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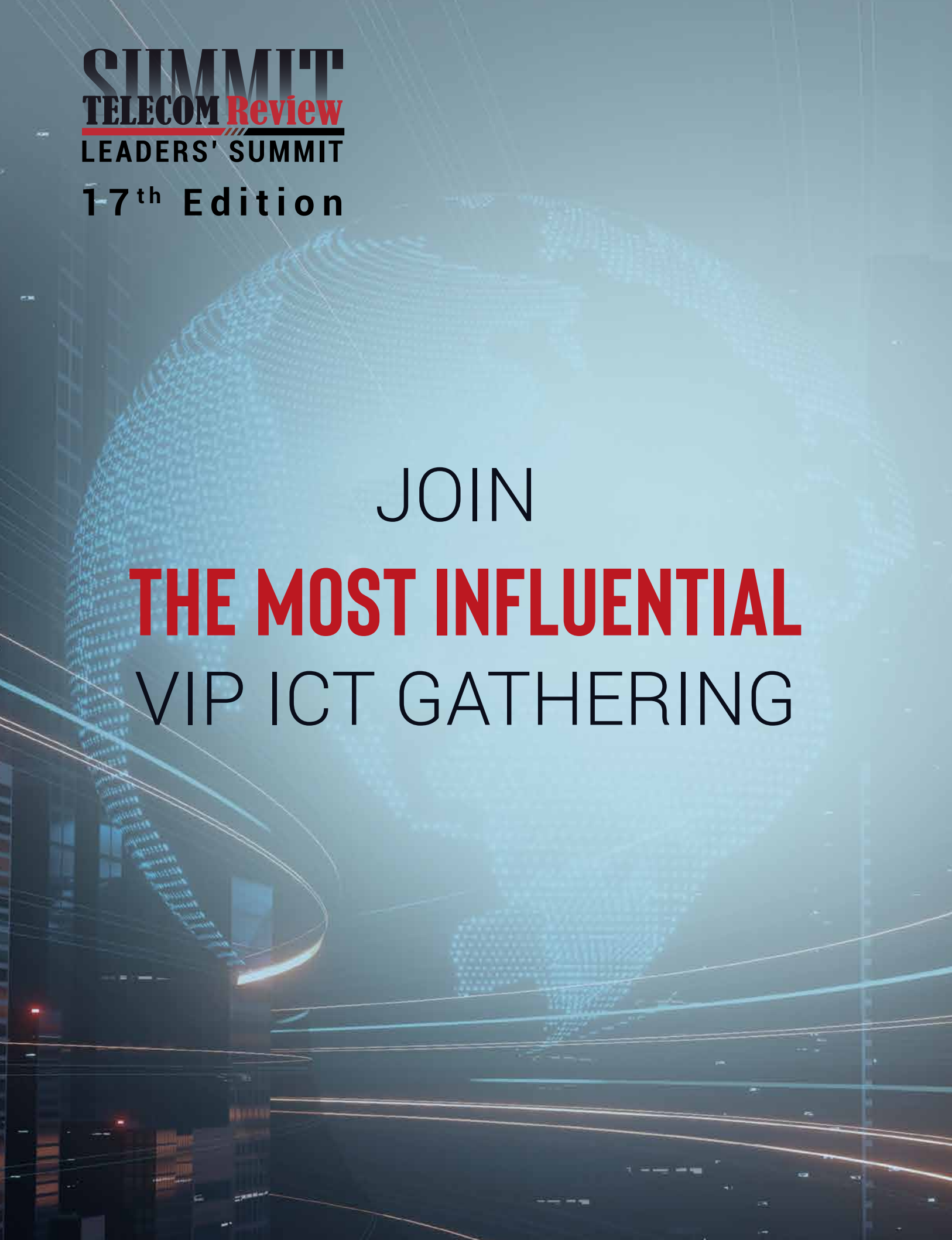
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Elon's Twitter Logo Change to Dog Makes Dogecoin Price Jump

Tech billionaire Elon Musk's decision to change the Twitter logo blue bird to a Shibu Inu dog – an icon associated with the digital token – caused the price of Dogecoin to shoot up by more than 20%.

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AI and Machine Learning Are Transforming Finance in Southeast Asia

In recent years, the world has witnessed tremendous technological developments, with artificial intelligence (AI) and machine learning (ML) emerging as game-changing technologies. These technologies have transformed many industries around the world, and Southeast Asia, a region noted for its rapid economic growth and technical innovation, is no exception. AI and machine learning are driving innovation and revolutionizing the way organizations function in the region, allowing them to leverage massive volumes of data and uncover important insights. From finance to healthcare, e-commerce to logistics, AI and machine learning are playing critical roles in increasing efficiency and production and improving decision-making capabilities.

Data analysis is a critical field where AI and machine learning are making important contributions. Southeast Asian businesses are collecting large volumes of data from a variety of sources, including consumer interactions, internet transactions and social media. Traditional analysis approaches, however, can be overwhelmed by the sheer volume and complexity of this data. AI and machine learning algorithms, with their ability to process massive amounts of data fast and efficiently, offer a solution to this problem.

A study by the Robocash Group showed that the integration of artificial intelligence and machine learning in the Southeast Asian FinTech industry peaked between 2016 and 2019. The FinTech industry has reached a "plateau," which may not continue for long. But the latest trends show that as financial technologies evolve, more businesses recognize the potential of this technology and begin to incorporate it into their business processes.

According to the recent Robocash Group report, the prevalence of AI and ML technologies in SEA fintech companies is continuously increasing, reaching 3.1% in 2022. In other words, 807 of the 26,105 Southeast Asian financial organizations already have AI and ML capabilities in their technology stack.

The Rise of Fintech in Southeast Asia

Southeast Asia has emerged as a hotbed for fintech innovation, driven by a young, tech-savvy population, rising smartphone penetration and increased demand for digital financial services. The complex and fragmented financial ecosystem of the region poses distinct difficulties and opportunities for both fintech startups and established companies. AI and machine learning (ML) technologies are at the vanguard of this change, allowing businesses to leverage the power of data to drive corporate growth and provide personalized services to customers.

Singapore had the greatest rate of AI and ML penetration in fintech among the nations surveyed, which included Singapore, Thailand, Malaysia, Bangladesh, Indonesia, Cambodia, the Philippines, Vietnam, Laos, Myanmar and Brunei.

The findings attribute the city-state's unusually high degree of digitalization and private fintech investment in AI to the fact that 5.36% of fintechs in the city-state had the tools in their stack in 2022.

Furthermore, the country has experienced rapid overall economic development, accounting for approximately 0.5% of global GDP. In 2022, 97% of its population had an internet connection, 94.4% had smartphones and 97% had a financial account. As a result, Singapore has created an environment that encourages the employment of cutting-edge technologies.

> "AI and machine learning are driving innovation and revolutionizing the way organizations function in the region, allowing them to leverage massive volumes of data and uncover important insights"

Back in 2021, the Singapore government committed to investing in a new national artificial intelligence program in finance. The funds were used for research and development, to construct AI centers of excellence and to create a pool of engineering expertise to develop AI applications. The country has been exploring AI since 2019, when it invested heavily in developing AI skills in order to become a leader in the industry by 2030.

The study also cites Laos as having a similarly promising fintech penetration rate of AI and ML at 4.08%. Fintech growth in Laos is still in its early stages, with only 49 enterprises out of the region's 26,105, implying that even a little penetration in the field is significant.

The Benefits of Using AI and ML in Fintech

The ability of AI and ML to process massive volumes of data rapidly and accurately is one of their primary advantages. This means that financial organizations can collect and analyze data from a variety of sources, such as consumer transactions, social media and market movements, in order to acquire important insights into their operations. They can make better judgments, lower risk and enhance business processes using these insights.

AI and machine learning, for example, can be used to create algorithms that assess client behavior, such as spending trends and preferences. This information can then be utilized to customize financial goods and services for individual customers, resulting in a more personalized experience and higher customer satisfaction.

AI and ML can also be utilized to improve risk management in addition to providing customer insights. Financial organizations can better foresee future market circumstances and alter their plans by evaluating data on market trends and economic indicators. This can assist them in mitigating risks and maximizing revenues.

Financial fraud, which is a major issue in Southeast Asia, is one area where AI and ML can be extremely useful. Traditional techniques of

investigation are sometimes delayed and ineffectual. Financial institutions can detect fraudulent activities in real-time using AI and ML, allowing them to take rapid action to prevent losses.

Financial inclusion is another one of the major implications of fintech powered by AI and ML. Fintech solutions are bridging the gap in Southeast Asia, where a major section of the population remains unbanked or underbanked, by offering access to digital financial services. AI-powered alternative credit scoring models enable lenders to assess the creditworthiness of people with little or no credit history, thereby increasing lending availability to underserved communities. This democratization of financial services has the ability to reach millions of people and drive regional economic growth.

Grab is one Southeast Asian business that is known for utilizing AI and ML in fintech. Grab is a ride-hailing and delivery company that has expanded into the financial services sector. The Grab Financial Group provides a variety of financial products and services, such as loans, insurance and payment processing.

One of the key innovations that Grab has introduced is the GrabPay Wallet. This digital wallet enables users to pay for a variety of services, including ride-hailing and food delivery, as well as send money to friends and family. The wallet is backed by AI and machine learning, allowing Grab to customize the user experience and offer targeted promotions and rewards.

A recent report by International Data Corporation, entitled "Role of Technology in the Banking Industry," shows 83.2% of banks in Asia and the Pacific, excluding Japan, will increase their technology budgets in 2023, with 14.8% indicating a 20% or more rise. According to the IDC survey, security and data transformation will be the primary areas of focus for technology investments in 2023, with 80.4% of banks planning to increase their budgets for security and access management, followed by big data & analytics (68.4%) and artificial intelligence (AI) or machine learning solutions (64.6%).

These priorities underscore the need for banks to handle the rapidly developing situation — one now driven by institutionalized threat actors — with AI-enhanced security tools. Increasing investments in data transformation suites also indicate the increased value of banking data as a key commodity and source of new revenue, where developing new analytic frameworks and processes can provide banks with considerable competitive advantages.

"The banking industry is always situated at the forefront of constant innovation, amidst challenges posed by global economic uncertainties, emerging competitors and ever-changing customer demand," said Adam Kamarul, market analyst at IDC Financial Insights. "The priorities set by the banks in 2023 serve both as a guidance on where banking is headed next and a signal for the types of technology innovations that will take place."

The following are IDC's primary survey findings:

- The most challenging aspect of digital transformation for banks is ensuring stability and avoiding downtime (47.8%), followed by managing operational risks of migration (43.7%).
- APeJ banks are pursuing third-party integration enablement (50.0%) and creating corporate banking products via API (48.1%) during the next 24 months.
- 70.6% of banks feel that their ESG efforts will increase their earnings over the next five years.

Regulatory Concerns

While the benefits of AI and machine learning in finance are substantial, there are also regulatory and ethical concerns that must be addressed. Because these technologies handle sensitive financial data, data privacy and security are critical. Regulators must strike a balance between encouraging innovation and protecting consumer interests. Transparent and accountable AI algorithms, as well as strong data protection regulations, are required to foster trust and confidence in the fintech industry.

Overall, AI and ML technology are valuable tools for businesses, enabling better educated and balanced business decisions. It will become much more common and successful in fintech in the future as new technologies emerge.

Southeast Asian fintech companies are progressively incorporating AI and ML technologies into their business models and processes. It should be highlighted, however, that these technologies are not perfect solutions and are not guaranteed to succeed. To get the most out of their use, businesses must correctly adjust them to their needs and models. TR

> Southeast Asia has emerged as a hotbed for fintech innovation, driven by a young, tech-savvy population, rising smartphone penetration and increased demand for digital financial services.

Zhang Wanchun, senior vice president, ZTE

Accelerating Highly Autonomous Networks to Support Operators' Digital Transformation

Telecom Review Asia interviews Zhang Wanchun, senior vice president of ZTE to learn about the importance of autonomous networks in addressing diverse business demands and how to bring autonomous networks into reality, achieving operators' digital transformation.

Autonomous networks (AN) will empower and accelerate the digital transformation of telecom operators and other industries. Automation and intelligence are required to support the growing complexity of cloud-based, highly-agility and versatile modern networks which underpin the digitalization of the industry. For many years now, ZTE has been actively developing a comprehensive portfolio of AI-based AN solutions to address diverse business demands to achieve seamless operations, optimize and coordinate network resources efficiently and create the best customer experiences. To yield these deliverables, ZTE's solutions are founded on three key pillars.

The first pillar is business-orientedness. The main goal of the ICT industry is to provide the best end-to-end customer service experience, with fit-for-purpose solutions. This can be translated into the "Zero-X " (zero wait, zero touch, zero trouble) capabilities to provide simple, seamless and consistent interactions for the user. ZTE taps on its expertise and solutions to support the operator's journey toward achieving deep network, organizational and business transformation.

The second pillar is openness. Fulfillment of service requirements relies on end-to-end, cross-domain coordination, which is supported by AI-native capabilities within each domain. The ability to share capabilities and data, and stay open for coordination enables closed-loop automation from process design to business operations. ZTE APIs applied to AN use cases comply and pave the way for a leading open network architecture in the industry.

Finally, the third pillar is operational efficiency. Delivering "Zero-X services and Self-X capabilities" requires automated operational and business processes, which occur through a carefully planned and executed iterative approach. ZTE assists operators in evaluating as-is processes, organization, and capabilities, to determine the degree of automation and create a path toward

intended requirements. Last year, ZTE successfully piloted the capability evaluation system in wireless networks for China Mobile, with the achievements included in a proposal submitted to TC7 of CCSA.

ZTE Addresses Telecom Operators' Pain Points

ZTE has developed uSmartNet, a self-evolving, AI-based network automation solution. Together with partners, ZTE has deployed this solution for extensive commercial use to claim a leading position in the industry in terms of leveraging big data, AI, and DPI technologies to leapfrog operators' developments.

At the heart of the uSmartNet solution is the capabilities to predict user experience and network performance, and automatically formulate and execute optimization strategies securely and efficiently. ZTE's solution uses a network digital twin for sensing and predicting spacio-temporal service distribution. Deviation from intended experience and quality levels can be predicted in real time, prompting the iterative adjustments of network configurations across domains in real-time. First pilots indicate that over 90% of physical network coverage can be accurately reflected with the digital twin network in real-time, and traffic prediction accuracy exceeds 90%.

Additionally, automatic detection, in particular when enhanced with complementary techniques such as AI-based UAV survey, allow telecom operators to spot and restore faulty sites five times faster than before.

As a concrete use case example, the end-to-end Voice over New Radio (VoNR) service evaluation and optimization improves the QoE (VMOS) of VONR video calls intelligently in a close loop manner.

Beyond operational benefits and efficiencies, big data and AI infrastructure pulls together and correlates a wide range of cross-domains OSS, BSS, CRM and external data, enabling business use cases for developing new revenue opportunities and increasing the monetization of the network. For instance, user profiling (used by more than 500 ZTE enterprise customers) allows telecom operators to understand and anticipate precisely the customer needs in terms of connectivity and APP consumption, and present them with timely and adequate service offers or promotions. This rises the telemarketing conversion rate up to 15%, compared to 6%-7% conventionally.

ZTE's Achievements in AN Solutions and Benefits to Operators

Over the last 5 years, ZTE has been carrying out extensive collaborations to promote AN development in China, as well as with international bodies such as the TMF. To date, ZTE has teamed up with more than 80 partners, with a portfolio of more than 100 projects globally.

Contributing to raising industry standards, ZTE held the plenary meeting of CCSA TC7 last year. Holding 27 key positions in global standards organizations, ZTE plays an active role in AN standards formulation, such as requirements for capabilities at different levels, technology evolution, and evaluation systems. Together with partners, ZTE has worked out three 3GPP standards, 8 CCSA standards, and over 10 industry specifications and improvement solutions for various scenarios.

ZTE also clinched the "Outstanding Use of TM Forum Assets" and "People's Choice" presented by TM Forum in recognition of ZTE's contribution to the industry. Moreover, ZTE participated in the publishing of AN whitepapers released by different organizations, including TM Forum, NGMN Alliance, China Mobile, and China Unicom.

ZTE will continue to focus on architectures, evaluation and measurement systems, and operation practices to advance the formulation and implementation of AN standards. Through these efforts, ZTE aims to foster industry-wide consensus and open collaboration amongst partners to build a harmonized AN ecosystem.

In this respect, ZTE benefits from its position as a global provider to the telecom industry with cross-domain capabilities, ranging from UE/terminals to core networks, through mobile and fixed access, optical and microwave transport and backhaul, as well as IT and OSS. Starting with AI enablement at the resource and domain level, ZTE can deliver open, cross-domain capabilities to drive the industry toward full Level 3 AN and beyond.

To illustrate recent customer developments relating to AN, ZTE helped build quality centers with China Mobile, bringing over 30 metrics and processes to L4 level , and deployed the ZTE solution for Telkomsel to achieve digital and intelligent network management. In addition, ZTE continues to develop and enhance ongoing projects in countries including Thailand and Uganda, to elevate network quality and customer experience with AN.

Last but not least, AIS and ZTE have jointly launched an "A-to-Z" innovation center in Thailand. This center serves as a common hub for research and application, and a model illustrating ZTE's partnership approach to build highly autonomous networks and develop new Level 3 and Level 4 AN capabilities. TR

> ZTE aims to foster industry-wide consensus and open collaboration amongst partners to build a harmonized AN ecosystem

Vikram Sinha, CEO, Indosat Ooredoo Hutchison (Indosat)

Indosat Ooredoo Hutchison's Successful Merger Empowers Indonesia

On the sideline of MWC 2023, Barcelona, Vikram Sinha, CEO of Indosat Ooredoo Hutchison (Indosat), delivered a presentation titled "The story of Indosat, the most Ssuccessful merger that empowers Indonesia," delving into Indosat's merger and its impact on connecting Indonesians and elevating the country's economy.

Indonesia is the fourth largest country in the world with a population of about 275 million. Home to 62 million SMEs and the highest number of unicorns in Southeast Asia, Indonesia is also one of the fastest-growing economies in Asia and an emerging digital powerhouse.

To better serve the connectivity needs of Indonesia, Indosat Ooredoo and H3i merged to form Indosat in 2022. The strategic move marked the successful start of a win-win collaboration to yield 1+1=11, Vikram Sinha, CEO of Indosat shared.

As a major digital telco in Indonesia, Indosat has been a major growth engine to drive the nation's digital ambition. The merger capitalizes on a larger market share and reduced operating costs, amongst other benefits, to grow its competitiveness and deliver greater value to customers. This complements Sinha's ongoing efforts to reinvent the telco in 2019, when it embarked on a 3-year digital transformation journey to deliver world-class digital experiences, connecting and empowering every Indonesian.

"We are confident of delivering synergistic value through the merger, with annual savings amounting to $300-$400 million over the next 3 to 5 years," Sinha elaborated.

Indosat taps on the synergistic value of the merger to capture growth and fuel the country's digital economy. As a digital enabler, Indosat plays a major role in catalyzing digital disruptions, advancing enterprise digital transformation, growing the middle class and unleashing growth opportunities in the rural areas.

Already, Indosat showcases stellar performance one-year post-merger. In 2022, Indosat's total revenue increased by 49% year-on-year, reaching IDR46.752 billion, while net profit soared 76.2% year-on-year, amounting to IDR1,459 billion. Additionally, Indosat's EBITDA reached IDR19.754 billion, growing by 42.3% year-on-year.

Sinha cited growing customers and customer satisfaction as other indicators telling of a successful merger just one year on. In the fourth quarter of 2022, Indosat's subscribers increased by 62.5% to reach 102.2 million subscribers. Data traffic nearly doubled, increasing by 91.8%.

Highlighting the importance of growing Indonesia's digital economy by providing quality customer experiences to both rural and urban areas, Sinha expressed that the merger had bolstered Indosat's capability to scale and positively impact connectivity beyond major cities. He noted that Indosat added 21 million first-time subscribers in rural areas in 2022.

However, Indosat's merger was not well-received when it was first announced in late 2021. Credit rating agencies had their reservations, citing "integration and execution risks", as well as "uncertainties over future financial policies" as reasons for concern.

Yet, Indosat's strong financial performance in the past year bears testimony to Indonesia's inherent growth potential and Indosat's core direction to focus on powering greater connectivity to boost overall productivity. Favorable national policies prioritizing digitalization have also been critical to Indosat's success.

Elaborating on his approach, Sinha stressed that cultural integration has been key.

"The management is tasked to do what is right and build on the capabilities of the employees," said Sinha. "Our goal is raising customers' digital experiences and enabling communities."

Collaborating with Like-Minded Partners to Unleash Indonesia's Growth Potential

According to research by Indosat, Indonesia's Internet economy will grow by 20% from $70 billion in 2021 to $146 billion in 2025. Total IT spending will increase from IDR300 trillion in 2022 to IDR459 trillion in 2027. During this period, Indonesia's digital economy is projected to grow from IDR1 trillion to IDR3,216 trillion, accounting for 8% and 14% of the country's GDP, respectively.

The support of ecosystem partners is instrumental in serving Indosat's larger purpose to contribute to Indonesia's digital transformation and economy. Recently, Indosat acknowledged the support of ecosystem partners during its first-year post-merger by debuting the Marvelous Partner Awards.

Through a partnership-first approach, Indosat looks to forge strategic collaborations with industry partners to co-create superior digital telco experiences that shape the country's digital roadmap.

"We are committed to growing with partners as we drive Indonesia's digital economy forward," Sinha commented. "As we continuously innovate, we are looking for like-minded partners to embark on this journey together."

For now, Indosat's merger journey proves to be a very promising start. In the near future, Indosat is projected to grow by another 8-9%.

As Indosat continues to embrace digitalization, Sinha is confident that Indosat will thrive in the digital age and radically impact lives. He concluded that Indonesia holds immense potential as a digital stronghold and Indosat is determined to maximize this growth together with like-minded industry partners. TR

"The merger had bolstered Indosat's capability to scale and positively impact connectivity beyond major cities"

Manjot Singh Mann, CEO, M1

M1 Casts Spotlight on Enterprise Market for Growth

In 2018, M1 embarked on a digital transformation journey to reinvent the legacy telco into a next-generation, agile digital telco. Telecom Review Asia interviews Manjot Singh Mann, CEO of M1, to discover more about how the telco is addressing customers' demand for digital experiences while deepening its market share in the enterprise sector.

M1 embarked on its digital transformation journey to transition from a legacy telco to a digital telco in 2018. Can you share with us some considerations and highlights from this process?

M1's digital transformation is enabled by our future-proof digital platform, which integrates all aspects of its systems onto a single platform. Working with some of the best leading technology service providers to integrate the systems has radically simplified the way M1 operates while providing real value to customers.

Our new platform's features and capabilities include: cloud-native applications to optimize resources and improve sustainability through cloud adoption with top-tier cloud partners; data analytics for actionable insights to streamline over 200 databases into a single data lake and enable real-time data analytics and provide actionable insights to better serve customers from a single source of truth; automation and self-serve for efficiency to deliver automated customer-facing touchpoints on the digital platform, offering better integration with partners as well as enabling an enhanced and efficient digital experience for customers; and hyper-personalization services to deliver the ability to personalize products, services and business solutions more rapidly and accurately, catering to customers' specific needs.

With the advent of 5G, telcos are in good stead to unlock 5G value for businesses seekingnew revenue streams. How is M1 tapping into opportunities in the B2B market?

We believe that the true value of 5G lies within the B2B as well as the B2B2C segments. Businesses that are able to leverage 5G technology will be one step ahead in delivering improved offerings with greater value to their customers and end users. M1 is boosting 5G adoption through partnerships to co-create 5G solutions and showcase real results. M1 has been at the forefront of 5G development, being the first to embark on 5G trials as early as June 2018 and multiple 5G SA trials. M1 has since conducted more than 15 5G use cases and partnerships and is on its way to delivering commercial solutions.

Can you share with us some partnerships forged in Singapore and the region?

As one of the key pillars in Keppel's connectivity business, M1 is able to collaborate with Keppel Group to co-create a wide range of 5G applications across its various businesses. This allows us to pilot projects and speed up the process of getting it commercially ready for other businesses to adopt. For example, in August 2022, M1 deployed Keppel Offshore & Marine's first autonomous vessel operations. M1 also worked with Keppel Offshore & Marine to implement a 5G AR/VR Smart Glasses solution at its yards to improve workplace safety in Singapore, which is the first in Southeast Asia's maritime industry.

We also worked closely with government bodies like Infocomm Media Development Authority (IMDA) and the Maritime and Port Authority of Singapore (MPA) to provide 5G SA coverage in our port waters to enable the establishment of Singapore's 5G@SEA, the world's first public and largest 5G Maritime testbed. This opens doors for Singapore to trial, innovate and commercialize 5G use-cases for the broader Maritime sector, from automated ship movement to remote pilotage.

In the B2B2C segment, M1 recently partnered with Gardens by the Bay to provide fast-speed 5G connectivity and immersive metaverse experiences in Gardens by the Bay's indoor venues. We also recently announced a partnership with the National Heritage Board to provide 5G connectivity and edge computing solutions to the National Museum of Singapore and the Children's Museum Singapore (CMSG), opening possibilities for museums and curators to attract and engage new audiences in innovative ways.

Building and retaining a strong pool of digital talent is a priority for many organizations. What steps is M1 taking to grow its current workforce?

With our transformation from a traditional telco into a cloud-native digital platform, we need to ensure that our people are also part of that journey. The ways of working need to change, as people are the ones driving technology. As such, we have been retraining and reskilling our people from the very beginning to help them transit. The ultimate goal is to have our people operate as part of a digital organization so that they are more accustomed to thinking digitally. TR

The true value of 5G lies within the B2B as well as the B2B2C segments. Businesses that are able to leverage 5G technology will be one step ahead in delivering improved offerings

Christian Priess, Head of Central Europe, Africa and Middle East at Hexatronic

Hexatronic Focuses on Acquisitions and Sustainability for Continued Growth

At SubOptic 2023, Telecom Review Asia connects with Christian Priess, Head of Central Europe, Africa and Middle East at Hexatronic, to learn about the company's ongoing efforts to grow its expertise, expand new revenue streams and grow its geographical market presence in FTTH and subsea cables globally.

Can you tell us more about Hexatronic and its developments?

Hexatronic creates high quality fiber networks all over the world. We partner with customers on four continents – from telecom operators to network owners – to offer leading, high-quality fiber technology for every conceivable application. Our solutions encompass FTTH, undersea cable, harsh environments, data centers and many other areas.

Complementing our work, we possess advanced training capabilities. In all the markets that we operate in, we offer field support services with highly-experienced technical teams who are constantly in the field assisting our customers with their deployments.

Can you tell us about Hexatronic's key markets and how is the company planning to expand its expertise and reach moving forward?

Our focus is on both the FTTH market – fiber or hybrid solutions for 5G, WiFi and CCTV – and the sensor market. We have a clear growth strategy to grow by more than 20% each year through a mix of organic growth and acquisitions. The main growth markets for us are Europe and North America. We target to undertake a number of acquisitions per year, depending on the opportunities

available, in order to support our continuous advancement.

Three key focus markets in these areas include the USA, UK and Germany. In the USA, for instance, we are expanding into data center solutions through acquisitions such as Data Center Systems. Two years ago, we built a duct factory in Texas. Currently, we are completing a factory in South Carolina.

In the UK, we have also completed several acquisitions, and as a result, we have established a healthy base of customers in the country, with CityFibre being one of the largest. In Germany, we also initiated a couple of acquisitions two and a half years ago and are now working with German providers to expand their fiber networks.

Additionally, for submarine cables, Hexatronic adopts a very flexible approach to cable supply. From our dedicated manufacturing facility in Hudiksvall, Sweden, we are able to provide smaller lengths of cable (up to 500 km) for customers with shorter system requirements. We also support fast turnaround times for quotations, manufacturing and supply to sites. We are happy to work on more complex projects in challenging environments. Our dedicated team of experts operates with a strong customer focus which helps extend our reach.

We have seen many acquisitions made by Hexatronic recently. Can you share some details?

Our most recent acquisition is Rochester Cable from TE Technologies. This deal closed only a week and a half ago, after signing the initial agreement in October 2022. Rochester Cable is a recognized leader in designing and manufacturing electro-optical cables to meet specific requirements in demanding industries such as oil and gas, sensing, defense, oceanographic and other subsea applications. The electro-optical cables can accommodate extreme water depths of up to 6,000 meters and connect various sensors, equipment and remotely operated vehicles.

Aligned with our strategy to enhance our "harsh environments" solution. Rochester Cable broadens Hexatronic's offering within fiber optic submarine communication cables to include dynamic working cables that transmit electrical signals and power in addition to transmitting optical signals.

In the Asia Pacific region, a recent acquisition is KNET, a micro duct manufacturer with a production plant and head office in South Korea, who has been our major supplier for many years. Acquiring KNET is a strategic move that gives us access to a high quality and high-volume production plant strategically located to serve our businesses in North America, Europe and Oceania.

Speaking of acquisitions, Hexatronic's recently published year-end report for 2022 also looks to further acquisitions in the future. What is next?

In 2022, Hexatronic continued to report strong growth, particularly in the USA, UK and also Germany. Sales grew by 88% compared to the preceding year, of which organic growth accounted for 53% of overall growth. We are currently exceeding our EBITDA target of 15-17% over a business cycle, and future acquisitions will help us sustain this growth.

Going forward, we will leverage our capabilities and knowledge in FTTH to tap into newer business areas. Our main acquisition objectives will be in three key areas, including wireless, fiber optic solutions for harsh environments and data centers.

Can you tell our readers about the latest subsea projects that Hexatronic has been involved with?

We have undertaken recent subsea cable deliveries to Asia from our dedicated factory in Hudiksvall, Sweden. At the same time, we are in the process of delivering subsea cables for offshore wind projects in Northern Europe and power interconnector projects in the USA.

Our factory has been busy, and business has been brisk, with many opportunities in the pipeline. We continue to research increased fiber count and new fiber types to provide lower attenuation and a larger effective area, leading to a longer reach for an improved submarine cable offering.

Hexatronic has a strong position on sustainability. What are your specific areas of focus?

At Hexatronic we have built a 'Sustainability Roadmap' which is founded on six priority areas.

- Reducing climate impact
- Creating a sustainable supply chain
- Having strong business ethics
- Creating a good health, safety and working environment
- Ensuring diversity and gender equality
- Increasing social involvement

The roadmap shows our contribution to the UN 17 Sustainable Development Goals, outlining our desired position in 2030 and the targets, goals and key actions that will get us there.

It is very important for cable system suppliers, component manufacturers and marine vessel operators, as providers of critical infrastructure, to take their responsibility to the planet seriously.

We have put in place 13 key actions to reduce our impact on the environment. Our main focus is high-resource efficiency and offering more sustainable products and services. Some practices include reducing goods transportation by optimizing pack sizes, coordinating product deliveries, improving forecasting and establishing local production.

We also alter our modes of goods transportation from air to shipping or train to move toward a zero-emissions vehicle fleet and introduce new climate-adapted materials and technologies. Generally, sustainability is a top focus for many businesses around the world, and not only in our industry. We take on a holistic approach to ensure sustainability and stay committed to 1.5oC science-based emissions-reducing targets.

Essentially, we believe that the more people who can access what the future has to offer, the better all our tomorrows will be. Our solutions aim to enable non-stop connectivity for communities worldwide, creating a lasting link to the future. TR

Fang Xiang, Vice President of Huawei Wireless Product Line

All Bands to 5G With Ultra-Wideband, Multi-Antenna Innovations

At the Mobile World Congress (MWC) Barcelona 2023, Telecom Review interviewed Fang Xiang, Vice President of Huawei Wireless Product Line, to learn about the latest developments and current trends in 5G networks, as well as innovations to build new network capabilities in a digital age.

Countries understand the importance of advancing 5G as a critical driver to chart industrial and economic growth. By the end of 2022, 243 commercial 5G networks had been deployed in 92 countries and regions from GSA report. Globally, terminal vendors and players have been actively launching entry-level 5G devices to embed 5G technology in all rungs of society. A total of 1,800 types 5G devices were released globally by the end of last year.

While this signals a healthy pace of 5G growth, Fang Xiang cited a changing digital environment and hence the need for 5G to evolve to deliver optimal value.

Diving right into the latest 5G developments and trends, Fang Xiang first shared that 5G services will become more inclusive and universal to benefit a wider group other than high-value customers. Secondly, newer applications, including voice over new radio (VoNR), the broadcasting of sports games, virtual reality (VR), augmented reality (AR) and cloud gaming, are rapidly emerging as

digital lifestyles and become deeply entrenched in society. These services must be supported by new network capabilities and network construction standards going forward. Thirdly, some operators are transitioning from 5G non-standalone (NSA) to 5G standalone architecture (SA) to support newer and more agile service applications.

To facilitate a smooth transition in network architecture, Fang Xiang noted that new requirements must be put in place.

To achieve greater ubiquitous connectivity, richer 5G digital applications and newer network architecture, all TDD and FDD bands should be used for 5G to support newer services and applications. "The evolution of all bands to 5G will help carriers optimize the value of each band, improve the spectral efficiency of 5G and grow network capabilities on downlink, uplink, latency and coverage," Fang Xiang said.

Challenges to Evolve All Bands to 5G

The industry must leverage and coordinate all bands to provide optimal 5G experiences. However, this is not without its challenges.

On the network side, as 5G upgrades, more new FDD and TDD bands are deployed. Given limited tower or antenna space, innovative products and solutions are needed to simplify engineering deployment as carriers plan for future network evolution. Carriers are also pressured to work toward greener, more energy-saving future networks to cater to a three- or fourfold capacity growth while maintaining the same levels of energy consumption.

They must be able to power newer digital applications, provide ubiquitous connectivity and match more SA architecture to yield a reliable and stable service quality, ubiquitous coverage, latency-guaranteed experience and deep-reaching indoor coverage. The network is required to coordinate all frequency bands to achieve better 5G experience. Additionally, carriers need to maximize spectrum value while reconstructing old 2G/3G devices and deploying devices for new applications. There is also a need to address the shortcomings of legacy 1T/2T network equipment.

Ultra-Wideband, Multi-Antenna Solutions

Legacy spectrum, such as the FDD, is fragmented, limited in bandwidth and operates on 1T/2T equipment. Carriers need to leverage all bands to 5G to maximize spectrum efficiency for newer applications.

In line with current industrial technological direction and demand, Huawei introduces several innovations to employ ultra-wideband and multi-antenna technologies to achieve all bands to 5G and deliver greater value for carriers.

Elaborating on these innovations, Fang Xiang introduced the ultra-wideband remote radio unit (RRU) with the ultra-wideband power amplifier to help carriers unleash the full potential of FDD spectrum and realize coordination of the fragmented FDD band.

To more effectively leverage FDD bands and maximize the value of limited spectrum resources, Huawei's multi-antenna technology breaks away from 1T1R/2T2R to 4T4R/8T8R/M-MIMO for even more channels, with Huawei's unique accurate calibration algorithm and to yield high-precision beamforming in order to enhance network capacity and coverage, as well as user experience.

As carriers seek out greener and more energy-saving solutions, Huawei's 5G equipment and hardware architecture focuses on high-efficiency components. Huawei's systematic three-layer green solution that covers sites, networks, and operations meets carrier's demand for "low power consumption during off-peak hours and high energy efficiency during busy hour" and green 5G goals.

Finally, the PIM (Passive Intermodulation) interference in the deployment of ultra-wideband, multi-antenna systems are both addressed by Huawei's leading PIMC (Passive Intermodulation cancellation) algorithms to eliminate interference. This innovation allows carriers to quickly and effectively deploy these ultra-wideband, multi-antenna solutions. Together, these innovations help carriers evolve all bands to 5G in order to achieve superior user experiences.

"We hope to work together with the partners in the industry to promote ultra-wideband, multi-antenna technologies to achieve breakthroughs in addressing carriers' needs. This adds value for carriers to realize the objective of all bands to 5G," Fang Xiang concluded. TR

The evolution of all bands to 5G will help carriers optimize the value of each band, improve the spectral efficiency of 5G and grow network capabilities on downlink, uplink, latency and coverage

China Mobile and ZTE Break Ground on Wireless Network Digital Twin

MBSB Bank has signed a Memorandum of Understanding (MOU) with CelcomDigi as part of its continuous digitalization journey to future-proof its banking operations and enrich customers' experiences. This maiden partnership between the Islamic bank and the country's largest telecommunications company will support MBSB Bank in continuing to serve its customers better and, at the same time, enhance its operational efficiency.

Under this partnership, MBSB Bank and CelcomDigi will explore opportunities in end-to-end smart banking solutions that include comprehensive services for cyber security, smart retail solutions financing and cloud infrastructure technology, among others. Additionally, both companies intend to collaborate on finding new commercial opportunities and joint go-to-market activities that will benefit their customers and employees.

"Partnering with CelcomDigi is certainly a key milestone, especially in an industry like ours, which has become increasingly competitive due to technological advances; hence, it is our hope that working strategically with a market leader can accelerate our progress in that space," said MBSB Bank's Datuk Nor Azam M. Taib.

"We plan to establish industrial IoT solutions as part of the business financing, focusing on green tech adoption, automation and quality assurance. We also intend to leverage on cloud technology in order to advance our digital capabilities, as this shall help to increase our competitiveness level."

CelcomDigi's Datuk Mohamad Idham Nawawi added, "We are excited to be MBSB Bank's trusted digital partner to support their digitalisation needs. We believe we have the right expertise and resources that will help advance MBSB Bank's digital capabilities, as the bank progresses in leveraging technology to bring enhanced products, services, and experiences for its customers. We look forward to unlocking more value from our synergies, as we innovate together while supporting the nation's digital agenda."

KDDI Partners With Oracle for Mobile Payment and Customer Loyalty Program

KDDI Corporation has chosen Oracle Database to modernize its online payment brand, au PAY, and customer loyalty program, au Ponta Points Program. By working with Oracle, au Pay payment processing is now five times faster than before, while the au Ponta Points Program's processing performance has improved by 200%. In addition, Oracle helps KDDI meet changing customer needs by enabling it to develop new services and applications 30% faster.

au PAY has approximately 31 million customers, while the au Ponta Points Program is one of Japan's most popular customer loyalty systems. Both au PAY and au Ponta Points Program continue to grow rapidly as Japanese consumers embrace mobile payments and a cashless lifestyle. To handle the increasing volume of data and transactions, KDDI urgently needed to update its system infrastructure.

"au PAY and au Ponta Points Program are indispensable services in our customers' daily lives, especially when digital money becomes a form of compensation starting in April 2023. Since these services must be available 24/7, we decided to redesign and build the IT architecture from the infrastructure up," said Nobuaki Kamada, general manager, DX Architect Department, Information System Division, Technology Sector, KDDI Corporation. "KDDI selected Oracle Database for its proven reliability, scalability, and security, and to form the foundation of our infrastructure. In addition, Oracle Database provides a data platform for our Java application development resources and allows us to reduce application release times by more than half without any downtime. Now we are able to quickly develop and deliver services that meet the ever-changing needs of our customers."

To further modernize the system infrastructure for au PAY and au Ponta Points Program, KDDI also deployed Oracle Real Application Clusters and Oracle Data Guard to achieve high performance and high availability. In addition, Oracle GoldenGate, which enables smooth data migration and synchronization and supports third-party databases, was used to ensure no downtime during the migration. The full migration was completed within a year, enabling KDDI to release and update new services through the upgraded platforms in a short period of time without any disruption.

Telekom Malaysia Extends Its Fiber Broadband Coverage

Telekom Malaysia completed a new fiber optic hub spanning the northern regions of Sabah and Sarawak in an effort to better connect the remote sites located there. Telekom Malaysia said in a statement that by building the hub or point of presence (PoP), subscribers will be less dependent on mobile internet and will enjoy faster services.

As part of the government's Twelfth Malaysia Plan, a development blueprint to improve the lives of Malaysian citizens, Telekom Malaysia is building broadband centers. The government is committed to having 4,370 PoPs established by 2025, with 4,323 PoPs built close to rural schools and 47 installed close to industrial areas.

Telekom Malaysia has been tasked with establishing 174 locations in Malaysia's central area as part of its phase-two PoP development project with the government.

According to Shazurawati Abdul Karim, executive vice president of Telekom Malaysia's B2B arm, TM One, the stronger connection will lead to better economic development and the creation of new infrastructures, such as those for 5G.

Shazurawati stated, "The presence of PoP can attract technology companies, start-ups and other businesses that require a high-speed internet connection to operate. This can create more job opportunities, increase innovation, and stimulate economic growth in local communities."

Converge and KT Partner to Support Philippines' Digital Transformation

Leading Philippine fiber internet provider Converge ICT Solutions Inc. and South Korea's KT Corporation, formerly Korea Telecom, have agreed to pursue a potential business collaboration and partnership that will support the digital transformation of local businesses by providing innovative enterprise technologies.

Uy said that this potential partnership further manifests the mission of Converge to provide world-class services that will empower Filipinos and businesses for the development of the country.

"As businesses continue to move their operations online, the demand is strong for cutting-edge enterprise solutions that would enable their different business processes. This potential partnership with KT will allow us to co-innovate and deliver advanced technologies suited for the needs of Philippine businesses, especially small and medium enterprises (SMEs)," she added.

Both companies also plan to jointly pursue digital transformation solutions in the country, including a cloud-based video surveillance solution called Video Surveillance as a Service (VSaaS) and a transportation management technology called Mobility as a Service (MaaS), among others.

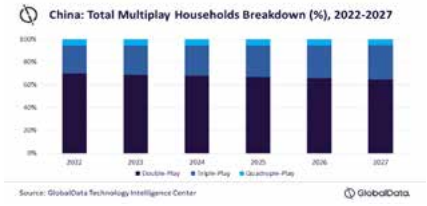
Converge CEO and Co-Founder Dennis Anthony Uy, who was present during the signing ceremony, said the potential partnership will enable both companies to leverage each other's expertise in information and communication technology for the delivery and development of enterprise-grade solutions.

"We are continuously working with global technology companies to provide augmented digital solutions that adapt to the requirements of our evolving business environment. We will continue to co-innovate with our partners as we strive to empower our local industries and help them unlock better opportunities and growth," Uy noted.

KT CEO Ku Hyeongmo, who also witnessed the MOU signing, said they are delighted to work with Converge as they seek to open more opportunities in the Philippines and contribute to the delivery of world-class innovations to local companies.

"We are thrilled to pursue this strategic partnership with Converge for the delivery of our leading-edge technology solutions to Filipino enterprises. We are one with Converge in championing digital democracy to improve the lives of their customers, and we hope that through this venture, we could contribute further to the advancement of other industries in the Philippines," said Ku.

China Multiplay Service Revenue Set to Increase Through 2027



The constant rise in the number of multiplay households in China and the growth in average monthly multiplay household spending are expected to drive the increase in multiplay service revenue in the country at a compound annual growth rate (CAGR) of 1.9% through 2027. The revenue is forecasted to reach $1.9 billion by the end of the forecast period, according to GlobalData, a leading data and analytics company.

GlobalData's China Multiplay Forecast Model (October 2022) reveals that the average monthly household spend on multiplay service bundles will increase from $33.4 in 2022 to $33.8 in 2027, primarily driven by the increasing adoption of higher-value triple play and quad play service bundles.

Well-established fixed network infrastructure and relatively high fixed broadband household penetration in the country that allow telcos to promote a wide range of multiplay service bundles built around high-speed internet service are expected to power the growth in the market.

As operators package additional benefits such as unlimited Internet and access to video-on-demand platforms to enhance their bundled service offerings, the average monthly household spend on multiplay service bundles is also expected to increase, thereby driving overall revenue growth.

Sarwat Zeeshan, telecom analyst at GlobalData, noted: "While double-play services will account for the majority of multiplay households in China during the forecast period, its share of the total will decline from 64% in 2022 to 60% in 2027. On the other hand, triple play and quad play services' share of total multiplay households will grow through 2027.

Quad-play adoption will stand to gain over the forecast period owing to growth in fixed-mobile convergence household penetration, which will increase significantly from 13% in 2022 to 34% in 2027.

All major operators in the country, including China Mobile, China Telecom, and China Unicom, are leveraging their widespread, high-speed fiber-to-the-home (FTTH) networks to accelerate multiplay service adoption and increase revenue-generating units (RGUs).

Global PC Shipments Decline in Q1 2023, With Apple Hit Hardest

Weak demand, excess inventory and a worsening macroeconomic climate were all contributing factors in the precipitous drop in shipments of traditional PCs during the first quarter of 2023 (1Q23). Global shipments numbered 56.9 million, marking a contraction of 29.0% compared to the same quarter in 2022, according to preliminary results from the International Data Corporation (IDC) Worldwide Quarterly Personal Computing Device Tracker.

The preliminary results also represented a coda to the era of COVID-driven demand and at least a temporary return to pre-COVID patterns. Shipment volume in 1Q23 was noticeably lower than the 59.2 million units shipped in 1Q19 and 60.6 million in 1Q18.

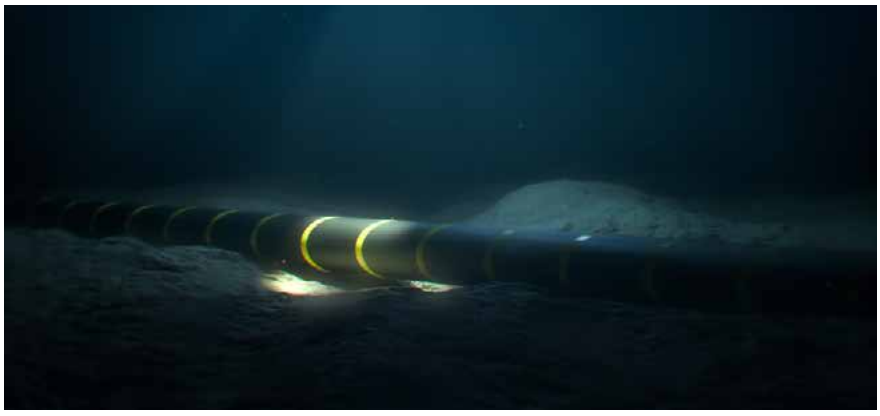
Apple took the largest hit, declining by 40.5% year-on-year, whereas other brands such as Lenovo, HP, Dell and ASUS declined by 30.3%, 24.2%, 31.0% and 30.3%, respectively.

"Though channel inventory has depleted in the last few months, it's still well above the healthy four- to six-week range," said Jitesh Ubrani, research manager for IDC's Mobility and Consumer Device Trackers. "Even with heavy discounting, channels and PC makers can expect elevated inventory to persist into the middle of the year and potentially into the third quarter."

The pause in growth and demand is also giving the supply chain some room to make changes as many factories begin to explore production options outside China. Meanwhile, PC makers are also rejigging their plans for the remainder of the year and have begun to pull in orders for Chromebooks due to an expected increase in licensing costs later this year. That said, PC shipments will likely suffer in the near term, with a return to growth towards the end of the year with an expected improvement in the global economy and as the installed base begins to think about upgrading to Windows 11.

"By 2024, an aging installed base will start coming up for refresh," said Linn Huang, research vice president, Devices and Displays at IDC. "If the economy is trending upwards by then, we expect significant market upside as consumers look to refresh, schools seek to replace worn-down Chromebooks, and businesses move to Windows 11. If recession in key markets drags on into next year, recovery could be a slog."

China Rivals US by Building $500 Million Subsea Internet Cable



State-owned telecom firms in China are developing a $500 million undersea fiber-optic internet cable network to compete with a similar US-backed project, according to four people involved in the deal. The proposed EMA (Europe-Middle East-Asia) cable would connect Hong Kong to China's island province of Hainan and connect to Singapore, Pakistan, Saudi Arabia, Egypt and France.

According to the four sources, China Mobile, China Telecom and China Unicom are planning one of the world's most advanced and far-reaching subsea cable networks in a bid to rival the US in their ongoing tech war. The EMA cable is a direct competitor to the SeaMeWe-6 cable under construction by US firm SubCom, which connects a similar route.

The cable, which will cost $500 million to complete, will be manufactured and laid by the Chinese cable firm, HMN Technologies. Sources familiar with the development revealed that the firm will receive subsidies from the Chinese government to build the subsea cable. Chinese telecom firms are expected to own more than half of the new network, with foreign partners being courted to take ownership of the remaining network.

Contracts for the EMA cable project are expected to be finalized by the end of the year, with the cable going online by the end of 2025.

SoftwareOne Hong Kong Partners With Console Connect for Improved Cloud Connectivity in Asia Pacific

SoftwareOne Hong Kong Limited has joined Console Connect's PartnerConnect program, an industry-leading worldwide Network-as-a-Service (NaaS) platform. This will allow SoftwareOne customers in the Asia Pacific region to have better access to cloud services globally.

Console Connect gives SoftwareOne's customers in the Asia Pacific a more flexible, safe and effective way to connect to major cloud providers around the globe as digital transformation and cloud adoption accelerate globally.

SoftwareOne will inform its clients about the advantages of network automation through Console Connect's PartnerConnect program, empowering them to manage their connectivity to clouds and essential digital infrastructure in real-time and on-demand. SoftwareOne users may connect to clouds with a single click by utilizing the worldwide Console Connect NaaS platform, which offers higher levels of speed, security, and performance for workloads and applications that are mission-critical.

All of the largest cloud platforms in the world, including AWS, Google Cloud, Microsoft Azure, Oracle Cloud, IBM Cloud, Alibaba Cloud and more, are directly and instantly accessible with Console Connect. In addition to helping SoftwareOne customers with their digital transformation journey, this improved cloud connectivity offering will further establish SoftwareOne as a one-stop solution provider.

Michael Glynn, SVP of digital automated innovation at Console Connect, expressed that his company is excited to start the collaboration with SoftwareOne to help more local businesses in Asia Pacific access the Console Connect Naas platform and turbocharge their journey to the cloud. He stated, "Cloud connectivity is an important consideration for today's businesses, and Console Connect makes it easier for them to setup and manage direct cloud connect services with leading hyperscale cloud providers."

According to Patrick Lam, general manager of SoftwareOne Hong Kong, the move to the cloud presents new connectivity challenges for businesses. He explained further that Console Connect provides a more flexible and faster way for customers to directly connect with cloud providers worldwide using a familiar cloud-like consumption-based model. "We look forward to growing our collaboration with Console Connect," Patrick Lam concluded.

ZTE Launches G5 Series Servers in Thailand

ZTE Corporation, a global leading provider of information and communication technology solutions, has launched its G5 series servers in Thailand, marking the first time that ZTE has released its servers outside of China.

The successful launch was attended by leading industry players, including AIS, Thailand's leading smart digital network provider; renowned consulting firm IDC; Intel, a partner in the server industry chain; and consumers from various sectors.

During the launch, ZTE unveiled some innovative features of its servers, such as high efficiency, intelligence, security and reliability, through various use cases and demonstrations.

ZTE said that the significant shift in the ICT industry in the Asia-Pacific region, driven by the development of new technologies and industries including, 5G, cloud computing, big data, AI and VR/AR, is powering a surge in demand for server procurement.

ZTE has released five types of servers at the conference, including the 5200 G5 high-density server, the R5300 G5 full-scenario universal server, the R5500 G5 mass storage server, the R6500 G5 heterogeneous computing power server and the R8500 G5 high-performance server.

The new G5 series servers boast ultimate performance for powerful computing power with the use of the latest Intel® Xeon® fourth-generation scalable processors with built-in acceleration engines. These servers provide powerful computing power and high memory bandwidth with a design that includes 32x DDR5 memory slots with a rate of up to 4,800 MT/s. The bandwidth performance has been boosted by 50%, and they support Intel® Optane™ persistent memory 300 series (Crow Pass). Additionally, the new PCIe 5.0 improves bandwidth by 150% and provides powerful hardware acceleration capabilities.

ZTE commits to collaborating further with upstream and downstream partners to build a solid computing foundation, accelerate the digital transformation of industries and enable more countries and regions to benefit from the digital economy.

SLT-MOBITEL Expands Partnership With Netcracker for Converged Revenue Management

SLT-MOBITEL, the national ICT solutions provider of Sri Lanka and a partner to Netcracker for nearly two decades, will implement Netcracker Digital BSS and Professional Services to consolidate its billing system for upgraded fixed, mobile and online charging capabilities. Netcracker's solution will help SLT-MOBITEL unify its brands and consolidate its IT infrastructure as the company continues its growth trajectory. SLT-MOBITEL will deploy several components of Netcracker Digital BSS, including revenue management and online charging systems, to create a unified billing platform across all of its brands for real-time charging and billing solutions for customers. The BSS upgrades will enable the reuse of existing functional components for reduced time to market, a 360-degree view for enhanced customer experience and the foundation for future fixed-mobile convergence (FMC) to provide superior products. SLT-MOBITEL will also leverage Netcracker Professional Services for E2E implementation and post-production support.

"We chose Netcracker to help us maintain a uniform and exceptional customer experience across all of our brands as we continue to expand," said Lalith Seneviratne, Group CEO of SLT-MOBITEL. "Netcracker's revenue management offerings have consistently delivered excellent results, so we are confident in its ability to upgrade our billing and support our future growth."

"We are proud to continue our strategic partnership with a customer who has always prioritized technological innovation and its customers," said Rohit Aggarwal, SVP and GM at Netcracker. "Creating a unified platform will streamline SLT-MOBITEL's billing and improve customer experience while setting the stage for future capabilities and an even wider variety of advanced products and services."

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Nokia to Advance DOCOMO's Nationwide Network 5G Services

Nokia will enhance NTT DOCOMO's (DOCOMO) nationwide IP core backbone and enable transport network slicing as it rolls out new 5G mobile services. The enhancement will allow granular SLAs, network scale, capacity and agility, along with increased power and resource efficiency.

DOCOMO deployed Nokia's 7750 SR-14s core routers, powered by its ground-breaking FP routing silicon. FP5 line cards provide future-ready 800GE capability, increase capacity by more than three times with a 75% power savings over previous generations, and simplify network evolution with concurrent line rate FP4 and FP5 line card operation in the same system. This will extend the life and sustainability of the systems as DOCOMO's customer bandwidth needs increase in the future.

To deliver the network slicing for its mobile services, DOCOMO will leverage the comprehensive segment routing capabilities of Nokia's proven Service Router Operating System (SR OS) for traffic engineered network slices for the granular SLAs required by DOCOMO's customers.

Nokia's NSP complements DOCOMO's segment routing solution with a Path Computation Engine (PCE) that leverages real-time telemetry to automatically optimize the IP network and improve SLA adherence. NSP will also enable DOCOMO to automate the creation, assurance, and optimization of IETF standards-based network slices in the transport domain.

Fumitaka Murayama, general manager, Core Network Engineering Department, NTT DOCOMO, Inc., said, "DOCOMO is committed to implementing slicing in 5G networks to provide networks that can respond flexibly and quickly to the diverse needs of our customers. In the transport network, a key component of this, it was essential to leverage Nokia's IP core solutions for its high performance, functionality, flexibility and quality in meeting performance and slicing requirements. In collaboration with Nokia, DOCOMO hopes to create new value for our customers and help solve social issues through new technologies such as network slicing."

John Lancaster-Lennox, head of Market Unit Japan at Nokia, said, "We're pleased to provide our next generation IP transport solution to DOCOMO. Nokia's 7750 SR-s platform and NSP solution will enable DOCOMO to balance network scale, capacity and sustainability that can evolve with its changing needs for years to come."

Optus Partners With Retravision to Expand Distribution in Western Australia

Australian telco, Optus, has partnered with leading retailer Retravision to expand its distribution partner network across Western Australia, including its reach into regional WA communities.

This partnership aims to give more local communities and businesses across Western Australia access to Optus' telecommunications services by making them available in Retravision stores for the first time.

Retravision's Managing Director, David Dorsett-Lynn, believes that customers will benefit from Optus products being available to support their technology requirements in one convenient location.

"Connectivity is essential for all Western Australians. With many Retravision stores already supporting people with their technology needs, we saw a fantastic opportunity to support them further by including a range of Optus prepaid products in Retravision stores across the state," said Dorsett-Lynn.

Meanwhile, Optus Territory General Manager WA, Paul O'Neill, said this is an important partnership for Optus, "Our partnership with Retravision is an important part of our commitment to giving people across Western Australia, in particular Regional communities, a choice when it comes to deciding on a network provider. With continued investment into our network and infrastructure in Regional WA, it's important that these communities have access to the range of products and services Optus offers, now made available in select Retravision stores.

"Both Optus and Retravision shared an aligned values, passion and service to our customers. The long-term commitment from both sides is a representation of our ongoing dedication to Western Australia, and we thank Retravision for their support and look forward to a successful partnership with even greater growth ahead of us," added Mr. O'Neill.

The partnership has made Optus products and offerings available in five Retravision stores in Western Australia since late March 2023 and will further expand to 14 sites across the state in the coming months.

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China Mobile, ZTE and Qualcomm Technologies Complete Industry First

ZTE, in partnership with China Mobile and Qualcomm Technologies, Inc., has successfully completed 5G Sub-band Full-Duplex (SBFD) verification and compatibility testing in the Xi'an Joint Innovation Lab, achieving the industry's first sub-band full-duplex gNB with higher uplink throughput over 1.47Gbps and lower end-to-end latency of 3.9ms simultaneously in TDD band with 100MHz system bandwidth.

This flexible frame structure was verified with a Snapdragon® X65 Modem-RF System-based reference device. As ZTE continues delivering enhanced mobile broadband experiences and extending 5G reach into new use cases, the company is seeing major breakthroughs in 5G technology, allowing for higher flexibility and efficiency on limited radio spectrums within a conventional TDD band.

Sub-band full-duplex (SBFD) is a promising enhancement as it allows gNB to perform simultaneous transmission and reception at the same time but in different non-overlapping sub-bands. 5G Advanced SBFD is a key milestone towards full-duplex evolution. Thanks to SBFD, gNB allows flexible UL/DL resource allocation and adaptation based on UL/DL traffic. Further, it will help reduce latency while improving UL coverage and system throughput.

ZTE has launched the industry's first SBFD RRU (Remote Radio Unit) with enhanced transceiver architecture by integrating multiple self-interference cancellation schemes like spatial isolation, analog sub-band filter and digital interference cancellation. The self-interference could be mitigated over 130 dB which enables optimal reception performance of the uplink signal at the gNB receiver. In addition, ZTE's SBFD solution adopts a "Flexible" slot in frame structure configuration and uses UE-level radio resource scheduling mechanisms to be compatible with legacy UEs.

Console Connect Unveils World's First Private Connectivity Solution

Console Connect has launched the world's first private connectivity solution at Mobile World Congress. This new technology aims to help businesses dynamically and securely route traffic directly between devices and clouds globally without traversing the public internet.

With IoT devices and traffic becoming increasingly vulnerable to network attacks, Edge SIM addresses the enterprise need for secure access between devices and clouds on a global scale, ensuring mobile traffic is not exposed to the public internet.

Businesses can use Edge SIM and the Console Connect NaaS platform to create their own private virtual "mesh" network between devices, clouds, applications, office locations, data centers and other network endpoints.

Using the Console Connect management portal or engaging via its API, businesses can click and connect edge locations in real-time, removing the complexity of network configuration and management and thus making it simple to scale IoT projects globally.

With coverage across over 180 countries worldwide, Edge SIM supports multinational organizations that need to securely transfer large volumes of data between their connected devices and the cloud while providing greater visibility, security and control over their global IoT assets.

The solution also caters to IoT applications that transfer business-sensitive data between multiple regions involving asset management, logistics, payment networks and more.

"Critical IoT projects are expanding globally. The network automation available through Edge SIM gives businesses cloud-based agility and control over their connected devices worldwide with speed and security. This is a game changer for how businesses orchestrate private connectivity for their IoT projects," said Marc Halbfinger of Console Connect.

Edge SIM connects devices directly to any of the world's largest cloud platforms, including AWS, Google Cloud, Microsoft Azure, Oracle Cloud, IBM Cloud, Alibaba Cloud and more.

It offers a simple pricing model that combines usage-based mobile connectivity with bandwidth-based cloud connectivity. Payment can be managed via the Console Connect platform, with contracts for as little as 30 days.

With the addition of a Console Connect Access Port, businesses can also dynamically link their enterprise locations and network environments, including data centers, Wide Area Networks (WAN) and last-mile access.

BlueJeans by Verizon Produces Interactive, Production-Grade Virtual Events and Live Streams

Zach Bosin, VP of product & growth marketing, BlueJeans by Verizon

In an exclusive interview with Zach Bosin, VP of product & growth marketing, BlueJeans by Verizon, he shared how the platform combines high-quality audio featuring Dolby Voice (R), HD video and web-conferencing capabilities for cloud-based meetings or significant interactive events, making it a perfect fit for partners like Telecom Review Group in catering to webinars and virtual events business.

Can you describe BlueJeans and its core services? And how do you ensure the security and privacy of users during video conferences?

BlueJeans by Verizon is a video engagement platform that fuses video and mobility to create a more flexible, inclusive workplace, helping enterprises work smarter, more collaboratively and more efficiently. When combined with Verizon's network and mobile connectivity, BlueJeans provides users with secure and reliable video conferencing and eliminates latency and network errors.

How does BlueJeans by Verizon differ from other video conferencing solutions on the market?

BlueJeans by Verizon provides a unique meeting experience for its users with unparalleled features, including:

- Dolby Voice Audio, a breakthrough in audio for online meetings, elevates the meeting experience by allowing attendees to hear clearly and communicate naturally, regardless of location in high-definition (HD) sound.
- Enterprise Grade Security that prevents unwanted participants from joining meetings and protects end-user privacy with default security settings enabled. Meeting organizers can lock meetings at any time and expel unwanted participants.
- A powerful, fully featured Mobile App for iOS and Android with crystal-clear audio, intelligent bandwidth management, dynamic screen-sharing, safe driving mode, mobile room controller, town hall and webinar support, and flexible join options.
- A premium desktop experience through the BlueJeans Desktop App 2.0 that allows you to join meetings faster, offers a more intuitive user interface and provides an immersive audio and video experience.
- Improved productivity with Smart Meetings, an intelligent meeting management software that allows users to capture important meeting discussion points, assign action items and catch up with timesaving highlight reels.
- BlueJeans' event platform is able to host up to 150,000 interactive event participants. Within the platform, a new production tool, BlueJeans Studio, allows event organizers to customize live streams to better engage their audience.

Can you discuss any recent updates or improvements that BlueJeans by Verizon has made to its platform?

BlueJeans Events empowers organizations to produce interactive,

production-grade virtual events and live streams.

We have recently introduced BlueJeans Studio, an all-in-one event production suite, to our Events platform. Studio allows users to create stunning live streams by adding logos, backgrounds and colors; engage audience members with real-time chat, Q&A and polls; and expand their reach to Facebook Live, YouTube Live and other streaming platforms simultaneously.

BlueJeans Gateway, a Microsoft-certified cloud video interop solution, is the easiest way to bring the power of Teams video meetings into conference rooms and huddle spaces to create intelligent workspaces. BlueJeans' pure SaaS (Software as a Service) solution works in conjunction with thousands of room system configurations, including Cisco, Poly and Lifesize.

BlueJeans' Corporate Learning & Training platform facilitates immersive, engaging, and inclusive meetings, with features like Weather Person Mode, Collab Board, multi-language, and closed captioning.

How does BlueJeans address common video conferencing issues, such as connectivity problems or audio/video quality issues?
To limit connectivity problems or audio/video quality issues, video platforms depend on low-latency networks and plenty of bandwidth. Verizon's 5G network enables both of those by computing to the edge of the network, where the application is, to reduce the response times needed. This allows for higher levels of video quality.

Can you discuss any integrations or partnerships that BlueJeans has with other software or platforms?
Most recently, BlueJeans announced a partnership with Sparq Live Limited to deliver professional-grade hybrid and virtual event experiences. Through this collaboration, enterprises seeking to create and execute exceptional on-brand events that immerse and engage audiences will have a one-stop shop for their events produced and streamed at scale with BlueJeans Events and Studio.

Last year, BlueJeans partnered with Google to equip the Glass Enterprise Edition 2 with BlueJeans Meetings. This collaboration allows workers to stream "point-of-view" video so remote coworkers can observe and troubleshoot in real-time, boosting productivity and collaboration for these businesses, which then improves their quality of work. TR

> BlueJeans by Verizon provides a unique meeting experience for its users with unparalleled features

Australia's Cyber Threatscape and Its Efforts to Counter Growing Risks

Amid a growing multi-sector cyber-threat landscape, the Australian government aims to make industries more resilient. Recently, the government has announced counteractive drills with large organizations, especially in industries including telecommunications, banking and electricity, to help them better address the increased security threats.

According to research by the security platform Flashpoint, Australia experienced a marked increase in the total number of breaches reported in 2022 compared to the preceding years. Of these, data breaches were most rampant in public administration, telecommunications, information and education, as well as finance and insurance. The research revealed that threat actors focused mainly on obtaining email addresses and account credentials in order to hold them ransom or sell them illegally.

Poor cybersecurity practices are a key contributing factor to these breaches.

Notably, a common problem in the public sector was the use of employees' personal emails on government systems to subscribe to services unrelated to work.

Accounting for 72% of Australia's 50 million stolen credentials, the media and telecommunications industry was found to be too relaxed with its security practices. This susceptibility is compounded by remote working, which makes shared information even more vulnerable to threat actors.

For the period from July 2021 to June 2022, the Australian Cyber Security Centre (ACSC) reported over 76,000 cybercrimes, representing a 13% increase from the previous financial year. The government agency for cybersecurity noted an "increase in the number and sophistication of cyber threats, making crimes like extortion, espionage and fraud easier to replicate at a greater scale."

The ACSC reported a total of 95 cyber incidents on critical infrastructure, with multiple attacks on its essential services thwarted, including an attack on government-owned CS Energy, responsible for some of the country's electricity output. Ransomware and software vulnerabilities have been major contributing factors to these incidents.

Last October, Optus suffered a cyberattack that potentially compromised up to 40% of Australians' personal information. A threat actor later demanded a $1 million ransom and released about 10,000 records to coerce Optus to comply with its demand. Similarly, about 30,000 current and former employees' data was breached at Telstra. In December, TPG Telecom similarly fell victim to a cyberattack that compromised up to 15,000 corporate customers' emails.

In other sectors, the Indonesian unit of the Commonwealth Bank of Australia was also subject to a cyber threat, and health insurer Medibank experienced a breach that compromised 9.7 million current and former customers' data.

Many industry experts attribute growing cyber breaches to a lack of skilled employees to effectively safeguard organizations in the cybersecurity industry. As a result, cybercrime increased by an average of 14%, with the average cybercrime costing small businesses approximately AUD$39,000 and medium businesses approximately AUD$88,000.

Australia Not Alone in This Plight

As countries embrace a digital-first economic landscape, more are inevitably falling prey to heightened cybercrimes. According to AustCyber, the Australian cyber market accounts for A$2.4 billion of the country's GDP. The country is also ranked as the fifth-most powerful cybernation in the world. Clearly, Australia is a country that prioritizes cybersecurity. But the threats are real, and Australia is not alone in falling prey to increased cybercrime.

Research group Tenableut has noted that out of the 1,335 publicly disclosed data breaches that took place worldwide between November 2021 and October 2022, 68% took place in the Asia Pacific, making the region most exposed to cyber threats compared to regions including North America, the Middle East, Europe and Africa. The latter group collectively accounted for just 31% of all records compromised.

These figures are a wake-up call for greater vigilance as the digital environment becomes more precarious. Australia is proactively raising its stance on cybersecurity and cyber investments. Among its many initiatives, the government has legislated cybersecurity obligations for businesses across 11 sectors deemed critical infrastructure — namely electricity, communications, data storage or processing, financial services and markets, water, healthcare and medical, higher education and research, food and grocery, transport, space technology and the defense industry — for businesses or entities to develop a comprehensive risk management program that effectively counters cyber threats.

R&D tax incentive programs have also been rolled out, aimed at advancing cyber innovation in the country. Additionally, state-based incentives provide payroll tax relief and subsidies for cybersecurity employees to ensure that organizations place adequate emphasis on cybersecurity.

As the modern digital environment continues to evolve, governments and organizations cannot afford to rest on their laurels and must instead be committed to safeguarding assets, data and infrastructure at all costs. TR

> Data breaches were most rampant in public administration, telecommunications, information and education, as well as finance and insurance

A Closer Look at 5G Fixed Wireless Access

In today's hyper-connected world, access to high-speed internet has become a necessity for individuals and businesses alike. With the advent of 5G technology, the promise of ultra-fast speeds, low latency and seamless connectivity is becoming a reality. Among the various use cases of 5G, Fixed Wireless Access (FWA) is gaining significant traction, offering an alternative to traditional wired broadband for providing high-speed internet access.

Cost-Effective and Efficient Solution

The global 5G FWA market is projected to experience robust growth in the coming years, with a Compound Annual Growth Rate (CAGR) of over 40% from 2020 to 2029, according to a recent analysis report by a leading market research firm. This growth is driven by the increasing demand for high-speed internet access, particularly in underserved areas where wired broadband infrastructure is limited or unavailable. Deploying 5G FWA networks enables telecom operators to provide last-mile connectivity without the need for physical infrastructure, making it a cost-effective and efficient solution.

Several key trends are shaping the 5G FWA market. One significant trend is the deployment of 5G FWA in rural and remote areas to bridge the digital divide and provide internet access to unserved and underserved communities. Governments and telecom operators in various regions are investing in 5G FWA networks to extend broadband coverage to rural areas, enabling economic development, education, healthcare and an improved quality of life for local communities.

Another trend is the integration of 5G FWA with other technologies, such as the Internet of Things (IoT) and Artificial Intelligence (AI). The low latency and high-speed connectivity of 5G FWA make it ideal for supporting IoT applications, such as smart agriculture, smart cities and industrial automation. Moreover, the convergence of 5G FWA with AI technologies enables advanced analytics, automation and autonomous decision-making, unlocking new possibilities for industries such as manufacturing, logistics and transportation.

Segmentation and Market Dominance

The 5G FWA market is segmented based on factors such as geography, application and end-users. North America is expected to dominate the 5G FWA market during the forecast period due to its mature telecommunications infrastructure, widespread adoption of 5G technology, presence of major technology players and telecom operators, favorable government initiatives and an increasing demand for high-speed internet access.

In terms of application, the residential segment is expected to hold a significant share of the 5G FWA market, driven by the increasing demand for high-speed internet access for home broadband, smart homes and entertainment applications. The enterprise segment is also expected to witness significant growth, fueled by the adoption of 5G FWA for enterprise connectivity, including remote offices, industrial automation and cloud-based services.

End users in both the consumer and business segments are expected to contribute to the growth of the 5G FWA market. Regarding consumers, the rising demand for high-speed internet access for online gaming, video streaming and smart home applications is driving the adoption of 5G FWA as a reliable and fast internet option. In the business segment, various industries such as manufacturing, logistics, transportation and healthcare are adopting 5G FWA for their connectivity needs, enabling advanced applications and improving operational efficiency.

A Promising Future for This Technology

As the evolution of 5G technology progresses, the potential for 5G FWA to revolutionize connectivity is vast. Its ability to provide high-speed internet access in rural and remote areas while supporting advanced applications and enabling seamless connectivity for consumers and businesses can help bridge the digital divide and drive economic development.

However, challenges need to be addressed, including the availability of the 5G spectrum, robust infrastructure requirements and regulatory considerations. Still, the competitive landscape of the 5G FWA market is rapidly changing. Various technology players, telecom operators and start-ups are entering the arena, leading to heightened competition and innovation.

As the demand for high-speed internet access increases, particularly in underserved regions, 5G FWA is expected to play a crucial role in closing the connectivity gap and enabling advanced applications in diverse industries. With continued advancements in 5G technology and infrastructure, the 5G FWA market is projected to grow substantially. And this is sure to shape the future of global connectivity. TR

“The enterprise segment is also expected to witness significant growth, fueled by the adoption of 5G FWA for enterprise connectivity, including remote offices, industrial automation and cloud-based services”

Asia Tech x Singapore

Asia Tech x SG 2023 is the premier tech conference in the Asia-Pacific region, bringing together industry leaders, innovators, and startups from across the technology landscape, with a focus on emerging trends such as AI, blockchain, and fintech.

Place: Singapore EXPO, Singapore

07 - 09 JUNE

Vietnam ICTCOMM

Vietnam ICTCOMM is an annual exhibition and conference showcasing the latest technology and trends in the telecommunications and information technology industry.

Place: Saigon Exhibition and Convention Center, Ho Chi Minh City, Vietnam

08 - 10 JUNE

MWC Shanghai

MWC Shanghai is Asia's leading event for the mobile and technology industry. With a focus on innovation and cutting-edge technology, it brings together industry leaders, experts, and innovators to share insights and ideas.

Place: Shanghai New International Expo Centre, Shanghai, China

28 - 30 JUNE

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Submarine Networks

Submarine Networks features the world's leading annual submarine communications gathering to exchange knowledge, explore the latest projects, develop strategies and form lucrative new partnerships to drive the industry forward.

Place: Suntec Convention Centre, Singapore

27 - 28 SEPTEMBER

Cloud Expo Asia

Cloud Expo Asia is the leading cloud technology event in the region that connects technologists and business leaders to explore the latest cloud innovations, solutions, and trends.

Place: Marina Bay Sands, Singapore

11 - 12 OCTOBER

GITEX Global

Gitex is an annual technology exhibition and conference showcasing the latest innovations and trends in the tech industry.

Place: Dubai World Trade Center, Dubai, UAE

16 - 20 OCTOBER

Telecom Review Leaders' Summit 2023

The 17th edition of the leading ICT gathering will convene industry leaders and partners, held in a hybrid format to tackle the latest industry trends.

Place: Great Ballroom at Le Meridien Dubai Hotel & Conference Centre

06 - 07 DECEMBER

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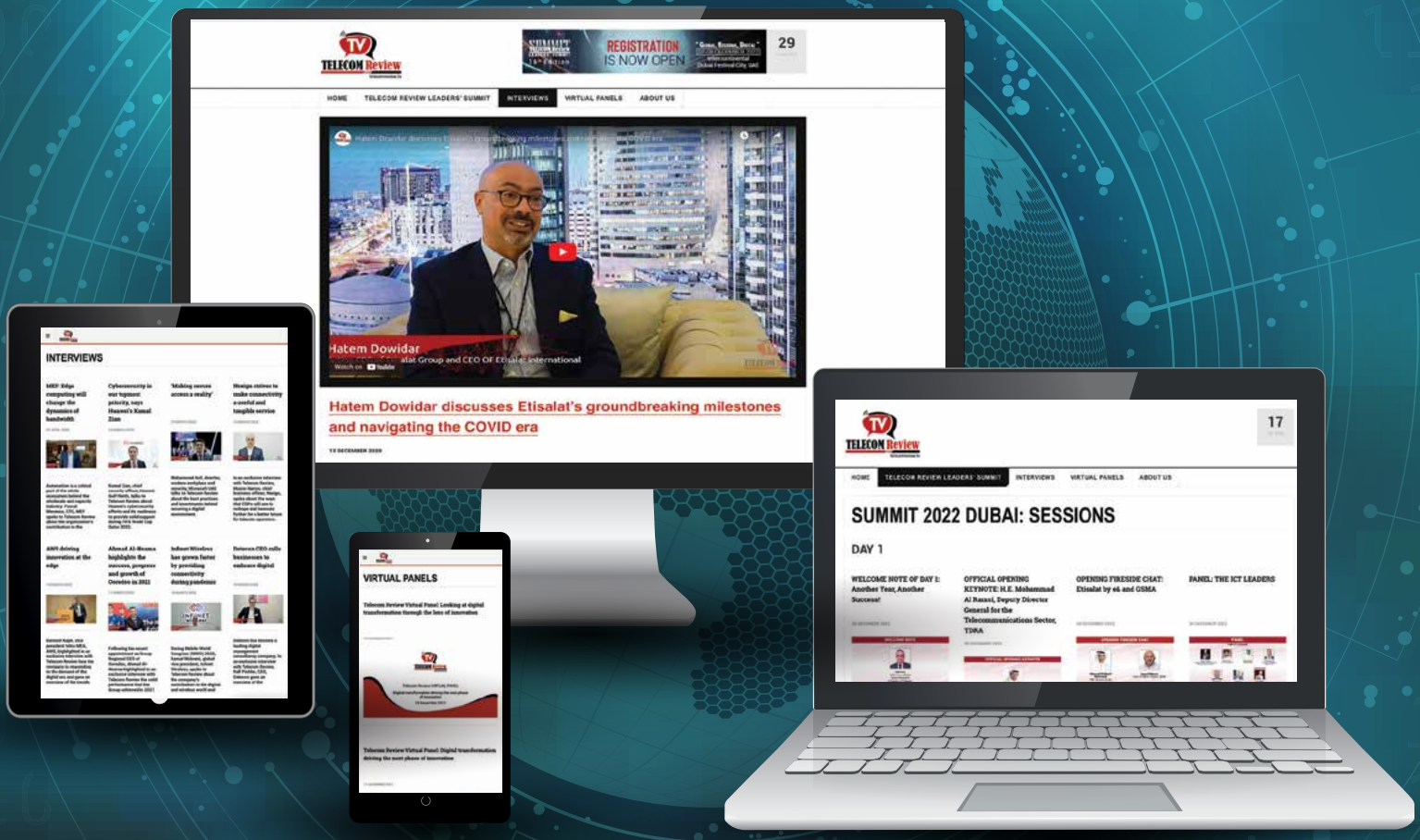

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