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

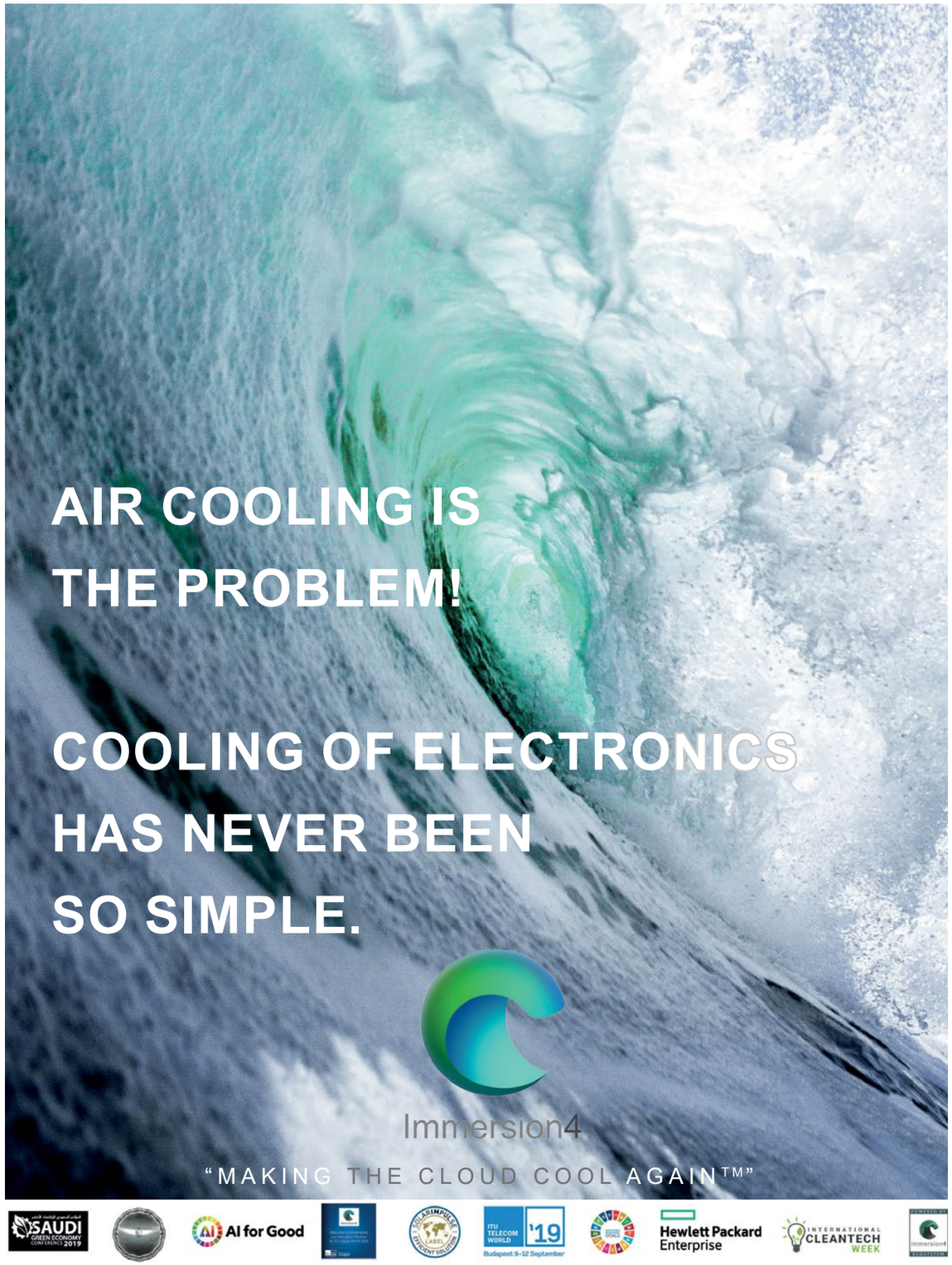
With the early vision of 5G, today, we have one of the fastest 5G in the region

Alaa Al Malki
CTO, Mobily KSA

The vision for Immersion4 is deep rooted in the principals of Eco Conservation and Environmental Conservation

Serge Conesa
Founder Chairman & CEO at Immersion4


IN 2021*,
ONLY 17% OF
ELECTRONICS IS
RECYCLED.
18 MILLION CHILDREN,
13 MILLION WOMEN
ARE PART OF DIGITAL
DUMPSITES.
*Source : WHO- World Health Organisation


AIR COOLING IS
THE PROBLEM!
COOLING OF ELECTRONICS
HAS NEVER BEEN
SO SIMPLE.
Immersion4
“MAKING THE CLOUD COOL AGAIN™”
SAUDI GREEN ECONOMY CONFERENCE 2019
AI for Good
ITU TELECOM WORLD '19 Budapest 9-12 September
Hewlett Packard Enterprise
INTERNATIONAL CLEANTECH WEEK

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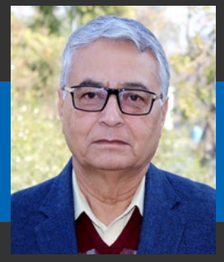

Dear Readers,

Welcome to the latest edition of Teletimes International.

First of all, I would like to wish all of our readers, contributors and partners a very happy new year. I would also like to share a good news that Teletimes International has won "MEA Business Award 2021 for Best Telecom Publication".

We walked into a crisis in 2020, worked together to find the solution to this crisis in 2021, and hopefully in 2022, we will walk out of this crisis together all around the world. And one cannot downplay the role technology has played in keeping all of our personal and professional lives going in this difficult period. For that, I am personally thankful to all the people in the tech sector who have made this amazing connectivity possible for people around the world. My personal commitment for this year is to focus more on technologies that are focused on making the world a better place, things like the "Be my eyes" app are reasons to be proud of this amazing industry.

Talking about technology for a better world, this edition features an exclusive interview with Serge Conesa, the Founder Chairman & CEO of Immersion4. Serge's vision is to reduce the energy consumption and e-waste from data center cooling and that too in such a way that the process itself becomes renewable energy. It is an amazing technology that focuses on creating a new process instead of spending money on improving a problem creating process. Serge talks in great length about his vision behind the company, the depth of the problem it is solving and the benefits of his technology.

I would also recommend the interview with Alaa Al Malki, CTO, Mobily KSA. Alaa talks about the focus of Mobily on customer experience and their on-going digital journey as a leading player in the global 5G industry. Mobily has plans to have 5G everywhere and their focus is definitely very inspiring.

As always, you will also find inside the latest updates and news from other major players in the ICT space. Your feedback is welcome on info@teletimesinternational.com

Enjoy Reading!

Khalid Athar
Chief Editor

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Collaboration is key to create a hyper-connected world with limitless connectivity, highlights Etisalat Chief

"Collaboration is key to create a hyper-connected world as we move into a future that requires limitless connectivity to improve lives, redefine business and nurture an entrepreneurial ecosystem especially in the past two years that has profound effects on the ways we work, learn and socialise", said Hatem Dowidar, CEO, Etisalat Group.

He delivered a keynote address on 'Enabling a Hyper-Connected World' at the TiE Global Summit, an annual flagship conference for entrepreneurs. Each year, the event gathers speakers, mentors and conducts sessions on new business trends and entrepreneurship.

The conference also witnessed the participation of government and industry leaders sharing their perspective on the growing entrepreneur ecosystem in the country. Ahmed Belhoul, Minister of State for Entrepreneurship and SME inaugurated the event sharing his vision on nurturing the next generation of entrepreneurs followed by Mohamed Al Abbar, founder of real estate conglomerate Emaar and the homegrown online marketplace Noon.

Abbar provided insights into his journey in building one of the largest real estate companies in the world and building an e-commerce portal in the region from scratch catering to customers in the Middle East.

In Dowidar's address he highlighted the significance of connectivity in this digital environment where the network brings together the various stakeholders in this entrepreneurial ecosystem. He also reiterated how Etisalat is constantly looking at innovative ways to service customers by collaborating with startups that will enrich services and the daily lives of consumers at the same time supporting its digital ambitions.

He also emphasised how a crisis can accelerate innovation reimagining a more connected society through the power of technologies such as AI, 5G, big data and IoT that are shaping our future and transforming lives rapidly. This can be done by working collaboratively with all the stakeholders

beyond the ICT ecosystem.

Dowidar added that mobile networks of the future have to be extensive and dynamic that is highly intelligent with an AI-powered infrastructure. These networks must be resilient and trustworthy capable of processing anywhere evolving as a model that is complex with real-time processing distributed and tightly integrated throughout the network.

With the continuous support and guidance of the UAE leadership in bringing digital transformation in the country this has enabled Etisalat to aspire to transition to a complete integrated ICT/digital solution provider. This is achieved by capitalising on opportunities such as megaprojects and smart city and Industry 4.0 projects across multiple verticals, including health, education, logistics and oil and gas.

Etisalat has remained committed to achieve its goals, reshaping the lives of its consumers, accelerating the economic growth of businesses and enhance the competitiveness of the countries where it operates, reiterated Dowidar. T

17th Global Ritossa Family Office Investment Summit Dubai

Today's leading family offices are Change-makers, Technology leaders, Influencers and Investors

Teletimes Report

Sir Anthony Ritossa and his team welcomed an esteemed group of global families, private investors, technology leaders, and entrepreneurs to the 17th Global Family Office Investment Summit held recently at Dubai under the high patronage of The Ministry of Economy in the presence of Dr. Thani Ahmed Al Zeyoudi, Minister of State for Foreign Trade, UAE. The Dubai Summit provided a close-knit group of international presenting partners with introductions to possible funding, exceptional networking, partnership opportunities, and co-investment ideas during two and a half days of exchanges in a private, closed-door environment. Prestigious family offices, private investors, sheikhs, royal families, and leading businesses from 55+ countries representing more than $4.5 trillion in wealth comprised the Summit Family Office delegations and reports confirm over $2.6 billion in new funding resulting from the most recent five events.

"The Summit included inspiring conversations on timely topics and investment opportunities that matter to today's visionary world leaders and next-generation heirs to the world's largest fortunes. Our Summit attendees are powerful individuals who live life on their terms and are committed to the relentless pursuit of new ideas with the potential to have a positive impact on our world. Collectively, we are building a universe focused on global cooperation and sustainability," said Sir Anthony Ritossa, Chairman of Ritossa Family Office.
Among the Summit highlights were sessions on leadership secrets based on personal experiences, family governance, food security, cryptocurrency/DeFi/blockchain, technology, healthcare, natural medicine, real estate, FinTech, philanthropy, education, branded real estate, natural medicine, environment, energy, alternative investments, SpaceTech, and transportation. Trust, commitment, power, respect, transformation, vision, and responsibility are essential themes around which the group shared ideas.

(From left): Sir Anthony Ritossa, Chairman, Ritossa Family Office with Daven Michaels, CEO, Current C Power and Moshe Shapoff, Investor Relations, TR Capital Management.

Fireside chat with Her Highness Shaikha Jawaher Al Khalifa, CEO, JKK General Trading, Bahrain and UAE

Official Summit Welcome Address by Dr. Thani Al Zeyoudi, Minister of State for Foreign Trade, Government of UAE

Fireside chat with Abdulla Fareed Al Gurg, Executive Chairman, Abdullah Al Gurg Global Investments

Sir Anthony Ritossa, Chairman, Ritossa Family Office with Helal Saeed Al Marri, DG, Dubai's Department of Economy

"Our digital journey has customer experience at the heart of everything"

Alaa Al Malki, CTO, Mobily KSA

Exclusive Interview: Khalid Athar

KA: As one of the leading operators in the Middle East, what development strategy has Mobily formulated in the digital transformation era?

AM: For the digital era, which is very important for us, what we care most is about the customer experience. As customer experience is the key factor – we do not just consider this in small projects here and there, it lies at the center of our offerings to our customers end to end. Our digital journey has customer experience at the heart of everything.

KA: Mobily has a wide range of businesses including a focus on transport, enterprise and multiple other verticals. What is the most important aspect of your offering for your core telecom customers?

AM: As of now, they are most concerned about our progress in 5G which is a priority for us also because 5G is the new era creating new revenue streams and creating endless possibilities in terms of solution offerings. Of course, the end users want to have a fast network which is more reliable and has lower latency which will enrich and enhance their digital experience which eventually also leads to newer revenue streams. So, 5G is a very important element in the new telecom ecosystem, which will enable operators to provide more and more services to the customers.

KA: What are some of the challenges that Mobily has encountered in the pursuit of its strategic goals and what has been your approach towards dealing with such challenges?

AM: One of the biggest challenges when it comes to consumer side is the need to create new services that integrate with the customer demand. We have to ensure that customers are able to have the best digital experiences first and secondly, that those experiences are well served through our network.

I want to highlight that in today's telecom environment, innovation on the network is as important is the network itself. The revenue stream is going down for legacy services on the voice side and on data side you must keep creating new things. Innovation is not just about creating new revenue streams but also about customized solutions for the customers and increase in the efficiency of the network. On the business, there is a huge demand coming; there are new business cases in mobility, in education, in medical and we are working on these cases ourselves. It will be important to ensure that our infrastructure continues to grow with these new demands in mind.

KA: Recently, the Global Green Energy conservation is becoming a hot topic, and many operators consider low carbon emission reduction while developing their services. How does Mobily see this issue?

AM: This is something that is very important to us here at Mobily and is taken into consideration in our projects and our vision in general which is aligned to the Saudi Vision 2030 headed by the Crown Prince. Even though, Saudi Arabia is an oil producing country, we are very much concerned about the carbon dioxide emissions and we are consciously making efforts to reduce them.

Take for example, our data centers – which is something Mobily is leading in as we have Tier 4 centers. Our data centers are the backbone in the industry however our investment in this business is not just in the infrastructure but is very much considerate of the power consumption. We have made great efforts to ensure highest possible efficiency in terms of power consumption which leads to lower carbon dioxide – and this is something that we are not looking at just from a cost perspective but also as something that we need to do for the society and the environment.

> "With the early vision of 5G, today we have one of the fastest 5G in the region"

KA: Would you like to tell us a little about who your key partners have been in your 5G rollout?

AM: We have three main partners when it comes to 5G. We have Huawei, Nokia and Ericsson and with them, we have great hope for the future. Many businesses cases are not yet developed, but we know that with such partners, who are the key vendors for the entire industry, we will stay ahead in the journey and we will be able to leverage from the best business cases that can be developed.

KA: What is your 5G offering at the moment? What kind of coverage do you have?

AM: The plan is to have a coverage of 5G everywhere. Currently, we're covering the main cities with 5G and the main thing on 5G is the fixed wireless. Right now, we are in phase one. Soon, we will have 5G which is on a deeper level with complete dependency on 5G itself. This is when we can enrich offerings with really low latency, something called an almost zero latency concept. From there on, we will start looking at products and solutions in medical, in education and transport where we have all these ports and "things" connected on private networks.

In fact, private networks will be a big focus as they are the way to go, especially in the industrial area with legacy cables and legacy Wi-Fi where we can alternate this with near zero latency and the complete network can be deployed on 5G which makes everything easy to reshape, easy to change the product line, easy to expand without a major hustle on timeframe.

KA: How would you compare Saudi Arabia's telecom sector with other markets in the region?

AM: Saudi Arabia invested in 5G ahead of many others or in fact, most others. The main investment came in during 2020, during the pandemic, where many businesses were pulling investment. The main suppliers of telecom were fully injected and with the early vision of 5G, today we have one of the fastest 5G in the region.

This 5G is very important for our market because we see a huge demand for this. The demand is coming from the youth in our country – we have about 65% of the population that is below 30. Therefore, our focus is on a network which caters to a huge demand of high speed, high capacity, and low latency.

KA: What factors will be the major driver of growth for the industry in 2022?

AM: I think that the main growth will come from the business unit considering a few things I have already shared earlier. I believe data centers will also be a key growth factor. This is something Mobily saw early on a long time ago and capitalized on it. We have great data centers and state of the art buildings since 2015 which we keep further innovating on and adding on to. In fact, we were the first ones getting certificates for the tier-3 centers in the kingdom.

2022 will also be a lot about IoT – something that is facing huge demand. Again, we are very targeted in our efforts as now our IoT network is the largest IoT network in the Middle East. Today, we have smart meters connecting around 10 million households. So, wherever there is electricity, we will have Mobily coverage with a narrowband IoT to be connected. This is how important internet has become. It's something that we saw during COVID-19 that internet is not a luxury anymore. However, we faced no problems in Saudi Arabia because we were investing our networks from long before the pandemic.

We have a very strong fiber network and we have a very strong wireless network and we think that the adaptation will increase in 2022. Many people are still working from home or hybrid and the productivity from homes which is based on networks is increasing which is adding on to the demand on the network and I think this demand will continue to grow in 2022. T

Annual spending on cyber security expected to reach 3 billion Riyals in the Saudi market

In presence of Prince Mohammed Bin Khalid Al-Abdullah Al-Faisal, Chairman of the Board of Directors of stc Group, the Minister of Communications and Information Technology, Eng. Abdullah Bin Amer Al-Sawaha, along with other dignitaries visited the stc stall during the @Hack event, and were received by the Group CEO of stc, Eng. Olayan Bin Mohammad Al-Wetaid and a number of the group's executives. was briefed on the latest technologies offered by the group in the field of cybersecurity, as the Kingdom of Saudi Arabia is witnessing a growth in the size of the cybersecurity market, with annual spending reaching 13% and an expected spending volume of 3 billion Saudi Riyals annually, in light of the digital transformation that the Kingdom is witnessing.

stc contributes to the @Hack event as a partner and digital enabler for the largest cybersecurity event in the Middle East, which is held in Riyadh, and organized by the Saudi Federation for Cybersecurity Programming and Drones in collaboration with the General Entertainment Authority, with the participation of speakers, international experts, and local and international companies specialized in the field of cybersecurity.

stc also supported the events and meetings with the participation of 200 speakers and experts from a selection of local and international companies specialized in cybersecurity. With the participation of Sirar by stc, which was launched by stc Group to enable and protect the expedition of the digital transformation and infrastructure, with a group of leading companies, by reviewing the latest solutions, products and technologies that it offers to its customers. T

Qatar participates in the 25th session of the Arab Telecoms and Information Council

The State of Qatar has participated in the 25th session of the Arab Telecommunications and Information Council of Ministers (ATICM), which was held in a virtual format and attended by several Arab ministers and officials.

The Qatari delegation from the Ministry of Communications and Information Technology (MCIT), the Communications Regulatory Authority (CRA), and Qatar Postal Service Company (Qatar Post) was headed by Mohammed bin Ali Al-Mannai, Minister of Communications and Information Technology.

The meeting's agenda included a set of topics related to the Information and Communications Technology (ICT) sector and the Postal sector. The meeting reviewed the results of the meetings of the specialized Arab technical committees in the ICT and Postal fields, in addition to the reports and recommendations issued by the Arab working groups specialized in the two fields. T

Huawei's Rotating Chairman:

We will continue investing in the future and creating value for our customers and partners

In a New Year message for 2022, Huawei's Rotating Chairman, Guo Ping, reiterated the company's ongoing commitment to creating tangible value for its customers and local communities through continued investment in the future. In his message, he announced that Huawei expects to round off the year with a total revenue of 634 billion yuan. Over the past year, Huawei's carrier business remained stable, the enterprise business experienced solid growth, and its device business expanded swiftly into new business domains. The company's global business operations remained steady, and their overall performance was in line with their forecasts.

Ping noted that the digital economy has become a major engine of global economic growth. Green and low-carbon technologies have become new drivers for sustainable development. This combination of digital transformation and green development presents the information and communication technology industry with incredible new opportunities. At the same time, an unpredictable business environment, the politicization of technology, and a growing deglobalization movement all present serious challenges for Huawei.

"We need to stick to our strategy and respond rationally to external forces that are beyond our control," said Ping. "A changing external environment won't cause us to change our ideals or aspirations. As a tech company, one of our greatest social responsibilities is exploring the future. We will spare no effort as we probe the endless frontiers of science and technology. We are committed to bringing ICT technology to each and every industry, to creating new value by helping them go digital, intelligent, and green, and to helping them cut their energy consumption and go low-carbon."

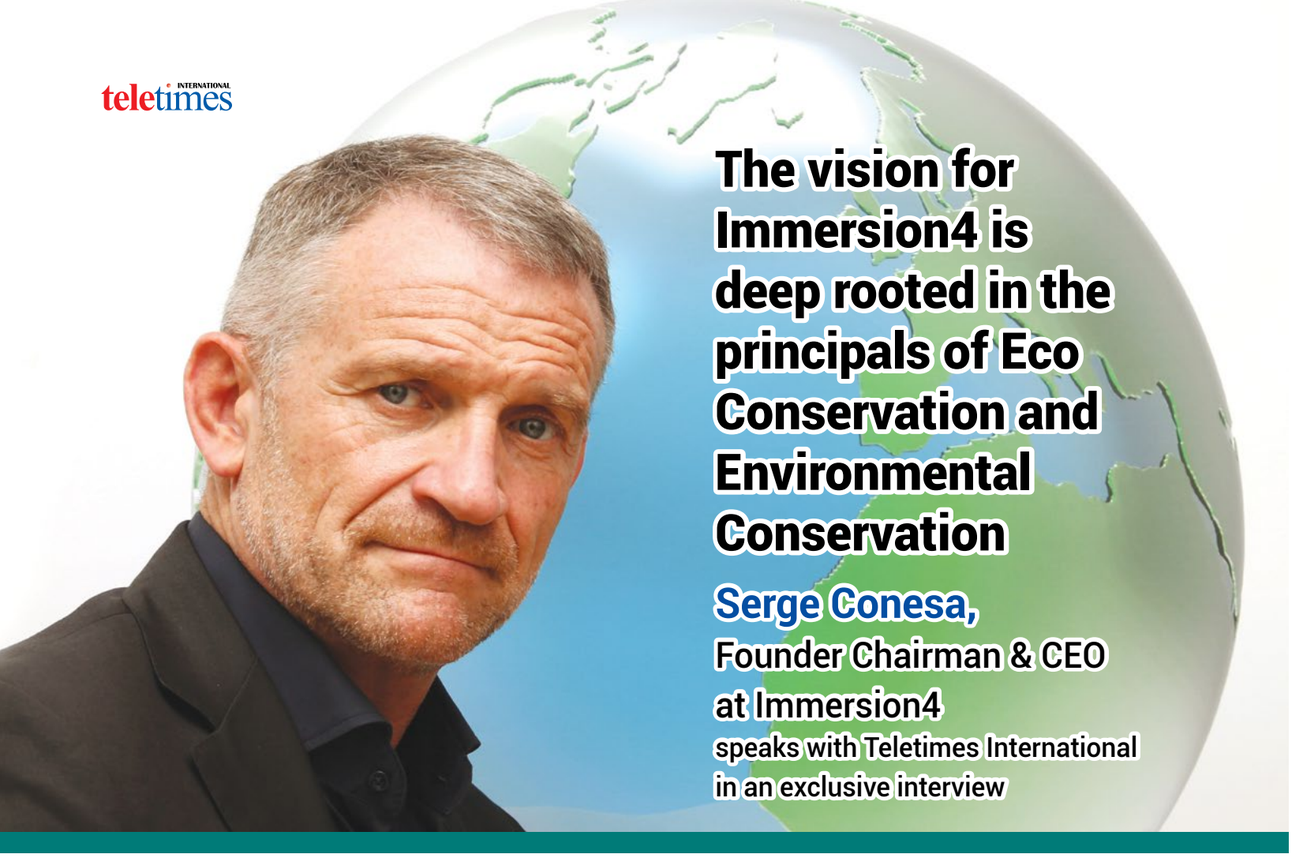
In terms of strategy, Ping restated the company's commitment to continue to focus on ICT infrastructure and smart devices. "While leveraging the strengths of our broader platform, we are breaking new ground with domain-specific subsidiaries and integrated teams to shorten management chains, responding more nimbly to our customers' needs, and creating greater business and social value than ever before. Within Huawei, our integrated teams focus on identifying the right technologies for their respective industries. When facing customers, they work closely with partners to explore the right solutions for practical challenges. Our goal is to take care of all the complicated stuff on our end, leaving our customers with simplicity itself," he said in the New Year message. The executive further stated that Huawei will continue to promote and safeguard unified global technical standards, support channel partners with long-term incentives, and also proactively support and develop high-quality suppliers worldwide to move forward together.

Huawei has continued to show its commitment to supporting the digital transformation of industries, promote the development of small- and medium-sized enterprises, and enable more people to benefit from digital technologies. The company has also actively been cultivating digital talent through initiatives like Seeds for the Future, ICT academies, and Women in Tech. In line with global sustainable goals, Huawei has been facilitating green and sustainable development and protecting the natural environment through intelligent and low-carbon technologies. Ping highlighted the company's commitment to work with carrier and enterprise customers as well as partners around the world to build simple, green, and intelligent ICT infrastructure that helps all industries go digital.


Guo Ping

Ping added: "Huawei only exists to serve its customers. We can't decide who chooses to work with us, but we will always wholeheartedly serve the customers who do. The goal of our organizational transformation efforts is to better serve our customers. By delegating decision-making authority to field offices, we want to make full use of our massive platform to better support the operations of elite teams, keeping them inspired to do what they do best."

"2022 will come with its fair share of challenges, but we will keep working closely with our global partners to overcome the difficulties we face, improve business performance, and strengthen our foundations. We will continue investing in the future and creating value for our customers and partners. In the end we will not only survive, but do so sustainably," Ping concluded. T



The vision for Immersion4 is deep rooted in the principals of Eco Conservation and Environmental Conservation

Serge Conesa, Founder Chairman & CEO at Immersion4 speaks with Teletimes International in an exclusive interview

TT: Please tell us a little bit about the vision behind the Immersion4 technology?

SC: We believe in a world based on Eco Conservation and environmental conservation, which are two of the four main principals that drive Immersion4 technology. I do believe we are past the stage where the world can heal itself without cost to mankind. The planet does not buffer for humanity's current lifestyle. The global trends due to evolving demographics, outdated industrial business models and scarcity in natural resources are fueling the upcoming massive challenges humanity is facing. Adapting and preserving what is left without pollution, emission and unnecessary use of natural resources is mandatory. To achieve that, we have to come back to the root of everything: we must rethink designs, usages and lifestyles.

Immersion4 is right at the crossroads on an inflection point solving the datacenter pollution and energy consumption with a positive impact towards achieving the SDG 17 Goals. We are entering an era where data is the 8th natural resource. However, data centers consume almost 15% of the world's electricity whilst data production implies heat generation. This is where all the laws of physics and effects mentioned above converge together defining the exchange rules.

Using the most efficient way, i.e. "liquid to liquid", Immersion4 DTM™ systems manage, collect, optimize and transport the digital heat dissipated so most of those calories can then be used to generate heat/cool electricity using any cooling/heating system, becoming a great complement to any renewable energy solution.

TT: Has the Immersion4 mission evolved and grown over time? Would you like to talk a little bit more about the benefits Immersion4 is bringing to the global economy?

SC: Ten years have passed since the time I was back in Washington DC working on the world energy consumption as part of a trusted company from the US Government. I realized that datacenters and air cool electronics are a big problem. Over the years, I saw the depth of a problem that is only getting bigger as the world produces more data. I realized that we can address it only by "coming together".

The vision for Immersion4 is deep rooted in this realization. I have created Immersion4 to address two main concerns for any nation: Data & Energy sovereignty whilst sharing the value chain. We achieve this using "I4IBM™". I4IBM™ is Immersion4 Industrial Business Model. It is 100% circular economy based: we create local production sites (CoolINT), and labs (CoolLabs) partnering with universities all around the world.

I4IBM™ "Immersion4 Industrial Business Model" is ahead of the COP26 recommendations already. It has been created with the objective to go fast, put a scalable, organized & structured way to do business locally with a reduced carbon footprint. I4IBM™ creates jobs locally and enhances university R&D.

I4IBM™ is applicable all around the world, offering equal transparency and understanding. Every nation with their own industry and their own people can benefit from it as they will contribute to it themselves. This will help reduce GHG, CO_2 & micro particles emissions and water consumption as well as energy consumption, energy financial debt. I4IBM™ will ultimately improve a nation's GDP while reducing pollution.

More than ever, the Immersion4 business model, based on circular economy and reduced carbon footprint, appears to be the right answer to limit companies' and nations' economic impact and dependence in case of crisis like the one due to the Corona virus.

Bundling innovation, technology, methodology and business models is the only way we found to change the current model; this new approach is highly economically viable for everyone and reduces people migration due to economical reason. Reducing the carbon footprint at each stage, from production to delivery, and creating value for communities are the way to help reduce the impact of climate change.

I4IBM™ has been designed to share the value chain with fully involved local investors and industrial partners.

TT: Can you share some details around what kind of energy waste and GHG are being produced through data center energy consumption around the world?

SC: The digital era contributes to reducing carbon emission. However, moral, economic and financial incentives must be put in place to stop this explosive growth of E-waste and e-waste exponential data production.

How we cool off electronics in general, and more specifically datacenters, is the root of our suffering. Data performance and programmed obsolescence are generating the e-waste recycling problem.

For decades we have tried to perform air cooling by using better cooling systems, adding water to the rack, putting datacenters in cold regions. However these fixes are temporary and fundamentally flawed as our world is digitalizing: Datacenters went from consuming

> "Using the most efficient way i.e. "liquid to liquid", Immersion4 DTM™ systems manage, collect, optimize and transport the digital dissipated heat so it can be re-used through heating/cooling systems"

5% of the world energy in 2016 to 20% in 2025, representing 10% of GHG emissions and over 2 trillion liters of water. On the electronic side, we have protected PCB's against humidity, corrosion, oxidation with chemical layers called "conventional coating" and highly toxic brominated flame retardants, which is a critical problem for e-waste recycling.

Immersion4 technology is about rethinking electronics cooling. We are back to the roots of electronics itself: air cooling is the problem. Today, we are cooling any type of legacy electronics without using natural resources such as air and water, through recyclable DTM™ & IBCMiners™ systems with 100% biodegradable engineered liquids. This drastically reduces the datacenter infrastructure, cooling and energy costs, avoiding the need for the chemicals previously mentioned, bringing sustainability in the data world and allowing urban mining.

We preserve the natural resources of air and water as this is what biodiversity and humanity need. We use ICE™ Coolant liquid for electronics: not only does it protect from humidity, corrosion, and oxidation, allowing urban mining, but it also collects the digital dissipated heat 1500 times better than air cooling, enabling the best thermal exchange ("liquid to liquid") for recovering and reuse. From Exascale to EDGE datacenters, Immersion4 has as unique product offerings for any type of datacenter, cloud, container, data-room through the two product offerings of DTM™ and IBCMiners™ systems.

The concept is simple: Distributed / Decentralized / « Data as

That is what immersion4 brings to the market "Making the cloud cool again™".

As a keynote speaker, I often ask if it makes sense to cool a glass of champagne by cooling an entire room or by cooling just the champagne itself? It makes the audience smile instantly. Well, this is what today's datacenter technology is about, cooling an entire room to cool a server with a hot spot somewhere in the room.

Today our past technology choices are impacting our planet dearly under the name of digitalization. We have the solution: IMMERSION4

TT: Has the Immersion4 technology been applied in projects so far? Would you like to share any recognition you have received?

SC: Immersion4 has received prestigious awards since 2018 for its technology such as International Inventions Show in Geneva (4 awards), ITU Best use of ICT and Global Excellence Awards in 2019. Labeled by Solar Impulse as one of the 1000 upcoming companies

"What we are suffering today is due to the way we cool off electronics in general and more specically in datacenters. Data performance and programmed obsolescence are generating the e-waste recycling problem."

Energy » "Pay as you Grow" / Any building / Any to Any

The best sustainable and economical answer from Blockchain to AI

National regulations related to GDPR can also have an important impact. Many nations impose their data to be processed locally. Companies cannot use cloud services or datacenters located outside of their country. This might help the diffusion of decentralized, but local EDGE datacenters. Important issues are connectivity, urban space availability and generated pollution such as CO_2 and noise. EDGE Datacenters where the DATA are collected and processed have to be well connected to the network, in collaboration with local telecom service providers using DTM™ "pollution free" technology.

URBAN integration - Immersion4 DUDE™ Architecture addresses all of them with the utmost mission to host any IT loads and applications locally in accordance with the mapping & zoning plans, generating new sources of revenue to communities.

GRID's & Internet - With less pressure on the GRID's and being less demanding in cooling infrastructure and energy consumption / pollution emission, EDGE Datacenters can now be implemented teaming with any service provider networks such as 4G, 5G and/ or fiber point of presence "POP" to create as well DATA hosting capabilities using as best internet network access connectivity.

Financials - No more Upfront sizing or initial CAPEX. Huge CAPEX reduction for real-estate and cooling infrastructures as they downsize and reduce OPEX through energy sources optimization with no dedicated buildings having massive footprint reduction. And all of this with the potential re-use of the digital dissipated heat.

to save the world and Forrester Sustainability Report in the magic quadrant up-right corner in 2020. Since 2019, we are the ITU Sustainability Partner and "AI for Good" Gold partner.

This year, Immersion4 DTM™ technology has been presented at the 2021 GITEX edition on DEWA booth.

"There is nothing such as a green datacenter which is not Immersive cooling based using Immersion4 technology".

Today, Immersion4 technology has been deployed and its technology is in demonstration all around the world at HPE Innovation centers in Dubai (UAE), Riyadh (Saudi), Geneva EMEA HQ (Switzerland), Casablanca (Morocco), Innovation Center City of Las Vegas (USA), SNCF Paris (France), ENS/CNRS Lyon (France), Akuo Energy Paris (France), E&Y Paris la Defense (France) and DEWA Dubai (UAE) with everything up to complete satisfaction.

TT: Which markets do you see as the first major markets for Immersion4?

SC: 2022 is Immersion4's global expansion year with a deep focus on MENA as we are opening our Immersion4 Middle East HQ in UAE, and Russia. It is too early to disclose details but I can say that Immersion4 is getting a lot of traction from major local and international players that have already accepted Immersion4 technology. In the meantime, we will continue to expand our European, Asian and US operations.

"As a speaker during my presentations, I often ask if it makes sense to cool a glass of champagne by cooling an entire room or just to cool the champagne itself? I can see people smiling. Well, this is what today's datacenter technology is about, cooling an entire room to cool a server with a hot spot somewhere in the room."

TT: Can other companies besides data center organizations benefit from Immersion4 technology? (For example, crypto mining companies)

SC: Absolutely, we have created IBCMiners™ Product Series containerized & modular palletized system which is a universal liquid cooling offering for any ASICs &/or RIGs designed for bitcoins, crypto-currencies and blockchain.

Part of the DUDE™ Architecture "Distributed Urban Datacenter Efficiency" addressing EDGE datacenter integration in smart cities, DTM™ & IBCMiners™ systems as presented in Teletimes' November 2021 edition share the same concepts & architectures to be cooled using the same cooling circuits based on the same principles and processes. No more need for dedicated building for datacenter & warehouse buildings. The DUDE™ Architecture is a true response to "unified under the same roof"; the concept is "Data as Energy" bringing additional value to real-estate as there is no "smart building / city" without "smart energy".

In the meantime, Immersion4 created CoolLabs to partner with laboratories, foundations & universities all around the world so Immersion4 immersive cooling concepts & technologies can be used for application on any electronics devices and systems, no matter the type or purpose.

TT: How does the year 2022 look like for Immersion4? What are the key target milestones?

SC: This for me is a question at two levels.
The first one is regarding Immersion4 only. I'm confident that 2022 will be a very "cool" year for Immersion4 where we will see the concretization of 10 years of work. We got traction from major players all around the world as well as nations focused on the COP26 agenda and their GDP. Their interest is to deploy "I4IBM" Industrial Business Model (100% circular economy based) in their respective countries, involving local economies and addressing the digitalization needs in their respective regions without energy infrastructure pressure. The second one is the fact that digitalization & human activities today are not in line with the world sustainability agenda. Expanding the Immersion4 ecosystem by inviting people to "come together" to rethink our current data and energy consumption models, motivated by the principles of eco conservation & environmental conservation, is Immersion4's primary milestone.

Our activity has a cost, and so far we haven't paid the rent of our presence on earth. This is not sustainable. We can only achieve sustainability by changing the way we do things, Immersion4 is a perfect example. Humanity is right at the crossroads, living this crucial time where today's decision, one decision at the time, can change forever our life on this planet. This is our sole and only home. Over 510 million km2 as a playground. Each of one of us can contribute to influence that change. This is not just social responsibility, it is also a parental responsibility, a pledge to our children to give to each one of them when we talk about "a brighter future".

I need help from each one of you to make it happen. More people contributing to our ecosystem is Immersion4's milestone! T

"The path to the future"

Apple said in 2002 "Think different**". In one sentence, asking the right question… "Maybe the E-waste problem can be simply addressed by changing the way we are cooling electronic from the beginning of time?"**

3 numbers to remember 17, 18 & 13 …
As per WHO (World Health Organization)
In 2021, 17% of electronic is recycled, 18 million children & 13 million women are part of digital dumpsites!

We are entering in a complete new era where we will need to rethink the creation of solutions based on the principles of Eco-conservation & environmental conservation demonstrating the optimization Energy & Volume without altering air quality traditionally inherent to any urban & industrial site in other to preserve the human race and the biodiversity.

Changing the electronic cooling method will rethinking & reshape datacenter for a better world - The use of Immersion4 cooling DTM™ technology avoids the need of must require chemicals due to Air and/or water cooling technology. This is due to the fact that PCB's & chassis are fully dunked within the ICE™ Coolant specially engineered to enhance electronic performances with ZERO negative effect.
This is the first and key step every datacenter owner can take to not only immediately change the exponential E-Waste recycling grows but decrease the need of cooling infrastructure & electrical energy.
This have been widely detailed on previous white papers called "Immersion4 - State of the Art Datacenter" and "Immersion4 – Electronic E-waste Feb 2019"

Drastically reduced energy consumption, full recovery of excess energy, occupied space optimization and permanent control of indoor and outdoor air quality, make **Immersion4 the pioneer of what will become the standard of modern eco-responsible Datacenters, considering energy consumption, air quality issues and electronic E-waste are crucial and intrinsically intertwined.**

The OIC-CERT 5G Security Framework: Bracing for what's coming

Ts Mohd Shamir bin Hashim, Cybersecurity Malaysia, Permanent Secretariat of the OIC-CERT Co-chair, OIC-CERT 5G Security Working Group

The fifth-generation (5G) wireless technology represents a complete transformation of the telecommunication networks that will be able to cater for the demand from emerging and disruptive technologies such as Artificial Intelligence (AI), Internet of Things (IoT), and Cloud computing, to name a few. These technologies require extensive bandwidth to enable new applications usage where 5G will transform the digital landscape and serve as a catalyst for innovation, new markets, and economic growth. In fact, 5G will be critical towards realizing the objectives of the Fourth Industrial Revolution (4IR), where billions of devices will be connected to the Internet through this technology. It is estimated that there will be more than 1.7 billion 5G subscribers worldwide by 2025.

Societies today do not have a choice when it comes to these emerging technologies; they must embrace and adopt them or risk being left behind by the rest of the world. Countries that are slow in adopting the technology will move to the bottom of the food chain and be left at the mercy of others. In a world that is moving towards ubiquitous interconnectivity, security risks lie at the weakest link in which it would be the interest of all parties to ensure every link incorporates minimum security standards to protect, in this case, digital data transmission and management.

The 5G digital transformation will continue to introduce new dimensions of attack vectors, surfaces, and vulnerabilities through the connected digital systems. IoT, for example, will bring a new set of challenges, such as the security, safety, and robustness of cyber and physical systems. Novel types of attack will inevitably catch the industry by surprise. As such, more and more touchpoints will become attractive and easy targets for cybercriminals. Therefore, there's the need to enhance cybersecurity measures proportionate to the threats emerging from digital technology advances.
Since the dawn of cybersecurity, cross-border collaboration has always been a pillar in mitigating cyber threats. One of these collaborations is the Organization of the Islamic Cooperation-Computer Emergency Response Team (OIC-CERT), a platform for information sharing and developing cybersecurity capabilities for members. The OIC-CERT is an affiliate institution of the Organization of the Islamic Cooperation (OIC).

The OIC is said to be the second-largest global organization after the UN with 57 member countries. These many countries under one umbrella offer an excellent opportunity for digital interconnectivity. Still, weak cybersecurity is a significant concern and might hamper the rollout of technologies such as 5G to accommodate future development. Based on the International Telecommunication Union Global Cybersecurity Index (ITU GCI) 2020, which measures the cybersecurity commitment of 194 countries, only four OIC Member Countries (OMC) are ranked in the global top 20 while 27 fall below 100.

This raises the question of how to elevate cybersecurity and digital technology capability and capacity among the OMC. How will these members embrace emerging technologies such as the 5G?

The OIC-CERT was formed in 2009 to offer cybersecurity assistance to the OMC. Presently 28 of the OMC are members of the OIC-CERT. The ITU GCI 2020 report shows that the four OMC ranked in the global top 20 are also members of the OIC-CERT. Focusing just on the OIC community, 18 OMC in the top 20 OIC members are OIC-CERT members. Thus, the OIC-CERT can be an avenue for the OIC to elevate the cybersecurity capability and capacity of OMC to prepare them for 5G and other disruptive digital technologies.

The OIC-CERT recognizes that 5G marks the beginning of a new era, albeit with serious cybersecurity challenges that could hamper its progress. Thus, to address some of these challenges, the OIC-CERT has established the OIC-CERT 5G Security Working Group (WG), led by CyberSecurity Malaysia and Huawei UAE, who are the OIC-CERT Secretariat and a Commercial Member respectively. The WG will look at formulating a 5G cybersecurity framework that is systematic and effective to accelerate ICT development. This framework is mainly intended for the regulatory authorities of the OMC to assist them in making policies on regulating 5G equipment vendors, mobile

network operators (MNOs), and the relevant service providers. The OIC-CERT 5G Framework clarifies the different 5G cybersecurity areas, roles, and responsibilities. The WG, with the contribution from Huawei UAE, has developed an OIC-CERT 5G cybersecurity risk repository identifying the exact cybersecurity requirements to address 5G cybersecurity concerns. Considering the difference in cybersecurity capabilities among the OMC, the framework and security requirements are designed to provide a baseline foundation, which can be individually customized to guide each OMC in regulating their 5G cybersecurity requirements.

It is unrealistic to build and maintain secure and resilient 5G networks, application services, and reliable network equipment through an all-in-one framework. In addition, it cannot be achieved by one person, one organization, or one nation. All parties involved need to collaborate in addressing the challenges that arise from 5G rollouts. With the aim to establish the cybersecurity requirements for the OIC community to securely adopt new technologies, the OIC-CERT had announced the formation of the 5G Security WG at the GISEC Global 2021 in Dubai, UAE in May 2021, and is looking to present the completed OIC 5G security framework at GISEC 2022 edition in March next year.. To date, the WG has completed the technical development of the framework with the following major components:

1. The OIC-CERT 5G Risk Repository
The repository provides a risk-based approach towards 5G security in the framework. The repository will be used for risk assessment and management of 5G security risks in information security projects where it will include industry consensual threat landscape, attack methodologies, mitigation strategies, and measures for different stakeholders such as MNOs, network equipment vendors, application providers, and regulators

2. The Baseline Security Technical
Specifications and Reference Standards A tiered 5G security framework is defined to address the 5G security that also identified a layered security model to explicitly distinguish roles and responsibilities in securing the 5G equipment, networks, and various applications to build a new digital era. For each layer, corresponding baseline security requirements are given. For example, the Network Equipment Security Assurance Scheme (NESAS), jointly developed by GSMA and 3GPP, is recognized as a unified cybersecurity standard for the equipment layer.

3. A common certification scheme across the OMC
The WG had provided a compliance validation scheme for the OMC. We have defined the Accreditation Body (AB), Certification Body (CB), and Evaluation Body (EB), detailed the requirements and duties in the certification scheme, evaluation process and criteria, and other necessary components that are critical in establishing an open, transparent, and collaborative cybersecurity ecosystem. This ecosystem helps the OMC address pertinent concerns arising from adopting the 5G and corresponding applications and uses cases built on top of 5G, such as cloud computing, IoT, and AI. These are the keys that will unlock the value of 5G and define the applications for embracing 5G and beyond.

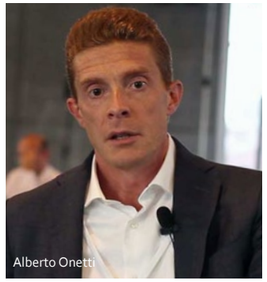
Huawei ranked as the World's 2nd Highest Investor in R&D

Huawei has ranked second in the 2021 EU Industrial R&D Investment Scoreboard, up from third place in the previous year's edition. The 2021 EU Industrial R&D Investment Scoreboard is a European Commission publication that ranks the research investment levels of 2,500 companies around the world that comprise 90% of the world's business-funded R&D. The report is prepared by the EU Joint Research Centre (JRC).

"Huawei is now ranked as the second-highest private sector investor in research and development in the world. The European Commission Industrial R&D Investment Scoreboard 2021 is recognized as one of the most authoritative global studies into private sector investment in research and development. International collaboration in the areas of research and science is very important so as to guarantee that the most innovative products and services are developed" said Tony Jin, Huawei's Chief Representative to the EU Institutions.

Alberto Onetti, Chairman of Mind the Bridge, commented, "We recognized Huawei's effort in working with startups, and in particular its ecosystem approach that takes into consideration the 'give' as much as the 'take'. In fact, Huawei makes use of its CLOUD infrastructure and of its Huawei Mobile Services to support startups' growth, the development of new products, and the expansion to new markets, while taking advantage of being close to countless cloud-native, AI, big data, and other hi-tech startups."


Catherine Chen


Alberto Onetti

Catherine Chen, President of the Public Affairs and Communications Dept at Huawei, said, "34 years ago, Huawei opened with just 5,000 dollars in registered capital. At that time, we luckily benefited from the generosity of other major companies who were willing to take a chance on a newcomer. So it is no surprise that we have wanted to do our part and pass this warmth and support on to more startups today. We believe this idea of paying it forward is important for healthy ecosystem development. Together with initiatives like our Shining Star program and the Huawei Developer Program designed for individual developers, we want to increase the number of startups in the market and support individual entrepreneurs and developers."

5G Virtual Networks: What is happening globally and where does the Middle East stand

Saurabh Verma - Director ICT & Sami Shaikh - Consultant ICT
Frost & Sullivan

Emerging technologies adopted by enterprises to support their digital transformation initiatives have generated much data regularly. However, this data must be transferred and analyzed faster to get the desired outcomes. Therefore emerging technologies have to rely on the networks that are not only capable of carrying large volumes of data but can also cater to their demands of ultra-low latency, high bandwidth, and the ability to support a substantial number of devices simultaneously.

5G networks can accommodate such requirements, and globally Mobile Network Operators (MNO) are rolling out 5G. In addition, many MNOs are offering 5G virtual private networks that can provide enterprises with uninterrupted, dedicated, and SLA backed network performance; without the challenges such as skills, cost, and long deployment lead time. A 5G virtual network is an isolated network carved out from the existing public 5G network, which restricts the devices that connect to it. A 5G virtual network can be provided to an enterprise, typically using a 5G network slicing over the public mobile network. In this case, the enterprise can benefit from most of the advantages of a private network. However, without the upfront cost or complexity involved in installing and operating on-site wireless infrastructure, enterprises also have the flexibility to leverage the public network for one or more services.

5G virtual networks aim to create a dynamic and robust virtual private network based on an advanced cellular communications infrastructure, capable of meeting the demands arising from enterprises. The 'slicing' function divides 5G virtual networks into different slices or layers; each layer can be individually designed, deployed, and controlled. In addition, each slice can be designed to cater to a specific use case or the needs of a group of users in a business process. For enterprises, the value of virtualized private 5G networks and their ability to be sliced into discrete layers is evident. It enables them to optimize latency, transmission rates, QoS, security, automation, time-to-market, and cost. From media and entertainment to healthcare, manufacturing, retail, transport, energy, and agriculture, 5G Virtual Networks have had a significant impact on how these industries use their communications networks to deliver next-generation services and products and optimize their business processes.

A virtualized private 5G network can manage the needs of different businesses, such as one business may require extreme reliability and low latency, another may need high bandwidth but have less demand for low latency. In addition, a virtualized private 5G network can be designed to guarantee certain connectivity-related characteristics for the associated services, such as analytic

capabilities, security-related services, or specialized charging. Enterprises can customize their virtual networks to cater to their digital transformation needs, which make 5G virtual networks more attractive to enterprises, in turn by providing several specific 5G virtual networks for different enterprises and various industry verticals, MNOs will be able to gain new revenue sources.

Overall, although 5G networks impact the consumer market, the biggest growth opportunities for MNOs and their suppliers will be in helping a wide variety of vertical industries. 5G capabilities and virtual network deployment will enable deployment of many advanced technologies that needed for vertical industries' connectivity-based operations and processes.

5G Virtual Networks: Digital transformation driving global adoption - Industry Use Cases

During the initial stages of 5G commercialization, there were opinions that verticals must have their own dedicated, isolated private networks to meet the highest standards, especially mission-critical networks for the emergency services, utilities, and public transport. However, recent studies carried out by European Commission show commercial networks can fulfil this role when designed to meet vertical needs. Today, industries in several countries have started adopting virtualized private 5G networks, which has reduced the need for a dedicated standalone network but instead can utilize a well-designed public 5G network. Additionally, the growing use of the Internet of Things (IoT) and other emerging technologies generating enormous amounts of data is further driving industries to consider virtualized private 5G networks. As a result, 5G Virtual Networks deployments have been seen in several parts of the world – supporting multiple use cases across different industry verticals.

Adoption trends in Americas:

The Americas was one of the early adopters of 5G technology. MNOs in this region have already rolled out virtual private 5G networks for several industries and will start seeing tangible returns from 2022 onwards. At the moment, more than 85% of revenue generated by MNOs from 5G Virtual Networks stems from enterprises across all verticals. Some of the prominent use cases seen in the region are in the following verticals:

Healthcare:

5G will stimulate the market for telemedicine services. It is forecasted the telemedicine space to display a 2019-2025 compound annual growth rate of 48.6% in the United States. 5G devices will utilize the vastly improved wireless infrastructure to allow for remotely managed telemedicine procedures with a high quality of service.

Remote Surgery

The most ambitious use case for 5G is to enable remote surgery, in which a surgeon operates a robot to perform or assist in the procedure. This will allow for access to talented surgeons no matter the location of the surgeon or the patient. Remote surgery expands the potential for robotic surgery. Current options include assistive remote surgery, which involves instruments that are directly controlled by doctors to make small incisions, ensure accurate placement of medical devices, and close the patient when the procedure is completed and fully automated remote surgery, in which instruments can perform surgical tasks end to end without the need for human intervention.

Current tools include remote-controlled robotic arms and miniature cameras for minimally invasive robotic heart surgery (e.g., mitral, tricuspid, or aortic valve replacement).

5G virtual private network offers a near real-time capability that will provide the network connectivity and low latency needed to advance remote surgery over the next 3 to 5 years

Manufacturing

Smart Manufacturing

A leading telecom operator used 5G Ultra-Wideband capability in the Corning factory in Hickory, North Carolina. As a result, the companies are working together to build the 5G factory of the future. The network is being used to prove how 5G can enhance factory automation and quality assurance functions in one of the world's largest optic fibre manufacturing facilities. For example, engineers in Corning can use 5G to speed data collection dramatically, allow machines to communicate with each other in near real-time, wirelessly track and inspect inventory using 5G-connected cameras. They will also test how 5G can improve the function of autonomous guided vehicles (AGVs) by helping them move more efficiently around the factory floor.

Adoption trends in APAC:

The private cellular network market in Asia-Pacific provides a unique growth opportunity for 5G Virtual Networks, driven by the robust ecosystem of collaboration and availability of spectrum. In addition, the COVID-19 pandemic has accelerated digital transformation for industries and has made reliable connectivity more critical than ever. Private cellular networks can address enterprises' on-premises connectivity needs by customizing the network to enable capabilities and use cases that are difficult to achieve with traditional wired or wireless network solutions.

Local governments in the Asia-Pacific have implemented initiatives to liberalize the spectrum and standardize private cellular networks for industrial use. For instance, the government in China is supporting 5G rollouts by accelerating their adoption. The Ministry of Industry and Information Technology (MIIT) has provided guidelines on stopping new IoT connections on the 2G/3G network. This approach has encouraged service providers to migrate mobile connections from 2G/3G networks to 4G/ 5G networks.

Such initiatives by the government have also resulted in operators deploying more 5G base stations. As per MIIT, there are 819,000 5G base stations in China, which provide 5G networks to all cities – accounting for more than 70% of the total 5G base station deployed globally. Support and collaboration from regulators and government authorities will play a key role in 5G deployment and adoption.

The manufacturing, logistics and transportation, and healthcare sectors will present the biggest opportunities for virtualized private 5G networks in Asia-Pacific. Among all the potential deployments, manufacturing, logistics and transportation, and healthcare sectors are expected to account for 28.7%, 15.4%, and 15.9%, respectively, in 2025. Furthermore, as the number of connected devices in the industrial environment increases, deploying private 5G networks to handle vast data will become a requirement.

Manufacturing

Smart Manufacturing

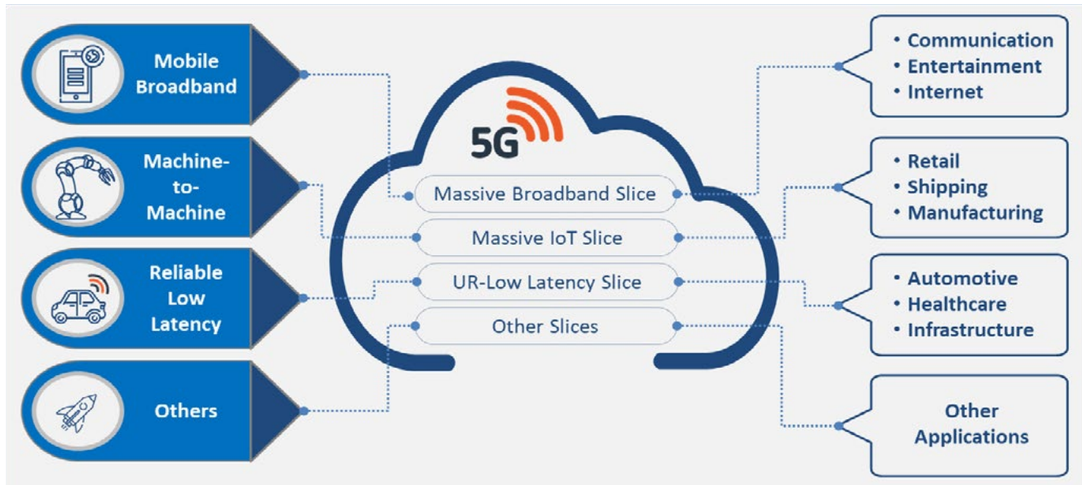
China's leading telecom operator, and Haier have completed a deployment of edge computing, 5G and machine vision into Haier's manufacturing environment. With this solution top of the range stainless steel refrigerators are visually inspected, in near real-time, to screen out production defects. Edge computing is deployed to host machine vision applications, with all data processing on-site at the production facility.

Energy & Utilities

Smart Mining

China's leading telecom operator, and Yangquan Coal Group successfully built the first 5G underground coal mine network in China, which at 534 meters below the surface is also the deepest underground 5G network in China. With the help of this "super Gigabit uplink" underground network, supporting

5G Virtual Networks enabled by Network Slicing



a peak uplink rate of 1100mbps, the network enables high-definition audio and video communication, rapid data transmission and remote intelligent control of equipment. This network enables three 5G applications together supporting unmanned, automated, and remote visual operation of the coal mine including inspection of mechanical and electrical chambers, autonomous driving, and fully mechanized mining.

Transforming Open-pit mining

In China, 5G infrastructure manufactures have deployed 5G private network in surface/open pit mines to enable autonomous mining. These autonomous mines support use cases of Autonomous vehicles, Real time condition monitoring and Remote-controlled drilling rigs.

Since mines are in remote locations and often span across large areas, network connectivity and availability become a challenge. With the 5G private networks, infrastructure have deployed autonomous mining use cases which have helped mining companies improve overall cost and production efficiency and ensured high return on investment.

5G Virtual Networks in Middle East

Operators in the middle east have been one the fastest to roll out commercial 5G networks. The UAE's Telecommunications Regulatory Authority (TRA) began its preparations in March 2018 by allocating 200 MHz of the frequency spectrum to operators to deploy 5G services. The efforts put in by the regional carrier Etisalat, the same year in May, UAE became the first country in the Middle East to launch 5G commercially. The regulatory authorities in the Middle East and operators and technology providers are building an eco-system to further develop the 5G infrastructure and deploy use cases supporting various industries. 5G continue to remain a priority for the region, given the massive economic benefits to brings to the table. The adoption of 5G Virtual Networks have quickly picked up pace in the region and is no longer in its infancy. MNOs are offering 5G URLL and eMBB based services, enabling industry use cases, such as VR/AR-enabled inspection, AI support video surveillance, PPE compliant and abnormality inspection, etc. The region has already witnessed the dynamic adoption of 5G Virtual Networks.

Current Adoption Trends and Challenges

In a recent study conducted by a leading global technology provider, close to 61% of surveyed companies plan to invest in 5G enabled private networks to transform business using emerging technologies. Additionally, national agendas in some major middle eastern countries like UAE and Saudi are focusing on connected cars, smart grids, and smart logistics. This will further drive the adoption of 5G Virtual Networks in the coming years. Although it is still small, the region demonstrates use cases of 5G private networks starting to take shape.

5G Private Networks in Oil & Gas

Saudi ARAMCO and a leading local telecom operator and a 5G infrastructure provider, have signed a Memorandum of Understanding (MoU) to launch a Joint Innovation Program for 5G Technology Utilization in the Oil & Gas Industry. As part of this initiative, the parties will jointly analyze the application scenarios and requirements of 5G in the oil and gas industry to develop and promote relevant, innovative solutions. Also, as part of the initiative, the parties are deploying an industry 5G virtual network with key technologies such as E2E 5G slicing, Multi-access Edge Computing, and Massive IoT. The virtual network enables many use cases in Aramco's upstream, middle and downstream production services, such as 3D augmented reality and remote collaboration, smart video surveillance, intelligent security management, machine vision, drone and robot applications, which would help fuel the digitization of the oil & gas industry.

UAE's leading Oil & Gas player ADNOC is working with a major telecom operator in the country to test and deploy industry-specific use cases such as Pipeline Leak Detection Systems, Telemetry, Robots/Drones, Virtual/ Augmented Reality, Video Surveillance with Artificial Intelligence (AI) features.

Launch of industrial private 5G slicing

Digital DEWA, the digital arm of Dubai Electricity and Water Authority (DEWA), and one of UAE's leading telecom operators have partnered to launch the region's first Industrial private 5G slicing through 5G stand-alone (SA) technology. InfraX, Digital DEWA's ICT services subsidiary, will offer private 5G slicing driven via edge computing, which will enable DEWA to enhance efficiency through a dedicated, secured, and state of the art network.

5G Private Networks enabling smart ports

In Oman, the leading integrated telecom operator and one of the leading 5G equipment providers have completed a 5G Pilot for Hutchison ports. The pilot intends to outline the roadmap to transform the port into the regions first fully automated port with many smart use cases, such as real-time surveillance of many parts of the port's operations, such as white/blacklist recognition, intrusion detection/loitering, crowd density and 4K monitoring. Other benefits include leveraging AI for HSE compliance and meeting future cost optimization goals.

Transformation in Banking driven by Private Networks

Leveraging 5G networks, Kuwait's' NBK bank has launched a mobile bank branch which allows its customers to talk directly to an NBK Agent using audio and video conferencing to conduct transactions like issuing a debit card, depositing or cashing a check.

Leveraging 5G Networks for Education

Under the direction of The Ministry of Education (MoE) in Kuwait, Education institutes are leveraging 5G infrastructure deliver innovative education services such as immersive learning using AR/VR and online classes to students pursuing distance education.

Road Forward

Although there are considerable efforts by eco-system players to boost the adoption of virtualized private 5G networks, the regional enterprises' uptake is slow due to the following reasons:

Lack of awareness: Although there is an interest in adopting 5G services, enterprises in the region are not fully aware of the advantages of virtualized private 5G networks. Eco-system players like regulators, telecom operators and technology providers need to work together to demonstrate the value add of 5G Virtual Networks. The efficiency and saving brought by investments in advanced technologies could be a good starting point. As technology adoption increases, enterprises will see the need and benefits of investing in 5G Virtual Networks. Additionally, the eco-system players need to develop use cases in collaboration with enterprises.

Lack of IT Maturity: Several enterprises in the region are not ready to adopt 5G virtual networks as they are lagging behind in their digital transformation, IT maturity, need to adopt and deploy emerging technologies, which would require 5G networks. A strong C-level focus with a deep understanding of technology is necessary to bring about enterprise change. CIOs and technology leaders in an organization should take the lead to demonstrate the value and efficiency that virtualized private 5G networks can deliver.

High-Cost Perception: Enterprises have been unaware of the costs involved in adopting 5G Virtual Networks. This lack of awareness has led the organizations to perceive that the cost of the service is very high, thereby restricting them from further looking into the service. Operators and technology providers need to work together to provide cost-effective services to enterprises, which would accelerate the adoption of 5G Virtual Networks.

Despite the barriers seen in the region, there has been increasing demand from large enterprises. As leading organizations in the region adopt these services, we will quickly witness many enterprises who will follow their lead. Eco-system players need to help enterprises realize the value of virtualized 5G private networks, change the mindset, and embrace changes.

The Middle East has always been a region with rapid and tremendous transformation. With the right mix of awareness, leadership and IT maturity, enterprises in all verticals will soon adopt 5G Virtual Networks to accelerate digital transformation in their business. T

Etisalat making global strides in 5G

Etisalat today has made global strides in 5G by setting a benchmark right from the launch of the network to the services with its infrastructure ready to support all 5G devices and future solutions backed by the continuous investments in technology and innovation on the network enabling superior 5G connectivity.

The continuous support and wise leadership of the UAE celebrating its golden jubilee this year has played a critical role throughout Etisalat's journey and the development of the telecom sector, setting a great motivation for Etisalat to continue deploying the latest innovative technologies and enriching the digital experience of customers while transforming communities.

Etisalat has built thousands of 5G sites until today to enable 5G coverage across the country. The network was ready to provide the service as soon as the 5G mobile handsets were available in UAE. Our management's strategy to focus on digital innovation and to 'Drive the digital future to empower societies' have led to investments in superior and state-of-the-art technology solutions on the network.
With a landmark achievement in speed, Etisalat offers consumers the world's fastest 5G download speed of 9.1Gbps. This is a result of building a robust network that empowered this leap in the 5G era to offer a speed 30 times faster than a 4G average throughput. This had a significant and profound change on individuals, industries, society and the economy, transforming how we live and work.

5G has all the capabilities to enable industries break any barriers in embracing and accelerating their own digitalisation journey. Etisalat has set milestones all the way, from making the first live 5G video call from the world's tallest and iconic tower 'Burj Khalifa' to becoming the first operator to enable a metro station, transform a smart district to empowering an international racing track with 5G connectivity.

Today Etisalat has set benchmarks for the industry backed by the infrastructure accomplishments made in the past that have complemented the 5G network. Etisalat took the lead in the launch of 5G in the MENA region targeting opportunities to maximise value from the delivery of end-to-end 5G enabled solutions. Etisalat has continuously engaged with relevant stakeholders to deploy and monetise from the 5G network while at the same time testing and exploring new 5G use cases for the government, business and different industries.

Etisalat's journey towards 5G

Etisalat embarked on its 5G journey in 2014 when it started constructing the network with a dedicated team of engineers and specialists to build one of the most advanced networks in the region.

In 2016, Etisalat Group signed a premier partnership deal with Expo 2020 Dubai, the first major commercial customer in the Middle East, Africa and South Asia (MEASA) region to access 5G services making them one of the fastest, smartest and best-connected places in the world.

Another significant milestone in 2016 was the successful completion of the first live 5G experiment using millimeter waves (mmWave). This showcase was the first of its kind in the MENA region with Etisalat becoming the first telco globally to test speeds of 71Gbps setting a new global

record in data transfer speed using e-band and massive MIMO technology.

The foundation of the commercial launch was laid in 2017, where Etisalat was one of the operators globally to launch a pre-commercial 5G network in certain areas of the country demonstrating high-speed use cases in addition to the low latency feature of the 5G technology.

Looking back at every step of the successful 5G journey, all the efforts have yielded results with the country crowned globally for 5G achievements. UAE's capital Abu Dhabi was ranked among the fastest capitals globally in the 5G network index with the fastest median download speeds (421.26Mbps) in the first half of 2021. This remarkable achievement for the UAE reflects the ongoing efforts of Etisalat and its investments to build one of the most advanced 5G networks in the region and the world.

The deployment of 5G across industries and sectors leads the way to digital transformation in UAE, pushing it to the forefront with a network that is future ready for the next generation of mobile technologies. T

Etisalat's all-new 'eLife Ultra' plans transform UAE home internet services

Etisalat has announced that launch of eLife Ultra, the next generation portfolio of home internet plans, designed to meet UAE families' home connectivity and digital needs, delivering world-class internet speeds combined with the best 4K and HD TV channels and a range of digital benefits.

The all-new plans deliver Video On Demand TV entertainment, TV gaming, music, lifestyle benefits and much more. All these added services are to meet the changing needs of families today, that has moved beyond just home internet and TV content, with the pandemic changing the way people consume services and go about their digital lives. With this in mind, Etisalat introduced the eLife Ultra portfolio that aims to address these changing needs and embrace the digital future for families in the UAE.

The launch of the eLife Ultra portfolio also marks an important milestone towards enabling the UAE to become a 'Giga Nation'. The introduction of the 1 Gbps Fusion plan at AED 999 is a game changer towards facilitating broad based adoption of Giga speeds.

Khaled ElKhouly, Chief Consumer Officer of Etisalat, said: "The new portfolio of services from Etisalat is testimony to our commitment to both address the diverse needs of families in the UAE and enable the UAE to become a 'Giga Nation' by making Giga speeds much more accessible. This is also in line with our strategy to 'Drive the digital future to empower societies', transitioning from a service provider to becoming a curator of digital experiences, delivering the most engaging content and services with the best-in-class home internet speeds. The new elife Ultra range of plans will bring incredible value to families with the ability to stream the best of entertainment, play games and enjoy hi-res quality music, along with the simplicity of shopping from home."

Successful completion of stc Secondary Public Offering with a total offering size of SAR 12 billion

The Public Investment Fund and stc have announced the successful completion of the secondary public offering. 120 million shares representing 6.0% of stc's share capital were sold to local and international institutional investors and retail investors by way of a secondary public offering, the first of its kind in the Saudi capital market.

The total offering size reached SAR 12 billion, which makes it the largest equity capital markets transaction in Saudi Arabia since the IPO of Saudi Aramco, the largest secondary follow-on transaction in EMEA in the last three years and the largest secondary follow-on transaction in CEEMEA in nearly ten years.

Yazeed A. Al-Humied, PIF Deputy Governor, Head of MENA Investments commented, "The strong interest that this Offering has generated from domestic and international investors is testament to stc's enduring strengths and exciting prospects for the future. As its majority shareholder, we look forward to stc continuing to play a leading role in shaping the future of the Information and Communication Technology sector in the Kingdom of Saudi Arabia, one of the 13 strategic sectors the Fund focuses on."


Eng. Olayan M. Alwetaid

Eng. Olayan M. Alwetaid, stc Group CEO commented, "We are extremely pleased to see the strong interest in the Offering from domestic and international investors. I believe this is an endorsement of stc's achievements as a leading ICT provider and one of the largest telecom players in the MENA region, as well for our strategy going forward. I have no doubt that the increase in the Company's free float percentage to 29.84% will further enhance the Company's international investment case and help make its shares accessible to a wider range of investors and improve trading liquidity. We welcome our new investors and look forward to sharing the Company's success with them."

Eng. Khalid Al-Hussan, CEO of the Saudi Tadawul Group, said, "The healthy reception of the Public Investment Fund's secondary offering highlights the maturity of the Saudi capital market, emphasising its depth, resilience and strength in response to positive regulatory and economic policies. The increasing complexity of the market and strong governance of Saudi Exchange, Edaa, and Muqassa, have created a welcoming environment that is able to support deals such as this. As of now, this is the largest equity capital market transaction in the Kingdom since Aramco IPO, and it bodes well for the future as we seek to capitalise on the growing momentum in the Saudi economy." T

stc signs 3 agreements and launches the new data center in Jeddah

stc signed partnership agreements with a number of specialized companies in support of establishing modern, new generation of cloud-based data centers. As part of the third phase of the data centers project, stc recently launched a new data center in Jeddah. These steps aim to expand the stc's capabilities and capacities and accelerate the implementation of the Kingdom's digital transformation goals through a flexible and global-level data distribution process.

Through these agreements, stc also seeks to accelerate the stages of advanced digital transformation, consolidate the Kingdom's role as a regional digital hub for cloud computing that attracts innovation-based technology investments in the region by providing cloud services to public and private entities and contributing to storing and processing their data. Thus, the cyber risks as well as the operating expenses of these entities would be reduced in line with cyber security standards and controls provided by data centers in the Kingdom.

These agreements are an extension of the third phase of the stc's newly launched data centers project, the largest in the region. This phase would provide seamless data distribution on a global level in compliance with the objectives of the Saudi Green Initiative for Environmental Sustainability.

In addition, stc inaugurated the new data center in Jeddah under the third phase of the data centers project. It is the first neutral data center in the region and its capacity amounts to 1.2 megawatts and 150 server racks. It combines many digital services that ensure fast and secure access to the high capacity local and international network that connects various IGW and MPLS networks.

The center comes as a part of stc's strategic plans for data centers to enable the company to be a gateway to the digital infrastructure of the Middle East and to achieve the digital transformation of the Kingdom by providing important digital availability areas that secure an integrated set of secure services and service management at the global level, in addition to improving its digital technologies and communication services across the major cities in the Kingdom, including Jeddah. T

stc awarded for its best internal application across the Middle East

stc was awarded the first place in the enterprise agility award 2021 for its best application that provides solutions for companies, for the internal communication application "HUB" during the awards ceremony that was held recently in Dubai.

stc's HUB application was crowned the first place as the best internal communication application, achieving the diamond plate of the Entrepreneur award 2021, after competing with a number of competing applications from international companies in the Middle East.

The competition revolved around the most suitable applications for work environment that require diversity in the characteristics of its internal applications and the speed of its renewed response to provide a digital communication environment.

stc's win reflects the excellence of the internal work environment, which aims to make the group a "model of excellence" in its internal applications in human resource management by providing a flexible and innovative digital experience for employees, which is reflected in enhancing their productivity. T

stc: More than 630 km of optical fibers & 40 mobile towers covering land port between KSA & Oman

stc has exerted its technical capabilities to cover the land port between KSA and the Sultanate of Oman, which was recently inaugurated between Al Bat-ha area in Al-Ahsa and Umm Al-Zamoul at the Omani borders in a desert area with difficult and special terrains.

The project linked the fiber-optic network along the road, where network coverage reached 100% and was implemented as a support for local content, through 10 local contractors. The length of cabling procedures exceeded "590" km while the length of fiber-optic cables exceeded "630" km, using more than 80 high-tech machines and equipment and with the participation of more than 1500 workers and technicians who worked around the clock. The project was implemented in various areas along the road, which are characterized by its difficult and tough terrains and hard to work at in some circumstances.

This project is considered one of the large projects implemented by stc and within a short record period of 180 days, where 40 mobile towers were connected with optical fibers. The land port service and the entities working in it with the latest technologies and at high speeds that support 100 GB of data. T

Huawei honored at the 3rd cycle of the Mohammed Bin Rashid Al Maktoum Business Innovation Awards

Huawei has been awarded the prestigious 'Best Performance Award' and the 'Outstanding Performance Award' during the 3rd cycle of the Mohammed Bin Rashid Al Maktoum (MRM) Business Innovation Awards. The awards were presented to Jiawei Liu, CEO of Huawei UAE, by. Sheikh Ahmed bin Saeed Al Maktoum, President of Dubai Civil Aviation Authority, Chairman and Chief Executive of Emirates Airline and Group, and Chairman of the Expo 2020 Dubai Higher Committee.

The MRM Business Award ceremony was held under the patronage of Sheikh Mohammed bin Rashid Al Maktoum, UAE Vice-President and Prime Minister and Ruler of Dubai, with the ceremony hosted by Dubai Chamber. The program recognizes companies who are proven leaders in innovation and whose advances contribute to the development of the national economy and cultivate a world-class business culture in the UAE. This is the third time that Huawei has won the 'Best Performance Award', the first being in the inaugural cycle of the awards in 2017. With three wins, the most by any single company, Huawei was subsequently bestowed with the prestigious 'Outstanding Performance Award' this year.

Abdulaziz Al Ghurair, Chairman of Dubai Chambers, congratulated Huawei for its achievements, saying its exceptional performance sets it as a leading example for other industry players. He further encouraged all winning companies to keep striving for excellence, embrace innovation within their organizations, and continue to raise standards within their respective industries.

Jiawei Liu, CEO of Huawei UAE said, "Huawei has always pursued customer-centric innovations that are done openly and collaboratively with the wider ecosystems in which we operate. The business success of our customers is the ultimate measure of the value of any technology, product, or process improvement. The receipt of these MRM Business Innovation Awards are further validation of our efforts to support stakeholders across the UAE to embrace digital transformation and create new value in the economy and wider society."

Huawei began operations in the UAE in 2001 and has since built an extensive presence in the country. To date, Huawei has invested in its UAE presence by setting up a Regional Supplier Center, a Customer Solution Innovation & Integration Experience Center, a Huawei OpenLab for joint innovation, and two offices in both Dubai and Abu Dhabi, amongst other ventures.

The MRM Business Innovation Awards also recognize how Huawei's significant R&D investments have enabled the company to develop some of the most advanced technology solutions globally, which are being made available to local organizations in the UAE. T

5G is much more than just "the next telco generation"

5G is the most flexible and variable telco ecosystem ever designed

Hans Neff
Senior Director,
CTO Group/Integrated Solution Dept./Global Marketing & Solution Sales Division, ZTE

Interview - Khalid Athar

TT: Where do you see the future of 5G technology is heading?

HN: 5G is already, with NSA and SA, the fundament and guarantee of high speed, high quality and high end customer experience in the 2B and 2C sectors, enabling any to any interconnection and communication. We can see 5G further evolving, enabling new end customer services and quality with every new 3GPP release standardized.

For me, the future of 5G technology is the future of intelligent, tailored, efficient and vertical application function integrated connectivity and cloudification in the telecommunication environment.

TT: What factors will be of the most impact when 5G is fully implemented?

HN: 5G is much more than just "the next telco generation", it is a full open ecosystem including a modernisation of the infrastructure (cloudification), decentralisation, orchestration/automation and a fully modular eSBA based telco application layer (including new functionalities). This open ecosystem approach allows, as soon 5G is fully implemented, to vertically integrate application functions, to position functionalities where they can best fulfil SLAs and to easily integrate 3rd party components.

Additionally, 5G enables new SLA values to be offered, such as ensured QoS bandwidth, latency, jitter, error rate. It allows use of slicing for efficient service deployment, edge computing with local offload and others, so an all in one (r)evolution driving digitalisation, which is maybe the biggest impact.

TT: What kind of applications can we expect to see, come from 5G capability?

HN: 5G allows, for the first time, the mobile telco industry to utilize highest bandwidth, lowest latency and highest terminal density in a very efficient way, opening up new business opportunities. This changes the way applications are working in the telco environment such as enabling new applications for the 2B and 2C market.

First, due to vertical integration of the application, the interaction between application, the end user requirements and the telco network will become closer, allowing dynamic management of SLA parameters. This will change how our current applications will use the network. Second, new technologies, such as slicing, will allow different SLAs for different applications dynamically managed at the same time, creating a per requirement slice adoption and more efficient use. This means the best/most efficient eco-system architecture is used for each service.

Third, new functionalities, increased capacity and throughput, will allow new applications to be present on the terminals and used by the end customer - direct AR/VR interaction, remote guidance, remote healthcare, remote education, new levels of machine to machine interaction, and machine to man interaction and digital twins, as we demonstrate in our 5G factory.

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"In Europe, operators are focussing on 5G NSA. 5G SA, the 5G, enabling the full benefits of 5G itself is starting slowly and with it, vertical integration same as industrial implementation."

TT: What industries or sectors can we expect to experience substantial change/improvement due to 5G?

HN: I do not see the impact of 5G limited to a specific industry or sector, I think 5G improves the availability, quality, density and speed of communication in general.

5G has the ability to change the way we use communication, for example for smart cities, smart metering, industrial and campus environments and private households. Basically it provides fast, low latency, high security and high quality connectivity everywhere, for all kind of use cases.

We are, for example, using 5G to produce 5G in our 5G radio factory, meaning the factory is 5G covered. This coverage is used by the environment, including AR/VR, digital twin, remote consultancy and others to produce 5G RAN connectivity. We also see huge benefits in providing high quality services to decentral points, such as remote healthcare, remote education or tourism, visible in our trials and live deployments already.

TT: How does the telecom industry anticipate this new speed and power impacting their business models?

HN: This fully new ecosystem, not limited only to speed and power, enables a total change of the business model - from connectivity provider to service enabler or even to service provider.

The operators are already preparing and some are already prepared. Operators are building for the 2B Market "Network + Middle Platform + Application" 5G product systems and focusing on the key industries to build varied demonstrative projects. Or for the 2C Market promoting 5G innovative applications and providing good-experience customer services for 5G subscription.

TT: How will 5G meet business needs, such as supporting IoT or remote healthcare applications, effectively in an emerging market environment with evolving regulations and infrastructure constraints?

HN: 5G is the most flexible and variable telco ecosystem ever designed. With slicing it is able to tailor the ecosystem to the application function's needs. With the variety of radio modules driven by 5G technologies the "right" technology for the "right" application can effectively be selected from 2TR to 64TR. With hyper condensed infrastructure as e.g. for the ZTE i5GC, a full 5G can be installed on one single COTS server. With the openness driven by eSBA, same as the Layer2/3 decoupling, a flexible architecture can be built. All this allows to tailor the 5G network to the real needs.

TT: What upcoming 5G innovations are you most looking forward to that will improve our experience?

HN: The most impressive innovation is a combined network and user orchestration, which allows the user to get the resources his currently utilized application requires in real-time based on AI - for perfect experience and best network efficiency.

TT: Why is virtualisation important for the future of cloud evolution?

HN: Virtualisation/Cloudification is the fundament for a telco-cloud, enabling operators to flexibly deploy or modify, slice and eSBA based new service architectures with lowest time to market and highest efficiency in an open environment. To enable the full strength of 5G, the ability to modify service offers and business processes fast and benefit from the openness of the Layer2/3 decoupling virtualisation/ cloudification is mandatory.

TT: What do telcos need to do so they work towards their goal faster than before, by 2025?

HN: To be faster, more flexible with better time to market, it is essential to remove silos. They must establish cloudification, orchestration and force the digital transformation of the company, including training teams and adopting the processes in the company for more efficiency. Basically, doing a digital transformation.

TT: What are the key concepts and benefits of cloud evolution for 5G+ MEC?

HN: To utilize 5G SA to its best, including the performance and flexibility it provides, it is essential to have a unified open telco cloud as fundament for the full ecosystem. The key concept is a hyperconverged integration, combining compute, storage and OVS/R in the COTS based cloud infrastructure, providing a hybrid virtualisation layer supporting containers and virtual machines. With this concept, a tailored deployment, from lightweight at the edge to full scale on the core, can be realized, all maintained by an E2E service and slice orchestration creating perfect fit automation.

TT: Is it worth investing in virtualization technology for 5G+MEC?

HN: An open, unified and tailored virtualisation infrastructure, like our TECS environment, is essential to deploy 5G and MEC efficiently. I see investing in virtualisation for an operator as the mandatory step to be able to use all benefits 5G.

TT: What is the future of cloud evolution (5G+MEC) with respect to virtualisation?

HN: The future is a unified, open and flexible telco cloud ecosystem, supporting containers same as virtual machines on a hyperconverged infrastructure, to enable tailored application deployment, near real-time e2e service and slice orchestration. It combines public and private clouds and allows a on demand based service deployment orchestrated by a unified service orchestration, able to utilise all infrastructure resources.

TT: What kind of challenges can you anticipate by adopting this strategy?

HN: The main challenge is to get rid of the silos in the operator, to find a unified solution able to be used by all applications of the operator. A second hurdle is the openness aspect which is the key for a future prove solution, specifically the layer3 decoupling.

TT: How can we deliver and maintain broadband access at a cost-effective level, including both mobility and fixed broadband services, to enable successful digitalisation in all sectors of our society?

HN: The existing telco networks already are supporting a various set of carriers from 800 to 2600 Mhz, with 5G 700 and 3500MHz added to this list. For the new frequencies it is important to do a tailored deployment of the frequencies and the correlated radio modules (64/32/8TR depending on the capacity needs). For the existing frequency, the main intention is that the existing equipment support 5G, so a smooth enabling of 5G is possible layer by layer (following 38.101-1 and the chipsets for the possible combinations). DSS and SuperDSS in addition allow the smooth enablement of 5G in one carrier. All this allows the delivery of high 5G capability in a cost effective level.

TT: With the year ending and you weighing it all up, what do you think we can expect in 2022?

HN: More operators deploying 5G NSA, and a focus also to 5G SA. New opportunities on the campus 2B market and vertical integration will be, from my perspective, the focus of the first half of 2022.

TT: What is your experience with 5G in Europe?

HN: In Europe, operators are focussing on 5G NSA. 5G SA, the 5G, enabling the full benefits of 5G itself is starting slowly and with it, vertical integration same as industrial implementation. Nevertheless some operators, also including our customers are frontrunners on the 5G technology, utilizing and offering 5G SA, campus solutions same as the full 5G ecosystem.

TT: How does the implementation and testing for 5G compare to America and Asia?

HN: Due to different focus, frequency ranges and use-cases it is difficult to compare the progress.

TT: Where do you think we can expect to see the most success when it comes to providing 5G services to customers?

HN: Within the B2C sector, it will be customers demanding the highest performance, and latest technology. Whereas, within the B2B sector, complex communication processes, with the highest SLAs, quality and security requirements.

TT: Do you think that companies providing telecom services will lose or gain customers when it's time for everyone to switch over (5 years from now)?

HN: With the move from 3G to 4G, I was not able to detect a significant customer migration. So I would say, as long similar services will be provided by telecom service providers the customer distribution does not depend "only" on technology.

TT: Where do you see Europe comparing well in terms of telecommunications?

HN: Europe is the home of many top operators. They are the pioneers of the evolution in the telecommunication industry. And they usually understand users very well and have a deep vision of future progress. Cooperation with them will enable us to lead the innovation and promote the state-of-art product solution. T

Huawei joins other industry leaders to discuss 5G licensed spectrum needs in mid-bands

Huawei, in partnership with Ericsson, Nokia and ZTE, together with the GSMA, recently hosted a high-level webinar on IMT called "The Future of Mid-Band Spectrum - IMT Spectrum needs, policy development and the role of 6GHz in ASMG". Policymakers and leading industry players shared their views and technical research on telecommunications spectrum needs, policy development and the role of 6GHz in the Arab region.

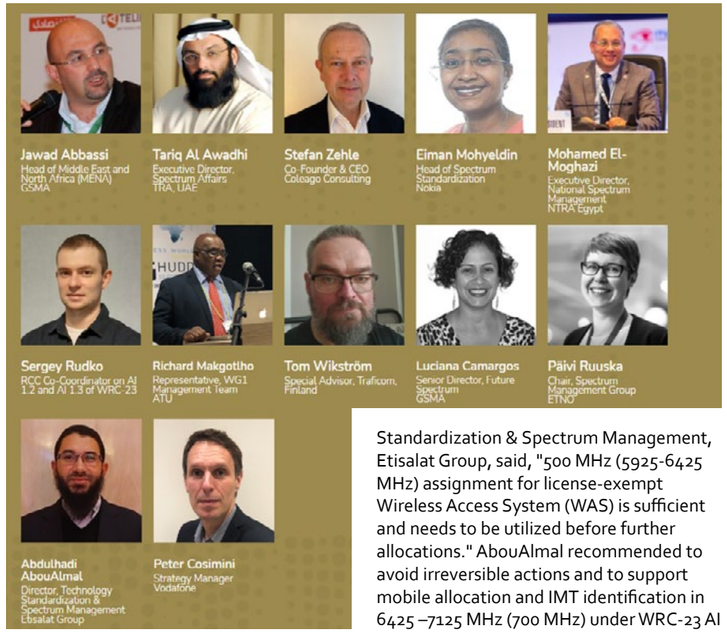
National leaders recognize continuous evolution of mobile technologies is crucial to unleashing the benefits of 5G for society. Widespread deployment of 5G is expected to drive social-economic development.

Many countries have deployed 5G as a strategic development mission, and the telecom sector sustainability is key to digital transformation at a national level. Data shows 180 operators in 72 countries/ territories have announced 5G service launches (either mobile or fixed wireless).

The UAE, Saudi Arabia, Germany, China, the UK, the US, Japan, South Korea, Singapore, and many others have also released national 5G strategies.

With a growing user base and an increase in new and enhanced Mobile Broadband Services (HD/UHD video, AR/VR services, cloud gaming), Fixed Wireless Access, Smart City use cases etc., traffic will continue to multiply. According to the latest forecast report by ITU, mobile traffic will continue growing to reach 100 GB per capita by 2025 and 250 GB by 2030 (excluding machine-to-machine traffic). Making additional mid-band licensed spectrum available for 5G is critical to cost-effectively serve citywide capacity needs (including smart cities) and connect small towns. This spectrum includes the 6 GHz range, an essential candidate for licensed mid-band expansion that offers a good balance in terms of coverage and capacity for a wide range of 5G use cases.

Speaking at the webinar, Abdulhadi AbouAlmal, Director, Technology



Standardization & Spectrum Management, Etisalat Group, said, "500 MHz (5925-6425 MHz) assignment for license-exempt Wireless Access System (WAS) is sufficient and needs to be utilized before further allocations." AbouAlmal recommended to avoid irreversible actions and to support mobile allocation and IMT identification in 6425 –7125 MHz (700 MHz) under WRC-23 AI 1.2 as flexibility is always an advantage for future decisions. On his part Peter Cosimini, Strategy Manager, Vodafone Group, observed that some urban 5G network areas will begin to experience capacity limitations within the next six years, as demand surges for enhanced mobile broadband services, fixed wireless, Smart City use cases, etc.

"With no other suitable mid-band spectrum opportunities foreseen in this decade (and perhaps beyond), not allocating the upper 6GHz band (6425-7125MHz) for IMT will have a significant impact on future public 5G network service performance and capacity with negative outcomes on our digital society and economy," Cosimini said.

Quoting a recent GSMA report on spectrum allocation, Luciana Camargos, Acting Head of Spectrum of GSMA, observed that an additional 2 GHz of licensed mid-band spectrum are needed to allow cell sites to accommodate the increased demand for 5G fixed wireless. "With less spectrum, IMT-2020 requirements are at risk. Otherwise, five times more base stations will be required to sustain demand," she warned.

Speaking on behalf of co-hosting vendors, Eiman Mohyeldin, Head of Spectrum Standardization at Nokia, observed that WRC-23 is a great opportunity to ensure spectrum harmonization for IMT in the 6425-7125 MHz band as this band constitutes a key opportunity to offer large contiguous channels for citywide 5G coverage. "Appropriate balance between licensed and license-exempt spectrum is required," she added.

Regarded as the optimal band to provide seamless wide-area coverage and high-capacity connections, licensing 6 GHz to IMT is essential to sustain a healthy economic development in the future. Mobile networks create more economic and social value than any other wireless technology, justifying the mobile industry's bid for more spectrum reserve. Global collaboration is imperative to developing a 6 GHz telecommunications ecosystem and making it commercially and timely available. T

URENT collaborates with Huawei Cloud for digital transformation

URENT, has partnered with HUAWEI CLOUD Middle East to accelerate its own digital transformation as it expands its service offerings and grows in more geographies across the region.

Moving forward, URENT will work with HUAWEI CLOUD as a trusted digital transformation partner and cloud provider. That will include tapping into HUAWEI CLOUD's infrastructure as a service (IaaS) and platform as a service (PaaS) capabilities, as well as a global network of more than 20,000 partners and 2.3 million developers contributing to the HUAWEI CLOUD.

URENT redefines mobility in the tech space, offering the first peer-to-peer vehicle sharing platform in the MENA region and preparing to expand beyond the region by licensing its technology to partners worldwide. URENT's technology can be used in B2C, B2B and B2B2C concepts and can be customized to meet the specific needs of partners, based on their country and client preferences and requirements. As such, establishing trust between the hosts and renters, many times located in different countries is vital, with secure cloud-based applications and services facilitating such engagement.


Omar Al Ashi

Omar Al Ashi, CEO and Founder of URENT, said, "Since its launch in the UAE in February 2021, URENT has been called the "the Airbnb of mobility" by Arabian Business Magazine. URENT is an end-to-end mobility platform that offers users the ability to rent almost anything that moves on ground and water, from cars, chauffeur-driven limos, to motorbikes, yachts, jet skis, etc. URENT users rent directly from hosts through its platform in a seamless, cashless, and user-friendly way. The platform enables hosts to set their own rules, limits, pricing, and availability of their fleets. Renters enjoy navigating through a wide range of vehicles and watercraft, with the option of interacting with the hosts via the in-app chat. Everything from booking, payment, special arrangements and any extras that the renter may require can be done through the app".

Omar Akar, MD & VP of Cloud Business at Huawei Middle East, noted, "With its rich stack of technologies, HUAWEI CLOUD is empowering and enabling organizations of all sized to digitally transform their business operations and key services. We are excited to be cooperating with URENT in this endeavor, themselves being a disruptor and innovator in the mobility market."

Huawei Ads expands Certified Partner Program

HUAWEI Ads, the programmatic advertising platform, has announced the addition of six new partners to the Certified Partners programme in the Middle East, Africa and India region. The partnership includes leading agencies such as LIVEmena in KSA, Home of Performance in UAE, ARQQA in Egypt, VEVE by Affinity and Ventes Avenues in India, and OMD Pakistan.

Brands can leverage Huawei's vast global user base that is currently untapped through HUAWEI Ads via 'Certified Partners' who are equipped to provide insights and advices that can optimise their campaign's creative and performance needs. In addition, HUAWEI Ads provides developers with the opportunity to integrate multiple kits with AppGallery and monetise from displaying ads. The advertising platform supports many ad formats including native, rewarded, banner, interstitial, splash and roll, enabling developers to increase their net revenue.

Adam Xiao, Managing Director of Huawei Mobile Services in the Middle East and Africa, Huawei Consumer Business Group, said, "We consider our partner ecosystem as an extension of our own team, and we are delighted to announce that we are expanding the HUAWEI Ads Partner Program to on-board six more leading agencies as 'Certified Partners' from the Middle East, Africa and India region. This milestone underpins our commitment to enhance our services and provide our customers and partners with support to place advertisements in the HUAWEI Ads ecosystem effectively. We look forward to supporting our partners scale new heights with their campaigns."

Since the global inauguration, HUAWEI Ads has introduced seven flagship apps, and have over 30,000 third-party apps, with over 1.2 billion daily advertising requests. Available across 170 countries and with over 700 million monthly active users, HUAWEI Ads allows developers to increase in-app revenue and benefit from advertising through a fully connected world.

Regional industry experts and Huawei speakers discuss cloud security challenges and collaboration

Teletimes Report

Industries around the Middle East and the rest of the world are undergoing digital transformation - and technologies such as cloud computing, Big Data, 5G, IoT and AI are being applied extensively. These innovations bring convenience, opportunities and benefits. However, they also create new challenges to cyber security and privacy protection. The future of cybersecurity depends heavily on collaboration of stakeholders to implement common standards and regulations. Cross-border collaboration has always been a pillar in mitigating cyber threats.

Teletimes International recently attended the Huawei sponsored 3rd virtual session of the 2021 Cyber Security Salons across the Middle East. As an initiative of Forum Global in partnership with Cullen International, the online event brought together key regional industry experts and Huawei speakers in a panel discussion to explore cybersecurity challenges faced by organizations, and explore opportunities for future collaboration.

Cyber Security Salons is a communication platform for stakeholders to meet and discuss cybersecurity policies and regulations, while providing the opportunity for regional and global regulators to explore how they can collaborate on cyber defense. The global series aims to bring in new perspectives from academics, policymakers alongside key opinion leaders and other stakeholders from APAC, European, and Middle Eastern regions.

This Middle Eastern version concludes the 2021 Security Salon series, after events in the Asia Pacific and European regions. The event witnessed a keynote presentation by Dr. Mohamed Hamad Al-Kuwaiti, Head of Cybersecurity, UAE Government, and the hosted panel discussion on cloud security and digital transformation featured key regional ICT leaders including Dr. Jassim Haji, President of Artificial Intelligence Group; Ms. Rasha Al Abdali, In-Charge Director of Compliance, Ministry of Transport, Telecommunications, and Information Technology in Oman; Mr. Charbel Chbeir, council member at ARISPA, the industry organization under the League of Arab States; and Mr. Kamal Zian, Chief Security Officer, Huawei Gulf North.

During the seminar, Kamal Zian, Chief Security Officer, Huawei Gulf North, highlighted the role of regional industry experts and technological leaders in cybersecurity: "While recovering from the pandemic, countries across the Middle East realized the importance of cloud as key enabler of digital economies. In Huawei, we are committed to supporting the region's digital transformation by delivering innovative, secure, and safe cloud services."

Also speaking at the seminar, Dr. Mohamed Hamad Al-Kuwaiti, Head of Cybersecurity, UAE Government, noted that we need to keep the ecosystem supporting our digital economy open, transparent, and collaborative. He concluded with how cloud security will be a core part of this new cybersecurity framework because

the future of securing cyberspace lies with reining in the cloud, as cloud security tomorrow is cybersecurity of today.

Dr. Jassim Haji, President of Artificial Intelligence Group, highlighted how Artificial Intelligence plays a vital role in cybersecurity, and that it won't just be people that solve these issues. With the world in the Zettabyte era, criminals are already using AI, machine learning, and complex algorithms to carry out cyber-attacks. With AI becoming more autonomous, machines will play a greater role in tracking cyber threats in the Middle East and beyond. "AI is a necessity in the future" he said, with more tools emerging with no human supervision, even including drafting policy.

Mr. Charbel Chbeir, council member at ARISPA, highlighted a note made by Professor Pierre Catala's presentation on the draft law on electronic communications, writing and transactions, and how the digital revolution enables every individual to communicate with others at any time, and affects everyone in their person and their property. Chbeir noted how the law must adapt to these new parameters of social life.

Ms. Rasha Al Abdali, In-Charge Director of Compliance, Ministry of Transport, Telecommunications, and Information Technology in Oman, highlighted how a good balance of policies and good governance are vital today. She continued to stress that data governance ensures that all the stakeholders are on the same page in terms of defining roles and responsibilities.

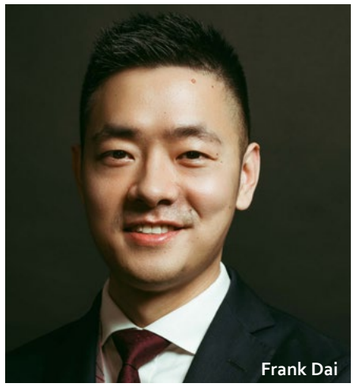
Huawei is a global entrusted ICT partner with leading cloud and cybersecurity expertise and continues to collaborate and contribute to the industry across the region. By working with partners and customers to advance cybersecurity, Huawei continues to support rapid digitization and is a key driver of cloud adoption to support the digital transformation of the Middle East. T

Huawei Cloud announces Spark Program for SMEs in the Middle East

HUAWEI CLOUD has announced the launch of "Spark", a new startup ecosystem support program aiming at empowering SMEs to develop their cloud capabilities. This initiative is the first step towards supporting HUAWEI CLOUD partners in line with the recently launched Oasis Program, where Huawei announced plans to invest USD15 million over the next three years to accelerate the development of technology enterprises and ecosystems in the Middle East.

Spark will support more than 50 SMEs, each will receive up to $15,000 fund support on HUAWEI CLOUD in addition to cloud training during the first phase of the program. A select group of SMEs will then join Spark Accelerate Program, where they will receive further technical support from HUAWEI CLOUD experts to help transform their businesses in the cloud and evolve their offerings.

Frank Dai, President of HUAWEI CLOUD Middle East, said: "SMEs play a prominent role in Middle East economies, where they contribute by far the largest share of national economic output. However, they face unique challenges, including a shortage of a skilled digital workforce and a lack of resources to digitize operations. By empowering more SMEs to succeed through Spark and similar programs, we can jointly cultivate an even stronger technology


Frank Dai

ecosystem in the Middle East."

SMEs are the backbone of the global economy and are essential contributors to job creation and economic growth. According to the World Bank, small businesses represent about 90% of all businesses worldwide and more than 50% of employment opportunities. In the region, 99% of the Saudi private sector consists of small and medium enterprises (SMEs) and 70% of the country's workforce. Similarly, the SME sector represents more than 94% of all companies operating in the UAE and provides jobs for more than 86% of the private sector's workforce. Digitization is a game-changer for the SME sector, contributing to significant revenue boost and business resilience. A whitepaper by UAE's Ministry of Economy revealed that digital technologies had helped 76% of UAE SMEs attract new customers, 65% were able to generate cost savings, and 50% were able to access new markets. For example, 45% of SMEs accepting digital payments recorded an increase in sales averaging +12% and could process payments seven times faster than non-digital payments.

HUAWEI CLOUD delivers a smart experience for people, cities, and enterprises in all scenarios, as part of Huawei's commitment to providing reliable, secure, and cost-effective cloud services to empower applications, and help organizations of all sizes grow in today's intelligent world. To support a wider cloud rollout, Huawei has unveiled several programs to help the region cultivate digital experts and build the local ecosystem. It recently announced a support program for developing 3,000 cloud experts in the region as part of the HUAWEI CLOUD Oasis Program. The Oasis Program includes USD7.5 million to be allocated for partner development, over USD2.5 million to be put behind credits and other cloud resources, and more than USD4.5 million in marketing support for program projects. According to Gartner, HUAWEI CLOUD ranks as the No. 5 IaaS cloud service provider globally, with a growth rate exceeding 200% between 2019-2020. T


Eaman Al Roudhan, CEO of Zain Kuwait

Zain Kuwait resolute 5G investment delivers business success

Asif Mehmood

Zain Kuwait's 5G traffic currently accounts for more than 40% of its total wireless traffic, ranking the operator as number one in GCC countries in terms of 5G offload ratio. Zain Kuwait is one of the leading telecom operators in MENA and has been at the forefront of innovation for years as the first operator to launch commercial 5G services in the Middle East.

From the 5G service development and business achievements of Zain Kuwait, it is clear that the focus on 5G development brings business success to operators. Zain Kuwait started deployment of 5G networks in 2018. After two years of continuous development, 5G services have entered a period of high growth. Users are continuing to develop rapidly, and the proportion of 5G traffic has also been increasing continuously. This has resulted in positive revenue and profit growth for the operator.

Zain Kuwait has achieved the 5G subscriber penetration ratio of 23%, and the average DOU of its 5G subscribers is five times higher than that of its 4G subscribers. Zain Kuwait's mobile network also recorded revenue and profit growth of 4% and 13% year-over-year in Q2 2021. This is an outstanding achievement especially when there is no population dividend and the expatriate population in country has been continuously decreasing. Zain's 5G development leads the Kuwait telecom market, and its business success has been a result of its overall strategic objective to provide first-class 5G services for users in Kuwait.

Zain Kuwait has firmly invested in 5G for the fastest network construction with the widest coverage, building a foundation for user experience

Network coverage is the basis for user experience. Zain started 5G C-band construction in 2018. In Q3 2019, it completed coverage of major urban areas. By early 2020, it achieved 1:1 construction ratio with its LTE network.

Focusing on fast and value-based network construction, Zain Kuwait was able to quickly exploit the benefits of enhanced 5G network coverage. Leading the network construction lays the foundation for creating 5G business advantages.

For instance, Zain was the first operator to commercialize 5G networks in Kuwait. In the commercial release phase, Zain provided the most extensive 5G coverage and best services owing to its focus on network construction. Within six months of the commercial launch, Zain reached 100% coverage, forming the first-mover advantage of 5G networks for itself.

User experience is the key In leading 5G experience targets to drive network experience leadership

With the goal of providing a first-class 5G network experience, Zain insists on higher standards of 5G network construction to ensure high-speed and reliable services for all the users. As a result, the investment in network planning and network construction was increased, which enabled Zain Kuwait to win Ookla's Fastest Fixed Wireless Network Provider Award in 2020 and to lead the Open signal Global Experience Test reports as well. A great network experience enhanced Zain's brand and helped it achieve greater commercial competitiveness. T

Yahsat collaborates with Emirates Schools to connect students with High-Speed Internet via Satellite

The collaboration between Emirates Schools Establishment and Yahsat has enabled high speed internet connectivity via satellite to support smart learning for 300 students in remote areas of the UAE.

The collaboration, which began in 2020 and was extended into the 2021 academic year, has helped to drive inclusion and accessibility across the government body's operations and to connect homes with no access to affordable broadband connectivity. This has allowed students to seamlessly continue remote learning from home during the pandemic. Yahsat has played a key role in empowering students by granting them high-speed access to smart learning platforms provided by the Emirates Schools Establishment, in partnership with the Ministry of Education.

As the UAE's leading satellite solutions provider, Yahsat continues to play an important role in providing critical connectivity to homes, businesses and communities across the UAE and in over 160 countries, regardless of geographic constraints, through reliable high-speed internet over satellite.


Jameela bint Salem Al Muhairi

The collaboration through this academic year was made possible through the support of Jameela bint Salem Al Muhairi, UAE Minister of State for Public Education, Chairperson of the Board of Emirates Schools Establishment, Musabbeh Al Kaabi, Chairman of Yahsat and Ali Al Hashemi, Group Chief Executive Officer of Yahsat Group.

"The Emirates Schools Establishment is keen to provide its services to students regardless of their location within the UAE. In cooperation with Yahsat, and by adopting the latest technology and innovations, we look forward to supporting this mission to provide students with sustainable education while enhancing their well-being and granting them access to smart learning platforms provided by the Emirates Schools Establishment through Yahsat's high-speed internet services," she said.

Musabbeh Al Kaabi, Chairman of Yahsat Group, added: "The impact that Yahsat has achieved so far through our collaboration with the Ministry of Education showcases how satellite connectivity can play a critical role in society, having directly impacted the lives of 300 students by providing them reliable internet access to continue their education. Through affordable high-speed internet over satellite to these students, Yahsat has effectively bridged the divide and supported our ambition of building a knowledge-based economy in the UAE, replicating similar contributions made in many markets across the Middle East, Africa, Asia and the Americas over the years." T

Eva Berneke appointed CEO of Eutelsat

The Board of Directors of Eutelsat Communications has announced the appointment of Eva Berneke as CEO, with effect from 1st January 2022. She will also be co-opted as a member of Board.

Eva brings considerable experience of the Telecoms and Technology industries. She joins Eutelsat from KMD, Denmark's leading IT and software company, specialising in IT solutions and services for the public and private sector, and now part of the NEC Group. During her tenure she oversaw the transformation of KMD from a mainly government service provider to a modern, digital company competing in both the public and private sectors.

Prior to that Eva held several senior positions at TDC, formerly TeleDanmark,


Eva Berneke

the largest telecommunications company in Denmark, notably as Head of Strategy and Head of the company's Wholesale Business division. Eva began her career at McKinsey where she developed a specialization in the TMT sectors and where she was based for 10 years at the group's Paris offices.

Eva sits on the Boards of international groups Lego and Vestas Wind Systems as well as France's Ecole Polytechnique. She is a graduate of Denmark's Technical University, where she gained a master's degree in mechanical engineering, and holds an MBA from INSEAD. Eva is fluent in French and English.

Commenting on the appointment, Dominique D'Hinnin, Chairman of the Board of Directors of Eutelsat said: "It is my great pleasure to welcome Eva Berneke to Eutelsat." T

Satellite remains an essential element of video distribution alongside the growth of OTT

AVIA hosted its Annual Satellite Industry Forum

The Asia Video Industry Association (AVIA) has hosted its annual Satellite Industry Forum as a virtual conference, to end off the Asia Video Summit umbrella of events in 2021.

The Forum opened with a look at Satellite Trends and Forecasts Post-Covid with Caleb Henry, Senior Analyst, Quilty Analytics. The traditional satcom industry continues to be in a state of rapid change, and still in a state of turmoil. While the industry is currently dominated by a handful of major players, this could also change dramatically over the next five years as new technologies and standards reset the competitive landscape. And despite the impact of Covid, there has been no let-up of interest in investment into the space industry with $5.5BN in collective proceeds from all 13 space SPACs.


Yau Chyong Lim


Stephen Spengler

AVIA was also privileged to host Stephen Spengler for his final keynote before he steps down as CEO of Intelsat. Spengler had spoken at the Satellite Industry Forum for his first keynote as CEO in 2015, hence it was fitting the Forum was his final address as well.

While the industry continues to innovate and push the boundaries of what is possible, it has yet to reach its full potential in fulfilling its essential role in the global telecommunications landscape. With digital video making up 70% of internet traffic, satellite remains the essential and enabling technology, with the ubiquity, reach and economics to serve the networks.

Spengler's outlook on industry trends for Asia remains positive, with linear and pay TV distribution still a driving application for the Asia Pacific region, with a growth rate of 2.5% per year. Spengler was also excited about 5G being a huge enabler and game changer. With satellite fully integrated into the 5G world, it will make solutions and services more seamless, interconnected, and economical.

Wrapping up his keynote address, Spengler shared Intelsat's mission to unify the global telecoms ecosystem of the future. The vision requires all satellite and terrestrial technologies, networks and providers, and solutions and services to be unified as one global ecosystem. "If we focus on our customers, the people who benefit from a more connected world, that is success for the next year and beyond," said Spengler.

Asia Pacific's leading satellite operators also shared similar positive sentiments despite the move from broadcast to streaming. Yau Chyong Lim, COO, MEASAT, believes that satellite will still be the main platform to deliver video services nationwide in Malaysia, and it is the platforms themselves who are transforming their services to include streaming. Hence broadcast and streaming will complement each other, with linear still having a role to play, and streaming alongside it. Similar in Australia, despite a plethora of streaming services available, Nick Leake, Head of Satellite and Space Systems, Optus, still sees the same requirements for satellite to go out for at least another 10 years. The greatest issue for Asia Pacific remains one of scale, in order to provide reliable networks to serve the customers, added Roger Tong, CEO, AsiaSat. Tong believes that moving forward, creating more partnerships between competing satellite operators is important, especially when regulatory restrictions on consolidation remains a key challenge in the region.

Sunil Bharti Mittal, Founder and Chairman, Bharti Enterprises and Executive Chairman, OneWeb, also joined the Forum this year for a keynote conversation on the space business in India. With the holy grail of low latency, high speed and sufficient capacity resolved by NGSOs, it has become a solution that works for the new world and into the future. 5G too is seen as a game changing technology for Mittal, with its extremely low latency a boom for industry applications. However, Mittal also noted that while NGSOs will have an important role to play in the 5G ecosystem, it will only be at the periphery of supporting 5G ambitions. Mittal also shared OneWeb's vision to connect all areas of the world, from oceans to aviation. "In 5 years' time. . . there should not be anybody in the world that is not connected," said Mittal.

The Satellite Industry Forum is generously sponsored by AsiaSat, Eutelsat, Hughes, Intelsat, Marsh and Maxar. T

New satellite market forecast anticipates 1,700 sats to be launched on average per year by 2030

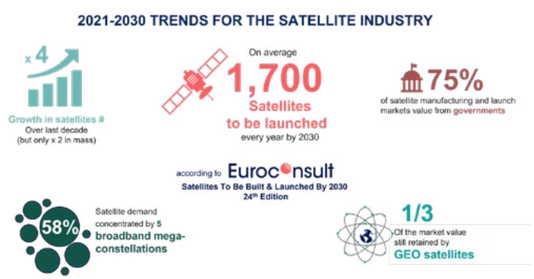
Euroconsult has released its "Satellites to be Built & Launched" report for 2021, the latest edition in a series that has consistently set the industry benchmark for analysis of the satellite market. The 17,000 satellites expected to be launched in the next ten years represents a fourfold increase over past decade, reflecting structural changes in the whole space ecosystem and a limited short-term impact of the pandemic.

The race is heating up to rapidly deploy commercial mega constellations for broadband communications and new constellations for real time observation of the Earth. Historical space powers invest in new satellite applications (e.g. Space Security Awareness) and a growing number of countries invest in their first operational satellite system, either for telecommunications, imagery intelligence, or space exploration.

The new edition of Euroconsult's satellite market forecast assessed individually about 170 constellation projects, of which 110 are from commercial companies. While OneWeb, Starlink, Gwo Wang, Kuiper and Lightspeed will represent 58% of the 17,000 satellites to be launched, they will account for only 10% of the satellite manufacturing and launch revenues of the space industry. The report identifies two reasons combining to explain this difference: economies of scale in satellite manufacturing and a strong decrease in launch prices.

Despite a multiplication of commercial constellation projects, only a few place satellite manufacturing contracts, generally with established players. Excluding a few large deals for large constellations and new communication satellites in geostationary orbit (GEO), global competition remains limited for satellite manufacturing. Satellite demand from the governments fuels the competition between local suppliers with still limited opportunities for them to expand internationally (because of national preference in every country where a space industry is established).

"The satellite sector no longer revolves around the axis of New



Space entrants challenging established legacy players. Instead, it has now shifted towards speed, and the ability to rapidly provide commercial services from satellite constellations, be it for broadband and/or narrowband communications (e.g. IOT) or for global and real time observation of the Earth. New Space is no longer the driving force in the industry. It's all about Fast Space now" said Maxime Puteaux, Principal Advisor at Euroconsult and Editor of the report.

Despite new business models from new commercial players in space, governments still represent three-quarters of the revenues of the space industry over the decade, i.e. $240 billion. Likewise, incumbent satellite manufacturers continue to dominate the market, with four of them capturing half of the market past decade for a value of $87 billion.

"Satellites to be Built & Launched" is the go-to report for any player throughout the satellite value chain, ranging from manufacturers to launch brokers and space agencies, or for those looking for detailed insight into this exciting and fast-developing market Appreciated by over 55 major players in 2020, the new report provides critical intelligence with as-yet unrivalled levels of precision. T

Turbidite and AsiaSat announce Partnership

Turbidite and AsiaSat have announced a partnership that will leverage AsiaSat's existing satellite and ground infrastructure with Turbidite's dynamic edge data center platform to support the accelerated demand for digital services.

"We are delighted to enter into this partnership with AsiaSat as we broaden our edge data center solutions to support new mandates by the growing number of OTTs and media companies as they continue to drive up digital traffic," said Bill Barney, Co-Founder & Chief Executive Officer, Turbidite. "Together with AsiaSat, we are able to further empower these customers to transform into digital ready organizations with secure access, flexible transport/bandwidth options and real time deployment."

"We see this partnership as one of our strategic moves to support customers with a breadth of new services to cope with the rapid pace of digital transformation," said Roger Tong, Chief Executive Officer, AsiaSat. "Turbidite's extensive expertise in the data center and network infrastructure deployment and management will truly complement our current satellite and ground-based solution portfolios. We look forward to working with Turbidite to further develop and enhance our infrastructure to meet the flexibility and diversity required by our customers." T

SpaceBridge expands successful connectivity serving 39 airports to Columbian Civil Aviation Authority

Aerocivil Colombia, Columbia's Civil Aviation Authority, is expanding its network in a continued successful partnership with SpaceBridge Inc. In 2015, Aerocivil and SpaceBridge launched a joint project to ensure continuous connectivity between aircrafts and ground air traffic control.

SpaceBridge Inc. implemented dual star and mesh technology infrastructures, allowing aircrafts and airports to communicate with each other while significantly decreasing the overall round-trip delay. "Having this type of connection is dire for Aerocivil Colombia to mitigate the potential dangers that could occur during flight." explains David Gelerman, CEO of SpaceBridge.
This project was implemented as many Colombian airports are located in regions that are geographically outside the range of cellular tower connection. As such, these airports can now rely on satellite connection thanks to the partnership between Aerocivil Colombia and SpaceBridge Inc. SpaceBridge has provided two geographically redundant gateways; one in the major city of Bogota and one in Barranquilla. This ensures that in the event a natural disaster affects one gateway, the other gateway will automatically take over to maintain constant connectivity. CEO David Gelerman explains this is the reason SpaceBridge's state-

of-the-Art point-to-point Mesh Satellite connectivity was implemented, as it is ensuring reliable, constant connectivity. T

Yahsat announces Global Agreement with Ericsson

Yahsat has announced a group-wide partnership with Ericsson (NASDAQ: ERIC) to provide private network, data and internet connectivity services across the oil and gas, mining and ports industries. The integrated solution provides secure, reliable and low-latency local connectivity to deploy Industry 4.0 use cases on a single network while ensuring that sensitive data remains on-site.

Yahsat and Ericsson will offer integrated solutions focused on critical connectivity to address industry challenges, including the lack of network separation for communications, high running costs, and data speed and coverage limitations. Under this agreement both parties will co-market and expand their sales of several important applications such as remote sensing, video surveillance, UAVs and drones, geo-positioning, backhaul solutions for offshore oil rig sites, and general data connectivity. The solutions offered will play a vital role in completing the technology and connectivity ecosystem needed for automation and IoT adoption in these industries.

The partnership leverages Ericsson's telecommunications and technology leadership position for these critical industries which often operate in remote

locations. Yahsat and Ericsson will further expand their private network presence across the region and provide value-adding services to existing and prospective customers.

Ali Al Hashemi, Yahsat Group CEO, said, "We are delighted to collaborate with Ericsson to deliver comprehensive integrated communications solutions to the oil and gas, mining and ports industries. Leveraging our combined areas of expertise, we are confident that we will play a key role in overcoming the access and connectivity challenges facing these critical industries and further build upon our strong value proposition to prime customer segments, regionally and internationally".
Åsa Tamsons, Senior Vice President and Head of Business Area Technologies and New Businesses at Ericsson, added: "Ericsson has introduced private 5G networking solutions to fuel innovation and drive efficiency and sustainability across every sector. In addition, 5G enables automation, increases safety and facilitates lower carbon operations. Ericsson's private network solution, combined with Yahsat's satellite connectivity and services, will empower advanced IoT use cases. Predictive maintenance, connected worker, augmented reality, sensor-based monitoring, and automated guided vehicles are some exciting examples." T

HISPASAT is collaborating with Ecuador on bridging its digital divide

Mohammed Tanveer

HISPASAT, the Spanish satellite telecommunications operator of the Red Eléctrica Group, has delivered two pilot tele-education and telemedicine projects via satellite to the Ecuadorian government to help bridge the digital divide in remote areas of the country. This collaboration -carried out over the last few months with the Ministry of Telecommunications and the Information Society, the Ministry of Education, the Ministry of Public Health, and the Vice Presidency- has taken shape in two events that took place in the Ministry of Education and the Office of the Vice President of the Republic, with the presence of Vice President Alfredo Borrero; the Minister of Education, María Brown; the Minister of Telecommunications and the Information Society, Vianna Maino; and HISPASAT's CEO, Miguel Ángel Panduro.

The pilot tele-education project will benefit more than 400 students from several schools located in remote areas of the country that lack connectivity, specifically: Rómulo Delgado (Carchi province), Andrés Mamallacta and CECIB San Luis (Orellana province), Escuela 16 de agosto (Morona Santiago province) and Jaime Elliot Educational Unit (Napo province). Thanks to this collaboration, HISPASAT will give these schools a satellite Internet service for a tele-education system that can store the educational contents provided by the Ministry of Education locally. This way, students can download this material on their devices and work with them at home. HISPASAT will also enable a WiFi connectivity service for the community, separate from the school's WiFi network, which will allow other residents to go online and help students and teachers to access the Internet and their educational contents in the event that the school has to close temporarily. The pilot project is offered together with a technology classroom (made up of laptops for the professors, a cabinet to store and load the devices, an interactive digital panel, and a digital classroom software management program with logical security), tablets for the students, and a course for teachers on how to work with this innovative solution.

Miguel Ángel Panduro, CEO of HISPASAT, said that "we have been working for years on bolstering Latin American society through telecommunications, especially in its poorly connected rural areas. That is why we are very proud to contribute today with these two pilot projects to improve education and healthcare in these remote towns and we are making ourselves available to the government of Ecuador to collaborate with them on new initiatives that help bridge the digital divide in the country."

Connectivity is a fundamental tool to promote equitable development in society. However, the differences in the infrastructure roll-out between the urban and rural world poses an obstacle for the most remote and disperse populations to have the same opportunities as the large cities concerning basic rights such as education and healthcare. According to a 2020 report by the Inter-American Development Bank, 46.1% of urban homes in Ecuador have Internet access, compared to only 16.6% of rural homes. Therefore, the use of satellite technology, which offers geographically independent universal coverage with a quick and simple roll-out, is the ideal instrument to extend high-quality connectivity across the country immediately and efficiently in order to provide fundamental services like those provided in these pilot projects. T

Ericsson Mobility Report: Mobile data traffic increased almost 300-fold over 10 years

Ericsson global insights reveal an almost 300-fold increase in mobile data traffic since 2011 – the year in which Ericsson Mobility Report was first published. The findings, based on current and historical network data, are included in the special ten-year edition of the **Ericsson Mobility Report November 2021**. The report looks back at some of the key trends and events that have shaped the last decade, as well as revealing the latest forecasts toward 2027.

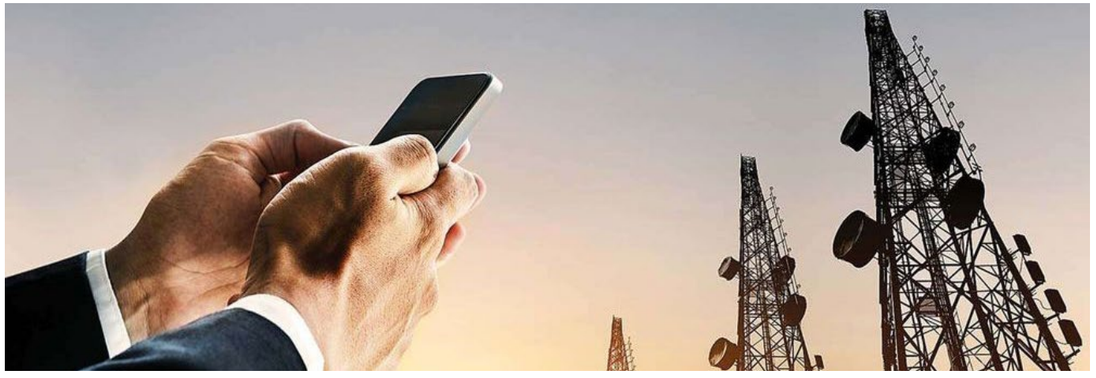
The premise that 5G will become the fastest deployed mobile generation to date has been enhanced with an updated estimate of close to 660 million 5G subscriptions by the end of this year. The increase is due to stronger than expected demand in China and North America, driven in part by decreasing prices of 5G devices. There was also a net addition of 98 million 5G subscriptions globally in Q3 2021, compared to 48 million new 4G subscriptions. At the end of 2021, it is estimated that 5G networks will cover more than two billion people.

According to the latest forecasts, 5G is on track to become the dominant mobile access technology, based on subscriptions globally, by 2027. 5G is also expected to account for around 50 percent of all mobile subscriptions worldwide – covering 75 percent of the world's population and carrying 62 percent of the global smartphone traffic by 2027.

Fredrik Jejdling, Executive Vice President and Head of Networks, Ericsson, says: "Mobile communication has had an incredible impact on society and business over the last ten years. When we look ahead to 2027, mobile networks will be more integral than ever to how we interact, live and work. Our latest Ericsson Mobility Report shows that the pace of change is accelerating, with technology playing a crucial role."

This is helping to fuel an exponential growth of mobile data traffic. Mobile network data traffic was up 42 percent, year-on-year, in Q3 2021 accounting for approximately 78 exabytes (EB), including traffic generated by Fixed Wireless Access (FWA) services. In Q3 alone, mobile data traffic was more than all mobile traffic ever generated up until the end of 2016. New forecasts reveal that total mobile network data traffic is likely to reach 370EB by the end of 2027.

The report also reveals that the nature of mobile connections is changing rapidly, contributing to the ongoing rise in mobile data traffic. Broadband IoT has now surpassed 2G/3G as the segment that connects the largest share of IoT applications. It is expected to account for 47 percent of all cellular IoT connections by the end of 2021, compared to 37 percent for 2G/3G and 16 percent for Massive IoT technologies (NB-IoT and Cat-M). T



Cryptocurrency for Diamonds in $20m auction

Syed Zulfiqar Ali

An Australian technology start-up, Yourdiamonds.com, has announced that it will accept bitcoin at its second auction/ tender of fancy pink diamonds originating from the recently closed Argyle diamond mine.

Sotheby's has announced recently that it would accept bids in Ether (ETH) in the wake of receiving cryptocurrency for payment of US$10.3million for the sale of a 100-carat diamond.

Christie's recently sold non fungible tokens (NFT) for funky new digital art for staggering prices shocking the art establishment. Yourdiamonds.comtm (YD) is the brainchild of Tim Goodman, former Executive Chairman of Sotheby's Australia. The YD Non-Exec Chairman, Jim Fernandez, is the former Senior Vice President of Tiffany & Co in New York.

YD sold a 2.00 carat fancy pink diamond for A$2.2 million in its first public tender in July, a new world auction record.

"Following the extraordinary results at our first tender we have gathered the largest

collection of Australian pink diamonds ever to appear on the secondary market," Tim Goodman said in Sydney.

"We were approached by a potential buyer asking if we would take bitcoin. This was a mystery to us until we found another Aussie start up, https://ausmerchant.io/ "

Yourdiamonds.comTM has engaged https://ausmerchant.io/ to enable receipt of bitcoin at the tender with the ability to immediately convert coin to cash. "It's just like our traditional merchant facility. It is surprisingly simple," Goodman added.

"The backend office accounting system Aus Merchant provides to YourDiamonds enables concise accounting of all transactions to reconcile with an Australian cost basis."

Ended on 06 December, the YD auction/ tender remained open to both the public and the diamond trade. It consisted of 53 pink, blue and red diamonds consigned for sale by fifteen private sellers including self-managed super funds, estates, collectors and investors. Every lot carried a pre-tender estimate and remained available for public viewing at a travelling roadshow in Australian capital cities.

Some of the star lots had been consigned by seventy two year old David Burger who was the Chief Diamond Polisher at the Argyle diamond mine for 30 years before his retirement in 2015. Mr Burger acquired the stones from a Perth jeweller in the late 1980s and recut them soon after. T

CRA and Mada Center launch the accessible Telecoms international best practices report

The Communications Regulatory Authority (CRA) and Mada Center launched the Accessible Telecommunications International Best Practices report, during a seminar attended by officials from the CRA and Mada Center, and representatives of the Ministry of Communications and Information Technology, Ooredoo Qatar and Vodafone Qatar.

The report was developed with the aim of informing stakeholders about the international best practices in the field of accessible telecommunications, in addition to the latest systems, technologies, equipment, tools, software, and services that help improve the accessibility to telecommunications services and applications by users with physical, visual, speech, and hearing disabilities and the elderly users. Additionally, the report includes a plan and future recommendations directed to all stakeholders, including the main players in the Information and Communications Technology (ICT) sector, and concerned parties and organizations, to achieve further progress towards inclusive access to telecommunications.

On this occasion, Eng. Salma Al-Sulaiti, Standards and Next Generation Technology

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Half of Russian 5G Projects are being tested in the Moscow region

Around half of all Russian pilot projects of 5G practices were implemented in Moscow and the Moscow region. During the year, a 5G Demo Center began its work in the capital, while agreements on the opening of new industrial 5G polygons were signed here.

The most notable Moscow-based 5G testing practices include the testing of innovative services and technologies in a fifth-generation communication network based on the city's 5G Demo Center. They were started by the Moscow Department of Information Technologies at the end of 2020. As of November 2021, several projects were tested, including a solution that allows visualizing and working with a BIM project in real time on a construction site.

A project to create a multifunctional complex for drones based on computer vision algorithms and a wireless optical communication solution using FSO (Free Space Optics) technology, where a laser is used instead of radio frequencies for data transmission was also tested in Moscow.

In September 2021, an agreement was signed on the creation of a 5G medical training ground on the basis of Botkin Hospital.

Aleksander Grobadko, the Deputy Head of the Moscow Department of Information Technologies says:

"5G is one of the priorities for technological development in Moscow. Existing pilot projects show how 5G can help Muscovites make traffic safer, solve complex production problems and conduct remote medical consultations. But before introducing such solutions on a metropolitan scale, you need to make sure of their effectiveness. Therefore, since 2019, around 30 pilot sites for 5G testing have been opened in Moscow, 5 Demo centers are operating and industrial 5G test sites are being created, the first of which is being deployed on the basis of Botkin Hospital." T

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Section Head, CRA said, "We are pleased to launch this report, which we have developed in collaboration with Mada Center. The importance of this report lies in the fact that it contributes to raising stakeholders' awareness about the best practices followed in the field of accessible telecommunications, where through their adoption, they contribute to ensuring the accessibility of users with disabilities and the elderly on an equal basis with others, especially since ICT is a major part of our modern-day interactions and activities in various fields; education, health, environment, or others. It also contributes greatly to driving development and diversifying the Qatari economy; one of Qatar National Vision 2030 goals. I would like to thank Mada Center for all their efforts to develop and launch this report, and we look forward to our further cooperation in the future."

Amani Al Tamimi, ICT Access Programs and Services Manager at Mada Center, expressed her pleasure about the launch of the report, saying, "We are pleased with our partnership with the CRA and with the report launch. The importance of this report lies in the fact that it contributes to ensuring inclusive access to telecommunications, by introducing stakeholders to ways of empowering users who are persons with disabilities or the elderly to access telecommunications services and applications, thus facilitating their effective involvement in learning, building capacity, development, and innovation. In addition to integrating them more in the society and the labor market, which contributes to improving the quality of life and achieving development in the various pillars of Qatar National Vision 2030. On this occasion, I would like to thank the Communications Regulatory Authority for their continued collaboration, and we look forward to more cooperation between us in the future." T

Dubai Customs discusses more cooperation with India

Dubai Customs organized a virtual meeting with an Indian business and trade delegation as part of their Ertibat Initiative, which aims at enhancing links and cooperation with diplomatic missions and trade partners. The meeting took place with the presence of Ahmed Mahboob Musabih, CEO of Ports, Customs and Free Zone Corporation, Director General of Dubai Customs and Aman Bouri, Indian Consul General to the UAE.

Dr. Bouri thanked Dubai Customs for organizing these meetings, which serve the interests of both parties and facilitate trade and investment activity between India and the UAE.

On his part, Ahmed Mahboob Musabih welcomed the Indian delegation highlighting the strong historic relation between the UAE and India.

"India is Dubai's second largest trade partner, and the emirate's trade with India touched AED67 billion in the first half of 2021 (AED32b for imports, AED19bn for exports, and AED16bn for re-exports), growing 74% from AED39 billion in the corresponding period in 2020."

Major commodities include diamonds at AED20.8bn, gold at AED10.4bn, petroleum oils at AED4.3bn, and telecoms at AED4bn. T

Dubai Customs awards business groups in 4th DCCC 2021

Dubai Customs honoured distinctive business and trade groups during Its 4 th Consultative Council Meeting 2021.

In the virtual event, H.E. Ahmed Mahboob Musabih, CEO of Ports, Customs and Free Zone Corporation, Director General of Dubai Customs reaffirmed the strong relation between Dubai Customs and its clients.

"This coherence and strong partnership were behind the successes of Dubai Customs, especially the recent winning of the DGEP's Elite Award 2021. We follow the vision of Sheikh Mohammed Bin Rashid Al Maktoum, Vice President, Prime Minister and Ruler of Dubai and His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of the Executive Council in order to consolidate the emirate's position worldwide in trade, business and tourism".

Ammar Abduljawad. Business Analyst at Dubai Economy department congratulated Dubai Customs on winning the DGEP's Elite Award and delivered a presentation on Invest in Dubai Platform (IID). It is a unified government portal that provides an exceptional experience for investors through which they can discover opportunities, study options, and obtain a license in a seamless, customer centric and manner through one integrated platform. This year, 55,000 trade licenses were issued compared to 33,000 last year.

Sajid Sayyed from Electronics Group delivered a presentation on the Group's role as a link between government entities and electronics companies. Omar Khan, Director, International Offices, Dubai Chamber, talked about the role of the Chamber in facilitating trade, promoting economic development and enhancing the business environment. T

Cybersecurity leader spearheads service-centric evolution by launching Help AG as a service

Help AG, the cybersecurity arm of Etisalat Digital and the region's trusted security advisor, has launched "Help AG as a Service," a service-centric model that provides comprehensive cybersecurity offerings that customers can avail "as a service" based on state-of-the-art platforms and tools. This highlights Help AG's position as a pioneer in the Middle East's cybersecurity sector, spearheading the industry's move towards a service-centric future.

Help AG as a Service is the culmination of the company's transition from technology delivery to a service-centric model, which has placed it in the best position to offer the entire lifecycle, from 'Assess' to 'Defend' to 'Respond,' as a service to customers.

With Help AG as a Service, customers can rest assured that they are provided best-of-breed services, irrespective of the underlying technology or deployment model. Driven by its vision to offer the highest level of protection and user experience, Help AG delivers future-ready services in terms of people, processes and technology, on an MRC/PAYG model.

All services delivered by Help AG are fully compliant with regional and country specific data regulations, and the company ensures that it has expertise and infrastructure available on the ground. Help AG follows the concept of 'think global, act local,' aiming to give customers all the benefits of the most advanced global technologies, while fully provisioning them with local expertise.

Commenting on the launch, Stephan Berner, Chief Executive Officer at Help AG, said: "Help AG has been one of the region's most experienced and trusted cybersecurity partners for more than 16 years, and with the launch of Help AG as a Service, we are truly cementing our place as a pioneer in the regional cybersecurity industry. The future of cybersecurity will be service-led, and Help AG is at the helm of this evolution."

Berner added: "Years ago, we built our service offering from the ground up with a commitment to delivering truly global and advanced security services while moulding them to address regional market threats and requirements. Our offering has been received very well in the market, enabling us to become the biggest Managed Security Service Provider in the Middle East, and driving us to take our service-centric transition to the next phase with Help AG as a Service."

Under Help AG as a Service, customers also enjoy SLA-based offerings; cybersecurity expertise on demand, wherein Help AG's experts work as an extension of the customer's team; and elastic capacity based on the customer's needs.

Help AG has already standardized many of its services, including 24/7 Threat Monitoring, Detection and Response, and it has applied automation to several existing services, including its Managed Advanced Web Application Firewall (AWAF) service and Secure Access Service Edge (SASE) offerings, namely Cyber Edge X and the Help AG Secure Private Access Service (HPA). Other best-of-breed services offered by Help AG include Penetration Testing, Red Teaming, Security Awareness, Compromise Assessment, Managed Security Controls, Digital Risk Protection, SMB Security Offerings, Always-On DDoS Mitigation, Security Bundles with Service Providers, and Secure Cloud Offerings. T

FC hacker to share inside track on how cyber criminals think at Intersec 2022

Intersec, will welcome ethical hacker, Freaky Clown (FC) for the first time in the Middle East as a headline speaker at the event who will give deep insights into the world of cybercrime.

As a well-known ethical hacker and social engineer, FC brings a truly unique perspective to Intersec's inaugural Cyber Security Lab conference, where he will talk about how cyber criminals circumnavigate access controls, how governments and organizations can identify their cyber weaknesses and what they can do to improve their security.

Intersec's Cyber Security Lab, under the theme 'into the unknown', will focus on cybercrime, building cyber resilience, cyber threats, infrastructure investment, national security and international cooperation. It has been developed through a strategic partnership between Intersec and the UAE Cyber Security Council, which sets out to strengthen cybersecurity in the UAE and improve co-ordination and response times to potential attacks.

Commenting on his participation, FC said: "At a time when governments, individuals and organisations over the world are experiencing a steep increase in cyber security threats, I am in a unique position to

be able to share inside information on the very people that they are being attacked by. I can help them become more aware, more secure and more capable of defending themselves and look forward to doing so at Intersect, an event which brings the industry's most important stakeholders together under one roof."

The Cyber Security Lab is one of six Intersec conferences being staged from 16-18 January 2022 at the Dubai World Trade Centre. Under the theme of 'Uniting the world's leading industry specialists for the safety and security of future generations', the three-day program is packed with hard-hitting discussions featuring global leaders debating, and exchanging perspectives on challenges, strategic initiatives and cooperation to foster safety and security of all. The full programme features over 500 speakers – the largest conference platform for the sector on a world-class stage.

Alex Nicholl, Messe Frankfurt Middle East's Head of Intersec, said: "Intersec's commitment to bringing the brightest, most qualified experts to the stage in 2022 is exemplified by the attendance of FC. Perhaps more than most, he understands how cyber criminals think, how they operate and what tools they use to beat security controls. Having worked for major global organizations like Raytheon, the depth and breadth of his insight must be heard – and we are incredibly excited to hear what he has to say at Intersec 2022."

Demonstrating Intersec's strategic importance to the UAE, it is held under the patronage of His Highness Sheikh Mansoor Bin Mohammed Bin Rashid Al Maktoum and official Supporters include Dubai Police, Dubai Civil Defence, Security Industry Regulatory Agency (SIRA), the UAE Cyber Security Council and Dubai Municipality. T

Ericsson, Telstra and Qualcomm set uplink speed record

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

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

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

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

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

Falling victim to a ransomware attack is one of the worst things that can happen to a company from a cybersecurity standpoint. No other attack damages the organizations' reputation, finances, and operational activities like ransomware.

Getting hit by ransomware means that hackers were able to steal and encrypt sensitive data. Usually, cybercriminals demand payment for the key that will allow the company to decrypt its files. Also, fraudsters promise to either remove or not make the stolen data publicly available on the dark web.

However, the situation usually pans out a bit differently in a real-life situation. Hackers tend to take the ransom and still publish the data. This is commonly known as double extortion.

Atlas VPN analysis builds on the recent Hi-Tech Crime Trends report by Group-IB.

Findings reveal that the second half of 2021 was a record period in terms of new data leak sites created on the dark web.

A data leak site (DLS) is exactly that - a website created solely for the purpose of selling stolen data obtained after a successful ransomware attack.

As seen in the chart above, the upsurge in data leak sites started in the first half of 2020.

Researchers only found one new data leak site in 2019 H2. However, the situation took a sharp turn in 2020 H1, as DLSs increased to a total of 12. Similarly, there were 13 new sites detected in the second half of 2020.

Like with most cybercrime statistics, 2021 is a record year in terms of how many new websites of this kind appeared on the dark web. DLSs increased to 15 in the first half of the year and to 18 in the second half, totaling 33 websites for 2021.

Record number of companies affected

People who follow the cybercrime landscape likely already realize that 2021 was the worst year to date in terms of companies affected by data breaches. Luckily, we have concrete data to see just how bad the situation is.

Last year, the data of 1335 companies was put up for sale on the dark web. However, this year, the number surged to 1966 organizations, representing a 47% increase YoY.

Yet, this report only covers the first three quarters of 2021. Meaning, the actual growth YoY will be more significant.

Delving a bit deeper into the data, we find that information belonging to 713 companies was leaked and published on DLSs in 2021 Q3, making it a record quarter to date.

Finally, researchers state that 968, or nearly half (49.4%) of ransomware victims were in the United States in 2021. For comparison, the number of victimized companies in the US in 2020 stood at 740 and represented 54.9% of the total.

Organized crime groups to blame

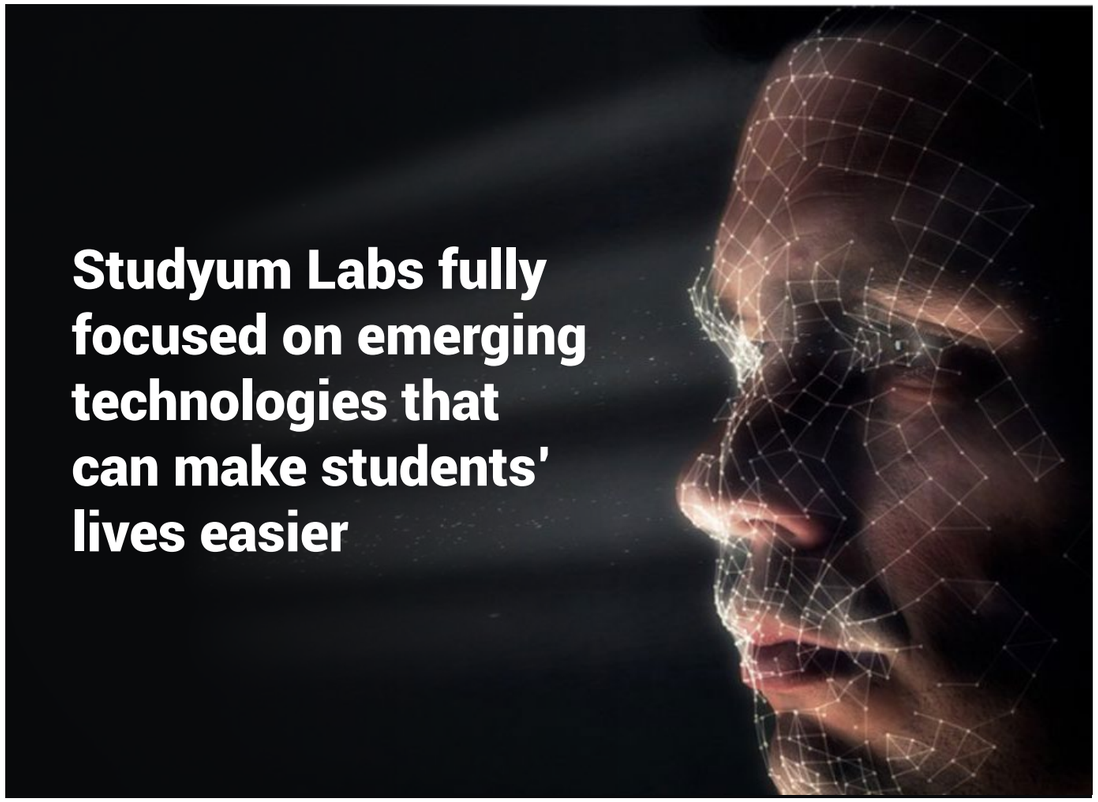
Some people believe that cyberattacks are carried out by a single man in a hoodie behind a computer in a dark room. However, that is not the case.

Ransomware attacks are nearly always carried out by a group of threat actors. For example, a single cybercrime group Conti published 361 or 16.5% of all data leaks in 2021.

Other groups, like Lockbit, Avaddon, REvil, and Pysa, all hacked upwards of 100 companies and sold the stolen information on the darknet.

Final remarks

Be it the number of companies affected or the number of new leak sites - the cybersecurity landscape is in the worst state it has ever been. T



Studyum Labs fully focused on emerging technologies that can make students' lives easier

Lately, many people around the globe are upskilling themselves by learning about technology. However, only a select few have identified how to utilize technology to enhance the learning experience. At Studyum Labs, we are fully aware of the possibilities that technology brings to make students' lives easier. With a special focus on emerging technologies – the ones currently in the lower phases of Gartner's hype cycle – we have devised the Studyum ecosystem to be flexible and innovative, all for the sake of making learning engaging, efficient, and effective like never before.

One of the core ideas behind Studyum is the financial incentivization of learning on top of other kinds of incentivization. Learning energy is transformed into monetary energy. This is possible with cryptocurrencies – the most astonishing revelation in monetary systems since the advent of digital currency. Through a sophisticated implementation of DeFi within the Studyum ecosystem, we have created STUD tokens whose main use case is the incentivizing of students and teachers on our platform. And with NFT-based 3D photo-holographic collectibles, the motivation levels of students can go even further.

Studyum is using blockchain to enhance student motivation, thus creating a concept called Decentralized Learning. Our multi-chain token solution simplifies value transfers from/to our platform. Students can earn STUD tokens in line with their performance – by joining the interactive lessons, completing set tasks, and passing tests. The tokens are then used to fully unlock other functionalities of the platform – to access new lessons and courses, personalize user avatars, and get limited edition NFT collectibles. Much like the play-and-earn concept of blockchain-based games, Studyum has forged a learn-and-earn framework for its learners, making learning worthwhile in more ways than one.

Applying multimedia technology in teaching has been one of the key factors in improving learning productivity ever since the introduction of radio in the 1920s and, with it, alternative mediums for delivering information. Today, students can attend classes online or watch perfectly crafted videos, enjoying the experience they are having. As a civilization, we are at the cutting edge of going even further. Now, we can talk about alternative mediums for exchanging information in education. Utilizing novel multimedia technologies, such as volumetric videos and holograms, we can keep the students captivated and attentive, thus, increasing the capacities of their cognitive abilities. In addition, since sports are the first use case of Studyum, enabling students to use holograms to master the motions from any angle is the next step. That drives the seamless integration of 3D volumetric technologies.

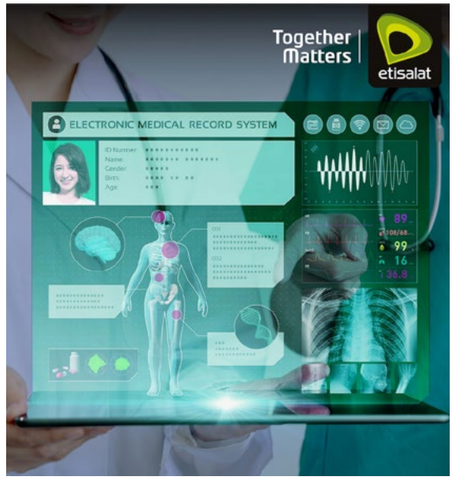
When we add to the equation Studyum's AI-powered customization of the syllabus and learning experience, we see that humanity is on the brink of transforming the way we learn forever.

Every human being is different and everybody has their own style of learning. By methodically applying AI/ML technology, Studyum is successfully personalizing and customizing a student's learning process. There are 3 levels at which these technologies adapt to the learning style of the student. Firstly, student preferences determine the classification of various suitable learning styles. Effectively, students navigate their learning paths through their actions. The biggest issue here is the ability to extract preferences from actions. One of the applied solutions for preference extraction is the smart-chat functionality through the implementation of Natural Linguistic Processing (NLP). Lastly, preferences can be extracted by identifying a student's emotions via the facial recognition system. In addition, this system also serves to measure attention and comprehension levels, modifying the learning experience to achieve higher student engagement. When the optimal learning style variation is defined, smart content adjustments are performed to precisely fit the student's needs.

To create an edtech solution that is both scalable and engaging, Studyum's UX/UI design needed to be both bold and highly intuitive. To fully accomplish this, apart from building internal competencies, we have onboarded world-class partners from this field, Fantasy Interactive. With their assistance, Studyum's appeal will be cross-generational, maximizing the functionality and comprehension of usage.

Studyum aims to be a fully individual approach to learning for everyone, implementing the principle of universal diversity. This means that the learning experience changes not only depending on the person, but also with the person. Most courses nowadays have rigidly fixed syllabuses that do nothing to reflect the ever-changing outside world. Studyum's novel approach is to define different paths in the syllabus to adapt to a student depending on their interests and preferences. This can be achieved by switching the structure of the so-called information architecture from linear to hierarchical. Instead of building information architecture to be consecutively dependent, we have decided to arrange it in smaller clusters, mirroring what progress actually looks like. As such, lessons within the Studyum ecosystem are shorter and more impactful, organized into micro-lessons. In that way, the issue of shorter attention spans spurred by the abundance of information around us has been resolved. From AI, Blockchain, 3D, UX/UI, all the way to the precisely crafted syllabuses, Studyum aims to alleviate most of the issues that arose due to a marginal implementation of technology into the learning process. By treating flexible, innovative solutions as integral parts of the system, education can quickly become globally accessible and produce marvelous reskilling and upskilling outcomes. All of the efforts combined in this area are definitely going to lead us to a more knowledgeable future.

Etisalat launches Business Edge Healthcare platform



Etisalat has announced the launch of Business Edge Healthcare platform, a plethora of services dedicated to enhance and empower hospitals, ambulatory practices and medical staff with seamless, secure and practical solutions to enhance day-to-day operations in all business phases of the various departments.

This falls in line with UAE's leadership's vision and the Department of Health's (DoH) overall objectives of enabling the use of digital health supporting clinics utilising digital technologies to improve health, care delivery, and informed decision-making for a better patient experience.

Dr. Hamed Ali Al Hashemi, Advisor to DoH Chairman at Department of Health – Abu Dhabi, said: "We welcome the launch of Etisalat's healthcare platform that will further boost the digital transformation process of healthcare in Abu Dhabi with locally hosted solutions. This will entice all market participants to adopt digital solutions that will enable them to provide a higher standard of patient care, as our joint goal."

Esam Mahmoud, Senior Vice President, SMB, Etisalat, said: "The emergence of COVID-19 and its devastating impact have brought irrevocable changes to our lives and the global economy. This demands agile solutions that empower frontline workers with the best in technology and continuous access to health services in a safe and convenient way. This solution is a testimony to bringing digital transformation to small businesses as it provides tools and services that will help them achieve a world-class healthcare system."

GLOBAL ICT, TELECOM & SATCOM EVENTS 2022

16 - 18 January 2022
intersec
Dubai, UAE

16 - 18 May 2022
BIG 5G EVENT
Austin, US

29 June - 01 July 2022
MWC Shanghai
Shanghai, China

28 Feb - 03 March 2022
MWC Barcelona
Barcelona, Spain

17 - 19 May 2022
CABSAT
Dubai, UAE

09 - 12 September 2022
Amsterdam, Netherlands

15 - 17 March 2022
MEET ICT BAHRAIN – THE LEADING ICT EVENT IN BAHRAIN | BITEX BAHRAIN INTERNATIONAL TECHNOLOGY EXHIBITION
Manama, Bahrain

24 - 25 May 2022
TELECOMSWORLD Middle East
Dubai, UAE

09 - 13 October 2022
GITEX GLOBAL
Dubai, UAE

21 - 23 March 2022
GISEC
Dubai, UAE

30 May - 01 June 2022
5G MENA
Dubai, UAE

18 - 20 October 2022
5G World
Amsterdam, Netherland

21 - 24 March 2022
SATELLITE
Washington DC, USA

01 - 03 June 2022
ConnecTechAsia
Singapore

08 - 10 November 2022
Global MilSatCom
London, UK

28 - 31 March 2022
capacity MIDDLE EAST 2022
Dubai, UAE

13 - 14 June 2022
CYBERTECH
Dubai, UAE

07 - 11 November 2022
Africa Com – Anchor Event of Africa Tech Festival
Cape Town, SA

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