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*The latest in Telecom, ICT and SatCom sectors of the Middle East, Asia and Africa*

# **stc Group** contributes to KSA GDP through its **1 Billion USD** investment

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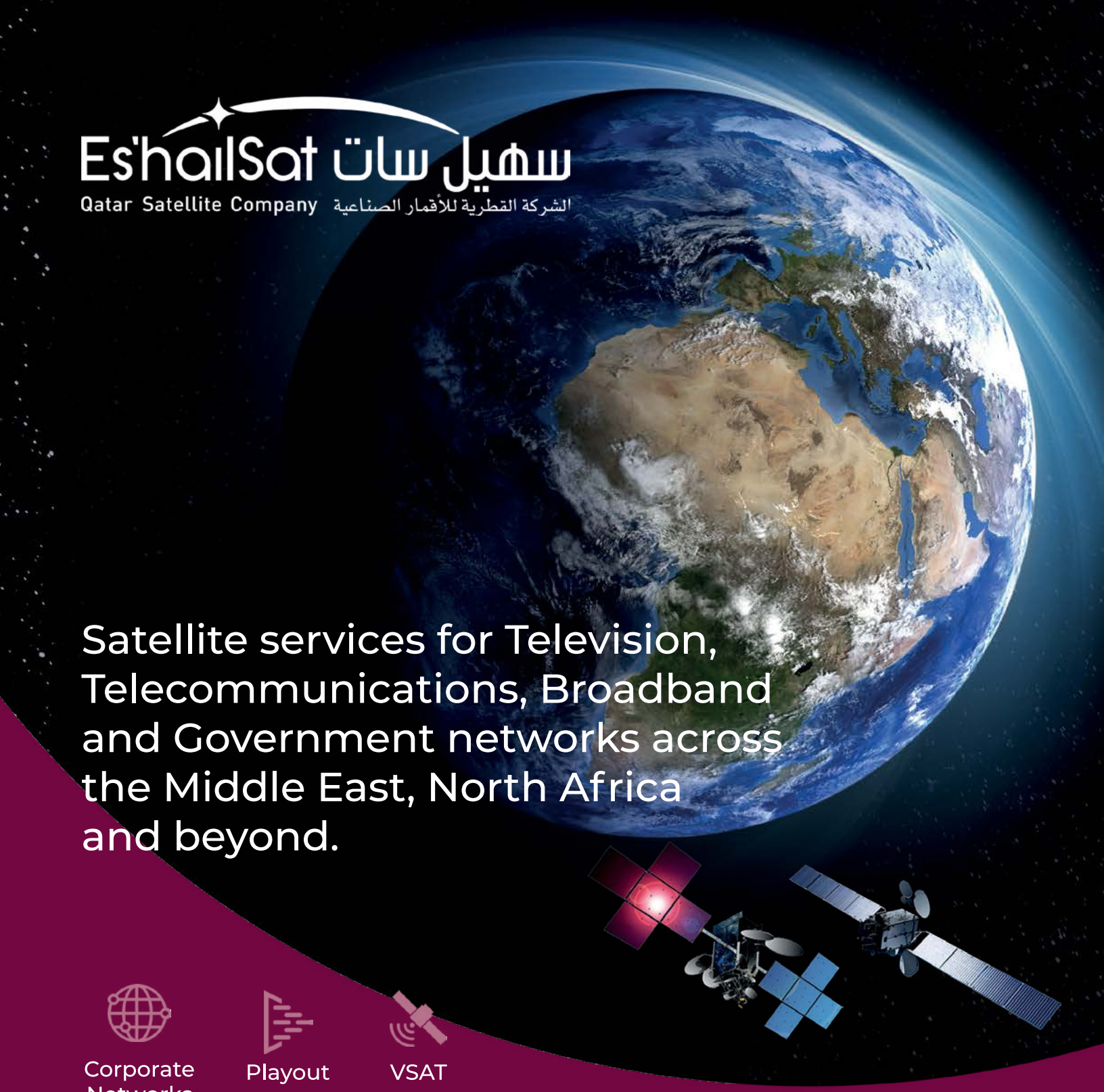

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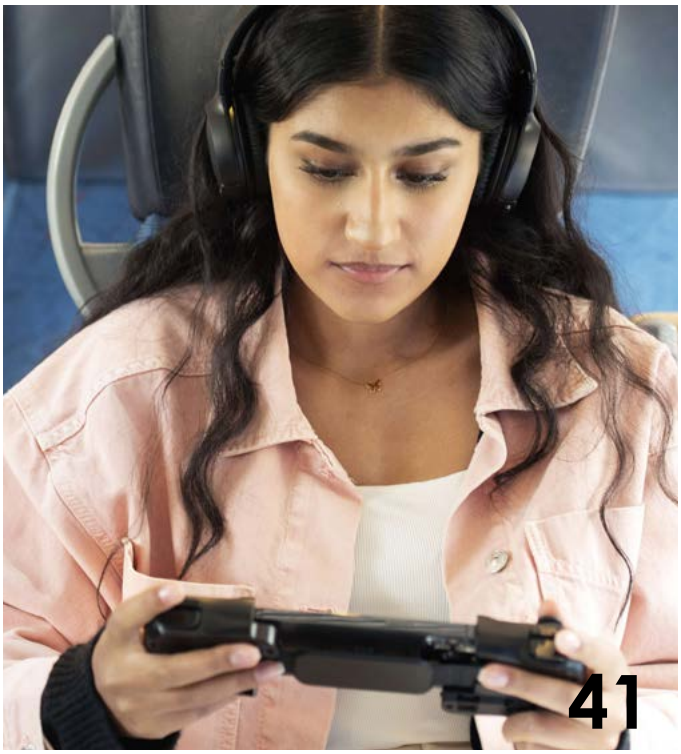

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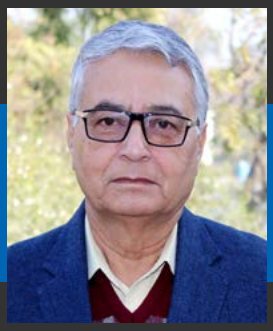

Dear Reader,

Welcome to the latest edition of Teletimes International.

The month of November brings our attention to AfricaCom (AfricaTech) held annually in Cape Town, South Africa. For over a decade, Teletimes has been a media partner to this event and we look forward to meeting our partners and supporters in Cape Town as always.

This edition features an editorial about stc Group and it's contribution to the KSA GDP through its 1 billion US$ investment. Future-focused as ever, stc strategy is fully geared towards enhancing investments in digital infrastructure, keeping pace with the latest technologies, and building an integrated digital system.

This edition also features an editorial and brief interview with Salvador Anglada, CEO of e& enterprise who shared his comments with Teletimes on the successful 100% acquisition of Smartworld.

Moving forward, you will find another interesting interview from the GITEX sidelines taken with Safder Nazir, Senior VP, Digital Industries at Huawei ME. Safder talks about Cognitive Cities, 5G and connecting the unconnected in this exclusive interview.

As always, you will also find the latest news and updates from major ICT players across the region in this edition of Teletimes International.

Your feedback is welcome on info@teletimesinternational.com

Enjoy Reading!

**Khalid Athar**
Chief Editor

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# e& continues to grow, establishing itself as a champion in the regional market

## *Salvador Anglada, CEO of e& enterprise shares his comments on the successful 100% acquisition of Smartworld, which is now rebranded to e& enterprise IoT and AI*

e& enterprise, part of e& (formerly known as Etisalat Group), has announced it has completed its acquisition of Smartworld, one of the UAE's leading technology solutions providers and systems integrators. The acquisition marks a major milestone for e& enterprise as it progresses into the enterprize digital space and enables organizations to maximize their digital potential.

Smartworld will now operate under e& enterprise and formally rebranded to e& enterprise IoT and AI. Smartworld's solutions portfolio will be embedded in the established Internet of Things (IoT) and Artificial Intelligence (AI) business lines of e& enterprise. The acquisition is envisioned to create enormous business value for e& enterprise customers and business partners, and further solidifies its technological leadership in the digital transformation conversation.

Commenting on the acquisition, Salvador Anglada, CEO of e& enterprise, said: "As part of our long-term vision and strategy in the area of IoT and AI, we are keen to ramp up our efforts in helping governments and enterprizes elevate to data-driven and highly automated organizations. Through the acquisition, we can do this and more, as enterprise customers seek to accelerate their digital transformation journey. The subsequent formation of e& enterprise IoT and AI and through the combined efforts of both teams, we are well placed to create enormous business value for our customers and business partners, solidifying our technology leadership as we progress towards our ambitions to lead the digital transformation conversation.

"Through e& enterprise IoT and AI, we

will focus on use cases specifically in the business and industries such as the smart and sustainable city, safe city, industry 4.0, digital healthcare, aviation, manufacturing, logistics, oil & gas, utilities and eGovernment. I am confident that by incorporating Smartworld's capabilities, competencies and skilled talent, we will continue to provide advanced digital solutions that continuously transform and enhance the way enterprizes do business."

Previously Vice President (VP) of IoT and AI Industry Solutions at e& enterprise, Alberto Araque will now head e& enterprise IoT and AI as its newly appointed Chief Executive Officer. Initially joining e& enterprise in 2015 as VP leading the IoT practice and later Digital Payments, Industry Solutions and the new AI unit, through the new company, Alberto will build new capabilities, expand the business into new industry verticals and capitalize on IoT and AI opportunities, making e& enterprise IoT and AI the end-to-end partner for enterprizes and governments.

Of the acquisition, Alberto Araque said, "e& enterprise IoT & AI, combined with Smartworld, brings together the best IoT & AI references in the UAE and the region. Both entities have secured major references across all verticals designing, delivering and operating impactful, intelligent and secure end-to-end digital solutions. e& enterprise IoT & AI will enhance customer experience through the design and implementation capabilities of Smartworld. Our combined capabilities now enable e& enterprise as a whole to fortify its core IoT and AI offerings to its customers, magnifying its core value of staying customer-centric at all times."

Smartworld was established in 2008 and is the market leader in implementing and operating advanced technology solutions. It has been engaged in multiple mega projects across various industries, servicing some of the finest organizations in the UAE, such as Expo 2020 Dubai, Dubai Airports, Nakheel, Jumeirah and Meraas. The Smartworld solutions portfolio includes infrastructure, Information & Communication Technologies (ICT), smart building, security, audiovisual (AV) and smart solutions.

**Teletimes caught up with Salvador Anglada in relation to the announcement with some exclusive Q&As for our readers.**

***Gulraiz Khalid: How do you see e& group growing and expanding in the regional markets in the near future?***

***Salvador Anglada:*** We have strong presence in certain key markets due to our operator network, such as Egypt for example, or Pakistan at a later stage. Therefore, we have an organic component to our growth. However, you will see that there is an inorganic approach as well. In the coming months, you will see some announcements around acquisitions we are doing in order to reinforce some of the capabilities we have and also enhance the overall value proposition.

***GK: Would you say that the unification of different capabilities under one entity is your competitive advantage?***

***SA:*** We are definitely unique because there is no other company that is currently providing this end-to-end approach that includes data center capability, IoT applications, helping customers in their own ICT requirements, Artificial Intelligence applications, basically everything the customer needs backed by the strength of the operator network. We already have a huge market of customers who trust us with various needs and through these newfound synergies, we have the capability to address the market even further now.

***GK: How do you position yourself in this market? How will your market entry impact the existing ecosystem?***

***SA:*** First of all, we believe the market is big enough. We have the big global players which will go on as they do with a global focus and we have small system integrators that will continue to do their work. We feel there is space for a local champion that is focused on this part of the world based on its capabilities and strengths that lie in this part of the world. This is where we come in.

Etisalat Group has changed its brand identity to e&, effective from 23 February 2022. Its strategy aims to accelerate growth through the creation of a resilient business model representing the Group's main business pillars. The telecoms business currently continues to be led by etisalat by e& in e&'s home market and by e& international in the subsidiaries outside of the UAE, upholding the Group's rich telecoms heritage, bolstering the strong telecoms network and maximizing value for the Group's various customer segments. Ramping up the digital services for individual customers to elevate their digital-first lifestyle, e& life brings next-generation technologies through smart connectivity platforms in entertainment, retail and financial technology.

To enable the digital transformation of governments, large-scale enterprizes and corporates, e& enterprise focuses on maximizing value through its end-to-end solutions in cybersecurity, cloud, Internet of Things (IoT) and Artificial Intelligence (AI), as well as deploying mega projects. e& capital allows the Group to focus its efforts on driving new mergers and acquisitions while maximizing shareholder value and strengthening global presence.

# Global tech leaders unpack the true value and impact of the Web 3.0 economy at GITEX GLOBAL 2022

International pioneers of the Web 3.0 economy were in Dubai, to host of never-seen-before experiences and technology innovations to propel the next digital revolution at GITEX GLOBAL 2022.

From Oct 10-14, Dubai World Trade Centre (DWTC) hosted the global tech ecosystem, with over 1,000 thought-provoking speakers and more than 5,000 companies from 90 countries spanning 26 halls and two million sq. ft of exhibition space.

H.E. Omar Bin Sultan Al Olama, UAE Minister of State for Artificial Intelligence, Digital Economy, and Remote Work Applications, delivered the opening keynote speech at the Sheikh Rashid Hall Main Stage. He highlighted that the UAE and Dubai believe in the power of globalisation and creating an ecosystem that allows people to thrive. H.E Al Olama highlighted how GITEX GLOBAL has continued to grow despite the global technology sector undergoing turmoil and uncertainty. He concluded his speech by reiterating that conversations taking place at GITEX GLOBAL will create 'sparks' that will change the world.

**New Paradigms of AI**

Speaking in the Middle East for the first time, Dr. Tian Qi, Chief AI Scientist, Huawei Cloud, delivered an informative session on the new paradigms of AI on GITEX's main stage on Day 1. Dr. Qi focused on the vast potential that AI can have for the scientific community, highlighting that AI can speed up computation time by a factor of at least 10,000, and can help better predict weather patterns and support in discovery of new medications.

***Dr. Tian Qi***
*Chief AI Scientist, Huawei Cloud*

***Sébastien Borget***
*Co-Founder & COO of The Sandbox*

**Unlocking the potential of the metaverse**

Issues of virtual asset ownership came under the spotlight during an interview between Sébastien Borget, Co-Founder & COO of The Sandbox, and Mike Butcher, Editor at Large at TechCrunch. Borget said the future of the metaverse had to involve users owning their digital assets with the freedom to decide how these assets are used or sold. Web 3.0 and blockchain is a chance to take back ownership of assets, he added. One of Sandbox's goals was to showcase its possibilities and this is why it was co-creating with brands such as Atari, so they could own their own space, launch their own gamified experiences and launch content with the community, co-creating and expand their brand creatively.

***Omar Bin Sultan Al Olama*** *- Minister of State for AI, Digital Economy and Remote Work Applications, UAE*

**Building trust in virtual assets**

Speaking at the GITEX main stage, Dimitrios Dosis, President of Eastern Europe, Middle East and Africa at Mastercard, said Mastercard's investment in CipherTrace gives insight into cryptocurrencies and provides transparency rather than anonymity, which in turn reinforces greater consumer trust. In addition, Mastercard, strategic sponsor of Fintech Surge 2022, which is taking place until 13th October as part of GITEX GLOBAL, is also working with small- and medium-sized companies to help them access cybersecurity insurance, he added.

# stc Group contributes to KSA GDP through its 1 Billion USD investment

One of the most significant drivers of the economic growth that the Kingdom is witnessing is the reliance on digital economy. The government of Saudi Arabia is emerging the ICT sector to provision and increase the capacity of businesses in the market, which will allow further capitals and productivity, and help obtain products, and services at lower costs. Saudi Arabia's ICT strategy 2023 outlines the generation of more than 25,000 jobs in the sector, increasing the size of the IT market and emerging technologies by 50 percent, as well as raising the sector's contribution in GDP by $13.3 billion.

A new era of digital excellence is on the horizon. Over the past few years, stc Group, the region's digital enabler, has made significant strides towards enhancing the Kingdom's digital infrastructure. The group continues to play a major role in accelerating the digital transformation in the region. Future-focused as ever, stc strategy is fully geared towards enhancing investments in digital infrastructure, keeping pace with the latest technologies, and building an integrated digital system that enriches customers' experience, while bolstering an increasingly prosperous economy.

*Future-focused as ever, stc strategy is fully geared towards enhancing investments in digital infrastructure, keeping pace with the latest technologies, and building an integrated digital system*

Business and technology are rapidly evolving, and the world is becoming more connected than ever. Service providers, such as stc Group will be essential to developing leading-edge digital communications and solutions that

*stc Group continues to contribute towards transforming the digital industry in the Kingdom into a leading industrial power and a global logistics center*

transform the success of companies as well as lives of individuals.

Previously, stc Group unveiled its initiative to establish the MENA's digital regional center for the Middle East and North Africa, during LEAP International Conference, with the aim of enabling the Kingdom's economy and GDP growth. The MENA's digital center will link three continents, Asia, Europe and Africa benefiting from the strategic location of the Kingdom and promoting investment in international communication services and data centers. With a 1 billion USD investment, stc Group, inaugurates its largest and one of the most significant projects, a state-of-the-art, Center3 Company, the digital regional center for the Middle East and North Africa. The new company will be the owner of all the digital infrastructure assets owned by stc Group, including data centers, submarine cables and international points of presence.

"Many businesses are gathering massive data, but the real benefit is optimizing this data for analysis that can steer the business forward. Digital transformation in the Kingdom of Saudi Arabia is now creating the system for collecting the right data and integrating it with business intelligence at

***Mohammed Alabbadi***
*Group Chief Carrier & Wholesale Officer, stc*

***With a 1 billion USD investment, stc Group, inaugurates its largest and one of the most significant projects, a state-of-the-art, Center3 Company, the digital regional center for the Middle East and North Africa***

an advanced level, hence Center3 came in to contribute to this transformation as well as to enhancing the digital economy", said Mohammed Alabbadi, stc Group Chief Carrier & Wholesale Officer.

Center3 will be a transparent point of contact in the telecommunications & Information technology sector as well as in the international communication infrastructure market. It aims to develop digital businesses and enhance investment opportunities in international communication services and data centers by providing the latest communication and hosting technologies. Furthermore, it will raise the capacity of data centers to meet the needs of the markets across Middle East

***Fahad Alhajeri***
*Chief Executive Officer,Center3*

and North Africa, as well as the rest of the world.

"This digital culture shift is crucial for businesses and enhancing it is even more vital for the success of the overall economy. It is definite that companies that undergo digital transformation improve efficiency and profitability. With the development of Center3 and data centers businesses can increase their agility with digital transformation to improve speed-to-market and adopt continuous improvement ", said Fahad Alhajeri, Chief Executive Officer of Center3.

With the aim to enhance the digital system, stc Group launched Center3, which in turn will contribute to enhancing the Kingdom's position as a regional digital center. This launch is in line with stc Group "dare" strategy to expand the scope and markets to achieve digital empowerment. Through Center3, stc seeks to build an integrated ecosystem of cables and data centers that pursues to attract big data, local and international service providers.

***Center3 will provide data center services, international communication, and Internet exchange services through its assets***

***Center3 will be a transparent point of contact in the telecommunications & Information technology sector as well as in the international communication infrastructure market***

Center3 will provide data center services, international communication, and Internet exchange services through its assets. stc Group will work to achieve the company's vision of making the Kingdom the main digital hub connecting three continents Africa, Asia and Europe as well as leading the largest share of Internet exchange and data traffic in the region.

stc Group continues to contribute towards transforming the digital industry in the Kingdom into a leading industrial power and a global logistics center. It also seeks to develop the local industrial sector, which puts Saudi Arabia at the forefront of global countries among data-dependent economies, through the transformation of business environments. Moreover, the group pursues to place the local community to become digitally connected in a step to achieve an advanced digital economy.

# "Cognitive Cities are about continuously becoming more efficient, more sustainable and more resilient"

## Safder Nazir, Senior VP

*Digital Industries, Huawei ME talks about Cognitive Cities, 5G and connecting the unconnected in exclusive interview with Teletimes International.*

**Gulraiz Khalid**

***Gulraiz Khalid: How does it feel to be back at GITEX in a post-covid world?***

***Safder Nazir***: The post-pandemic era right now seems to be witnessing a rising demand for in-person events and interactions. This year specifically, GITEX GLOBAL experienced a very busy period hosting thousands of visitors from all around the globe. Aligning with this, Huawei has also showcased its largest-ever presence this year, as the Diamond Sponsor of the event. Meeting on-ground with our high-level customers and partners at our booth allowed us to demonstrate the company's ongoing innovations for the future in digital power, including AI, cybersecurity, 5G (paving the way to 5.5G), cloud-native 2.0 architectures, and industry applications. Visitors were also introduced to how Huawei designs and strategies to meet the needs of various verticals and industries, as we continue to reveal how these solutions and technological advances are creating new economic value and enabling a green and intelligent society that aligns with national digital transformation goals.

***GK: How would you define Cognitive Cities in comparison to Smart Cities?***

***SN:*** This is about a journey: from digital, to smart, to cognitive. If you look at the development of Smart Cities in a post-4G era, the technology driver behind 'Smart Cities' was IoT providing lots of use cases where you can connect things to interact with the citizens, and in the more recent times, we are looking at 'Cognitive Cities' where the technology transition is AI. A physical Cognitive City differs from conventional cities and Smart Cities in the fact that it is steadily learning from constant interaction with its citizens through the use of AI to become continuously more efficient, more sustainable and more resilient.

***GK: You've been one of the champions for Smart Cities in the region for quite a while. How have the leading Smart Cities improved in the recent years and are we headed in the right direction?***

***SN:*** There's been significant growth where ease of use and access to services has really improved. Partially fueled by the response to COVID, the transformation growth has been tremendous, and you can do so many more things such as renewing your tenancy contracts completely online without any physical interaction.

Are we in the right direction? A Smart City program is considered more of a journey where each city can take its own path, so, as long as the cities are continuously improving, they're on the right path. And, as more AI technologies are used to provide

*"A physical Cognitive City differs from conventional cities and Smart Cities in the fact that it is steadily learning from constant interaction with its citizens through the use of AI to become continuously more efficient, more sustainable and more resilient"*

that continuous improvement, the cities are on the journey to become Cognitive Cities.

Dubai has been leading the way in many aspects and I can say, from a personal perspective, having lived here nearly 20 years, that the ability to access services is incredibly user-friendly. The fact that the UAE has a very clear direction in terms of renewable energy and a strategy for a circular economy means we can look forward to this journey continuing in a very positive manner.

***GK: Would you like to talk a little bit about Huawei's approach towards renewable energy?***

***SN:*** The approach for everyone right now should be to make products that are more energy efficient and focus on sustainable sources of energy. Huawei has the world record for the world's most energy efficient data-center which was measured in Annualized PUE (Power Usage Effectiveness) of 1.11. How did we achieve that? By using technologies like AI, and solutions such as Huawei's iCooling@AI which reduces the energy consumption of data centers while enabling smart cooling of large data centers and cutting PUE. Even in our base stations and our equipment, we are using materials that are reflecting heat and utilize free air cooling. It's a single approach that we apply across our network portfolio which aims at energy efficiency for the entire network and everything is built and operated with that mentality.

***GK: What does 5G mean for your area of business in specific?***

***SN:*** At Huawei, we now see the introduction of 5.5G, and not only 5G. This is considered highly transformative because the innovation removes any gap we might have faced in terms of bandwidth and latency, and accordingly, we would have unrestricted mobility in our services. As users, we should not have to think about whether something will work, the service has to be there for us when and wherever we need it, and the experience should be the same wherever I am and wherever I go - this is ubiquitous connectivity which is enabled through 5G or 5.5G.

One of the first use cases for 5G was the Fixed Wireless Access which creates the same experience as Fiber in places where you are on older copper networks. And this fiber-like experience means access to all the Smart City services in a ubiquitous manner. This is why we see places like NEOM making 5G a cornerstone for the development of their Cognitive City.

***GK: In one of your recent blog posts, you talked about connecting the underserved. Would you like to share some information about Huawei's efforts in that regard?***

***SN:*** As stipulated by the U.N, connectivity is a human right as well as the cornerstone of economic progress. Nevertheless, GSMA reports that more than 700 million people in the world remain unconnected, and many of these people live in hard-to-reach remote areas where it's impractical or too expensive to connect them.

*"I certainly see mixed reality having the potential to make our experiences in cities and built environments to be richer and easier"*

Connecting the unconnected is a key part of our digital inclusion strategy to create an inclusive society. For example, in rural Nigeria, Huawei teamed up with the local carrier MTN to bring connectivity to the remote village of Tobolo. For Adeshia, the community health worker at Tobolo, this connectivity can mean the difference between life and death; instead of traveling to nearby towns to ask doctors to visit the village, she can now call or text them, saving time – and lives.

You would have also seen at our booth how Huawei is using RURAL STAR and RURAL STAR PRO, as the simplicity of the system means that a node can be built in less than seven days, cutting setup costs and time by up to 70%. Additionally, the footprint is minimal – RuralStar consumes no more energy than five lightbulbs. So far, we have implemented this system in 60 countries connecting more that 50 million people.

***GK: What role will Augmented and Virtual Reality play in smart cities?***

***SN:*** We're already seeing these technologies play a huge role in sporting and gaming industries as we all know. I certainly see mixed reality having the potential to make our experiences in cities and built environments to be richer and easier. Imagine walking around an event like GITEX GLOBAL and being able to interact in a 4th dimension, where you can recognize people and have their LinkedIn profile pop up in-front of you. The missing piece for that interaction is figuring out the human-machine interface phase; we could do that by carrying our smart phone in front of us all the time – but who wants to do that? Smart glasses, for example, have been EXPERIMENTED, however they haven't been widely adopted. The human-machine interface could be something we have not yet even imagined, and may be different for each use case, but the technology itself will really improve the experiences across smart and cognitive cities. T

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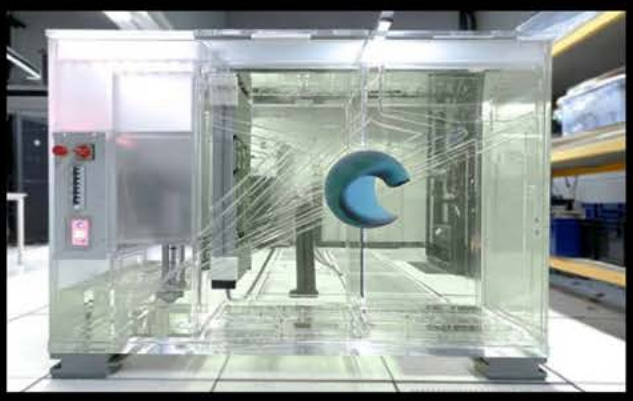

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# HUAWEI CONNECT 2022 in Dubai: Innovative Infrastructure drives Industrial Digital Transformation

***Ken Hu***
*Rotating Chairman, Huawei*

***Bob Chen***
*VP, Huawei Enterprise BG*

***Joy Huang*** *President, Huawei Cloud Strategy & Industry Development*

More than 3,000 industry stakeholders gathered together at HUAWEI CONNECT Dubai, to discuss "Innovative Infrastructure to Unleash Digital". Representatives from Huawei and other organizations shared their latest digitalization practices, exploring new paths to industrial digital transformation.

Ken Hu, Huawei's Rotating Chairman, delivered a keynote outlining three ways the ICT ecosystem can help break through common barriers in digital transformation:

- Boost digital infrastructure, including more robust connectivity and stronger, more diverse computing resources.
- Help organizations go beyond simple cloud adoption and truly make the most of cloud, focusing on advanced technology services that drive leapfrog development.
- Build out local digital ecosystems including partner development, strengthening the digital talent pool, and providing more support for SMEs.

Opening the event, Steven Yi, President of Huawei Middle East & Africa expressed gratitude to customers and partners for their ongoing trust and reaffirmed Huawei's commitment to contributing to local development. He also shared three key initiatives of Huawei, its customers and partners, to unleash digital productivity. Together, they work to build a solid digital foundation for all and reinforce local digital ecosystems to support the future of digital nations.

**Innovative, scenario-based technologies enhance digital infrastructure to unleash digital productivity**

Bob Chen, Vice President of Huawei Enterprise BG, discussed how multi-tech synergy is critical for finding the right technology for the right scenario. He explained in his keynote speech "Innovative Digital Infrastructure Accelerates Digital Transformation" that "Data is at the core of digital transformation, and data ingestion, transmission, storage, and analysis are key steps. Huawei provides full-stack products and product portfolios to support end-to-end data processing, accelerating customers' digital transformation."

In terms of data connectivity, Huawei unveiled NetEngine AR5710, a hyper-converged gateway that is ideal for small and midsize branches, and NetEngine 8000 F8, an ultra-compact universal-service aggregation router. These all-new products are helping lay a solid data foundation to further unleash digital productivity.

With regards to data transmission, Huawei has been exploring how to apply the fifth generation fixed network (F5G) evolution across various industries. During the event, Huawei in partnership with a customer, jointly launched a digital pipeline corridor inspection solution based on optical fiber sensing technology, enabling automatic pipeline corridor inspection.

Regarding data storage, Huawei and Commvault, a data management software company, jointly launched a data protection solution that provides enterprise customers with secure and reliable data protection from end to end. This helps create a reliable

and efficient storage foundation, allowing enterprizes to maximize the value of data.

Joy Huang, President of Huawei Cloud Strategy & Industry Development, pointed out that Huawei's approach to digital transformation has three pillars: greener infrastructure, ongoing innovation, and shared experience. Huawei Cloud aims to be the best digitalization partner for customers, and is working with partners and customers to unleash digital with Everything-as-a-Service.

Additionally, customers from various industries in the Middle East and Africa also shared their best practices with Huawei in digital transformation at the event.

Huawei also launched the Huawei Empower Program, which aims to help develop a thriving digital ecosystem for global partners. Through this program, Huawei will conduct joint innovation with its partners via OpenLabs, empower partners with a new framework, a new plan, and an integrated platform, and create a talent pool through the Huawei ICT Academy and Huawei Authorized Learning Partner (HALP) programs. Huawei also announced an investment of US$300 million into this program over the next three years to support its global partners.

# Huawei Connect Roundtable

This year, Huawei brought its Huawei Connect series of global events to Dubai for the first time, which took place on October 12. Huawei's annual flagship event brought over 3,000 industry leaders, experts, and partners from the Middle East, North and South Africa, South America, and CEE Nordic Europe, together to explore how to unleash digital productivity, it also outlined initiatives that can help build the ICT ecosystems capable of advancing common barriers in digital transformation and boosting digital economies.

On the sidelines of Huawei Connect, Huawei hosted an exclusive group media interview with Huawei Global and regional experts including, Alaa Elshimy, MD and SVP Enterprise BG, Huawei Middle East, KOH HONG ENG, Global Chief Public Sector Scientist, Huawei, and Sheldon Wang, Director of Digital Government, Huawei. The executives discussed how to build a national digital foundation that can focus on emergency response, online education, smart public services, etc. The representatives also explored where industry digitalization is heading, what opportunities it brings, and how digital technologies can be practically applied in different industry scenarios to fully unleash their value.

Huawei also shared practical experience and share insights on the White Paper on the public service infrastructure to address the pain points of digital transformation of governments and ministries.

**While responding to the question raised by Teletimes International, (How is Huawei contributing to the overall vision of UAE?) Alaa Elshimy, MD and SVP Enterprise BG, Huawei Middle East, elaborated the following points:**

•Huawei is bringing its Huawei Connect series of global events to Dubai for the first time this year, bringing its global expertize to benefit customers and partners and help them unleash digital productivity.

•Huawei is working closely with the UAE government to bring technological advances to even more industries and create new value by helping governments and enterprises in UAE and the wider region go digital while operating more intelligently and achieving sustainability.

•Huawei partnered with the Entrepreneurial

Nation to launch the 'ScaleUp Digitize' program to enable startups and SMEs in the UAE to enhance their digital infrastructure by adopting cloud technologies and services.

•Huawei launched its first cloud region in the UAE last year, bringing the HUAWEI CLOUD services closer to Middle East customers while addressing data retention laws for regulated industries. Since then, we have seen regional customers innovate on the cloud, including adopting emerging technologies such as AI.

•In cybersecurity, the UAE's National Cybersecurity Council (NCSC) signed a Memorandum of Understanding with Huawei earlier this year to collaborate in strengthening local cybersecurity strategies and efforts. As per the memorandum, both parties will work towards strengthening strategic collaboration in cybersecurity based on the Public-Private-Partnership model. As part of the memorandum, both parties have agreed to jointly establish a Cybersecurity Center of Excellence to deliver talent training that addresses the cybersecurity capacity-building needs for Emiratization.

•In talent development, Huawei has partnered with leading universities and colleges on various CSR initiatives, including ICT Academy, ICT Competition, and Seeds for the Future, among others. We are promoting collaboration between public and private sector entities, educators, and technology companies to develop talent through these initiatives.

•Du recently signed a Memorandum of Understanding (MoU) with Huawei to foster development, enhance skillsets, and accelerate efforts to drive talent progression in the UAE through three core development programs. As part of the longstanding partnership with Huawei, du will equip graduate trainees, technology professionals and senior-level professionals with key competencies, knowledge, and technical skills required in the business world.

# Huawei's User Experience Model of the Premium Broadband Solution - StellarCue

The 8th Ultra-Broadband Forum (UBBF) was held in Bangkok with the theme "Stride to Ultra-Broadband 5.5G". The forum is witnessing the global release of StellarCue, the user experience model of Huawei's Premium Broadband solution. This model analyzes user experience in minutes, supporting carriers' experience-oriented HBB operations in three scenarios.

StellarCue is a user experience model trained using massive amounts of sample application data including delay, packet loss, and jitter. It can infer experience quality of applications related to video, game, office, and education, and detect frame freezing, interruption, and slow response in just a few minutes. It empowers carriers to speed up poor-QoE fault identification from hours to minutes and transform from network-level detection to user experience awareness.

User experience awareness is key to offering better services and seizing opportunities in the new era through experience-oriented operations. Huawei introduces innovative technologies and provides carriers with three major benefits.

**Precise identification of potential users:** This multi-dimensional potential user identification model utilizes more than 100 labels related to applications, user experience, bottleneck, and networking. With these labels, carriers can formulate precise marketing strategies to fit users' needs as opposed to making strategies just based on BSS information.

**Best Wi-Fi speed assurance:** By initiating segment speed tests in batches behind the scene, carriers can obtain the Wi-Fi rate of each terminal in a home and precisely locate the bandwidth bottleneck (whether indoor or outdoor). Based on this information, carriers can then analyze the root cause, for example, a single-band 2.4 GHz Wi-Fi router. Carriers can resolve configuration issues by performing optimization remotely, eliminating the need of site visits for troubleshooting. The three steps of speed tests, analysis, and optimization ensure Wi-Fi quality.

**Proactive services:** Carriers can utilize minutes-level poor-QoE detection (such as video frame freezing) and poor-QoE snapshots to accurately determine the root causes based on recorded temporal and spatial information. In this way, carriers can transform from the passive complaint-driven troubleshooting mode to the brand-new proactive user experience awareness and assurance mode, and reduce user complaints, enhance brand reputation, retain users, and improve user satisfaction.

The Premium Broadband solution with StellarCue has been commercially deployed in nearly 50 sites in China. In Henan Province, insights from the five-dimensional user experience model helped increase the marketing success rate of FTTR and gigabit services from 3% to 10%. In addition, the network ROI was improved by 40% through on-demand network construction based on the user experience triangle suppression model. In Zhejiang Province, with accurate poor-QoE analysis and proactive services, the poor-QoE rate decreased from 4.3% to 2.7%, and the complaint ratio per 10,000 users decreased from 165 to 95. As user experience has become the new driving force, Huawei's Premium Broadband solution effectively helps carriers expand their markets, provide better services, increase revenue, and enhance their reputation.

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# Innovation: The foundation for the digital era

*By: Steven Yi, Huawei Middle East and Africa President*

Innovation today represents the primary driver of technological progress, new product development, and rising competition and productivity, which are necessary for stable and sustainable economic growth. The Global Innovation Index Database, by the World Intellectual Property Organization (WIPO) reveals a direct link betwen the investment in innovation and high GDP per capita, while companies with sizeable R&D budgets are often market leaders.

No other company demonstrates this paradigm than Huawei, whose leadership in ICT is the result of a history of commitment to innovation. Every year, Huawei invests over 10% of its sales revenue into R&D. The company's R&D investment reached about USD 22.38 billion in 2021, representing 22.4% of total revenue and bringing the total R&D expenditure over the past ten years to over USD 132.5 billion. By the end of 2021, Huawei held a total of 110,000+ active patents, across 45,000+ patent families. In terms of the number of patents granted in 2021, Huawei ranked No. 1 at both the China National Intellectual Property Administration and the European Patent Office, and No. 5 at the United States Patent and Trademark Office. Huawei also ranked second in the 2021 EU Industrial R&D Investment Scoreboard. Patent panorama reports published by independent third parties show that Huawei is an industry leader in the fields of 5G, Wi-Fi 6, and H.266.

Between 2009 and 2013, Huawei invested more than US$600 million into 5G

technology research. Following this, in 2017 and 2018 Huawei invested almost US$1.4 billion into 5G product development. Our investment in network evolution has seen Huawei lead the 5G race. A few months ago, a leading US-based patent firm (Tech+IP) positioned Huawei at the top of its 5G patent license rankings, which include patent counts, global coverage and adherence to core technical standards. GlobalData, another data analytics and consulting company from the UK recently released a report entitled 5G Mobile Core: Competitive Landscape Assessment. The assessment concluded that Huawei 5G Core portfolio is the strongest, rated as the "leader" among all the 5G core solutions and use cases around the world. Now Huawei has taken the lead on the next evolution of connectivity technology, 5.5G, which we proposed for the first time in 2020. We will soon see 5.5G vision become a reality, enabling a 10 Gbps experience and a hundred billion connections.

In the digital economy, computing power is a new driver of production. Data itself is a core asset, and cloud and AI are the new tools of productivity. Moving forward, AI computing will account for more than 80% of a computing center's capacity, providing the muscle for practical AI applications in all areas of life. To deliver ubiquitous cloud and intelligence, we will need to provide the ultimate computing power. Huawei's focus on innovation has turned Huawei's cloud platform into the world's fastest-growing cloud ecosystem. HUAWEI CLOUD is today an essential platform for internet companies and organizations to go digital. The platform has attracted 3.02 million developers, 28,000 consulting partners, and 9,000 technical partners and released 7,400+ KooGallery products five years since launch.

While we forge a new intelligent path for the world, we must ensure progress does not come at the expense of the environment. According to third-party research, data traffic generated by digital services is expected to grow 13-fold over 2020 by 2030. This means that, unless energy efficiency improvements are made, the ICT industry's energy consumption and carbon emissions will see a 2.3-fold increase. According to ITU, the ICT industry must reduce carbon emissions by at least 45% by 2030 to meet the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement's goal. At Huawei, we aim to accelerate clean energy generation, build green transportation, sites, and data centers, and ultimately contribute to zero-carbon buildings, campuses, and cities. By June 2022, Huawei Digital Power solutions have helped customers generate 588.5 billion kWh of green power and save 17 billion kWh of electricity. These efforts have offset 290 million tons of $CO_2$ emissions, equivalent

*"In the digital economy, computing power is a new driver of production. Data itself is a core asset, and cloud and AI are the new tools of productivity"*

to planting 390 million trees. Huawei Digital Power looks at five areas of business globally: Smart PV, data center facilities, mPower for electric vehicles, site power, and integrated energy solutions.

Cybersecurity is a cornerstone of the future digital world. Huawei believes that cybersecurity is a shared responsibility. Challenges need to be addressed through technological innovation, knowledge sharing, standards development, verification, and other internationally credited measures. Huawei has a proven track record in cybersecurity globally. Over 70 cybersecurity certifications were awarded to Huawei, providing customers with internationally recognized security assurances. To date, the company has submitted over 65,000 standards contributions to more than 200 standards organizations. Huawei 5G base station was the first to pass the industry NESAS/SCAS 2.0 evaluation.

Progress in innovation and ICT is only possible if there's a rich talent pool that can produce candidates with advanced skills and the leadership mindset needed to thrive in a highly dynamic digital world. While Middle Eastern universities continue to produce talented ICT practitioners that have supported the region's economic progress. However, demand for IT solutions is accelerating. Therefore, we must continue investing in talent development to ensure that organizations have access to the qualified personnel they need to pursue

> *"No other company demonstrates this paradigm than Huawei, whose leadership in ICT is the result of a history of commitment to innovation"*

> *"Progress in innovation and ICT is only possible if there's a rich talent pool that can produce candidates with advanced skills and the leadership mindset needed to thrive in a highly dynamic digital world"*

their digital transformation goals.

Huawei will continue doing its part with our initiatives such as Huawei ICT Academy, the annual Huawei ICT Competition, Seeds for the Future, joint innovation centers, labs and other CSR initiatives. In the Middle East, Huawei has set up 167 Huawei ICT Academies, and more than 3,500 students have participated in the flagship program Seeds for the Future, while over 40,000 people have obtained Huawei certification. We also have trained over 120,000 ICT talents for the Middle East.

But innovation done within siloes will fail in its objectives. The digital economy is developing rapidly, and industries are going digital and setting green agendas faster than ever before. This will generate new business models, new productive arrangements, and new models for the flow of wealth. All of this means that a more open, diversified, and inclusive industry ecosystem will soon be needed. Huawei remains committed to openness and collaboration for shared success. We work with various industry and ecosystem partners to shape new mindsets, and new models for cooperation and building trust. To lead success in the digital world, multi-level collaboration across the ICT industry is needed. We actively participate in industry organizations to develop industry standards and alliance ecosystems, and work with global standards organizations, institutions, and think tanks to promote the formulation and implementation of relevant standards and industry policies. This will drive the healthy development of ICT industry.

We are on the verge of the most remarkable shift in socioeconomic transformation underpinned by technology. There are, however, no shortcuts to progress and the path to success runs through innovations empowered by research and development.

# 5G Leads the Stride

*"As a key enabler of digital transformation, 5G opens up a world of new opportunities"*

The Global Mobile Broadband Forum 2022 hosted by Huawei and organized together with its industry partners GSMA and GTI kicked off. The annual event gathers mobile network carriers, vertical industry leaders, and ecosystem partners from around the world to discuss how to make 5G a commercial success, as well as other high-priority industry topics like green development, intelligence, and 5G evolution.

At the event opening keynote, Huawei Rotating Chairman, Ken Hu said: "5G has grown faster than any previous generation of mobile technology. In just three years, we've seen solid progress in network deployment, consumer services, and industry applications.

"5G is in the fast lane," he continued, "and we should all be proud of the progress we've made. But there's more we can do to maximize its value. We need to work together to fully unleash the power of 5G networks and expand into services like cloud and system integration. Together, we can drive leapfrog development in 5G networks, applications, and the industry as a whole."

As of October 2022, more than 230 carriers around the world have launched commercial 5G services. In total, the industry has set up over three million 5G base stations, serving more than 700 million subscribers.

In telecoms, consumer services still account for the bulk of carrier revenue. As 5G becomes more prevalent, its vastly superior experience is driving new shifts in consumer behavior, including a sharp rise in high-definition video traffic. New mobile applications that take advantage of 5G's greater speeds and lower latency have doubled average user data consumption (DOU) and are increasing average revenue per user (ARPU) by 20%–40%, contributing to steady growth in carrier revenue from connectivity.

At the same time, B2B 5G applications are also becoming a new engine for carrier revenue growth, producing considerable value in industries like oil and gas, manufacturing, and transportation.

These applications are not only innovative – they're generating real commercial value for carriers. In 2021, for example, Chinese carriers brought in over CNY3.4 billion (roughly USD500 million) in new revenue from more than 3,000 industrial 5G projects. What's more, these projects also generated 10 times that amount from related data and integrated ICT services.

> *"New mobile applications that take advantage of 5G's greater speeds and lower latency increasing average revenue per user by 20%–40%"*

B2B 5G applications are poised to become the fastest growing revenue stream for carriers. 5G is enabling new service scenarios, applications, and business models, paving the way for unprecedented growth opportunities in the industry.

"To seize these opportunities," said Hu, "there are a few things we need to do."

**Building out networks for better user experience**

Beyond expanding coverage, networks should be built in a way that optimizes different types of user experience. For example, Chinese carriers have optimized their networks for TikTok and other popular video services, reducing first input delay by 50% and frame freeze by 90%. This much

smoother video experience has doubled data consumption and is attracting new users to 5G services.

**Driving the development of 5.5G**

To push 5G to the next level, Huawei worked with carriers and industry partners to propose four features for 5.5G, the next evolution of 5G technology: 10 Gbps downlink, 1 Gbps uplink, support for 100 billion connections, and native intelligence.

"The industry needs to come together to define standards, prepare the spectrum, and build out the ecosystem," said Hu.

**Driving service innovation to maximize the value of 5G**

With large bandwidth and low latency, 5G can be integrated with cloud and AI to provide entirely new services for consumers and businesses alike. Carriers can deliver new experiences like extended reality (XR), cloud gaming, and enriched calling services for individual consumers, and provide enterprizes with more comprehensive digital transformation solutions. These open up new revenue streams, presenting an opportunity for carriers to go beyond connectivity and move into cloud services and system integration.

Industry digitalization is the next wave of global economic development. As a key enabler of digital transformation, 5G opens up a world of new opportunities. But the ICT ecosystem needs to work together to make the most of them. "If we work together, we can drive leapfrog development in 5G networks, applications, and the industry as a whole," Hu concluded.

James Chen, President of the Global Sales Dept of Huawei Carrier BG, delivered a keynote entitled "Making Strides Towards 5G Success". In his speech, Chen said, "We've seen fast progress in 5G. To fully unlock the value of 5G, we need to accelerate deployment, and make the most of every band, every hertz, and every watt. Together, we can take 5G from a leading brand and leading technology, to a leading experience and a leading business. And we can make 5G a commercial success."

Chen described how 5G is driving industry development in many aspects. Compared with 4G, 5G networks are 10-times faster, delivering speeds greater than 1 Gbps. 5G users also consume two times more data than 4G users – more than 20 GB per month and that amount is expected to keep growing. This creates huge opportunities for carriers in three areas: user experience, IoT, and industrial digitalization.

1) User experience can generate more revenue than ever before, as carriers shift away from traffic-based business models. This can be achieved by offering 5G packages priced based on other factors like speed, latency, and uplink experience.

2) IoT is also a booming market with a rapid growth in both consumer and industrial IoT services, which is expected to create 100 billion IoT connections.

3) Finally, in industrial digitalization, 5G provides high-quality connections, and services like private lines and networks that are helping carriers expand into the B2B market. With 5G, carriers can diversify their portfolios beyond connectivity, and identify new sources of revenue.

Despite these opportunities, 5G rollout is still inconsistent across different countries. Right now, 5G coverage is only available for 29% of the global population – much lower than 4G, which covers 92%. According to Chen, to fully unlock the value of 5G and make it a commercial success, it is necessary to accelerate 5G network deployment, and make the most of "every band, every hertz, and every watt."

First, spectrum will have to be better utilized. All spectrum bands can be used for 5G, but different bands, such as TDD bands, FDD bands, and mmWave bands, produce optimal performance in different scenarios. Second, massive MIMO will need to be used in every band to get the most out of every hertz. Third, building on the 10x energy efficiency of 5G over 4G, ongoing innovation will need to be made at three separate layers – equipment, sites, and networks – to enable every watt to carry more bits, and help build 5G networks with optimal performance and energy efficiency. AI will also need to be applied in 5G networks to make the most of limited network resources.

At the end of his speech, Chen said, "5G is changing the mobile landscape, but this is just the beginning. Huawei will continue to innovate in technologies to maximize the value of each band, hertz, and watt, help global customers build 5G networks with the best experience, optimal energy efficiency, and highest efficiency, and continuously create value for customers. Together, we can make 5G a commercial success."T

# 2nd Annual edition of Huawei Innovation Day discussed how collaboration can unleash innovation for a sustainable digital future in Middle East and Africa

Huawei has held the second annual Huawei Innovation Day with customers, partners and technology experts from the Middle East and Africa. Held in parallel with GITEX GLOBAL 2022, the Huawei MEA Innovation Day 2022 was organized in partnership with the Arab ICT Organization (AICTO) under the theme of "Collaboration to Unleash Innovation for Sustainable Digital Future".

The annual event gathered the region's government leaders from different sectors, industry analysts, ICT ecosystem partners and international standardization, and Huawei's senior leadership team.

Jeff Wang, Global President of Public Affairs and Communications Huawei, delivered the opening keynote speech to highlight Huawei's commitment to supporting the MEA digital transformation and ICT sustainability future. "Today, we have heard from customers and partners from the Middle East and Africa who are leveraging our technologies to enable new business models, boost competitiveness and spur sustainable economic growth," Wang said, adding, "We also heard amazing stories of how technology is being applied to solving some of the greatest challenges facing humanity such as climate change, energy transition, inclusion and women empowerment. Such outcomes inspire us to continue innovating to power a better future for all."

Eng. Mohamed Ben Amor, Secretary General of the Arab ICT Organization (AICTO), the event partner, delivered the keynote speech, highlighting the importance of collaboration between various regional stakeholders and global partners to build an integrated ICT ecosystem for a sustainable digital economy. "We are delighted with this collaboration with Huawei around an insightful topic increasingly becoming the keystone for sustainable technological development," H.E Ben Amor stated, adding, "If "innovation" was always and will remain the engine of economic and social progress with a profound transformational impact on our lives, technological innovation will be, without any doubt, the compulsory way towards a better digital future. Therefore, we highly trust that technological innovation will help transform challenges into opportunities and shorten the path to achieving our common goals. This requires, in particular, a strong regional and international cooperation framework to strengthen national and regional innovation systems and models leading to innovative and sustainable technological initiatives."

Steven Yi, President of Huawei Middle East & Africa, added: "We are honored with the distinguished audience in our Innovation Day MEA 2022. Our mission remains to bring the broadest ICT ecosystem together to inspire change and deliver socioeconomic growth. We are hopeful the lessons we take from the event today will help bring us closer to an open, intelligent world that has been our mission from Day 1."

Additionally, various keynotes were also delivered by H.E. Zhang Yiming, Ambassador of the People's Republic of China to UAE, Dr. Fadia Kiwan, Director General of Arab Women Organization, H.E. Dr. Khaled Wali, Director of the ICT Department at the League of Arab States, H.E. Eng. Mohamed Ben Amor, Secretary General of the Arab ICT Organization, H.E. Dr. Mohammed Al-Ohali, President of KFU

(King Faisal University) and Jawad Abbasi, Head of MENA, GSMA.

This year's Huawei MEA Innovation Day covered themes such as green ICT for the sustainable future of sectors and industries, the ICT talent ecosystem, and empowering women in ICT in the MEA region. In a panel hosted by Toni Eid, founder of Telecom Review Group & CEO of Trace Media, panelists discussed the importance of open partnerships and collaborations for shared success in building the ICT Ecosystem in MEA, the role of Digital Power in telecom networks, and green solutions in cloud. The panel was attended by H.E. Dr. Elsadig Gamaleldeen Elsadig Karar, Director General of the Telecommunications and Post Regulatory Authority of Sudan (TPRA), Dr. Jassim Haji, President, International Group of Artificial Intelligence, Dr. Fahem Al Nuaimi, Ankabut CEO, UAE and Dr. Ammar Al Husaini, Deputy Director General at Central Agency for Information Technology, Kuwait.

Huawei also delved into emerging technologies in the Middle East and Africa, highlighting the importance of cybersecurity and discussing the benefits of integrating technologies like 5G, Cloud, and AI in supporting verticals, key industries, businesses, and public services

A key topic Huawei explored at the Huawei MEA Innovation Day this year is building talent ecosystems to create future ICT leaders and strategies for strengthening the ICT skill development path for key sectors

***Eng. Mohamed Ben Amor***
*Secretary General, ICT Organization (AICTO)*

***Jeff Wang Global President of Public Affairs and Communications Huawei delivering the opening keynote speech***

and industries. ICT talent is significant in driving digital transformation and realizing national plans and visions. In a panel discussion with key industry and academics, the role of public-private partnerships in fostering innovation and equipping the youth with the right tools to become future ICT leaders was highlighted.

The second panel discussion moderated by Caroline Faraj, CNN VP and CNN Arabic Editor-in-Chief, shed light on the important topic of empowering the role of women in tech. In the digital era, Huawei strongly believes that more opportunities and support must be given to women to ensure they have access to the education and training they need to be competitive in the digital economy. Equipping women with these skills has proven to promote social integration and inclusive and diversified societies. The panel was attended by Dr. Fatma Taher, IEEE UAE Section Chair, Dr. Eman Said Al Abri, Dean of the College of Computing and Information Sciences, the University of Technology and Applied Sciences, Oman, Dr.Mardin Abdullah Anwar, Director of ICT and Statistics at Salahaddin University, Erbil, Iraq and Rania Halimeh, Regional Director, META, Logical Operations. Panelists discussed the importance of public and private partnerships to nurture innovation, local female ICT talents and create ICT future leaders, improve university curriculums and programs in light of ICT accelerated innovation, and fill the talent gap in cybersecurity, among other topics.

Shunli Wang, Huawei's Vice President in the Middle East delivered the closing remarks during the event, and highlighted the need to lead new ways for public-private sector collaborations to drive shared success and "Unleash Innovation for a Sustainable Digital Future in MEA region". Wang also mentioned Huawei's focus on 5.5G which will soon become a reality, enabling a 10 Gbps experience and a hundred billion connections.

"More markets in MEA – such as Jordan – have already announced the launch of 5G. We look forward to supporting Jordan in introducing the benefits of 5G, and we call for maintaining a fair, unbiased, and transparent 5G business environment. We believe that providing equal opportunities to global 5G vendors based on existing work track record, global experience, cost, and international standards effectiveness will ensure raising the bar in the competitiveness of the local telecom market and efficiently contribute to the national plans and visions," concluded Wang.

# Huawei and IEEE UAE Section jointly release L3.5 Data Center Autonomous Driving Network White Paper

At HUAWEI CONNECT 2022 in Dubai, Huawei and IEEE UAE Section jointly released the L3.5 Data Center Autonomous Driving Network White Paper, with industry forerunners UAE's Ankabut and Commercial Bank of Kuwait (CBK) witnessing the release. This white paper provides deep insight into the architecture, key capabilities, and typical application scenarios of L3.5 autonomous driving networks (ADNs) in data center scenarios, as well as deployment practices for key sectors such as finance, public service, and energy. Serving as an informative point of reference for enterprizes, this white paper can help to take the automation and intelligence of data center networks (DCNs) to new levels.

According to the white paper, as the digital economy becomes a key driver for global economic growth and enterprize data centers expand rapidly, data center networks urgently need to solve the following most pressing problems:

- Multi-cloud and multi-DC heterogeneous networks have become the norm for enterprizes. As such, enterprize customers need to centrally manage and coordinate multi-cloud DCNs and multi-vendor network devices as well as implement highly automated networks.
- The ADN needs to seamlessly integrate into enterprizes' O&M systems and IT processes, which vary significantly between enterprizes, so as to implement intelligent closed-loop management throughout the process.

To address the preceding challenges, the White Paper proposes the L3.5 data center autonomous driving network, which implements high-level automation and intelligence capabilities such as unified management, flexible orchestration and collaboration, and simulation in multi-cloud and multi-vendor networks, in addition to interconnecting with enterprizes' IT management systems to achieve end-to-end automation.

The White Paper illustrates the key technologies of L3.5 ADNs for data centers:

- **Open programmability platform:** centrally manages heterogeneous networks and devices.
- **Intent orchestration platform:** provides more than 100 generic NE models for flexible orchestration through drag-and-drop operations, implementing flexible orchestration of network-wide service flows without breakpoints. This, in turn, helps implement highly automated multi-cloud and multi-vendor heterogeneous networks and provision cross-cloud networks in seconds.
- **APIs published from orchestrated service flows:** are flexibly invoked by enterprize IT management systems on demand. In this way, the ADN can seamlessly integrate into enterprize O&M systems and IT processes, slashing the number of work orders and reducing the amount of repetitive manual work by more than 70%.

"Huawei's data center autonomous driving network is the industry's first to evolve from L3.0 to L3.5. This is the result of our deep insight into real-world service scenarios and pain points of customers across sectors such as finance, public service, and manufacturing, as well as our joint innovations with industry forerunners," said Arthur Wang, Vice President of Huawei's Data Center Network Domain. "The White Paper shares best practices across these sectors, with the aim to enhance enterprizes' competitiveness in the digital economy era by optimizing their network architectures and operating modes and helping them build agile and reliable services while reducing their OPEX and CAPEX."

To date, Huawei's Data Center Autonomous Driving Network Solution has been deployed in data centers of more than 10,000 customers across sectors such as finance, public service, manufacturing, and energy.IT

# stc reveals a White Paper in collaboration with GCC Open RAN Consortium

To further enhance its collaboration with other regional operators and building on its earlier announcement to establish a joint GCC Consortium in a step to accelerate the early adoption of Open Radio Access Network (Open RAN) solutions in their brownfield networks with a robust regional ICT ecosystem, the Consortium launched a regional community open lab that provides shared facilities and access to members and vendors for Open RAN solution trials and validations.

To establish the right mechanism and understanding of Open RAN, the consortium announces the publication of a whitepaper titled "Open RAN for Brownfield Operators Challenges and Opportunities". The White Paper sets out the challenges of deploying Open RAN in brownfield networks, such as interoperability, operational complexity, cybersecurity, performance, and TCO issues. As well, addressing the potential opportunities, mainly 5G prospects, disaggregation, the path to 6G, and Automation. Furthermore, the White Paper discusses the summary of recent Live trials and the community Open Lab.

***Eng. Bader A. Allhieb***
*Infrastructure VP, stc*

stc Group will continue to work with Open RAN consortium members and other stakeholders aligning on Open RAN trials, technology strategy, and leveraging on international partners' experience for the early adoption of Open RAN. Allowing stc to strengthen its drive and strategical drive towards a digital future, a pillar of its DARE strategy and an essential element of the Kingdom's drive towards vision 2030.

Eng. Bader A. Allhieb, stc Infrastructure VP said: "stc Group is committed to promoting and working with the operator members from GCC Open RAN consortium to achieve the objective of accelerating Open RAN adoption in brownfield networks. The White Paper release announcement indicates the entry into a new era of operators' collaboration to promote the development of open RAN technology, which leads to growth of our local ICT sector and provides a trusted avenue for new entrants, in both the hardware and software fields to work with operators.

# stc and HUAWEI accomplished the first global 1.2T/channel trial of the DWDM network

stc has announced that in collaboration with Huawei, the first Global 1.2T/channel trial in its DWDM optical network has successfully completed. Known as the Dense Wavelength-Division Multiplexing optical fiber technology that is used to increase the bandwidth of existing fiber networks. The completion of the project reflects stc's leadership and pioneering advantage in the ultra-high-speed transmission field and verifying the 1.2T/channel transmission capability on the stc live network.

The optical layer uses the Super C technology (120 channels in one pair of fiber), and the maximum single-fiber capacity can reach 48T, providing bandwidth assurance for Saudi Arabia's new services and applications such as: e-government, smart healthcare, smart education, as well as it accelerates Saudi Arabia's digital transformation.

"stc Group has been the leader of the region in the field of optical transmission innovation and has paid a great attention to large-capacity transmission technologies," said Eng. Bader Allhieb, Infrastructure VP of stc Group. "Huawei's 1.2T high-speed transmission technology maximizes the single-fiber capacity by 4 times and greatly improves the bearer efficiency of optical networks. In the future, stc Group and Huawei will continue to cooperate and explore the ultra-high-speed optical transmission field, accelerate the application of innovative technologies, construct more efficient optical networks, and provide high-quality connection services to cope with explosive traffic growth."

The pioneering vision and leadership of stc Group in the digital market, is a contributor to the success of KSA's vision 2030 of digitization and automation. As the digital market leader in Saudi Arabia, stc Group has been committed to modernizing telecom infrastructure, strengthening its technical advantages and network capabilities, and ultimately providing an excellent user experience.

*stc Group provisions Capacity Europe, London*

# The group successfully concludes its contribution with the latest specialized carriers' and Wholesale projects

stc Group concluded its contribution in the Capacity European Conference, which was held in London. The group provisioned the event through a Diamond Sponsorship. It also showcased its latest projects in data centers, most notably Center3 and submarine cable projects as well as the services it provides to the telecom service providers, international operators and the international business sectors.

The conference focused on the future of digital infrastructure networks. It is the largest of its kind as it has been held for 22 consecutive years as well as it brings together network operators, data centers, cloud service providers, Internet exchange services, content providers, satellite companies, and more.

stc's continued participation in Capacity Europe 2022 is a confirmation on its role as the largest digital enabler in the Middle East , as it provides the capacities and speeds necessary for its customers. stc Group has invested in strengthening the digital infrastructure and developing a highly efficient network of global submarine cables in line with the Kingdom's 2030 vision of increasing digitization in the Saudi market.

Eng. Mohammed AlAbbadi, Group Chief Carrier and Wholesale Officer, represented stc Group in the main keynote panel of the conference, which was about 'What does the future hold for telecoms in an inflationary environment?'. He explained that higher expectations for what infrastructure can deliver today, requires higher investment, therefore finding the proper partnerships to extract value is vital.

stc Group recently launched Center3 with the aim of developing digital business and enhancing investment opportunities in international communication services and data centers. In the direction of providing the latest communication, hosting technologies and raising the capacity of data centers connect the three continents Asia, Africa and Europe.

Center3 seeks to manage big data, high-speed computing, and local and international service providers by managing the digital infrastructure assets owned by stc from data centers, submarine cables and internet exchange points.

*Erin Kalejs*

# How immersive liquid cooling and AI are turning data centers green

Data centers are the beating heart of the digital economy. If you don't know what they are, here's a quick description: data centers are the factories of the "Digital Era", "the hidden engine" behind any mobile, PC, IoT, where computers are used to collect, store and manage data. Data in the cloud doesn't exist somewhere in the sky, and unfortunately there are yet no clean "data clouds".

Using air cooling, data centers require an enormous amount of energy and use of natural resources like water to run smoothly. Today, estimates of that amount vary greatly depending on the source from 1% to 15% of the world energy consumption. According to the International Energy Agency, data centers use approximately 200 terawatt-hours (TWh) of electricity, or nearly 1% of global electricity demand, contributing to 0.3% of all global $CO_2$ emissions.

No matter the sources one looks, overall, it's quite an inefficient system in place that struggles to keep up with the rise of computing needs and big data (IDC predicts that the collective sum of the world's data will grow from 33 zettabytes this year to a 175ZB by 2025, for a compounded annual growth rate of 61 percent). It is clear that drastic action must be taken in order to reduce data centers' energy consumption on a global scale.

The good news is that green technologies such as Immersion4 in combination with AI, are changing the way data centers operate to make them more sustainable based on four pillars; no water consumption, no $CO_2$ emissions, no GHG (greenhouse gas) emissions and ethics. It sounds almost unattainable, doesn't it? In a recent AI for good webinar, "Energy saving vs sustainable AI and data" Immersion4's Founder and CEO, Serge Conesa explained how it's happening.

**The driving forces behind air vs immersive liquid cooling**

The major issue impacting traditional data centers is their inefficient use of energy. "This is based on the simple fact that we cool electronics using air. Air is an insulator. We need to change the paradigm. As long as we use air, we need to have special dedicated cooling infrastructure to protect the electronics and the PCBs against heat, external events, such as dust, corrosions, oxidation, humidity, temperature swings, and so on and so forth."

Immersion4's simple yet effective solution to reducing data centers overall harmful environmental impact can be summed up in two words: liquid cooling. Thus, eliminating the need for air cooling and its dedicated infrastructure and offers the opportunity to use the thermal waste from the datacenter to reduce the carbon footprint of the built environment: "simplicity is the highest form of sophistication".

Immersion4 uses a "Liquid to LiquidTM" thermal transfer combining "DTMTM systems using ICETM coolant" connected to a sealed closed water loop. This is paradigm shift, no more air temperature control needed in the datacenter yet only liquid temperature control. Electronics of any kind immersed within the ICETM coolant liquid circulating and collecting the heat generated allows "any IT Load to

*"When it comes to energy consumption within data centers, 60 to 70% goes to cooling and 30 to 40 at most goes to the IT load which is at the end of the day a big loss of energy," explains Serge Conesa. "Any data center today is being paid for data resiliency not for energy efficiency."*

> *"The only thing we need to change right now is our behavior because the technology is here," Serge Conesa.*

operate no matter if the servers are overclocked, and independently of any kind of application you're using."

Using liquid instead of air to cool IT Load solves a ton of all problems (such as humidity, corrosion, oxidation, dust, electrostatic, temperature swing, whiskers, to name a few) providing a stable temperature environment control which is crucial for the longevity of any electronics.

Another big challenge towards achieving sustainability is the problem of E-waste.

"One of the crucial problems we are facing today is E-waste," he says. "If we use Immersion4 technology, generally by immersing any kind of electronic components with the connectivity, electrical data, and fiber optics we basically do not need all those protections called conventional coating and brominated chemical layers which are needed when we use air cooling."

He added, "I am looking forward to the day when we create PCB's and components that are dedicated to liquid immersive cooling because that will be the day that we make E-waste history allowing urban mining recycling anywhere in the world."

**Technology for sustainable energy consumption and conservation**

While using and creating renewable sources of energy is crucial, Conesa pointed out that conservation is key. "The first principle that drives Immersion4 is Eco conservation, using energy for what matters and what matters in the datacenter is the IT load not the cooling. It's also not about using dedicated building because any building should be able to become a data center. For me, there is no smart city without smart energy".

Additionally, air cooled data centers require "creating new power plant, upgrading the grid and renewable energy is not enough in term of quantity, resiliency and consistency which is why there is not a single data center today running only on renewable energy."

AI is also playing a role in making data centers more sustainable. AI-powered software can help data centers more effectively manage their infrastructure, maximize the use of their CPUs and deliver significant energy savings.

New processors for data centers also play an important part as they increase computing power without increasing energy consumption. As Conesa mentions "the issue is not only about a processor being too hot. Today CPU, GPU, FPGA, ASIC, memory, etc have become heat sensitive impacting performances and overclocking capability. Using immersive cooling allows tremendous savings in energy consumption and dedicated cooling infrastructure.

When we solve the core problem which is cooling electronic, AI can be used efficiently. Combining data collection, optimized application software using the right algorithms, virtualization to manage data with the needed processing contribute greatly to enhance sustainability. These are the keys to have a complete sustainable chain from the electronics component to the applications."

**Embracing innovation to create change**

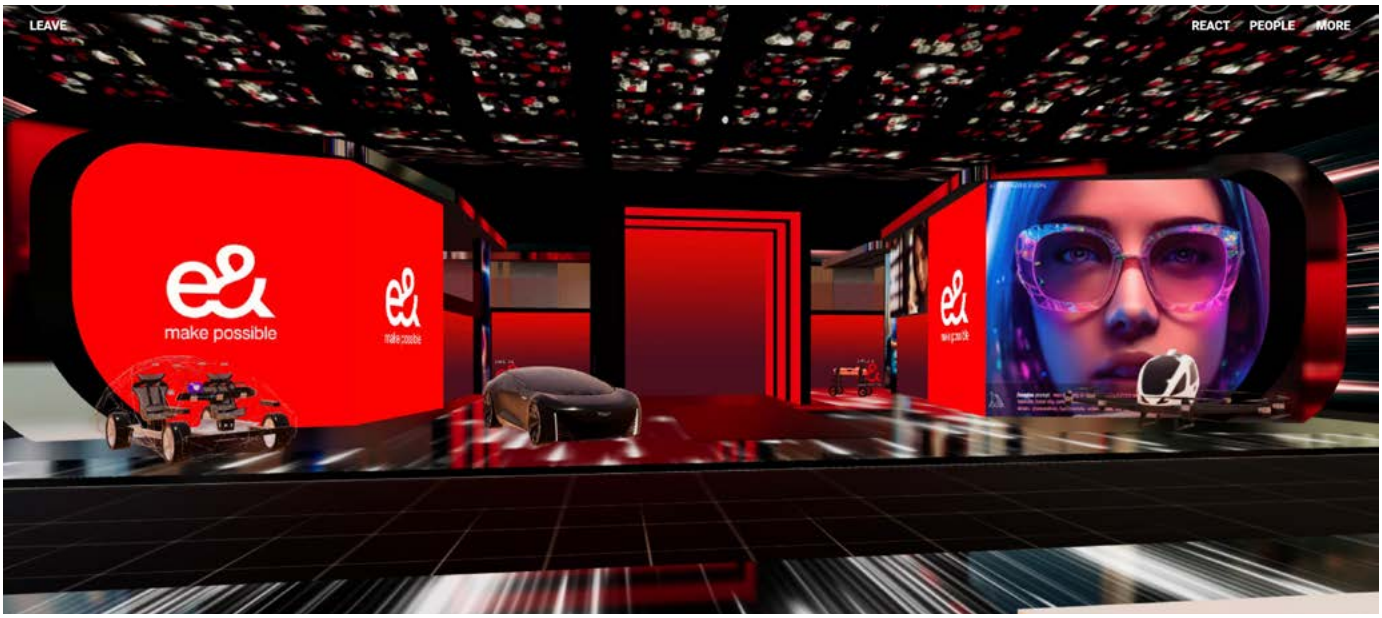
In the "AI for Good" interactive Q&A session with the audience, a question came up: how compatible is Immersion4 with current servers? which Conesa replied: "Any server, any router or switch is compatible with Immersion4: being able to take the legacy of any servers from any brand is very important. The only modification you will have to make will be to replace the hard drive with an SSD hard drive, because a mechanical hard drive doesn't work with the liquid so the performance will be greatly degraded." He adds, "the good news is, because of the market trend all servers today are equipped with SSD hard drive."

Advanced cooling technologies go further with AI. By embracing and applying it to redesigning true sustainable data centers the possibilities are endless since, "Immersion4 DTMTM technology is climate and building agnostic for any application from EDGE to HYPERSCALE".

Conesa ended the session by pointing to the elephant in the room "it is not you and me or our kids who are guilty for using their phones and consuming data, it's the big engine on the back – the data factory aka the data center." T

*(https://aiforgood.itu.int/how-immersive-liquid-cooling-and-ai-are-turning-data-centers-green/)*

# e& takes its first step into the metaverse




e& has enthraled stand goers at GITEX GLOBAL 2022 by inviting them to enter the next digital universe with the soft launch of their virtual world, e& universe. This move marks a significant achievement in the Group's transformation journey to a global technology and investment conglomerate, as it takes its first steps into the metaverse.

Hatem Dowidar, Group CEO, e& shares his views on why telcos must adopt the metaverse in enhancing customer experience and boosting digitalization journeys of enterprises.

Metaverse technology may be in the early incubation stages, given that it needs high-bandwidth and low-latency communications to work at scale. Still, telcos must consider harnessing its potential for the betterment of lives, whether it is a virtual playground or shopping destination, or even using it as a training ground for smarter, more efficient AI and industrial manufacturing processes. To get it to work at the grand scale we all envision will require robust connectivity solutions. This is where 5G becomes the fulcrum, given that mobile networks may not be able to handle the metaverse network demands.

According to a report by Ericsson, 5G is a critical enabler for the metaverse and its entire ecosystem as it has global reach, including roaming capabilities. For the cloud and edge-cloud (MEC) capabilities of the metaverse, 5G also offers low latency, offload processing and enhanced render level of detail (LOD).

To harness the power of the metaverse, telcos must expand beyond their traditional capabilities and more towards embracing a growth mindset where they are open to exploring innovative ideas. In fact, telcos can play a more prominent role in the metaverse value chain by leveraging emerging technologies such as 5G, edge cloud, analytics and Artificial Intelligence (AI).

In fact, there are endless opportunities that telcos can level in the metaverse domain such as:

•**Cloud computing services –** Edge computing is one of the foundational stones in the metaverse, and telcos are in a prime position to provide edge computing services so as to unlock more efficient data transfer, lower the load of network congestion and also add another revenue stream in the process.

•**Human interface hardware –** Telcos can drive the adoption of augmented reality (AR) and virtual reality (VR) applications used for optimal interaction in the metaverse. These could be through the bundling of VR devices and connectivity services and go further in adopting an end-to-end (E2) device lifecycle management approach.

•**Advanced analytics or AI –** Now more than ever before, telcos have access to a variety of data points. More so, in the metaverse, they can use these Big Data insights to improve decision-making. The data could also help them in using customer-and operations-related insights to use advanced analytics and AI to bolster revenues.

•**Connectivity provider –** With the generational shift from 5G to 6G as we approach 2030, this will further the adoption of the metaverse in daily life. Telcos can play a part in addressing network capacity and efficiency-related issues as metaverse requires robust fibre connectivity, which delivers high-bandwidth speeds.

•**Metaverse platforms –** As the metaverse platforms will evolve from a series of

*Hatem Dowidar - Group CEO, e&*

various virtual worlds created individually by companies, there will come a time when a super virtual world will be formed. By investing in emerging metaverse platforms, telcos will have the upper hand in building the in-depth technical expertise required to create the metaverse of the future.

**•Cybersecurity, privacy and trust –** Individuals and enterprizes remain concerned about their digital footprint and data integrity. As data custodians, telcos are seen as a trusted partner by customers in keeping their private data safe. And so, telcos could consider leveraging their current customer relationships and position themselves as 'identity management experts.'

Telcos will also be required to partner with technology giants, internet tech companies, specialist cloud providers, device manufactures, technology platform providers as well as online game developers so that they can create a partner ecosystem for developing a solid metaverse ecosystem. In that way, telcos can become the orchestrators of the metaverse ecosystems by identifying collaborative opportunities with involved parties.

Based on the limitless possibilities that are available in metaverse adoption and in line with our commitment to digitally empower societies, we are taking a significant step forward into the metaverse this GITEX GLOBAL by announcing the launch of e& universe, hosted virtually in Arcadia Planitia on Mars.

Alongside, we have had two other major showcases: the Metaverse Service and etisalat by e&'s business centre. The Metaverse Service is a metaverse platform designed to maximise user experience through multiple virtual spaces and avatars. This was a result of the collaboration with SK Telecom, the largest mobile operator in Korea, to explore media and entertainment. Through our third metaverse showcase, etisalat by e&'s business centre showcase is in collaboration with Huawei, where e& is demonstrating the future of retail using a 3D retail experience in an innovative way.

**e& universe is going to revolutionise customer experience and empower users with opportunities to traverse both the virtual and physical worlds. Here's why.**

With the launch of e& universe, hosted virtually on Mars, specifically in Arcadia Planitia, we are taking our first steps into the metaverse. Scientific research indicates that Arcadia Planitia is a location most suitable for future life on Mars. According to NASA, it is one of the few regions where abundant shallow ice is present at relatively low latitude.

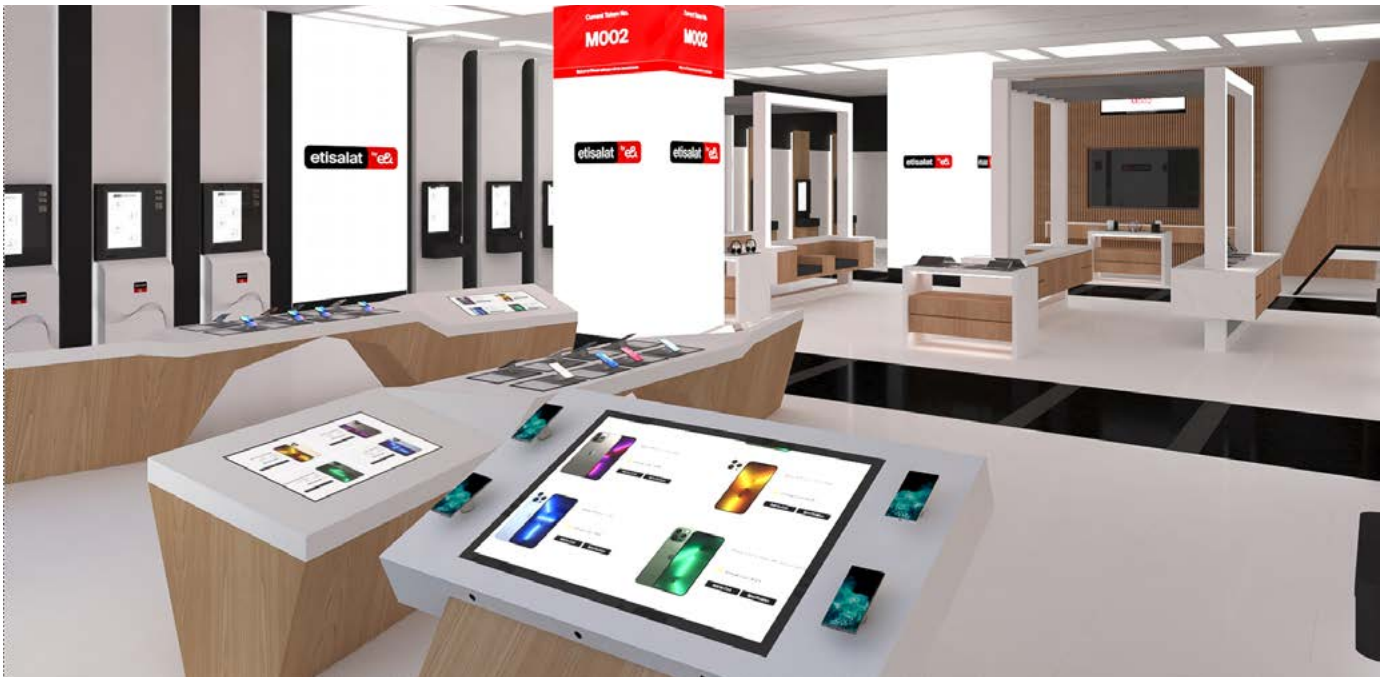
The launch of e& universe is in partnership with HTC, the leading manufacturer or virtual reality and mobile devices. Visitors can virtually visit e&'s stand at GITEX GLOBAL 2022 and for the very first time in the history of GITEX, can view technology showcases.

The next phase of this project is set to enthrall users with the opportunity to purchase digital assets, watch virtual concerts and sporting events, purchase non-fungible tokens (NFTs), and many other digital experiences that are set be the first in the country and the region.

**Our other showcase at GITEX GLOBAL is Metaverse Service, a metaverse platform designed to maximise user experience through diverse virtual spaces and avatars.**

The Metaverse Service was a result of the collaboration with SK Telecom, to enhance user experiences through multiple virtual spaces and unique avatars in addition to exploring opportunities for social networking in the metaverse. This platform provides the opportunity to visit the exclusive exhibition of e& NFTs alongside special artworks by international artists, and listen to famous K-pop music, poems, and various entertainment shows available in the world of metaphysics through virtual and augmented reality technologies available on the platform.

**Our third showcase at GITEX GLOBAL is etisalat by e&'s business centre showcase where we are demonstrating the future of**




**retail using metaverse technologies.**

This is an advanced metaverse showcase presented by etisalat by e& in collaboration with Huawei, providing a digital 3D retail experience of the company's business centre in an innovative way. Visitors can experience a real-life customer journey by using VR devices. They can also access the services and products offered by tracking the hands movement or through voice commands. This indicates how the benefits of the metaverse in taking customer experiences to a whole new level, where customers can connect and use digital services in real time and through the use of high-speed 5G network with very low latency.

I envision that the metaverse will offer a transcending experience to users and businesses. The vision is based on our firm belief in capitalising on the opportunities that next-generation technologies offer to empower a brighter, digital future for all.

When we speak about our commitment to offering customer experiences that transcend everything they have experienced before, we are not only showcasing how technologies can digitally empower societies. We are looking at how we can design deeper levels of personalisation beyond anything we have done before, whether it be customer experience, a user journey, or retail purchases. Harnessing the potential of the metaverse will certainly become the pivot that accelerates our progress to the next frontier of the digital realm. It is a world we are still exploring, and there's so much untapped potential, since the metaverse has already shown demonstrated multiple possibilities to transform the world of technology.

What makes the journey into the metaverse exciting is the use of next-generation technologies such as Web 3.0, VR, AR, ubiquitous 5G high-speed internet, Blockchain, Crypto, NFTs, and others, backed by the remote working or hybrid working models that the world has adopted these past few years.

Apart from immersive experiences for individuals, there are multiple opportunities for entrepreneurs and technology companies to capitalise on as they enter the metaverse. Gartner predicts that by 2026, 25% of people will spend at least one hour a day in the metaverse for work, shopping, studying, and socialising. When it comes to experiences, games, concerts and other entertainment activities can offer additional revenue opportunities for talent. As for streaming entertainment, users could have a new medium for consuming entertainment when content aggregators start to create content meant for the metaverse.

Travel opens up several possibilities as it is in this realm that the metaverse

*"I envision that the metaverse will offer a transcending experience to users and businesses. The vision is based on our firm belief in capitalizing on the opportunities that next-generation technologies offer to empower a brighter, digital future for all"*

> *"Metaverse technologies will also be embraced beyond retail and travel in the areas of home, offices and in the communities"*

goes beyond the physical and temporal boundaries and users can embark on a virtual trip to destinations they would like to visit in person at a later date. Moreover, online shopping experiences in retail could become much more realistic with the metaverse-ready body suits and innovative user interface devices, from the comfort of one's home.

TechRepublic, an online trade publication for IT professionals, has reported that 91% of organizations are planning to use metaverse technologies over the next few years, where 60% use VR/AR for production optimisation, 53% use metaverse technologies for enhancing customer care and 26% for corporate training.

We believe that the future is about unlocking creativity, exploring immersive experiences and storytelling, as well as building a new world. The partnerships we are making in the metaverse also give us a platform to enable our audiences to interact in unique ways. At the same time, the metaverse allows creators the freedom to set up environments where they can meet, unite and customise content for their specific viewers.

**Metaverse technologies will also be embraced beyond retail and travel in the areas of home, offices and in the communities.**

According to the investment bank Citi, currently, the metaverse represents a potential USD 8 trillion to USD 13 trillion opportunities by 2030, that could boast as many as 5 billion users, including a mobile phone user base.

Homes of the future could become a metaverse where families and friends from across the world can tune in digitally and physically to share great moments and occasions. Already, gamers are accessing the world of virtual gaming through headsets and other such simulators. In the future, game consoles could be moved to the cloud to render impactful graphics in real time.

Meeting rooms on the office premises rooms could evolve into 'immersive' rooms, while cubicles in the physical realm could be linked via AR portals to create multi-purpose spaces, whether it is for supporting hybrid working models or engineering projects such as digital twins.

Extended technologies (XR) will be used at hospitals and caregiving clinics to improve the patient's quality of life through immersive experiences. With the use of either avatars or teleoperated equipment, caregivers can continue to work remotely and interact with their patients, ultimately improving patient care.

Academic institutions could see a more immersive and cost-effective way to hold practical training sessions and classes where virtual equipment is used.

When it comes to AI and metaverse, the UAE has a strong and clear vision and strategy. These next-generation technologies will play a role in boosting the socio-economic development of the country.

With the AI strategy, the UAE aims to become the world leader in AI by 2031 in alignment with the UAE Centennial 2071. The country's vision includes creating massive socio-economic growth, becoming a knowledge economy and generating up to AED 335 billion in extra growth. $120 billion is the anticipated contribution of AI to the economic growth of the UAE by 2030.

In addition to having the world's first AI Minister, the UAE government has taken the lead even in establishing the world's first graduate-level AI university in Abu Dhabi, the Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), empowering students and businesses to advance AI in all aspects of life. In late July 2022, Dubai announced it was looking to shape the future of AI by setting up the Higher Committee for Future Technology and Digital Economy, focused on investments in the metaverse and establishing strategic partnerships. This followed the launch of the Dubai Metaverse Strategy, which aims to foster innovation and application of new-age technologies, ensuring the metaverse increases its

contribution to 1% of the Emirate's overall GDP. The strategy will also see the increased contribution of the metaverse sector to the Dubai's economy to $4 billion by 2030.

In July 2022, the Dubai government also announced that it is going to take its government into the metaverse to allow users access to services in an integrated network of 3D virtual worlds. The move is set to improve the overall industrial competitiveness as well as efficiency optimising in a heavily digitalised world we all live in, which will ultimately support the country's aspirations to diversify the UAE's economy even further.

Recently both Abu Dhabi and Dubai became the first global cities with a global metaverse launch by UAE-based Metaverse Holdings. The UAE will be the first 'utilised' hub within the first virtual world that replicates real-life experiences and places. This is where users worldwide will experience the best attractions and iconic landmarks from the comfort of their homes as the experiences will merge both the physical and digital worlds. The announcement is in line with the UAE government's mission to advance the adoption of blockchain technology, digital assets and the metaverse across the region.

This year also, the UAE announced the Digital Economy Strategy, which aims to double the contribution of the digital economy to the UAE's GDP from 11.7% to over 20% within the next ten years. The UAE is among the top 25 % of countries in the most important global digital indicators, where the contribution of the digital economy to the non-oil GDP is 11.7%, and the UAE's GDP is 9.7%. It is worth noting that the ICT sector has been the driving force in the digital economy.

The UAE has developed the UAE Digital Government Strategy 2025 so as to merge all digital aspects into overall government strategies and integrate them on a national level, which will ensure a world-class digital infrastructure for the UAE. It is in alignment with various national strategies, including the UAE Centennial 2071, UAE Strategy for AI, and Fourth Industrial Revolution (4IR) strategy. In particular, Abu Dhabi Digital Authority was set up to support Abu Dhabi's digital transformation through various digital services to establish a secure digital government ecosystem in Abu Dhabi.
We were privileged to work on the launch of Cyber Eye, with the Abu Dhabi Digital Authority, which is a central part of the Abu Dhabi government cybersecurity strategy. We made a difference by ensuring that a one-of-a-kind technology was employed to identify cyber threats in real-time to further strengthen the security of Abu Dhabi government entities' digital assets. This initiative will enhance the position of Abu Dhabi and the UAE as an innovation and technology hub.

In late September 2022, the two-day Dubai Metaverse Assembly became a global platform for the metaverse community where the aim was to ideate, develop and deploy a range of innovative technological solutions and next-generation technologies that will impact the quality of life of people around the world. It became the ideal space to boost knowledge-sharing, idea incubation and discuss ways to collaborate even further in addressing pressing challenges that the world faces today.

The UAE has taken great strides in the metaverse and this latest launch from e& into the metaverse highlights our commitment to the vision of the leadership in enhancing the country's position to the forefront across all global ICT indicators, digital competitiveness and adoption of the most modern and advanced technologies. We are all so privileged to be part of the digital economy journey of this country, as digitalisation and, more specifically, the adoption of the metaverse creates additional opportunities for economic growth as well as adds value for our customers and shareholders. T

***"When it comes to AI and metaverse, the UAE has a strong and clear vision and strategy. These next-generation technologies will play a role in boosting the socio-economic development of the country"***

# e& partners with Ericsson to build sustainable networks in the UAE

e& has partnered with Ericsson through its telecom arm etisalat by e&, the brand representing the United Arab Emirates telecom pillar of e&, on a major expansion project to improve network energy efficiency through the deployment of the latest Ericsson Radio System portfolio across the service provider's network. The two-year project is in line with e&'s Sustainability Strategy, launched in July 2022.

The initial deployment phase saw a substantial reduction in energy consumption of up to 52 per cent with Ericsson's dual-band Radio 6626 compared to prior deployed radios. The reduction in energy consumption is equivalent to 7.6 tonnes of carbon dioxide ($CO_2$) emissions per site per year for the sites configured with four LTE carriers.

Moreover, the deployment of Ericsson's state-of-the-art 5G mid-band radios for 5G network expansion has resulted in 20 per cent improved energy efficiency compared to the previous radio generation.

The expansion will help etisalat by e& evolve its radio access network (RAN) and support efforts to break the energy curve, which is key to reducing its carbon footprint across the region.

Khalid Murshed, Chief Technology and Information Officer (CTIO), Etisalat UAE, says: "Building a brighter digital future for all begins with placing our people, customers, and the environment at the heart of our business. We have remained committed to our sustainability aspirations with resilience despite the changes witnessed on the ever-evolving business landscape over the last few years. We are focused on minimizing the environmental impact of our network by pursuing environmentally sustainable solutions that elevate performance quality. The energy consumption reduction witnessed by deploying the enhanced Ericsson Radio System is part of our strategy to build a more sustainable infrastructure across the country."

Ekow Nelson, Vice President and Head of Global Customer Unit e& at Ericsson Middle East and Africa says: "Sustainability is central to our purpose, and being at the forefront of network innovations, we are actively supporting the broader telecom industry in reducing energy consumption and minimizing the carbon footprint. Our proven and tested innovative radios will enable etisalat by e& to offer optimal network performance to end users as they evolve their infrastructure to be more sustainable. Moreover, the energy reduction in our radios will aid etisalat by e& in significantly cutting down operational expenditure and make significant contributions to our net zero targets."

Ericsson and etisalat by e& have been actively exploring sustainable network solutions and have also hosted a sustainability-themed event last year at the Swedish Pavilion at Expo 2020. This latest partnership is set to support etisalat by e& in sustainably transitioning from a traditional telecom operator into an integrated digital solutions provider, propelling the company's vision to digitally empower societies. T

# e& presents its investment pillar, e& capital, powered by USD 250 million VC Fund, at GITEX GLOBAL 2022

e& has announced its strategy for e& capital, its investment pillar at GITEX GLOBAL. e& capital disclosed latest deals and insights into how e& plans to further progress its aspirations as a GLOBAL technology and investment conglomerate through its USD 250 million e& capital Venture Capital (VC fund). e& capital will further drive the tech ecosystem through larger investments at the growth stage beyond its VC fund.

Earlier this year, the transformation of e& provided the right foundations for the Group to consider VC and growth investments for early-stage entrepreneurs and rising startups. The e& capital VC mandate is to attract, engage and support startups, adding value to their journey by capturing synergies, providing access to investor and expert networks, and adopting a collaborative approach. Building on the Group's strong fundamentals of more than four decades of growth, e& capital has the capabilities to discover and invest in startups with a significant market potential, a passionate founding team, a disruptive business model, and superior potential from a technology and business performance perspective.

e& capital investments will play a critical role in enhancing the offering for e& customers, with the e& investment arm already closing sizeable deals, thus standing as a testimonial of its determination and abilities. Already, it has made a strategic investment in VUZ, a leading immersive social app that allows users to stream and experience a new level of immersive realism in Extended Reality (XR) and metaverse digital experiences. Through its contribution to the USD 20 million in the Series B funding round for VUZ, e& capital stays committed to supporting startups that show promise of driving value as well as scaling in the near future.

e& capital had also funded Lablabee, a tech startup which will grow the world's first hands-on lab platform for the telco cloud, offering training that is more interactive and accessible. Lablabee has demonstrated the potential to transform its novel ideas into a viable business solution that will add value to customers and impact the technology sector.

At GITEX GLOBAL, e& capital demonstrated how it is supporting early-stage entrepreneurs who possess the vision to build big businesses by facilitating education, mentorship, networking and funding opportunities. In particular, e& will be supporting the top regional female founders through prize money and other tangible rewards during one of the region's leading exhibition and conference.

Hatem Dowidar, Group CEO of e&, said: "We believe that trends shaping the future are worthy of investment. With the future-focused e& capital business model, we want to be innovation custodians by delivering on our business objectives, executing meaningful investments, and earning GLOBAL exposure. The uniqueness of e& capital revolves around several core elements: leveraging the strong foundations of e&, supporting bold startups that can make a difference, and acting as a catalyst for turning big ideas into the leading businesses of tomorrow. Given the close interplay among e&'s diverse business pillars, e& capital will assess synergies that help us accelerate the business growth of startups and the Group."

Kushal Shah, Head of Venture Capital, e& capital, added: "As the investment arm of e&, our vision is to invest in business ideas that empower a better and brighter digital future. Building on the strong foundations of e& as a GLOBAL technology and investment conglomerate, we are now taking massive strides towards supporting visionary tech businesses by enabling synergies and providing access to innovation. Once this happens, the regional tech ecosystem will evolve dramatically. Major change never happens overnight, and we are gearing up for a long-term goal of enabling meaningful progress that moves the world forward. As we build a portfolio of fast-scaling businesses that are already proven winners, we are looking forward to setting things in motion in VC and growth investments, as we rely on a thorough process that will continuously build and maintain momentum."

According to market research from MAGNiTT and based on their Q3 2022 MENA Venture Investment report published recently, funding in the first three quarters of 2022 stood at USD 2,331 million, recording a yearly increase of around 20%. However, this funding growth was against the backdrop of, the number of deals closed

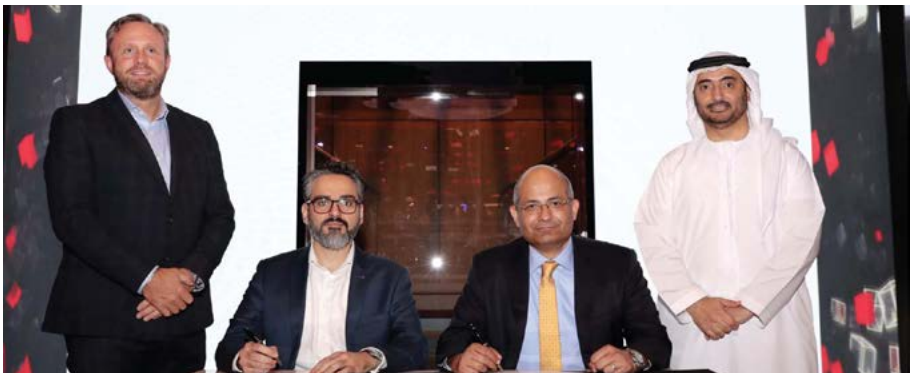
in the aforementioned period reaching 446, down by 4.7% annually.

In continued positive momentum, the UAE, Egypt and Saudi Arabia maintained the top three positions at the level of the number of deals and value of funding capturing more than 75% of the region's shares. The UAE topped the funding value list with USD 845 million over 117 deals in the first three quarters of 2022, while Saudi Arabia followed with USD 818 million across 106 deals and Egypt came in the third position with $392M over 120 deals. Bahrain emerged into the top five with USD 120 million following a MEGA deal of USD 110 million closed in January. FinTech remains the industry of choice, ranking first in both number of deals which touched 94 with a share of 21% and value of funding which edged up by 74% to rest at USD 747 million with a share of 32%. Looking at the number of deals, e-commerce and Transport & Logistics (T&L) ranked second and third with respective shares of 15% and 10%. Regarding funding, T&L came in second place with a share of 13%, while Food & Beverage (F&B) came in third position with a share of 10%. Agriculture emerged into the top five industries in funding in the first nine months of 2022. This followed the USD 181 million MEGA round closed in June 2022. Globally, the value created by startups is about USD 3.8 trillion in ecosystem value, which is almost at par with the Gross Domestic Product (GDP) of a G7 economy, according to advisory firm Startup Genome.

Given the above venture capital funding trends in the region, e& capital is keen to promote the positioning of the MENA tech sector amongst its Global peers, by successfully and sustainably scaling local startups to reach the Global stage. e& capital is also ready to make bold, steady investments and stay the course, driven by teams and expertise that work in sync with the market pulse. T

# PTCL and Nokia to explore innovative ICT solutions for government, cities, industries and businesses

Pakistan Telecommunication Company Limited (PTCL) and Nokia have announced the signing of a Memorandum of Understanding (MoU) to explore together to provide innovative ICT solutions to industries, government, cities, and businesses throughout Pakistan.



*Group Chief Business Solutions Officer, PTCL & Ufone, Zarrar Hasham Khan and Head of Customer Team for PTCL Group at Nokia, Imran Durrani, Signed an agreement to explore innovative ICT solutions in Pakistan. President and Group CEO, PTCL & Ufone, Hatem Bamatraf and Head of Global Enterprise Business Nokia, Chris Johnson are also present at the ceremony during GITEX GLOBAL 2022 in Dubai.*

The purpose of this MoU is to collaborate and tap into the potential of the ICT market and catalyze the digital transformation of enterprizes across Pakistan. Under this MoU, PTCL and Nokia will engage in discussions to strategize and build a go-to-market plan to address industry needs selling PTCL solutions with Nokia products and services including Nokia Digital Automation Cloud (DAC), a high-performance, end-to-end private wireless networking and edge computing platform.

Zarrar Hasham Khan, Group Chief Business Solutions Officer, PTCL & Ufone said, "PTCL is the largest ICT services provider having a wide footprint across Pakistan. PTCL is playing a pivotal role in driving digital transformation throughout Pakistan, meeting the need of collaboration in the ICT segment. This will create synergies to revolutionize various sectors such as healthcare, education, automotive, retail, energy & utilities, cities and agriculture as well as other industrial segments across Pakistan, enabling all geographical areas with modern ICT technologies and a better future."

Imran Durrani, Head of Customer Team for PTCL Group at Nokia, said, "Nokia has deployed mission-critical networks to more than 2,200 leading enterprise customers in the transport, energy, large enterprise, manufacturing, webscale, and public sector segments around the globe. We have also extended our expertise to more than 485 large private wireless customers worldwide across an array of sectors. This MoU with PTCL is yet another testimony to further strengthening the long-term relationship between us. At Nokia we will leverage our industry-leading private wireless products and services including Nokia Digital Automation Cloud (DAC) to empower PTCL to cost-effectively offer digital solutions to their enterprise customers across a wide spectrum of segments."

PTCL endeavors to offer its customers enhanced service quality, faster speeds and enable a simplified network architecture that increases operational efficiencies. T

# Ericsson's largest consumer study shows 5G is already paving the path to the metaverse

As 5G uptake in many parts of the world bridges the milestone from early adopters to mass adoption, major new Ericsson research – the industry's largest global study of its kind to date – underlines consumers' growing commitment to 5G and their expectations on next-generation uses cases.

**Called 5G:** The Next Wave, the Ericsson ConsumerLab report addresses the impact 5G has had on early adopter consumers since launching in various countries, as well as gauging the intention of non-5G subscribers to take up the technology – and their related expectations. The report forecasts that 49 percent of smartphone users in the United Arab Emirates (UAE) intend to upgrade to a 5G subscription in the next 12 months. Currently, 36% of smartphone users in the UAE are on 5G.

The mix of Ericsson tracking data covering 5G launches since 2019, and the new consumer survey, has enabled Ericsson ConsumerLab to identify six key trends impacting the next wave of 5G adoption.

The report covers the behavioral changes triggered by the bundling of digital services into 5G plans by communications service providers – particularly the increased use of enhanced video and augmented reality (AR) apps.

The report also addresses the speed of mainstream 5G adoption, whether consumer demands are being met, and 5G-related changes in smartphone behavior - and their impact on network traffic.

More than 49,000 consumers in 37 countries were interviewed in the research – the largest global 5G-related consumer survey in the industry to date and the largest consumer survey conducted by Ericsson on any topic. The survey scope is representative of the opinions of about 1.7 billion consumers worldwide and 6 million consumers in the UAE.

Jasmeet Singh Sethi, Head of Ericsson ConsumerLab, says: "The scale of the research gives us an authentic insight into consumers' views and attitudes to 5G. The report shows that the next wave of potential 5G users have different expectations from the technology compared to early adopters. Overall, consumers see engaging with 5G as an essential part of their future lifestyles."

He adds: "It is interesting to note that 5G is emerging as an important enabler for early adopters to embrace metaverse-related services, such as socializing, playing and buying digital items in interactive 3D virtual gaming platforms. The amount of time spent on augmented reality apps by 5G users has also doubled over the past two years, compared to 4G users."

The report forecasts that 5G consumers with experience of using extended reality (XR) functionality are likely to be the first to embrace future devices as they are more positive about the potential of mixed-reality glasses. Half of 5G users who already use XR-related services weekly think that AR apps will move from smartphones to XR headsets within the next two years, compared to one-third of 4G consumer who hold this view.

**5G – the Next Wave Report: Six key trends in the UAE:**

**1.5G adoption to be inflation resilient:** 49 percent of users in UAE intend to upgrade to 5G subscription in the next 12 months.

**2.The demanding next wave of users:** Keeping both 5G early adopter and next wave user happy and to motivate 5G adoption by providing affordable phones, innovative services, and higher speed than 4G.

**3.Perceived 5G availability is emerging as the new satisfaction benchmark among consumers.** While UAE has 5G population coverage of 93 percent, only 48 percent of 5G users typically perceive being connected to 5G more than 50 percent of the time.

**4. 5G is pushing up usage of cloud gaming and augmented reality.** There are more than twice as many 5G users, who are typically engaging with more than three services in 2022 compared to 2020.

**5. 5G monetization models are expected to evolve:** 95 percent of 5G users in UAE consider innovative 5G experiences to be important inclusion on their mobile broadband plans.

**6.5G adoption is setting the path to the metaverse.** In the UAE, more than half of 4G users say they will start or increase using AR applications in real-world once they sign up for 5G. T

*Aftab Raza Khan*

# Successful launch of EUTELSAT HOTBIRD 13F satellite

Eutelsat Communications has announced that EUTELSAT HOTBIRD 13F satellite was successfully launched into Geostationary Transfer Orbit by American space launch provider SpaceX using a Falcon 9 rocket that lifted off from Cape Canaveral, Florida, USA on October 15th.

The separation of the all-electric satellite occurred after a 35-minute flight and the spacecraft systems initialization was successfully completed over a period of 3 hours.

EUTELSAT HOTBIRD 13F is one of two satellites built by manufacturer Airbus Defense and Space. EUTELSAT HOTBIRD 13F is based on the Eurostar Neo telecommunications satellite platform, developed under an ESA Partnership Project with Airbus designed to foster innovation and competitiveness in the European space industry.

Once into orbit and positioned, the satellite EUTELSAT HOTBIRD 13F will, with its twin EUTELSAT HOTBIRD 13G, reinforce and enhance the broadcast of more than a thousand television channels into homes across Europe, Northern Africa and the Middle East. Moreover, the satellites will offer advanced features in terms of uplink signal protection and resilience.

The two satellites will be replacing three older satellites at Eutelsat's 13° East flagship neighborhood position.

Pascal Homsy, Eutelsat Chief Technical Officer said: "Our congratulations to the Eutelsat, Airbus and SpaceX teams for successfully launching our EUTELSAT HOTBIRD 13F satellite into geostationary orbit. This satellite brings the latest technology resources of the new Eurostar Neo platform at our leading 13-degree East position and confirms a long-term partnership between Airbus and Eutelsat".

# Eutelsat statement on satellite jammings originating from Iran

"Since 26 September, Eutelsat has been experiencing jamming on two of its satellites. The interferences harmfully affect the transmission of several digital TV and radio channels broadcasting in Persian from outside of Iran, as well as other channels. As a result of measurements conducted with a specially designed interference detection system, Eutelsat concluded that the uplink transmissions of all these interfering carriers originated in Iran.

In order to remedy this situation in the shortest possible time, Eutelsat decided to take action simultaneously along two main lines: on the diplomatic front, and using all appropriate national and international procedures, Eutelsat has immediately notified the relevant authorities in the Islamic Republic of Iran, demanding that the harmful jamming operations be immediately and permanently stopped. Eutelsat has also reminded the relevant Iranian authorities that intentional jamming is explicitly prohibited by the International Telecommunication Union (ITU) Radio Regulations. Concurrently, on the technical front, Eutelsat's technical experts have been working around the clock with affected customers to mitigate the impact of the interference on service as much as possible".

# Omar Al Olama: Expand North Star a strategic catalyst for the digital economy reflecting GITEX GLOBAL impact on the tech industry

Omar Sultan Al Olama, Minister of State for Artificial Intelligence, Digital Economy and Remote Work Applications, and Chairman of Dubai Chamber of Digital Economy stated that the UAE and Dubai have long consolidated its status as the international hub to set-up and attract unicorn and leading digital companies from across the globe, which reflects the UAE leadership in creating the best ecosystem for entrepreneurs, tech-preneurs, as well as start-ups to flourish and expand their impact on the world of AI and digital economy.

This came at the GITEX GLOBAL investors briefing, announcing the extending of the acclaimed start-up brand, North Star, into Expand North Star to be held from 10-12 May 2023 at the Dubai World Trade Centre to accommodate the accelerating growth of the powerhouse tech event brand, following the sell-out success of its 2022 edition this October.

Expand North Star, was jointly announced by Omar Sultan Al Olama; and Helal Saeed Al Marri, Director General of Dubai's Department of Economy and Tourism, and Dubai World Trade Centre Authority, as part of North Star Dubai, the world's largest start-up show, alongside its current strategic partner Dubai Chamber of Digital Economy.

Omar Al Olama added that Expand North Star 2023 will be a key platform for the Dubai Chamber of Digital Economy to attract companies, while showcasing Dubai and the UAE's competitive advantages and growth opportunities in a thriving digital economy, stating; "the event will offer an excellent opportunity for entrepreneurs, innovators, and digital business leaders to connect with potential venture capital investors from around the world, while international unicorn founders can share

***Omar Sultan Al Olama***
*Minister of State for AI, Digital Economy and Remote Work Applications, and Chairman of Dubai Chamber of Digital Economy*

***Helal Saeed Al Marri***
Director General, Dubai's Department of Economy and Tourism, and Dubai World Trade Centre Authority

their inspiring success stories."

He further noted that Expand North Star will act as a strategic catalyst to expand the future of digital economy, reflecting what GITEX GLOBAL is to the global technology industry. This is the leading event of its kind, bringing together the region's leading digital business and entrepreneurial ecosystems to connect, collaborate and foster business partnerships that drive international growth.

Helal Saeed Al Marri, added: "As VC's look to future proof their investments against the backdrop of global economic challenges, opportunities for start-ups to raise funds has never looked better. In partnering with the Dubai Chamber of Digital Economy, we will further augment the achievements and success of Expand North Star, leveraging synergies and networks with a common mission to broaden the global start-up ecosystem, build relationships, and create more opportunities.

"As the new name implies, Expand North Star will ramp up the start-up entrepreneurship momentum, transcending geographic industries and intellectual boundaries as it looks to connect government partners, investors, and corporate accelerators with innovators and tech stars from every continent."

**A new creative format to extend engagements with key stakeholders in tech**

Hosted by Dubai Chamber of Digital Economy and organized by Dubai World Trade Centre, Expand North Star shall present a new creative format to extend its engagements with venture capitalists, unicorns, scale-ups, start-ups, and key stakeholders in the tech ecosystem; which will advance the continued expansion of GITEX GLOBAL and amplify its achievements.

The new concept start-up show arrives as the UAE enters a new phase of economic development catalysed by new digital generational technologies and innovation. The digital economy is expected to be

a major driver of the UAE's sustainable economic growth, contributing nearly 20 percent to the country's GDP over the next ten years.

New policies and initiatives are being put in place, promoting smart infrastructure that enhance the digital readiness of the UAE government to ensure business continuity. From IoT, AI, blockchain, metaverse, or Web 3.0, the UAE has been at the forefront of adopting the latest technologies, which has benefited all sectors of the economy and society.

**North Star Dubai** soars to new heights in UAE's thriving start-up ecosystem

Conceptualised seven years ago as GITEX Future Stars with a modest 200 participating start-ups, the rebranded North Star Dubai in 2022 has since developed a sterling global start-up and scale-up following, this year hosting more than 1,000 start-ups from 63 countries, having added an additional sold-out hall with 65 percent year-on-year growth, and hosting the highest number of investors and unicorns globally.

There are more than 1,400 start-ups in the UAE with an estimated value of $24 billion, and a further 90 investment funds in the digital sector along with 12 business incubators. UAE companies also held the lion's share of a record-breaking $2.6 billion in start-up funding across the Middle East and North Africa in 2021, achievements that underscore Expand North Star's attractiveness to international start-ups to leverage the UAE's vibrant network and expand their ambitions into wider markets.

Expand North Star from 10-12 May 2023 will present more space and flexibility to engage and develop the international community with an even more creative and impactful program. The showpiece event will be co-located with the inaugural GITEX Impact and Future Urbanism Summit & Expo, the region's dedicated dual platform for tech-centred sustainability investments, and public-private partnerships.

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*On the sidelines of GITEX GLOBAL 2022*

# Dubai Police, Hewlett sign MoU

The Dubai Police General Command has recently signed a Memorandum of Understanding (MoU) with Hewlett Packard Enterprise (HPE), to cooperate develop joint activities in areas of common interest, explore and innovate across future security projects, develop security innovations.

Signed on the sidelines of the GITEX GLOBAL 2022, held at Dubai Trade Centre, the MoU paves the ways for cooperation in cooperate in setting comprehensive strategies for research and development projects.

The MoU was signed by His Excellency Major General Khalid Nasser Al Razooqi, Director of the General Department of Artificial Intelligence at Dubai Police, and Ahmad Alkhallafi, Managing Director for UAE, Hewlett Packard Enterprise.

Maj. Gen. Al Razooqi said that Dubai Police, under the directives of His Excellency Lieutenant General Abdullah Khalifa Al Marri, Commander-in-Chief of Dubai Police, is consistently continuing its efforts to support security sectors with research, studies, and knowledge.

"The Force always seeks to strengthen its partnerships with the government and private sectors, to achieve its strategic directions based on three main pillars– a safe and resilient city, promote community happiness, and innovation in institutional capabilities," he added.

Maj. Gen. Al Razooqi explained that GITEX GLOBAL 2022 is an essential platform for growth and development. "It also an opportunity to showcase the best global practices of Dubai Police under the directives of the wise leadership that aims to achieve prosperity and improve the quality of life of the community members", he indicated.

Ahmad Alkhallafi, Managing Director for UAE at Hewlett Packard Enterprise said, "We are so delighted to sign this agreement with Dubai Police, and we recognize the close relations of HPE with the UAE government. "We are committed to harnessing all our expertise and capabilities in this field to support the strategic directions of Dubai Police to achieve prosperity and improve the quality of life for residents," he added.

# Web 3.0 innovations enthral audiences at Global DevSlam 2022

Pioneers in the metaverse ecosystem explored the multi-billion opportunity in the emerging virtual universe on the second day of GITEX GLOBAL 2022. Diverse industries from gaming, retail, fashion and sports are looking to explore an increasingly vast and rich virtual ecosystem in Web 3.0, with Dubai Metaverse Strategy envisioning more than 40,000 new virtual jobs by 2030 in the Emirate.

To help propel the Web 3.0 economy, the 42nd edition of GITEX GLOBAL features X-VERSE, sponsored by TMRW Foundation in collaboration with Decentraland, one of the world's most immersive metaverse journeys featuring 28 experiential brands; and Global DevSlam, the Middle East's largest ever coder and developer meetup.

At Global DevSlam 2022, Saqr Bin Ghalib, Executive Director, UAE Office of AI, Digital Economy, and Remote Work Applications, announced the launch of the region's first PyCon, in collaboration with the Python Software Foundation. PyCon is the world's largest Python developer conference, and PyCon MEA will provide a unique platform for networking and collaboration to the developer community. He reinforced that the Global DevSlam is an important initiative that supports the National Program for Coders, which aims to make the UAE a global hub for the development of coders.

**Endless opportunities of the metaverse**

Within the next decade, the metaverse has the potential to add $3 trillion to global GDP — a contribution of 2.8% — with the Middle East, North Africa and Turkey set to benefit from more than $360 billion or 6.2% of GDP, Angelika Gifford, Meta Vice President for Europe, Middle East and Africa, said at the GITEX GLOBAL Main Stage on Oct 11. The metaverse will reach a billion people in the next decade, drive billions in revenue and create millions of jobs, she added, stressing that the metaverse is the biggest creation since the start of the internet. Her advice for anyone wanting to get involved in the metaverse was: "build muscle" by "playing around", experiment as much as possible and link up with partners who can help.

**First retail experience on the pioneer artificial gravity space station unveiled**

Orbital Assembly (OA), developer of the first space park with gravity, announced a strategic collaboration with Dream Big World to develop the first terrestrial retail experience in space at X-VERSE, the world's largest curated Web 3.0 immersive experience. Juan De Lascurain, Chief Dreamer, Dream Big World, stated that its customers will be able to enjoy different digital experiences utilising VR, NFT, digital fashion, and the Metaverse,

**The TMRW Foundation debuts the Internet Of Life™ at X-VERSE**

The TMRW Foundation, the headline sponsor of X-VERSE, launched ROOM, its lifelike 3D communication solution to offer a look into the future of the three-dimensional internet: The Internet of Life™. ROOM enables browser-based 3D video conferencing, elevating video calls through lifelike and gamified online meeting spaces. It enables users to virtually interact in the most natural way possible by mirroring human nature, featuring the world's most socially present technology. T

# GITEX leads global tech communities to Africa for historic launch in the world's next biggest digital economy

GITEX GLOBAL, has embarked on a new journey into Africa, leveraging a 42-year legacy of connecting tech titans, governments, start-ups, investors and global innovation hubs, to accelerate, collaborate, and explore new ventures in the world's rising tech continent.

The inaugural GITEX AFRICA will take place from 31 May-2 June 2023 in Marrakech, Morocco, rallying the tech world's attention to the vast potential of the globe's youngest continent, and shaping the vision for a more connected, sustainable, inclusive, and tech-driven digital economy.

The landmark event is the first overseas venture for GITEX GLOBAL, the influential tech brand trusted by international tech executives. It was announced at a press launch during GITEX GLOBAL 2022, which this year outran capacity at the Dubai World Trade Centre venue to cross two million sq. ft. with more than 5,000 exhibitors from 90 countries.

GITEX AFRICA is launched in partnership with the Digital Development Agency (ADD), a strategic public entity leading the Moroccan government's digital transformation agenda under the authority of the Moroccan Ministry of Digital Transition and Administration Reform.

KAOUN International, the overseas events organising company of Dubai World Trade Centre (DWTC), will lead the partnership for this much awaited business endeavor in the highly sought after tech region, officially launching the "Go There" global campaign for GITEX AFRICA campaign today.

At the show's official announcement and signing ceremony, Mohammed Drissi Melyani, General Director of the Digital Development Agency, said: "We are honoured to organize this event in a continent which is seeing great dynamic, economic and social growth in many fields.

"Morocco is playing a crucial role to assist and support the development of Africa under the leadership of His Majesty The King Mohamed VI and to link it economically to the rest of the world. We are deeply engaged to contribute to the success of this first edition of GITEX AFRICA and will work very hard to make it exceptional for us all."

Trixie LohMirmand, CEO of KAOUN International and Executive Vice President of Dubai World Trade Centre, organiser of GITEX, added: "The time for Africa is now. Against a stuttering world tech market, Africa has risen and punched well above its weight recently, with big tech investments rocketing and start-ups funding recording the best year ever in 2021 at six times over the global average.

"It takes a lot to build and sustain an outstanding tech event. GITEX has a global following of communities that trust the brand's motivation in discovering new tech geographies and marketplaces for greater empowerment and knowledge sharing in the new generation economies.

"The Digital Development Agency Morocco is committed to accelerating wide scale digital transformation of its society and the tech modernization of the wider African continent. The unified commitment from the stakeholders embodied in GITEX

AFRICA shall amplify the African tech opportunities and bring to forth the world's next biggest digital economy."

**One Africa, limitless opportunities in world's burgeoning tech frontier**

With tech-friendly policies in a continent that is now far more accessible, African investment is rocketing. Analysts predict the tech market is on track to scale from $115 billion to $712 billion by 2050, while growth in start-up funding is six times higher than anywhere else. In only six years, Africa went from zero to seven unicorns, with four all born last year.

African talent development is also at its fastest. Global tech titans Microsoft and Google are already setting up billion-dollar innovation and talent hubs in Africa, while the number of people with internet access has grown to 522.8 million, or 40 percent of the African population.

Meanwhile, a youthful populace coupled with Africa's rapid urbanisation is accelerating digital economic growth, with 70 percent of the Sub-Saharan African population under 30 years of age and 45 percent of Africans set to live in cities by 2025.

The pervasive confidence and upbeat outlook on the African tech landscape are shared by global start-ups and investors, accentuated by the unrivalled opportunities, global visibility and economic impact brought about by the debut of GITEX AFRICA.

"I'm thrilled to learn about GITEX AFFRICA next year," said Ramez El-Serafy, CEO of Flat6labs, the Middle East and North Africa's leading early stage venture capital firm, and an existing exhibitor at GITEX GLOBAL's North Star start-up showcase.

"Africa is a rising market with boundless opportunities for bold expansion, where start-ups, investors, accelerators, Venture Capitalists, multinational corporations and the entire tech ecosystem can construct sustained growth.

"At Flat6Labs, we see first-hand the impact

and connections GITEX has continued to drive for regional and global businesses. Our presence at GITEX is crucial for us and our start-ups every year, and with Flat6Labs' expanding footprint across Africa, GITEX's expansion into Africa in Morocco is just fantastic news for us."

Pardon Mujakachi, Vice President of Strategy & Partnerships at Chipper Cash, an African unicorn fintech platform offering mobile, cross-border money transfer services, added: "We're excited to hear that GITEX is coming to Africa, and believe this a watershed moment for Africa's future digital economy.

"GITEX AFRICA will create more opportunities for tech entrepreneurs to shine on the global stage, with Africa a key focal point of innovation and sustainable expansion in emerging economies. Converging the entire tech ecosystem, GITEX AFRICA will propel the continent forward in the incubation of start-ups, scale-ups, and unicorns such as Chipper Cash."

**Enabling Morocco – Africa's emerging tech hub**

At the confluence of Europe, Sub-Saharan Africa, and the Middle East, Morocco is well-positioned to transform into a regional business hub by leveraging its geographically strategic location, political stability, and world-class infrastructure.

Morocco is Africa's fifth-largest economy, the second biggest African investor in Sub-Saharan Africa, and the largest African investor in West Africa, while it also sits 3rd of all African countries in the World Bank's ease of doing business index.

Foreign investment in Morocco is rising, particularly in export sectors like manufacturing, through favourable macroeconomic policies, trade liberalisation, investment incentives, and structural reforms. New Moroccan national strategies emphasise value-added industries such as renewables, automotive, aerospace, textile, pharmaceuticals, outsourcing, and agro-food.

**Amplifying GITEX GLOBAL's enduring African association**

For years GITEX GLOBAL has advanced the African agenda, in 2022 welcoming its most heightened participation from the African tech ecosystem yet. This was amplified by 'Africa Fast 100' at its North Star start-up showcase, the largest ever gathering of African start-ups to be hosted under one roof outside of Africa.

In its largest edition yet, GITEX GLOBAL 2022 also featured involvement from key African unicorns, such as Jumia, Flutterwave, and Chipper Cash, while welcoming ministerial delegations from Nigeria, Ethiopia, Morocco, and many more.

GITEX AFRICA 2023 will build on these achievements, curating the most powerful innovations emerging from the world's next most sought-after market across the fast-growing sectors of fintech, e-commerce, cloud, IoT, AI, telecom, and security. T

*Arthur D. Little*

# Successfully managing IOT Cybersecurity Risks

*By Philipp Mudersbach, Tim Christoph, Moritz Kandt*

**The importance of a holistic framework to protect your business**

We are currently witnessing an enormous increase in both industrial and consumer Internet of Things (IOT) deployments across a range of sectors, from smart mobility to industrial uses. However, this growth is not being matched by a corresponding focus on IOT security, dramatically increasing risk for businesses across their ecosystems and supply chains. As a path forward, this Viewpoint outlines a holistic framework and approach to successfully manage the IOT cybersecurity challenge.

**Growing importance of IOT Security**

By extending the use of smart, connected devices to collect data and monitor processes, the IOT enables transformational change across consumer and industrial uses. (In industrial contexts, the IOT is usually called the Industrial Internet of Things [IIOT]. However, because cybersecurity is equally relevant for both industrial and consumer use cases, in this Viewpoint we use "IOT" to describe both areas.) It delivers higher efficiency, greater innovation, and allows new ways of working and connecting to customers. Its impact is being felt across all industries, including smart agriculture, smart homes, education, industry, healthcare, retail, mobility, grid/energy, government, and smart cities. Using IOT sensors to monitor vaccine cold chains during the pandemic is a prime example of the benefits the technology can provide.

Demonstrating the pervasiveness of the trend, a recent International Data Corporation study estimates IOT spending will top US $1 trillion in 2022. And Statista predicts the market size for industrial IOT applications alone will reach $111 billion by 2025. However, this expansion brings increased cybersecurity risks. IOT adds a substantial number of new end points for organizations to protect, many of which may be out of the direct control of a company's IT team. Moreover, IOT devices tend to be deeply interconnected, creating a greater risk of cyberattacks spreading from them throughout the company network. At the same time, organizations face an overall rise in cyberattacks — both from private individuals and state actors — that are increasing in complexity.

Whether the objective is espionage, extortion through ransomware, or simply to cause malicious damage, these groups will always target the easiest way into an organization. Therefore, businesses must take a forward-looking approach that protects them both now and in the future.

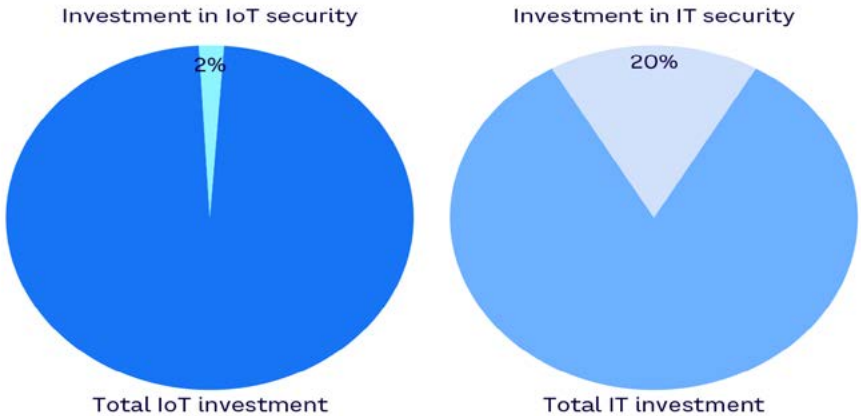
Currently, IOT represents a weak point due to a combination of underinvestment, the complexity of technology, and unclear security responsibilities.

For example:

- Cybersecurity makes up about 20% of a normal IT budget, but less than 2% of IOT budgets. This underinvestment in cybersecurity prevention opens the door for attackers to infiltrate a company's equipment.

- IOT ecosystems normally contain a large number of disparate devices, often deployed externally to company networks or in areas traditionally run by operational technology (OT) rather than IT teams, such

**Figure 1. Relative spend on IT and IoT security**



as factory control systems. All such devices can pose severe security risks.

- Responsibilities for IOT security can be blurred between IT, OT, and external providers, leading to a piecemeal approach. This undermines the holistic response required to effectively prevent cybersecurity attacks that normally cross over internal organizational boundaries.

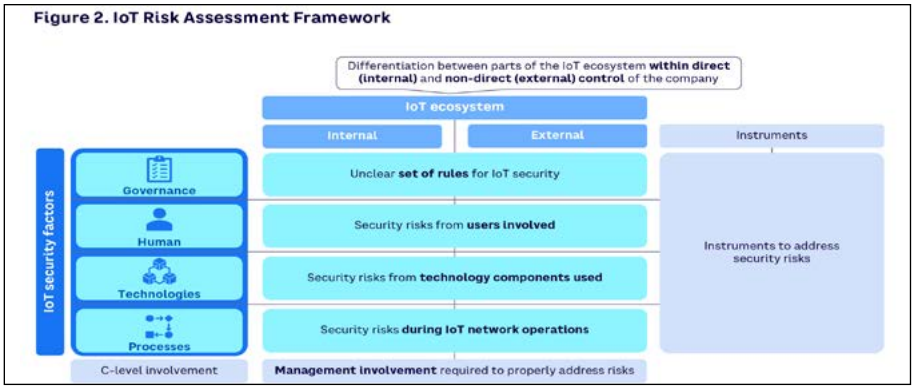
Consequently, companies need both to invest more and take a whole ecosystem approach to IOT security risks. As we define it, the IOT ecosystem consists of every device and service connected to the IOT network. It includes internal and external devices/services, all of which must be protected from a range of risks — from online attacks to physical threats and the consequences of human behavior and actions. This is broader than traditional cybersecurity. As such, organizations need to look beyond their own firewalls to understand risks, manage threats, and ensure ongoing secure operations.

We are already seeing cyberattacks that use IOT hardware to target consumers as well as organizations, including the following examples:

- **Ring**. Amazon-owned smart home company Ring provides a range of connected devices, from video doorbells to security cameras and alarms. It suffered a hack when criminals exploited weak, recycled, and default security credentials to access live feeds from the cameras around customers' homes. Hackers were even able to communicate remotely using the devices' integrated microphones and speakers, harassing customers in some cases. In addition to causing customer distress and reputational damage, Ring is currently the target of ongoing legal actions, including a class-action lawsuit for $5 million.

- **Oldsmar water supply**. In Oldsmar, Florida, USA, an intruder was able to hack into the system that controls the town's water supply using remote-monitoring software and then boosted the level of sodium hydroxide (lye) in the water supply to 100 times higher than normal. While the change was detected and cancelled by an operator before it went into effect, the potential consequences for public health were catastrophic — lye poisoning can cause burns, vomiting, severe pain, and bleeding.

**Figure 2. IoT Risk Assessment Framework**




**A framework for Holistic IOT Security**

Given the increasing importance of IOT to business operations, the time to act on security is now. However, organizations should not only invest more in IOT security. Unless this spending is coupled with the right IOT security risk management, it will potentially be wasted.

Based on ADL's Cybersecurity Matrix, outlined in a previous viewpoint, we have developed the IOT Risk Assessment Framework with a specific focus on risks related to an organization's IOT devices. By applying the holistic framework, companies can understand and mitigate risks across their IOT ecosystem.

The framework distinguishes between internal and external activities and requires organizations to understand and include areas that are outside their direct control or influence, such as external service providers and partners across the supply chain.

Often, companies focus only on the areas of the ecosystem within their direct influence, failing to account for risks from external service providers.

The framework covers four different factors as part of a company's operational readiness to handle cybersecurity risks:

**1. Governance —** unclear rules and governance structures that hamper the safe use of IOT devices. For example, unaligned policies between internal and external IOT devices.

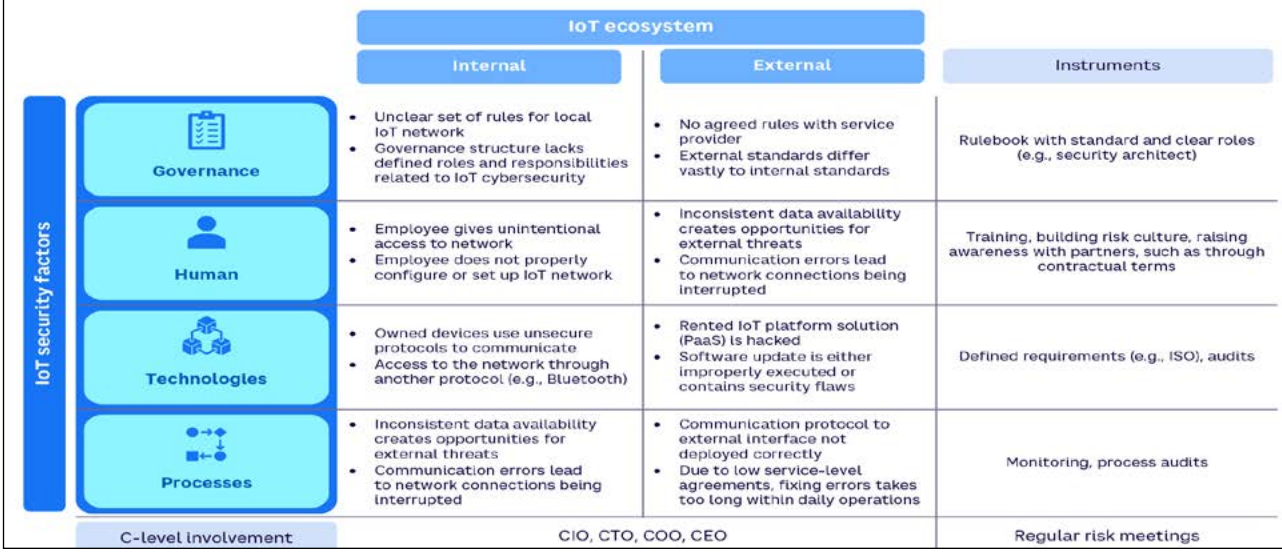
**2. Human —** security risks caused by human error or malicious activity. For example, not all internal/external staff may have received sufficient training to work securely with IOT devices.

**3. Technology —** security risks from issues with hardware, software, and services. Often companies are unaware of external risks within bought-in hardware or services due to a lack of detailed due diligence. Similarly, the growing number of IOT devices used within production technology may not be known to IT or may not be managed under existing security policies.

**4. Processes —** security risks caused by poor processes within the operation of the IOT network. Issues arise particularly when processes span different parts of the business and/or involve external providers.

Strong C-level involvement must underpin the framework. This requires alignment at the board level between IT and OT so that IOT security factors cover all connected devices. Responsibilities, security standards, and approaches must be set out clearly and standardized across IT and OT. The aim is to create holistic, transparent IT/OT environments across the business so that all assets connected to the network are covered by guidelines. Business should enforce IOT security factors through clear service-level agreements and

**Figure 3. IoT Risk Assessment Framework, with examples**




manage those factors through an overall IT/OT security council that involves all stakeholders.

**The Assessment Process**

In a complex environment, with multiple internal and external players, implementing an effective IOT security framework can appear challenging. Organizations have the choice between standards from ISO, IEC, or the US National Institute of Standards and Technology (NIST).

Among the options, ADL recommends adopting the NIST framework due to its more holistic approach and easier mapping. The approach must be comprehensive, following NIST's five-stage model:

**1. Identify**. Create an inventory of all network connected IOT devices across the business and in use by external providers within the supply chain. Create a full asset register, identifying and logging potential risks, including possible future risks. Determine where are the strengths and potential weaknesses. Confirm that suppliers meet security standards (e.g., ISO) within their own operations and ensure all employees are properly qualified and certified.

**2. Protect.** Put in place the governance, controls, and training to mitigate risk and ensure security. Begin with the most pressing weaknesses to ensure major issues are covered quickly. Implement safeguards around access control, data security, and information protection — inside and outside the organization. Run regular awareness training with all relevant employees and contractors, including simulated attacks.

**3. Detect.** Develop and implement full security monitoring across the ecosystem, including OT and external providers. Focus on clear processes to detect anomalies and events, with well-understood escalations to named individuals.

**4. Respond.** Have a full plan in place to launch immediate responses in the event an IOT security attack is detected. This should include both internal and external communication and actions to be taken across the ecosystem. Responses should be frequently tested and subject to a process of continuous improvement.

**5. Recover.** Develop and implement appropriate activities to maintain plans for resilience and restore any services that are impaired due to IOT security breaches. Recovery plans should include short-term mitigations to reduce business disruption, and longer-term improvements to the human, technology, and process parts of the framework.

**Conclusion**

**Putting security first for IOT**

The clear benefits of the IOT are driving massive growth and investment in the technology, particularly in industrial and supply chain scenarios. However, security is currently a low priority, putting companies at risk. Organizations therefore need to focus on:

1 Creating a comprehensive IOT security framework that spans the ecosystem and includes OT alongside traditional IT.

2 Covering more than just technology to incorporate the risks from people, processes, and governance.

3 Understanding the roles of both the internal and external parts of the ecosystem, through a holistic view of the entire IOT estate.

4 Enforcing standards through C-level involvement. Taking this approach will help unleash the benefits of IOT while ensuring secure, uninterrupted operations. T

*With compliments from Arthur D. Little*

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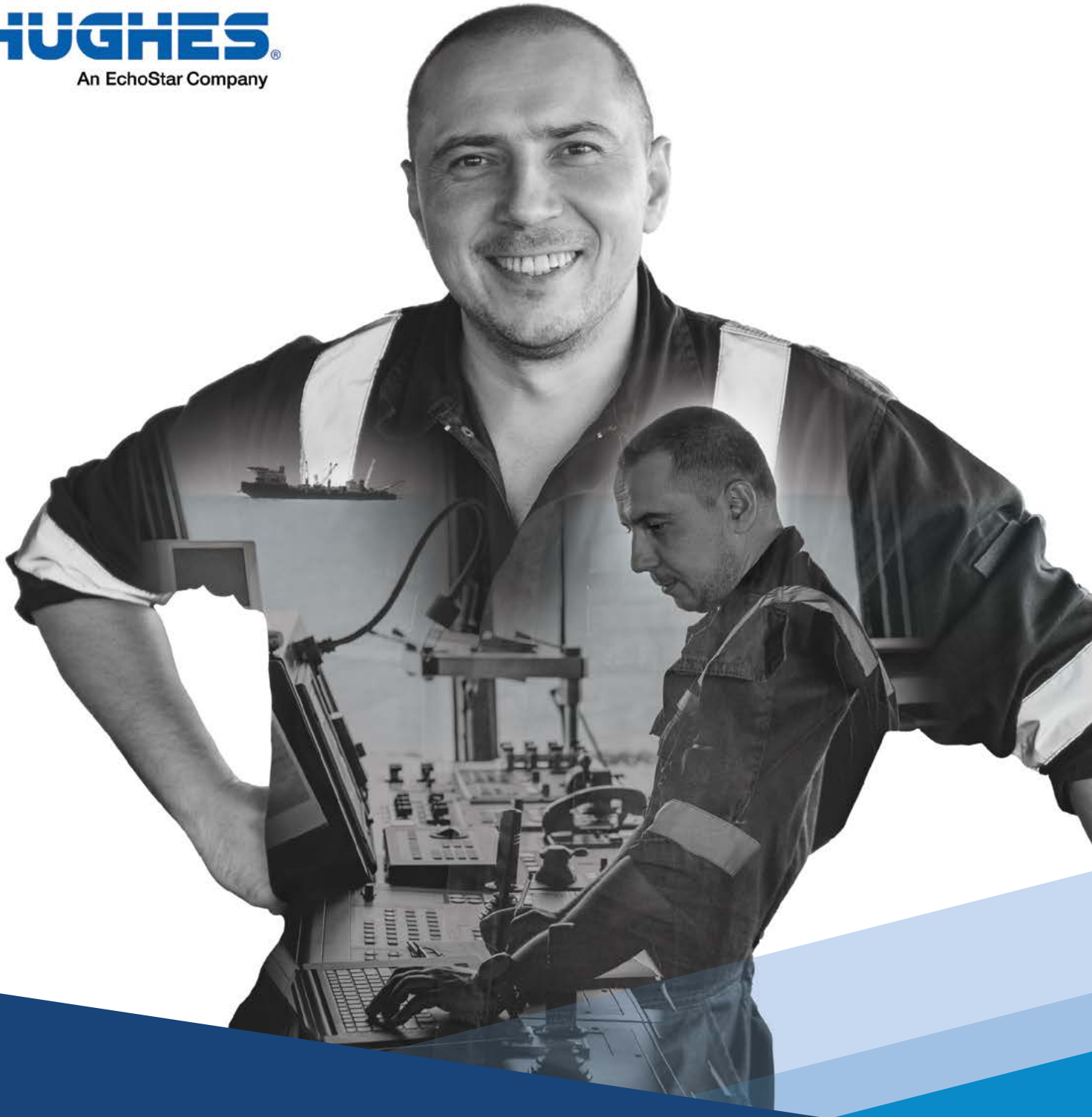

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