TELECOM Review

ASIA PACIFIC

THE TELECOM INDUSTRY'S MEDIA PLATFORM

Q1-2022

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TECH TRENDS that will transform TELCOS

Interoperability with local service providers high on **PCCW Global's** growth agenda

Creating value with private **5G networks** to transform industries

How leading operators are accelerating **5G in Asia Pacific**

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Q1-2022
ASIA PACIFIC
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Provided in cooperation with AFP, the global news agency

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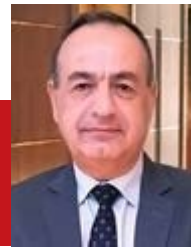

Toni Eid,
founder
editor in chief
Telecom Review International

A Summit like no other!

We are talking about the 15th edition of Telecom Review Leaders' Summit which was held on December 8, in Dubai, UAE, but reached the whole world!

In its hybrid model, the Summit gathered over 1300 attendees whether in person or online from over 55 countries with an amazing and special Middle Eastern flare!

In addition, we would like to thank our partners and sponsors, leaders of the ICT industry!

Our distinguished speakers have enriched the content of this years' Summit, making it an edition to remember!

We would also like to extend our gratitude to all participants especially those who joined us in person! And each and every one who nominated their brand for our prestigious awards, regardless if they won or not. This shows your trust in us!

Thank you to the team of Telecom Review and Trace Media who worked hard with me, for long days and along various weeks to ensure the success of our event!

Now, with 2022 being around the corner, we will begin announcing our webinars series for the coming year, one after another and you should make sure to stay tuned for the announcement of the 16th edition of the Leaders' Summit coming soon.

Do not miss our events! We are looking forward to your participation in one or more of our webinars and definitely our Summit as well.

See you soon in another year of success together!

Tech trends that will transform telcos

Accelerating digital capabilities and building resilience in a fast-evolving and competitive market is paramount to long-term enterprise growth. Across the board, business leaders are navigating emerging technologies as a force multiplier to scale their digital ambitions and seize new opportunities in a changing landscape. Here, we identify some significant tech trends that will shape telcos.

Digital twin

According to Fortune Business Insights, the global market for digital twins is projected to grow at a compound annual growth rate of 39.9% to reach US$72 billion by 2028. While digital twin technology is not new, it is gaining traction beyond manufacturing, across industries including healthcare and agriculture. For instance, the pandemic has led scientists to use advanced modeling and prototyping of digital twin technology to detect patterns in diseases and identify remedial treatments.

Cities are also relying on digital twins to achieve cost savings in energy and utilities, with ABI estimating as much as US$280 billion in global cost savings by 2030. It is also used to improve urban living conditions. For instance, Shanghai uses digital twins to allow urban planners to gather predictive data on floods and traffic conditions. In Singapore, a grid digital twin that provides real-time virtual representation of the physical power grid assets and network builds the nation's grid resilience and supports cleaner energy deployment.

For operators, the benefits of digital twins include real-time site inventory and predictive maintenance. It can help address the increased complexities of networks when IoT and 5G deployment proliferates, raising operational efficiencies when deploying network optimization, and facilitating understanding of business processes and customer behaviors.

There are also opportunities to seize in the vertical market. For instance, through digital twins of their towers, sites and network, operators can share their gathered data and insights as a service to monetize.

Metaverse

Metaverse is the new buzzword for three-dimensional virtual spaces where individuals come together via avatars to interact in environments mirroring the physical world. A disruptive tech perceived to be the next iteration of the Internet, metaverses open up possibilities to a virtual economy just as important as the physical economy, where cryptocurrencies and non-fungible tokens (NFTs) are exchanged.

While metaverses are still in their infancy, dominated by small metaverses that have yet to make a very significant impact, the market is growing steadily. Global metaverse transactions is estimated at US$6 billion last year, according to research firm Strategy Analytics, and projected to reach about US$42 billion by 2026. Seizing opportunities in metaverses are entertainment and gaming companies, as well as retail brands, using extended reality (XR) to create truly immersive experiences. Tech giants like Apple, Google, Microsoft and Facebook are also investing in metaverses. And in China, hype on metaverses led more than 1,300 tech companies to register metaverse-related trademarks in December 2021. But that is not all.

As metaverses have very high requirements for bandwidth, storage and computing, telecom operators can step in to play the important role of supporting metaverses infrastructure, as well as expanding offerings in AR and VR.

According to research from Consumer & IndustryLab, the use of 5G in metaverses is estimated to help operators fetch revenue reaching US$712 billion by 2030.

Last May, South Korea launched an alliance comprising 17 tech

companies and 8 industry groups to develop metaverse-related technologies and ecosystems. SK Telecom has since launched Ifland, a metaverse platform designed to deliver optimal user experience through virtual spaces and avatars. According to the operator's vice president Cho Ik-Hwan, "The metaverse is our future business model. It will be our core business platform."

Hailing metaverse as the third-generation Internet, China has also established the nation's first approved metaverse industry association, of which China Mobile, China Telecom and China Unicom are amongst its members, to promote healthy and rapid development of the metaverse industry. Leveraging on China Telecom's cloud and product content capabilities, for instance, its cloud gaming and entertainment subsidiary plans to launch an integrated metaverse platform to serve all types of virtual worlds.

Also looking to monetise 5G through metaverses, Verizon Communications has embarked on a metaverse treasure hunt to demonstrate its 5G performance.

Hybrid cloud, multi-cloud and edge computing

Cloud strategies are becoming the essence for retrieving valuable data insights and enabling remote work as digital infrastructure resilience becomes a priority in the wake of the pandemic. Gartner predicts that overall cloud spending in the Asia Pacific will exceed the rest of the world, reaching US$200 billion by 2024, with investments growing at a compound annual growth rate (CAGR) of over 20% since 2018.

There is no one-size-fits-all when it comes to adopting cloud strategies – it all depends on the organisation's infrastructure needs, security, workloads and more. While every cloudification journey is different, the shift to cloud has infiltrated all layers of tech stack, namely applications, infrastructure, platforms and services.

With focus shifting to post-pandemic growth, businesses are embracing and optimising a mixed public and private cloud environment to reap the benefits of increased scalability, faster time to market, lower costs, reduced risk and enhanced customer experience. With a multi-cloud strategy, organisations can select the cloud service offering the most benefits to reap the greatest value. However, operating across different cloud services is not without its challenge. The key is ensuring interoperability.

According to Allied Market Research, the global telecom cloud market is projected to reach US$125 billion by 2030, growing at a compound annual growth rate of 21.8% from 2021 to 2030. Of which, public cloud amounted to two-thirds of the total market in 2020.

In the industry, where operators need to adhere to compliance regulations and carry personal data, hybrid cloud environments are chosen to ensure that sensitive information is located on-premise. During the forecast period, the hybrid cloud segment is estimated to grow the fastest, at a CAGR of 24.7%.

To unlock the potential of 5G and IoT markets, both hyperscalers and telcos want to build capabilities to capture enterprise value at the edge. In the region, Singtel and Optus have partnered with AWS to deliver 5G solutions to enterprises on the edge. Indosat Ooredoo has also partnered with Google Cloud to target Indonesia's small- and medium-sized business (SMB) through 5G edge computing solutions. Working with hyperscalers provide these operators the scalability to support and grow new revenue stream in a more sustainable way.

Zero trust

Zero trust security adopts a "never trust, always verify" approach to enhance security. This means that all users, whether within or outside of the organisation's network are verified, approved and constantly checked for security. Since organisations cannot eliminate cyber threats, which have been on the steady rise, they can protect

the network and its resources by removing implicit trust.

As organisations embrace cloud infrastructure, more cloud vulnerabilities are exposed. A zero trust framework protects digital environments, using network segmentation to manage the risks in a hybrid cloud environment to mitigate threats. Essentially, zero trust security addresses threats by performing repeated verifications, minimizing the damage in the event of a breach and automating prevention and detection.

According to Gartner, up to 60% of VPNs – with a market value between US$25 billion and US$40 billion – will be replaced by zero trust solutions by 2023. Last October, Singapore's government is the first in Asia to launch a new cybersecurity strategy using

the zero trust approach to strengthen its cybersecurity posture and protect public services applications and IT systems.

A big target for cyber attacks, the telecommunications industry is in a strong position to benefit from a zero trust architecture. With all the assets necessary to capture value from managed services, there is also a burgeoning market for operators to provide managed zero trust services, For instance, CITIC Telecom started partnering with zero trust provider Zscaler last year, to keep client data, networks and applications safe.

Fixed wireless access

Growth in 5G will fuel fixed wireless access (FWA) deployments and provide new revenue opportunities for operators. This trend will also be fuelled by consumers and businesses as digital transformation drives the need for broadband connectivity.

According to Ericsson, 77% of global service providers had a FWA offering as of October 2021. By the end of 2025, it is predicted that FWA connections will grow threefold to 160 million to account for one-fifth of global mobile network data traffic. In the Asia Pacific region, where a wide digital divide dominates, the ability for FWA to deliver internet access economically to underserved markets makes it an attractive solution. In many developing countries, governments are making increased broadband connectivity a national priority to promote digitalization efforts and economic recovery. This trend will likely generate more interest next year.

In addition, FWA is becoming one of the leading use cases for 5G to help operators monetize on 5G. As 5G FWA complies with the 3GPP, an equipment vendor ecosystem will grow to in turn create supporting equipment at scale, at lower costs for operators' use. Verizon for instance, plans to cover 2 million business with 5G C-band FWA. In Southeast Asia, Globe Telecom is the first operator in Southeast to launch a commercial 5G FWA service.

These trends tell us that technology is the way of the future. They also point the way to optimization and monetization to ensure future growth. With technological advances disrupting all industries, transformation and innovation must be an ongoing process to deliver impact. TR

Wang Quan, vice president of ZTE Corporation

Creating value with private 5G networks to transform industries

Private 5G networks are on the rise as transformative applications support digitalization and IoT. Telecom Review Asia Pacific speaks to Wang Quan, vice president of ZTE Corporation, to find out how private 5G networks provide operators with new opportunities as 5G brings strong impetus for transformation across industries.

How do private 5G networks add value to operators and transform industries?

The concept of private networks is not exclusive to 5G. In the 2G, 3G, and 4G eras, industries with special requirements on network security and stability, such as railways, airports, power and oil already rely on customized private networks to power secure and robust connectivity. However, traditional private networks have their limitations – they are unable to support massive connectivity and can only be used to complement mainstream public networks. Increasingly, traditional private networks can no longer support the demands of real-time and remote operations in the intelligent era where man-machine interconnectedness grows.

With the maturity of 5G technology and the dawn of Industrial 4.0, more enterprises are now embracing digital and intelligent transformation. To address future demands, enterprises that depend on traditional private networks are now exploring new network technologies.

The need for deterministic networks in vertical industries with high demands on latency, reliability and security makes private 5G networks the best choice going forward. For example, in extreme work environments such as mines, UHD videos, high bandwidth, and ultra-low latency are requirements to remotely control excavators and other industrial devices in real time. In smart factories, a large number of sensors are connected to networks to carry out real-time automation and monitoring to execute safe processes.

Across many industries, intelligent networks demand deterministic networks with low latency and low jitter. In these scenarios, private 5G networks are capable of providing customized SLA guarantees for a wide range of customized industrial applications, therein presenting enormous

opportunities for operators to realize private 5G as a service to tap on new economic growth points.

Can you tell us about the benefits of ZTE's private 5G networks?

As a key provider of integrated communications and information solutions, ZTE has always been at the forefront of private 5G networks innovations and applications.

ZTE provides an all scenario private 5G network covering RAN, core network, transmission, industrial gateway and other end-to-end products. For example, ZTE's dedicated industrial core network, industry 5GC (i5GC), integrates and optimizes more than 10 key network functions of the 5G core network, requiring just one server to complete the deployment of an entire network. This brings ease to deployment, especially in underserved areas with limited resources.

In addition, ZTE's iCube all-in-one cloud network solution supports customer-centric 5G industry private networks and edge cloud services. The solution offers agility and scalability as voice, BBU, OLT, MEC and industry applications can be loaded on-demand to provide customers with highly-customized integrated private industry cloud network services.

ZTE's private 5G network solution encompasses private network consultation, planning, design, customization, integration, installation and deployment. This new "Private 5G as a Service" business model supports operators in rapidly customizing private 5G networks for industries.

ZTE has also built Openlab, a center for innovation, to flexibly construct customized end-to-end private 5G networks and provide an incubation environment for 5G application innovation. Together with operators and industry partners, ZTE can incubate innovative solutions. To date, ZTE has joined hands with more than 500 partners to explore innovative 5G application scenarios across verticals including smart manufacturing, power grid, port, mining, healthcare, education, and agriculture. ZTE will continue to work with global operators and industry partners to fast track industrial developments.

Can you share with us ZTE's latest innovations in cloud infrastructure?

Cloud platforms manage and shield underlying hardware through the hypervisor virtualization layer to provide services such as VMs, containers, and bare metals to achieve resource sharing. However, having the hypervisor virtualization layer deployed on the server results in server performance loss and serious security risks.

ZTE's new-generation cloud infrastructure addresses these concerns by uploading the management control module and hypervisor virtualization layer of the cloud platform from the server to the NEO cloud card. Only the lightweight hypervisor resides on the server, hence reducing the CPU load of the server to achieve zero performance loss. At the same time, the NEO card is pre-integrated with the hypervisor virtualization layer, such that users can conveniently deploy the layer to ensure ease of use.

Suited for use with general servers, the ZTE NEO card enables server cloudification to be easily achieved by merely inserting the card into the server to power the widespread use of private and public cloud.

Network functions virtualization (NFV) has evolved from dedicated hardware to general hardware. The most important feature of NFV is that it provides unified operating resources for upper layer virtualized network functions. However, general hardware such as x86 does not meet large bandwidth and low latency requirements – found lacking in terms of data forwarding efficiency and data parallel processing.

As such, hardware acceleration is critical to improving network performance in the 5G network. Through hardware acceleration, the system can accelerate the decoupling between hardware and servers to achieve resource pooling and improve network resource utilization.

There are two decoupling approaches for hardware acceleration – software and hardware decoupling for standardized hardware acceleration cards, as well as software and hardware decoupling for dedicated NE functions. To achieve unified management of NFV heterogeneous acceleration hardware, the ETSI has formulated the software framework standard of unified management for NFV acceleration hardware, while OpenStack provides a general hardware acceleration management framework. TR

South Korea to auction 5G frequency next month

South Korea's Ministry of Science & ICT will be launching an auction to award mobile carriers additional 5G spectrum next month. The winning carrier is required to install more than 150,000 5G base stations by 2025, as part of the government's plan to deploy 5G nationwide.

Additional 5G spectrum in the 3.4 GHz to 3.42 GHz will be auctioned. This news has stirred dissatisfaction SK Telecom and KT, as both carriers won 100 MHZ of the 3.5 GHz band in June 2018, while LG Uplus secured a bloc of 80 MHz spectrum.

In November 2021, the number of 5G subscribers in South Korea reached 20.19 million, crossing the 20 million mark for the first time to account for more 25% of total 72.57 million mobile subscriptions in the country.

Telenor Myanmar evaluating prices owing to tax amendments

Telenor Myanmar is evaluating tax amendments declared in early January and assessing how the changes will impact the pricing of its products and services.

Effective from 8 January 2022, the amendment to the Union Tax Law 2021-22 declared by the State Administration Council addresses SIM card sales and activations, as well as data service consumption through mobile or fixed networks.

With this amendment, all telecom operators in Myanmar will be affected as SIM cards will receive a flat tax increase of MMK 20,000 for every new SIM card. Revenues from data services will be subject to commercial tax of 15%.

This tax is application to both consumers and businesses for mobile and fixed connections. Voice and SMS services are not subject to tax amendments.

This amendment comes after price hikes on telecom services in December 2021.

In a statement, Telenor Myanmar said: "All telecom operators have stopped sales of SIM cards until the changes can be reflected in respective IT systems. Price changes for data consumption should be expected on data packs across all mobile operators and internet service providers."

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Singtel and Ericsson achieve Southeast Asia fastest download speeds on 5G SA NR-DC

Singtel and Ericsson have made a technology breakthrough in 5G standalone (SA) New Radio-Dual Connectivity (NR-DC), becoming the first in Southeast Asia to reach download speeds of 5.4Gbps by aggregating Singtel's spectrum holdings across mid-band spectrum 3.5GHz and 28GHz mmWave. This milestone was achieved in a demo with Ericsson's 5G radio access network products and solutions and dual-mode 5G Core network solutions, as well as a test device from Qualcomm Technologies powered by its Snapdragon X65 5G Modem-RF System.

5G SA NR-DC technology, which combines mid-band and mmWave frequencies, further enhances Singtel's 5G SA speed and capacity to enable high-performance and latency-sensitive applications, and stimulate innovative new use cases across business, industry and consumer ecosystems. Applications can range from cloud gaming, immersive media, AR, VR, XR to autonomous vehicles or robotic control. This new development will push the boundaries of 5G technology, combining different frequency bands across the networks, to fully utilise Singtel's 5G assets for an enhanced user experience.

Mr Mark Chong, Singtel's Group Chief Technology Officer, said, "This 5G breakthrough demonstrates our commitment to continually innovate and maximise the potential of what this developing technology can deliver. The increased speeds will help pave the way for many new applications as we look to drive transformative benefits for consumers and businesses."

As one of the first 5G SA networks deployed globally, the future implementation of 5G SA dual connectivity in Singapore will help accelerate the adoption of 5G for both consumers and enterprises, create new business opportunities, strengthen the local 5G ecosystem, as well as drive the future-readiness of Singtel's network. This achievement closely follows the latest win at the Asia Communications Award, where Singtel and Ericsson were jointly recognised for 5G deployment in Singapore.

Mr Martin Wiktorin, Head of Ericsson Singapore, Brunei and Philippines, said, "At Ericsson, we have already deployed over 100 live 5G networks worldwide, building a strategy around multi-layer networks from low, mid-band to high-band 5G. In Singapore, we are constantly driving technology innovations together with Singtel. As 5G frontrunners, we strive to expand the potential of limitless connectivity, and further enhance digital transformation to benefit industries, consumers and societies."

This new 5G technology breakthrough builds on the strong collaboration between Ericsson and Singtel over the past 30 years as technology front runners in Singapore. Past milestones include achieving Singapore's fastest 5G speeds of 3.2Gbps at Singtel's unmanned pop-up retail store UNBOXED as well as Singtel's GENIE, the world's first portable 5G-in-a-box platform powered by Ericsson to enable enterprises to experience 5G's capabilities and trial use cases in their own premises.

Chunghwa Telecom and Thai National Telecom to jointly build 5G private networks

National Telecom (NT), The WhiteSpace (The WSP), Delta Electronics (Thailand) PCL. and Chunghwa Telecom have signed a Memorandum of Understanding (MOU) for collaboration in a 5G private network. The joint project will support the "Thailand 4.0" innovative manufacturing plan and assist Thailand in accelerating the use of 5G Innovative applications to introduce technologies such as the Internet of Things (IoT), information security, artificial intelligence (AI), and big data. In addition, the project will help realize innovative application services, such as Thailand's smart manufacturing, remote collaboration, and smart medical care.

This four-party multinational cooperation promotes 5G enterprise private networks and innovative application services in the Thai market. It focuses on solving the pain points of digital transformation for enterprises in the post-epidemic era and leverages Chunghwa Telecom's abundant technical energy, service best practices, and solution ecosystem partners to support Thailand. Moreover, it will assist the Thai government in creating a 5G innovative application service ecosystem to make Thailand a leader in industrial transformation and technological innovation among the five North ASEAN countries, namely Thailand, Cambodia, Myanmar, Laos, and Vietnam.

Firstly, this cooperation between Chunghwa Telecom, NT and The WSP is to introduce a 5G private network to actualize AR remote collaboration for application in assembly training, operation assistance, and visual equipment control at the main office and first plant of Delta Electronics (Thailand) in Bangpoo Industrial Estate, Thailand. This will complete digital transformation for the post-epidemic era.

In the future, this joint plan will extend to the local government, manufacturing, tourism, medical or financial industries in Thailand. Chunghwa Telecom will provide their own MEC Intelligent A+, as well as design and planning experience. NT will provide the local 5G core network. Lastly, The WSP will provide local marketing and operation experience, and work together to create innovative application services for Delta's smart factories.

Ooredoo appoints new key executives

Ooredoo announced the appointment of Ahmad Al-Neama as group regional CEO, Bilal Kazmi as group chief commercial officer and Eyas Assaf as executive director, performance management effective 1 January 2022.

Ahmad Al-Neama has been with Ooredoo for almost two decades, taking up senior roles, most recently as the CEO of Indosat Ooredoo where he excelled and scored many major achievements for the company. Ahmad's most notable accomplishments include spearheading Indosat Ooredoo's business turnaround and signing strategic partnerships with global technology leaders and international organisations. Most importantly, he was behind the company's sale and leaseback agreement for more than 4,200 telecommunications towers – one of the largest deals of its kind in Asia – and he has seen the launch and roll-out of 5G in Indonesia. Ahmad has also led the landmark deal with CK Hutchison that resulted in the merger of the two entities, creating Indonesia's second largest mobile telecoms company. He brings a wealth of experience gained over a variety of leadership roles within the company.

In his new role as group regional CEO, Ahmad will be responsible for the P&L of six markets, including Indonesia, Algeria, Tunisia, Palestine, Myanmar and Maldives, setting priorities to drive sustainable growth across key operations.

Bilal Kazmi was acting group chief commercial officer since July 2021 and has over 25 years of international experience in leadership roles, including P&L accountability across the commercial value chain for a USD1 billion turnover company. He has a strong track record of leading a wide range of commercial functions in the telco arena, such as sales and distribution, customer care, new product development, international business and the implementation of complex telecoms projects like digital transformation and large-scale structural changes.

As group chief commercial officer, Bilal will drive Ooredoo's commercial transformation to accelerate growth across key areas such as customer centricity, sales & distribution and digital leadership.

Eyas Assaf has rejoined Ooredoo Group, being appointed as executive director, performance management at Ooredoo Group Finance. Prior to this, he was Indosat Ooredoo's CFO, a key member of the management team responsible for delivering outstanding business performance as well as the merger with CK Hutchison.

Aziz Aluthman Fakhroo, managing director, Ooredoo Group, said: "I am delighted to announce the appointment of three of our stellar colleagues to lead the next phase of our company's success, along with the larger Ooredoo Group team. This is part of our strategy to invest in our greatest talents, as we move forward with our business transformation plan to create a faster, more agile, more inspiring company."

HKT's digital venture arm partners Google Cloud to up customer experience

HKT's loyalty program and digital ventures arm - The Club, announces its strategic collaboration with Google Cloud to develop an innovative hyper-personalisation platform, named Copernicus, to integrate into The Club's digital ecosystem across its business pillars. Combining its strong network and database with Google Cloud's expertise and state-of-the-art technology, The Club aims to provide customers with a uniquely tailored online digital experience.

Through closely collaborating with many business partners, The Club has long provided its members with truly unprecedented experiences and a variety of premium services, ranging from lifestyle, shopping, travel, insurance, and much more. This time, The Club looks to Copernicus to achieve a more focused and personalised customer experience, leveraging Google Cloud's expertise in data security and governance, data analytics and data visualisation capabilities to deliver products and services geared specifically to each customer's specific needs.

The Club's Data Science team will develop machine learning and AI algorithms to identify customer needs-based products and services by analysing members' behaviours and preferences, allowing The Club to take further steps towards enhancing consumer experiences with more personalised offerings.

Specifically, Google Cloud's advanced data analytics technology empowers The Club to build Copernicus which enables The Club to understand each individual member's purchasing behaviour and interests more precisely and quickly on one unified platform. This in turn allows The Club to deploy more targeted and personalised marketing strategies for reaching individual members across all touchpoints of the customer journey. The Club members will benefit from tailored recommendations that match their interests and needs through their preferred channels.

Mr. Alan Tsui, CEO of HKT's loyalty, digital and analytics, said, "We are excited to announce this ground-breaking collaboration with Google Cloud in Copernicus. This enables us to provide the best services and products at the right time for individual members. In recent times, we have adopted data science technology to tailor exclusive rewards to selected members, piquing their already heightened interests. We firmly believe our unique in-house data capabilities, partnered with Google Cloud's advanced technology, will lay a strong foundation for our digital transformation journey."

5G: Enabling more than just connectivity

5G, in many ways, is still in its infancy. The good news is that it is growing and evolving quickly. Much has been said (and written) about the theoretical benefits of 5G: High speeds, low latency and massive connection density. But, not many organisations understand what 5G actually means for their industry environments. Many organisations—while intrigued by the possibilities of incorporating 5G into their operational and customer-facing processes—often lack the resources to experiment and invest in a long-drawn cycle of "unproven" innovation.

Hence, it is important for organisations to work with suitable partners. They have the foresight and resources to further flesh out various 5G proof of concepts and understand how these concepts mesh with the organisation's broader digital transformation agenda.

IDC has identified a few 5G use cases that will have maximum impact across verticals:

Process automation and robotics

5G addresses the challenges of today's static manufacturing lines, increasing machines' mobility. This reduces the time required to service the machines and allows them to be reconfigured on the fly. In addition to supporting such automation and robotics use cases on public networks through network slicing, the 5G network's ultra-low latency will allow robotic controls to be processed at the edge, creating further opportunities to improve machine coordination and reduce costs.

Cloud gaming

5G and multi-access edge computing is going to further accelerate the adoption of mobile cloud-streamed gaming (CSG) services. When users

are mobile and on a cellular network, their experiences often vary to a much greater extent today. This relative network unreliability puts mobile CSG services at a significant disadvantage versus wired/Wi-Fi services. The gaming market is set to explode as network operators bring more 5G mid-band spectrum online in the next few years.

Autonomous vehicles

The pathway to increased guided and vehicle autonomy will be largely built on the promise of 5G delivering Society of Automotive Engineers (SAE) Level 4 full self-driving vehicles, as well as accelerating SAE Levels 1 and 2 vehicle growth over the next five years. 5G-based cellular vehicle to everything (C-V2X) will significantly enhance all types of vehicular communication. 5G's ultra-low latency and network slicing characteristics, together with edge cloud, will enable innovative applications, resulting in safer and more cost-effective transportation.

Video analytics and surveillance

Wireless has been somewhat problematic for applications such as video surveillance due to network capacity, reliability and security issues. IDC believes that 5G will propel wireless video surveillance to become a dominant force over the next five years. An increasing number of applications such as wireless perimeter control, aerial drones and home security systems will increase demand for wireless technology that can support high-resolution video securely. 5G along with edge compute will ensure secure and timely ingestion and processing of video feeds to help organisations make data-driven decisions in real-time.

Immersive experiences

5G provides organisations with exactly what is needed of networks to transform B2B2C consumer experiences by satisfying the appetite for immersive entertainment, gaming and broadcast experiences. In addition to mobile augmented reality/virtual reality (AR/VR) being used by field and repair technicians who operate far from a central office, there is a considerable opportunity for entertainment venues and sports arenas to provide a 360-degree VR experience at large-scale events such as sports meets and music concerts. Current network generations lack the throughput and capacity required to deliver high-definition content, but 5G, along with edge deployments, allows for ultra-low latency and processing times that are required to deliver a real-time and enhanced immersive experience.

Industry 4.0 is acknowledged as a transformative series of initiatives around how we make and distribute goods. 5G is poised to have a significant impact across verticals such as manufacturing, healthcare, logistics, media and smart cities. IDC believes that a large number of organisations will boost spending on 5G in 2021-22. Asia Pacific (excluding Japan) regional Internet of Things use case spend across manufacturing, resources and infrastructure is forecast to hit US$295 billion in 2025. With such investments in play, organisations should look out for a service provider—with a platform-based approach to 5G, a broad partner ecosystem and a proven track record of helping organisations on their digital transformation journeys—to evaluate potential 5G use cases and get started early to gain a significant edge over their competitors. TR

> 5G addresses the challenges of today's static manufacturing lines, increasing machines' mobility. This reduces the time required to service the machines and allows them to be reconfigured on the fly

Marc Halbfinger, CEO, PCCW Global

Interoperability with local service providers high on PCCW Global's growth agenda

In an exclusive interview with Telecom Review during the Telecom Review Leaders' Summit 2021 at the Intercontinental Hotel, Dubai Festival City, Marc Halbfinger, CEO, PCCW Global shared his insights on NAAS, automation, and forging stronger strategic relations with stakeholders in the MENA region.

How is PCCW Global transforming traditional ICT business models through automation and cloud?

PCCW Global's automation brand Console Connect is facilitating end-to-end user automation. Console Connect represents software-defined cloud interconnection which allows any user to leverage the fabric of the platform to interconnect with clouds, data centers and with other users, and any application on an on-demand basis. That means, from here forward, a user only needs to provide a port on the Console Connect platform and they can use what they need, only when they need it and that means to pay only for what they need, when they need it. That shift in behaviour around ordering, on-demand provisioning, and the ability for users to interconnect with one another is bringing about a very significant transformation.

What are PCCW Global's latest offerings in IoT and blockchain for enterprise business?

PCCW Global and Console Connect are automating IoT delivery platforms. IoT means that a user, particularly an application that needs to deliver large scale numbers of SIMs, can leverage

the automated Console Connect platform to automate the activation and delivery of those SIMs throughout the native cloud or physical network infrastructure, and that's very meaningful. In addition, Console Connect and PCCW Global technology community is increasingly using distributed ledger or blockchain technology as the unit of value to determine inventory, settlement, and management of infrastructure through clear identity. Having an immutable distributed ledger allows us to leverage blockchain to work with partners and establish a more seamless, interoperable, and interconnected ICT community.

Please tell us about the role of interconnect and network-as-a-service (NAAS) for a smart and scalable data center.

The question around network-as-a-service is quite critical. To provide network as a service, we need to focus on the last three letters – 'as a service', and that means being able to offer something on an on-demand basis. We don't need order forms anymore with the Console Connect environment. The user can simply open a profile and develop their environment on an on-demand basis. This is exactly what network as a service means - the user takes the network only for the time that they require. To do that, we need as many relationships as possible worldwide with data centers. Today, we have over 500 data centers that are interoperable on the Console Connect platform with plans in 2022 to grow that number significantly. Having a large number of on-ramps and off-ramps in the data center world facilitates interoperability and makes the network-as-a-service ever more meaningful. For instance, any enterprise user that wants to access its cloud in one zone from another zone can do that through the network as a service interoperated through an interconnected data center. The combination of having a well-distributed fabric and automated platform and as many data centers as possible as well as a front end that allows a user to take network services on demand, means utility, efficiency, and flexibility.

How is PCCW Global collaborating with partners and stakeholders in expanding its operations in MENA region?

PCCW Global and Console Connect have always taken a strong view that interoperability with local service providers in any jurisdiction is very important. Our offices in the UAE and our colleagues who operate here have built relationships for many years with service providers, whether they are network-based or application-based throughout the Middle East and North Africa region. I'm confident that our relationships with service providers in the Middle East and Africa will help us assure that the users of the service providers will themselves also enjoy the benefits that PCCW Global network and Console Connect automated fabric have to deliver. TR

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New year, new phone: Is it time to level up to 5G?

Flagship phones of major brands like Huawei, Apple, and Samsung have already started to support 5G. If you are still hung up with a 4G LTE-supported device, you must be wondering if it's actually worth it to upgrade now.

Considering that consumers change phones after two to three years, an Ookla speed test analysis provides a great overview in terms of 5G phone speeds in both Android and Apple devices. Bear in mind that carriers and location are major influencing factors in getting the desired performance.

It's exciting to think about all possibilities of 5G such as faster connections, accessibility for a wide range of devices, and a better future for video calls, cloud communications, and other emerging applications within the 4IR era. One of the remaining hurdles is availability. With 5G still only available in select markets with coverage maps yet to be fulfilled, 2022 will probably be the year when most people actually start to feel a 5G speed boost with new spectrum allocations and regulations in play.

How much speed do we need?

Almost any internet speed is fine for receiving a text-only email, but depending on what kind of streaming or other activities you might do, the internet speed needed would change. For example, you may need only 1 Mbps to listen to a Spotify song, and in general, at least 3 Mbps to stream most videos in standard definition. However, you need around 25 Mbps to watch a 4K Netflix movie in HDR at its highest quality as well as have a consistent gaming experience with 20-100 milliseconds ping time.

Likewise, if you frequently download and upload large files and participate in video meetings, a minimum of 25 Mbps download speed is also recommended. Hence, a 25 Mbps plan can be referred to as the goldilocks of internet plans as it is neither too fast nor too slow.

On the other hand, the potential speeds promised by 5G are an incredible jump forward, with download speeds ranging from 150 Mbps to more than 1 Gbps. That's an enormous improvement over 4G's 30-60 Mbps.

Speed analysis in terms of 4G/5G devices

As per Ookla, even the fastest device can only perform at the level of the network it's on, resulting in a wide variation from country to country according to gathered data.

In the Middle East (and globally), Etisalat was recognized as the fastest mobile network for the second consecutive year. Unsurprisingly, during Q3 2021, UAE recorded a 485.59 Mbps download speed on iPhone 13 which was faster than any phone in the particular countries analyzed. Moreover, Samsung's latest series in 2021 had the fastest speeds on Android 5G devices, ranging between 164.06 Mbps and 285.39 Mbps download speeds. In line with this, GCC 5G leader Saudi Arabia showed the second-fastest median download speed over iPhone 13 during Q3 2021. In Bahrain, iPhone and Android 5G-capable devices have almost the same download speeds of 102.93 and 114.06, accordingly.

Moving towards the Asia-Pacific region, in Australia, even the slowest 5G-capable device on the list was much faster than the fastest 4G LTE phone. There's also a 110 Mbps difference between the 5G median download speeds among Apple and Android's latest devices. Boasting the world's largest 5G network, China's Android device manufactured by Huawei outranks iPhone 13 at 280.22 Mbps download speed. Despite that, China was home to the largest performance increase (10x), when comparing the iPhone 11 to the iPhone 13 (26.84 Mbps vs 278.22 Mbps). While in Japan, iPhone 13 and Sony Xperia II showed a slight difference in 5G median download speed — 95.82 Mbps and 94.85 Mbps. Even the slowest 5G-capable device in Japan was 56% faster than the fastest 4G LTE devices. Lastly, in South Korea, 5G seems to be worth the upgrade for Android high-performing devices, comparing 221.18 Mbps in the fastest 5G to 60.41 in the fastest 4G. During Q3 2021 as well, South Korea's iPhone 12 download speed beat iPhone 13 download speed in five countries: Canada, France, Japan, the UK, and the US.

Testing the 4G/5G landscape in North America, the fastest 5G-capable device among the top five most popular in Canada offered a very fast median download speed (121.53 Mbps) but two 4G LTE devices were nearly as fast as the slowest 5G-capable device on the list (between 64.99 Mbps to 69.63 Mbps). In parallel, iPhone 13's 5G is still leading in Canada at 163.34 download speed. In the US, T-Mobile was known as America's fastest 5G network, but 5G-capable devices underperformed when compared to other countries, except Japan and South Africa. For Android, the top 5G median download speed was 69.78 Mbps while 4G LTE median download speed was 35.98 Mbps. Even iPhone's 5G is still comparably slower than other countries at a 95.10 Mbps peak.

From 43.09 Mbps to 67.09 Mbps, South Africa's median download speeds on the most popular 5G devices were among the lowest in Ookla's Q3 2021 data. iPhone 12's 5G came close at 73.44 Mbps. South Africa's telecom industry is gaining ground in the continent, as the land of opportunities catches up on the current digital transformation wave.

Conclusion

Among all the popular 5G-enabled devices sampled by Ookla, regardless of the operating system, the top median download speed reached 485.59 Mbps (UAE) while the slowest was 43.09 Mbps (South Africa). For popular 4G LTE-enabled devices, the top median download speed achieved was 100.60 (UAE) while the slowest was 17.74 Mbps (Bahrain).

To cater to a highly-digital lifestyle that consumers have nowadays, upgrading to 5G could be reasonable in terms of speed and latency. Having said that, choosing the network provider and device as per location would still affect the overall 5G performance and experience. TR

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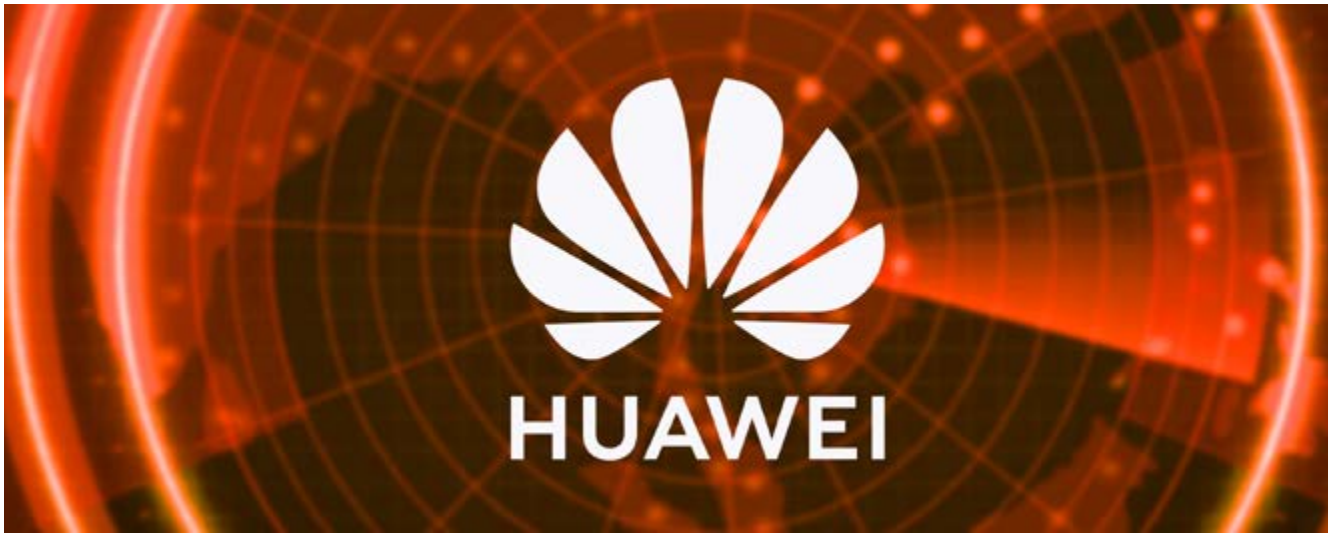

Huawei and ASEAN Foundation partner to bridge digital talent gap in Asia Pacific

Huawei and the ASEAN Foundation signed an MoU to jointly bridge a digital talent gap through the ASEAN Seeds for the Future program. The Asia Pacific Innovation Day – Digital Talent Summit 2021 was an online summit where policy-makers, researchers and industry experts convened to discuss best approaches to build a digital talent ecosystem in the region.

Jointly, the partnership between the ASEAN Foundation and Huawei aims to expand the digital training footprint in the region. To be launched in 2022, the ASEAN Seeds for the Future is a scaled-up version of Seeds for the Future, a global CSR flagship initiative undertaken by Huawei since 2008 to provide world-class digital skills training to youth in 131 countries and regions. Since its inception, the program has benefitted about 9,000 students from over 500 universities.

The ceremony was attended by Executive Director of ASEAN Foundation Dr. Yang Mee Eng and Vice President of Huawei Indonesia Albert Yang, and witnessed by Permanent Representative of the Kingdom of Cambodia to ASEAN H.E. Amb. Yeap Samnang, Deputy Secretary-General of ASEAN for ASEAN Political Security Community H.E. Robert Matheus Michael Tene, Deputy Permanent Representative of the Philippines to ASEAN Elizabeth Te, Deputy Permanent Representative of Republic of Singapore to ASEAN Tham Borg Tsien, and Huawei Asia Pacific Vice President Jay Chen.

"Our partnership with Huawei signifies another important milestone for ASEAN in regards to bringing in committed partners from the private sector to contribute to youth development effort in ASEAN," said Executive Director of ASEAN Foundation Dr. Yang Mee Eng.

This marks the ASEAN Foundation's first partnership with the private sector to lay a solid digital foundation as countries embrace digitalization. Through the ASEAN Seeds for the Future, the ASEAN Foundation collaborates with Huawei to design custom needs for the region. For instance, nearly half of the program's participants will be female to address a prevailing gender gap in the region. Yang highlighted that the program is also designed to address rural-urban and infrastructure gaps to elevate the digital readiness of societies.

"Access to education is vital to create opportunities and support sustainable development. Our cooperation will contribute to achieving the objectives of ASEAN Digital Masterplan 2025, which aims to increase the capacity of youth in the region to participate in the digital economy and to create a digitally inclusive society in the region," said Jay Chen, vice president at Huawei Asia Pacific.

Huawei to invest $50 million to develop 500,000 digital talents

Stressing the need for ASEAN to build an ICT talent-based ecosystem to help countries take the digital leap, Jeffrey Liu, president of Huawei Asia Pacific also announced that Huawei will invest $50 million in the next 5 years to develop 500,000 digital talents in the Asia Pacific region.

The online summit was also attended by government officials including Deputy Secretary-General of ASEAN for ASEAN Political Security Community H.E. Robert Matheus Michael Tene, Chair of the ASEAN Digital Senior Official Meeting H.E. Dato' Sri Mohammad Mentek, the Minister of Posts and Telecommunications of Cambodia H.E. Dr. Chea Vandeth, the Chief of Presidential Staff of the Republic of Indonesia H.E. General TNI (Purn) Dr. Moeldoko, the Minister of Youth and Sports of Sri Lanka Hon. Namal Rajapaksa, the Philippine Ambassador to China H.E. Jose Santiago L. Sta. Romana, and Permanent Secretary of Thailand Ministry of Higher Education, Science, Research, and Innovation H.E. Prof. Sirirurg Songsivilai, M.D., Ph.D.

In their keynote speeches, they reinforced the importance of building a digitally-savvy human capital to bolster socioeconomic development and lauded Huawei's ongoing commitment and investment in creating a robust digital future.

In a virtual roundtable discussion, speakers shared vibrant exchanges on key insights and challenges regarding digital talent in sustainable development. The speakers included Dr. Syed Ismail Shah, ITU area representative for Southeast Asia and other Members States in Asia and the Pacific, Puji Pujiono, senior advisor for coordination in the ITU Regional Office for Asia and the Pacific, Gokhan Ogut, CEO of Maxis, Mohamed Djelid, director of UNESCO Regional Science Bureau for Asia and the Pacific, and Dr. Vu Minh Khuong, associate professor at the Lee Huan Yew School of Public Policy, National University of Singapore.

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Key insights into fostering digital talent in the region were also released in Huawei's white paper titled "2022 Asia Pacific Digital Talent Insights". In his presentation, Alex Lee, senior consultant for National Digital Talent Development, shared recommendations in the white paper for sustaining digital talent development and a call to action for wide-scale digital upskilling between industry, academic, and government policy-makers to bring the region forward. TR

Maria Grace Yao Uy, co-founder, president, and chief resource officer of Converge ICT Solutions Inc.

Influential female leader in telco

In this exclusive interview, Maria Grace Yao Uy, co-founder, president, and chief resource officer of Converge ICT Solutions Inc., shares with Telecom Review Asia Pacific her role as a prominent female business leader in the telecom industry and her advice for women in business.

Congratulations on being recognized as one of the prominent female business leaders in the Asia-Pacific region. What led you to this remarkable milestone?
I'm honored to be included in this prestigious list. But I believe it's really a testament to the strength of the organization, Converge ICT Solutions, Inc. Being in a leadership position in an ICT company, especially one that took many years to grow, has been both fulfilling and challenging. It took a lot of learning and determination for Converge to get to this point. For decades, the telco industry in the Philippines was dominated by two large players.

Thus, our entry into the fixed broadband market took a lot of effort. But my husband Dennis and I were determined to deliver world-class fiber connectivity to the majority of our people. Our dream is to connect the unserved and underserved Filipinos with high-speed, reliable broadband connection which has become a necessity, especially during this pandemic.

You play a fundamental role in Converge ICT Solutions' growth. How do you manage to wear multiple hats and successfully steer the business to profitability?
I'm also a mother of three, so I know too well that nurturing something valuable takes time, patience, and hard work. There's no shortcut to it. Getting the right leaders is very challenging because more than just the hard skills and experience, it is important that they have the right attitude and are aligned with our vision. As long as we start with the end in mind and we continue to open ourselves to learn from others and our mistakes, reaching our goals will eventually become a reality.

How does Converge ICT Solutions differentiate itself from other telecom service providers in the Philippines?
We have our undivided focus on fiber. This is our market differentiator, and we pride ourselves on seeing the potential of this technology early on. We ventured into fiber technology at a time that it was still expensive, but we knew we wanted to offer the best connectivity solutions to Filipinos. That risk is reaping rewards now as the source material of fiber has gone down in cost, we brought in innovative technology for its installation (micro trenching) and demand for it shot up due to Filipinos staying at home. The stars aligned for us.

The fixed broadband industry after all is a blue ocean - our fixed broadband penetration rate is still quite low, all players combined, we only have about 20% of the household using fiber connectivity so there is a lot of room for us to grow. Following our aggressive expansion, we are also innovating to serve our customers better. Aside from the technology, we also want to be the best provider in terms of customer service.

As a self-made businesswoman, wife, and mother, how do you keep a balance between your professional and personal lives?
One of my biggest struggles as a working woman and a mother is balancing family and work. I won't say it's easy - but it's definitely doable. Through prioritization and extreme organization, we do the best we can. For me, family still always comes first. But after over a decade of hard work and dedication, Converge and all the people in it have become family to Dennis and me.

What words of wisdom can you impart to aspiring ladies, Filipinas, and tech entrepreneurs out there when it comes to leadership and gender empowerment?
My biggest piece of advice to women in business today is to never be afraid of voicing out your story and opinions. Many women realize too late the ability to stand up for themselves - whether it be due to nurture or the Asian culture.

Raising three independent girls and being president and CRO at Converge, among my goals now is to empower my children and other women to speak out for themselves and make sure their voices are heard. I understand that not everyone has the platform to do so, thus, it is important to help others. TR

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How leading operators are accelerating 5G in Asia Pacific

One of the fast-growing regions in the world with over half of the world's total subscribers, Asia Pacific is a hotbed for 5G adoption. According to Juniper Research, over 60% of global 5G connections will be located in the region by 2026.

A game-changing technology that offers immense possibilities for enterprises and consumers, 5G offers the potential to drive economies. Research firm Frost & Sullivan forecasted 5G market revenues to grow from US$2.13 billion in 2020 to US$13.90 billion in 2025, at a compound annual growth rate of 45.5%. However, to unleash the full potential of 5G, mobile operators and governments must work in tandem to accelerate 5G investments and innovations.

Policy-makers can invest in future economic growth by intensifying infrastructure deployment, allocating adequate and harmonized spectrum to address future demands, and incentives to provide operators more 5G monetization opportunities.

At the same time, mobile network operators must give consumers adequate reasons to upgrade to 5G. They must also move up the value chain to deliver viable use cases to enterprises across industry verticals.

We look at what leading 5G operators in the region are doing to deepen their 5G journey.

SK Telecom

The government plays a key role in propelling South Korea's 5G evolution. It has been coordinating collaborative work in the ecosystem to promote R&D and develop 5G equipment and

applications. According to the Ministry of Science and ICT, 5G coverage has been deployed across its 85 cities, with the number of 5G subscribers reaching 20.19 million in November 2021, accounting for more than a quarter of 72.57 million mobile subscriptions in the country.

However, despite rapid 5G deployments made possible with increased tax incentives to Korean operators, industrial 5G is not taking flight as quickly as desired.

Last July, the ministry unveiled a US$190 billion Korean Digital New Deal 2.0 to grow hyperconnected industries. This includes developing open metaverse platforms, cloud computing, blockchain, and services based on ICT convergence. More than 1,800 companies specializing in new 5G services will also be created to boost 5G adoption. This will support a national ambition to deliver 5G services to 3,200 locations by 2026, up from just 195 in the second half of last year.

To appeal to younger generations, all three South Korean operators, namely SK Telecom, KT, and LG UPlus have launched cloud gaming services powered by 5G. Motivated to provide users enhanced experiences in gaming, as well as facilitate partnerships with other industries, SK Telecom also plans to develop its metaverse service into an open platform.

In the consumer market, SK Telecom will also continue to invest in IPTV to converge OTT and home media services. To target industrial IoT businesses, the carrier will build more data centers, as well as grow 5G MEC and dedicated line infrastructure.

China Mobile

With more than 560,00 5G base stations in China, China Mobile aims to increase its 5G coverage to all rural towns across the country by the end of the year. Adding about 11 million 5G customers each month, China Mobile ambitions to become the main driving force of a digitized and intelligent country.

Through innovative apps, the carrier intends to continue leveraging 5G capabilities to provide consumers full immersive experiences. For instance, cloud gaming built on 5G edge to provide very low latency, as well as 5G combined with AI or video processing for other applications. The carrier also plans to expand 5G industry applications across 18 key vertical sectors.

Recently, China Mobile jointly launched the Green 5G Joint Innovation Lab to develop 5G energy-saving technologies and products. These technologies aim to help energy-demanding industries such as chemical and steel reduce energy consumption and carbon emissions.

With deployments nationwide, China Mobile makes reducing OpEx through network automation a priority in its 5G strategy. Through partnerships with ecosystem stakeholders, the carrier aims to reach Level 4 autonomous network by 2025. It has already achieved partial Level 3 capabilities, with plans to roll out this process across its subsidiaries globally.

Last July, China announced a 3-year plan to attract 560 million 5G mobile subscribers by the end of 2023. Focused on expanding the use of 5G across industries, the plan is to grow the penetration rate of fast wireless technology in big industrial enterprises by 35% then, and scale up 5G applications in sectors such as mining and grid.

NTT Docomo

Leading Japanese mobile operator NTT Docomo launched 5G in March 2020, with plans to invest over US$7 billion to expand its network to 97% of the populated areas of the country by 2025.

With secure and quality ICT, including 5G, being crux to Japan's digital foundation, emphasis is placed on mitigating supply chain risks.

As part of Beyond 5G to realize next-generation communications systems with industry, academia and, governments globally, NTT also joins hands with overseas partners to develop new technologies and standards. For instance, NTT, together with Finnish partners will build a pilot 6G network for an event in Osaka in 2025.

Telstra

Australia's first 5G mover, Telstra's latest T25 plan builds on the foundation of its T22 plan to transform the business. This new plan, which comes into effect later this year, aims to extend 5G coverage across Australia, deliver enhanced customer service and reduce its annual fixed costs by US$366 million. Telstra will continue to deploy 5G network and double metro cells to increase density, with hopes to provide 5G coverage to about 95% of the population by 2025. By then, an estimated 80% of all mobile traffic will be on 5G. 4G coverage will be expanded to 100% of the carrier's network by 2024, to deliver 4G, 5G, and eventually 6G.

To attract more 5G subscribers, Telstra offered postpaid small plan users free 5G connectivity for 6 months last August – a plan dedicated to only medium and higher-plan subscribers. In November, Telstra its first 5G home and business plans.

Despite a drop in revenue last year, Telstra shared that their investments are paying off. A restructure is also underway to ensure more agile operations.

While high-income countries are leading this evolution, widespread 5G deployment in the rest of the region will bid its time. However, operators can still justify highly-targeted 5G deployment for key sectors such as agriculture and manufacturing. In ASEAN for instance, A.T Kearney's analysis shows that Indonesia has the highest value potential with 5G, followed by Thailand and Malaysia.

As the world prepares for a 5G-powered future, mobile operators will naturally navigate this trajectory differently to capture the most value of 5G. What is essential is long-term coordinated efforts with regulators and industry partners to bring the biggest impact to the connectivity landscape. TR

Successfully closing a mega hybrid event by Telecom Review

The 15th edition of the Telecom Review Leaders' Summit, one of the most anticipated and largest ICT events in the industry, was successfully held in a hybrid format, welcoming hundreds of distinguished guests physically and virtually at the InterContinental Dubai Festival City on December 8, 2021.

Toni Eid, Founder of Telecom REVIEW & CEO of Trace Media

H.E. Eng. Majed Al Mesmar, Director-General, TDRA

C-level executives within the ICT industry and a broad range of professionals including telecom operators, telecom vendors/suppliers, industry regulators, government officials, content providers, cybersecurity experts, consultants, and smart city innovators were present during the full-day gathering.

Telecom Review Leaders' Summit

Reunited again – physically and virtually – this year's Summit was bigger than ever before, thanks to the participation of the most influential figures in the ICT industry from the Middle East, Africa, North America, and Asia Pacific. His Excellency Eng. Majed Al Mesmar, director-general, TDRA also graced his presence and officially delivered the opening keynote speech for the event.

Commenting on the success of the event, Toni Eid, founder of Telecom Review and CEO of Trace Media, said, "This year, we are back together in the city of Expo 2020, coinciding with the celebration of UAE's jubilee year. Being the first one to hold a hybrid event during the pandemic, we have done it again with ensured safety and quality for the 15th edition of Telecom Review Leaders' Summit. I am definitely proud that we are heading towards the 18th year of our business and recognizing the 10th year of the Telecom Review Excellence Awards ceremony. I would like to thank every partner for their support and congratulate all the winners. See you again next year!"

Raising the bar higher with distinctive and top-notch speakers, Telecom Review organized a one-day conference filled with insightful keynotes and panels to share and gain knowledge about what is being done to pave the way for the Industry 4.0 era.

Exclusive panels were arranged to cover the topics of reshaping the telcos' model, digitizing wholesale, seizing 5G opportunities, ongoing evolution of network infrastructure, emerging technologies, and managing cybersecurity threats.

Diving deeper, the first panel entitled "The Telecom Leaders' Panel – The New Telcos," discussed how the pandemic impacted the telcos' strategies, what are the new investment opportunities, and how did the overall sector's efforts been during this challenging time.

The second panel entitled "Digitizing the Wholesale Industry," tackled about the latest developments in the wholesale industry, how the world is getting connected through digital infrastructure, how on-demand services like data, cloud, connectivity, and data centers meet the needs of the new era, and what does the future hold for the wholesale industry in terms of data traffic increase.

The third panel entitled "Seizing the Opportunities of 5G," explored the monetized elements and ROI of 5G, how to choose the right business model, the status of 5G and IoT deployment, and global approaches to 5G spectrum auction.

The fourth panel entitled "The Evolution of Network Infrastructure," examined the role of AI in serving telecom infrastructure, the evolution of submarine cable connectivity, the effect of hyperscaler networks on carrier networks, and the infrastructure readiness for satellites.

The fifth panel entitled "Emerging Technologies – Winners and Losers," explained the role of emerging technologies in the fight against the pandemic and revenue generation, how cloud computing is set to push AI and IoT to the forefront in the next decade, how SD-WAN and data analytics are driving new technology and network operations, and how will technology affect our lives in 2025.

Last but not the least, the sixth panel entitled "Managing Cybersecurity Threats," spoken of telcos being exposed to more risks during the pandemic, what are the data vulnerabilities for enterprise users in

An Jian, President of Carrier Network Business Group, Huawei ME

Frederic Schepens, CEO, MTN Global Connect

Marc Halbfinger, CEO, PCCW Global

Mikko Lavanti, Head of Mobile Networks MEA, Nokia

the public and private sectors, and regulation updates in the framework of the new normal.

Telecom Review Excellence Awards

One of the highlights and the most exciting part of the 15th Telecom Review Leaders' Summit is the Telecom Review Excellence Awards ceremony that honored leading ICT brands and leaders for their achievements during this year, followed with the annual gala dinner.

The night kicked off with an exclusive fireside chat between Toni Eid and Hatem Dowidar, CEO, Etisalat Group. Opening the floor for the winners, Jeff Seal, chief awards officer, managing partner, and editor-in-chief, Telecom Review North America, said, "This year the Telecom Review Award program had a very high interest level from the industry, with a record number of nominations from around the world. The Awards continue to be the "standard" for which the industry judges its peers. The Telecom Review panel of judges are leading experts from around the world and spent quite a bit of time deliberating on the winners."

Among this year's award categories are Best Digital Transformation Provider, Best 5G User Growth, Best Customer Service Provider, Best Loyalty and Rewards Program, Best Cloud Provider, Most Innovative Product/Service, Best Satellite Operator, Best Wholesale Operator, Best Operator, Best Industry Vendor, Best 5G Innovation, Best Corporate Social Responsibility Initiative, Best 5G/Fiber Infrastructure Deployment, Best Carrier Enterprise Services, Most Creative Enhanced Service Provider, Fastest Corporate Growth, Most Innovative Employer, Fastest Broadband Deployment, and Best Telecom Brand.

On December 7, prior to the 15th Telecom Review Leaders' Summit, the International Telecommunication Union (ITU) CxO meeting was also hosted by Telecom Review in a hybrid format, with du as co-host. TR

PANEL OPENING
Mats Granryd, Director-General, GSMA

Hatem Dowidar, CEO, Etisalat Group

Karim Benkirane, Chief Commercial Officer, du – EITC

Ekow Nelson, Vice President, Global Head of Etisalat Accounts, Head of Ericsson Pakistan at Ericsson Middle East and Africa

Samer Halawi, Executive Vice President and Chief Commercial Officer, Intelsat

Kevin Vachon, Chief Operating Officer, MEF

Toni Eid, Founder, Telecom Review & CEO, Trace Media - **Jeff Seal,** Managing Partner & Editor in Chief, Telecom Review North America

PANEL: **THE TELECOM LEADERS' PANEL:** THE NEW TELCOS

PANEL: **DIGITIZING THE WHOLESALE INDUSTRY**

PANEL: **SEIZING THE OPPORTUNITIES OF 5G**

PANEL: **THE EVOLUTION OF NETWORK INFRASTRUCTURE**

PANEL: **EMERGING TECHNOLOGIES:** WINNERS AND LOSERS

PANEL: **MANAGING CYBERSECURITY THREATS**

EXCLUSIVE FIRESIDE CHAT: **Hatem Dowidar,** CEO, Etisalat Group **- Toni Eid,** Founder of Telecom Review & CEO of Trace Media

H.E. Mohamed Ben Amor, Secretary-General, Arab ICT Organization (AICTO)

Dr. Chaesub Lee, Director of the ITU TSB, ITU

Eng. Ahmed Mekky, Chairman and CEO, Benya Group

Hazem Metwally, CEO, Etisalat Misr

Bilel Jamoussi, Chief, Study Groups Department, ITU

Mohamed Al Marzooqi, Acting International CTIO, Etisalat

James Kirby, SVP and Head of EMEA, CSG

Ali Amiri, Group Chief Carrier & Wholesale Officer, Etisalat Group

Aji ED, Head of technology Mobile Networks MEA, Nokia

Femi Oshiga, VP Sales, Service Providers, MEA & APAC, CommScope MEA & APAC (ex Japan)

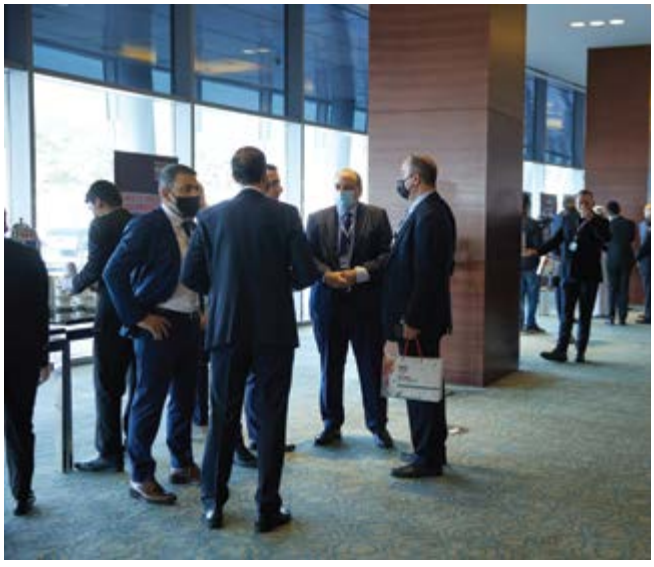
May Li, Marketing VP, Huawei ME

Hamid Nawaz, General Manager, Fixed Data, Middle East & Central Asia, SES Networks

Mounir Ladki, President, MYCOM OSI

Eric Handa, CEO and Co-founder, APTelecom


HUAWEI




Join us for the reception
Awards ceremony
and Gala dinner at 20.00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00:00:10


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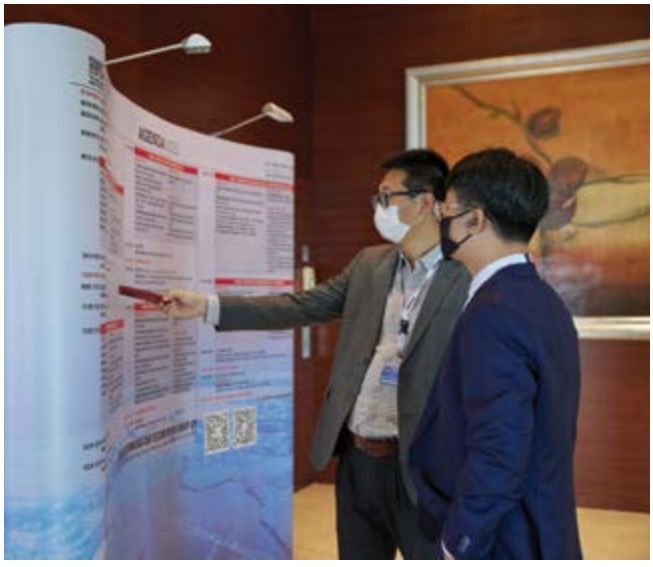
Awards ceremony
and Gala dinner at 20:00



Telecom Review Excellence Award winners for 2021

As a wrap-up to the 15th edition of Telecom Review Leaders' Summit, Telecom Review organized the 10th edition of its Excellence Awards ceremony where companies and industry leaders are recognized for what they have accomplished during the year.

Telecom Review, together with an independent panel of judges, continued its dedication and commitment to the ICT industry in ranking the best of the best in terms of corporate innovation and performance as well as individual capabilities and contributions as influential players globally.

Below are the winners of this year's edition:

Best Digital Transformation Provider - **Huawei**

Best 5G User Growth - **Zain KSA**

Best Customer Service Provider (Operators) & Best North American Wholesale Operator- **Verizon Partner Solutions**

Best Loyalty and Rewards Program - **Etisalat Smiles Application**

Best Cloud Provider - **Netcracker**

Most Innovative Product/Service (Operator) - **Zain KSA and Zain Yaqoot**

Most Innovative Product/Service (Vendor) - **CSG**

Best Satellite Operator - **Intelsat**

Best Middle Eastern Wholesale Operator - **Etisalat**

Best African Wholesale Operator - **Liquid Intelligent Technologies**

Best Asian Wholesale Operator - **China Mobile International**

Best Carrier Enterprise Services & Best Global Operator - **PCCW Global**

Best Middle Eastern Operator & Best 5G Infrastructure Deployment - **Etisalat**

Best Industry Vendor - **Nokia**

Best 5G Innovation (Vendor) - **Huawei**

Best Corporate Social Responsibility Initiative - **Sofrecom**

Best Infrastructure Fiber Deployment - **Benya Group**

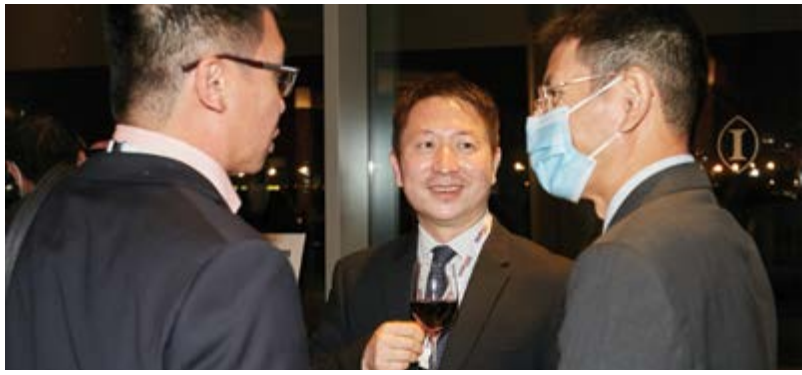
Most Creative Enhanced Service Provider - **APTelecom**

Fastest Corporate Growth - **MTN GlobalConnect**

Most Innovative Employer - **TELUS**

Fastest Broadband Deployment - **Dawiyat**

Best Telecom Brand - **Zain Group**



Leader Merit Awards

CEO of the Year for Infrastructure Initiative (Operator)
Frederic Schepens, MTN GlobalConnect

CEO of the Year - African Mobile Telecom Operator
Hazem Metwally, Etisalat Misr

CEO of the Year (Vendor)
Steven Yi, Huawei Middle East & Africa

CEO of the Year - Best Project Achievement
Ahmed Mekky, Benya Group

Executive of the Year (Global)
Marc Halbfinger, PCCW Global

Marc Halbfinger
CEO, PCCW Global

I personally want to congratulate the organizers of Telecom Review Summit and Toni himself for persevering throughout the pandemic in order to assure that a platform such as Telecom Review continues to thrive. Because in an environment such as this, despite all the talk about automation, still, it's necessary to interact on a personal level to build layers of trust and to make sure that we are collectively developing the ICT industry.

Let me congratulate Telecom Review for this Leaders' Summit. ITU is very happy to be a part of it, especially as Trace Media becomes an ITU member. Taking this opportunity, I'm very delighted to deliver our certificate from the ITU secretary-general to officially become one of our members. ITU normally participates in this global summit, so it is my pleasure to come here

Dr. Chaesub Lee
director of the ITU telecommunication standardization bureau

Ahmed Bin Ali
SVP corporate communications & official spokesperson of Etisalat Group

Etisalat always values the participation in Telecom Review events, and I think the Leaders' Summit is very special for all operators in the region. We always like to be part of it to share knowledge across our peers in different countries, especially with Etisalat now being in 16 countries.

The Telecom Review Leaders' Summit is one of the top regional industry events and one of our key annual events to connect with the regional ICT ecosystem. This year's event came at a pivotal time as the world recovers and readjust to a new reality. Together with other participants, we have reaffirmed just how important digital is to economic recovery and progress, while paving a path to a brighter future for all.

Steven Yi
president, Huawei Middle East

Eng. Ahmed Mekky
chairman & CEO, Benya Group

I'm honored to be attending the 15th edition of Telecom Review Summit this year. It's always an important event and I'm considering this as our annual regional festival for the ICT sector. It's only Toni Eid who's able to gather us, despite all kinds of challenges or complications.

We are long-term partners of Telecom Review and this Summit. This has been always a very good chance for us to share with partners and customers our latest strategy. For me personally, I was looking forward also for the networking part. As I am new to the region, it gives me a great chance to meet our partners, customers and people in the industry in general.

Mikko Lavanti
head of mobile networks MEA, Nokia

Kevin Vachon
chief operating officer, MEF

We love working with Telecom Review. They've been a media partner with some of our own events. Toni Eid just brings out an excellent crowd of executives, and our target audience are telecom executives. We always have such a great gathering here as we get to present and meet them.

I've been attending the Telecom Review Summit for the past years and I was looking forward to attending this one as well. Post-covid, we have been doing a lot of interaction online but this has given us the privilege to meet face-to-face telecom industry decision-makers in one place. Telecom Review Summit gives us an opportunity to interact with leaders, understand the trends that are happening within the industry, and also share the kinds of developments that we are doing to change Africa, especially as we bring the benefits of a more connected life there.

Mohammed Aliyu
GM of fixed connectivity and business development, MTN GlobalConnect

Roque Lozano
VP IP and optical networks, MEA, Nokia

First of all, Telecom Review is doing an excellent job of trying to put together all the actors in this theater. The theater in person, like this event, is very much well-thought, after all these months of pandemic impact. At the same time, I think the most important and compelling is putting together all of these actors from different angles to have different opinions; but at the end, on the very same objectives — making the digital world more accessible, more sustainable, and more beneficial for all of us as an industry and society in general.

This is one of our favorite events of the year. We meet a lot of our friends, customers, and partners here in Dubai, and it's such a great place to be at a great time of the year. We love being at Telecom Review Leaders' Summit.

Femi Oshiga
VP sales, service providers, MEA & APAC (ex Japan), CommScope

Hakan Ekmen
CEO Telecommunication, umlaut

As one of the technology leaders in 5G, we are interested in seeing how the development of 5G is going in the region. As we joined this event here, we saw that 5G is becoming more mature and all telecom operators are committed to investing in 5G.

It's always a pleasure to attend the Telecom Review Summit, especially this year after the pandemic, meeting again with leaders coming from operators, service providers, and vendors. The panel discussions were really amazing.

Elias Saab
chief commercial officer, Sofrecom Group

Ayhem Alzaai
telco sales manager, CEMEA, Red Hat

I think the Summit this year is fantastic. If we look around the activity and the conversations, you have done a fantastic job in ensuring that the communication is handled in a way that fosters collaboration and partnership, which is brilliant. Having the ability to discuss, engage, and collaborate with thought-leaders, and some of our partners and customers, with operators and government regulators, is just an amazing opportunity for everybody. It's a great event and we look forward to it every year.

I attended this Summit for many reasons. First the topics that are being discussed are of high interest, second seeing all friends, people and everybody is always a good thing, all the event is about is networking. Finally, after two years of lockdowns, it's really great to be here in person with everyone. Thank you Telecom Review for making this happen.

Samer Halawi
Executive vice president and CCO, Intelsat

Samer Geissah
technology strategy and architecture, TELUS

TELUS is a proud sponsor for the Telecom Review Summit. We have been sponsoring this event and we attended regularly because it's a great opportunity to meet decision makers and C-level attendees, individuals that have visions and we network, collaborate, and exchange ideas on how we serve our customers in a best manner.

The event this year was fantastic. Especially after COVID-19. It was great to meet my colleagues such as the CEOs of various telecommunications companies in the region.

Dr. Ahmed Sindi
CEO, Dawiyat

Telstra, Ericsson and Qualcomm Technologies achieve highest uplink peak rate

Ericsson, Telstra, and Qualcomm Technologies have achieved the highest uplink peak rate ever recorded on a commercial network during a live demo in Queensland, Australia. Together, they reached an uplink data speed of close to 1Gbps, paving the way for more seamless experiences in use cases such as live video streaming and social media content sharing.

Using Ericsson's New Radio-Dual Connectivity (NR-DC) and carrier aggregation software features together with a smartphone form-factor test device powered by Snapdragon® X65 5G Modem-RF System on Telstra's network, this new uplink speed record marks another significant milestone for the ecosystem collaboration between the three companies.

The high uplink peak rate was reached by combining the data rates from both mid-band and high band (millimeter wave) to fully utilize Telstra's spectrum for improved user experience. The demo used Ericsson's NR-DC software feature with uplink four-component carrier aggregation (UL 4CC CA), in which four contiguous carriers of 100MHz are combined, resulting in higher data speeds.

Delivering uplink peak rates of close to 1Gbps will enable Telstra to more than double the current uplink throughput in its 5G network. This is particularly important for supporting applications and services that involve uploading vast amounts of data.

Sibel Tombaz, head of product line 5G RAN, Ericsson, says: "We continue to pursue new and innovative ways of enhancing the end-user impact of 5G. An uplink speed of close to 1Gbps using NR-DC and four-component carrier aggregation is the latest in a series of 5G milestones we have achieved in collaboration with Telstra and Qualcomm Technologies. This means users can enjoy vastly improved experiences from applications where quicker upload time makes a difference."

Nikos Katinakis, group executive networks & IT, Telstra, says: "We have a history of world firsts with Ericsson and Qualcomm Technologies. In 2016 we broke the 1Gbps barrier on 4G; in January this year, we set a new download record on 5G, and now we have set a new record in the uplink on a commercial 5G network. It is a testament to the continuous efforts of our team to innovate, and I take pride in how, together, we continue to push the boundaries of what this technology can deliver."

Sunil Patil, vice president, 5G product management, Qualcomm Technologies says: "Qualcomm Technologies is pleased to collaborate with Ericsson and Telstra on this 5G dual connectivity and carrier aggregation milestone. By achieving the highest uplink peak rate ever recorded on a commercial network in Queensland, Australia, we're underscoring our commitment to enabling differentiated 5G experiences across a variety of use cases beyond mobile. Together, we are realizing the full potential of 5G through new breakthroughs that will drive transformative benefits for consumers and enterprises alike."

SLA Digital partners with Unitel on direct carrier billing in Mongolia

SLA Digital has announced a new partnership with Unitel Group, a Mongolian telecommunications company, with Unitel naming SLA Digital as their managed service provider for carrier billing.

As part of the relationship, SLA Digital will also be able to offer digital content providers access to Unitel's other payment options including IPTV payments, Toki E-Wallet and payments made via U-Point, their points based loyalty program.

Kevin Drayne, CEO at SLA Digital commented: "We are delighted to be working with Unitel to enable seamless and secure payment experiences for their customers through carrier billing. We see this relationship as a real opportunity to bring more to Unitel and their customers, by offering a vast range of digital content and entertainment with new convenient ways to pay."

The partnership means Unitel will be able to effortlessly introduce new digital content to customers from SLA Digital's expanding client portfolio. Likewise, digital content providers can connect to Unitel's mobile subscribers, and expand into this region, through a simple integration process.

Kevin continued: "Our direct connection with Unitel Mongolia will allow our existing and new digital content partners to easily connect to the mobile operator and make the most of all the payment options available. We hope that more content and more ways to pay will lead to greater choice and satisfaction for Unitel customers."

Inmarsat successfully launched new commercial communications satellite

Inmarsat has successful launched its first Inmarsat-6 satellite, I-6 F1, by Mitsubishi Heavy Industries (MHI) from the JAXA Tanegashima Space Center in Japan.

The Inmarsat-6s (I-6) are Inmarsat's first ever hybrid L- and Ka-band satellites, incorporating increased capacity and new technological advances for ELERA's transformational L-band services alongside additional Global Xpress (GX) high-speed broadband capacity. Adding to an existing global fleet of 14 geostationary satellites they extend Inmarsat's commitment to mission critical services while enabling a new generation of pioneering technologies to connect and sustain the world.

This launch is the first of seven planned for Inmarsat by 2024 in the company's fully-funded technology roadmap. Launch success was confirmed by MHI at 15:59 UK time on 22 December following satellite separation from the H-IIA launch vehicle, with successful signal acquisition soon afterwards.

The most sophisticated commercial communications satellite ever launched, I-6 F1 is comparable in size to a London double-decker bus, with a deployed solar arrays 'wingspan' similar to a Boeing 767 and a 9 metre wide L-band reflector that will be deployed over the coming days. The satellite will then be raised to geostationary orbit (GEO) approximately 36,000km (~22,500 miles) above the Earth via its all-electric propulsion system and then undergo a thorough and extensive testing programme. I-6 F1 will enter service in 2023. Ground stations in Western Australia will support I-6 F1.

Rajeev Suri, CEO of Inmarsat, said, "This launch marks Inmarsat's newest technological leap forward as we maintain our strong commercial momentum and sector leadership. It gives me great pleasure and pride to confirm the successful launch of I-6 F1. This satellite extends our world leading mobile satellite communications services for our customers and partners, especially in the Indo Pacific region. My warmest thanks and congratulations go to the Inmarsat team that delivered flawlessly on this project as well as our launch provider Mitsubishi Heavy Industries and our satellite manufacturing partner Airbus Defence and Space."

Airtel and Capgemini collaborate on 5G enterprise solutions

Bharti Airtel and Capgemini have announced that they will collaborate on bringing 5G-based enterprise grade solutions to the India market.

Airtel and Capgemini will bring together their experience in connectivity and 5G solutioning, and system integration (SI) capabilities, to co-innovate a range of India-focused use cases. Capgemini's 5G Lab, situated within its Mumbai campus, and Airtel's 5G Lab in Manesar will be the development hubs.

Two 5G use cases have already been deployed by Capgemini at Airtel's 5G Lab. These are focused on smart health and immersive remote assistance for field operations and maintenance. These use case solutions leverage computer vision, video analytics, augmented reality and AI/ML technologies.

Ananth Chandramouli, managing director of the India Business Unit, Capgemini said: "Our partnership with Airtel is truly a game changer for both of us and has the potential to disrupt the market dynamics. Through this partnership, our focus will be on enabling enterprises to leverage the benefits of 5G technology and identifying exciting new use cases to fuel innovation, revolutionize business models and accelerate digital transformation."

Ganesh Lakshminarayanan, CEO, Enterprise Business, Airtel Business said: "Airtel has been leading 5G testing and validation in India and looks forward to building an open and vibrant ecosystem that brings together all stakeholders and drives innovation. Through this partnership with Capgemini, we look forward to offering our customers cutting edge solutions, which deliver the benefits of the 5G technology."

Thailand partners Huawei to launch ASEAN's first 5G smart hospital

Thailand Office of The National Broadcasting and Telecommunications Commission (NBTC), Siriraj Hospital, and Huawei Technologies (Thailand) Co., Ltd. on Thursday jointly launched the "Siriraj World Class 5G Smart Hospital."

Thailand General Prayut Chan-o-cha, Prime Minister and Minister of Defence, presided over the inauguration ceremony alongside Chaiwut Thanakamanusorn, Minister of Digital Economy and Society, Prof. Dr. Prasit Watanapa, MD, Dean of Faculty of Medicine Siriraj Hospital Mahidol University, Colonel Natee Sukonrat, Ph.D, Vice-Chairman of the National Broadcasting and Telecommunications Commission, Han Zhiqiang, Ambassador of the Embassy of the People's Republic of China in Thailand, Abel Deng, Chief Executive Officer of Huawei Thailand, as well as Assoc. Prof. Visit Vamvanij, MD, Director of Siriraj Hospital, Assoc. Prof. Cherdchai Nopmaneejumruslers, Vice Director of Siriraj Hospital.

This project marks the first and largest 5G smart hospital project in Thailand and the ASEAN region. It aims to bring more efficient and convenient experience to patients by introducing technologies such as 5G, cloud, and artificial intelligence, and promote Siriraj Hospital to become a model for smart hospitals in Thailand and the world. At the same time, Siriraj Hospital and Huawei will establish a Joint Innovation Lab to incubate innovative 5G applications. Currently, the two parties have started piloting 5G portable medical boxes, 5G unmanned vehicle, 5G medical carts, and 5G smart hospital beds. It is expected that 30 5G medical applications will be incubated and promoted nationwide in 2022.

General Prayut Chan-o-cha, Prime Minister, addressed the national policy on 5G technology and digital economy, stating, "The Thai government understands the importance of technology, successfully drafting a plan for Digital Thailand, and today is an important first step in the utilization of digital technologies and 5G in the medical field. This will help reduce processes for medical personnel, decrease overall risk, and will improve the effectiveness and efficacy of healthcare for patients. We will use Siriraj 5G Smart Hospital as a pilot project with the aim of expanding to other hospitals in the future. We admire Siriraj Hospital and Mahidol University, and would like to thank Huawei, NBTC, private organizations, and all other partners involved in this project. We hope the project will act as a blueprint for all smart hospitals in Thailand going forward."

Prof. Dr. Prasit Watanapa, MD, Dean of Faculty of Medicine, Siriraj Hospital Mahidol University, shared the background and development of implementing Siriraj's Smart Hospital Project with 5G and artificial intelligence (AI) to build a model for smart hospitals in collaboration with its partners – introducing 5G, cloud, AI, and digital disruption technologies for application in prevention, treatment, and rehabilitation to enhance the quality and productivity of medical services, bring about good experiences while using its services, provide people in remote areas with better opportunities to access advanced tertiary health care services, as well as minimize the disparity and serve as a model for new generations of medical services to the global public health industry. In addition, an innovation lab and other innovative platforms were also established to cultivate innovation projects in the future.

ZTE crosses 400 million unit milestone in CPE shipments

ZTE Corporation announced it has shipped more than 400 million customer premises equipment (CPE) devices by November 2021.

"ZTE achieved explosive growth in our CPE business in 2021, with yearly shipments exceeding 60 million units," revealed Fang Hui, vice president of ZTE. "In the passive optical network (PON) CPE segment, ZTE ranked first globally for both shipments and revenues in the third quarter of the year, according to the Broadband Access & Home Networking Quarterly Report 3Q21 released by the research firm Dell'Oro Group."

ZTE's innovative Mesh+Wi-Fi 6 solution delivers real gigabit speeds throughout the home to enable a full-coverage and seamless-roaming network experience for users. Also, its Mesh+AI (Artificial Intelligence) solution is able to solve the pain points of home network management by implementing visual management of home Wi-Fi and performing intelligent diagnosis and optimization.

In addition, ZTE"s Mesh+FTTR (Fiber to the Room) solution is the only all-optical networking solution in the industry to support both point-to-point (P2P) and point-to-multipoint (P2MP) technologies. Designed to provide future-ready connectivity, the solution can eliminate the bandwidth bottleneck in the home in one go and meet the home broadband requirements of users in the next 20 years. With this solution, ZTE has won multiple awards and completed commercial trials in over 20 provinces of China.

To date, ZTE's high-end 10-gigabit-capable symmetric passive optical network optical network terminal (XGS-PON ONT) and Wi-Fi 6 products have been massively deployed in countries and regions including Japan, Europe and South America.

"Moving forward, ZTE will continue to focus on technological innovations and experience upgrades, with an eye to providing high-quality smart home solutions and products, and promoting the digital transformation and upgrades of homes," said Fang Hui.

MWC 2022 Barcelona

MWC Barcelona is the world's most influential event for the connectivity industry. It's where world-leading companies and trailblazers share the latest thought leadership about the progression and future of connectivity. And it's the best place for networking opportunities with mobile and tech industry influencers. Together, we will shape the future of connectivity. It's time to reconnect, reimagine, and reinvent for industry success.

Place: Fira Gran Via, Barcelona, Spain

28 - 03 FEBRUARY - MARCH

Byond Mobile

Byond Mobile is a dedicated 5G exhibition that will convene business leaders from various industry verticals, with strategy experts from the Internet, Mobile Communications and IT sectors. Focused areas include mobile networks, cloud solutions, cyber-security and robotics, as well as the latest in AR/VR, machine learning and AI to unlock the potential of the IoT era.

Place: Bangkok, Samyan Mitrtown Hall

08 - 09 JUNE

07-08 DECEMBER

Telecom Review Leaders' Summit 2022

The 16th edition of the leading ICT gathering will be held in a hybrid mode where the latest industry trends will be tackled.

Place: Virtual and physical

Latest updates on:
www.telecomreviewasia.com

TELECOM Review
virtual panels

Telecom Review's virtual panels' series continues in 2022

Building on previous years' successes, we continue our mission of connecting the industry's leaders.

The 2022 series of virtual panels will address, among others:

- **5G** monetization
- **Digital transformation:** Progress, results, prevision
- Rethinking **wholesale and capacity** growth strategy in the digital age
- The challenge of **cybersecurity** in a more connected world
- **Network automation:** They key to success

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