

ZAINIAC

DIGITAL INNOVATION

4TH EDITION



**UNLOCKING
OPPORTUNITIES**

Charting Zain Group's digital innovation developments during 2018

An abstract graphic composed of various business-related symbols. It includes a large pie chart with blue and yellow segments, a bar chart with blue bars, a line graph with a red line showing an upward trend, a green arrow pointing up and to the right, a blue diamond shape, and a cluster of green stars. The background is a dark blue with light blue streaks radiating from the right side.

BUILDING THE BEST FOR BUSINESS

Contents



2 Unlocking opportunities

Zain Group is an example of an organization that is investing in technology while also building up its internal and external ecosystems to take advantage of the awesome power of the Fourth Industrial Revolution



3 Zain flagship leads in innovation

Zain Kuwait provides a conducive platform for digital innovation in products and services, which are then exported across the operator's footprint



4 A Kingdom of successes

Zain Saudi Arabia experienced some incredibly positive financial and operational milestones during 2018, which boosted its position in the market, and bolstered the Group's strategic position

6 Thought leadership

Zain Group publishes its latest report entitled, *Social Innovation: The Fusion of the Fourth Industrial Revolution and A New Generational Mindset*



10 Year in review

An overview of developments at Zain Group, which made 2018 a commendable year

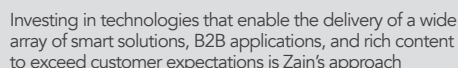


12 Zain Drone

Zain Drone as-a-Service (DaaS) is set to unlock opportunities in various industries to fast-track growth and exploit the Internet of Things (IoT) in an efficient, safer and faster way

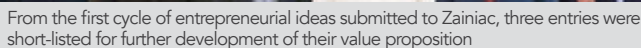


Zain Group is making significant progress in its drive to become a digital lifestyle provider as it embraces the Fourth Industrial Revolution



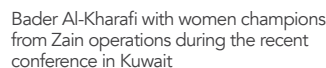
Zain Group is an example of an organization that is investing in technology while also building up its internal and external ecosystems to evolve into a truly digital lifestyle provider with offerings and service that exceed its customers' expectations. The company's strategy focuses on the generation of incremental revenues through investment in technologies that enable

During 2018 there was significant progress on Zainiac, an online platform and community for Zain Group employees. The platform allows employees across the Group to suggest innovative ideas, share challenges, and collaborate in a bid to achieve common goals.



Also during the year, Zain launched another cycle of its 'Generation Z' program for six high-achieving Kuwaiti graduates, who were selected to enter the program following a rigorous assessment process. The latest program builds on previous year-long graduate programs that started in 2016, which have seen four graduates from each of the previous years offered full-time employment at Zain.

In November 2018, Zain Group hosted its second annual Women Empowerment forum in Kuwait, which focused on raising the roles and number of women leaders across all Zain operations. The initiative, the brainchild of Zain Group Vice-Chairman and CEO, Bader Al-Kharafi, also saw the creation of a new position, Chief Inclusion and Diversity Officer, and the introduction of sweeping new flexible hours for working mothers with children up to four years old.



Zain flagship leads in innovation

The company continues to set the pace for technology adoption across the Group

Zain Kuwait provides a conducive platform for digital innovation in products and services, which are then exported across the Group's footprint. Kuwait also sets the foundation for the performance of the rest of the Group, and 2018 was another year punctuated by strong partnerships, digital innovation and market leadership in all key business facets at Zain Kuwait.

The Zain Life portfolio focused on the areas of Customer Experience, Smart Homes, and Digital Entertainment as Zain Kuwait continued in its transformation into a digital services provider in support of the New Kuwait 2035 Vision.

The operator launched BEAM, the advanced wireless broadband technology, offering speeds that match fiber optics at up to 40 Mbps. The launch made Zain Kuwait the first telco to offer this revolutionary technology in the country. The technology ensures consistent speeds, enabling customers to enjoy 4K streaming, virtual reality, online gaming, and downloading heavy files.



BEAM, the advanced wireless broadband technology, offering speeds that match fiber optics at up to 40 Mbps has been debuted in Kuwait

being ready to go live with the state-of-the-art service across all heavily populated areas in Kuwait once devices become commercially available, which is expected in 2019.

Zain Kuwait launched zBot, the new face of smart customer services, making the operator the first telco to offer the interactive customer care solution in Kuwait. This customer service channel utilizes the latest artificial intelligence (AI) solutions to interact and respond to customer inquiries in a fully automated manner without the need for human interaction.



Amazon Prime Video content is being offered in Kuwait through a partnership with Zain

Enhancing customers' digital lifestyle requirements, Zain Kuwait launched an exclusive Amazon Prime Video offer for the first time in the country, through which it delivers award-winning and popular movies and TV content on an advanced network.

Google brought in for comprehensive API initiative

Early in the year, Zain announced the launch of the Group Application Program Interface (API) Platform, that saw the operator exposing its APIs, thereby helping to remove a significant barrier to developing potential digital partnerships from across the globe.

The platform has since been introduced in Kuwait, Saudi Arabia, Jordan and Iraq and Zain continues to work alongside the Apigee team at Google Cloud as the API platform provider, FOO, a leading regional mobile digital solutions entity as the developer, and Shift Technologies, the leading Apigee Edge API Platform implementer in the Middle East region, to introduce this Group-wide API program.

Zain partnered with the global alternative payments provider DoCoMo Digital, the European unit of Japan's NTT DoCoMo as its first content partner using the new API layer. Zain Kuwait went on to launch a gaming platform with DoCoMo Digital, allowing customers to enjoy more than 1,000 popular high-quality games on iOS, Android and Windows.



The deployment of a Group-wide Application Program Interface (API) Platform will bring about greater agility to Zain as it considers new market opportunities, accelerating innovation and expanding into new business verticals

A Kingdom of successes

The turnaround strategy in Saudi Arabia is bearing fruit as the company's financial and operational results scale new heights

Zain Saudi Arabia experienced some incredibly positive financial and operational milestones during 2018, which boosted its position in the market, and bolstered the Group's strategic position, with all stakeholders responding positively to the progress achieved there.

During the year, Zain Saudi Arabia successfully refinanced and extended the maturity date of a syndicated SAR 5.9 billion (USD 1.57 billion) Murabaha facility for five years until 30 June 2023. The operation also came to agreement with the regulatory authorities in the Kingdom to consolidate the annual royalty fee for commercial service, reducing the tariff from 15% to 10% of net revenues retrospectively, commencing 1 January, 2018. These positive developments, among others, saw the company record a full-year 2018 net profit that soared to SAR 332 million (USD 89 million), reflecting a 29-fold increase on the performance in 2017.

Towards the end of the year, the Board of Zain Saudi Arabia approved an offer to sell and lease back the passive physical infrastructure of the mobile tower portfolio (over 8,100 sites) in the Kingdom for approximately SAR 2.43 billion (USD 648 million) to IHS, a leading independent tower operator.

Earlier in the year, Zain Saudi Arabia and Nokia commenced a massive Multiple Input Multiple Output (MIMO) pilot in the city of Jeddah on the TD-LTE network using 2.6 GHz spectrum.

The pilot used Nokia's 5G-ready AirScale massive MIMO antenna for 4.9G calls to improve network capacity, providing speeds of above 700 Mbps per user, end enabling customers to enjoy extreme broadband applications without experiencing any buffering.

The actual deployment of the technology will allow Zain to meet the growing demand for ultra-broadband services while deploying 5G-ready equipment such as massive MIMO is especially useful in helping service providers

add capacity in densely populated urban environments.

Zain Saudi Arabia also signed an agreement with Halalah, the financial technology company, to strengthen ties between the two companies in the areas of telecommunications and digital payments. Halalah is set to provide e-wallet services and financial technology services to Zain Saudi Arabia, in support of the operator's digital transformation.

Throughout 2018, Zain Saudi Arabia's strong performance was driven by a focus on operating efficiencies; investment in network upgrades and fiber (FTTH) expansion; customer service and acquisition strategies; new service developments and data monetization initiatives; continued growth in the Enterprise (B2B) segment; as well as the benefit of the pilgrimage season.

5G spectrum win

At the beginning of 2019, Zain Saudi Arabia announced successful acquisition of 2600 MHz spectrum, following an auction held by the Communications and Information Technology Commission (CITC). Zain's success in obtaining new spectrum frequencies within the available ranges is an important milestone in terms of market competitive capabilities. By expanding its range of available frequencies, Zain Saudi is expected to offer a greater array of state-of-the-art mobile telecommunications services using the 4G and 5G technologies.



Zain Saudi Arabia recently enjoyed a major participation in the Saudi IoT Exhibition and Conference in Riyadh, where the company showcased its leading-edge connectivity solutions



Zain & Huawei Strategy Summit cements joint-cooperation

A decade-long partnership now moves its focus to growth opportunities in 5G, IoT, B2B, and beyond



Zain Group Vice-Chairman and CEO, Bader Al-Kharafi, led a delegation of senior Zain executives who met with their counterparts from Huawei in Shanghai, led by rotating Huawei Chairman, Guo Ping, for the strategic summit

In October 2018, the two companies held a strategy summit in Shanghai, China to align their respective strategies as they enter a new era characterized by the effects of the Fourth Industrial Revolution.

Zain Group Vice-Chairman and CEO, Bader Al-Kharafi, together with his management team and CEOs from across Zain's footprint attended the summit, while rotating Huawei Chairman, Guo Ping led the Huawei delegation. The parties signed a Memorandum of Understanding (MoU) during the two-day event, which saw Zain Group being selected by Huawei to become a strategic partner in the offering of HUAWEI CLOUD services in Kuwait and across the Middle East and North Africa region (MENA).

The MoU is in line with the New Kuwait Vision 2035 and the strategic relation-

ship between Kuwait and China to drive improvements in the areas of Public Administration, Economy, Infrastructure, Living Environment, Healthcare, Human Capital, and Global Position.

During the summit Zain and Huawei discussed other topics of mutual interest, including their respective technology roadmaps given the introduction of 5G in the MENA region as early as this year. The companies assessed the expected business cases for 5G in the region, including its impact on IoT, mobility, connectivity, healthcare, government, and other essential sectors.

Senior management from the two companies also discussed the opportunities for innovative B2B services, which is a growth area for Zain, serving the entire spectrum of

customers, from Small Office/Home Office (SoHo) users to large corporations and government entities with dedicated B2B units. In developing these opportunities, Zain is evolving from being a mobile centric operator to a full-service ICT player, advancing innovative mobile, fixed-mobile, fixed, IoT, IT security and Cloud-based solutions to private and public-sector organizations.

Enterprises require solutions that offer greater flexibility, connectivity, scalability, security, and processing power, as well as an ability to be accessed from locations around the world. Given Zain's expertise and Group synergies, the company aptly offers B2B solutions helping governments and organizations of all sizes with specialized products and services aimed at meeting their unique needs.

Social Innovation:

The Fusion of the Fourth Industrial Revolution and A New Generational Mindset

Zain Group has been a customer-centric operator for its long history and this focus has extended to the communities in which it operates. In recent years, Zain Group's desire to be at the cutting edge of innovation has spurred the company to develop thought leadership reports, with the latest installment entitled, *Social Innovation: The Fusion of the Fourth Industrial Revolution and A New Generational Mindset*.

The report provides a clear understanding of how the various forces of the Fourth Industrial Revolution and the new generational mindset foster social innovation. At Zain, social innova-

tion is an area of great importance as it not only addresses societies' most pressing challenges, it provides a legitimate avenue for youth across the company's footprint to engage in a meaningful manner and become active participants in socio-economic development.

In the report, the endless benefits and opportunities social innovation brings to humanity, businesses, civil society and governments are highlighted. Additionally, the document examines how Information and Communication Technology (ICT) can and does play a critical role in enabling a more inclusive approach to social, economic and environmental impacts, fostering positive change. The report also provides a clear understanding of the relationship between social innovation and the United Nations' Sustainable Development Goals (SDGs) in the context of planetary boundaries and social thresholds.



The report highlights that Information and Communication Technology (ICT) can and does play a critical role in enabling a more inclusive approach to social, economic and environmental impacts, fostering positive change



Social innovation is an area of great importance at Zain as it not only addresses societies' most pressing challenges, it provides a legitimate avenue for youth across the company's footprint to become active participants in socio-economic development

The new report highlights how the Fourth Industrial Revolution has created vast opportunities to influence the trajectory of society and revolutionize the way businesses operate. The world is in the midst of a technological revolution in which societies are being forced to embrace advancements to maximize benefits and drive sustainable and inclusive growth. At its core, the Fourth Industrial Revolution serves as the interconnectedness of all emerging new technologies providing increasingly enhanced and meticulously customized products and services that improve people's lives.

The new generational mindset, which is primarily comprised of youth, plays a fundamental role in relation to understanding the importance of addressing society's most pressing issues as young people are the ones who will fully experience the threats of our complex world. Many young people acknowledge that automated processes will impact them directly, while also being well aware that some of the lower income, less educated, and basic skilled workers are the ones who will be affected earliest and greatest. Accordingly, young people are becoming highly critical of corporations' commitment to ethics and values, and it is crucial for businesses to reflect these concerns so as to attract and retain the best young talent available.

Commenting on the publication of the company's latest report, Zain Group Vice-Chairman and CEO, Bader Al-Kharafi said, "As a business that is grounded in technology, it is fascinating to witness the rapid rate of development over the last 20 years. The latest developments in technology are not only changing the landscape in an accelerated manner, but more importantly, are finding solutions to existing and future global challenges."

Al-Kharafi continued, "As a regional leader dedicated to catalyzing positive and inclusive change, Zain will continue to push the envelope around social innovation with the aim of addressing the Sustainable Development Goals. ICT is an efficient and transformational tool that can be harnessed to drive the achievement of all 17 SDGs, and as such, technological advancements in this area should be viewed as a means of choice in addressing the goals and alleviating some of the world's greatest problems."



Zain Group Vice-Chairman and CEO, Bader Al-Kharafi believes the latest developments in technology are not only changing the landscape in an accelerated manner, but more importantly, are finding solutions to existing and future global challenges

The report also sheds light on pressing issues including:

- The Fourth Industrial Revolution is impacting areas such as employment, inequality, and data privacy, which are reshaping every aspect of daily life.
- Through social innovation, companies will be able to tap into new markets and consumers.
- Some of the grave global challenges such as climate change and political instability can be overcome through the implementation of innovative solutions that mitigate the negative impact of the challenges.

Zain thought leadership

Examples of the practical social innovation projects as related to specific SDGs include:



1. SDG 9.4 - Upgrade all Industries and Infrastructures for Sustainability: ICT can help achieve this specific target by providing clean and environmentally friendly solutions related to industrial processes.



2. SDG 11 - Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable: Advancements in technological tools can help build and explore the potential of smart cities. Digitizing

public places also provides opportunities for urban areas to become better equipped for the population's ICT needs that facilitate access to information.



3. SDG 16.2 - End abuse, Exploitation, Trafficking and all forms of Violence and Torture against Children: The ICT industry can lead actionable change when it comes to protecting children,

delivering beneficial solutions to address the issue.



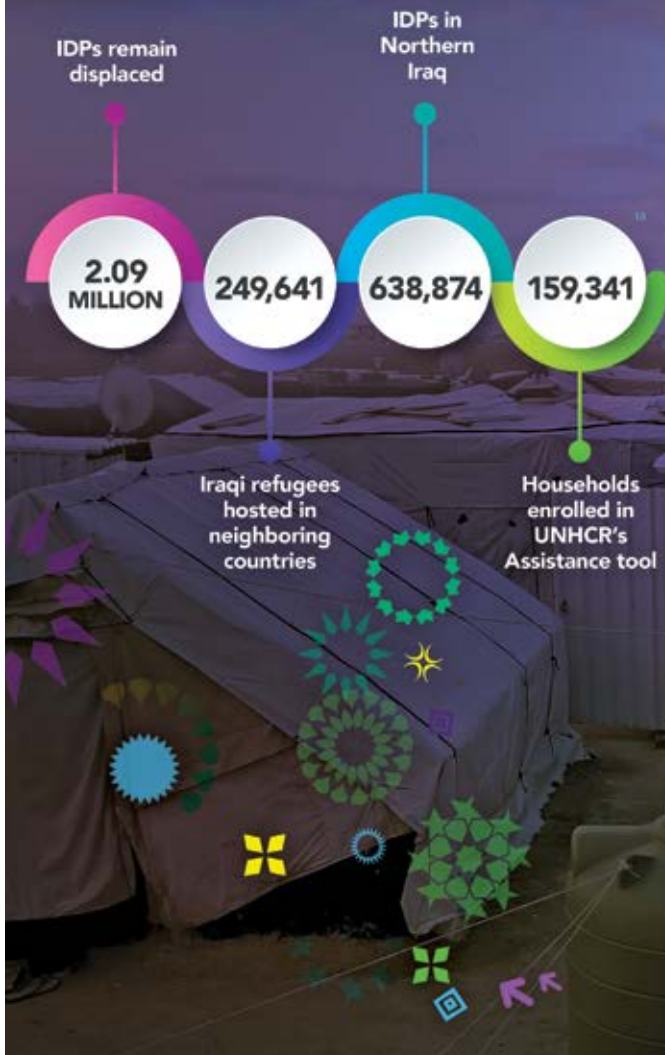
Social Innovation at Zain

While modern businesses tend to shy away from contributing financially to social innovation and usually position it on the sidelines, Zain has been focused on this area for years. Programs established by the company over the years have altered the status quo and noticeably led to meaningful change on an inclusive basis. Through the effective use of new technologies, reach, and mobile connectivity, Zain is devising innovative solutions to initiate an ecosystem across the region that impacts segments of society that are typically marginalized.

While still in its early stages of implementation, Zain's social innovation agenda is shaped by the notion of value creation for both the company and its communities. Examples of Zain's pioneering social innovation activities include the company's partnership with MIT Enterprise Forum (MITEF) Pan Arab Startup competition that has been held in Kuwait, Saudi Arabia and across the region; as well as the 'Innovate for Refugees' initiative, which exemplifies how such initiatives can positively impact people at grassroots level. In Jordan, Zain partnered with a local startup, Mind Rockets, to build innovative technology to fully engage the hearing impaired. Through this partnership, Zain added a new feature to its website where hearing-impaired individuals can access the site using sign language via an avatar. Through the development of young aspiring entrepreneurs, the Social Fellowship Program in Sudan aims to support individuals who have innovative entrepreneurial solutions to some of society's most pressing deficits.

War and Conflict

The MENA region continues to face devastating ongoing conflicts which are leaving millions of people displaced and vulnerable. Accordingly, human displacement is one of the most damaging consequences of such conflicts taking place in Iraq and Syria. In Iraq, the number of terrorism related incidents and tribal feuds continue to leave thousands of people from returning to their homes.



Jennifer Suleiman, Zain Group's Chief Sustainability Officer commented, "Innovation in all its forms has shaped the pace of human evolution from the beginning of time. It has allowed for great inventions to come to fruition and it should be considered as the foundation of exploration. For us at Zain, we embrace the rapid changes that the Fourth Industrial Revolution brings about, helping unfold a multitude of opportunities across the board."

Suleiman continued, "It is exciting to witness the fusion of forces being generated from young people's new generational mindset, breaking down barriers, helping circumvent obstacles and in some cases catapulting products and services that address social challenges to the forefront. The forces in isolation are very disruptive, which is opening new possibilities for a more inclusive and equitable growth. We encourage all our stakeholders to become active drivers in this fascinating change and we look forward to the evolution of new innovations across the region. We remain determined to play our part in this metamorphosis."



Jennifer Suleiman, Zain Group's Chief Sustainability Officer encourages all stakeholders to become active drivers in the fascinating changes taking place, and says Zain is looking forward to the evolution of new innovations across the region

The Social Innovation: The Fusion of the Fourth Industrial Revolution and A New Generational Mindset report is not printed physically, so as to reduce negative environmental impact, and instead may be viewed online or downloaded by visiting the link: <https://zain.com/en/sustainability/thought-leadership-reports/>



A look back at the significant strategic developments at Zain during 2018

January

- Zain Sudan launches partnership with Facebook as the first company in the country to do business with an American entity after sanction uplift for Sudan, allowing customers to access Facebook without internet connection.



- Zain Innovation Campus (ZINC) in Jordan was the recipient of a Mohammed Bin Rashid Awards for Young Business Leaders accolade for being the Best Social Entrepreneurship Responsibility Initiative in the Arab World.

- The commencement of Zain Group's 'Generation Z 2018' program for six high-caliber Kuwaiti graduates, who were selected to enter the initiative following a rigorous assessment process.

- Zain Jordan launches 'Dezain Space', a platform to support designers in Jordan enabling talented and creative youth to turn their ideas into productive projects.

February

- touch Lebanon launches investment fund 'MIC Ventures' to invest in ICT startups as well as providing entrepreneurs with an incubator working space, logistics, and technical support.
- Zain Iraq partners with Instagram to promote its products, services, offers and competitions on Instagram Stories platform, a first in Iraq in terms of using social media as an advertising communication platform for corporations.



- touch Lebanon launches the "touch Innovation Program" (TIP) in partnership with ArabNet, and with the support of Antwork in the custom development of a co-working space at the touch LAB whereby every six months, TIP will identify and incubate 4-6 promising entrepreneurs.

March



- Memorandum of Understanding (MoU) signed with Ericsson creates a roadmap to jointly develop and test selected 5G and Internet of Things (IoT) cases.



- Enters MoU with Huawei to explore innovative solutions to continue investing in key areas of talent development and digital transformation including 5G testing and exploiting the vast opportunities in cloud services and gaming.

- Announced a strategic partnership with Apigate, a subsidiary of Axiata Digital, to procure and provide API services via Zain's API Hub for its operating companies and end users.

April

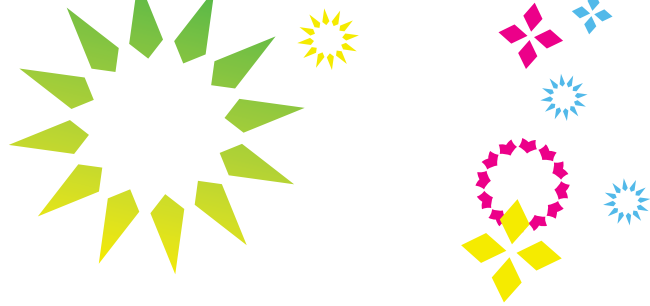
- Winners announced of the Zain sponsored MIT Enterprise Forum PanArab Startup Competition, an annual competition designed to support and celebrate innovation in the Arab world.



May

- Opening of Zain Innovation Center (ZINC) in Kuwait, a youth empowerment initiative creating a co-working hub, the first of its kind in Kuwait provided by a corporate entity aiming to bolster youth entrepreneurship and the country's startup ecosystem.





June

- Zain Kuwait launches the first integrated 5G technology on its network, representing a quantum leap in the operational efficiency of its network, in several prominent locations as an early initiative for its customers.

- Zain KSA refinances its SAR 5.9 billion existing Murabaha facility for five years at preferential terms, with an additional working capital facility of SAR 647 million for two years.

July

- Zain joins other global mobile operators committing to adopt and implement the GSMA IoT Security Guidelines, that outline best practice and recommendations for Internet of Things (IoT) security for the entire IoT ecosystem.

August

- Finalizes a USD700 million, five-year Revolving Credit Facility with a syndicate of regional and international banks that refinances a USD800 million Revolving Credit Facility arranged in 2014.

- touch Lebanon selected as the top performing telecom company for the Anghami services, MENA's biggest home-grown music streaming platform that connects more than 60 million users.

September



- Zain crowned 'Best Brand' at Telecom World Middle East Awards 2018 for the fifth consecutive year.

- Zain Kuwait launches zBot, an all-new interactive digital channel for smart customer service, utilizing the latest artificial intelligence solutions to interact and respond to customer inquiries in a fully automated manner.



- Zain Sudan launches Tak Tik, a flexible service allowing customers to buy a bundle of units with full flexibility and without any restriction of use between data, voice and SMS.

- Zain Jordan awarded the "Best Financial Technology Solutions - Fintech Telecom Company" by a regional telecom operator for its Zain Cash service, at the JFEX 2018 Awards.

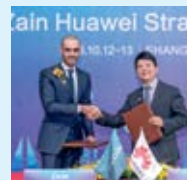
October

- Zain Bahrain launches the Kingdom's first interactive fully automated smart customer service solution 'zBot', making it the first telecoms operator to launch this innovative solution in Bahrain.



- Zain Iraq opened its new headquarters in Baghdad in October 2018, reflecting the sense of optimism that exists at the operation.

November



- Huawei selects Zain to offer HUAWEI CLOUD services in Kuwait and MENA supporting Zain's digital strategy of unlocking the tremendous growth opportunities in B2B,

aiming to become the operator of choice for governments and enterprises.

- Zain Sudan MD and Zain Africa CEO, Mr Elfatih Erwa awarded CommsMEA's first-ever Lifetime Industry Service Award.



- Zain Saudi Arabia agrees to sell and lease back its telecom tower network to IHS Holdings for circa USD 648 million, a conditional divestment of more than 8,100 towers that creates shareholder value as it reduces debt obligations, unlocks capital and resources, allowing more focus on core operations.

December

- Zain Saudi Arabia signs agreement with Kingdom's Finance and Telecom authorities to consolidate annual royalty fees; and settles disputed amounts for the past nine years positively impacting future financial results.

Zain Drone takes to the skies

In October 2018, Zain Group announced the launch of its pioneering Zain Drone service in Kuwait, with the plan to expand its operation to other markets across the operator's footprint in due course.

Zain Drone as-a-Service (DaaS) is set to unlock opportunities in various industries to fast-track growth and exploit the Internet of Things (IoT) in an efficient, safer and faster way. The disruptive power of drone solutions will bolster efficiency as it offers state-of-the-art bespoke drone solutions and provides advanced analytics for governments and businesses.

Multiple solutions across core industries such as oil and gas (flare inspections), utilities (power line inspections), construction, infrastructure (asset inspections), security, real estate, telecom infrastructure, and agriculture are offered by Zain DaaS.

A corporate entity has been created to focus on the delivery of drone-powered solutions, building upon its leading position in digital innovation across the markets in which it operates.

Zain enjoys extensive in-house expertise in drone technology, and possesses solid relationships with government entities, having deep experience in collecting, transferring, storing and processing huge quantities of data in a trusted manner.

Furthermore, Zain has the distinct advantage of offering reliable connectivity through an extensive network of towers across its regional footprint (22,000+), and enjoys vast experience in cloud infrastructure, system integration and data analytics. In December 2018, Zain Kuwait announced entering an agreement with Zain Drone to undertake inspections of its tower infrastructure. The agreement saw the operator become one of the first in the MENA region to



The service was introduced to the public during GITEX 2018 in Dubai, with Zain DaaS set to streamline site inspections among other capabilities

deploy drone technology to inspect and maintain its cell tower infrastructure, demonstrating the operator's drive to become a more agile and cost-efficient provider. The agreement also represents the first commercial deal for Zain Drone.

In a growing trend globally, progressive mobile operators have identified the need to constantly monitor their towers to ensure hassle-free relay of signals between devices and infrastructure. Drone cell tower inspection reduces costs and the time taken

to detect flaws considerably, as well as providing companies with complete details of defects through visual imagery, making it easier to develop lasting solutions for the problems that are identified.

Automation will play a key role in the cell tower inspection industry where automated workflows have proven their potential by helping cut inspection costs by as much as 50%.

DroneShield brings counter-drone technology support

In December 2018, Zain Group entered into a Teaming Agreement with DroneShield Ltd, a worldwide leader in counter-drone solutions, which will see the companies working together on meeting Zain's customers' requirements for these types of security solutions in the region.



The two companies are cooperating on meeting Zain customers' requirements for counter-drone security solutions in the region

The rise of drones brings multiple risk and liability challenges for governments and industry. Zain has a substantial market penetration in the region with precisely these kinds of customers – civil infrastructure operators, airports, governmental bodies and security agencies, and others – that require counter-drone security solutions.

Zain is fielding increasing demand from customers for comprehensive solutions in this space, and DroneShield's product range, coupled with Zain's telecommunications expertise, provides exactly what customers are looking for.

5G Switch Made Easy with Ericsson



The telecom industry, like many others, is looking at what 5G may bring with great anticipation. As 5G commercializes, the mobile ecosystem is larger and more expansive than ever. Momentum is building in many markets as service providers accelerate their plans for 5G rollout. In 2024, we project that 5G will reach 40% population coverage and 1.5 billion subscriptions, making it the fastest wireless broadband generation ever to be rolled out on a global scale.

Wojciech Bajda, Head of GCC and Global customer unit Zain, at Ericsson says: "Our network technology allows mobile service providers to smoothly evolve their networks and minimize the time to market once they choose to switch on 5G. That's how we enable service providers to capture the business growth and cost efficiencies of the improved capacity, density, latency and agility facilitated by 5G."

Welcome to an automated society

With 5G, the speed and reach of automation will increase rapidly. The Ericsson 10 Hot Consumer Trends 2019 list reveals that smartphone users across 50 countries have high expectations of 5G to mobilize and automate many areas of everyday life. While consumers see communications benefitting most from upgraded mobile networks, they also believe that 5G will support automation in a variety of ways.

37% of consumers predict 5G will better enable home alarms, while 23% believe it will also positively impact self-driving cars. One in five consumers see a long list of IoT devices being made more useful by 5G including electricity, gas and water meters, refrigerators, stoves and washing machines.

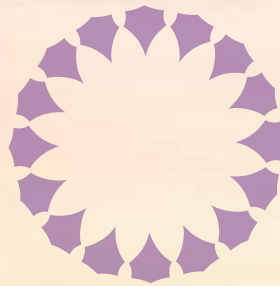
Smartphone users globally also believe Augmented Reality (AR)/Virtual Reality (VR) applications will be improved. Specifically, 32% believe VR shopping is set to benefit from 5G, and 21% expect mobile use of AR/VR headsets in general.

Zero-touch consumption

People are increasingly expecting new technology to automate the mundane elements of life, and in the process, hopefully allow us to spend more time on more fulfilling pursuits. For example, not everyone finds going to the supermarket stimulating – 49% of virtual assistant users would prefer to automate household restocking of generic items.

Some of this household automation might seem a bit alien, as one considers that humans are of course still the ultimate beneficiaries. But zero touch consumption without human intervention might happen sooner than we think. In fact, 7 in 10 current virtual assistant users think this type of automated consumption will be commonplace in the next three years.

Ericsson's 5G Platform is constantly expanding. With its 5G-ready hardware and spectrum sharing, dual mode core and orchestration, we support a quick and smooth introduction of 5G. By adding capabilities to our 5G Radio Access, 5G transport and Cloud Core portfolios, together with our management and orchestration, digital BSS and network services, we offer communications service providers an outstanding 5G solution that is both extensive and flexible. This ensures a smooth and cost-effective 4G- to-5G migration and enables operators to offer enhanced Mobile Broadband and Fixed Wireless Access, 5G services, as well as to make the most of the upcoming opportunities with respect to IoT and industrial applications.



SOCIAL INNOVATION

**THE FUSION OF THE FOURTH INDUSTRIAL REVOLUTION
AND A NEW GENERATIONAL MINDSET**

2019 THOUGHT LEADERSHIP REPORT