



ANNUAL REPORT

TRANSFORMING COMMUNICATIONS EMPOWERING LIVES

GOVERNMENT'S VISION FOR THE SECTOR

The telecommunications sector is an important engine for Bahrain's economic growth and diversification as well as social cohesion. An efficient telecommunications sector, with first class infrastructure, used to provide leading-edge services and respond to the needs of consumers and businesses, is vital for increasing productivity and supporting the growth of new sectors of the economy. This includes an energetic digital services sector.

A robust telecommunications platform, as part of a dynamic Information and Communications Technology (ICT) eco-system, will also enhance the ability of the Kingdom and its citizens to achieve a range of societal objectives, including improvements in health care, education and the ability of citizens to communicate with governmental bodies.

Since liberalization commenced in 2002, the Kingdom has been at the forefront of telecommunications sector reform in the region, and It is essential that Bahrain remains at the forefront of the digital developments, within the region and globally.





His Majesty the King

SHAIKH HAMAD BIN ISA AL KHALIFA

The King of Bahrain



His Royal Highness Prince

KHALIFA BIN SALMAN AL KHALIFA

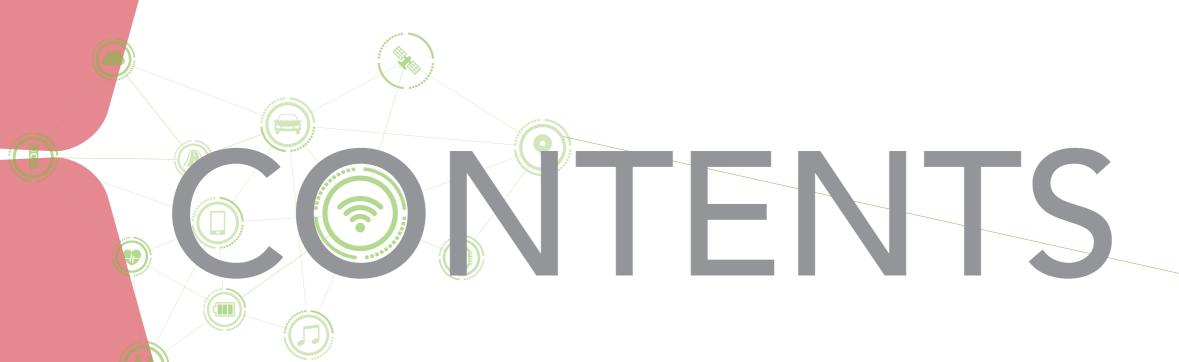
The Prime Minister



His Royal Highness Prince

SALMAN BIN HAMAD AL KHALIFA

The Crown Prince, Deputy Supreme
Commander and First Deputy Prime
Minister





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VISION&MISSION

OUR VISION

A communications environment that enriches the social and commercial fabric of the Kingdom of Bahrain.

OUR VALUES

Inspiring: Our imagination, clarity of thought and clear leadership stimulates innovative thinking that meets the needs of tomorrow.

Commitment: Our drive and determination to achieve excellence, our discipline in the execution of our duties, our focus on the development of our team, and our sense of responsibility instil passion for the development of the Kingdom of Bahrain.

Respect: Our respect for each other is ensured by listening, collaborating and having consideration for each other, the public and licensees we work for, the environment and future generations.

Balanced: Our evidence based approach to decision making and our adaptability ensure that we remain proportionate, consistent, fair and just

Transparency: Our open and inclusive approach to regulation ensures that we are held responsible and our actions and decisions are understood.



OUR MISSION

To develop a competition led market for the provision of innovative communications services, available to all, which: encourages sustainable, economically efficient investment; respects the interests of consumers; fosters ecologically friendly initiatives; and supports the social and commercial welfare of the Kingdom of Bahrain.

To continue to build as an exemplar regulator within the region through thought leadership and to be the employer of choice by: investing in our people to develop a professional, passionate team; transparency and fairness in operations; and adherence to quality assurance.

A FOCUSED STRATEGY



With the aim of achieving its mission and vision objectives, as well as ensuring it is moving in the right direction, TRA has designed a Focused Strategy Framework, which outlines the Authority's guidelines to create a communications environment that enriches the social and commercial fabric of the Kingdom of Bahrain .

TRA will ensure its plans and initiatives are consistently implemented in line with the following strategic points:

FOSTER COMPETITION

Initiatives and effective regulation that foster the continued growth and development of the telecommunication sector by way of effective and fair competition.

OPTIMISED TECHNOLOGIES

Initiatives that encourage the adoption, deployment, and optimization of the latest technologies that support the growth of the market and deliver higher quality of services to consumers.

CONSUMER EMPOWERMENT

Initiatives that provide knowledge and tools to empower the consumers and enrich their experience of the telecommunications services and to allow them to make well-informed decisions.

UBIQUITOUS BROADBAND

Initiatives undertaken to ensure that broadband services of high quality and competitive prices are available to all local stakeholders.

SECURITY AND CYBER SAFETY

Initiatives that support a safe and secure telecommunications infrastructure to deliver highly reliable Electronic Communication Services.

EFFICIENT REGULATOR

Initiatives that adapt, enhance, and update the framework, processes and tools used by the Authority in the implementation of its duties.

DYNAMIC & EFFECTIVE REGULATORY FRAMEWORK

Initiatives undertaken to adapt regulations over time, with the aim of continuously reviewing, updating, and improving the telecommunication regulatory framework, and maintaining proportionate focus where necessary.







AN EVERMORE DYNAMIC & EFFICIENT

INFRASTRUCTURE



Guided by the Fourth National Telecommunications Plan (NTP4), the TRA, throughout 2018, undertook a number of initiatives geared towards facilitating the deployment of state-of the-art technologies for the ultimate benefit of consumers. The highlight of TRA's efforts in this direction, was the development of a new regulatory framework underpinning the separation of Batelco and the deployment of the National Broadband Network (NBN) supported through a single fibre network – a key NTP4 objective.



in and submit details

of their complaint and

supporting documents;

was also launched in

order to maintain effective

communication between

TRA, consumers and

licensed operators.

Keen to better serve all society segments, including disabled consumers; TRA launched a video call service for its Consumer Call Center, which enabled any android user to initiate a video call directly to TRA's Consumer Call Center, to submit their complaints and enquiries.

Averages comparigns were also conducted throughout the year

Awareness campaigns were also conducted throughout the year to inform and empower consumers. 'Know Your Rights'; 'Your Sim Your Responsibility'; and 'I am Roaming Ready' being the highlight.

As part of its initiatives under the Fourth National Telecommunications Plan to develop human resources capacity in the telecommunications sector, TRA launched a number of initiatives, and conducted workshops & sessions throughout the year including the "VAT for Telecoms Workshop" in collaboration with KPMG for its employees and licensed telecom companies, and '5G Masterclass Training Course', amongst others.

Under its staff development initiative the TRA implemented several initiatives including the Culture Transformation Program, imparting EQFM based training to new TRA employees; 'Lean Six Sigma Training'; 'Mini Mobile World Congress' workshop focusing on 'New Technologies', with leading global ICT infrastructure provider, Huawei; and a Workshop, Leadership Program, in Cooperation with Global Executive Education and BIBF.

The Kingdom's telecommunications sector witnessed continuous competition and achievements in providing diverse and high-quality telecommunications services to both residential and businesses users. Some mobile services prices decreased by 27% between 2017 and 2018 and as much as 54% between 2013 and 2018. Fixed

broadband prices also fell by 7% between 2017 and 2018 and as much as 82% between 2013 and 2018.

The steep decline in the services' prices contributes to the significantly high penetration rates of telecommunications services in Bahrain, which have constantly remained amongst the highest rates globally, over the past several years.

According to the Global Competitiveness Report published by the World Economic Forum in October 2018, Bahrain ranked 3rd globally in internet user percentage at 98%; 5th globally in mobile broadband penetration rate (147.3%); and 10th globally in mobile penetration rate (158.4%).

2018 also witnessed a 36% reduction in mobile number porting requests (14,449 compared to 22,552 requests in 2017); and 64% reduction in fixed number portability requests (2817, compared to 7800 requests in 2017).

TRA also led from the front on the global telecommunications arena. Alongside attending many international conferences and seminars, including the noted ITU 20th Plenipotentiary Conference (PP-18); TRA represented the Arab Region within ITU-T Study Group 17 for Cyber Security, and hosted the 16th Annual AREGNET Conference in the Kingdom of Bahrain.

TRA won the prestigious CommsMEA's "Regulatory Initiative of the Year" Award for 2018, at the 13th Annual CommsMEA Awards in Dubai, UAE, for its efforts in developing the Public Radio-communications Stations Regulation aiming at ensuring secure and advanced telecommunications infrastructure.

In acknowledgement of the Authority's efforts that demonstrated the greatest commitment to its financial policies & procedures combined with the key initiative to improve operational effectiveness, TRA was presented with the "Finance Team of the Year – Public Sector" award, at the 'CFO Strategies Forum MENA', in Dubai, UAE.

For its outstanding employee development and training programs, TRA was awarded the "Excellence in HR- Employer of the Year" Award, at the 2018 Future Workplace Awards, in Dubai, UAE.

The TRA has also developed regulations aimed at regulating the deployment of new telecommunications towers – a most important component of the telecommunications infrastructure; and rectify the existing ones in accordance with international best practices, focusing on both the functionality and aesthetics. The regulation also encourages sharing of towers among operators, thus ensuring there is no unnecessary multiplicity of the towers.

As the Kingdom moves towards the next era of telecommunications, TRA sets the stage for 5G implementation. A 5G Working Group chaired by TRA was established, for developing and implementing the action plan for the introduction of 5G commercial mobile networks in Bahrain.

Aimed at empowering consumers and ensuring that they receive the best-in-breed services, TRA published an updated Quality of Service ('QoS') Regulation applicable to licensed operators in the Kingdom. The updated QoS Regulation sets out renewed key QoS targets for licensed operators to achieve in delivering services to consumers.

Building on its commitment to constantly improve consumer experience, a new 'Consumer Dispute Regulation' was developed by the TRA to improve the dispute handling process; establishing the principles and procedures for the submission, handling and resolution of a Dispute arising between a Subscriber and a licensed operator.

A new integrated complaint and inquiry management system – featuring a consumer portal where consumers could easily log

ACTING CHAIRMAN'S STATEMENT CONTINUING ON THE SUCCESS PATH

Another successful year, highlighted by concrete efforts and consolidated outcomes, TRA exerted significant efforts towards the execution of the Government's policy to maintain the Kingdom's position among the developed countries regionally and internationally in the main ICT indicators, which will highly recognize the Kingdom's economy as one capable of adapting to future changes.

The International Planning Sub-committee entrusted TRA to lead and coordinate the activities related to the preparation of national positions on the Agenda Items (Al) 1.13 and 9.1 (issue 9.1.1) of the World Radio-communication Conference WRC-19. The Authority shared its reports

We were honored to host and chair the 16th Annual AREGNET meeting in the Kingdom of Bahrain, sharing our vision and expertise in the telecommunication industry which has lead the Kingdom to achieve no.1 ranking in the ICT Development Index (IDI) of the International Telecommunications Union (ITU).

about the Agenda Items with DWL, which were then submitted to the

chairman of the GCC team for WRC-19 preparation.

The talks explored the potential of M2M and IoT connectivity in leading to the development of 'Smart Cities' and the limitations faced by certain policy makers and regulators whilst working on feasible strategies and ideas to create a sustainable environment.

The need and significance of Cybersecurity has become extremely essential and critical worldwide. TRA's active participation in cyber security-related events promotes the Kingdom of Bahrain's collaborative works towards global ICT security standards which conform to the best practices in the implementation of security standards.

TRA was nominated to represent the Arab Region within the ITU-T Study Group 17 for Cyber Security which was mainly attended by delegates and representatives from Member States, Sector Members and Associates to the Study Group 17 in the region.

TRA also attended the 'Regional Workshop on ICT Statistics' in 2018. Organized by the Telecommunication Development Bureau of the ITU, the workshop aimed at strengthening the capacity of countries to produce the national statistics needed for the indicators on telecommunications and ICTs.

Upholding a culture of excellence and professionalism, TRA was awarded the "Finance Team of the Year – Public Sector", at the 'CFO Strategies Forum MENA' by Naseba, in Dubai, UAE; organized by Naseba, in acknowledgement of the Authority's efforts demonstrating the greatest commitment to its financial policies & procedures combined with the key initiative to improve operational effectiveness.

The TRA prides itself on its emphasis on career development and training. In recognition of its contribution to the growth and development of the Middle East HR Industry, TRA received the "Excellence in HR- Employer of the Year" Award, at the 2018 Future Workplace Awards, in Dubai, UAE.

Credit goes to the TRA 'Human Resources' team, who have worked hard to see the initiatives through successfully and enabled TRA to develop a solid career development and training program, which focuses on the continued growth of its young cadres. TRA values fostering tomorrows leaders and will continue to give its cadres the tools and knowledge to excel.

Having demonstrated the greatest commitment towards developing regulations aiming at ensuring a secure and advanced telecommunications infrastructure, TRA was also conferred upon the highly prestigious CommsMEA "Regulatory Initiative of the Year" Award for 2018, at the 13th Annual CommsMEA Awards in Dubai, UAE.

The award acknowledged the Authority's outstanding efforts towards prioritizing the deployment of public radio-communications stations, and developing 'Public Radio-communications Stations Regulation'; an essential step towards enabling the deployment of future wireless technologies using the state-of-the-art stations, while addressing public concerns and environmental impacts at the same time.

With TRA's persistent commitment to excellence and innovation, Bahrain's ICT industry has shown substantial growth and potential to further its expertise and we look forward to continue our contribution towards growth in ICT across the Arab Region, and globally.

TRA will continue to monitor and evaluate the performance and developments of the telecommunications sector and take the necessary measures to boost and develop it as it is an essential sector for the growth and development of other economic sectors to achieve the objectives of the Kingdom's Economic Vision 2030.

SH. HAMED BIN MOHAMMED AL KHALIFA

ACTING CHAIRMAN

Bahrain ranked 3rd globally in internet user percentage at 98%; 5th globally in mobile broadband penetration rate (147.3%); and 10th globally in mobile penetration rate (158.4%), in the 2018 Global Competitiveness Report published by the World Economic Forum.

The 'Retail Price Benchmarking Study of Telecommunications Services in Arab Countries' for 2018 revealed the prices of fixed and mobile broadband services in Bahrain compared very well regionally, while also confirming that the mobile operators in Bahrain offered more competitive prices compared with other GCC countries.

Bahrain also has the most value for money fixed broadband services in the Arab States, according to the '2018 Measuring the Information Society Report' issued by the ITU.

With the introduction of 5G networks we will not only experience an evolution of mobile broadband networks but also bear witness to new and unique network & service capabilities. It will integrate networking, computing and storage resources into one unified infrastructure, allowing for an optimized and more dynamic use of all distributed resources, and the convergence of fixed and mobile services.

Setting pace to the implementation of 5G network within the Kingdom, a 5G Working Group (5G WG) was constituted for developing and implementing the action plan for the initial introduction of 5G commercial mobile networks in Bahrain. The Working Group, chaired by TRA, will also prioritize the frequency bands that are most likely to be used for operating the 5G networks according to the recommendations of the relevant international technical groups.

Moreover, the Working Group will align its spectrum needs from the different frequency bands with the GCC, regional and European direction along with the outcomes of the World Radio-communications Conference-19."

Making its impressions on the global telecoms arena, Bahrain remained at the forefront in sharing expertise and exchanging views with the international telecommunications community.

The TRA participated in the twenty-fifth meeting of Working Party 5D on IMT systems, as well as the Task Group 5/1 Meeting in Geneva in May, discussing aspects related to the development of a better regulatory framework for the provision of satellite services, as well as the preparation of proposals and working papers to be submitted by the ASMG to World Radio-communication Conference in 2019, to be held in Geneva under the umbrella of ITU.

Telecommunications Regulatory Authority Kingdom of Bahrain

BOARD OF DIRECTORS



SH. HAMED BIN MOHAMMED AL KHALIFA ACTING CHAIRMAN



MAJOR GENERAL RIADH EID ABDULLA BOARD MEMBER



TAREQ JALIL AL SAFFAR BOARD MEMBER

ACTING GENERAL DIRECTOR'S MESSAGE EFFICIENCY THROUGH TRANSPARENCY & COLLABORATION

Bahrain's Telecom Industry has always been a balancing point that influenced every other industry in the Kingdom. Enriching the industry plays a large part in enriching the economy as a whole, thus our dedication to keeping pace with state of the art infrastructure and services.

The 4th National Telecommunications Plan (NTP4) mandates the move towards single fixed fibre network supporting the development of a National Broadband Network, and 2018 is an important year as we pave the way for it. The separation of Batelco is one of the biggest steps towards this end. It took over 70 meetings over the course of three years to achieve this key milestone. With NBN available for wholesale, there is room for more market players to benefit from this national network and compete on a level playing field, and consumers will be able to reap the rewards of more innovative services.

5G is the next big leap in technology, and its deployment is a key step in realizing the government's vision in the 4th National Telecom Plan. A 5G Working Group chaired by TRA is responsible for determining sector requirements from a technical & commercial perspective, as well as the mechanisms required for collaboration across all government bodies. This Working Group will pave the way on all that is necessary to make 5G's rollout smooth and successful.

Deploying new technology in the sector requires a swift regulatory process. Nowhere is this more evident than our effort to regulate the deployment of new telecommunications towers, or Public Radio-communications Stations (PRS). The TRA's new regulatory framework "Regulation on Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations" ensures both the deployment of new telecommunications towers, and rectifies existing ones to prevent overlap, encouraging shared masts among operators to reduce the number of towers across the Kingdom, and placing emphasis on aesthetics. A related regulation we published also addresses the way forward on installing, permitting, upgrading and maintaining PRSs, an effort which coordinates and considers laws and concerns of other government entities.

Empowering consumers and ensuring that they receive the best services is an ongoing objective in the TRA. Our latest 'Quality of Service' Regulation (QOS), sets out key QOS targets for operators to maintain in order to ensure services are provided within a set acceptable standard. Further, to ensure that competition between the licensees does not affect the quality and efficiency of telecommunication services, and to protect consumer rights and their ability to make better informed choices, TRA also published comparative indicators for numerous categories including Service Provision, Reported Faults, Service Restoration, Billing Accuracy, Complaints and Network Measurements. Balancing QOS through regulation promotes service based competition, aimed at improving the quality of services, making them more affordable, while letting innovation take root through new technology. There is

a good level of cooperation from the industry in providing quality of service parameters to the TRA who in turn verifies these parameters. We appreciate mobile operators' continued efforts in improving consumer experience through enhancements and upgrades of their mobile networks.

Protecting consumers is as important to us as empowering them. TRA, in 2018, issued the 'Consumer Disputes Regulation' that establishes the methodology for handling of disputes between a subscriber and a licensed operator, in addition to improving the Complaint handling process by establishing basic high-level criteria for Licensed Operators to follow. and also the recent additions introduced in the latest Consumer Protection Regulation, TRA launched video call service for its Consumer Call Center, to better serve people with hearing impairment, allowing android users to initiate video call directly to TRA's Consumer Call Center to submit their complaints and enquiries.

The regulation is one of the legal instruments that will create more transparency and coordination among all concerned parties to reach a fair solution that preserves consumer rights in disputes. Complaints indicators received against telecom service providers will also be published to promote transparency and competitiveness among service providers, to develop services and address complaints from their subscribers. The Authority stresses on its significant duties and powers to protect the interests and rights of telecommunications subscribers in the Kingdom by continuing expanding and enhancing the communication channels among itself and the consumers, and improving the level of services.

Special emphasis is laid on people with special needs with regard to their rights as consumers in the telecommunications sector. Taking the outputs and proposals of the ITU Plenipotentiary Conference 2018 into account, and also on the recent additions introduced in the latest Consumer Protection Regulation, TRA launched video call service for its Consumer Call Center, to better serve people with hearing impairment, allowing android users to initiate video call directly to TRA's Consumer Call Center to submit their complaints and enquiries. In line with the Consumer Dispute Regulation, TRA also launched new integrated complaint and inquiry management system in order to maintain effective communication between TRA, consumers and the telecommunications service providers. Adding to the series of consumer support initiatives, the new system enables subscribers to submit a request for dispute resolution in the event that the service provider fails to provide the consumer with the appropriate solution.



As part of the NTP4 objective of developing human resource in the telecoms sector, TRA continued with initiatives focused on skills and expertise development with special emphasis on fostering local talent, and adopting the best practices, policies, and methodologies for the continuous enhancement and upliftment of its human resources. In support of the government's nationalization initiatives, TRA has been efficiently investing in local skilled workforce development, and involving them in the sector mainstream, aligning the development plans with its own strategic priorities as an organization.

In 2018, TRA increased its local workforce percentage to 86. Female participation also improved further, constituting 44% of the total TRA employees. The Authority is committed to its culture of transparency and will continue to engage industry stakeholders with the expectation of full collaborative commitment of all parties to meet the Government's vision as outlined in the Fourth National Telecommunications Plan.

SH. NASSER BIN MOHAMED AL KHALIFA ACTING GENERAL DIRECTOR

EXECUTIVE MANAGEMENT



SH. NASSER BIN MOHAMED AL KHALIFA
ACTING GENERAL DIRECTOR



SH. MOHAMED BIN SALMAN AL KHALIFA
DIRECTOR OF FINANCE, INFORMATION
TECHNOLOGY & HUMAN RESOURCES



MOHAMED ALBINALI
DIRECTOR OF MARKET AND
COMPETITION



MOHAMED ALNOAIMI
DIRECTOR OF TECHNICAL & OPERATIONS



DR. JEAN PIERRE SCERRIACTING DIRECTOR LEGAL AFFAIRS





THE JOURNEY THUS FAR A LOOK BACK



TELECOMMUNICATION LAWS

A crucial need for progress in the telecommunications sector arises, thus the Telecommunications Regulatory Authority was established, and the Telecommunications Law was implemented for the first time in Bahrain.

TRANSPARENCY

With our launch, a newfound approach to the telecommunications industry was revealed. Our dealings brought about a clearer perspective to the oft-confusing world of telecom. We adopted an; Open Dialogue policy that encouraged interaction and feedback by exchanging ideas.

Additionally, we simplified and clarified the processes in the sector, by making a lot of our information public. With fixed lines in the country growing from 175 thousand to 185 thousand in one year and mobile customer penetration at 45%, this approach aimed to build consumer trust through transparency.

The next step to create a healthy telecommunication environment was our implementation of the liberalization plan. This plan provided the country with an opportunity for economic advancement since different sectors could converge and create new business prospects, as well as more global exposure for Bahrain.

We provided 18 licenses in the year; encouraging the growth of the telecommunication market to BD152 million and making it the fourth impactful industry in the country.

At the end of 2003 the second telecommunication operator license was granted; MTC-Vodafone began to function, and for the first time in Bahrain there was actual competition in telecommunications.

FULLY LIBERAL

With the plans set and the telecommunication market becoming more of a level play field, 2004 provided operators with an opportunity to shine. The launch of a second mobile operator in the Kingdom of Bahrain breathed new life into the market; providing consumers with the ability to choose. This historic move created a more transparent environment for all telecommunications stakeholders.

The impact was extensively evident; mobile penetration rose from 45% to 57%, broadband internet penetration was at 20%, and fixed lines rose to 191,553 thousand. With a steady growth of revenue at 5% the role of telecommunications in the Kingdom of Bahrain became essential.

Interconnection was also an area of interest, since it was crucial for all operators to link to their networks. Without effective interconnection the subscribers of one network would not be able to communicate with another.

This created a larger pool of cross network opportunity. Keeping consumer interest at heart, we implemented the numbering initiative that introduced 8 digits to the public and laid the foundations for current and future expansion of lines.

We also introduced the pre-carrier selection where by the consumer now had a choice to pick which carrier they wanted, and supported this by initiating educational telecoms campaigns to create awareness among the public. By July 2004, we could announce in confidence that the telecommunication sector had been fully liberalized, as we had met each of our milestones head on in a transparent manner.

BUILDING COMPETITION

Pushing connectivity and progress forward we granted the license to Bahrain Internet Exchange. Although Bahrain Internet Exchange (BIX) began to operate the kingdom's Internet connection point in 2004, full effects were felt in 2005. BIX acted as the hub for Internet connectivity and traffic within the kingdom.

This license established an advanced, competitive offering in the kingdom aimed at reducing costs of connectivity and increasing Internet usage. Not only did these initiatives change the telecommunications market; it provided job opportunities for Bahraini residents which resulted in a 20% increase in the sector.

During this active year a panel of industry experts was commissioned to analyze and review our current performance. The panel recommended working towards a more robust framework to allow more access to new operators and increasing consumer protection by directly communicating to them.

This is where we decided to bring consumer awareness to the forefront of our activities and we launched our first consumer campaign. Since mobile penetration in 2005 rose to from 57% to 81% this year, awareness amongst younger and older generations became crucial, so we moved to educate them about the uses of mobile phones.

CONNECTING THE KINGDOM

From a base of BD152 million in 2003, the telecommunications industry generated BD253 million in 2006; equivalent to annual average growth of about 20%. At this point, focus has shifted solely on targeting the needs of the consumer. Realizing the importance of the end user we wanted to provide a means of dialogue that encouraged active participation.

When the campaign; Keep Asking was launched, the consumer finally had a voice in the market. We initiated a consumer helpline where by all users could dial in directly and provide their honest feedback on matters that could not be solved by their operator. This awareness push created a 35% increase in call-ins compared to last year.

To keep the consumer voice heard and our performance consistent various panels were invited again for a review, making sure our focus was clear and that nothing could deviate us from our mission as a regulatory authority.

The common goal of protection, fairness and transparency was being highlighted and referred to consistently. Also, as number of internet subscribers rose incredibly in 2006 to 38,628 from 21,432 in 2005, the idea of protection and education became something that we wanted to encourage when surfing the net.

In conjunction, we commissioned a Consumer Advisory Group to provide feedback on issues that the Bahraini consumer had. As consumer confidence soared, a more solid relationship began to surface between the public and the TRA.

A WIRELESS NATION

2007 showed great signs of growth. Internet revenues rose 13% to 5.4 from 4.8 million, mobile penetration was 107% and Bahrain had one of the highest penetrations in the GCC comparing well with their European counterparts.

As Bahrain moved forward, the hunger for innovation in the telecommunication industry provided an opportunity for us to license two operators with national fixed wireless services successfully.

This meant that with two more providers for national fixed services the market was injected once again with healthy competition and greater choice.



FOSTERING GROWTH

In 2008, we updated our direction and published the second National Telecommunications Plan. Although there has been growth of 11.6% in total telecommunications revenues during this year, as well as 38% growth in the number of staff working in the telecommunications sector since liberalization in 2003; this document set out objectives for the Telecoms sector that needed to be implemented in the next three years.

Removing barriers to competition, encouraging investment within the country, and developing a regulatory framework were just some ways we sought to make communication more efficient and reliable within the kingdom.

The telecom landscape began to change as the new National Telecommunications Plan set the primary objectives for the kingdom. the Strategic and Retail Market Review; published in 2007, set the milestones for the year and the market began to prepare itself as the prospect of a third mobile operator was on the horizon.

REAPING SUCCESS

By 2009, we began to establish ourselves as a forward thinking authority; resulting in our efforts being regionally recognized by both CommsMEA and SAMENA Telecoms Council.

This was when TRA Bahrain would stand out with the best and most progressive regulator of the year awards. These awards were acknowledgment for our efforts in regulating the market, introducing healthy competition and creating choice for our consumers throughout the years.

The data provided in 2009 was a testament to our efforts in telecommunication. Mobile subscribers had increased steadily since 2005.

By 2009, there were over 1.24 million mobile subscribers in the Kingdom of Bahrain from 300,000 in 2002. International traffic grew by 55% between 2008 and 2009, so the challenge at this point was to maintain this consistency and progression by opening up more channels of opportunity for the kingdom and its people.

One of these important steps was opening up the market for new mobile operator bids. The introduction of a third party provided a broader spectrum of telecommunications opportunities that were available to the public, a fact which encouraged operators to drive telecommunications innovation to greater heights. Another was to break the barriers of number portability which we began working towards at the end of the successful year. This way we could encourage the operators to perform at their best; guaranteeing greater value for the consumer.

EDUCATING THE PUBLIC ON VARIETY

The year 2010 proved to be lucrative in many respects. The launch of a third mobile operator in the kingdom was the most significant step towards open competition. STC (Saudi Telecommunications Company) launched VIVA; their arm into Bahrain, and the challenge of innovation was set in motion for the three existing operators. Each company went head to head; trying to launch the newest products and driving the telecommunication industry into dynamic growth. The new challenge propelled the importance of our role in the sector.

Between 2009 and 2010, the number of broadband subscribers increased by 19%. Now was the time to push education and clarity of the telecommunications world to the end

The introduction of the online safety initiative provided an educational walkthrough of the Dos and Don'ts when surfing the Internet. The campaign maintained and attempted to grow the supportive relation-ship we had created with our consumers.

BREAKING BARRIERS

In 2011 the competitive barriers were eliminated with the successful launch of the, "I Love My Number" campaign, promoting more freedom and churn in the market. This initiative provided the consumer with the flexibility and power to move where they felt they could benefit the most.

A significant advancement for the operators came in the form of the Loop Unbundling initiative (LLU). This provided operators with fair access to infrastructure services.

With the Loop Unbundling initiative, we provided the necessary tools to all service providers and created more room for innovation by ensuring that there are no constraints for progress. The (LLU) also made sure that we provided fair and unbiased solutions for all operators in the market.

Moreover, our advancements continued their contribution to job creation. In 2011 approximately 2,700 employees worked directly in the telecoms sector. This showed a 50% growth in the number of employees since liberalization in 2003.

Once again, our efforts were recognized by SAMENA Telecom council as a beacon of determination, transparency and positive impact; landing us with telecom regulator of the year award.

THE CONSUMER AND THE **FUTURE**

2012 demonstrated a clear presence of progression. There were approximately 1.9 million mobile subscribers in Bahrain; representing a mobile penetration rate of 158%, as well as a gross turnover of BD406 million representing 4% of the Bahraini GDP. After the 3-year plan launched in 2009, it was time again to take a look at the regional and global telecom industry and evaluate Bahrain's telecommunication advancements and future challenges.

Market leaders came together with the government once more, and we published the third National Telecommunications Plan to establish short and long term objectives.

Focusing more on broadband initiatives and propelling the Internet as a center for business convergence, we saw e-commerce in the nation soar and global reach becoming more prominent.

These actions drew attention to the telecoms model the Kingdom was using and the environment we had fostered, which created another success story in the form of the-Economy award from the e-Government. 2012 culminated with the award of the "Regulator of the Year" from CommsMEA commending all our advancements and our active role in cultivating Bahrain's economy.

In keeping with the recommendations of the Third National Telecommunications Plan (3rd NTP), the TRA commenced the license award process for 4G mobile services in early 2013, and by Q1 2013, both Batelco and Zain had launched their commercial Long-Term Evolution (LTE) services.

To enable the provision of LTE based and any other services, in September 2013, additional spectrum have been allotted to the current three mobile operators via Managed Assigned Process.

TRA TIMEI

LEADERSHIP BEYOND BORDERS

One of the highlights of 2014 for the telecommunications industry and Bahrain came in the form of the 14th Global Symposium for Regulators (GSR14), which took place in the Kingdom of Bahrain under the auspices of the TRA.

Organized by the ITU's Telecommunication Development Bureau and hosted by the Government of Bahrain, under the patronage of HRH Prince Khalifa bin Salman Al Khalifa, the Prime Minister, the GSR14 saw the assembly of the largest gathering of the global regulatory community in Manama.

Over 700 leading specialists from 113 countries registered to attend the event, which also attracted approximately 80 leading participants, including government ministers, heads of regulatory agencies and industry chief executives.

An important show of confidence in Bahrain and the TRA, GSR14 was a landmark event for the industry on a global level as it allowed for a review and working discussions of telecommunications developments and futuristic planning in addition to the conclusion of supportive agreements.

EDUCATING THE PUBLIC ON VARIETY

TRA has always enabled healthy competition in the local telecommunications market and empowered consumers with greater choice and a generous array of services.

Moreover, TRA's focus has been, and shall continue to be, on the consumers.

Listening carefully to their complaints and trying to resolve them was a primary role of the Authority and indeed, 2015 attests to the TRA's dynamic efforts to follow such a customer-focused direction. In 2015, the TRA also reaped the success of its endeavors when it was proclaimed the best regulator of year for the 10th edition of the annual CommsMEA Awards.

This award, won by the TRA in Bahrain for the 5th time, acknowledged the regulator's accomplishments in cultivating an environment in which the telecommunications sector across Bahrain was able to flourish

GLOBAL ACHIEVEMENTS LOCAL TALENTS

The year 2016 witnessed an influx of change and a culture of transformation across the sector. TRA paved the way towards the adoption of sustainable solutions and best practices across the sector, through collaborative sharing with local ministries, telecom providers, and global market sector leaders.

Workshops for TRA people and industry professionals were conducted towards the goal of cultivating a culture of positive values and transformation in the sector.

Market indicators also revealed steady growth in the revenue of the sector. On a parallel track, the year presented new opportunities for consumers with high-capacity solutions on network coverage, quality of service, cyber security and safety, billing, choice of provider, likewise the year presented new opportunities in the industry and ways to overcome challenges

The year sustained the steady stream of effective policies and regulatory actions established over the previous years, which drastically stimulated competition in the sector, and resulted in price reductions, innovative communications services improved consumer experience.

A notable achievement of the year is the highest accolade received as First Place Winner for Employer of the Year in the Public Sector category at the MENA HR Excellence Award, 11th Human Capital Forum MENA.

TRA also reached an important milestone when Bahrain was ranked 11th globally in the telecommunications infrastructure index compared to 24th in 2014, according to the United

Nations' e-Government Readiness Report published in July 2016, wherein Bahrain also maintained its lead in the Arab region's ICT Index.

DRIVING DIGITAL DEMAND

In view of the Kingdom's ever-evolving demand for telecommunications services, TRA responded by prioritizing investment in new high-speed, converged ICT eco-system, with advanced, futuristic services such as 5G, the Internet of Things (IoT) and Machine-to-Machine (M2M) communications, under the auspices of the 4th National Telecommunications Plan (NTP4).

Plans and initiatives were consistently implemented, to address critical areas such as international supply, digital security and barriers to entry; in line with the TRA 'FOCUSED' strategy and the vision to transform the Kingdom of Bahrain into a fully 'Digital Economy'.

Fostering effective and sustainable competition; establishing ubiquitous ultra-high speed networks; and security & cyber safety remained the important ongoing objectives for TRA.

AN EVERMORE DYNAMIC & EFFICIENT INFRASTRUCTURE

The year 2018 was defined by the TRA's efforts and commitment to further enable the telecoms industry for deploying state of the art infrastructure and networks capable of delivering next generation services to the public.

The authority developed and amended a number of regulations; the highlight being the 'New Regulatory Framework' to give effect to the key objective of NTP4: establishing the National Broadband Network ("NBN") supported through a single fixed fibre network, and regulate the deployment and rectification of the telecommunications towers in accordance with international best practices.

A 5G Working Group (5G WG) chaired by TRA was constituted, for developing and implementing the action plan for the initial introduction of 5G commercial mobile networks in Bahrain.



TRA THROUGH 2018



TRA fosters telecom tower sharing initiative with new regulatory framework; commences approvals of applications for the deployment of new public radio-communications stations (telecommunication towers) in various areas in Bahrain.

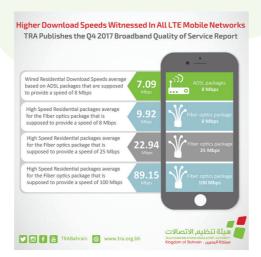


TRA holds event to **honor** its new joining members for having successfully completed the culture transformation program as part of TRA's commitment to striving for excellence. The program consisted of training in hard and soft skills, in addition to equipping them with knowledge and expertise in **EFQM** based excellence models.



The Telecommunications Regulatory Authority (TRA) publishes its 'Mobile Quality of Service Report' for year 2017, surveying the most popular mobile services in Bahrain including web browsing, popular apps use, video playback, data transfer, SMS and voice calls, under a variety of testing conditions, such as indoor and outdoor

JANUARY.....FEBRUARY.....FEBRUARY



TRA Publishes the **Q4 2017 Broadband** Quality of Service Report. Higher download speeds with all LTE mobile operators, the key highlight among others.





TRA along with global cybersecurity company, Kaspersky Lab, embarked on a series of interactive cybersecurity roadshows in schools in Bahrain aimed at raising awareness about the threats that await children on the Internet and effective ways to respond to them.



Ministry of Interior pays TRA a visit to learn about their experience in

The Telecommunications Regulatory Authority (TRA) of the Kingdom of Bahrain chaired a series of briefings with telecom operators to discuss the development of its New Economic Regulatory Framework for a single fixed fibre network.



TRA organizes 'Lean Six Sigma Training' session for staff to provide an in-depth understanding of the widely-recognized Six Sigma methodology: the disciplined data-driven approach and process improvement techniques that eliminate defects in any process.



TRA meets with SAMENA Telecommunications Council to discuss ways of cooperation between the private and public sectors in the field of telecommunications.

MARCH.



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TRA Publishes 'Consumer Complaints and Call Center Statistics' for 2017 in conjunction with the World Consumer Rights Day; handled 942 complaints during 2017, with 95% success rate.

TRA Conducts the
First Meeting of
5G Frequencies
Working Group
(5G WG) to discuss
the efforts towards
setting the proper
plan and conducting



the necessary preparations to secure the required spectrum for implementing the 5G networks in the Kingdom of Bahrain.



TRA participates in the Regional Workshop on **ICT Statistics** organized by ITU and MOTT Bahrain. The capacity building workshop aims to strengthen the capacity of countries to produce the national statistics needed for the indicators on telecommunications and ICTs.

The TRA Board of Directors holds its **first meeting** of the year. Key issues related to the telecommunications sector are discussed. The board praises TRA's significant efforts towards the 'Privacy and Data Protection Regulation', 'International Roaming Regulation', and achieving the NTP4 objective of establishing the single fixed fibre National Broadband Network.





TRA participates in **Ahlia University** Careers Expo



TRA celebrates 'Family Day' at its headquarters

APRIL



TRA delegation visits the **UAE Telecommunications** Regulatory Authority (TRA UAE); is briefed on the best practices and strategies related to the management of licensing and regulatory affairs, finance, spectrum, human resources, and customer happiness.



TRA, in collaboration with the training firm Terrapin, holds **'5G Masterclass Training Course'** for its employees and licensed telecom companies, giving an overview about the 5G services, usages and benefits.

TRA holds 'VAT for Telecoms
Workshop' in collaboration with KPMG. The workshop discussed VAT; its fundamental aspects; and its application and impact on businesses and industries.





TRA Holds **Second Industry Working Session** with mobile network operators ("MNOs") to discuss key milestones achieved in the development of the 'New Economic Regulatory Framework' and the Batelco separation project.



TRA participates in the **ITU-T** Study Group 3 meeting, in the capacity of Vice Chair. The meeting focused on regulatory and economic aspects, witnessed presentation of over 88 contribution and working documents, and a participation of over 100 delegates from 58 different member states and sector members.

TRA holds workshop on its latest consumer protection regulation



MAY.....

TRA **issues statistics** on telecommunications equipment imported into the Kingdom of Bahrain within the 1st quarter of 2018; over a quarter of a million telecom devices Imported.

TRA extends SIM registration deadlines for postpaid subscriptions by 3 months, to September 2, 2018. Advises subscribers to complete registration and avoid deactivation.





TRA officially inaugurates new 'Telecom Mast Permitting Office', which will be responsible for regulating and rectifying telecom towers. The office will coordinate with relevant government bodies to obtain required permits and No-Objection Certificates, for the deployment of telecom towers.



TRA Acting General Director Sheikh Nasser Bin Mohamed Al Khalifa has a bilateral meeting with ITU-D Director Mr. Ebrahima Sanu. The meeting shed light on the joint collaboration at regional and international levels as well as the future of changes in the telecommunication industry.



TRA participates in the 'SAMENA Leaders' Summit' in Dubai. The one-day leadersonly event focused on private and government partnerships and collaboration within the ICT industry.



including 5G, Al, IoT, and cloud computing, in collaboration with leading global ICT infrastructure provider, Huawei.

TRA holds a technology focused workshop in collaboration with Bird & Bird, an international law firm focused on technology. The workshop explored how



Telecoms Service Providers were competing, or cooperating with 'Over The Top' Service Providers (OTTs).



TRA organizes **Tropical Summer** themed event for staff at its headquarters.

TRA organizes **health checkup** camp for its employees at its headquarters.





TRA celebrates the festive spirit of the holy month of Ramadan. Organizes Ghabga for its staff.

JUNE

TRA Board of
Directors hold their
second meeting. Key
issues related to the
telecommunications
sector were discussed
including progress of
the NTP4 objective of



establishing the single fixed fibre National Broadband Network, and issues related to regulating and rectifying telecoms towers.

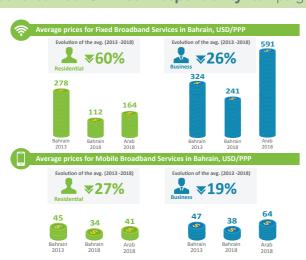


TRA **celebrates Eid el Fitr** with employees at its headquarters.

TRA launches 'I'm roaming ready' campaign.

JULY

TRA launches 'Your Sim Your Responsibility' campaign video.



TRA publishes a report on the **'Retail Price** Benchmarking Study of Telecommunications services in Arab countries for 2017'. TRA carried out the study on behalf of the Arab Regulators Network (AREGNET). Broadband prices in Bahrain compare very well regionally, according to the study.

AUGUST.....

TRA reminds subscribers to **register their post-paid SIM** cards before the deadline. Also warns non-compliance shall lead to suspension of the service on a temporary basis initially, and final deactivation by December 2, 2018.

TRA digitally launches its Annual Report for the year 2017.



TRA celebrates **Eid el Adha** with employees at its headquarters.

TRA holds "Did You Know!" awareness initiative which aims to create an environment that boosts TRA's staff general knowledge about any topic that is not related to their work.

TRA launches 'Know Your Rights' campaign.

SEPTEMBER

TRA issues **'Regulation'** on Permitting, Installation, Upgrading and Maintenance of Public Radio-communications Stations (PRS).

TRA issues warning against Scammers, in general public interest.

TRA Publishes updated 'Quality of Service' Regulation (QOS) as part of its efforts to protect and empower consumers, applicable to all licensed operators in the Kingdom. The amendments to the regulation sets out key QoS targets for licensed operators to achieve in delivering services to consumers.

The Board of Directors hold their **third meeting**. Key issues discussed included the progress of the projects related to the Spectrum Award and Batelco Separation. The board hailed TRA's 'Telecoms Masts Rectification Plan'.





TRA hosts **staff gathering** at its headquarters.

TRA attends the
4th Arab States
Preparatory
Meeting in Riyadh;
organized by the
Communications
and Information
Technology
Commission, KSA,
in preparation of
the forthcoming
ITU Plenipotentiary
Conference in Dubai,
UAE.





TRA organizes motivational session for its staff, featuring prominent Bahraini businesswoman and real estate expert Eman Al-Mannai, under the "Did You Know!" initiative.

As part of the **'Know Your Rights'** campaign, TRA launches its event at the **Avenue Mall** to raise visitors awareness on the rights included in the recent published regulations of Consumer Dispute & Consumer Protection.

OCTOBER.

TRA hosts the **16th Annual Arab Regulators Network (AREGNET)** meeting.
Preceded by a workshop organized in association with the International Telecommunications Union (ITU), the 2018 AREGNET workshop placed emphasis on Machine to Machine (M2)



on Machine-to-Machine (M2M) communications and Internet of Things (IoT).

TRA '2018 Mobile Quality of Service Report' audit campaign Begins. TRA organizes workshop with mobile telecom operators from around the Kingdom to discuss upcoming audit on



mobile billing, network coverage, and quality of services in Bahrain.

TRA issues warning against Scammers, in general public interest.

TRA, represented by its **Cyber Security** Directorate, participates in the Regional Cybersecurity Week 2018 for the Arab Region in Kuwait.



During the summit, TRA is nominated to represent the Arab Region within ITU-T Study Group 17 for Cyber Security.



TRA Awarded
"Finance Team of
the Year – Public
Sector", at the 'CFO
Strategies Forum
MENA', in Dubai,
UAE; organized by
Naseba, a regional
consultancy firm with
expertise in business
facilitation.

TRA holds a session on **self-management** with prominent psychiatrist and addiction therapist Dr. Sharifa Swar, under the **"Did You Know!"** initiative.



TRA organizes a breast cancer awareness session with **'Think Pink Bahrain'**, a charity dedicated to breast cancer research.

TRA Holds Workshop on **Leadership Program** in Cooperation with Global Executive Education and Bahrain Institute of Banking & Finance (**BIBF**).





TRA Participates in The International Telecommunication Union's (ITU's) 20th **Plenipotentiary Conference held (PP-18)** in Dubai, UAE. Held every four years, the conference is the highest decision-making body of ITU, the United Nations specialized agency for ICTs. More than 2500 participants attended the PP-18.

NOVEMBER

TRA launches video call service for its Consumer Call Center, allow android users to initiate video call directly to TRA's Consumer Call Center: 81188 to submit their complaints and enquiries.





TRA Wins

"Excellence in
HR- Employer
of the Year"
Award, at the
2018 Future
Workplace
Awards, in
Dubai, UAE.



TRA wins CommsMEA's
"Regulatory Initiative of the
Year" Award for 2018, at the
13th Annual CommsMEA Awards
in Dubai, UAE. The award was
conferred in recognition of
the TRA's efforts in developing
Public Radio-communications
Stations Regulation aiming
at ensuring secure and
advanced telecommunications
infrastructure.

TRA launches **"16 Years of Achievements video"** marking its 16th anniversary

NOVEMBER



TRA conducts **blood donation** drive for its staff, in collaboration with BDF Hospital.



TRA honors its team who worked on organizing and coordinating the **16th Annual AREGNET Conference** hosted by TRA in the Kingdom of Bahrain.

DECEMBER.

TRA launches new integrated complaint and inquiry management system in order to maintain effective communication between TRA, consumers and the telecommunications service providers.

TRA publishes its latest 'Market Indicators Reports' measuring the performance and development of the telecommunications sector. The reports include the Market Indicators in the Kingdom of Bahrain, the Arab Price Benchmarking Study and the Residential Market Survey.



TRA Sponsors the **Arab ICT Forum** as a 'Platinum' partner. Shedding light on the latest developments of ICT, the forum was held under the auspices of the TRA Chairman of the Board, Dr. Mohammed Al Amer, and organized by the Bahrain Society of Engineers.



TRA Board of Directors hold the **4th and last meeting** of the year. Hailing the Bahrain telecommunication sector progress, the board praised TRA's outstanding efforts and contribution in its growth and development.



TRA celebrates Bahraini Women's Day at its headquarters. Awardwinning Bahraini businesswoman Ms. Huda Janahi meets TRA staff on the occasion.

The ITU 2018 'Measuring the Information Society Report' for the price baskets of capped fixed broadband services, declares Bahrain to be having the most value for money fixed broadband services in the Arab States.

TRA Participates at the BIC National Day Festival

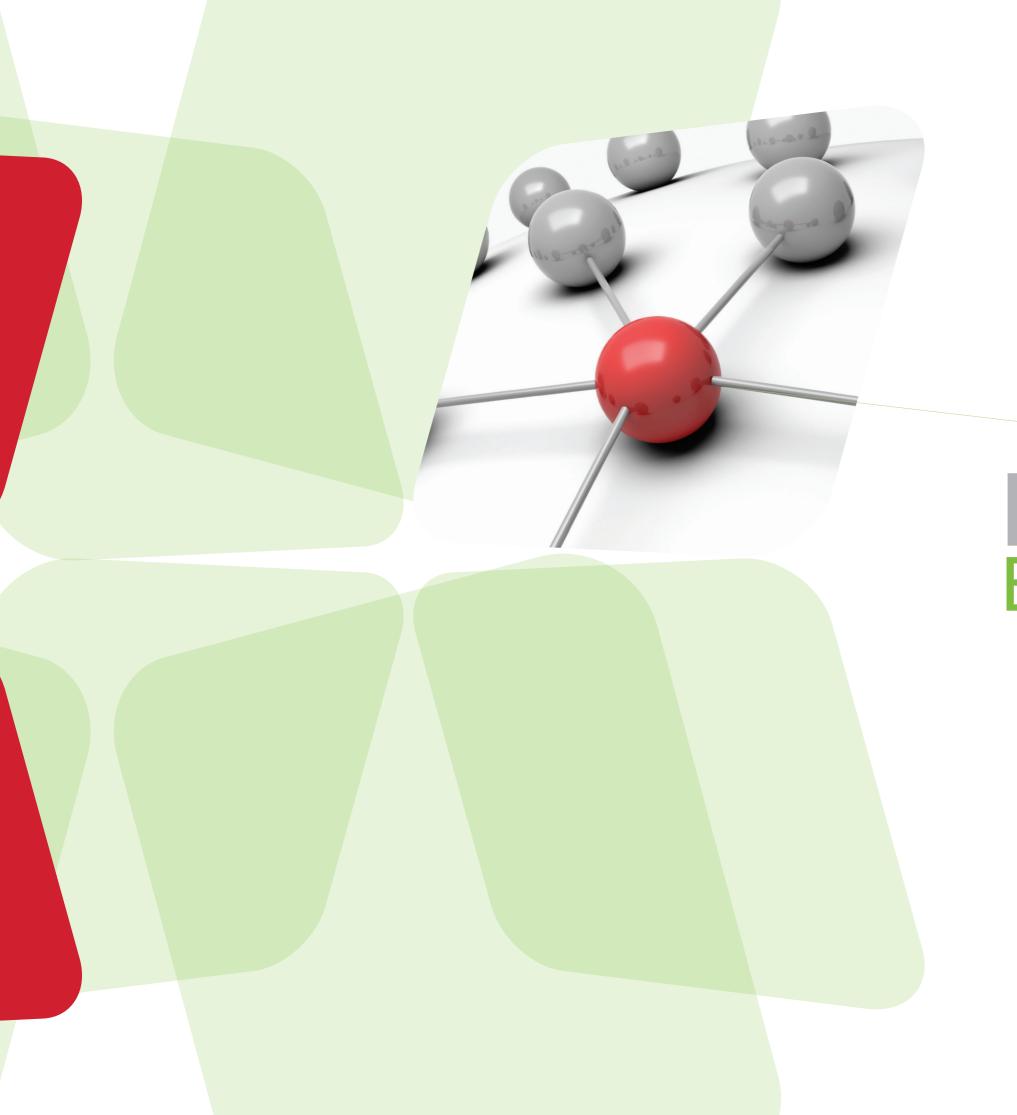


TRA advises consumers not to engage with scams messages and fake links.

TRA celebrates **National Day**









THE MARKET INDICATORS AND

QUALITY OF SERVICE



TRA exerts significant efforts to protect the interests of subscribers and promote an effective and sustainable competition between the operators. It also supports the execution of the Government's policy to maintain the Kingdom's position among the developed countries regionally and internationally in the main ICT indicators. This will highly recognize the Kingdom's economy as one capable of adapting to future changes.





With TRA's focus on constantly improving the quality of services, lowering the prices, and driving innovative technological advancements, to deliver the consumers the very best, the Kingdom's telecommunications sector witnessed continuous competition and achievements in providing diverse and high-quality telecommunications services.

Consistent decline in prices for services, has been expanding the reach of telecommunications services to a larger segment of citizens and residents in the Kingdom, thus contributing further to the significantly high penetration rates of telecommunications services in Bahrain which have constantly remained among the highest rates globally, over the past several years.

According to the Global Competitiveness Report published by the World Economic Forum in October 2018, Bahrain ranked 3rd globally in internet user percentage at 98%; 5th globally in mobile broadband penetration rate (147.3%); and 10th globally in mobile penetration rate (158.4%).

The TRA 'Mobile Quality of Service Report' for the year 2017, concluded the nationwide network coverage for all operators had met the license requirement of 99% population coverage across the kingdom in outdoor use of mobile services whether through calls or data usage, on both 3G and 4G handsets.

The average download throughput rate increased 25% in 2017, to 37.3 Mbps, compared to the 29.8 Mbps in 2016. Rate of perfect calls also increased to 99.3% in 2017, from 96.3% in 2016. On 4G networks, 96% of the webpages downloaded within 10 seconds.

The 'Retail Price Benchmarking Study of Telecommunications Services in Arab Countries' for 2018 revealed that based on a set of agreed baskets, the prices of fixed and mobile broadband services in Bahrain compared very well regionally. Mobile services prices had fallen by up to 27% between 2017 and 2018, and up to 54% between 2013 and 2018. The prices of fixed broadband services also dropped by up to 7% between 2017 and 2018, and up to 82% between 2013 and 2018.

The study also showed that all the mobile packages in Bahrain had data service in addition to the voice services, while confirming that the mobile operators in Bahrain offered more competitive prices compared with other GCC countries.

The decline in prices, has resulted in subscribers migrating to higher internet speeds. According to the reports, in 2017, 84% of fixed broadband subscribers were provided with internet speeds equal to or more than 10 Mbps compared with only 10% in 2013. Moreover, the use of internet data has also doubled seven times between 2013 and 2018.

The data allowance provided with the packages also increased significantly in 2017. 46% of plans had data allowances over 10GB in 2017 compared to 9% in 2016. The large increase in the data allowance was a response to the increase in the data usage.

Based on the latest market data, the average monthly outgoing mobile domestic voice minutes per customer increased by 5%, while the average mobile data usage increased by approximately 21.3% over the period 2017-2018. Average monthly data usage

for Bahrain in 2018 reached 11.5 GB compared to 2 GB in 2013, a growth of 5 times. Moreover, 74% of mobile subscribers had an active data subscription by the end of 2018 compared to 50% in mid of 2013.

Higher Download Speeds with All LTE mobile operators were also confirmed by reports. Wired Residential Download Speeds averaged at 7.09 Mbps based on ADSL packages that were supposed to reach a speed of 8 Mbps, while High Speed Residential packages varied at a 9.92 Mbps Average for the Fiber optics package that was supposed to reach a speed of 8 Mbps; 22.94 Mbps Average for the package that was supposed to reach a speed of 25 Mbps; and 89.15 Mbps Average for the package that was supposed to reach a speed of 100 Mbps.

Owing to better and cheaper services, 83% of respondents reported satisfied with their overall mobile services in 2017 and 85% were satisfied with their overall broadband services, in the Kingdom.

With significantly increased number of subscriptions and the volume of usage, the telecom sector's revenue maintained its level. According to 2017 data, the telecommunications services revenue reached BD 426 million. Moreover, operators continued to invest in the sector to provide the latest technologies and best services; the investment volume reaching BD 54.1 million, indicating continuous investment and competition in this sector.

NUMBER OF **MOBILE SUBSCRIPTIONS** IN 2018 2.09m | 139% Penetration rate



	2014	2015	2016	2017	2018
Total	2.33m	2.54m	2.99m	2.36m	2.09m
% of Prepaid	78%	78%	81%	74%	69%
% of Postpaid	22%	22%	19%	26%	31%

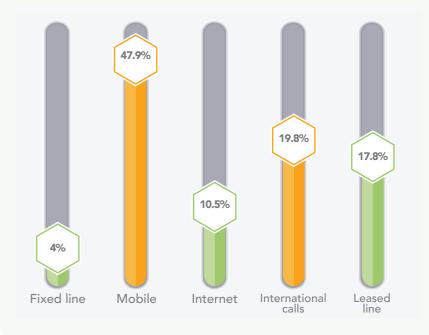
NUMBER OF FIXED **TELEPHONY SUBSCRIPTIONS**IN 2018 (WITHOUT ISDN) 225,759m | 15% Penetration rate

	2014	2015	2016	2017	2018
Total	246,696	242,439	233,917	239,976	225,759
% of Fixed Wired	68%	73%	76%	80%	85%
% of Fixed Wireless	32%	27%	24%	20%	15%

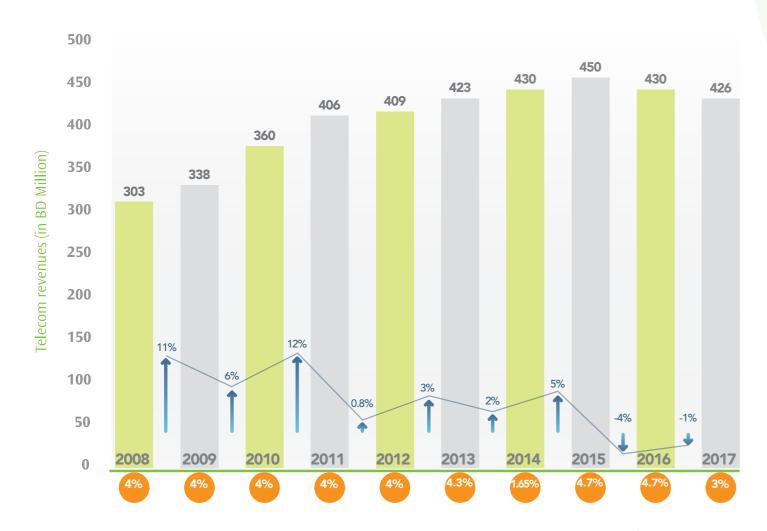
NUMBER OF **BROADBAND SUBSCRIPTIONS** IN 2018 2.16m | 144% Penetration rate



EVOLUTION OF RETAIL SERVICES **REVENUES**BY SEGMENT 2017



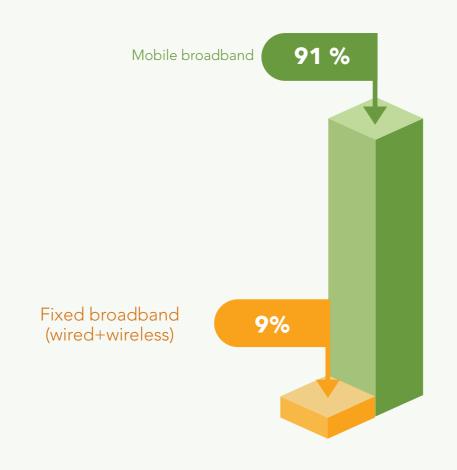
TELECOM SECTOR REVENUES (in BD million)



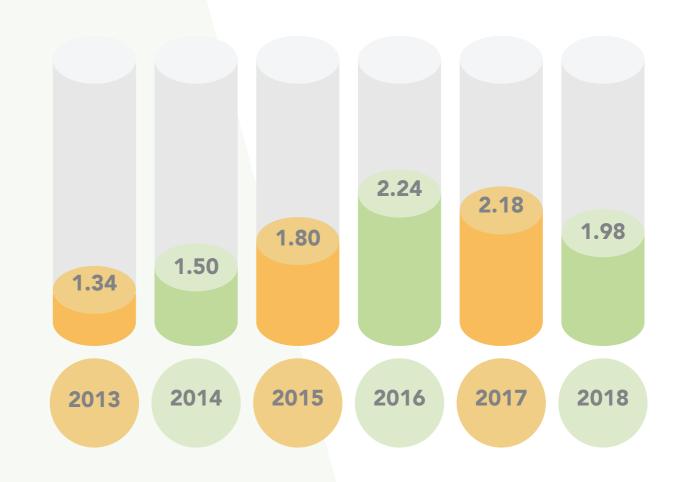
Percentage contribution to GDP*

→ Revenue percentage growth

PROPORTION OF BROADBAND SUBSCRIPTIONS BY ACCESS TYPE 2018



MOBILE BROADBAND SUBSCRIPTIONS (in million)

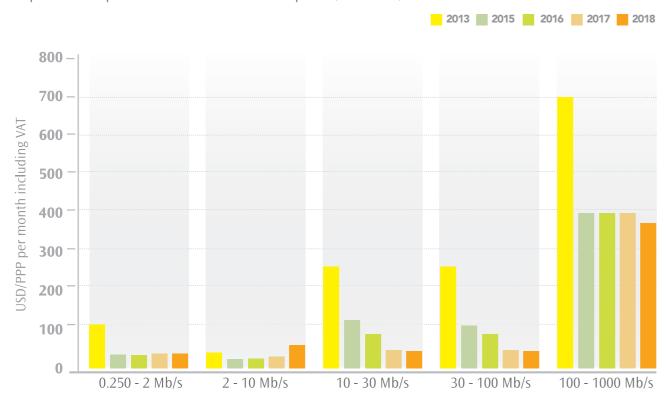


ANNUAL DATA CONSUMPTION (petabyte)



RESIDENTIAL FIXED BROADBAND TIME SERIES FOR BAHRAIN, OECD BASKET

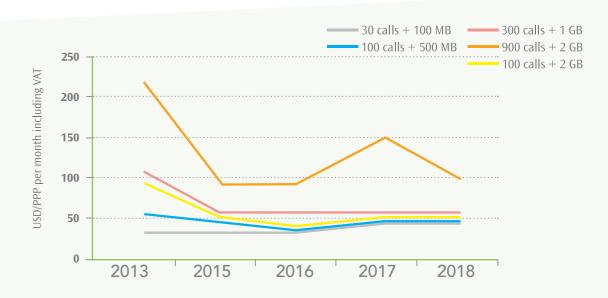
up to 82% drop in residential fixed broadband prices (2013-2018)



OECD MOBILE BASKET TIME SERIES FOR BAHRAIN

(Voice, Messages & Data)

up to 54% drop in the prices of mobile telephony with data services (2013-2018)



FURTHER REDUCTION IN GCC **DATA ROAMING** RATES IN 2018 (Fils/min)

International calls made within GCC







National calls made within GCC





BAHRAIN VS GCC/ARAB NATIONS TELECOM SERVICES PRICE COMPARISON







	Bahrain results compared to GCC averages	Bahrain results compared to Arab averages	Bahrain results compared to OECD averages
PSTN (Low usage)	Ø	Ø	Ø
PSTN (High usage)	Ø	0	\Rightarrow
Mobile (Low usage)	\ominus	=	(
Mobile (High usage)	Ø	Ø	(
Fixed broadband (Low speed)	Ø	Ø	
Fixed broadband (High speed)	Ø	0	(
Mobile broadband (High speed)	Ø	⊘	(
Mobile broadband (High usage)	Ø	Ø	(
Leased lines	$\boldsymbol{\ominus}$	•	*

^{*}Only 2 Mb/s speed can be compared with the OECD data.

Q4 2017 BROADBAND QUALITY OF SERVICE REPORT

Higher Download Speeds Witnessed In All LTE Mobile Networks TRA Publishes the Q4 2017 Broadband Quality of Service Report Wired Residential Download Speeds average 7.09 Mbps based on ADSL packages that are supposed 8 Mbps to provide a speed of 8 Mbps High Speed Residential packages average 9.92 for the Fiber optics package that is supposed to provide a speed of 8 Mbps High Speed Residential packages average 22.94 for the Fiber optics package that is 25 Mbps supposed to provide a speed of 25 Mbps High Speed Residential packages average 89.15 for the Fiber optics package that is supposed to provide a speed of 100 Mbps

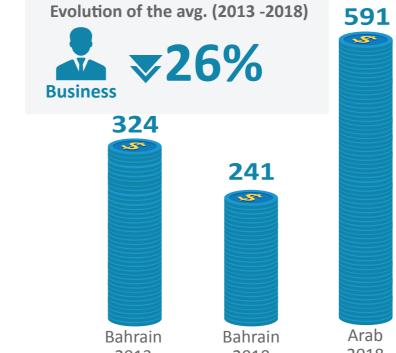


BROADBAND PRICES IN BAHRAIN COMPARED VERY WELL REGIONALY



Average prices for Fixed Broadband Services in Bahrain, USD/PPP

Evolution of the avg. (2013 -2018) ₹60% Residential

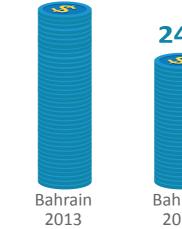












2018 2018



Average prices for Mobile Broadband Services in Bahrain, USD/PPP

Evolution of the avg. (2013 -2018)







34 Bahrain 2018











MAIN TELECOM INDICATORS

SERVICES OFFERED BY ACTIVE OPERATORS

	2013	2014	2015	2016	2017	2018
TELECOMMUNICATION SECTOR REVENUE (MILLION)	422.766	430	450	430.6	426	NA
CONTRIBUTION TO GDP	%4	%4	%4	%4	%3	NA
Number of mobile subscriptions	2,210,190	2,322,860	2,533,208	2,994,865	2,364,477	2,092,714
-with penetration rate	%176	%177	%185	%210	%158	%139
-pre-paid percentage	%80	%78	%78	%81	%74	%69
-post-paid percentage	%20	%22	%22	%19	%26	%31
Number of fixed telephony subscriptions	251,643	246,696	242,439	233,917	234,709	225,759
-with penetration rate	%20	%19	%18	%16	%16	%15
-Fixed wired percentage	%65	%68	%73	%76	%79	%85
-fixed wireless percentage	%35	%32	%27	%24	%21	%15
Breakdown of retail services revenue:						
Fixed line services	14,166,167	13,100,093	12,112,641	11,033,429	12,409,383	NA
Mobile services	127,080,948	119,413,422	116,709,642	113,391,639	148,494,966	NA
International calls - Mobile IDD	70,171,137	68,927,930	57,206,806	41,995,989	29,161,667	NA
International calls - Fixed IDD	4,143,910	3,299,998	2,959,444	2,403,455	2,034,475	NA
International calls - Other	6,635,125	4,433,464	3,258,635	2,606,238	1,550,252	NA
Internet services	41,030,580	46,034,619	59,316,350	59,128,005	61,422,731	NA
Leased line services	45,823,586	54,045,808	58,135,613	54,565,145	55,240,920	NA
Total	309,051,454	309,255,334	309,699,130	285,123,899	310,314,394	NA
Evolution of retail services revenues by segment						
Fixed line	%5	%4	%4	%4	%4	NA
Mobile	%41	%39	%38	%40	%47.9	NA
Internet	%13	%15	%19	%21	%10.5	NA
International calls	%26	%25	%20	%16	%19.8	NA
Leased line	%15	%17	%19	%19	%17.8	NA
Broadband subscriptions	1,507,067	1,677,784	1,977,602	2,407,408	2,373,306	2,160,324
Population (As per 2018 IGA publication)	1,253,191	1,314,562	1,370,322	1,423,726	1,501,116	1,503,091
Broadband penetration	%120	%128	%144	%169	%158	%144
Broadband subscriptions by access type:						
Fixed wired subscriptions (e.g ADSL and fibre)	%3	%3	%4	%3	%4	%5
Fixed Wireless subscriptions (e.g. WiMax)	%8	%7	%5	%4	%4	%4
Pay-per-use mobile broadband	%34	%34	%25	%24	%22	%10
Standalone mobile broadband (e.g. dongle, USB, tablet)	%14	%15	%18	%14	%13	%19
Add-on broadband to voice	%41	%41	%48	%55	%57	%62
Mobile Broadband – 2018	1,332,055	1,505,311	1,799,303	2,238,233	2,179,162	1,976,330
Annual data consumption (Petabyte)	NA	119	193	292	452	565
Male	2,149	2,174	2,311	2,316	2,061	NA
Female	806	851	895	914	853	NA

Operator Name	National Fixed	International Calls	Mobile	Internet	Leased line	Other data service	Others
Ascentech telecoms		√					
Batelco	✓	✓	✓	✓	✓	√	
Bahrain Internet Exchange						✓	IP Transit –Peering – Colocation - Lawful Intercept - Number Portability- IPLC
BT Solutions LTD					√	√	
Equant Global Network - EGN BV					1		IPVPN
Etisalcom Bahrain	✓	✓		✓	✓		MPLS
Gateway Gulf				1			Data Center Co-location & Services Provider
Golden Sands Electronic & Phone							Bulk SMS
Gulf Electronic Tawasul					√		
IMC							International calls through wholesale
Infonas	✓	✓		✓	✓	✓	
Kalaam telecom	✓	✓		✓	✓		
Mada Communication					✓		International Transit voice services
Menatelecom	✓	✓		✓	✓	✓	
Moving Gulf Telecom		✓					
Northstar Technology		✓		✓	✓		
Nuetel Communications	✓	✓		✓	✓	✓	IPTV - ICT
Orbit Data Systems				✓			
Rapid telecoms	✓	√		✓	✓	✓	
Sita						✓	
Viacloud	✓	√		✓	✓		
Viva Bahrain	✓	✓	✓	✓	✓		
Vodafone Enterprise Bahrain						√	IPVPN -Ethernet Wireline - Ethernet VPN
Zain Bahrain	✓	√	✓	✓	✓	✓	
Zajil					✓		







TRANSFORMING



ICT is set to change the way we live yet again for years to come. The pace of change has been unprecedented with new technologies continuously enabling us to reengineer our private and public sectors to become more efficient. But, further to that our productivity levels are set to rise faster because of this sector and its contribution across all other sectors."







The New Framework gives effect to the Government's Fourth National Telecommunications Plan ("NTP4") objective of establishing the National Broadband Network ("NBN"), which is supported through a single fixed fibre network.

Developed with the aim of improving the quality of services, lowering prices, and drive innovative technological advancements, the New Framework encouraged these improvements by ensuring that all operators compete on a level playing field in the provision of services to end users.

The Authority thoroughly discussed the development of the 'New Framework' with licensed operators, taking in their views/opinions about the same.

Another highlight of the 'New Framework' was regulating the deployment of new telecommunications towers and rectifying the existing ones in accordance with the best international engineering practices in order to ensure the optimal implementation of the provisions of the Prime Ministerial Decision No. 45 of 2015.

Based on the powers vested in the Authority through the Decision 45, the Authority also issued Regulation on permitting, installation, upgrading and maintenance of Public Radio-communications Stations (the "Regulation"), in coordination with the concerned government entities, to regulate the PRSs situation in the Kingdom of Bahrain.

The new regulatory framework enables the concerned operators

to effectively deploy new telecommunications towers and develop existing ones according to new permit procedures and engineering specifications agreed upon with the relevant government entities.

Focusing on both functionality and aesthetics, the new framework also mandates that telecommunications towers blend with and compliment the environment around them, while also encouraging shared usage of telecommunications towers among operators and limit the replication of towers without operational need.

The new regulatory framework will also ensure that all existing towers are gradually rectified within an appropriate period of time to comply with applicable laws and regulations.

With the advent of the framework, TRA commenced approvals of applications submitted by the telecommunications network operators for the deployment of new Public Radio-communications Stations (PRS) in various areas in Bahrain.

The regulation also engages the public in choosing the locations to deploy the PRSs, giving confidence to the public that the PRSs deployment is being regulated and monitored.

A new dedicated 'Telecom Mast Permitting Office', was officially inaugurated by the TRA, to carry out the approval processes and monitor the implementation of the telecom towers rectification plan to ensure that all towers comply with applicable regulations and requirements.

The Authority also developed and implemented the automated Radio-communications Stations Information Management System ("RIMS"), through which all applications for deploying telecommunications towers could be submitted and approved.

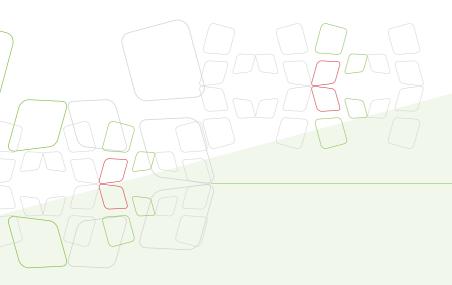
Fulfilling its commitment towards enabling the latest telecom

technologies, and enabling the Kingdom of Bahrain to be one of the leading countries in the region to launch the 5G network, a '5G Frequencies Working Group' (5G WG) chaired by TRA was formed to analyze and consider the commercial sector needs for spectrum required for establishing the 5G networks in cooperation with all the concerned government entities and accordingly setting the proper plan, and conducting the necessary preparations to secure the required spectrum for implementing 5G networks within the Kingdom.

The Working Group will also prioritize the frequency bands that are most likely to be used for operating the 5G networks according to the recommendations of the relevant international technical groups. Moreover, the Working Group will align its spectrum needs from the different frequency bands with the GCC, regional and European direction along with the outcomes of the World Radio-communications Conference-19.

Making its impressions on the global telecoms arena, Bahrain remained at the forefront in sharing expertise and exchanging views with the international telecoms community.

The International Planning Sub-committee entrusted TRA to lead and coordinate the activities related to the preparation of national positions on the Agenda Items (AI) 1.13 and 9.1 (issue 9.1.1) of the World Radio-communication Conference WRC-19. The Authority shared its reports about the Agenda Items 1.13 & 9.1.1 with Directorate of Wireless Licensing Frequency and Monitoring (DWLF&M), which were then submitted to the chairman of the GCC team for WRC-19 preparation.



TRANSFORMING

TRA was also nominated to represent the Arab Region within the ITU-T Study Group 17 for Cyber Security which was mainly attended by delegates and representatives from Member States, Sector Members and Associates to the Study Group 17 in the region.

TRA hosted the 16th Annual Arab Regulators Network (AREGNET) Conference in Bahrain. With emphasis on Machine-to-Machine (M2M) communications and Internet of Things (IoT). The Conference aimed at providing insight on new industry topics and strengthening the collaboration between Arab countries, on international issues related to M2M and IoT, and how it impacts the future of the telecommunications industry.

TRA also attended the Regional Workshop on ICT Statistics organized by ITU. The capacity building workshop aimed to strengthen the capacity of countries to produce the national statistics needed for the indicators on telecommunications and ICTs.

TRA was awarded the "Finance Team of the Year – Public Sector", at the 'CFO Strategies Forum MENA', in Dubai, UAE; organized by Naseba, in acknowledgement of the Authority's efforts demonstrating the greatest commitment to its financial policies & procedures combined with the key initiative to improve operational effectiveness.

In recognition of its contribution to the growth and development of the Middle East HR Industry, TRA won the "Excellence in HR-Employer of the Year" Award, at the 2018 Future Workplace Awards, in Dubai, UAE.

TRA was also conferred upon the highly prestigious CommsMEA "Regulatory Initiative of the Year" Award for 2018, at the 13th Annual CommsMEA Awards in Dubai, UAE. The award acknowledged the TRA's outstanding efforts in developing Public Radio-communications Stations Regulation aiming at ensuring secure and advanced telecommunications infrastructure.

TOWARDS A MORE EFFICIENT & SECURE TELECOM NETWORK THE INITIATIVES

JANUARY

TRA FOSTERS **TELECOM TOWER** SHARING INITIATIVE WITH NEW REGULATORY FRAMEWORK

The Telecommunications Regulatory Authority (TRA) in the Kingdom of Bahrain commenced approvals of applications submitted by the telecommunications network operators for the deployment of new public radio-communications stations (telecommunication towers) in various areas in Bahrain.

TRA, in cooperation with a specialized international consultancy office, developed a new regulatory framework to regulate the deployment of new telecommunications towers and rectify the existing ones in accordance with international best practices.







MARCH

TRA & LICENSED OPERATORS IN BAHRAIN WORK TOWARDS ACHIEVING **SINGLE NETWORK**

The Telecommunications Regulatory Authority (TRA) of the Kingdom of Bahrain chaired a series of briefings with licensed operators to discuss the development of its New Economic Regulatory Framework ("The New Framework") and offer operators the opportunity to present their views.

The New Framework gives effect to the Government's Fourth National Telecommunications Plan ("NTP4") objective of establishing the National Broadband Network ("NBN"), which is supported through a single fixed fibre network.

The purpose of developing the New Framework is to improve the quality of services, lower prices, and drive innovative technological advancements. The New Framework will encourage these improvements by ensuring that all operators can compete on a level playing field in the provision of services to end users.



TRA CONDUCTS FIRST MEETING OF **5G FREQUENCIES** WORKING GROUP

The Telecommunications Regulatory Authority (TRA) chaired the first meeting of the 5G Frequencies Working Group to discuss and shed the light on Government's efforts in general and TRA's efforts in specific in setting the proper plan and conducting the necessary preparations to secure the required spectrum for implementing 5G networks in the Kingdom of Bahrain.

The Working group is responsible for developing and implementing the action plan for the initial introduction of 5G commercial mobile networks in the Kingdom of Bahrain.



MAY

TRA INAUGURATES NEW TELECOM MAST PERMITTING OFFICE

TRA officially inaugurated a new Telecom Mast Permitting Office, which will be responsible for regulating and rectifying telecom towers. The Office will be responsible for coordinating with the relevant government bodies, including the Ministry of Works, Municipalities Affairs and Urban Planning, the Supreme Council for Environment and the Civil Aviation Affairs to obtain required permits and No-Objection Certificates from these bodies prior to granting the final permit by TRA for deploying telecom towers.

The move was to ensure the optimal implementation of the provisions of the Prime Ministerial Decision No. 45 of 2015 ("Decision 45") that promulgate the Regulation concerning Public Radio-communications Stations. TRA appointed a consulting firm to develop a framework and regulations for the deployment of telecom towers and the establishment of a specialized office to ensure the implementation of these regulations.



SEPTEMBER

TRA ISSUES REGULATION ON PERMITTING AND INSTALLATION OF PUBLIC RADIO-COMMUNICATIONS STATIONS

The Telecommunications Regulatory Authority (TRA) announces the issuance of the Regulation on Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations (the "Regulation"). This Regulation was developed in coordination with the Municipalities Affairs, Civil Aviation Affairs, Supreme Council for the Environment, General Directorate of Civil Defense and other concerned government entities.

Each of the stakeholders established its criteria and conditions that the licensed operators shall consider in order to allow TRA to issue the final permits to deploy the Public Radiocommunications Stations (PRSs).

ACHIEVING GLOBAL EXCELLENCE

FEBRUARY

TRA MEETS WITH **SAMENA**Telecommunications Council

TRA met with SAMENA Telecommunications Council to discuss ways of cooperation between the private and public sectors in the field of telecommunications. This collaboration brings closer the views and efforts from both the private and the public sectors within the Kingdom of Bahrain and the region.



MARCH

TRA ATTENDS THE **REGIONAL WORKSHOP** ON ICT STATISTICS



TRA participated in the regional capacity building workshop organized by the Telecommunication Development Bureau of the ITU in collaboration with the Ministry of Transportation and Telecommunications, Bahrain.

Aimed at strengthening the capacity of countries to produce the national statistics needed for the indicators on telecommunications and ICTs, the workshop discussed the main groups of telecommunication/ICT indicators, their definitions and methodological issues, existing mechanisms of national coordination of ICT statistics, the dissemination and harmonization of ICT data at the international level, with a focus on the Information Development Index (IDI) issued by ITU.

APRIL

TRA DELEGATION VISITS THE UAE TELECOMMUNICATIONS REGULATORY AUTHORITY (TRA UAE)

A delegation from the Telecommunications Regulatory Authority (TRA) of the Kingdom of Bahrain headed by Sh. Mohamed bin Salman Al Khalifa, Director of Finance, Information Technology and Human Resources, visited the UAE Telecommunications Regulatory Authority (TRA UAE) in order to learn about the best practices and strategies related to the management of licensing and regulatory affairs, finance, spectrum, human resources, and customer happiness.

During the visit, TRA UAE delivered a detailed presentation on the scope of its work which included the regulation and development of the UAE's telecommunications sector, and the empowerment of government entities in the field of intelligent transformation.

The delegation was also briefed on the work mechanism of the Human Resources Department in terms of the organizational structure, recruitment mechanism, training courses and performance and talent management system.



TRA BAHRAIN PARTICIPATES IN THE **ITU-T STUDY GROUP 3**MEETING

TRA Bahrain participated in the ITU-T Study Group 3 meeting in Geneva, which is related to regulatory and economic aspects. TRA Bahrain's Head of International Relations Mr. Adel Mohamed Darwish participated in this meeting in the capacity of Vice Chair to the study group for the period 2017-2020. The meeting concluded successfully with over 88 contribution and working documents presented at the meeting and a participation of over 100 people from 58 different member states and sector members. The meeting addresses various topics of interest to the industry including Over-The-Top (OTT) services, Mobile Financial Services (MFS), International Mobile Roaming (IMR) and other economic and regulatory topics.





MAY

TRA ATTENDS **SAMENA**LEADERS' SUMMIT

TRA participated in the one-day leaders-only event focused on private and government partnerships and collaboration within the ICT industry, held in Dubai. TRA's Acting General Director Sheikh Nasser Bin Mohamed Al Khalifa was a guest speaker during the panel related to Dimensions of a Sustainable Regional Digital Economy.

During the Summit, TRA announced its close work and partnership with SAMENA in an effort to get more involved with the industry and focus on regional initiatives of top interest to the industry. The Summit shed light on facets of an increasingly Digital Economy driven region, to help visualize long-term socio-economic benefit through a well-defined digital agenda and moving forward with national efforts.

MAY

TRA HOLDS BILATERAL MEETING WITH ITU-D DIRECTOR

TRA Acting General Director Sheikh Nasser Bin Mohamed Al Khalifa held a bilateral meeting with ITU-D Director Mr. Ebrahima Sanu. The meeting shed light on the joint collaboration at regional and international levels as well as the future of changes in the telecommunication industry.



SEPTEMBER

TRA ATTENDS THE **4TH ARAB STATES** PREPARATORY MEETING IN RIYADH

Organized by the Communications and Information Technology Commission, KSA in Riyadh, in preparation of the forthcoming ITU Plenipotentiary Conference (ITU PP) in Dubai, UAE; the preliminary meeting discussed number of work papers pertaining communication and IT development targets



for the Arabian region besides the participation pattern of the Arabian team in the forthcoming ITU PP, held from October to November in Dubai

The Bahrain delegation was represented by Director of Telecom for the Ministry of Transportation and Telecommunications Mr. Musa'ab Abdulla and the Head of International Relations Department for the Telecommunication Regulatory Authority, Mr. Adel Mohamed Darwish

OCTOBER

TRA BAHRAIN HOSTS THE **16TH ANNUAL AREGNET**CONFERENCE IN THE KINGDOM OF BAHRAIN

TRA hosted the 16th annual Arab Regulators Network (AREGNET) meeting in Manama, in association with the International Telecommunications Union (ITU). The Conference emphasized on Machine-to-Machine (M2M) communications and Internet of Things (IoT), while providing valuable insights on new industry topics and strengthening the collaboration between Arab countries through a series of workshops moderated by leading experts of the industry as they proceed to analyze in-depth topics of international issues related to M2M and IoT, and how it impacts the future of the telecommunications industry.

The Conference further explored the potential of M2M and IoT connectivity in leading to the development of 'Smart Cities' and the limitations faced by certain policy makers and regulators whilst working on feasible strategies and ideas to create a sustainable environment.



OCTOBER

TRA ATTENDS REGIONAL **CYBERSECURITY** WEEK 2018 FOR THE ARAB REGION

The Telecommunication Regulatory Authority (TRA) represented by its Cyber Security Directorate took part in the Regional Cybersecurity Week 2018 for the Arab Region organized by the Communication and Information Technology Regulatory Authority of Kuwait (CITRA) from 21 – 25 October in Kuwait in cooperation with the International Telecommunications Union (ITU)'s Arab Regional Office and the Arab Regional Cybersecurity Centre (ARCC).

During the Regional Cybersecurity Week, TRA was nominated to represent the Arab Region within the ITU-T Study Group 17 for Cyber Security which was mainly attended by delegates and representatives from Member States, Sector Members and Associates to the Study Group 17 in the region.

TRA also participated in the 7th Regional Cybersecurity Summit that aimed to address the best preventive strategies to counteract cyber threats and the 6th Regional Cyber Drill that aimed to enhance communication and capacity building and boost emergency readiness and response to cyber threats and/or attacks.



TRA PARTICIPATES IN THE INTERNATIONAL TELECOMMUNICATION UNION'S (ITU'S) 20TH PLENIPOTENTIARY CONFERENCE

TRA Participates in The International Telecommunication Union's (ITU's) 20th Plenipotentiary Conference (PP–18) held in Dubai, UAE. Held every four years, the conference is the highest decision-making body of ITU, the United Nations specialized agency for ICTs.

The Conference opened with a global call for the world to "act as one" to connect the world's nearly four billion people who remain unconnected to the Internet.

The Plenipotentiary Conference is the highest decision-making body of ITU, the United Nations specialized agency for ICTs. Held every four years, the Conference is the key event at which ITU Member States build consensus on key international ICT issues, elect leaders for the Union's top posts, and decide on a roadmap for ITU's work over the next four-year period, including strategic and financial plans.

More than 2500 participants attended the PP-18, including heads of government, ministers and other delegates from most of ITU's 193 Member States, as well as representatives from private companies, academic institutions and national, regional and international bodies.

During this conference TRA Bahrain's Head of International Relations was nominated as a vice chair for the working group of the plenary and was assigned with the task of heading the ad-hoc meeting related to Internet of Things (IoT), which worked immensely through the conference to reach an ITU resolution on IoT taking into consideration contributions from the attending member states and regions.



OCTOBER

TRA AWARDED "FINANCE TEAM OF THE YEAR - PUBLIC SECTOR"



Telecommunications Regulatory Authority (TRA) Bahrain received an award for "Finance Team of the Year-Public Sector" on the 31st of October 2018. The award ceremony, which took place at the CFO Strategies Forum MENA, in Dubai, was organized by Naseba, a regional consultancy firm with expertise in business facilitation.

The award came in acknowledgement of the Authority's efforts that demonstrated the greatest commitment to its financial policies & procedures combined with the key initiative to improve operational effectiveness.

TRA WINS **COMMSMEA'S** "REGULATORY INITIATIVE OF THE YEAR" AWARD

Recognizing the efforts of the Telecommunications Regulatory Authority of the Kingdom of Bahrain ("TRA"), having demonstrated the greatest commitment towards developing regulations aiming at ensuring a secure and advanced telecommunications infrastructure, CommsMEA announced TRA Bahrain as a winner of the "Regulatory Initiative of the Year" Award for 2018 in the 13th edition of the annual CommsMEA Awards on Wednesday, November 14, 2018 in Dubai - UAE.

This award comes in acknowledgement of the TRA's keenness towards prioritizing the deployment of Public Radio-communications Stations (PRS) and the recent issuance of the Public Radio-communications Stations Regulation – an essential step towards enabling the deployment of future wireless technologies using the state-of-the-art stations, while at the same time considering public concerns and environmental impacts.



NOVEMBER

TRA WINS "EXCELLENCE IN HR- EMPLOYER OF THE YEAR" AWARD

Telecommunications Regulatory Authority (TRA) Bahrain was announced winner of the "Excellence in HR – Employer of the Year" at the 2018 Future Workplace Awards, held on the 13th of November in Dubai, UAE.

The Future Workplace Awards recognize the outstanding achievements of individuals, departments, teams or an organization that have contributed to the growth and development of the Middle East HR Industry.

TRA received the award in recognition of its emphasis on career development and training, and the Human Resources team initiatives focused on developing a solid career development and training program, which focuses on the continued growth of its young cadre.





PROTECTING& EMPOWERING

THE MARKET & THE CONSUMER





Mrs. Amna Alghatam Acting Manager Consumer Affairs, TRA



A new 'Consumer Dispute Regulation' was developed to improve the dispute handling process. The purpose of the regulation was to establish the principals and procedures for the submission, handling and resolution of a Dispute arising between a Subscriber and a licensed operator, in addition to improving the Complaint handling process by establishing basic high-level criteria for the handling of Complaints by licensed Operators.

The regulation entitles the relevant stakeholders to determine and resolve disputes through mediation, settlement and issue of decision. The regulation shall guarantee the right of the subscriber to restore the disputed telecommunications service during the submission procedure of the dispute request.

As part of its efforts to protect and empower consumers, the Telecommunications Regulatory Authority published an updated Quality of Service ("QoS") Regulation applicable to all licensed operators in the Kingdom. The amendments to the regulation set out key QoS targets for licensed operators to achieve in delivering services to consumers.

This regulation is an important part of the TRA's strategic objective which aims at empowering consumers and ensuring that they receive the best services. An effective legal framework has been established to determine the level of quality of service that licensed operators commit to when providing services to consumers.

TRA also held workshops to brief the local licensed operators in the kingdom on the updated QoS Regulation and the Consumer Dispute Regulation based on the principle of transparency with the licensees, who in return shall abide by the provisions of the Regulations.

According to the 'Consumer Complaints and Call Center Statistics' for 2018, TRA handled 1250 disputes during that year, with 98% of the total disputes settled. The Mobile market comprised 62% of the total complaints; the Broadband market being second at 26%. Fixed Line Services constituted 12% of the total market disputes.

The total complaints received were broken down into the following categories: Billing: 29%, Contracts: 23%, Network Service Performance: 22%, and Others (the remaining categories combined): 26%.

During the past four years, the TRA Consumer Contact Center received more than 22K calls. In 2018, 5,250 calls were received with a 99% response success rate. The results were in line with the TRA's objective of promoting consumer communication frameworks for all complaints and inquiries related to licensed operators.

As part of its keenness to serve all the society segments better, including the differently abled (people with hearing impairment), TRA launched a video call service for its Consumer Call Center. The new feature enables any android users to initiate a video call directly to TRA's Consumer Call Center to submit their complaints and enquiries.

The initiative comes in response to the message recently launched in social networking accounts "I am deaf", which included the challenges faced by the deaf and people with hearing impairment in the society. The initiative also comes in implementation of the outputs and proposals of the ITU Plenipotentiary Conference recently held in the UAE for the Resolution on Telecommunication & Communication Technology Accessibility for Persons with Specific Needs, and it also comes in complementation of the recent consumer rights introduced in the TRA's Consumer Protection Regulation.

In line with the TRA's objective of promoting consumer communication frameworks for all complaints and inquiries related to licensed operators, TRA launched a new integrated complaint and inquiry management system in order to maintain effective communication between TRA, consumers and the licensed operators.

Besides the automized connection, the system also provides faster options for registration via email (Gmail) or Facebook account, as all complaint and inquiry process are managed through this portal. The system includes a consumer portal where consumers can easily log in and submit details of their complaint and supporting documents.

In line with the Consumer Dispute Regulation enforced in 2018, the new system complements the series of consumer support initiatives, which enables them to submit a request for dispute resolution in the event that the licensed operator fails to provide the consumer with the appropriate solution. The system also enables consumers to provide their views on the resolutions provided by the licensed operator.

TRA also held several training workshops for the licensed operators to explain the advantages of the new system. The workshops focused on the updated dispute submission mechanism, the new features of monitoring responses and updates according to a specified period.

Throughout the year, various awareness campaigns were also initiated to make consumers more aware and better informed. #iamroamingready campaign was launched last year in conjunction with the summer holidays; it aimed at informing the public of the risks of roaming bill shocks and the options available to control mobile data and phone bills while roaming abroad.

PROTECTING & EMPOWERING THE MARKET & THE CONSUMER

TRA's efforts succeeded in increasing awareness among consumers on the risks of roaming bill shocks. This resulted in a decrease of roaming complaints by approximately 4% compared to previous years.

The "Know Your Rights" Campaign aimed to empower subscribers by defining their rights and the corresponding obligations of the licensed operators. It also raised awareness on their rights included in the recently published Consumer Dispute & Consumer Protection regulations.

TRA has observed significant increase in the cases of Identity thefts through the exploitation of SIM Cards. This includes over a hundred cases of travel bans being issued on individuals who fell victim to identity theft. TRA launched the 'Your SIM Your Responsibility' campaign to encourage SIM registration.

In order to prevent identity theft related crimes, and provide consumers with additional safeguards during SIM-Card registration, TRA made it mandatory for all mobile operators in the Kingdom of Bahrain to carry out biometric scans for every SIM card owner. TRA has been continuously monitoring the process of registration and has been addressing any issues as a matter of priority.

TRA ensured that operators provided consumers with all the necessary support in order to accommodate the elderly over 60 years old, as well as those with disabilities or whose fingerprints cannot be detected by the scanner. Those are exempted from the verification scanning process and are only required to submit certain documentations to prove their identity.

The Authority regularly warned consumers against scammers and advised them to refrain from engaging with such individuals. They should report all suspicious communication immediately and block such numbers to limit further communication.

TRA collaborated with the global cybersecurity company Kaspersky Lab to raise awareness on cyber safety in Bahrain. The Authority embarked on a series of interactive cybersecurity roadshows in schools in Bahrain aimed at raising awareness about the threats that await children on the Internet and effective ways to respond to them. The major areas of concern addressed were cyberbullying, inordinate disclosure of personal information and general rules of online behavior.

CONSUMER COMPLAINTS AND CALL CENTER STATISTICS FOR 2018

EOY Call Center KPIs

Total Number of Received calls	п	5250
Response Success Rate	п	99%
Average speed of answering calls (sec)	ш	3.8
Abandoned Rate	ш	1.20%
Service Level: of answered calls within target		96.40%

EOY Complaints KPIs

Total Number of Disputes Received	1250
Total Number of Disputes Closed	1223
Average Dispute Closure (Days)	16

Complaint Categories

Disputes Type(%)

Fixed Line Services Disputes	12%
Mobile Services Disputes	62%
Broadband Services Disputes	26%

Disputes/Market (%)

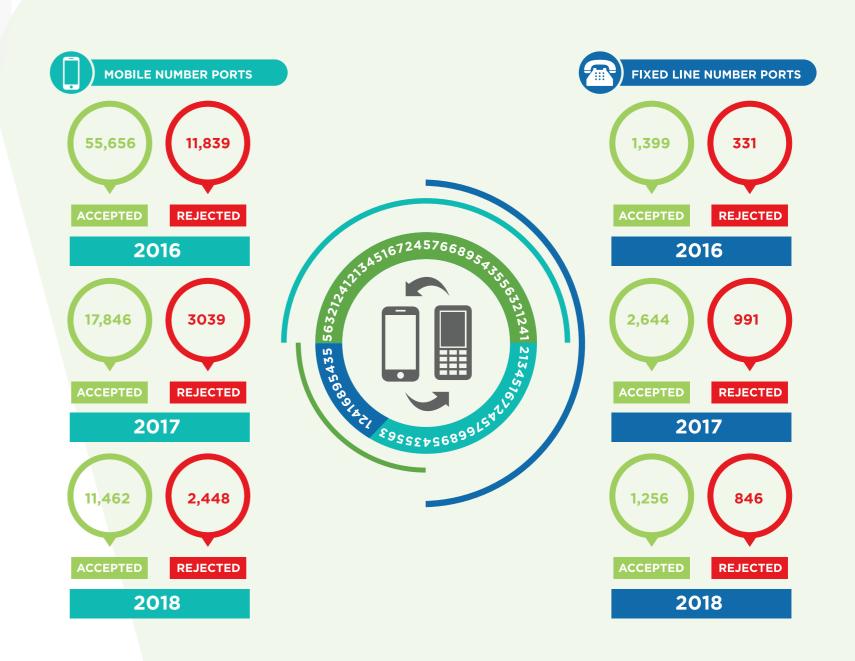
Billing	29%
Contract	23%
Network Service Performance	22%
Others: Remaining Types Combined	26%



CONSUMER DISPUTES REGULATION

W 6. Subscribers Right During The Dispute 5. The Decision **▼ 20% Service Level** 1. Procedures of **Agreement For** Request For Dispute Resolution **Dispute Handling** 4. Dispute Resolution 63 2. Acceptence Of A Dispute 3. Dispute Resolution Procedures

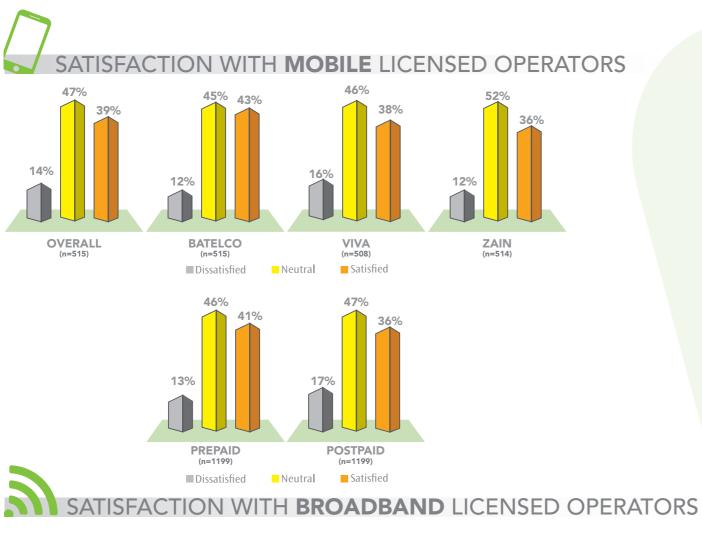
NUMBER **PORTABILITY** FOR 2018

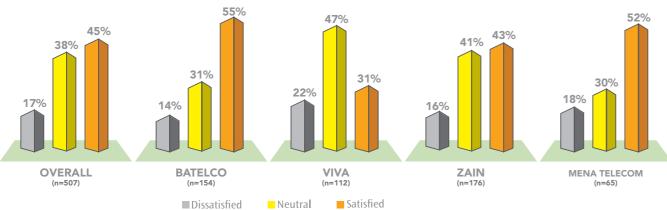


CONSUMER AWARENESS OF TRA & SATISFACTION LEVELS WITH LICENSED OPERATORS

A consumr experience survey conducted by TRA confirmed high levels of satisfaction in both the 'mobile' and 'broadband' services, as well as with the TRA's overall role within the telecomunnications sector.

Conducted by the 'Consumer Affairs' department, the survey aimed at assessing the consumer awareness of TRA and satisfaction level with licensed operators.





SATISFACTION WITH TRA'S ROLE

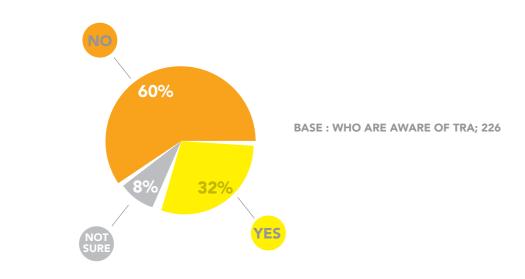
Overall Satisfaction Level

■ Dissatisfied (1-6) ■ Neutral (7-8) ■ Satisfied (9-10) (n=181) Regulate telecomunication sector 34% Protect consumer rights in telecommunications sector 49% 34% Resolve complaints between consumers and operators 23% 26% Facilitate competition to better serve consumers 23% 45% 32% Monitor telecommunications service providers 20% 50% 30% Set the rules and regulations for the telecommunications sector 47% 38%

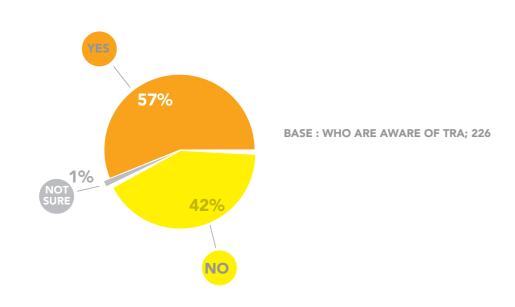


AWARENESS OF TRA CAMPAIGNS

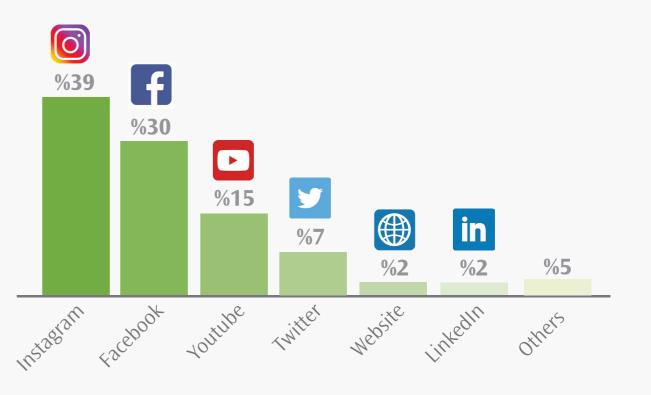
AWARENESS OF CONSUMER RIGHTS IN THE AREAS OF TELECOMMUNICATIONS











Base: Who are aware of TRA presence on Social media; 54



TRA CONSUMER AWARENESS CAMPAIGNS 2018

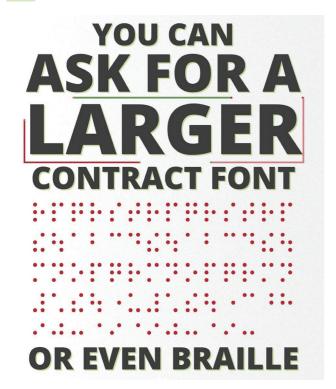
'I AM ROAMING READY'



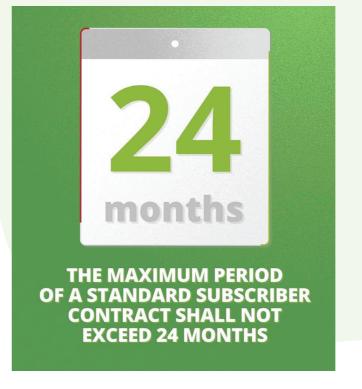




2 'KNOW YOUR RIGHTS'









TRA CONSUMER AWARENESS CAMPAIGNS 2018

3 YOUR SIM YOUR RESPONSIBILITY











MARCH TRA SUPPORTS KASPERSKY'S CYBER SAFETY SCHOOL ROADSHOW



Kaspersky Lab and the Telecommunications Regulatory Authority embarked on a series of interactive cybersecurity roadshows in schools in the Kingdom of Bahrain aimed at raising awareness about the threats that await children on the Internet and effective ways to respond to them.

Focusing on children between the ages of 7 to 13, the roadshow addressed major cybersecurity issues including cyberbullying, inordinate disclosure of personal information and general rules of online behavior.

AY TRA HOLDS SESSION ON ITS CONSUMER DISPUTE REGULATION FOR TELECOM OPERATORS

The Telecommunications Regulatory Authority (TRA) held a session on its Consumer Dispute Regulation for licensed operators in Bahrain to discuss the provisions of the regulation related to compliance and enforcement.

During the session, TRA stressed the importance of complying with the measures set forth in the regulation, and in the case of a failure by a licensed operator to the provisions of the regulation, TRA may impose a number of penalties, which may reach to BD 50,000.

The purpose of the regulation is to establish the principals and procedures for the submission, handling and resolution of a Dispute arising between a Subscriber and a licensed operator, in addition to improving the Complaint handling process by establishing basic high-level criteria for the handling of Complaints by licensed operators.

The regulation consists of several chapters that apply to all subscribers, including submission procedure and content of a request for dispute resolution, acceptance of a dispute, dispute resolution procedures, resolution by settlement, issuance of decisions, in addition to subscriber rights and guarantees as well as a number of general provisions related to compliance and enforcement.





KEEPING A TAB

TRA will continue to monitor and evaluate the performance and developments of the telecommunications sector and take the necessary measures to boost and develop it as it is an essential sector for the growth and development of other economic sectors to achieve the objectives of the Kingdom's Economic Vision 2030.

Sh. Nasser bin Mohamed Al Khalifa Acting General Director, TRA

Throughout the year, TRA continued with consolidated steps towards creating a stronger, more dynamic telecom infrastructure within the Kingdom. While safeguarding the interests of the stakeholders the government; the market; and the consumer, through its various initiatives, the Authority also kept a constant check on the various parameters critical for the optimal performance of Bahrain's telecom sector.

As part of The Telecommunications Regulatory Authority's (TRA) commitment to the implementation of the Fourth National Telecommunications Plan, the Authority held industry working sessions with Mobile Network Operators ("MNOs") to discuss key milestones achieved in the development of the 'New Economic Regulatory Framework' and the Batelco separation project.

Ensuring transparency and safeguard for the interests of all industry stakeholders, the constructive engagement of MNOs in the sessions set out clear expectations about the delivery of the National Broadband Network ("NBN"), which is supported through a single fixed fibre network.

TRA also held a workshop with Bird & Bird, an international law firm focused on technology, to review and analyze how Telecoms Service Providers were competing with or cooperating with Over The Top Service Providers (OTTs).

Ensuring safer, more efficient public networks, TRA has also been regulating the importation of telecommunications equipment into the Kingdom, through its regulatory process, requiring prior approval on a set of technical and safety prerequisites.

In 2018, the TRA processed above 1 million imported telecom device units. The new electronic approval system adopted in early 2016 has made processing highly efficient, with overall requests taking less than 2 days.

Data showed that the volume of importing terminal equipment (cell

Ensuring consumers in Bahrain get the most out of their mobile services, and help them make informed decisions when choosing their services and operators, the Telecommunications Regulatory Authority also conducted its annual audit on mobile coverage and quality of services in Bahrain, and prepared the 2018 Mobile Audit Report providing the public with comparable quantitative and qualitative data on the performance of mobile operators.

Stepping up its efforts to protect consumer rights, TRA issued the Consumer Dispute Regulation in 2018 that establishes the principals and procedures for the handling of a dispute arising between a subscriber and a licensed operator. The Regulation is aimed at creating more transparency and regulation among all concerned parties to reach a fair solution that preserves consumer rights in disputes.

Since its inception in 2014, TRA's Cyber Security Directorate (CSD) has focused on its mission to promote a secure and trusted cyber environment that supports Bahrain's national security and economic well-being. The year 2018 also marked many new achievements in the area of telecommunications security.

With a view to further understand the impact of telecom security incidents on key economic sectors, CSD conducted a study on Cyber Threat Landscape in Bahrain's Telecom Sector. The study concluded the current state of security for major licensed operators was at par with Operators of similarly placed countries.

The study further identified that establishment of an effective framework to ensure cybersecurity readiness and response should be a key telecommunications sector objective. Accordingly, a Cyber Security

Framework was developed based on a SECURE model that intends to underpin the discussion with government entities, businesses, citizens and the wider society and trigger stakeholder dialogue towards the development of a coherent long-term cybersecurity strategy.

TRA also issued SIM-Card Enabled Telecommunications Services Registration Regulation to address the threat of unverified or unknown SIM users in Bahrain and to protect consumers from fraud. The regulation while mandating a new biometric registration for verification, also has a supplementary process aimed at cleaning up the existing subscriber database, with the hope of having no unknown SIM Card owners.

During 2018, the regulation was enforced and a reporting mechanism was introduced to enable accurate reporting of Registered and Verified SIM-Card subscribers. In doing so, more than 2 million SIM-Card subscribers were Registered and Verified by the three Mobile Network Operators.

Ensuring a systematic approach in managing risks and applying a standard risk management process across the telecom sector, the Cybersecurity Directorate enforced the CTI Risk Management Regulation during 2018, to ensure that the CTI owners certify against ISO 27001 standards for all their Critical Telecom Infrastructure and Assets, in order to mitigate the economic, security, and social risks that may arise from severe disruption or damage to these critical sites - The telecommunications infrastructure being the backbone to development.

The Telecommunications Regulatory Authority (TRA) also published its latest Market Indicators Reports in the Kingdom of Bahrain, which measured the performance and development of the telecommunications sector. The reports included the Market Indicators in the Kingdom of Bahrain, the Arab Price Benchmarking Study and the Residential Market

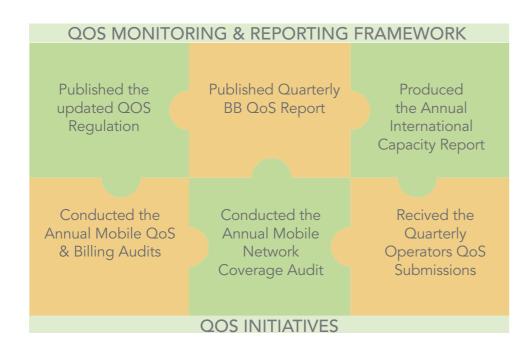
phones, smartphones, fax machines, printers, scanners, tablets) in 2018 reached 938,866 units: 82% of the total telecom device imports. Telecom equipment accounted for 12% at 136,699 units, while 6% were other imports with 69,763 units.





QUALITY OF SERVICE MANAGEMENT

A NUMBER OF QOS INITIATIVES WERE EXECUTED DURING 2018



ANNUAL INTERNATIONAL CAPACITY REPORT

The ICT assigned HOT TELECOM to produce the International Connectivity and peering report for 2018. The data required was collected from the operators and analyzed, to study the evolution of the international capacity on the different international cables landing in Bahrain and internet related peering traffic. The Analysis was presented internally to the GD and the TRA team in October 2018. The purpose of this report is to assist the TRA in assessing the overall status of the telecommunications connectivity between the Kingdom and the rest of the world.

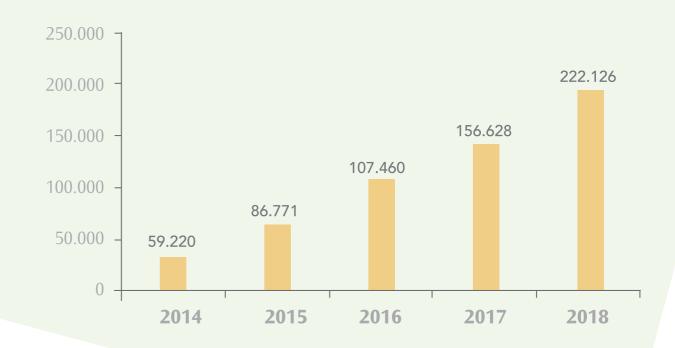
The report highlighted a number of key issues including:

- Update on the number of physical routes and the usage of those routes;
- Updates on the Capacity usage of individual cables systems;
- Updates on IP transit capacity, usage and commercial arrangements;
- Peering arrangements between local ISPs;
- International voice usage patterns; and
- Potential issues as reported by the operators.

TOTAL BAHRAIN INTERNATIONAL CABLE CAPACITY (GBPS)



INTERNATIONAL IP TRANSIT CAPACITY, GBPS





ANNUAL MOBILE QOS, BILLING, AND COVERAGE AUDITS

After awarding the IMT Licenses to Mobile operators in 2013, the authority obliged operators to cover 99% of the population; 'Directique' was commissioned to conduct the Mobile Network Coverage Auditin Sep-Oct 2018.

TRA aimed at evaluating and benchmarking quality levels offered by Mobile Network Operators (MNO) in the Kingdom of Bahrain, Batelco, Viva and, Zain from an end-user perspective, for the following set of services:

- Voice
- Short Message Services (SMS)
- Smartphones data tests (Web surfing, HTTP file transfers)
- Smartphones data tests on hotspots (HTTP file transfers)
- Video streaming assessment using Smartphones
- Social networks using Smartphones

The purpose of the audit is to conduct the assessment using a test method designed to gather a faithful qualitative record from an end-users' point of view, avoiding assessing quality through a pure technical angle, as this is performed by Mobile Operators themselves on a regular basis. The below figures summarize the recorded results:





VOICE QUALITY

RATE OF PERFECT QUALITY 2 MINUTES CALLS

VOICE QUALITY

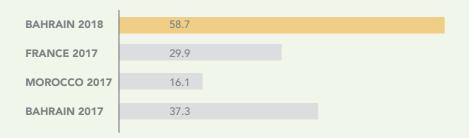
RATE OF SUCCESSFULL CALLS SET UP

BAHRAIN 2018	99.5%
FRANCE 2018	98.4%
SAUDI ARABIA 2018	99.8%
MOROCCO 2017	98.2%
BAHRAIN 2017	99.4%



HTTP DL

THROUGHPUT (MBPS) WITH A 4G HANDSET



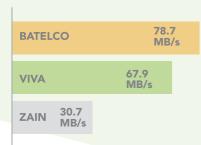
HTTP DOWNLOAD

AVERAGE DOWNLOAD THROUGHPUT (MBPS)

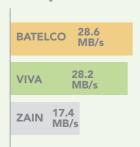




4G Download

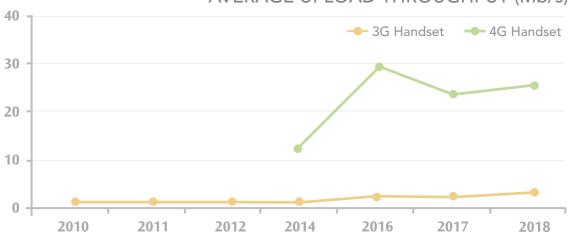


4G Upload



SMARTPHONES

AVERAGE UPLOAD THROUGHPUT (Mb/s)



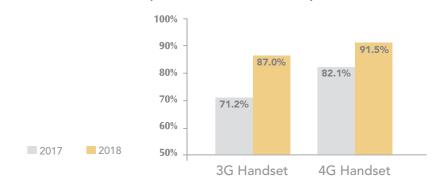
SMS - RS10

RATE OF SMS RECEIVED WITHIN 10 SECONDS



VPQR:

% OF VIDEOS SET-UP, HELD FOR 2 MIN,& MARKED 4



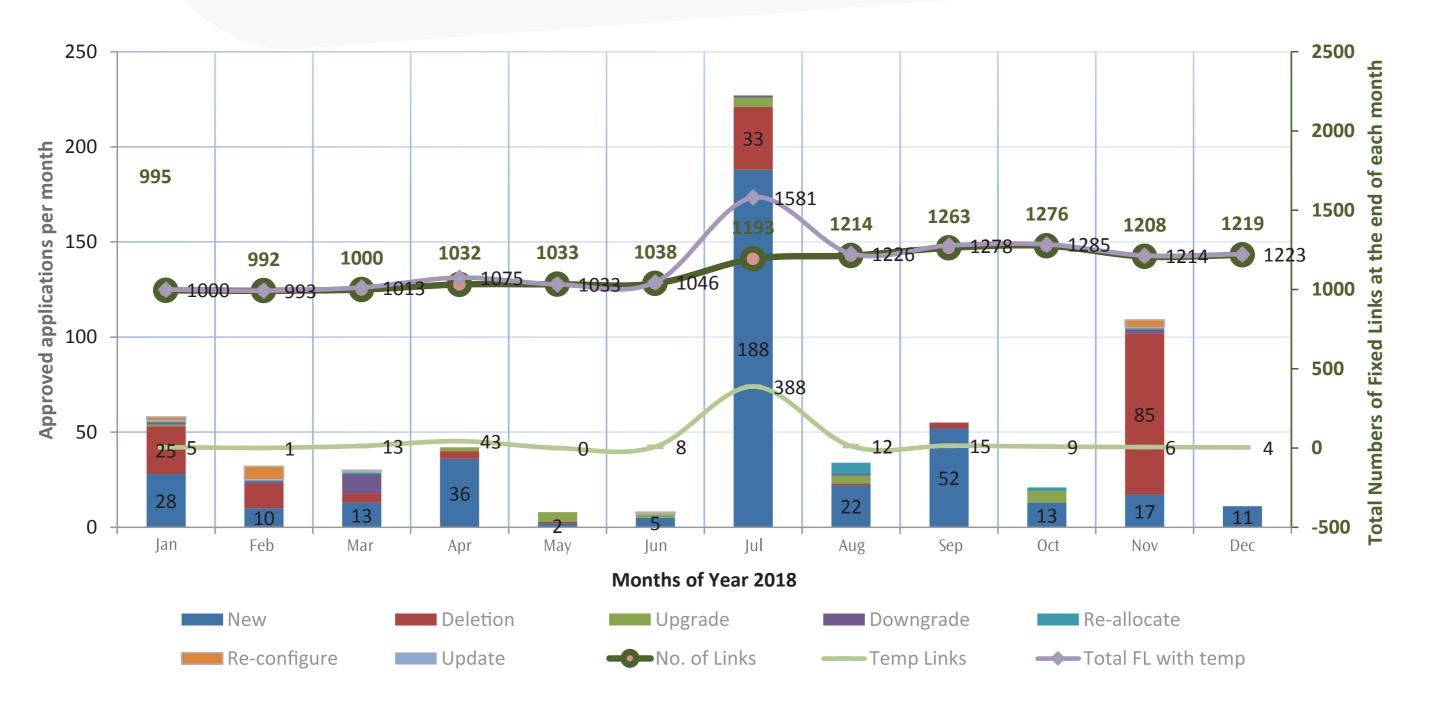
SMS SERVICE

RATE OF SMS RECEIVED WITHIN 30 SECONDS

FRANCE 2018	98.5%	
BAHRAIN 2018	99.3%	
MOROCCO 2017	98.9%	
BAHRAIN 2017	98.2%	

FIXED LINKS POINT TO POINT LINKS MARKET 2018

2018 APPROVED APPLICATIONS & TOTAL FIXED LINKS





KEY PERFORMANCE INDICATORS - 2018

SPECTRUM DEPARTMENT

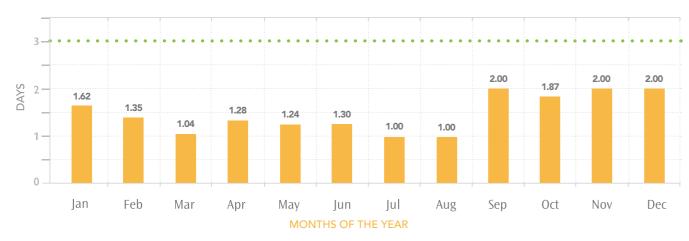
PROCESSING TIME OF NOC

The average processing time for the applications reduced from 1.60 days in 2017 to 1.48 days in 2018, for a total of 3,406 applications received. This factored in a major change of the process of approving NOC's as a BD10 fee was introduced in 2018 for every approved application.

It is worth noting that the total number of applications decreased because there was an update to the HS codes in the Customs Affairs system "Ofoq" which resulted in further filtering of the devices being assigned to TRA's approval

NOC AND TYPE APPROVAL APPLICATIONS

PROCESSING OF APPLICATIONS FOR NOC 2018



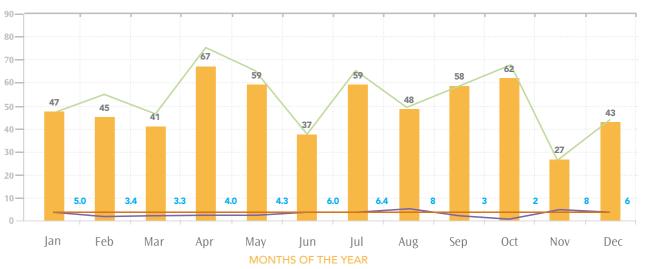
Average application processing time

• • • • • Target for application processing

NUMBER OF APPLICATIONS &

AVERAGE PROCESSING TIME PER APPLICATION

'Telecom Equipment Importation Report' for number of devices entering Bahrain

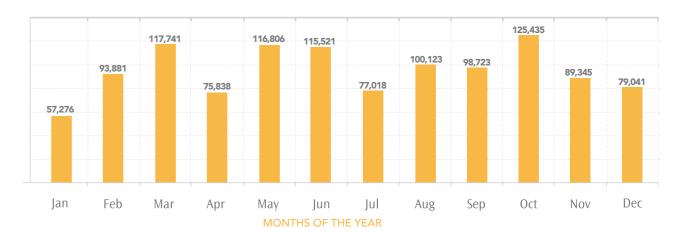


Despite the huge number of requests for telecom equipment importation through Ofoq system, the SMD managed – through outsourcing this task – to quantify the imported equipment and to categorize them.

TELECOM DEVICES

THAT ENTERED BAHRAINI MARKET 2018

Approved telecom equipment imported to Bahrain per month

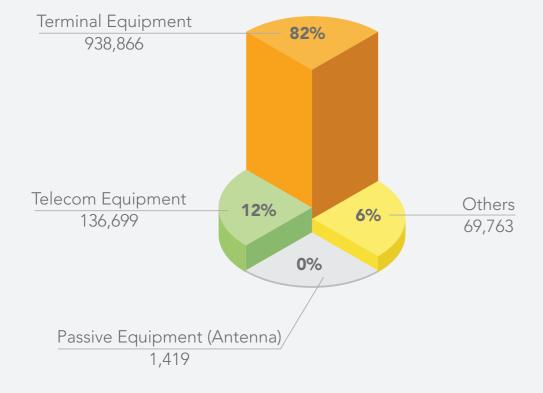


The total number of devices that entered the market was 1,46,748



CATEGORIZATION OF IMPORTED TELECOM DEVICES

Total 1,146,748



INTERFERENCE CASES SIGNIFICANT DECREASE IN INTERFERENCE INCIDENTS

Compared to the 64 reported interference incidents in 2017, the Authority only received one reported incident from Batelco, which was processed and closed within 7 days. Introduction of fee for every reported interference case under the new 'Schedule of Fees 2017', contributed majorly to the decrease.

NO. OF **INTERFERENCE CASES**AND THEIR SOLVING AVERAGE TIME (2018)





CROSS BORDER SPILL-OVER SIGNALS MONITORING

TRA reached an agreement with a sub-contractor to carry out the monitoring of cross border spill-over signals. By year end, a total of 38 cases were found where networks of neighboring countries were observed the borders of Bahrain. 32 cases were from operators in KSA and 6 were from Vodafone in Qatar.

Additionally, the Spectrum team conducted measurements in Hawar Island, to measure overspill signals from neighboring countries. The logfile confirmed no dedicated calls could be made despite observing signal from Qatar.



Cross Border Spill-Over Measurement Route



MONITORING THE LEVEL OF ELECTROMAGNETIC EMISSIONS FROM BASE STATIONS OF PUBLIC TELECOMMUNICATIONS OPERATORS

SMD is in continuous monitoring of the level of electromagnetic emissions from base stations of public telecommunications operators in the public, occupational and residential areas. Locations around 1,000 sites (towers, masts or IBSs) have been measured in 2018. No signals were found to exceed the thresholds set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) (i.e. the signals levels recorded were not harmful to the human beings).

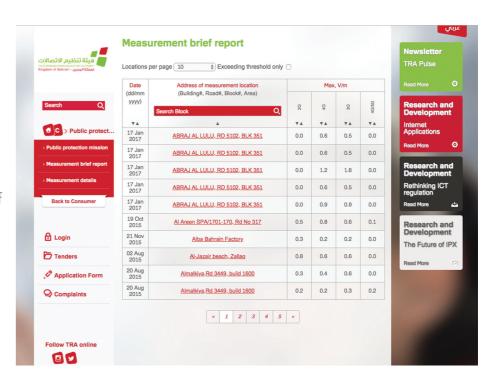


Examples of radiocommunication stations measured

UPDATES TO THE SAFETY MEASUREMENTS ONLINE WEB-PAGES

After the completion of measuring 1,000 sites, the results were successfully uploaded to the ICNIRP online webpages for anyone from the public to view at their own convenience. The measurements covered a collection of base stations of public telecommunications operators in public, occupational and residential areas across the Kingdom.

The web page illustrating the sorting capability



KEY PERFORMANCE INDICATORS - 2018

TELECOMMUNICATIONS UTILITY INFRASTRUCTURE DEPARTMENT

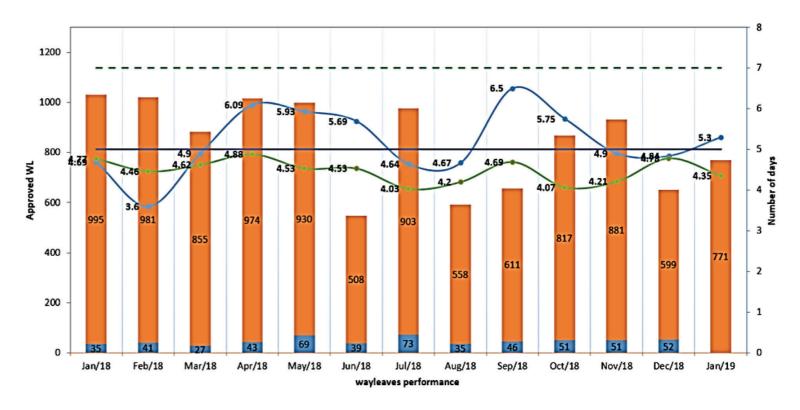
In August 2018, The Telecommunications Regulatory Authority ("TRA") issued the Public Radio-communications Stations ("PRS") Regulation in accordance to the Prime Ministerial Decision No. 45 of 2015. The regulation sets the necessary standards and processes to be followed by the Mobile Network Operators ("MNO") when deploying, upgrading and maintaining PRSs.

Earlier in July 2018, TRA launched the Radio-communications Information Management System ("RIMS"). All related PRSs processes are automated in RIMS

The average **processing time of TUI Department** operations is illustrated in the below table:

TYPE OF OPERATION	Total Processed In 2017	Average Processing Time In 2017	Total Processed In 2018	Average processing time in 2018	Targeted KPI
Underground wayleaves	11,516	5.68 days	10,174	4.48 days	7 days (Total)
Utilities - Consultations (CN)	1,214	12.9 days	951	9.7 days	12 days
Utilities - Planning Permissions	143	18.2 days	64	8.5 days	17 days
Permitting of PRS deployment	33 ¹	29.07 days	140 ²	21.43 days	44 days

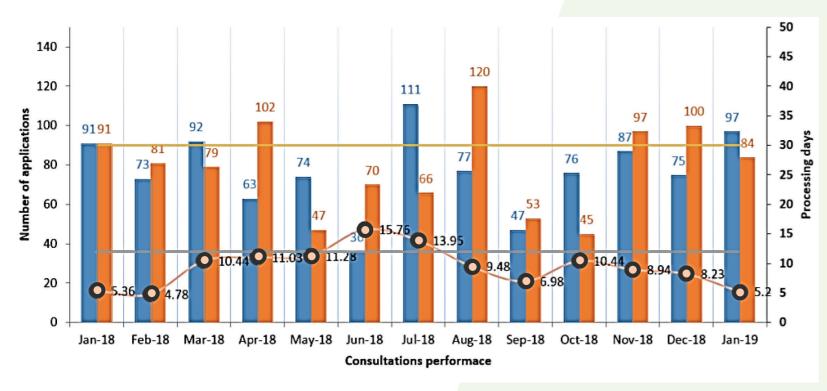
RECEIVED AND CLEARED **CENTRAL PLANNING OFFICE** (CPO) AND TRA E-WAYLEAVES

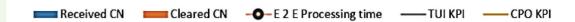






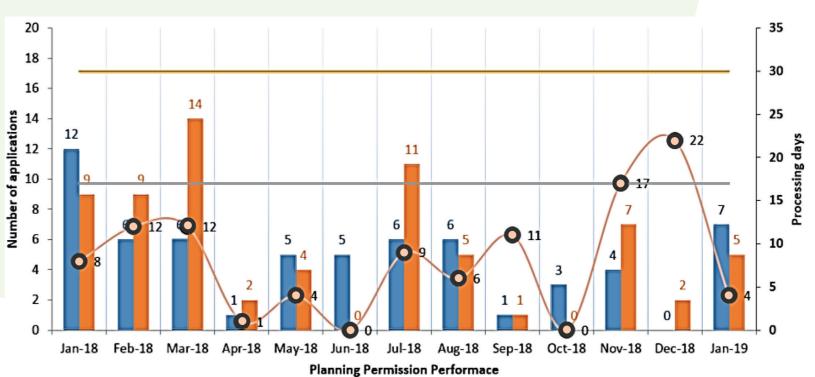
RECEIVED AND CLEARED UTILITIES - CONSULTATIONS (CN)





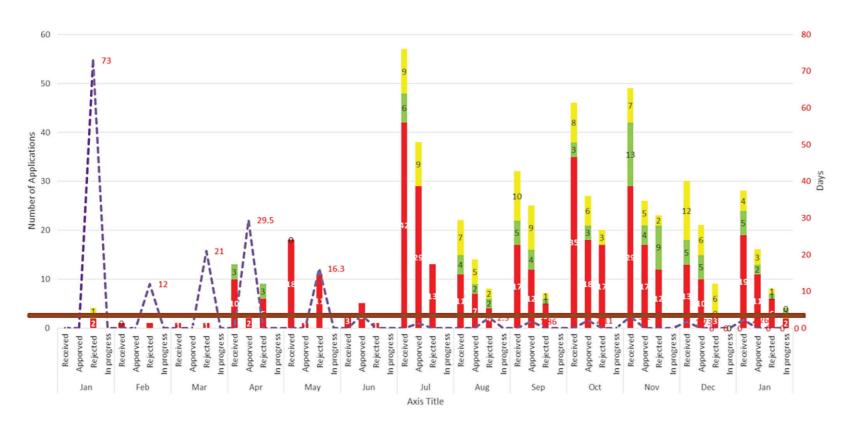
RECEIVED AND CLEARED UTILITIES - PLANNING PERMISSIONS





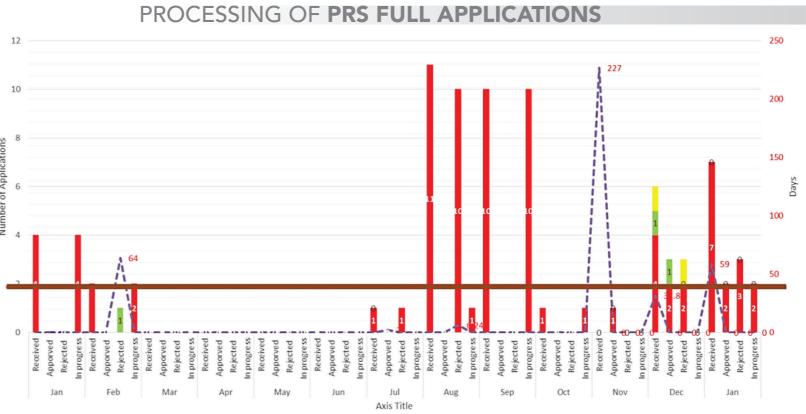


PROCESSING OF PRS PRE-APPLICATIONS











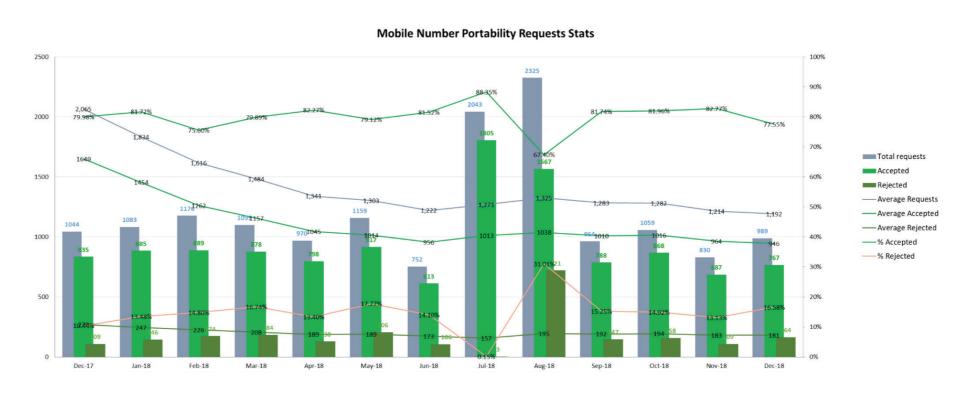
KEY PERFORMANCE INDICATORS - 2018

ICT DEPARTMENT

MOBILE NUMBER PORTABILITY

- The numbering porting central system witnessed a huge reduction in 2018:
- 14,449 porting requests compared to 22,552 porting requests in 2017, with an average of 1,204 per month.
- The average porting time for subscribers to successfully transfer their number to a new mobile operator was 19 minutes.
- The month of June 2018 has witnessed a drop of mobile porting requests with 752 porting requests. Where in 2017, the month of January received the highest mobile porting requests with 4,010 porting request.
- The ICT team were closely monitoring few critical KPIs related to the Number portability to ensure fair competition in the market without any abuse from operators:
- It was noticed that 2018 the "No response" indicators shows an average of 1.1%compared to 2.9 in 2017
- 16.9% of the total requests were rejected mostly due to overdue bills not being paid by the requester.

MOBILE NUMBER PORTABILITY REQUESTS FOR THE PERIOD DECEMBER 2017 TO DECEMBER 2018





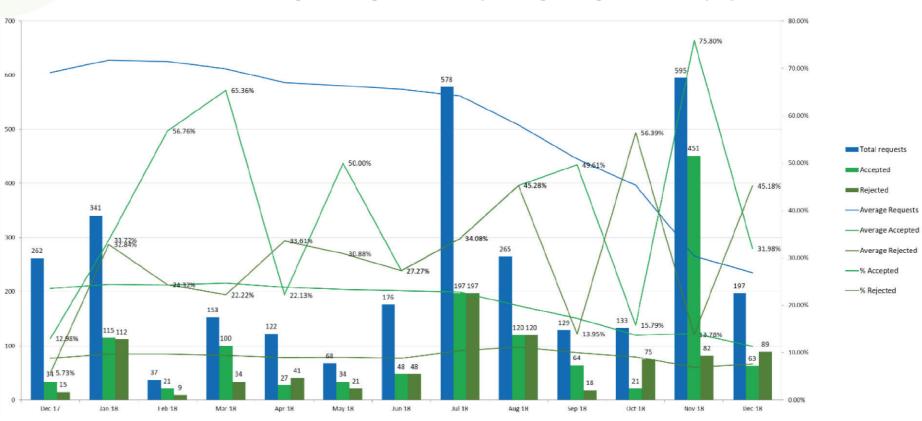




The ICT team also closely monitored critical KPIs related to the Fixed Number portability to ensure fair competition in the market without any abuse from operators towards business market segment.

- 2,817 porting requests compared 7,800 porting requests in 2017, with an average of 234 per month. The requests shows a decrease of 64%.
- The average porting time for subscribers to successfully transfer their number to a new fixed operator was 209 minutes.
- The month of November, 2018 witnessed the peak of fixed porting requests with 595 porting requests. In 2017, it was the month of October which received the highest 2,293 fixed porting requests.
- The fixed NP Rejection average in the year 2018 was 30% of the total requests

FIXED NUMBER PORTABILITY FOR THE PERIOD FROM DECEMBER 2017 TO DECEMBER 2018







DOMAIN NAME APPROVALS

A total of 354 total requests were received for Domain Name approvals in 2018, which represents an increase of approximately 7% compared to 2017 (330 requests). The average response time of 178 minutes represented an increase from 2017 average response time of 125 minutes. This fared better than the target of 180 minutes to approve a .bh domain name request.

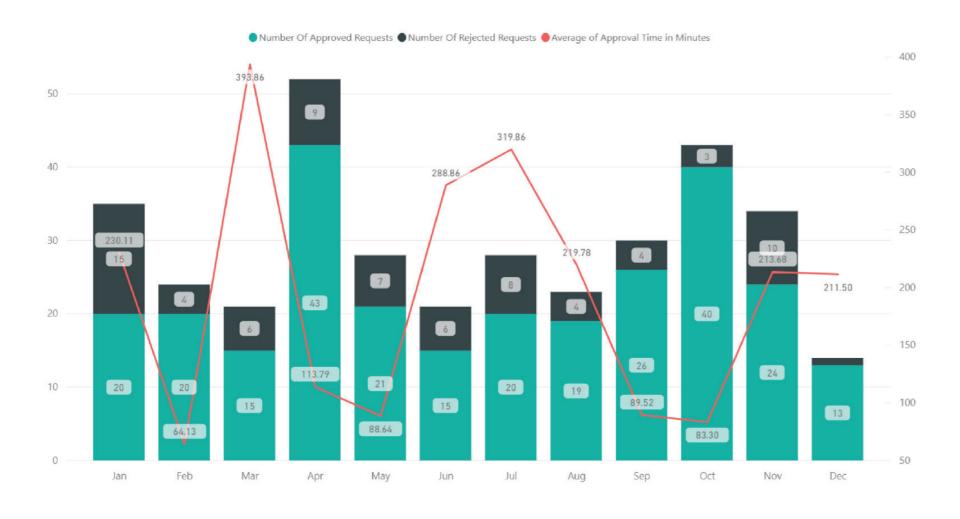
Once the .bh Legal framework and Registry system is launched, this operational task will be outsourced to the Registrars who will be accredited by the Authority.

For SSL Certificates, 12 requests were received compared to 33 received in 2017. The requests were responded to within an average of 1 day. This task will also be automated once the Registry system is launched and the WHOIS service is activated.

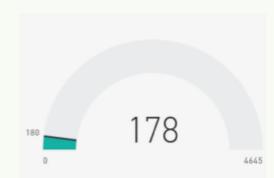
DOMAIN **NAME APPROVALS** FOR THE PERIOD FROM JANUARY 2018 TO DECEMBER 2018

Total Recieved	Approved	Rejected	Missed Target
354	276	77	78

DOMAIN NAME APPROVAL APPLICATONS



AVARAGE APPROVAL TIME IN MINUTES





MONITORING & EVALUATING

MAY

TRA HOLDS SECOND INDUSTRY **WORKING SESSION** TO ACHIEVE SINGLE NETWORK

As part of The Telecommunications Regulatory Authority's (TRA) commitment to the implementation of the Fourth National Telecommunications Plan, the Authority held its second industry working session with mobile network operators ("MNOs") to discuss key milestones achieved in the development of the 'New Economic Regulatory Framework' and the Batelco separation project.

The constructive engagement of MNOs in the session set out clear expectations about the delivery of the National Broadband Network ("NBN"), which is supported through a single fixed fibre network.

The Authority's initiative to hold regular working sessions with MNOs aimed at ensuring that the process of delivering this critical national project is transparent and safeguards the interests of all industry stakeholders.



TELECOMS SERVICE PROVIDERS PERFORMANCE OVERVIEW WORKSHOP WITH BIRD & BIRD

TRA held a workshop in collaboration with Bird & Bird, an international law firm focused on technology. The workshop focused on how Telecoms Service Providers are competing with or cooperating with Over The Top Service Providers (OTTs).



JUNE

EXTENSION OF **POSTPAID SIM** REGISTRATION DEADLINE

In line with the new process requiring biometric scans for postpaid SIM Card registration to protect subscribers from fraud and identity theft, TRA extended the registration deadline by three months, from the initial June 2, 2018 to enable subscribers who had yet not registered their postpaid SIM-cards.



While advising subscribers to present their documents for verification, with their service provider, the Authority also warned non-compliance would result in initial suspension of the service on a temporary basis and final deactivation if still not registered by December 2, 2018.



OCTOBER

TRA 2018 MOBILE QUALITY OF SERVICE REPORT AUDIT CAMPAIGN BEGINS

Telecommunications Regulatory Authority held a workshop with mobile licensed operators from around the Kingdom to discuss an upcoming audit on mobile coverage and quality of services in Bahrain.

The audit covered mobile billing, service quality, and network coverage. The 2018 Mobile Audit Report provided the public with comparable quantitative and qualitative data on the performance of mobile operators throughout the year.

DECEMBER

TRA SPONSORS ARAB ICT FORUM

The Telecommunications Regulatory Authority sponsored the annual Arab ICT Forum as a 'Platinum Partner'. The forum held under the auspices of TRA Chairman of the Board, Dr. Mohammed Al Amer is organized by the Bahrain Society of Engineers and it is a one day biannual event which sheds light on the latest developments of ICT.

The year's theme was 'Engineering Innovations and Design to Support Smart Cities' and various speakers from across the region shared their insights in this regard.









The TRA prides itself on its emphasis on career development and training. The commitment to its staff is what continues to make TRA an employer of choice. As part of the 4th National Telecom Plan's objective of developing human resources capacity in the telecommunications sector, the Human Resources team at TRA who have worked hard to see the initiatives through successfully and enable TRA to develop a solid career development and training program, which focuses on the continued growth of its young cadres. TRA values fostering tomorrows leaders and will continue to give its cadres the tools and knowledge to excel.



With special emphasis laid on the development of human resources capacity in the telecommunications sector, by the NTP4, TRA further augmented its efforts towards continuous and sustainable development of its workforce, adopting best international practices and methodologies.

The highlight of the Authority's efforts in this direction is the 'Culture Transformation Program'. Designed for new TRA employees, as part of TRA's commitment to creating excellence, the program imparts world-class training in hard and soft skills, in addition to equipping them with knowledge and expertise in excellence models, based on the 'European Foundation of Quality Management (EFQM)'.

TRA's steadfast commitment to empowering and enabling the local talent in the sector, has enabled the Authority to greatly alter its employment policy, to the benefit of the Bahraini citizens.

With focus on creating a localized workforce, TRA achieved a higher local to expat ratio in 2018, at 86% Bahrainis, and 15% expats, compared to the 80% Bahraini and 20% Expat ration in 2017. The female employee percentage also rose by 9% from last year to 44% in 2018.

Embraced with the vision of creating future leadership, the Authority successfully implemented strategic plans aimed at 360 degree personality development, while also aligned with its own strategic priorities as an organization.

Sh. Mohamed Bin Salman Al Khalifa Director of Finance, IT & HR, TRA

The "Did You Know!" awareness initiative was launched with the aim to create an environment that boosts TRA's staff general knowledge about any topic that is not related to their work.

To develop interpersonal management skills, TRA conducted a workshop on Leadership Program for its employees, in Cooperation with international talent development firm 'Global Executive Education' and Bahrain Institute of Banking and Finance (BIBF).

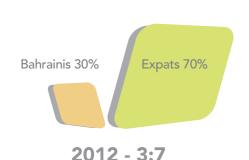
Throughout the year, TRA organized festive and socio-cultural activities for its employees, such as team building activities during National Day, Family Day, Ghabga, etc., for an overall development and enhanced interaction, and increased overall satisfaction among the employees.

MALE-FEMALE PROPORTION IN THE TELECOMMUNICATION SECTOR



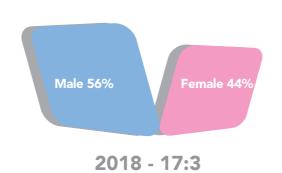
LOCALIZING EXCELLENCE THE TRA EMPLOYMENT STATUS

Local – Expat Ratio

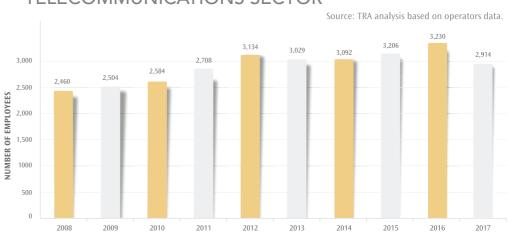




Male - Female Ratio



NUMBER OF EMPLOYEES WORKING IN THE TELECOMMUNICATIONS SECTOR



A CULTURE OF COMITY & CORDIALITY

THE TRA INTERNAL ACTIVITIES & EVENTS

JANUARY



TRA HOLDS EVENT TO HONOR NEW JOINERS The Telecommunications Regulatory Authority (TRA) honored its new joining members in an event, for having successfully completed the culture transformation program as part of TRA's commitment to striving for excellence.

The program consisted of training in hard and soft skills, in addition to equipping them with knowledge and expertise in excellence models; based on the European Foundation of Quality Management (EFQM).

The event, and program was led by the TRA's Culture Transformation Team (CTT), consisting of members from TRA's management, whose goal is to develop and oversee a strategy that centers on positively influencing the TRA's staff through development programs which support the creation of a culture of excellence.

FEBRUARY



'LEAN SIX SIGMA TRAINING' SESSION TRA organizes 'Lean Six Sigma Training' session for staff to provide an in-depth understanding of the widely-recognized Six Sigma methodology: the disciplined data-driven approach and process improvement techniques that eliminate defects in any process.



MINISTRY OF INTERIOR VISITS TRA To learn about their experience in adapting the efqm module and creating a culture of excellence

MARCH



TRA PARTICIPATES IN AL AHLIA UNIVERSITY CAREERS EXPO 2018



TRA Celebrates 'Family Day' with Staff

APRIL



TRA HOLDS A **5G MASTERCLASS** TRAINING COURSE. The Telecommunications Regulatory Authority (TRA) organized a three-day masterclass training course on 5G in cooperation with the training firm Terrapinn. The course which was attended by a number of TRA's employees and licensed telecommunications companies was held as part of the 4th National Telecom Plan's objective of developing human resources capacity in the telecommunications sector.

The course gave an overview about 5G services and discussed 5G usages and benefits, including the deployment of super-efficient and super-fast

mobile networks, pervasive converged fibrewireless networks, the role of GSMA regarding 5G services. The course also discussed 5G way forward which includes setting the technical foundation for 5G, Spectrum acquisition, selecting the business models.

During the course, 5G case studies were presented, including what 5G Vendors are saying, Telcos in 2020, the Key challenges to implementing 5G networks, overcoming the risks of 5G implementation, and evaluating the impact of 5G on the industry.

VAT FOR TELECOMS WORKSHOP As part of its initiatives under the Fourth National Telecommunications Plan to develop human resources capacity in the telecommunications sector, The Telecommunications Regulatory Authority (TRA) held a three day "VAT for Telecoms Workshop" in collaboration with KPMG. The workshop was conducted with the purpose to

discuss VAT which will be introduced soon in the Kingdom of Bahrain and which will have an effect on several functions within the telecoms sector.

The workshop gave an overview of VAT in GCC and discussed several fundamental VAT aspects, such as the impact of VAT on the business sector in Bahrain, application of VAT on the telecoms industry, as well as VAT reporting requirements, legal aspects, and HR and employee benefits in addition to pricing strategy.

MAY



TRA HOLDS 'MINI MOBILE WORLD CONGRESS' workshop focusing on 'New Technologies' including 5G, AI, IoT, and cloud computing, in collaboration with leading global ICT infrastructure provider, Huawei.



TRA
ORGANIZES
'TROPICAL
SUMMER'
THEMED
EVENT FOR
STAFF

HEALTH CHECKUP FOR STAFF

As part of TRA's commitment to staff's wellbeing, health checkup camp was organized at the TRA headquarters. Basic health tests and counselling for a healthy lifestyle were extended to the TRA staff at the event.



JUNE 6



TRA ORGANIZED A **GHABGA** DURING RAMADAN AT THE FOUR SEASONS HOTEL as part of their commitment to cultivating closer relations with staff members. Employees enjoyed the festivities including games and raffle prize draws, and other fun activities..

JUNE 25

TRA CELEBRATES **EID EL FITR** WITH STAFF



AUGUST

TRA LAUNCHES "DID YOU KNOW!" AWARENESS INITIATIVE which aims to create an environment that boosts TRA's staff general knowledge about any topic that is not related to their work.

AUGUST 28

TRA **EID EL ADHA** CELEBRATIONS



SEPTEMBER



STAFF GATHERING



SEPTEMBER 30

"DID YOU KNOW!" – SUCCESS STORY OF EMAN AL MANNAI.

TRA organizes motivational session for its staff, featuring prominent Bahraini businesswoman and real estate expert Eman Al-Mannai, under the "Did You Know!" initiative.



OCTOBER

"DID YOU KNOW!" FEATURING SHARIFA SWAR. TRA holds a session on self-management with prominent psychiatrist and addiction therapist Dr. Sharifa Swar, under the "Did You Know!" initiative.

OCTOBER 17



THINK PINK TRA organizes a breast cancer awareness session with 'Think Pink Bahrain', a charity dedicated to breast cancer research.

OCTOBER



TRA'S LEADERSHIP PROGRAM.

TRA Holds
Workshop on
Leadership
Program in
Cooperation with
Global Executive
Education and
BIBF.

NOVEMBER



TRA HONORS AREGNET MANAGEMENT TEAM TRA Holds Workshop on Leadership Program in Cooperation with Global Executive Education and BIBF.

TRA HOLDS
BLOOD
DONATION
EVENT IN
COLLABORATION
WITH BDF
HOSPITAL



DECEMBER 2

WOMEN'S DAY CELEBRATIONS. Celebrating and acknowledging its female workforce, TRA celebrated Bahraini Women's Day at its headquarters. Award-winning Bahraini businesswoman Ms. Huda Janahi meets TRA staff on the occasion.

DECEMBER 18



TRA PARTICIPATES AT THE BIC NATIONAL DAY FESTIVAL The Telecommunications Regulatory Authority (TRA) participated in the National Day Festival held at the Bahrain International Circuit. During the festival, the TRA briefed the attendees on its functions, responsibilities and awareness campaigns in the interest of the consumer.

DECEMBER 18

TRA CELEBRATES **NATIONAL DAY** WITH ITS STAFF, AT ITS
HEADQUARTERS.





THE FOURTH NATIONAL TELECOMMUNICATIONS PLAN

Inspired by its vision of creating an efficient telecommunications sector, that serves as an important engine for Bahrain's economic growth and diversification, as well as its social cohesion, the Government of the Kingdom of Bahrain (Government), adopted the fourth National Telecommunications Plan in 2016 (Resolution No. 29), in conformity with Article 15 of the Telecommunications Law, as promulgated by Legislative Decree No. 48 of 2002 (Telecommunications Law).

The ambitious plan paves the way for Bahrain's telecom sector to enter a whole new era of digital connectivity; setting the stage for the introduction of next-generation Information and Communications Technology (ICT) infrastructure.

Emphasizing the need for a robust digital services sector, the NTP4 – while prioritizing investment in new high-speed infrastructure; outlines the idea of an advanced telecommunications platform, as part of a dynamic and converging ICT eco-system, which will enhance the digital competence of the Kingdom at unprecedented levels, establishing it as a regional as well as international ICT HUB.

In 2017, the Telecommunications Regulatory Authority took major steps to initiate the implementation of the Government policy outlined in the Fourth National Telecommunications Plan. The first was to undertake the development of a new economic regulatory framework to support and promote the Plan, majorly by defining the rules and obligations for operators to support the Plan's goals and deliver the 'Single Network Policy' – the key to effective implementation of the Plan.

The TRA also started an initiative to review the entire supply chain for international connectivity, and assessment of the effectiveness of the current regulation relating to the ability of licensed operators to access international connectivity, at cable landing stations in Bahrain.

TRA is also conducting a review of the mobile market in the Kingdom in order to understand the effect of market and technology trends on the state of competition in Bahrain's mobile market, and the most effective regulatory options in response to these trends.

The objective is to develop a roadmap of measures to promote Bahrain as a regional business and ICT hub, under the NTP4 umbrella.



THE NTP4 CORE OBJECTIVES

- Promoting Bahrain as an ICT and business hub in the region, with the telecommunications sector playing a central role in attracting new investment to the Kingdom.
- Affordable, secure, and robust, ultra-high speed fixed and mobile broadband network access to Bahrain consumers.
- Develop a strong and dynamic telecommunication sector by maintaining effective and sustainable competition in the Bahrain telecom market
- Prioritizing investment in new high-speed ICT infrastructure, with cutting-edge technologies, to stimulate wider economic growth, consistent with the Kingdom of Bahrain's Economic Vision 2030 and the goal of becoming a 'Smart Kingdom'.

THE NTP4 GOALS

In line with its objectives, NTP4 has set the following targets to be achieved within its 3 year timespan:

• 95% of all households and 100% of businesses and public radio communication stations in the Kingdom of Bahrain are able to access affordable, reliable, and secure ultra-fast broadband services. The remaining 5% of households shall have access to broadband Internet services using alternative access methods.

- Deployment of a national fiber network to support the ubiquitous ultrafast broadband, which all retail service providers will have access to, on an equal, fair, reasonable and non-discriminatory basis – fostering healthy competition.
- Adoption of a 'Clear Spectrum Policy' plan in the Kingdom, for assignment of the appropriate bands through clearly identified processes, to support the continued demand for mobile data services, and its evolution.
- Establishing appropriate support and incentives to promote ICT investment as well as training programs and capacity building to foster the development of talent, entrepreneurs and a Bahraini knowledge base in the internet space.
- Ensure the Kingdom is ranked within the top 20 countries globally, in key international telecommunications indices, by the end of 2018.
- Effective framework to ensure adoption of international best practices in national cybersecurity and cyber safety coordination, preparedness, and response, by the relevant entities in the Kingdom telecommunications/ICT sector.
- A high level of demand for services utilizing ubiquitous ultra- high speed networks, based on next-generation fixed and mobile infrastructure that fosters a converged internet eco-system.
- A comprehensive review and modification, if necessary; of the Kingdom's legislative framework for the telecommunications sector to address developments in the rapidly evolving sector since the promulgation of the Telecommunications Law in 2002..

THE NTP4 IMPLEMENTATION PLAN

Government has identified a number of detailed action steps that will be implemented over the next three years in order to achieve the policy objectives set out in the Plan.

- Government recognizes that its plan for the sector is ambitious.
 The complex and dynamic nature of the ICT sector makes forwardplanning all the more challenging and will require the combined
 efforts of all stakeholders to achieve the objectives of the Plan.
- Government intends to work closely with industry participants and other relevant stakeholders and organizations during the implementation phase to deliver on the policy priorities that have been identified for the sector.
- This collaboration particularly in the area of NBN deployment aims to benefit all licensees as well as Bahraini consumers and enterprises, while at the same time ensuring that Bahrain retains its position at the forefront of digital developments in the region and globally.

THE INSTRUMENTS OF SUCCESS

1.UBIQUITOUS ULTRAFAST BROADBAND INFRASTRUCTURE

- The development of fiber-based National Broadband Network (NBN) capable of delivering ultra-fast broadband to consumers and businesses across the Kingdom remains a core objective under NTP4 a key development underpinning all of the policies established by the Plan.
- The technologies and network architecture in the deployment of the NBN must be "future proof"; ensuring that the network can be upgraded at minimal cost to deliver state-of-the-art performance in line with international benchmarks.
- A single NBN infrastructure in the Kingdom for ultra-fast broadband products and services. This single network will be established and operated by a separate legal entity, with the right to deploy the network and supply products and services, to all licensed operators within the Kingdom, on a non-discriminatory basis.
- Strengthening the existing regulatory framework to ensure that Other Licensed Operators (OLOs) are able to compete more effectively in the provision of services to end-user customers.

2.MOBILE COMPETITION

- Ensure the Kingdom's strong and competitive telecom sector continues to deliver significant customer benefits and sustainable competition is safeguarded while maintaining high quality of service standards for mobile voice and data.
- To sustain the current healthy and effective level of competition in the telecom market, and avoid regulatory uncertainty; TRA is not to issue individual mobile telecommunications license to any new applicants during the NTP4 timespan.

3.SPECTRUM ALLOTMENT/ ASSIGNMENT AND WIRELESS INFRASTRUCTURE EVOLUTION

- Identify spectrum that should be allocated for commercial telecommunications services in line with the current Radio Regulations of the International Telecommunication Union, while also making necessary plans to free up spectrum, currently held by other entities – for the purpose of promoting sustainable growth in the mobile industry.
- Spectrum awarding for commercial telecommunications services to be in line with international best practices, whilst taking into account the priority placed by the Government on the roll-out and uptake of fiber services.
- All allotted radio spectrum for commercial use will be subject to review, to ensure efficient utilization, management and valuation of the radio spectrum to the benefit of the Kingdom.
- Implementation of regulatory measures as necessary to optimize the efficient use of wireless infrastructure and to promote and encourage site and mast sharing amongst all commercial wireless networks wherever feasible.
- Ensure compliance with the established procedures, requirements and technical rules for the construction, siting and design of radio communications stations and supporting structures.
- To further facilitate the provision of advanced mobile services, the Government will coordinate with relevant Government agencies, to secure sites in private and public developments, necessary for new mast construction.

4.NATIONAL SECURITY OF ELECTRONIC COMMUNICATIONS NETWORKS AND SERVICES

- Implementation of cybersecurity and cyber-safety measures across all sectors of the Kingdom, in line with the latest international standards and measures being adopted in other key markets globally, to ensure the Kingdom's critical telecommunications infrastructure is as secure and resilient as possible.
- Inventory of all critical telecommunications infrastructure in Bahrain. The facilities thus identified should be evaluated to determine how they measure up against cybersecurity best practices globally, and any gaps should be addressed as a matter of priority.
- Measures to secure user devices and improve consumer awareness of online threats and how to deal with them, for cyber safety of consumers.

5.INTERNATIONAL CONNECTIVITY

- A review of the entire supply chain of international capacity, including the provision of cross-border dark fiber, and adoption of necessary measures for efficient functioning of the relevant markets
- Review of the effectiveness of current regulation relating to the ability of licensed operators to access international capacity at cable landing stations in Bahrain, along with effective interim measures to minimize the anti-competitive impacts of any bottlenecks.
- Review the continued need for 'Bahrain Internet Exchange' (BIX) and its role going forward, with a view to making the most efficient and effective use of Government resources.
- Implementation of measures to ensure effective local peering arrangements between internet service providers, so that local internet traffic remains within the Kingdom. TRA shall monitor the arrangements to ensure maximum amount of internet traffic remains within Bahrain.



6.ACCESS TO INTERNET APPLICATIONS AND SERVICES

- Promoting a converged ICT eco-system of both fixed and mobile services, to allow the Kingdom's telecom consumers, the access to lawful content and applications of their choice, using the devices of their choosing, so far as is technically feasible, and without unreasonable discrimination by telecommunications operators.
- Prioritize, as a core policy, the deployment of a fiber-optic based NBN to enable advancements in the process for the development of the 'Internet of Things' (IOT), as well as of cloud technology and other developments necessary for the Kingdom's aspiration of transforming into a 'Smart Kingdom'.
- Device complementary policies that promote non-discriminatory access to internet content and applications via both fixed and mobile broadband services to contribute to the development of a healthy internet eco-system and promote user take-up.

7.DEVELOPING BAHRAIN AS A REGIONAL ICT HUB

- Relevant initiatives to promote the development of the local ICT sector as a whole, and the telecommunications industry in particular – as a key component to the wider economic development in Bahrain and essential for achieving the Economic Vision 2030 objectives, and recognizing the Kingdom's economy as 'future proof'.
- Identification and addressing of obstacles in the telecommunications / ICT sector to attract leading global content and service providers to the Kingdom of Bahrain.
- Achieve greater cooperation and communication between businesses, governmental agencies and consumers to promote the development, hosting and use of local content and applications.
- Necessary funding programs for the creation of academic and training programs specialized in the telecommunications sector, to foster development of Bahraini human capital in the telecommunications sector, and ensure that the right skills are available to develop the sector further.
- Promote the development of local content, applications and hosting within the Kingdom. This will include encouraging greater coordination amongst all organizations and agencies that have responsibilities affecting developments in this important area.
- Monitoring of the Kingdom's ranking against key international telecommunications / ICT indices, in order to ensure the Kingdom is ranked amongst the top 20 countries globally by the end of 2018
- Lead coordination with the rest of the GCC and put forth initiatives which will support the development of the telecommunications sectors and the digital economy of the region.

8.REVIEW OF THE TELECOMMUNICATIONS LAW

- Promulgated in 2002, the Telecommunications Law has served its purpose well and proven to be relatively flexible. However, given the fast evolving telecommunications sector, a number of areas have been identified in which the existing legislation may require updating to reflect industry developments.
- TRA in coordination with the Government, will undertake a review
 of the existing provisions of the Telecommunications Law in line
 with international best practice, and will also consider the need
 to update the legislation and related legal instruments to address
 industry demands and developments.





TELECOMMUNICATIONS REGULATORY AUTHORITY

1

BOARD OF DIRECTORS' REPORT for the year ended 31 December 2018

The Board of Directors present their Annual Report and Financial Statements of Telecommunications Regulatory Authority (the "Authority") for the year ended December 31, 2018.

PRINCIPAL ACTIVITY

The Authority is an independent body and its duties and powers include, among other matters, protecting the interests of subscribers and users and promoting effective and fair competition among existing and newly licensed operators in the telecommunications sector in the Kingdom of Bahrain.

REVIEW OF OPERATIONS

The results for the year are set out on page 5 of these financial statements.

TRANSFER OF SURPLUS

The movement of surplus and transfers to the Ministry of Finance are shown on page 6 of these financial statements.

AUDITORS

A resolution proposing the re-appointment of KPMG Fakhro as auditors of the Authority for the year ending December 31, 2019 and authorising the Directors to fix their remuneration which will be put to the Authority's Board of Directors' Meeting.

On behalf of the Board

Shaikh Hamad bin Mohamed Al Khalifa Deputy Chairman

29 May 2019

Shaikh Nasser Bin Mohamed Al Khalifa Acting General Director



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CR No. 6220

INDEPENDENT AUDITORS' REPORT TO THE BOARD OF DIRECTORS

Telecommunications Regulatory Authority Manama Kingdom of Bahrain

Report on the audit of the financial statements

Opinion

We have audited the accompanying financial statements of Telecommunications Regulatory Authority (the "Authority"), which comprise the statement of financial position as at 31 December 2018, the statements of income and expenses, accumulated surplus and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Authority as at 31 December 2018, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

Basis for opinio

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditors' responsibilities for the audit of the financial statements* section of our report. We are independent of the Authority in accordance with the International Ethics Standards Board for Accountants Code of Ethics for Professional Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

The board of directors is responsible for the other information. The other information obtained at the date of this auditors' report is the Directors' report set out on page 1.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed on the other information obtained prior to the date of this auditors' report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the board of directors for the financial statements

The board of directors is responsible for the preparation and fair presentation of the financial statements in accordance with IFRS, and for such internal control as the board of directors determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the board of directors is responsible for assessing the Authority's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the board of directors either intends to liquidate the Authority or to cease operations, or has no realistic alternative but to do so.



3

INDEPENDENT AUDITORS' REPORT TO THE BOARD OF DIRECTORS (continued)

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are
 appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of
 the Authority's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the board of directors.
- Conclude on the appropriateness of the board of directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Authority's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the board of directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

KPMG Fakhro

Partner registration number 137 29 May 2019

TELECOMMUNICATIONS REGULATORY AUTHORITY

STATEMENT OF FINANCIAL POSITION as at 31 December 2018

Bahraini dinars

	Note	2018	2017
ASSETS			
Non-current assets			
Property and equipment	5	565,062	642,518
Trade receivables	6	_	680,637
Total non-current assets	17.	565,062	1,323,155
Current assets			
Trade and other receivables	6	1,959,694	2,478,000
Cash and bank balances	7	17,907,293	21,417,610
Total current assets	2.71	19,866,987	23,895,610
Total assets		20,432,049	25,218,765
Accumulated surplus Total accumulated funds	8	9,365,543 9,365,543	11,828,765 11,828,765
Accumulated Funds Accumulated surplus	8	9,365,543	11,828,765
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Non-current liabilities			
Employee benefits	9	18,930	14,791
Deferred income	10	8,162,827	9,099,587
Total non-current liabilities		8,181,757	9,114,378
Current liabilities			
Deferred income	10	936,760	936,760
Trade and other payables	11	1,947,989	3,338,862
Total current liabilities		2,884,749	4,275,622
Total liabilities		11,066,506	13,390,000
Total accumulated funds and liabilities		20,432,049	25,218,765

The financial statements consisting of pages 4 to 24 were approved by the Board of Directors on 29 May 2019 and signed on its behalf by:

Shaikh Hamad bin Mohamed Al Khalifa

Deputy Chairman

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Shaikh Nasser Bin Mohamed Al Khalifa

Acting General Director

The accompanying notes 1 to 25 form an integral part of these financial statements.

TELECOMMUNICATIONS REGULATORY AUTHORITY

8

STATEMENT OF INCOME AND EXPENSES for the year ended 31 December 2018

Bahraini dinars

	Note	2018	2017
INCOME			
License fees	12	3,012,474	2,371,547
Frequency and spectrum fees	13	5,513,744	5,644,089
Numbering fees		1,064,897	1,068,212
Other regulatory income	14	1,075,195	7,440,635
Interest income		602,364	414,750
Other income	15	911,804	56,683
Total income		12,180,478	16,995,916
EXPENSES			
Staff costs	16	(1,871,827)	(2,255,663)
General and administrative expenses	17	(1,087,672)	(1,097,946)
Consultancy and legal fees	18	(2,197,972)	(1,287,961)
Advertising and publicity		(71,808)	(85,744)
Impairment loss on trade receivables	6	-	(151,199)
Depreciation	5	(330,554)	(288,638)
Total expenses		(5,559,833)	(5,167,151)
		0.000.045	44.000.00
Surplus for the year		6,620,645	11,828,765
Other comprehensive income			
Total surplus for the year		6,620,645	11,828,765

The financial statements consisting of pages 4 to 24 were approved by the Board of Directors on 29 May 2019 and signed on its behalf by:

Shaikh Hamad bin Mohamed Al Khalifa Deputy Chairman

Shaikh Nasser Bin Mohamed Al Khalifa Acting General Director

The accompanying notes 1 to 25 form an integral part of these financial statements.

TELECOMMUNICATIONS REGULATORY AUTHORITY

7

STATEMENT OF CASH FLOWS

for the year ended 31 December 2018 Bahraini dinars

	Note	2018	2017
OPERATING ACTIVITIES			
Surplus for the year		6,620,645	11,828,765
Adjustment For:			
Depreciation	5	330,554	288,638
Provision for employees' benefits	9	4,139	8,038
Impairment allowance on trade and other receivables	6	_	151,199
Other miscellaneous income		(18,319)	
Amortisation of deferred income	10	(936,760)	(936,760)
	_	6,000,259	11,339,880
Working capital changes:			
Decrease / (increase) in trade and other receivables		1,198,945	(2,882,431)
(Decrease) / increase in trade and other payables		(1,372,555)	1,148,534
Increase in deferred income			1,940,281
Employees' benefits paid	9		(23,619)
Net cash generated from operations activities		5,826,649	11,522,645
INVESTING ACTIVITIES			
Purchase of property and equipment	5	(253,099)	(162,861)
(Increase) / decrease in term deposits with banks		(4,419,708)	1,813,984
Decrease / (increase) in security deposit	7	1,700,000	(1,131,342)
Net cash (used in) / generated from investing activities		(2,972,807)	519,781
FINANCING ACTIVITIES			
Transfer made to the Ministry of Finance		(9,083,867)	(9,266,875)
Net cash used in financing activities		(9,083,867)	(9,266,875)
Net (decrease) / increase in bank balance		(6,230,025)	2,775,551
Bank balance at 1 January		6,400,252	3,624,701
Bank balance at 31 December	7	170,227	6,400,252

The accompanying notes 1 to 25 form an integral part of these financial statements.

ANNEX A - ACTIVE LICENSED OPERATORS - 2018

CURRENTS ACTIVE LICENSEES & LICENSES AS OF 31 DECEMBER 2018										
censee	Total Licenses	VAS	ISL	ISP	IFL	NFL	NFWS	IMTL	VSAT	IEX
scentech Technical Services	3	✓	√	√						
ahrain Internet Exchange	2				✓					✓
ahrain Star Event Management W.L.L	2	✓	√							
atelco	7	✓	✓	1	✓	✓		1	✓	
T Solutions Limited - Bahrain Branch	2	✓	✓							
quant Global Network - Foreign Branc :GN BV)	h 1		1							
tisalcom Bahrain Company W.L.L	5	✓	✓	✓	√	✓				
ateway Gulf Company B.S.C (Closed)	3	Expired	1	Expired	1					1
olden Sands Electronics and Phone	1	✓								
ulf Electronic Tawasul Company	1		✓							
MC .	1		✓							
fonas W.L.L	5	✓	1	1	1	✓				
alaam Telecom Bahrain B.S.C. (Closed)	4	✓	√	✓		✓				
lobitel Communication W.L.L	1	✓	✓							
orth Star Technology Company W.L.L	3	✓	✓	✓						
uetel Communications S.P.C	5	1	✓	1	✓	✓				
orbit Data Systems Company W.L.L	4	✓	√	✓	✓					
apid Telecom W.L.L	5	✓	✓	1	✓	✓				
TA	2	✓	✓							
iaCloud W.L.L	4	✓	✓	1	1					
IVA Bahrain B.S.C	7	✓	✓	✓	✓	✓	✓	√		
odafone Enterprise Bahrain W.L.L ormerly Cable & Wireless Worldwide ahrain W.L.L)	1		1							
ain Bahrain B.S.C	7	✓	✓	✓	✓		✓	✓	✓	
ain Global Communications Services P.C (formerly MADA Communication ompany S.P.C)	2		✓		1					
ajil Information Technologies ternational W.L.L	3	✓	√	✓						
OTAL	81	19	22	14	12	7	2	3	2	2

REVOKED LICENSES (IN 2018)

Licensee Name	VAS	ISL	ISP	IFL	NFL	NFWS	IMTL	VSAT	IEX	Revoked Date	Revocation Mode
Mobile Information Services	✓									22 - Feb - 2018	Voluntary
Moving Gulf Telecom W.L.L	1	1								30 - Aug - 2018	Voluntary
Gateway Gulf Company B.S.C (Closed) (not to be treated as a revoked licensee as only two licenses have expired)	✓		✓							20 - Sep - 2018	Licenses expired / not renewed

ANNEX B - PUBLIC CONSULTATIONS ISSUED IN 2018

PUBLIC CONSULTATIONS				
SI. No.	Public Consultations	Issue Date		
1	Public Consultations Bulletin 2018	29 - Mar - 18		
2	Public Consultation on the New Economic Regulatory Framework and the Functional Separation of Batelco	10 - May - 18		
3	Public consultation on the Authority's proposed approach to implementing the separation of Batelco	12 - Jul - 18		
4	Public Consultation on International Roaming (Price Transparency) Regulation	23 - Jul - 18		
5	Public consultation on Award of Spectrum in the 800 and 2600 MHz bands	14 - Aug - 18		
6	Public Consultation on Own Initiative Monitoring and Enforcement Programme	09 - Oct - 18		
7	Public Consultation on A revised Mergers and Acquisitions Regulation	18 - Oct - 18		
8	Public Consultation on Draft Determination of Dominance in Mobile Termination Markets	18 - Oct - 18		
9	Public Consultation on the Review of the Guidelines for the setting of the amount of a fine for violations of Article 35 and/or 65 of the Telecommunications Law in the Kingdom of Bahrain	23 - Oct - 18		
10	Public consultation - Amended Revenue Reporting Regulation	24 - Oct - 18		
11	Public consultation on Separated Entity licence	13 - Dec - 18		
12	Public consultation on the Separated Entity's Draft Reference Offer	20 - Dec - 18		

ANNEX C - REGULATIONS, DETERMINATIONS & GUIDLINES ISSUED IN 2018

REGULATIONS, DETERMINATIONS AND GUIDELINES				
SI. No.	Document	Issue Date		
1	Consumer Dispute Regulation	21 - Feb - 18		
2	Decision No. 2 of 2018 - Proposed Acquisition of Gulf Electronic Tawasul Company – Foreign Branch by Kalam Telecom Bahrain B.S.C.	14 - Mar - 18		
3	Report on the New Telecommunications Economic Regulatory Framework for the Kingdom of Bahrain	15 - Apr - 18		
4	Amended Accounting Separation Regulation	06 - May - 18		
5	Public Notice on assignment of frequencies to Fixed Wireless Access systems in 28 GHz band	11 - Jun - 18		
6	Special Temporary Measure Under Article 40(bis)(b) Of The Telecommunications Law	06 - Aug - 18		
7	Separation of Batelco Guidelines	06 - Aug - 18		
8	Regime for Monitoring of Separation of Batelco and NBN Compliance Guidelines	06 - Aug - 18		
9	Quality of Service Regulation	16 - Aug - 18		
10	Regulation on Permitting, Installation, Upgrading and Maintenance of Public Radiocommunications Stations	30 - Aug - 18		
11	Decision No 8 of 2018 – IMC Telecom (transfer of shares)	13 - Sep - 18		
12	Decision No.(7) Of 2018 - Timeline for the rectification of Legacy Public Radiocommunications Stations	17 - Sep - 18		
13	Determination issued by the Telecommunications Regulatory Authority to Nuetel Communications SPC pursuant to Article 65(f) of the Telecommunications Law regarding Nuetel's pricing of its Local Interconnection Charges	01 - Oct - 18		

ANNEX D - ORDERS ISSUED IN 2018

ORDERS					
Sl. No.	Order	Issue Date			
1	Order No. 1 of 2018 - Batelco Breach of Article 57(f) of the Telecommunications Law	14 - Mar - 18			



