urban sector that is absent from developing technologies. Because of this, tech's umbrella of platforms and services have taken over as a priority for innovators, disruptors, and investors alike. If you look at FXCM's shares heat map, most of the companies that saw a positive movement in the last month are tech players or have frontier technology significantly integrated into their platform. These are Bilibili, NVIDIA, Google, SAP, Smoore International, WuXi Apptec, Tesla

Motors Inc., Amazon.com, and NetEase (HK) — all promising or already big names in tech. Despite the uncertainty of the past year (or perhaps due to it), more people feel encouraged to invest while various applications of frontier technology see relevant industries thrive. The shift to a digital future is largely inevitable, and these tumultuous times can be opportunities to look into stocks and shares while prices are low. Investing in 5G and tech stocks is actually made more convenient now.

With the rise of trading platforms, even investors from the UAE can participate in international stock markets and place their shares purchases using their phones. You can put your money into 5G by buying stocks of 5G companies, be they producers of wireless carriers, makers of 5G-capable devices, or providers of 5G infrastructures. The top companies in the US are Verizon and T-Mobile, but even Apple has a stake in 5G-capable devices. NVIDIA is another company that is a good tech and 5G stock purchase, given their involvement in telecommunications companies that support 5G. Even the UAE telecommunication company du is eyeing a 5G expansion, which might be worth looking into for your portfolio.

Of course, a return of profit can never be 100% assured, but putting your eggs into a future-forward basket can dramatically increase favourable odds. It is all but cemented that technology will continue to proliferate and change, so it's wise to put your money in the future. ■

du and Philips to accelerate a data-driven healthcare transformation in the UAE

Philips and du to accelerate the critical, data-driven transformation of healthcare in the United Arab Emirates (UAE) in support of the Dubai Health Strategy 2021.

The partnership will focus collective efforts on realizing value-based care by improving patient and healthcare professionals' experiences, delivering better health outcomes, at a lower cost of care across the healthcare continuum.

"Bringing people and businesses together to unlock economic and social transformation has always been at the heart of our operations," said Farid Faraidooni, Chief New Business & Innovation Office, du. "Although the pandemic undoubtedly altered this laser-focused approach temporarily, with business continuity and seamless connectivity for all our topmost priorities, recent events have also accelerated the pace of momentum to realize the digital transformation required to help people take better care of their health at every stage of life. As a leading national organization, we are proud to contribute to efforts in this direction and look forward to working with our partners at Philips to achieve our shared objectives in due course."

Crucially, the potential and power of virtualized healthcare extends well beyond COVID-19. For example, the swift and sustained growth of imaging services beyond the hospital has led to the rise of the tele-ICU or eICU, where off-site healthcare professionals are able to interact



and engage with bedside staff about patient care and exchange information in real-time.

In due course, the infrastructure provided by du and paired with Philips' technological advancements will provide predictive analytics, data visualization, and reporting capabilities to healthcare workers. This winning combination will enable the local health system to access critical patient information, make split-second life-saving decisions, and prevent patient deterioration in general ward settings through early warning scores.

"We have seen some inspiring success stories with our Philips eICU programme

in delivering value-based care; healthcare professionals have been able to save lives and reduce mortality rates while improving the quality and efficiency of healthcare services - reducing the cost of care and the length of patient hospital stays," says Vincenzo Ventricelli, Chief Executive Officer for Philips Middle East, Turkey & Africa.

Going forward, the virtualization of healthcare and more widespread adoption of telehealth will play an increasing role in helping people to live healthily and cope with disease, enabling care providers to meet people's health needs, improve productivity, and ultimately deliver better outcomes. ■

Kinda Baydoun joined Veeam Software as Regional Channel & Distribution Leader

One of the award winner ICT leaders Kinda Baydoun has joined VEEAM Software Company as Regional Channel and Distribution Leader.

Kinda is known as a Result-driven senior manager with an excellent track record exceeding sales targets and growing market shares, offering more than 17 years of experience in the sales and channel fields with global organizations such as Sun Microsystems and Hewlett Packard. Kinda is recognized as a prominent leader for building and leading sales organizations. ■



Ksenia Drozdova elected as new Director General of Intersputnik IOSC



Ksenia Drozdova, Deputy Director-General for Business Development of Russian Satellite Communications Company (RSCC), was elected Director-General of the Intersputnik International Organization of Space Communications (IOSC). The decision was passed at the joint 49th session of the Board and 23rd session of the Operations Committee of the Intersputnik International Organization of Space Communications (Intersputnik IOSC), held from April 5 to May 14, 2021 in a remote format.

Ksenia Drozdova was nominated to the post of Director-General by the Ministry of Digital Development, Communications and Mass Media of the Russian Federation (Ministry). In this respect, the Ministry expressed confidence that Ksenia Drozdova being elected the Director-General of Intersputnik would ensure stable operation and further

development of the organization. Sixteen organizations acting as the members of the Board of Intersputnik IOSC and on behalf of the Members, and 19 organizations members of the Operations Committee took part in the voting for the Director-General.

From 2009 for more than 10 years Ksenia Drozdova had held office as the Chair of the Operations Committee of Intersputnik IOSC. Under her leadership, the Operations Committee established effective interaction between Intersputnik member countries and significantly expanded the satellite capabilities that organization members offer to their customers.

As Director-General of the international organization, Ksenia Drozdova will head the Directorate – the permanent executive and administrative body of Intersputnik – and

will be engaged in the further development of the organization. Intersputnik IOSC will continue the policy of strengthening ties and coordinating interaction both within the system of international organizations and with regional telecommunication organizations. Intersputnik also plans to actively develop its space fleet, including in the virtual network operator (VNO) model.

"Our priority is to provide people of the Intersputnik member states with convenient access to all satellite-based services: from B2B solutions to end user communication options," said Ksenia Drozdova. "The members of our organization have satellite fleets in different orbits – low, medium, geostationary – and the service areas of their spacecraft cover the entire globe. I believe that Intersputnik will use all advanced capabilities of the constellations in any type of orbit to provide the most modern services and eliminate the digital divide around the world."

From 2008, Ksenia Drozdova had been in charge of business development at a leading Russian satellite operator RSCC. She had initiated and managed a number of projects to promote Russian satellite constellation-based communication services to foreign markets. She is the author of numerous articles on the development of satellite communications in Russia and a co-author of the development strategy of Russian Satellite Communications Company. She was awarded the Medal of the Order for Merit to the Fatherland of the II degree, the gratitude of the President of the Russian Federation for her great contribution to the implementation of the project for the Russian Federation's transition to the digital TV broadcasting, the Certificate of Honor of the President of the Russian Federation, numerous departmental and enterprise awards. Ksenia Drozdova was also an award winner of the 2020 Prize of the Government of the Russian Federation in the field of science and technology for the creation of a national satellite constellation to provide digital telecommunications services in the Russian Federation. ■

A Successful Technology Modernization Process for Businesses

New ERP and SaaS systems can spur changes in the operating model

By Dr. Housseem Jemili, Partner at Bain & Company Middle East

Until recently, many companies saw technology modernization as a necessary evil, something to postpone as long as possible to avoid the disruption sure to accompany it. Today, more of them recognize that disruption is part of the attraction. Modernizing systems can and should serve as an opportunity for companies to reevaluate timeworn and inefficient processes and update them. One way that companies modernize their systems is by updating their enterprise resource planning (ERP) and other integrated management systems. Increasingly, these systems can help companies by providing ways to create more value by delivering improved processes.



that process, to make changes to improve it.

In addition, leaders present a clear business case for the transformation, showing which processes will change and how this will improve the business. This case needs to be based on hard data, and should also present the transformation as a portfolio of changes. Budgets need to be flexible—not yearly, but monthly, and senior managers must be willing to change or accelerate investments where necessary to gain advantage.

This business case should reflect the value of adopting a more modular architecture with more standardized components, which can increase the pace of innovation and improvement.

Ongoing change management is, of course, essential and needs to be guided by a cross-functional team empowered to design the future state and make the changes necessary to reach it. Change management needs to happen at all levels, from the C-suite to the front line, and must be rooted in a clear understanding of the ways that people and their jobs will have to change

Finally, executives leading a technology modernization transformation can help ensure success by following a few tried and tested principles. First, get on with it. The quicker a company engages with the challenges of modernization, the sooner it can begin to see results that will deliver a competitive edge. Second, don't make the mistake of viewing this only through the eyes of the CIO or IT team. Successful modernization programs keep a laser focus on the customer's needs and the business goals of serving those. Lastly, don't think of this as a single event. Business and digital transformations are the beginning of a journey that can continue to create positive momentum and beneficial outcomes for years to come. ■

Leaders also work to ensure they have a clear view of technology spending, so they can track how investment leads to results. Every initiative has a business case, and executives can articulate how a specific technology investment is creating business value.

Finally, these companies are comfortable with technology, elevating it to the same level as other critical business functions. This helps them embrace transformation, which creates an energy that carries the momentum forward. Employee engagement in the transformation is usually pretty high, because the benefits are made clear to all and senior management keeps an unwavering focus on the transformation, offering consistent messaging about the connection between change and value creation. Frequently, employees feel better prepared for the challenges ahead because the company is keeping pace with change.

The elements of a successful transformation Successful transformations are more likely when senior executives and the board align on the ambition. Leading organizations take a zero-based approach, redesigning processes from scratch, introducing new ways to work, and creating new business models. Critically, they empower the people who actually run a process, who are closest to the market for

First, these systems help companies develop an end-to-end view of their business processes, not only by facilitating seamless connections, but also by tapping the expertise of industry partners to provide guidance on best practice for each particular industry and segment. Second, customers shift from a capex model of purchasing large systems to subscription models, even systems that are not delivered, as Software as a Service (SaaS) can increasingly be purchased with similar financing models. Finally, building on both of these points, upgrading systems can provide a platform for investing in more next-generation services, such as analytics and AI, which can help grow the business.

What sets leaders apart

First and foremost, leaders set out to achieve transformational results, rather than single-digit improvements. They spend more time thinking about how to take advantage of future opportunities.

Most adopt Agile methodologies, building up cross-functional teams that are empowered to test and learn, and to make decisions about where to focus investment to move initiatives forward, from the C-suite to the front line.

Indosat Ooredoo Reports Stellar Results in Q1 2021, Delivers Net Profit of IDR 172 Bn with 12.6% Revenue Growth and 42.5% EBITDA Growth YoY



Indosat Ooredoo has announced an excellent set of financial results for the quarter, ended 31 March 2021.

President Director and CEO Indosat Ooredoo, Ahmad Al-Neama, said: "Despite the operational challenges created by the ongoing pandemic, Indosat Ooredoo has made an outstanding start in 2021. Our growth momentum has continued to build, reflected in consecutive double-digit revenue growth, a strong EBITDA performance, and we also record a net profit. This Q1 result has set a new benchmark for our financial performance. Our strategy to provide simple and relevant products, supported by our efforts in network excellence, has translated into an accelerating gain in cellular market share and a strong rebound in our enterprise business.

I would like to thank our loyal customers and all our stakeholders for their continuous support, which has helped us to deliver these outstanding results. We remain committed to providing communities across Indonesia with the connectivity and digital products and services they need during this tough time and to accelerating Indonesia's transformation into a digital nation."

Indosat Ooredoo has recorded excellent financial performance in the first quarter of 2021, maintaining the growth momentum of the previous year. Indosat Ooredoo's total revenue increased by 12.6% year-on-year (YoY) to IDR 7.3 trillion. Cellular revenue rose by 12.5% YoY to IDR 6 trillion. Enterprise business has shown a turnaround in the first quarter of 2021 with 17.1 % growth in enterprise revenue (YoY) to IDR 1.3 trillion.

Ooredoo's also recorded a healthy customer base growth with 60.0 million engaged customers, an increase of 7% YoY. Average Revenue per User (ARPU) increased by 11% YoY to IDR 32.7 thousand, driven mainly by robust growth in data traffic, which rose 46% compared to the same period in the previous year.

In Q1 2021 Indosat Ooredoo announced the signing of a sale and leaseback agreement with PT EPID Menara Asset Co ("Edge Point Indonesia") for more than 4,200 telecommunications towers. The transaction is valued at IDR 11 trillion and will unlock significant capital to build on Indosat Ooredoo's strong growth momentum through further improvements to its network performance and the launch of innovative new digital solutions to enhance the customer experience. ■



Katarzyna Rybarczyk

Can drones save lives and deliver change in Africa?

Originally, Unmanned Aerial Vehicles (UAVs), most commonly known as drones, were built for military operations. Because of the frequent use of UAVs as weapons in targeted killings and airstrikes, drones have developed a bad reputation. Over the years, however, they have proven hugely valuable for responding to humanitarian crises.

The use of drones in humanitarian operations is a rapidly evolving field that underlines various capacities of UAVs and promotes the safe and ethical use of this powerful technology. Thanks to drones, the efficiency of humanitarian operations can be improved, and problems such as famine or climate change can be successfully addressed.

In recent years, drones have been deployed in humanitarian operations in various regions of the world. Still, Africa has been a leader in the field.

Drones facilitating disaster relief

People around the world are being displaced by climate shocks that now occur more frequently than ever before. In Africa, which is the continent the most vulnerable to climate change, drones have facilitated conducting rescue missions and supporting local communities affected by natural disasters. For example, as the African Union Development Agency reported, during Cyclone Eloise in January 2021, five African countries used drones to search for survivors. After the event, drones enabled assessing the damages to houses, and the integrity of water and electricity supply in hard-to-reach areas.

When natural disasters such as floods, earthquakes or wildfires happen, the first seventy-two hours are critical. The emergency response needs to start

immediately to save lives and help survivors. The first step in responding to such events is assessing the extent of the damages and identifying how many people need urgent help.

Getting to the disaster scene or waiting for reports from local authorities can take a significant amount of time. With the use of drones, this information can be obtained within just a few minutes. Not only are drones fast, but they can also hover over vast regions affected by a disaster and provide images of resolution higher than photographs taken by satellites, even when there are clouds or at night. Moreover, thermal cameras can be attached to drones to detect heat, thus providing rescue teams with information on where the people who need help are.

Drones delivering critical supplies

Around sixty per cent of the population of Sub-Saharan Africa lives in rural regions. Drones have been an important part of delivering humanitarian aid to areas that are difficult to get to, and regions ravaged by armed conflict. UAVs allow humanitarian workers to deliver food, water, and medical supplies to those who need it without having to put their lives at risk.

Timely access to vaccines, medicines and equipment can significantly improve responding to disease outbreaks. In 2016, Rwanda launched the world's first national drone delivery service. As Gavi, the Vaccine Alliance reported, the programme allowed to deliver 'life-saving medical supplies in minutes rather than hours for millions of Rwandan citizens in remote communities.' After that, numerous African countries followed Rwanda's example. In 2019, the world's largest drone delivery service, giving

twelve million people access to healthcare and vaccines, began in Ghana.

Drones can also quickly transport samples between cities and villages for testing to identify outbreaks or new viruses. That has been the case in Uganda, where drones have been used to confirm Ebola outbreaks.

Challenges associated with humanitarian drone use

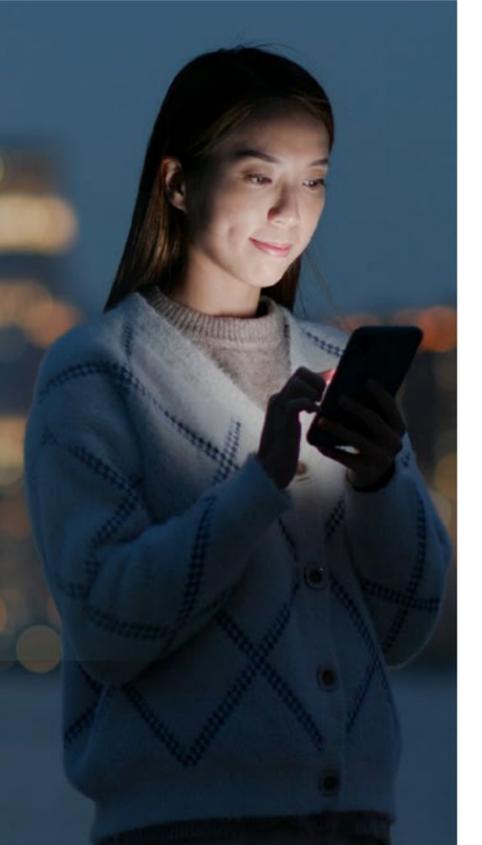
Drones can help fight poverty, feed food-insecure people, save lives and prevent the spread of diseases. Drone technology has the potential to do a lot of good and deliver positive change not only in Africa but also elsewhere in the world. Drones can ensure that no one is left behind and that those living in remote areas get the assistance they need.

Unfortunately, however, there still exist a number of barriers preventing the application of drones in many African countries. The African Union Development Agency names 'high costs, unskilled manpower, and restrictive regulatory frameworks' as the main obstacles.

For the time being, African drone regulations are in the development stage. Hence, governments enjoy a great degree of autonomy, and there is no harmonised regulatory framework addressing the development and the use of drones in humanitarian operations.

As UAVs are increasingly used in this context, it is essential that they are handled responsibly. The benefits of using drones for humanitarian aid are clear. Yet, to use their full potential, African countries need to coordinate the use of drone technology better. ■

Ericsson ConsumerLab 5G already changing smartphone use behavior



A new report by Ericsson ConsumerLab highlights the impact that 5G is already having on smartphone users worldwide and what they expect the technology to deliver in the future. Indoor coverage is one of the focus areas to emerge from the consumer research, with one-in-five 5G users already reducing Wi-Fi use on their phones indoors because of the benefits of 5G mobile connectivity.

The report - Five Ways to a Better 5G - is the result of the largest global 5G consumer study to date. Covering consumer sentiment and perception in 26 markets - including the US, China, South Korea, and the UK - the Ericsson ConsumerLab study methodology is representative of 1.3 billion smartphone users globally, including 220 million 5G subscribers.

The report explores key trends behind the adoption, use and perception of consumers with and towards 5G. A key report finding reveals that even by the end of 2020, increased awareness of service and value benefits could have resulted in 22 percent

more smartphone users with 5G-ready handsets upgrading to 5G subscriptions. The report also highlights how 5G is already beginning to trigger new use behaviors. In addition to reducing Wi-Fi use, early adopter 5G users also spend an average of two hours more on cloud gaming and one hour more on augmented reality (AR) apps per week compared to 4G users.

However, while 5G users are satisfied with speed, about 70 percent are dissatisfied with the availability of innovative services and new apps. Consumers say they are willing to pay 20 to 30 percent more for 5G plans bundled with digital service use cases.

Covid-19 lockdowns and movement restrictions mean that the vast majority of 5G early adopters' regular experiences with the technology have been indoors. As a result, early adopters indicate that indoor coverage is two times more important than speed or battery life in delivering satisfactory 5G experiences.

The report also outlines five ways for

communications service providers (CSPs) to meet consumer expectations both in the immediate and longer terms, including:

- addressing the knowledge gap by educating and better marketing the value of 5G to consumers
- ensuring consistent quality of indoor and outdoor 5G coverage
- adapting to network requirements for new 5G services
- focusing on consumer intent to envision new 5G use cases
- accelerating availability of existing and new use cases through ecosystem partnerships

Jasmeet Singh Sethi, Head of ConsumerLab, Ericsson Research, says: "So far, analyses of 5G network experiences have mostly focused on 5G speeds and availability based on independent network measurements. But it is equally important to understand how 5G early adopters perceive that experience. With Ericsson ConsumerLab's five recommendations and insights, CSPs can encourage 5G adoption and meet consumer expectations." ■

Gulf region's smartphone market kicks off 2021 with rapid growth

Newly released data from IDC's Worldwide Quarterly Mobile Phone Tracker shows that the overall mobile phone market of the Gulf Cooperation Council (GCC) region experienced quarter-on-quarter (QoQ) growth of 15.6% in Q1 2021 to total 6.21 million units. The region's smartphone market grew 30.0% over the same period to reach 5.53 million units, while feature phone shipments declined 39.2% to 679,000 units. In terms of value, the smartphone market totaled \$1.99 billion, a 22.9% QoQ increase, while the feature phone market was worth \$13 million, a QoQ decline of 32.5%.

The smartphone market's growth was spurred by the release of several new models by Android vendors. The impact of anticipated supply shortages on the market's top vendors was less than expected, with shipments into the region remaining healthy throughout the quarter. Consumer demand also continues to improve with the region's successful vaccination programs and slightly improved economic outlook.

In unit terms, Saudi Arabia accounted for 53.8% of the GCC smartphone market in Q1 2021, with strong QoQ growth in shipments of low-end Android devices. This was partially due to the release of pent-up demand following significant shortages of cheaper devices in the market during previous quarters. Consumers are also becoming more accustomed to the higher VAT rate. The UAE accounted for 25.7% of the region's smartphone shipments after experiencing strong QoQ growth, with Samsung increasing its shipments substantially — both in the retail and telco channels. The Dubai Shopping Festival also helped spur consumer sales in the UAE market.

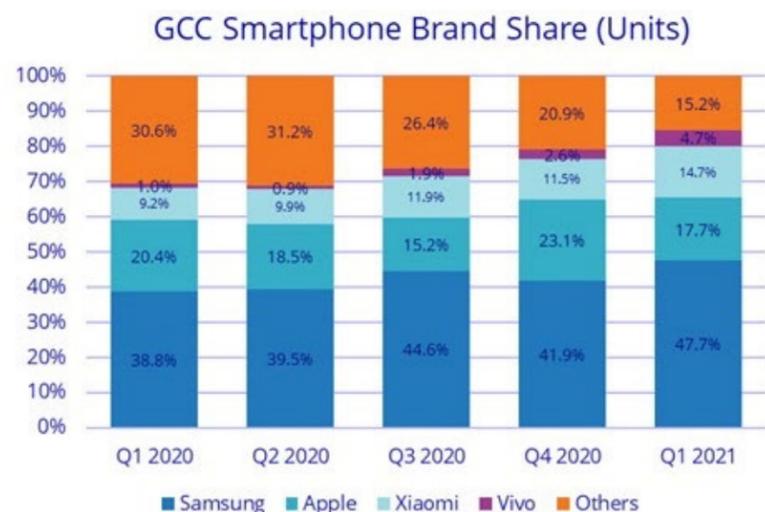
Samsung posted significant 48.0% QoQ growth in its smartphone shipments in Q1 2021 to further extend its lead in the GCC

market. Second-placed Apple suffered a 0.6% QoQ decline, while third-placed Xiaomi saw its shipments increase 65.5% QoQ as supplies were prioritized in key markets of the GCC

"Samsung's growth stemmed from its uninterrupted supply of key low-end models that had previously experienced shortages, while its premium 5G-based devices also enjoyed growth thanks to a strong performance in the telco channel,"

traditionally represents a slower period in terms of sales, and tourism remains restricted due to the COVID-19 crisis," says Balachandran. "However, with the vaccine rollout continuing, travel resuming, and supply chain constraints and component shortages being resolved, the smartphone market is set to grow through the second half of the year."

5G devices continue to gain popularity, with IDC's research showing that 5G handsets



Source: IDC, 2021
GCC Smartphone Market by Brand Share (Units), Q1 2020-Q1 2021

says Akash Balachandran, a senior research analyst at IDC. "Samsung and Xiaomi have effectively filled the gap created by the decline of Huawei and Honor in the region's smartphone market. The second half of the year will be critical in determining how Huawei's standing in the market evolves.

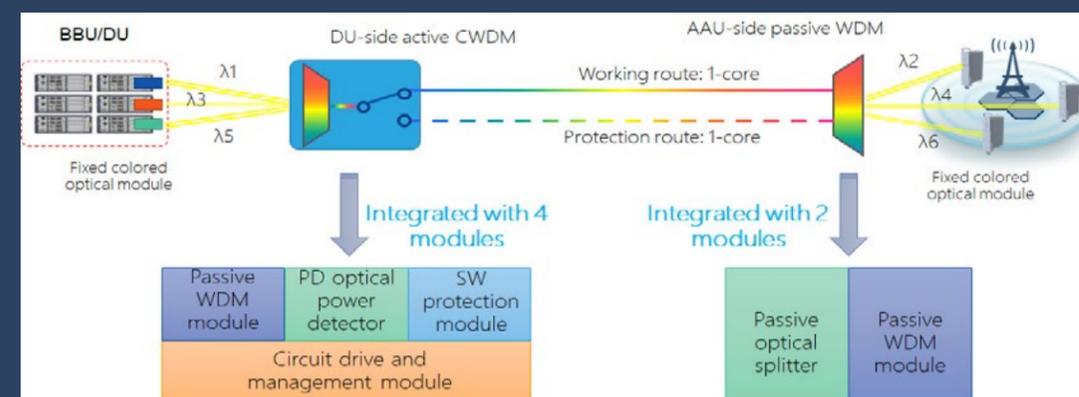
Looking ahead, IDC expects the GCC smartphone market to grow 12.5% year on year in 2021. "The Holy Month of Ramadan, which this year took place in Q2,

accounted for 20.2% of all smartphone shipments to the GCC in Q1 2021, up from just 1.3% in Q120. "This trend is forecast to continue as smartphone vendors prioritize shipments of 5G devices and as more devices become available among Android vendors operating in the mid-tier price bands," says Ramazan Yavuz, a senior research manager at IDC. "The region's telcos, with their world-leading position in terms of 5G rollouts, are also driving the increase in 5G shipments into the GCC." ■



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Pioneer Consulting Report: “Marine Services for Undersea Telecom Cables”

Pioneer Consulting, the full-service submarine fiber optic telecommunications consulting and project management company, announces the release of its latest “Marine Services for Undersea Telecom Cables” report.

Spanning over 350 pages, “Marine Services for Undersea Cables” – an update to Pioneer Consulting’s 2011 report on the topic – provides an up-to-date overview of the market for marine services that serve undersea telecommunications cables. The services include the key providers of survey, installation, and maintenance services, the technical requirements for these services, current trends affecting the submarine cable industry, and analysis of market areas impacting the marine services industry.

The report also serves as a primer for readers new to the subsea telecommunications space, with comprehensive information concerning the detailed activities and infrastructure that make up the survey and installation marketplace.

Tutorial-level information is provided on vessels, their services, the nature of marine installation and maintenance agreements, storage, and many other ancillary services.

Regarding the future of the industry, Pioneer Consulting explores several trends in this report:

Greater shore-end protection and deeper burial: Industrial fisheries and the requirement for greater cable protection have led cable burial depth to increase from an average of one meter a decade ago to 2-3 meters today.

Regional infill: There is an increased need for regional systems to meet the expansion of broadband intra-regionally.

Continuing technological developments to improve system reliability: Whether it is the increased reliance on survey and lay software aboard vessels, faster signal processing, broadband access while at sea, or improved mechanical and electrical equipment, the trend

has been towards increasingly sophisticated solutions being needed to meet the exacting requirements of end clients.

Stress in the marine maintenance marketplace: Changes to marine maintenance may create impacts, especially on small carriers and capacity owners who may find their needs underserved if the current status quo on consortium maintenance continues to break down.

“This report is a one-stop shop for anyone looking for a complete primer on the state of marine services for undersea cables,” said Howard Kidorf, Managing Partner at Pioneer Consulting. “We also dive into detail about some of the challenges the industry will face in the coming years, and ways that stakeholders can prepare and adapt. The demand for greater global connectivity is higher than ever, and we can only meet that demand if marine services are maintained and expanded at a similarly accelerated pace.”

Etisalat expands SmartHub footprint with new facility in Kalba



Etisalat has announced the further expansion of its SmartHub with a third location opening in Kalba complete with a state-of-art Tier 3 data centre facility addressing the growing demand and enhancing geographical diversity.

SmartHub Kalba is Etisalat’s third wholesale data centre, following the opening of facilities in Fujairah and Dubai last year. The new data centre will offer geo-redundant ecosystem for global players to expand their regional presence.

Additionally the new facility is also selected to be the landing for Africa-1, a new subsea

telecom system connecting Africa, the Middle East and Europe.

With the launch of its latest facility, Etisalat’s Carrier & Wholesale Services (C&WS) has set a benchmark in the region, and is a testimony to the company’s strategy to ‘Drive the digital future to empower societies’. It is also in line with UAE leadership’s vision to continue leading as an ICT and data hub for the region addressing the diverse requirements of global telecom infrastructure.

Ali Amiri, Group Chief Carrier & Wholesale Officer, Etisalat, said: “As one of the biggest neutral carrier hotels, Etisalat’s SmartHub

data centres will be an ICT bridge between continents always supporting critical business activities of global customers. SmartHub Kalba will enable us to increase our capabilities and global capacity to meet our international clients’ expanding needs for infrastructure across Asia, Africa, Europe, Middle East and the Americas.”

The new facility is scheduled to be operational by the first quarter of 2022 providing a robust data centre infrastructure evolving to meet future demands including landing of a new generation of submarines as well as becoming a disaster recovery hub for Etisalat’s customers in the Fujairah SmartHub.

CRA publishes the Fourth Version of the Class License for Short Range Devices to keep pace with rapid technological advancements



frequency ranges was in response to the rapid increase in the uses of radio-communications equipment and applications and the numerous recent related advancements. In addition to CRA’s keenness to ensure that there is enough radio spectrum to keep pace with the rapidly evolving technological environment and therefore ensuring that advanced, innovative, and reliable information and communications technology services are provided across Qatar. The additional frequencies to these applications and the review of the authorized maximum allowed output power for some applications will allow using and selling a greater variety of SRDs in the country, which in turn will benefit consumers and other stakeholders,” said His Excellency Mohammed Ali Al-Mannai, President of CRA.

It is worth mentioning that the CRA is the responsible authority for regulating and managing all the affairs related to the use of the radio spectrum in Qatar, as well as establishing an effective approval regime for telecommunications equipment.

Accordingly, CRA has the powers and authorities of granting, amending, renewing, suspending, and revoking Class Licenses, Radio Spectrum Licenses and Authorizations and determining the terms and procedures necessary for their issuance. Also, CRA sets and manages the plan for Radio Spectrum and ensures the optimal use of it, where no person shall operate any radio-communications equipment or make any use of radio frequencies, without a Radio Spectrum License or a Radio Frequency Authorization from the CRA. Moreover, CRA monitors compliance by licensees with the terms and conditions of their licenses and may take any measures and procedures in this regard.

The Communications Regulatory Authority (CRA) recently published on its website the fourth version of the Class License for Short Range Devices (SRDs) that replaces the third version that was in place. The fourth version was designed to keep pace with rapid technological advancements in radio-communications equipment and applications and according to the resolutions and recommendations of World Radiocommunication Conference 2019 (WRC-19).

The Class License specifies the

harmonized standards to be used for SRDs and the fourth version includes updates to the rules, international standards and technical specifications for the SRDs intended to be imported to Qatar as well as the corresponding authorized maximum allowed output power. In addition to updates related to the addition of new frequency bands and applications for SRDs including Wireless Access Systems (WAS) applications like Radio Local Area Networks (RLANs) applications onboard land vehicles which include wagons, cars, trucks, and buses. “The introduction of the additional

Starcom Group, transforming the networking business

Starcom Group (Star Communication Services & STARCOM Technologies Pvt Ltd.) is a leading, regional Systems Integration and digital transformation solutions provider that supports its client's pursuit of operational excellence and profitability. With over 15 years of operational experience, hundreds of projects delivered, and rational capital that spans multiple industry sectors including wireline operators, cellular operators not only in Pakistan and Afghanistan but also in the Middle East region. Starcom's team of trained technology experts are fully capable of integrating and delivering innovative consulting, business, and technology solutions with a commitment to excellence and client satisfaction. Starcom is acknowledged as one of the Pakistan's most capable Infrastructure Solution providers. We have successfully delivered hundreds of infrastructure projects.

For organizations to achieve their strategic business goals in a continuously-evolving and highly competitive marketplace, it has become inevitable for them to adopt robust, highly scalable, readily available and responsive integrated systems that enable processes. Deploying versatile, reliable, and highly secure ICT infrastructures to host and run business solutions has become increasingly compelling, but implementing and managing such sophisticated ICT infrastructure setups is being a tedious job for most organizations. By leveraging its wide spectrum of solutions, highly trained human capital, global network of technology partners, and robust value-chain, Starcom provides clients across a spectrum of sectors with the expertise, cutting-edge technologies, best ICT practices and processes, and the after-sales support services they need. We guarantee the highest levels of efficiency, effectiveness, scalability, and business sustainability. Our cumulative experience has grown continuously through the management and implementation of our projects in Pakistan, Afghanistan and throughout the Middle East region.

1. **Our Infrastructure Solutions offerings include:**
 - Telecommunication & Networking Solutions
 - Mobile BBU Fronthaul & Backhaul Solutions using OTN/PTN & IP-MPLS, Metro Fiber Solution with Clock like 1558V2, Synch-E etc
 - 3G/4G/LTE & 5G Tower Fiberization Solution,



Outdoor & Industrial Grade

- 5G OpenRAN, SoftwareDefine Open vRAN & 5G networks with 5G-native architecture
- DWDM, xPON, Small Cells & 5G IDU & ODU CPE's for MNO's
- Carrier Grade Dual WAN port Layer 3 LTE ROUTERS (industrial Grade)
- TDMoIP, VoIP Solutions, Wi-Fi & 4G LTE Mobile Backhaul over MPLS
- Test & Measurement Solution from 1Mbps to 400G, Spectrum Analyzer, QoE
- SCADA, IoT, M2M, SDN/NFV & SD-WAN Solutions

- Mobile Fronthaul Passive Solution & Clock Distribution for MBH with 1588-GM
- MEF CE2.0 Access and Aggregation Mobile Backhaul Solution

2. Our technology and service offerings are:

- Telecom Infrastructure Implementations Services (TI Services)
- Routing and Switching Configurations
- Data Center Preparation
- Wireline/Wireless Implementations
- Structured Cabling
- Site Survey, DC Power, SCADA, Optical Passive Cabling & many more

3. Our Service Offerings:

We work with our clients to improve their network reliability and efficiency through customized end-to-end technology service and solution implementations with the aim of improving operational processes and enhancing overall performance. Our technology offerings have excellent maintenance and support components; STARCOM offers the following technology services:

- Professional Services – Consultancy, Engineering Design & Integration.
 - Managed Services - 24x7 network support, management, SLA.
 - Technology Services - Industry leading products, Configuration & Installation.
- Starcom has enhanced expertise for Telecom implementations of 3G/4G/5G & LTE, from BTS to BSC/MSC. We also specialize in Test & Measurement hardware solution for GSM/ Mobile & Telco operators TDM, IP, Power, GPS, Synch-E & many more.

4. Our Vision

- To become distinguished ICT and Telecom Systems Integrator in Pakistan and the region
- To provide affordable yet premium quality technical assistance
- To continually explore integration potential on the technology horizon

5. Values

- Be Regardful to our Clients
- Be Thoughtful and responsible
- Be Truthful and fair in deliverables
- Be Passionate for delivering on commitments

6. Our Mission

To become the leading Technology Systems Integration and Digital Transformation partner in Pakistan, Afghanistan and the Middle East – having:

- Leading edge technologies
- Intense customer and partnership focus
- Best in class resources
- Properly governed systems and methodologies

Women cybersecurity leaders dominate VirtuPort's MENAISC2021

The ninth edition of VirtuPort's Middle East & North Africa Information Security Conference 2021 (MENAISC2021), being held as a hybrid virtual event on May 25 and 26, is marked by an overwhelming presence of women leaders from the cybersecurity field.

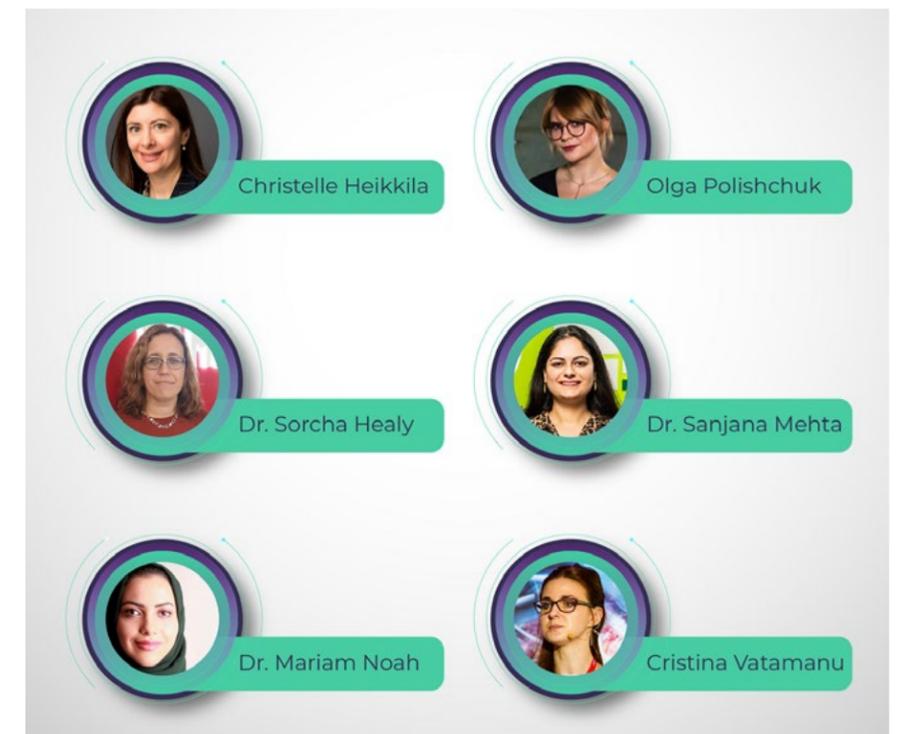
The conference, being held this year under the theme "Cybersecurity Vigilance, Continuous Monitoring & Mitigation: Understanding the Impact of the 5G Era" includes the participation of eight pioneering female cybersecurity experts who are all speaking on the importance of strengthening cybersecurity vigilance across several important sectors.

Dr. Mariam Nouh, assistant professor at King Abdulaziz City for Science and Technology (KACST), and co-director of the Center for Complex Engineering Systems at KACST and MIT at Hemaya, presented a speech titled "Catch me if you can! Leveraging threat intelligence in combating cybercrimes."

Olga Polishchuk, senior director, investigations & analysis at ZeroFOX, spoke on the subject "A year in threat intelligence: Looking back at the 2020 threat intelligence timeline and predicting trends for 2021."

Dr. Sanjana Mehta, head of market research and public policy EMEA at (ISC)², shared her expertise on the topic "Understanding the Cybersecurity Workforce," in which she explored a number of important questions about the professionals who work to keep our safety and security online, and the challenges and concerns they face.

She explained: "Using findings from (ISC)²'s exclusive research studies, we examined the composition of the cybersecurity workforce, what motivates and concerns them, how they have handled the last year of unprecedented change and look at which members of an



organization actually are responsible for cybersecurity. We also identified where the challenges are in creating a more diverse and balanced community of practitioners, as well as looked at those pursuing a cybersecurity career to understand what they are seeking from employers, training, career progression and what their future expectations are for the sector."

Dr. Sorcha Healy, principal engineer and lead data scientist at McAfee, spoke about McAfee MVISION Insights, which she said offers the ability to track and protect against prevalent cyberthreats in the Middle East. She added that MVISION Insights is leading the effort to unite against cybercriminals for the benefit of all.

Christelle Heikkila, IT director at Arsenal football club, spoke on the importance of protecting the data of leading sports teams

with unique cyber protection.

Lama Al-Hudaithy, cybersecurity analyst at CyberX, spoke about "Learning Management System (LMS) and Phishing Softwares."

Cristina Vatamanu, senior team lead - cyber threat intelligence lab at Bitdefender, discussed Naikon, a threat actor that targets military organizations in the South Asia region and has been active for more than a decade. Naikon managed to stay under the radar for almost two years, gathering intelligence for cyber-espionage purposes. In her speech "Long-running military cyber-espionage operation," she revealed a wide set of tools used in this operation dedicated to particular steps in the kill-chain, in addition to a new backdoor used by the Naikon threat actors, dubbed Nebulae. ■

Fibercos and towercos help provide telecom infrastructure for future networks in Africa and Middle East - GlobalData

The telecommunications market in the Africa & Middle East (AME) region is growing, and, in some cases, seeing network buildout and expansion. Leading data and analytics company GlobalData notes that rising activity in the fibercos and towercos market will help build out infrastructure and allow telcos to free up Capex to reinvest in other growth drivers.

Madison Galati, Telecoms Market Data & Intelligence Analyst at GlobalData, comments: "Global towercos have been making inroads in the AME region, expanding their networks through mergers and acquisitions (M&As). For example, American Tower acquired Eaton Towers in 2019 in a deal worth \$1.85bn that included towers across five African countries. While American Tower already had a presence in Africa, the acquisition was a significant deal, demonstrating the types of investment being made in the region - particularly in the tower market."

There have been notable towerco activity in the Middle East, with STC Saudi Arabia having launched towerco subsidiary TAWAL in April 2019 to monetize its tower assets and invest in other revenue-generating streams such as 5G and fiber. In March

2021, Zain and Mobily received regulatory approval to merge their tower assets to create a towerco with Raidah Investment Company and IHS KSA. Towercos are much more active in AME compared to fibercos as the region develops its 3G and 4G networks and selected countries introduce 5G.

Galati continues: "The fiber network is still in the process of being installed in most countries in the AME region, with 61% of fixed-broadband lines being xDSL in 2020. Fiber will be the fastest-growing technology for fixed broadband in AME, expanding at a robust compound annual growth rate (CAGR) of 15.4% over 2020-2025.

"Due to the relatively limited fiber-network infrastructure in AME, fiberco activity has mainly occurred in countries that have more advanced fiber networks such as South Africa and Jordan. The South African market, for example, has several fibercos that lay, manage and operate regional FTTH/B networks."

As the demand for fiber develops in AME, telcos can eventually turn to fibercos to help expand their fiber networks while monetizing their assets. Telcos have a few

different options available to them. They can spin off part (or all) of their fiber assets to create their own fiberco - opening the opportunity to wholesale their network in an open access model to other market players - or they can open their fiberco's capital to institutional investors such as pension funds and private equities to help fund their fiber rollouts; or even go a step further by conducting an IPO. In addition, they can offload part of their fiber assets to an existing fiberco or draw them into a joint venture with other telcos and infrastructure providers (e.g. electricity companies).

Galati concludes: "As 5G and FTTH/B expand, fibercos and towercos will become increasingly valuable strategies. In fact, fibercos and towercos can partner in preparation for the 5G network. For example, in January 2019, towerco Helios Towers partnered with fiberco Vulatel in South Africa to create Helios Towers South Africa. The partnership expanded Helios Towers' presence in South Africa and positioned them to operate the network that will be required for 5G. Thus, the fiberco and towerco market in AME will become more prevalent as mobile broadband and fiber networks advance." ■

CommScope debuts NOVUX portfolio of global fiber deployment Solutions

CommScope has announced the launch of its NOVUX portfolio of outside plant terminals and closures, designed specifically to assist global service providers in the quick and efficient deployment of fiber networks. NOVUX is the only FTTH platform with an inherently modular, end-to-end architecture that allows operators to scale and shape their networks as they evolve.

The NOVUX ecosystem leverages a flexible, modular, and backwards-compatible architecture that allows operators to adapt and scale to a wide variety of field applications. NOVUX simplifies fiber

deployment by allowing operators to use 75% fewer components than existing solutions while delivering fifty times the number of configurations available today.

The system is designed with sustainable practices for packaging, labeling, and installation equipment, and it features class-leading innovations like CommScope's Octopus sealing gel, which offers protection in harsh environments while allowing easy access for upgrades and regular maintenance.

"Our NOVUX portfolio is all about giving

our operator customers the highest degree of agility and flexibility in their growing fiber deployments," said James DeCoe, vice president, Network Connectivity, CommScope. "The new NOVUX range allows operators to maximize their network and respond quickly to changing market conditions and high-volume demand. These solutions deliver unprecedented ease of installation today, with the flexibility to ensure that the network meets tomorrow's needs. Furthermore, CommScope offers our customers the security of a dedicated, agile global supply chain built on common platform designs and processes." ■

Nokia and Ooredoo Oman begin 4G and 5G fixed wireless access deployment



Nokia and Ooredoo have introduced super-fast and reliable 4G and 5G fixed wireless (FWA) access throughout Oman. Work to deploy the Nokia FastMile 4G FWA solution throughout the country commenced in February 2021. The scope of work will initially see 15,000 homes and businesses connected. In addition, 3,000 homes in city centers will soon get Nokia FastMile 5G FWA.

Noor Al Sulaiti, Chief Executive Officer of Ooredoo Oman, said, "Fixed wireless access is a critical part of our strategy to provide high-speed internet across Oman. Nokia's solution offers a great 4G and 5G experience, so that more of our customers can enjoy the internet with us. The service will take connectivity to the next level, supporting the demands of our residential and business customers for superfast and reliable connectivity."

Khin Sandi Lynn, Industry Analyst at ABI, said: "We see significant traction for both 4G and 5G FWA technologies as operators increasingly use these solutions as a way to bring ultra-broadband access and services to customers. ABI Research forecast that worldwide FWA subscriber base is expected to double in 2025 reaching 165 million. Technologies like Nokia's FastMile FWA solution provides operators with the flexibility to quickly connect subscribers without the hassle of connecting any wires."

Rima Manna, Head of the Middle East Market Unit, Nokia MEA, said: "We are excited to have partnered with Ooredoo Oman to enable world-



class FWA connectivity for its customers, and looking forward to further strengthen our collaboration. Our receivers and gateways are field proven to provide connectivity and best-in-class speed in the toughest of radio conditions which will help Ooredoo serve a larger area. The high gain antennas guarantee the most efficient use of radio airtime of any customer premise equipment, saving radio costs".

The Nokia FastMile solution allows operators to build profitably on their existing Radio Access Network (RAN) installed base and idle rural spectrum so they can offer fixed wireless broadband to urban, suburban and rural users. Nokia FastMile includes customer premise equipment with a built-in modem and antenna, a cloud-based controller for point of sales, monitoring and control, and smartphone applications for installation and support. Together they provide a powerful end-to-end solution delivering guaranteed sustained rates to fixed subscribers. ■

GLOBAL ICT, TELECOM & SATCOM EVENTS 2021



With an increase in reliance on technology and cloud computing in various sectors and industries, and the growth of cryptocurrency, cyberthreats and attacks, industrial espionage, information security breaches, identity fraud, financial fraud and other illegal activities that involve the application of cyber forensics, are bound to expand. This is especially true in the post-COVID-19 era.

Digital or cyber forensics analysis is based on retrieving objective evidence of digital criminal activity, and includes all practices of collecting, identifying, extracting and analyzing evidence from digital devices by highly skilled investigators to track the digital impact of the source of the attack using highly specialized tools and techniques to harvest data without tampering with evidence.

This type of evidence is currently used in criminal and civil cases, and extensively in internal investigations in the private sector. It is considered to be one of the areas of cybersecurity, which has come

into prominence due to the ongoing digital transformation worldwide.

The use of cyber forensics is growing with the increase in cybercrimes, whose damages are expected to reach up to \$6 trillion annually in 2021.

The 9th edition of MENAISC2021 will spotlight forensics during its varied sessions, which will be held from May 25 to 26. The event is titled "Cyber Security Vigilance ... Continuous Monitoring & Mitigation - Understanding the Impact in a 5G Era," and will tackle a number of other related topics, including: 5G networks, cybersecurity frameworks, artificial intelligence, analytics, cloud security and virtualization, data security and privacy strategy, satellites and communications, human skills for cybersecurity, and advanced hacker threats.

A recent report titled "Global Digital Forensics Market 2019" focused on the current market scene, the size of its shares, drivers, trends, the

dominant players in it, and its promising opportunities. Its scope included digital devices, software and services, including forensic evidence for computers, mobile devices, networks and others. According to the report, the value of this market in 2017 was about \$143 billion, and it is expected to reach \$375 billion by 2023, with a compound annual growth rate of 329 percent during the projected period (2018-2023).

The relevant authorities in Saudi Arabia, such as the National Cybersecurity Authority, the Ministry of Communications and Information Technology represented by the Saudi Digital Academy, the Saudi Federation for Cybersecurity, Programming and Drones, and a number of major universities have launched specialized development plans and programs to qualify national cadres in the field of digital forensics analysis - an area whose significance has escalated since 2019 due to the rise in cyberattacks on various governmental and service sectors in the Kingdom. ■

15-16 June 2021



Dubai, UAE

23 - 26 August 2021



Colorado Springs, USA

03-05 November 2021



Madrid, Spain

22-23 June 2021



Sydney, Australia

06-07 September 2021



Dubai, UAE

08-12 November 2021



Cape Town, SA

23-25 June 2021



Seoul, South Korea

12-15 October 2021



Hanoi, Vietnam

16-17 November 2021



Virtual

28 June - 01 July 2021



Barcelona, Spain

17-21 October 2021



Dubai, UAE

01-03 December 2021



Baku, Azerbaijan

14-16 July 2021



Singapore

26-28 October 2021



Dubai, UAE

03-06 December 2021



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