هيئة تنظيم الاتصالات دولة قطر
Communications Regulatory Authority
State of Qatar

ANNUAL REPORT 2016

Communications Regulatory Authority
State of Qatar
هيئة تنظيم الاتصالات دولة قطر

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His Highness
Sheikh Tamim Bin Hamad Al Thani
Emir of the State of Qatar

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His Highness
Sheikh Hamad Bin Khalifa Al Thani
Father Emir

MESSAGE FROM THE MINISTER

Qatar National Vision 2030 honors the importance of developing a knowledge-based economy which is characterized with intensive research, development and innovation, in order to achieve acceptable and sustainable economic growth rates to maintain high standards of living for present and future generations.

With confident steps and a clear vision, Qatar continues its journey towards building the desired digital future and enriching the lives of all members of the Qatari society. The Communications Regulatory Authority (CRA) contributes to this vision by fostering the national economy by establishing appropriate regulatory frameworks, a world-class information infrastructure that enables innovation, and the use of ICT mechanisms which are fundamental pillars of a knowledge-based economy.

CRA plays a major role in supporting and encouraging an open and competitive telecommunications sector, to ensure the provision of innovative, advanced and reliable telecommunications services with full commitment to balance consumers' rights and meeting the needs of service providers.

In addition, CRA has established new regulations and strategies evident from Qatar's global ranking of 27 among networked nations worldwide, and is ranked second among Arab countries, on the network readiness index. The contribution of the ICT sector to GDP increased to 1.7% in 2016 compared to 1.3% in 2014.

CRA plays a vital role in planning and managing public telecommunications infrastructure which service providers rely on, and also encourages investments in infrastructure development by working with all stakeholders to attract long-term investment and to ensure that a sustainable business environment is available.

CRA has accomplished important achievements in 2016, and is proud to celebrate it with the release of the following annual report.

H.E. Jassim Saif Ahmed Al Sulaiti
Minister of Transport and Communications

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MESSAGE FROM THE PRESIDENT

As Qatar seeks towards transitions into an innovative nation, the Communications Regulatory Authority (CRA) continues to contribute to that progress. 2016 was a year in which we saw a new level of maturity in Qatar's telecommunications market as well as the dynamic development of digital media, and information and communications technology (ICT) sectors. Each of these sectors has grown year-on-year, a direct result of CRA's regulatory strategies, which ensure stability and GDP growth. The ICT sector now makes up 1.7% of Qatar's total GDP, up from 1.3% in 2014.

CRA has continued to put the building blocks in place to encourage competition and protect consumers in the telecommunications market. As outlined in the 2014 general policy statement – "Regulating for the Future" – CRA began focusing on regulating wholesale markets and prevailing bottlenecks. CRA also saw progress in defining the new postal law and in formulating a general policy statement that establishes CRA's position on access to digital media.

CRA has launched an overall assessment of the different sectors of the market and their interaction in order to launch a policy articulating the principles that will guide CRA activity in the ICT and postal sectors as well as access to digital media. These principles will give guidance to CRA and enhance the stability, which the CRA seeks to achieve for the benefit of all stakeholders.

Qatar has been recognized for its many achievements in developing a knowledge-based society. We are well positioned to leverage the opportunities offered by ICT. An in-depth analysis of the global ICT sector landscape indicates that the development of Qatar's telecommunications infrastructure is on par with that of comparable high-income countries.

Looking forward, 2017 seems to be an important year for us too in many ways. Among many other things, we will look to build on the progress CRA made in establishing and enabling the usage of Qatar-specific domain names – including (.qa) – which will help all businesses and organizations in their business field. 2017 will also be an important step forward in preparing a strategy that ensures continued development of a competitive sector that offers individuals and businesses a broad range of innovative and reasonably priced communications services.

CRA also plans to undertake a sector review to analyze the state of competition in the telecommunications market to determine future measures, which will further promote competition in an evolving marketplace. This is especially important considering new dynamics like globalization and emerging players in the field. This effort of identifying new paths, which point towards the promotion of competition, includes studying whether additional service providers are needed in specific areas of the market.

H.E. Mohammed Ali Al-Mannai
President of Communications Regulatory Authority

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CRA would not achieve these achievements presented in this annual report without the support and commitment of Qatar's leadership and the continued dialogue with key stakeholders. I would like to thank you in advance for being part of this success, as we look forward to another productive year.

The Communications Regulatory Authority (CRA) is the Communications Regulator in the State of Qatar established by virtue of Emiri Decree (42) in 2014. The CRA regulates the Telecommunications and Information Technology sector, Postal sector, access to digital media and Spectrum.
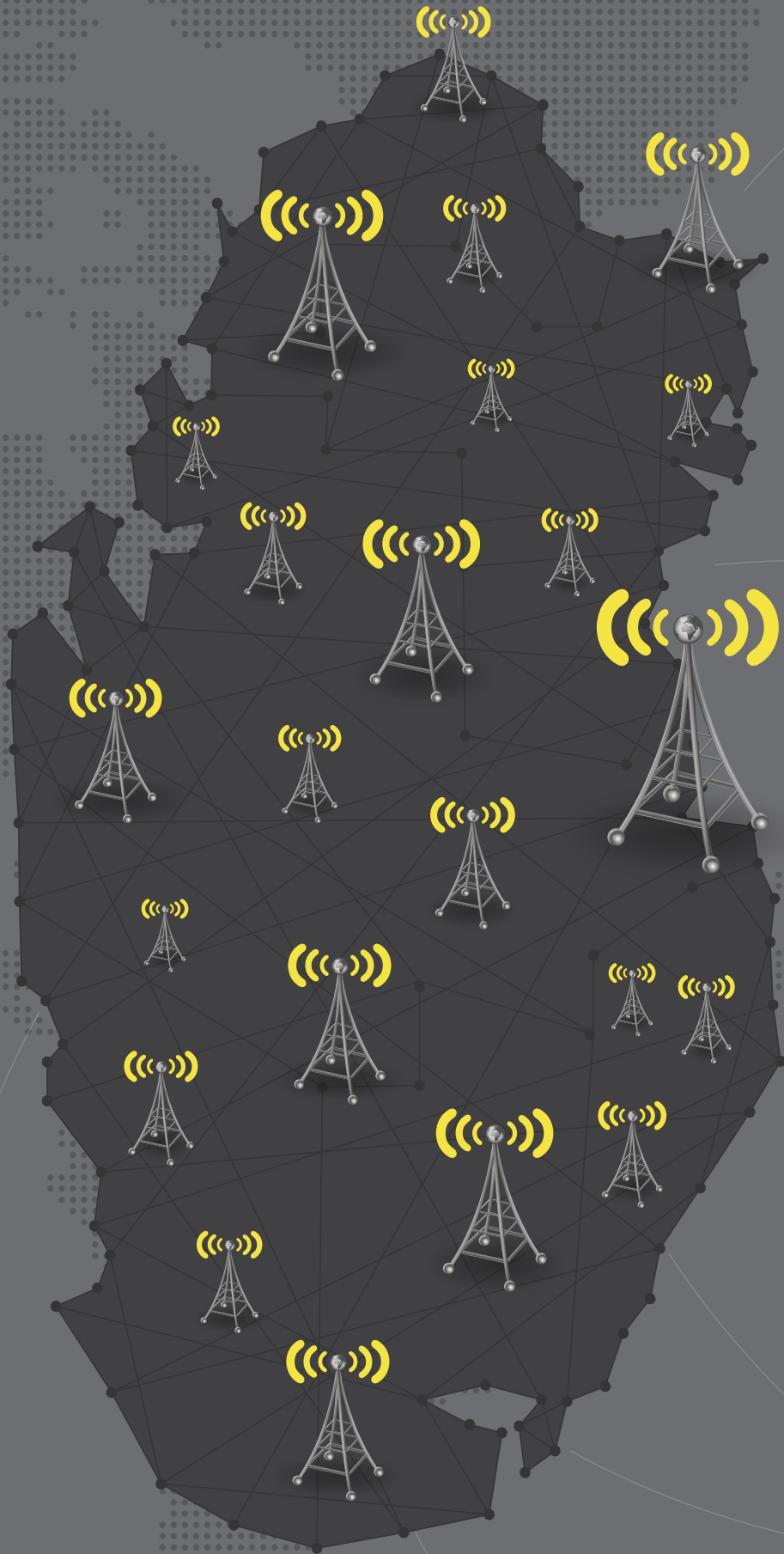
VISION

Qatar – a smart connected nation, enabled through effective and innovative ICT and postal regulation.

MISSION

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- To enable the development of a digital society and the postal sector for the social and economic benefit of Qatar, through a forward looking, transparent and consistent regulatory framework.

- To foster sustainable competition to promote a fair market place and improve customer experience through the ubiquitous availability of smart, innovative and high quality services.

- To continue building our institutional capabilities through investing in and developing our staff, expertise and resources.

INTRODUCTION

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The Communications Regulatory Authority (CRA) continues its commitment to support a buoyant telecommunications sector and a regulatory environment that fosters a knowledge-based economy. CRA is using a range of regulatory and enforcement powers to encourage competition in the communications sector and ensure consumer rights are protected.

CRA's holistic and transparent approach to regulation is guided by its values of promoting consistency, certainty, transparency, and flexibility across the regulatory framework development. CRA strategy aims to focus on regulating wholesale markets to decrease unnecessary retail regulation, works to benefit the fixed sector and directs considerable attention to affecting a continuation of the steady growth seen in the mobile sector.

CRA also intends to develop where necessary a set of minimum terms and conditions on all networks and service providers and limit the regulation of dominant service providers where possible, to address identified bottlenecks at the wholesale level.

CRA has developed a comprehensive competition policy and intends to implement this policy to ensure any incidents of non-compliance are addressed. Furthermore, CRA also plans to introduce a continuous monitoring of sector performance and development, as it deems necessary.

The following annual report details the achievements and progress made by CRA in 2016. Several important themes emerge.

The telecommunications market is reaching a level of maturity. New technological trends and new business dynamics, such as international players delivering telecommunications and non-telecommunications services on top of the traditional telecommunications operators' networks, are leading to new competitive paradigms. Consequently, individuals are benefiting from a broad range of innovative, high quality services at affordable prices.

In addition, both operators provide national coverage via 2G, 3G and 4G services. Ooredoo Qatar announced plans to offer nationwide LTE-Advanced services (4G+) and in May 2016, Ooredoo Qatar announced the trial of its Voice over LTE network (VoLTE). Vodafone Qatar has likewise launched its own LTE-Advanced nationwide network while pursuing plans for VoLTE coverage. While competition in the mobile sector is robust, competition in the fixed sector has yet to emerge, with the price of fixed services like broadband and leased lines relatively high compared with global standards. Internal and external competitive pressure – which CRA will monitor and, when possible, guide – will however drive a new dimension of competition both in the fixed and in the mobile markets.

Consumers are benefiting from a wide-range of consumer protection efforts. With the independent dispute resolution mechanism being implemented because of the Consumer Protection Policy, CRA resolved more than 94% of complaints that consumers were not able to resolve with their service providers in 2016. Furthermore, the complaint management system is being fully automated. CRA's mobile app – Arsel – is being upgraded to make it more user friendly, and to enrich its functionalities. This year CRA also began the development of a Policy and Regulation on Operator Behavior toward Consumers so that consumers can better understand the obligations of service providers as well as their own rights and obligations.

A robust regulatory and legal framework that supports the development of the sector continues to be developed, and existing policies and regulations promulgated last year are being vigorously monitored and enforced for compliance. The Competition Policy launched last year is being monitored for compliance and action to ensure that anti-competitive behaviors, which pose challenges in the delivery of good outcomes for consumers, are mitigated.

A Quality of Service (QoS) policy and the related regulation is being developed this year so that the performance obligations of the service providers and networks are clear. The Passive Civil Telecommunications Infrastructure Regulation that governs access to and/or sharing of civil infrastructure put in place at the end of 2015, is being implemented in 2016 with the development of the Standard Access Offer (SAO) prepared by service providers and owners of civil infrastructure to provide fair and non-discriminatory access to service providers.

The pages of this annual report further highlight CRA's achievements and the progress made.

The Communications Regulatory Authority's key mandate is aimed at promoting a fair and competitive marketplace for the benefit of consumers and the whole industry to foster sustainable competition for years to come. CRA has fully embraced its role as the regulator within Qatar's communications and information technology sectors. CRA is called not only to draft and improve the rules – a role that has been performed in recent years – but also to ensure fairness between the market players.

STRUCTURE AND STATE OF QATAR TELECOMMUNICATIONS MARKET

The service providers operating in Qatar are offering a broad range of services to individuals, businesses and the government entities. Ooredoo Q.S.C. and Vodafone Qatar Q.S.C. (referred to as Ooredoo and Vodafone in the subsequent text) provide mobile and fixed services, with Qatar National Broadband Network (Qnbn) also providing fixed services. Harris Salam W.L.L., QSat Communications W.L.L., RigNet Qatar W.L.L. and Qatar Satellite Company "Es'hailSat" provide satellite services.

Competition in the mobile market has clearly taken hold in Qatar and both Ooredoo and Vodafone provide national coverage via 2G, 3G and 4G services. Competition has not yet taken hold in the fixed market. Ooredoo has deployed its fiber-to-the-home (FTTH) network, which now covers 99% of the country. Vodafone is offering broadband services in The Pearl Qatar as well as in areas where Qnbn has deployed its network (e.g. Barwa City, West Bay, etc.). The satellite sector is also progressing remarkably with Es'hailSat developing a new Ka-Band hub for data communications services. In the near future we will witness the launch of Qnbn's second satellite, Es'hail-2, which will provide the region with additionally advanced services which include broadcast, telecommunications, amateur radio services and broadband options.
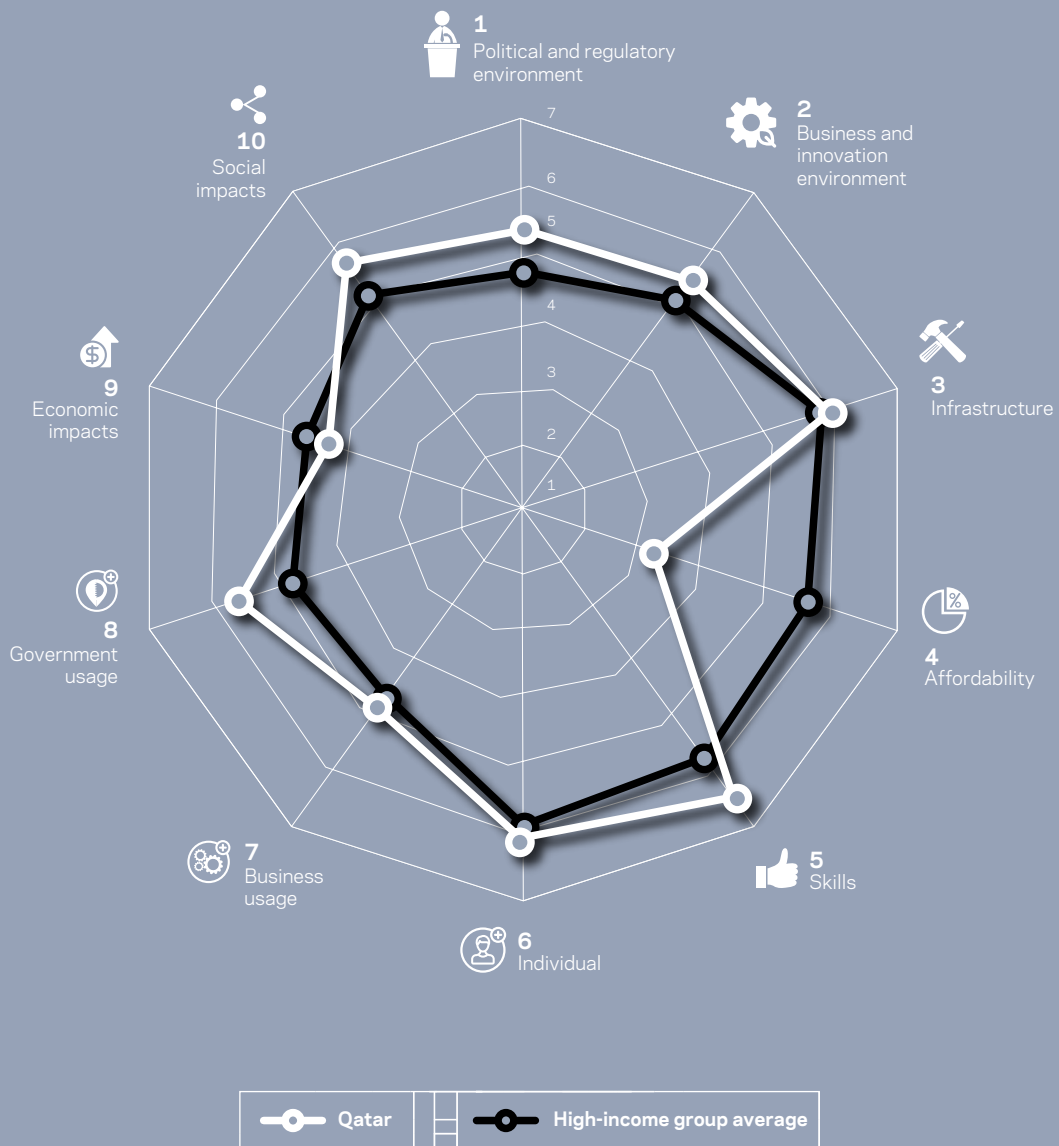
These advancements have led to Qatar ranking 27th globally (out of 139 countries) and second among Arab countries in the Global Information Technology Report's (GITR) Networked Readiness Index (Figure 1)

The in-depth analysis of the global landscape conducted by the World Economic Forum indicates that the development of Qatar's telecommunications infrastructure is on par with that of comparable high-income countries. Furthermore, Qatar's political and regulatory environment and the resulting business innovation are deemed above average with respect to peer countries. The GITR index goes further to highlight issues in term of pricing. This issue was also highlighted in a June 2016 report issued by the Ministry of Transport and Communications (Qatar's ICT Landscape 2016: Business) – which found that businesses were unsatisfied with the cost of Internet and IT products and services.

Qatar's positive ranking within the GITR Index represents an important achievement. Qatar National Vision 2030 envisions a knowledge-based society, a reality that the country's telecommunications industry is helping to advance. Performing well globally has acted as a stimulus to making continued improvements in the future, with stronger competition and enhanced services guiding the way, especially in relation to services provided to business customers.

The following paragraphs provide more in-depth and detailed analysis related to the state of the telecommunications market.

FIGURE 1. Qatar Network Readiness Performance, 2016

1 Political and regulatory environment

2 Business and innovation environment

3 Infrastructure

4 Affordability

5 Skills

6 Individual

7 Business usage

8 Government usage

9 Economic impacts

10 Social impacts

Qatar | High-income group average

Source: World Economic Forum, the Global Information Technology Report, July 2016

THE OVERALL TELECOMMUNICATION SECTOR

As Figure 2 indicates, despite the external macro level factors affecting Qatar's economy, the overall telecommunications sector (including fixed, mobile, satellite and VSAT) remained relatively stable between 2015 and 2016 with total revenue of 10,151 million QAR in 2016 compared to 10,157 million QAR in 2015.

FIGURE 2. Revenues of the overall telecommunications sector
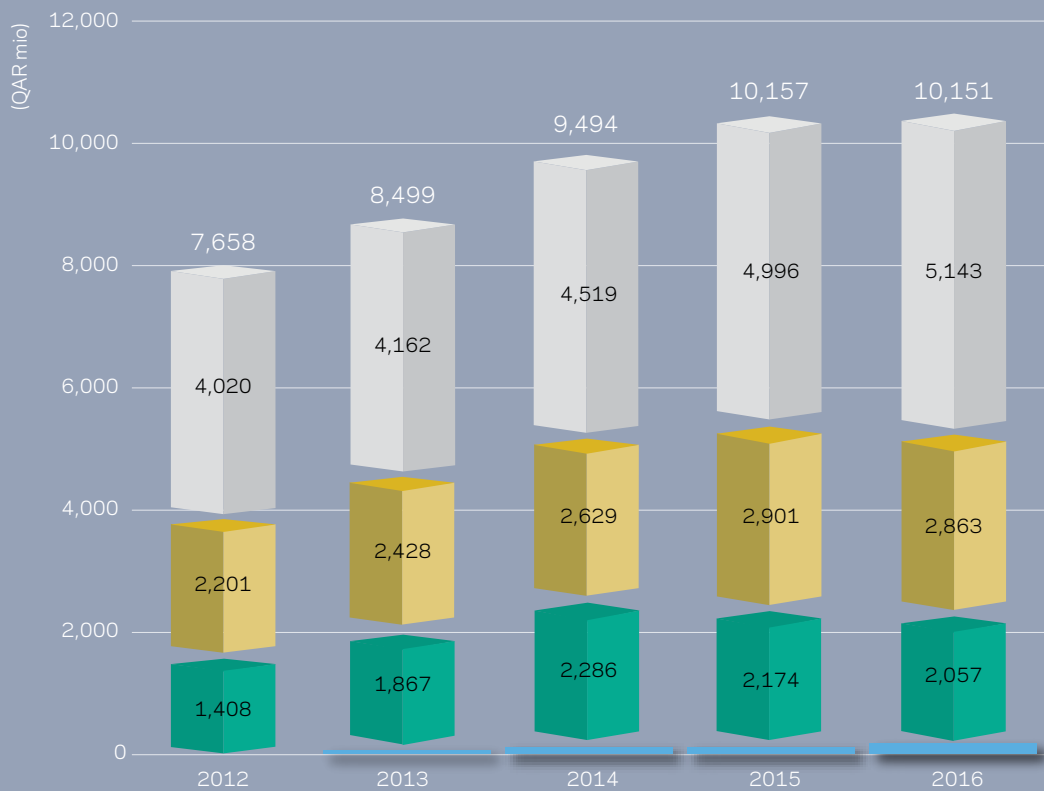
Source: Service providers' financial data; CRA calculation

FIGURE 3. Qatari GDP and Telecommunications contribution

Legend:
- ■ GDP at Current Prices (Nominal)
- **% Contribution of Information and Communication sector**

Source: Ministry of Development Planning and Statistics (MDPS); CRA calculation

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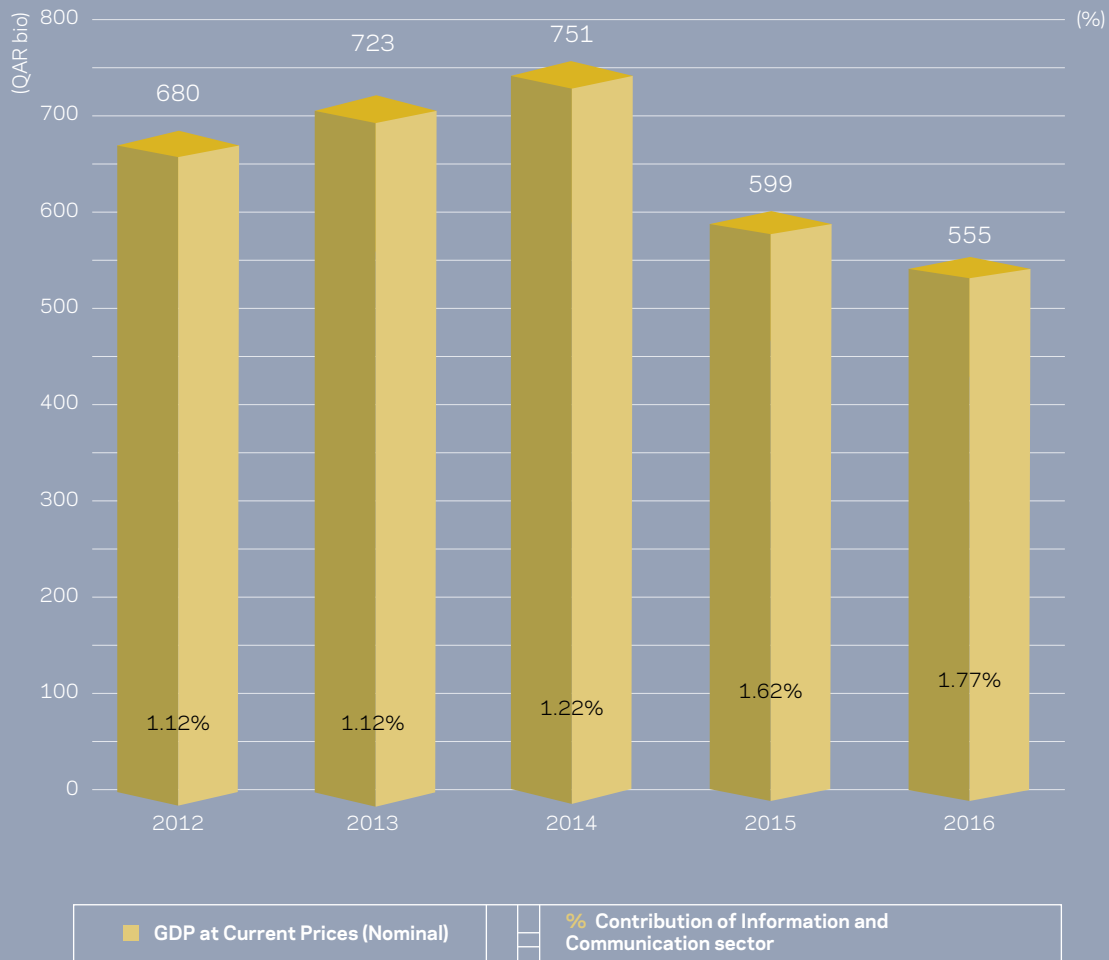Note: For the overall economic situation, the contribution of the Information and Communications sector [1] (as defined in the National Accounts published by the Ministry of Development Planning and Statistics) for which telecommunications is the most important and fastest growing component is adding to the diversification of the Qatari economy. This can be seen in Figure 3 and the sector now makes up 1.77% of Qatar's total GDP, up from 1.22% in 2014 and 1.12% in 2012.

[1]Information and communication technology (ICT) includes the administration of affairs and services concerning the construction, extension, improvement, operation, and maintenance of communication systems (postal, telephone, telegraph, wireless, and satellite communication systems). Qatar Infrastructure Statistics: An Overview, Economics Statistics and National Accounts Department, Qatar Statistics Authority, May 2012 available at http://www.mdps.gov.qa/en/knowledge/Publications/Economic/Eco_Qatar_Infrastructure_Statistics_En_2012.pdf 3Ovum, Telecom Media & Entertainment Outlook 2015, http://info.ovum.com/uploads/files/²Ovum_Telecoms_Media_and_Entertainment_Outlook_2015.pdf last retrieved on March 19, 20174 Household ICT Survey 2015 (Ministry of Transport and Communications)

4.9 million subscribers

7%

increase in population

FIXED AND MOBILE SERVICES PROVIDED TO THE PUBLIC

In terms of fixed and mobile subscriptions, as Figure 4 indicates, they too have remained relatively stable between 2015 and 2016 with around 4.9 million subscribers in total at end of 2016 compared to 5.0 million subscribers in total at end of 2015. Meanwhile as the population continues to increase (7% over the period Q4 2015 to Q4 2016) the penetration rate of mobile subscriptions has fallen from 191% of the population in 2015 to 176% of the population in 2016. This remains one of the highest rates of mobile penetration in the MENA region and the rest of the world.

FIGURE 4. Population, Fixed and Mobile Market Subscribers

Legend:
- •••• Vodafone Qatar (Fixed and Mobile)
- •••• Ooredoo Qatar (Fixed)
- —— Ooredoo Qatar (Mobile)
- |||||||| Population
- |||||||| Total Industry Subscribers
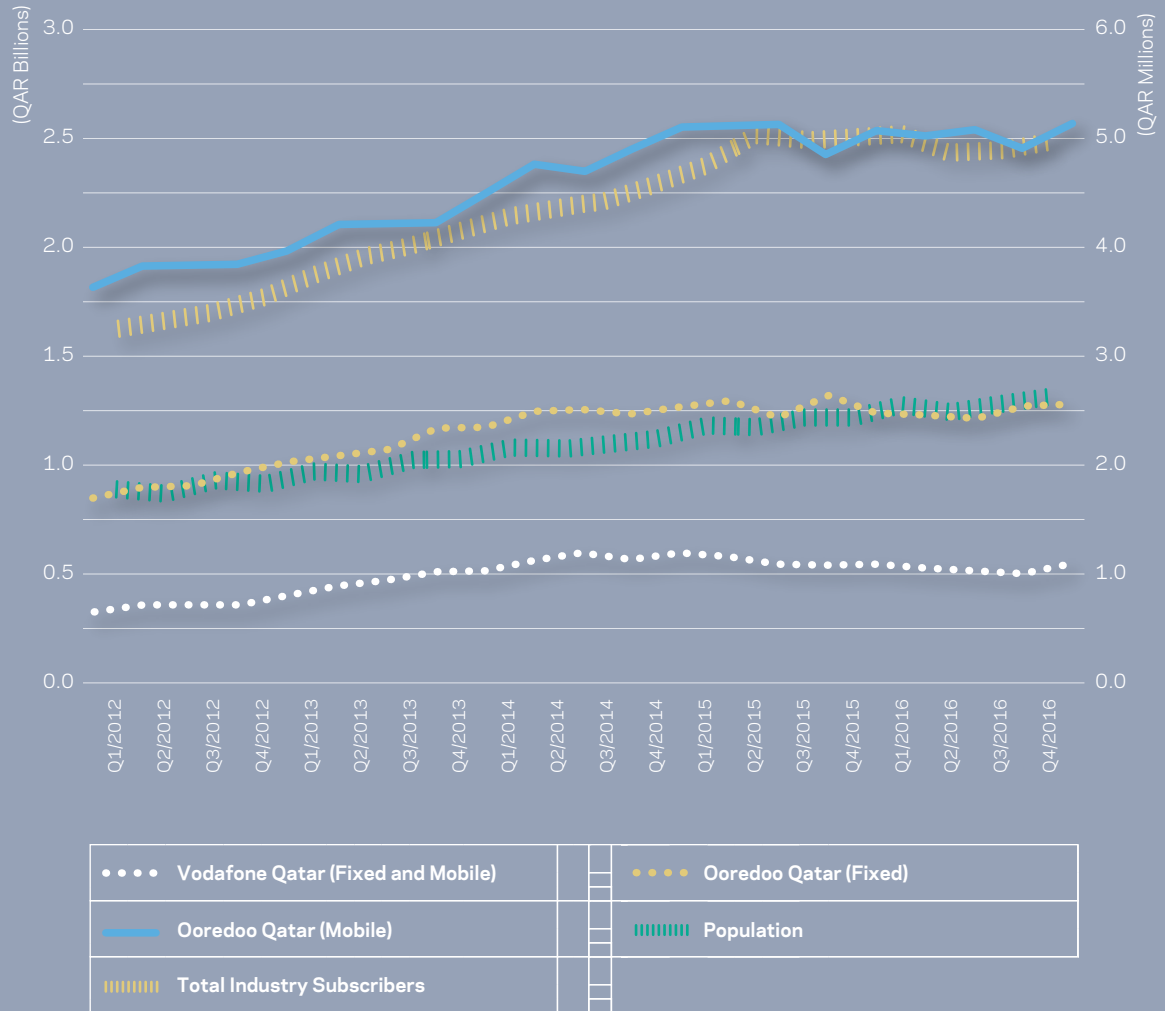
Source: Qatar Statistic Authority 2016 for population figures; service providers' financial data for total market subscribers

The stability in the trends for both revenues and subscribers between 2015 and 2016 is due to the combined effect of a number of factors:

- The change in the population's makeup with an increasing number of "blue collar" workers with limited spending capacity and a decreased number of "white collar" workers;

- The maturity of the telecommunication markets, with some price declines;

- A larger resiliency of the fixed and mobile markets vis-à-vis the overall market; and

FIGURE 5. Ooredoo and Vodafone EBITDA and profit margin

Ooredoo EBITDA Margin · · · ·
Vodafone EBITDA Margin · · · ·
Ooredoo Profit/Loss Margin ——
Vodafone Profit/Loss Margin ——
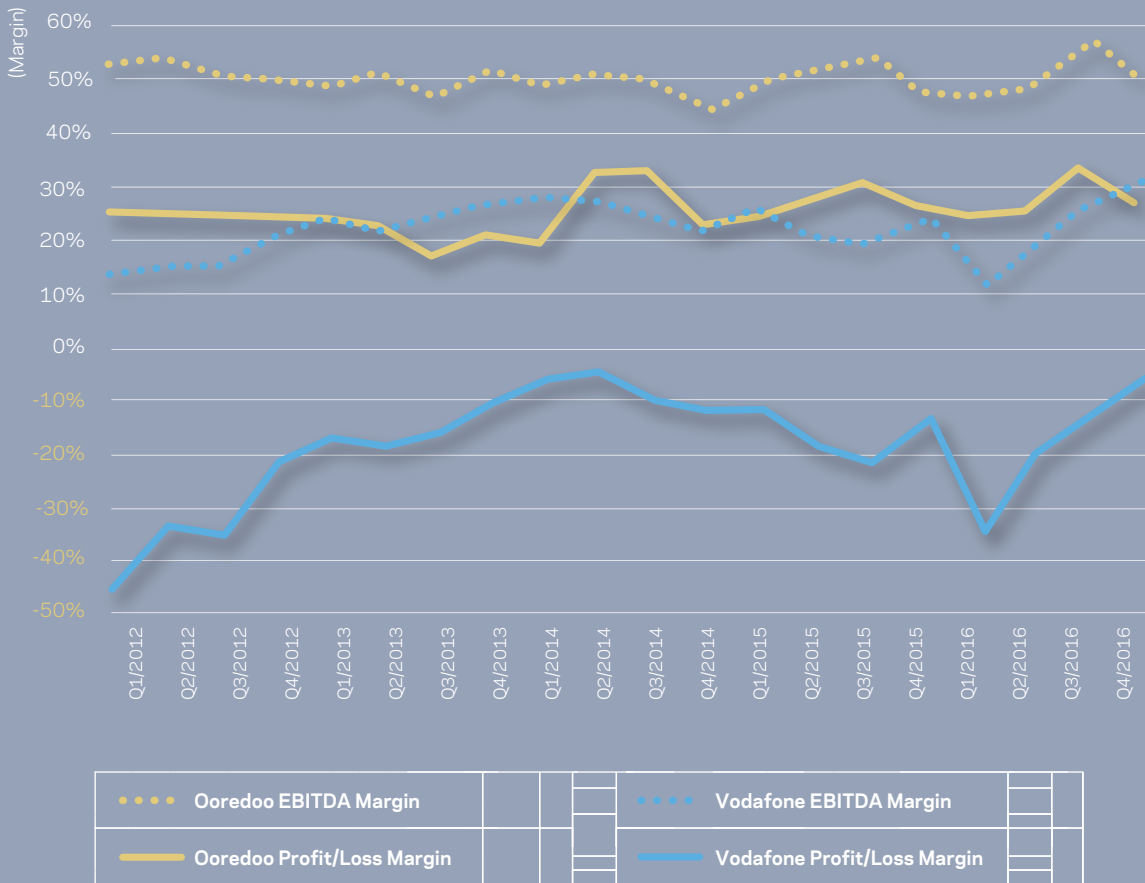
Source: service providers' financials, CRA estimation and calculation;
NB: Ooredoos' profit for Q4/2016 is estimated, as Ooredoo ceased published quarterly profits

In terms of the main service providers' margins and profitability, as shown in Figure 5, Ooredoo's EBITDA margin varied around the 50% mark between 2012 and 2016 whereas Vodafone's EBITDA margin improved to breach the 30% barrier for the first time in 2016. Vodafone's profitability however has remained negative (although improving) between 2012 and 2016, whilst Ooredoo's profit margin fell below 30% at the end of 2016.

We can observe from Figure 6 that service providers are diversifying their businesses and increasing the share of revenues not linked to their licensed activities (e.g. data centers, ICT Solutions, sale of handsets, etc.). In 2016 revenues not linked to licensed activities accounted for 22% of service providers' revenues, while in 2015 it accounted for 20% and in 2014, 18%

FIGURE 6. Ooredoo and Vodafone licensed versus non-licensed activities revenues

(%)

Year	Licensed Activities Revenue	Free market activities
2012	88%	12%
2013	85%	15%
2014	82%	18%
2015	80%	20%
2016	78%	22%

■ Licensed Activities Revenue

■ Free market activities (e.g. handset sale, installation, ...)
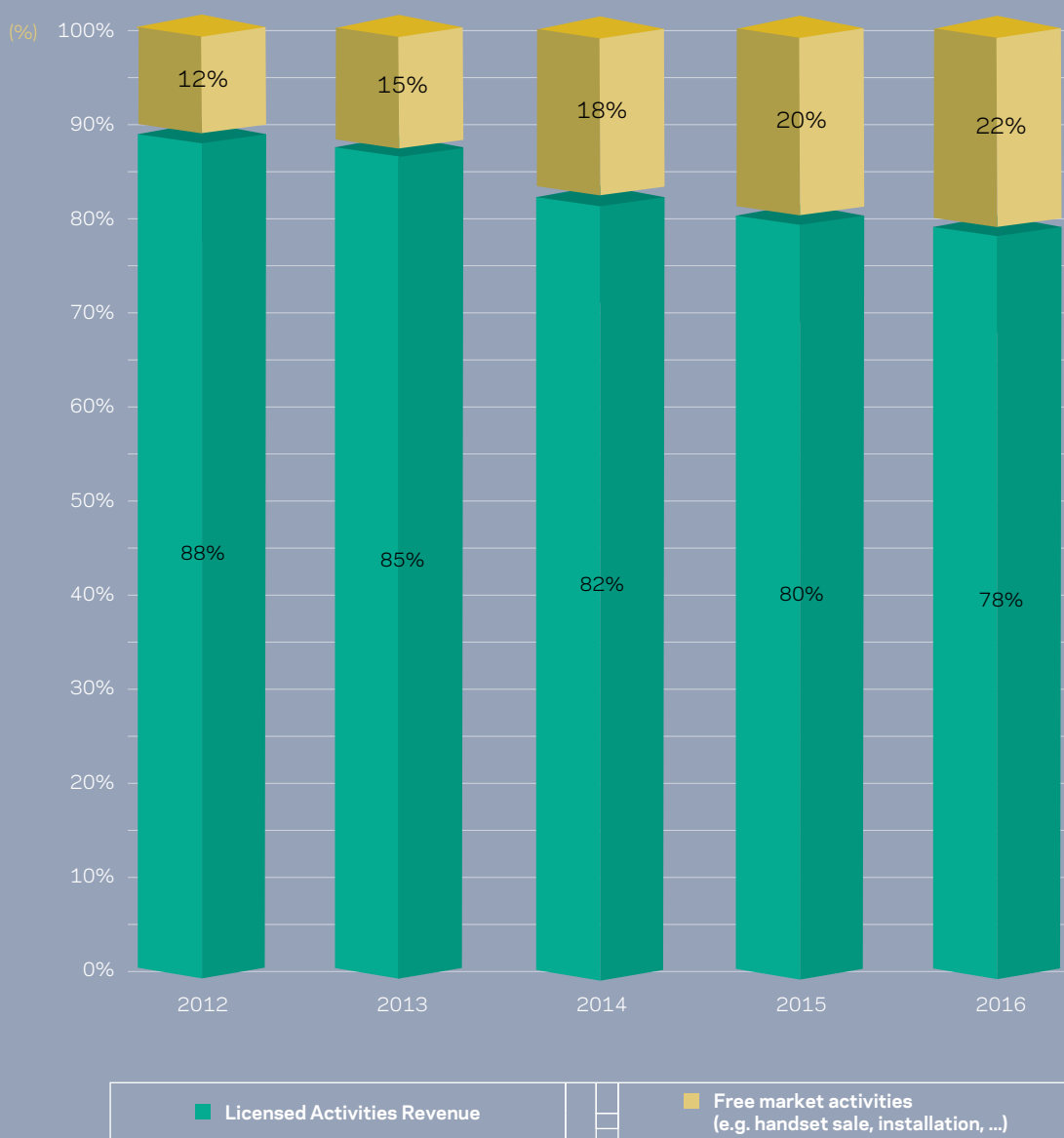
Source: service providers' reporting; CRA calculation

MOBILE MARKET

This market covers mobile national and international calls, messages and mobile broadband services.

As previously mentioned, Figure 7 shows that mobile penetration has declined to 176% of the population since peaking at nearly 200% in Q2/2015. One of the key reasons is a clean-up exercise of the service providers to remove accounts which aren't meeting the registration and subscription requirements.
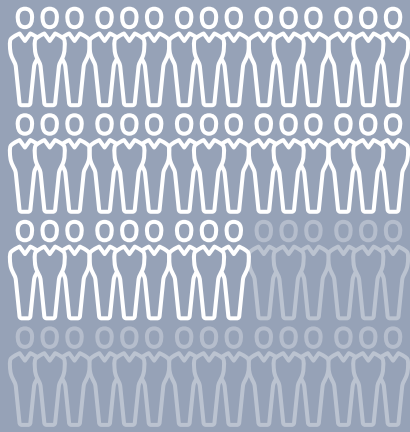
Total Mobile penetration and subscribers

176%

population

FIGURE 7. Mobile Subscribers, Penetration Rate and Population

Mobile subscribers (millions) — Mobile penetration (%)

	Q1/2012	Q2/2012	Q3/2012	Q4/2012	Q1/2013	Q2/2013	Q3/2013	Q4/2013	Q1/2014	Q2/2014	Q3/2014	Q4/2014	Q1/2015	Q2/2015	Q3/2015	Q4/2015	Q1/2016	Q2/2016	Q3/2016	Q4/2016
Total	2.9	3.0	3.1	3.2	3.4	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.4	4.7	4.6	4.6	4.7	4.5	4.5	4.6
Ooredoo	2.1	2.1	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.6	2.7	2.8	2.9	3.1	3.1	3.1	3.1	3.0	3.1	3.1
Vodafone	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.6	1.5	1.5	1.5	1.5	1.5	1.5
Penetration	167%	167%	174%	175%	177%	181%	183%	186%	186%	186%	186%	188%	187%	198%	190%	191%	184%	181%	177%	176%

- Vodafone Qatar
- Ooredoo Qatar
- ····· Total Mobile Penetration

Source: Service providers' reporting, CRA calculation

Qatar
Mobile Penetration Rate

As Figure 8 illustrates, despite this decline Qatar still has one of the highest penetration rates in the region and internationally.

FIGURE 8. Total Mobile Penetration Rate in the Region

Source: Cullen International 2017

As Figure 9 shows, competitive pressure, an increasing population of 'blue collar' workers, and falls in prices (especially international calls from mobiles) has seen mobile Average Revenue per User (ARPU) driven down. Ooredoo reported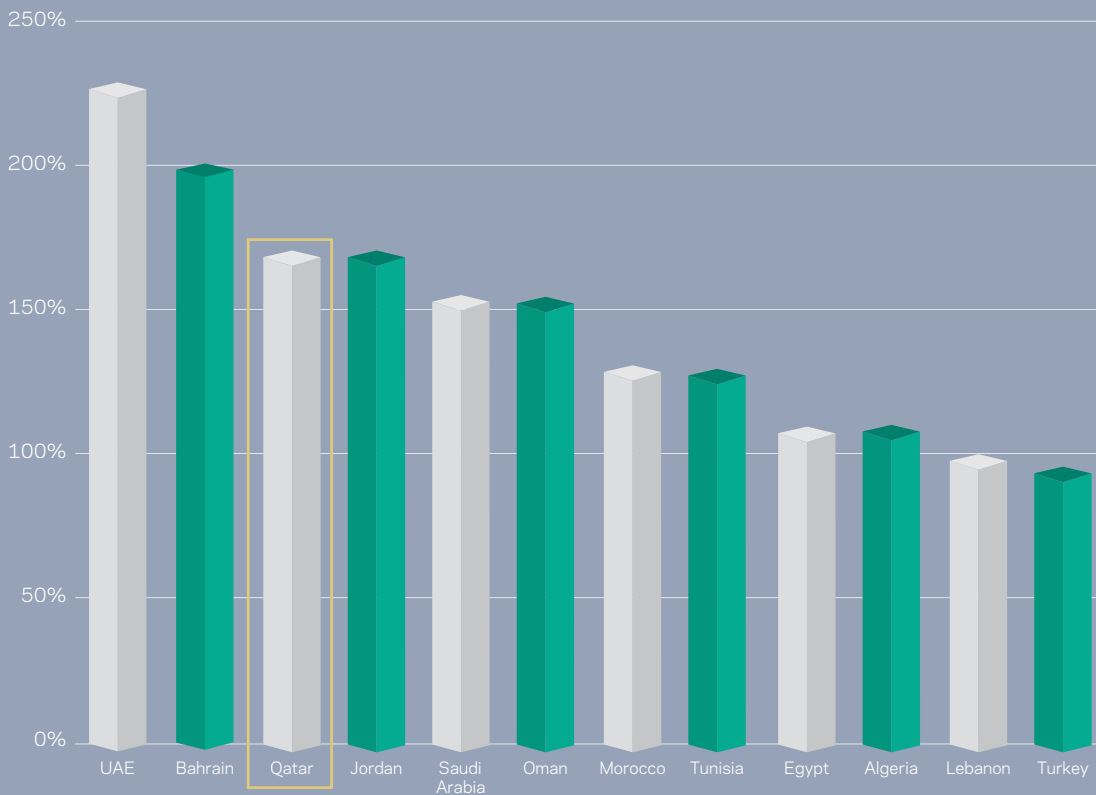 a fall from QAR 150/subscription/month in Q1/2012 to QAR 121/subscription/month in Q4/2016 with Vodafone's ARPU fallen markedly less from QAR 112 to QAR 106 in the same period.

Ooredoo ARPU
150/121^{QR}
mobile average revenue per user
2012-2016

Vodafone ARPU
112/106^{QR}
mobile average revenue per user
2012-2016

FIGURE 9. Average Revenue per User

(QAR/subscription/month)

Ooredoo Qatar values: 150, 154, 153, 149, 130, 132, 124, 133, 129, 134, 130, 128, 127, 128, 124, 119, 114, 120, 127, 121

Vodafone Qatar values: 112, 122, 118, 121, 121, 123, 124, 125, 126, 131, 124, 125, 122, 111, 111, 110, 107, 101, 105, 106

X-axis: Q1/2012, Q2/2012, Q3/2012, Q4/2012, Q1/2013, Q2/2013, Q3/2013, Q4/2013, Q1/2014, Q2/2014, Q3/2014, Q4/2014, Q1/2015, Q2/2015, Q3/2015, Q4/2015, Q1/2016, Q2/2016, Q3/2016, Q4/2016

Legend: Ooredoo Qatar — Vodafone Qatar
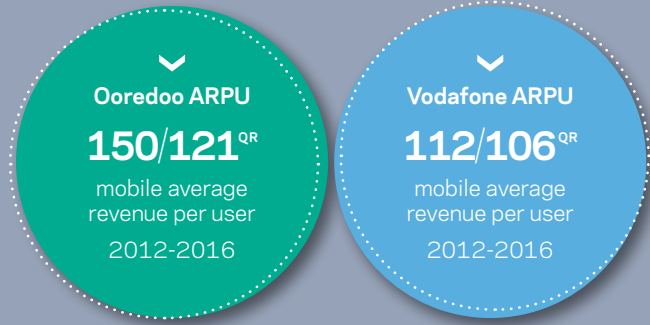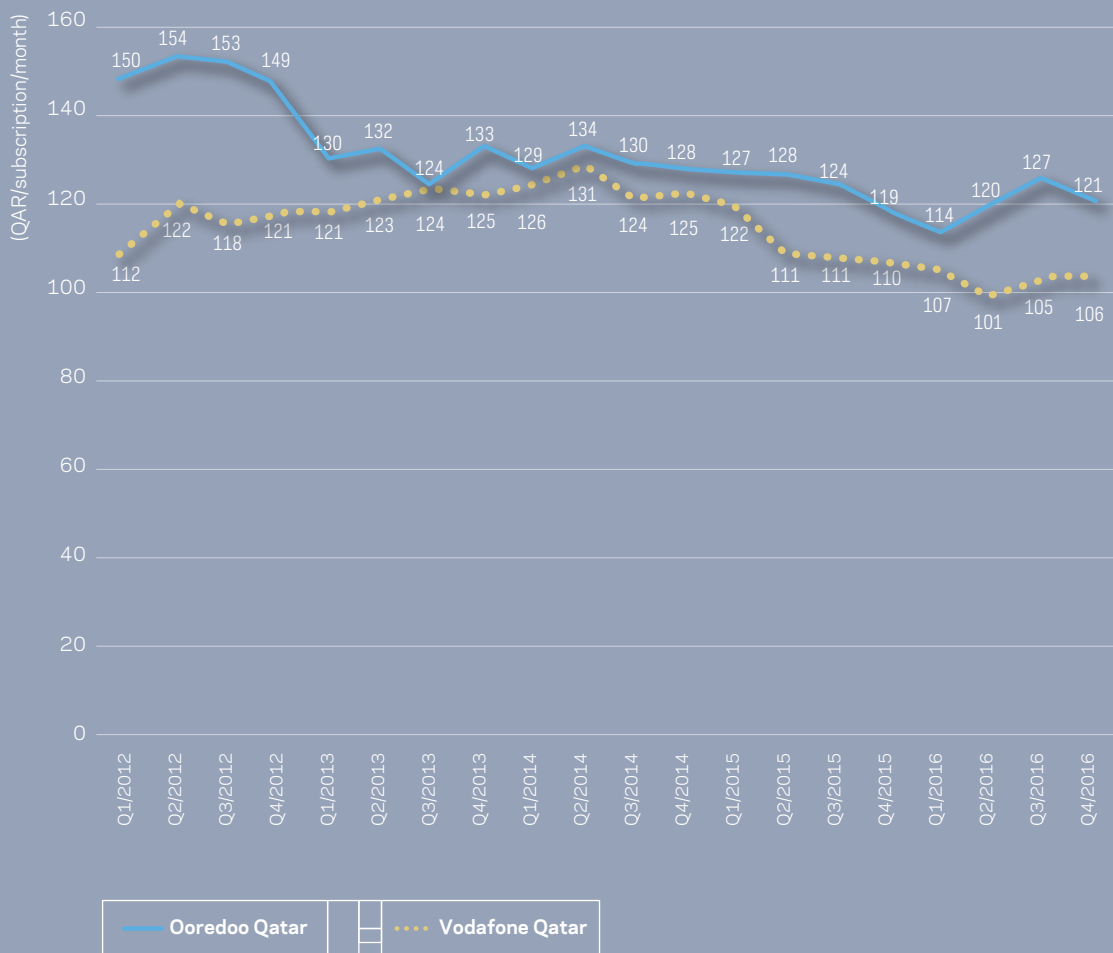
Source: Service providers' financial data

Figure 10 indicates that the reduction in operators' ARPU has been a global trend in recent years and will continue at least until 2019 according to experts[2]. In Qatar, however, both Ooredoo's and Vodafone's ARPUs are well above the Arab countries.

FIGURE 10. Telecommunications Operators' ARPU in Select Countries: bars filled in green represent countries with at least 3 mobile operators
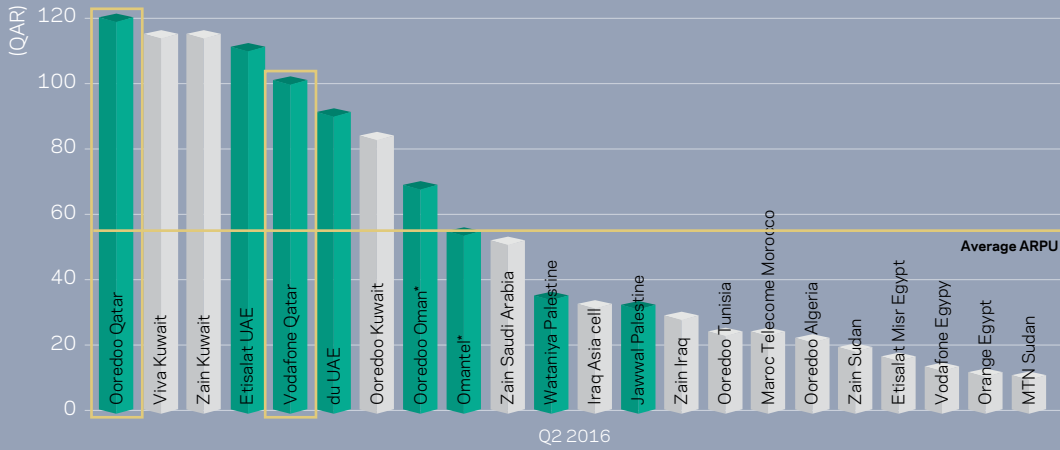
Source: Arab Advisors, 2016

As shown in Figure 11 Vodafone Qatar's market share (by revenue) dropped from 30% at the end of 2015 to 28% at the end of 2016. Vodafone's market share (by revenue) is today almost equivalent to that of Q4 2012.

FIGURE 11. Ooredoo and Vodafone Market Shares Based on Revenues
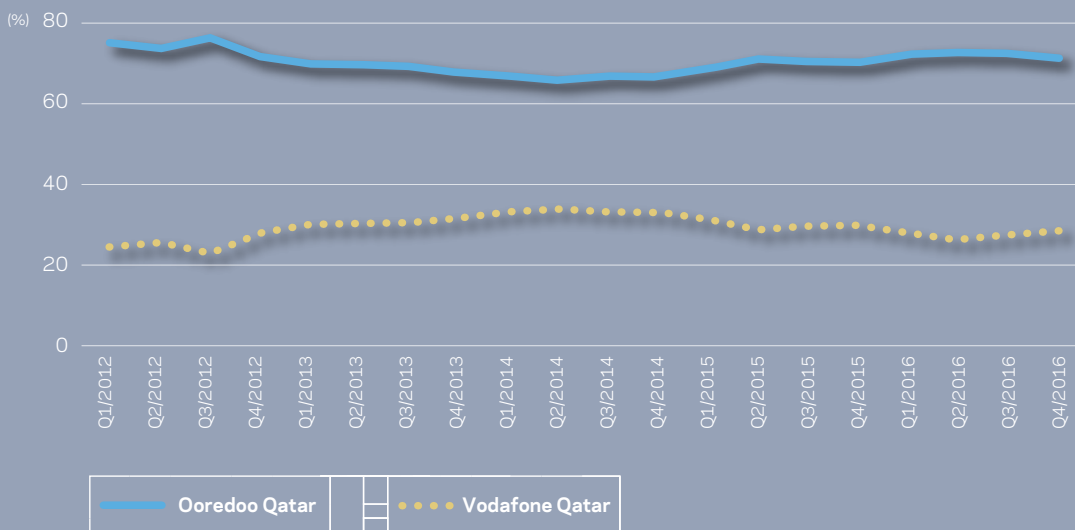
Source: CRA calculation on service providers' financial data

FIXED MARKET

This market covers national and international calls and messages, access services, broadband services and leased lines.

Despite the liberalization of the market, the fixed market is firmly controlled by Ooredoo. Today, Vodafone has a handful of broadband connections and leased lines in The Pearl, West Bay and Barwa City.

Ooredoo remains a near monopoly with 96% of revenues. Today, Ooredoo covers nearly all of Qatar with its fiber connections. According to the data disclosed by the Ministry of Transport and Communications, 86% of all households have access to a fixed wired broadband network.[3]

Figure 12 indicates the number of premises (both home and office) passed by the fixed fiber network along with the number of fiber broadband subscriptions. It displays a take-up of approximately 55% as at December 2016 (450,000 real estate or industrial unit passed and 250,000 subscriptions taken for real estate or industrial unit).

[3] Household ICT Survey 2015 (Ministry of Transport and Communications)

Fiber Broadband Subscriptions

55%

Dec 2016

450,000
premises passed

250,000
subscriptions

FIGURE 12. Growth in Fiber Connections in Qatar

Legend: Total Broadband Connections | Homes/Offieces passed by Fibre
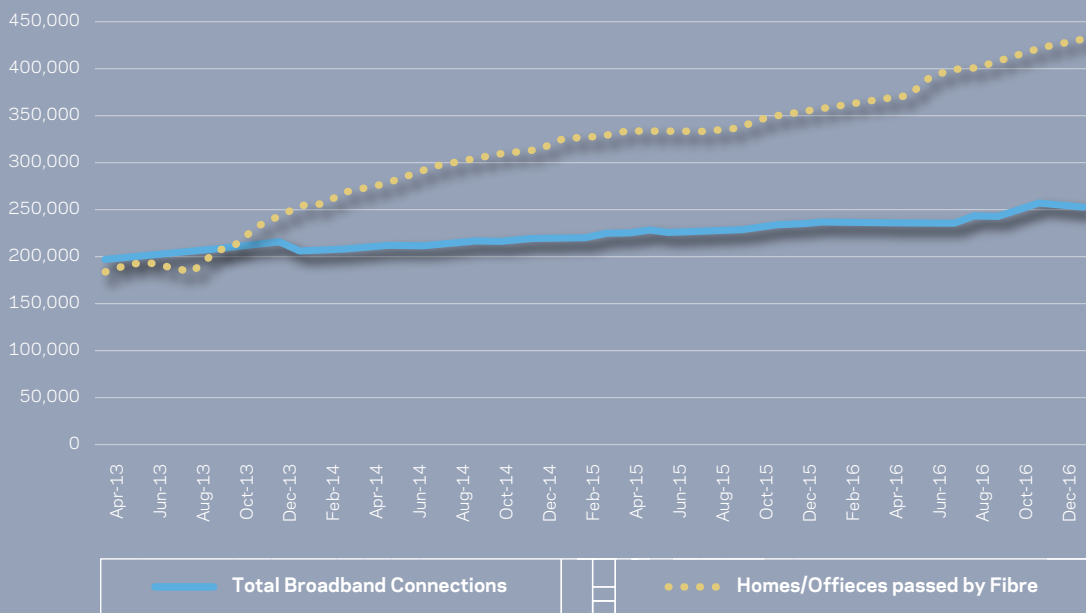
Source: Service providers' submissions

The availability of a 'cutting-edge' fiber infrastructure has enabled subscriptions to migrate to broadband packages with higher speeds. As Figure 13 below indicates, in Q1 2012 94% of broadband internet subscriptions were for packages with speeds of less than 2Mbps. This has changed drastically over the 4 years to 2016 so that by the end Q4 2016, 92% of broadband internet subscriptions were for speeds of 2Mbps and greater.

FIGURE 13. Fixed Line Internet Subscriptions by Speed

Quarter	<2 Mbit/sec	>= 2Mbit/sec - <=10 Mbit/sec	> 10 Mbit/sec
Q1/2012	94%	6%	0%
Q2/2012	92%	8%	0%
Q3/2012	91%	9%	0%
Q4/2012	89%	10%	1%
Q1/2013	88%	11%	1%
Q2/2013	85%	14%	1%
Q3/2013	84%	15%	1%
Q4/2013	82%	17%	1%
Q1/2014	74%	23%	3%
Q2/2014	71%	26%	4%
Q3/2014	68%	28%	4%
Q4/2014	25%	48%	27%
Q1/2015	22%	51%	26%
Q2/2015	21%	53%	26%
Q3/2015	20%	54%	26%
Q4/2015	18%	56%	26%
Q1/2016	16%	58%	26%
Q2/2016	13%	61%	26%
Q3/2016	11%	64%	26%
Q4/2016	8%	67%	25%
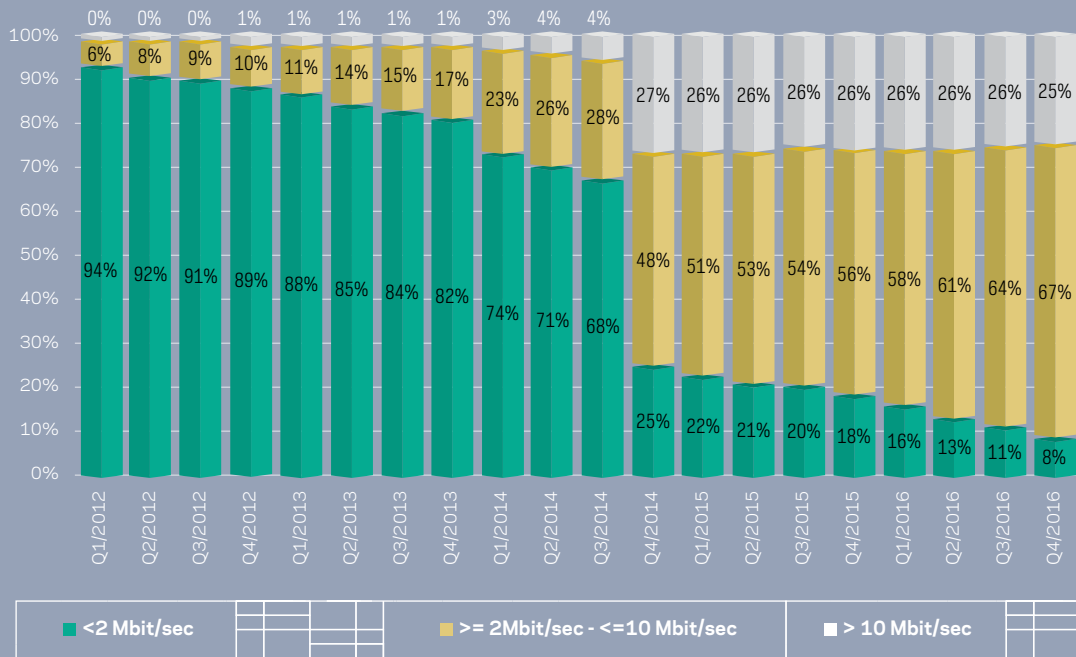
Source: Service providers' submissions

Voice calls, broadband internet and IPTV

47%

triple play
subscribers

There is still room for improvement though. With 45% of homes/offices passed not subscribed to fiber broadband services and only 25% of subscriptions for packages with speeds greater than 10 Mbps, the question remains of whether the state-of-the-art fiber network is being used to its full potential.

Figure 14 indicates that 47% of customers prefer the triple play subscription (voice calls, broadband internet and IPTV) over the double play subscription (voice calls and internet), where 30% of customers subscribe to double play. The main reason for this is likely to be the price of a subscription to triple play services being the same as a subscription to double play services. The remainder of subscription types (not displayed in Figure 14) are for voice only subscriptions over fiber at 23% as at Q4 2016.

FIGURE 14. Subscriptions for Double Play (voice calls and internet) and Triple Play (voice calls, internet, and IPTV)
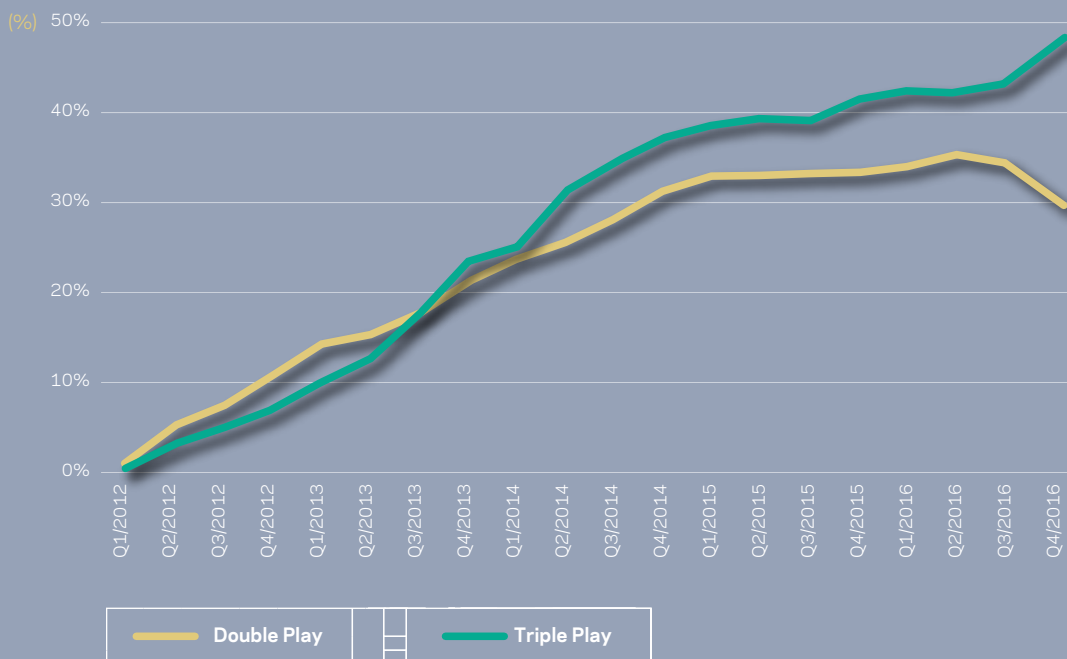
Source: Service providers' submissions

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ANALYSIS OF THE STATE OF THE TELECOMMUNICATIONS MARKET

The analysis of the state of the telecommunications market and competition indicates the presence of important dynamics that CRA has regularly considered when modulating its operations throughout 2016.

Limited increase in service provider revenues during the past 12 months, despite a growth in population, indicates a transfer of operator surplus to customers. While this could be considered a good thing, the transfer finds its roots in external pressure applied by new players providing services from over-the-top telecommunication networks (OTT players) rather than the competitive dynamics internal to the market. Despite this, the phenomena has led to a decrease in operators' ARPU, a trend that has been experienced all over the world in recent years.

However, it would be simplistic to state that the competitive pressure by OTTs is merely leading to a decrease of operators' revenues. OTTs are a game changer and their services are changing the nature of operators' revenues, as data traffic is increasing. Operators are now being asked to surf this trend and monetize the data stream.

As the regulator, CRA ensures that virtuous competitive dynamics internal to the telecommunications sector are preserved and fostered to the benefit of end users. In order to preserve competition, CRA:

- Ensures that abusive behaviors are not harming the competition of the mobile market nor impeding competition to flourish in the fixed one.

- Creates the regulatory conditions needed for competition on the fixed market.

Therefore, a continuous intervention aimed at promoting competition at a wholesale level and a monitoring of the market at the retail level is required.

CRA has committed to providing a framework that will encourage this network to thrive alongside a monitoring of the market aimed at preventing or minimizing anti-competitive practices in the enlarged ICT sector, in order to improve the customer experience.

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WHOLESALE FRAMEWORK

As mentioned in the Introduction to this report, with the 2014 Policy Statement – "Regulating for the Future" – CRA's main focus is on regulating wholesale markets and the removal of prevailing bottlenecks. This focus has continued in 2016, which has seen, for improving network competition, the implementation of wholesale remedies attached to the designation of Ooredoo as dominant service provider in all wholesale fixed markets.

Orders and Approved Reference Infrastructure Access Offer (RIAO) for Ducts of Ooredoo

This decision will enable all existing and future licensed service providers fair and non-discriminatory access to Ooredoo's ducts, with the objective of fostering competition and enhancing availability of additional networks for the people of Qatar. The Orders amended the RIAO approved by CRA in November 2015. Among other terms and conditions, CRA changed the clause on the acceptance procedures, with an objective of facilitating and speeding up the signature of agreements based on the RIAO.

The Orders required Ooredoo to publish the RIAO on its website within fourteen (14) business days of the date of the Orders and clarified that the RIAO was immediately available to licensed service providers for signature of agreements with Ooredoo, regardless of the above publication.

Wholesale Reference Offers (WROs) for Broadband Access and Leased Lines

Acting consistently in line with the outcomes of the Market Definition and Dominance Designation (MDDD), CRA asked Ooredoo to prepare and submit for approval Wholesale Reference Offers for Broadband Access and Leased Lines. The objective of this provision is to provide the existing and future licensed service providers with fair and non-discriminatory access to active wholesale products for competing with Ooredoo in the broadband and leased lines retail markets. Ultimately, the availability of these WROs will allow the customers to choose between two retail service providers of broadband services, supporting the objective of Qatar's National Broadband Plan. Further, the competition in the leased lines market will benefit the business customers suffering from limited availability and affordability of services, hence favoring the settlement of new businesses and the diversification of the Qatari economy from oil and gas.

Wholesale Charges

In June 2016, CRA rejected a request submitted by Ooredoo for reviewing the wholesale charges of the duct products. In CRA's view, data provided by Ooredoo was not sufficient to justify changes to the wholesale charges of duct products approved by CRA in May 2015.

Wholesale Reference Offers: Orders amending RIO of Ooredoo and Vodafone and RTO of Ooredoo

The Orders for the Reference Interconnection Offers (RIO) and Reference Transmission Offer (RTO) were approved by CRA in May 2015. In November 2016, CRA amended the clause on the acceptance procedures with the objective of facilitating and expediting the signature of agreements based on the RIOs and on the RTO. The Orders required Ooredoo and Vodafone to publish their Wholesale Reference Offers on their website within fourteen (14) business days from the date of the Orders.

Passive Civil Telecommunications Infrastructure Access Regulation: Implementation of the Standard Access Offer

This regulation governs the provision of access to certain passive civil infrastructure required to support the delivery of telecommunications services in Qatar, and establishes the general obligations of service providers and owners of civil infrastructure. Among others, the developers owning civil infrastructure are required to prepare a Standard Access Offer (SAO) to provide fair and non-discriminatory access to service providers.

CRA approved a format of the SAO in September 2016. CRA is monitoring the implementation of this format whose objective is to reduce disputes related to the access of civil infrastructure among developers and service providers.

COST ACCOUNTING AND ACCOUNTING SEPARATION OF OOREDOO

As a DSP, Ooredoo is required to develop and submit on a yearly basis to CRA for approval a Regulatory Accounting System (RAS). The RAS describes a set of systems, processes, policies, and procedures that enable a DSP to establish a record-keeping regime necessary to meet its regulatory obligations of cost accounting and accounting separation, and which keeps track of revenues, costs, assets and capital employed. One of the key objectives of the RAS is to calculate, trace, and analyze costs in order to demonstrate compliance with a cost orientation and non-discrimination obligation for regulated services. The main instruments of the RAS are: i) the cost model; ii) the separated financial statements; and iii) audit and statement of compliance.

The RAS of the Financial Years 2010 - 2014 have already been submitted by Ooredoo and approved by CRA over the period 2010 - 2015.

The implementation of the RAS FY 2015 began in April 2016. CRA has gone through the review of two preliminary submissions by Ooredoo. CRA expects Ooredoo to deliver an audited final submission for CRA approval by the first quarter of 2017 in order to conclude the process by the second quarter of 2017.
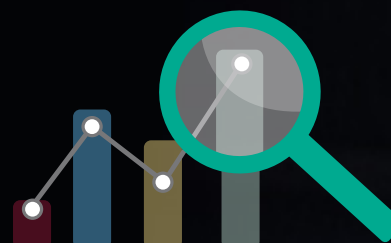
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MONITORING OF THE MARKET

The implementation of a Wholesale Framework also requires monitoring the retail market to ensure the compliance of service providers with relevant laws and regulations. This monitoring was particularly active regarding retail tariffs following the publication of a revised Retail Tariff Instruction in May 2015, which outlined the general rules for approval of retail tariffs.

In 2016, CRA received 52 tariff filings from Ooredoo and 75 from Vodafone. Of these filings, all but one were resolved.

Under the purview of its monitoring activity, CRA published a price benchmarking report in June 2016 aimed at comparing retail prices for telecommunications services in Qatar as of June 2015 with other GCC countries, including comparison with the relevant Arab and OECD countries.

Ooredoo

52
tariff filings

41
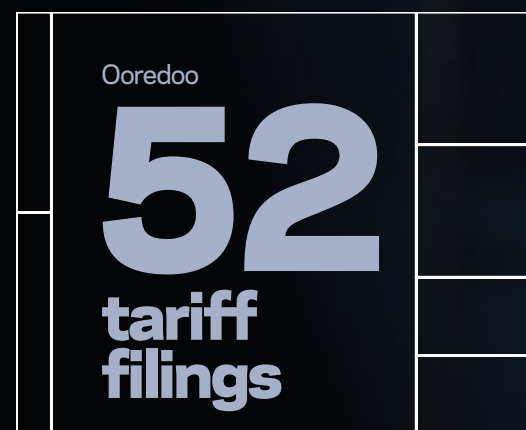
Vodafone

75

tariff filings

126

resolved

MARKET DEFINITION AND DOMINANCE DESIGNATION (MDDD)

The many actions taken to encourage competition, monitor the market and prevent or minimize anti-competitive practices, stem mainly from analyzing the market and identifying remedies by assessing market dominance. Thus, CRA regularly reviews the competitive dynamics in the telecommunications sector in order to determine the need for (ex-ante) regulatory intervention. This is referred to as the Market Definition and Dominance Designation (MDDD) process. Regular updates of the MDDD ensure that any resulting regulation remains up-to-date and in line with the underlying market dynamics. Following previous MDDDs in 2008 and 2011, CRA finalized a third round of MDDD in May 2016.

This proceeding was needed given the changes that occurred in the Qatari market from the second round of MDDD performed in 2011. At the time of the 2011 MDDD, Vodafone had only recently entered the Qatari telecommunications market. Since then, the sector has been characterized by the growth of two competing national (mobile) network infrastructures and a near nation covering fiber network. Given this, CRA considered it important to assess the resulting impact of the competitive dynamics in the sector. Second, competition in the fixed voice and broadband services (as well as associated wholesale services) did not develop sufficiently, leaving Ooredoo as the only relevant service provider on a national scale. Third, Vodafone remains reliant on Ooredoo for certain fixed wholesale services.

Moreover, in 2014, CRA issued a policy statement – "Regulating for the Future" – setting out its overall approach to regulation of the sector going forward. This, among other efforts, put forth a focus on regulating wholesale markets and prevailing bottlenecks. These efforts are particularly relevant in markets, which are characterized by competing national networks, as is the case for mobile voice and broadband services in Qatar, as no bottlenecks exist. The 2014 Policy Statement informed the MDDD review of the manner CRA has focused on wholesale regulation where there are identifiable bottlenecks that are causing or are likely to cause issues in the market. The focus on wholesale regulation has decreased, wherever possible, intrusive regulation at the retail level.

Upon completion of the MDDD proceeding, CRA designated Ooredoo as dominant service provider in all the relevant fixed markets, both retail and wholesale, and in the wholesale market of mobile termination. Vodafone meanwhile has been designated the dominant service provider in the wholesale market of termination, both on fixed and mobile networks.

The ex-ante remedies related to dominance designation include both the obligation to prepare Wholesale Reference Offers, if requested by the CRA, as well as the Retail Tariffs Approval.

According to the outcome of the MDDD, neither Ooredoo nor Vodafone are dominant service providers in the retail mobile markets.

COMPETITION POLICY

CRA has engaged in an ongoing review of the various obligations of service providers, as per the regulatory framework, and is expected to conclude its report by Q2 2017. Once completed, the full picture will be shared with service providers and, whenever required, the expected outcome clarified. This will facilitate CRA monitoring compliance within the regulatory framework and increase service providers' awareness of their respective obligations.

In the meantime, CRA has developed a compliance assessment process that has been shared with the service providers. This process is followed by CRA when issuing Warning or Non-Compliance Notices to service providers.

In 2015, CRA focused on developing a competition framework tailored for Qatar. Implementation started in 2016 with a first Decision and Orders directed to Ooredoo. The case addressed the foreclosure of the market for civil passive infrastructure required to roll out telecommunications networks on which Ooredoo had been declared dominant.

CRA will continue enforcing the competition policy as a tool to support the development of the sector.

Improving the customer experience is a major part of CRA's mission, and the promotion of competition is instrumental to that improvement. Enhancing the customer experience may be pursued not only by promoting competition at the national level but also through intervention at the international and regional levels in order to address trans-border issues.

GCC ROAMING AGREEMENT

LOOKING TO THE FUTURE

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Following the decision adopted during the 24th meeting of the Gulf Cooperation Council (GCC) Ministerial Committee for Post, Telecommunications and Information Technology held in Doha in June 2015, CRA has been putting in place the necessary regulatory instruments to implement the decided reduction in roaming charges within the GCC member states.

This new regulation, enforced at a wholesale level since January 2016 and at the retail level since April 2016, will reduce rates for roaming, telephone calls, text messaging and data services throughout the GCC countries. Customers who only require limited access to roaming services will also reap the benefits of this cost-cutting regulation.

The reduction in roaming charges is a continuation of the collaboration and cooperation between GCC regulators, under the auspices of the GCC General Secretariat. The first roaming regulation was issued in June 2010 and took full effect in February 2012. It covered roaming voice calls but excluded other roaming services such as mobile data and SMS. The new regulation, a result of comprehensive study and public consultation by the GCC Roaming Working Group, addresses this gap.

In order to fulfill its mandate, CRA is looking into the future developments of the sectors involved in the overall communications ecosystem.

To that end, a study has been conducted on forward looking competitive dynamics, including the traditional telecommunications sector and the enlarged digital media sector. The study identified future challenges and the eventual institutional responses to address the identified issues stemming from this new environment. The conclusion of this study was shared with service providers in two workshops and will be the foundation for development of future activity by CRA.

CRA started an overall assessment of the different sectors of the market and their interaction in order to launch an overall policy articulating the principles that will guide the Authority's activity in the information and communications technology, and postal sectors, as well as access to digital media. These principles will give both guidance to CRA and enhance the predictability of its actions to the benefit of all stakeholders.

The first Business Satisfaction Survey, released in June 2016, was conducted among business customers to measure levels of satisfaction on quality of services delivered by Qatar's telecommunications service providers. This survey follows the Consumer Satisfaction Survey conducted in 2014.

Business Satisfaction Survey

Since the business community is a heavy user of communications services, the survey evaluated satisfaction levels based on parameters such as pricing, transparency and service offerings among businesses operating in the Qatari marketplace. This study will serve as an essential baseline that allows CRA to enforce policy and advocate ensuring high standards of quality of services and competition within the communication sector in Qatar.

Some of the findings include:

▪ More than 80% of the respondents consider fixed voice and fixed Internet services critical for their business, with fixed voice deemed particularly more significant among smaller enterprises (1-9 employees).

▪ Overall, 91% of business customers are satisfied with the quality of communication services provided in Qatar. The overall satisfaction is high for fixed voice service (91%) and fixed Internet services (87%), but is relatively low among mobile Internet users (69%). A sizeable number of businesses have neutral responses toward various communication services (neither satisfied nor dissatisfied). Satisfaction levels with QoS vary across various business segments.

▪ Overall, while some business customers consider prices for communication services in Qatar to be moderate to low, there is a considerable number of customers who perceive prices to be high. The discontent with pricing is high for mobile Internet (48%), fixed link (41%), mobile voice (32%), fixed Internet (31%) and fixed Voice (31%).

▪ The levels of satisfaction with network related experiences such as coverage, availability, reliability, voice quality and speed of data services vary considerably among different communication services. Business customers are satisfied with the network coverage for mobile voice services (81%) in contrast with mobile Internet (59%). The network coverage satisfaction levels for Mobile Voice are higher for Ooredoo (83%) as compared to Vodafone (74%).
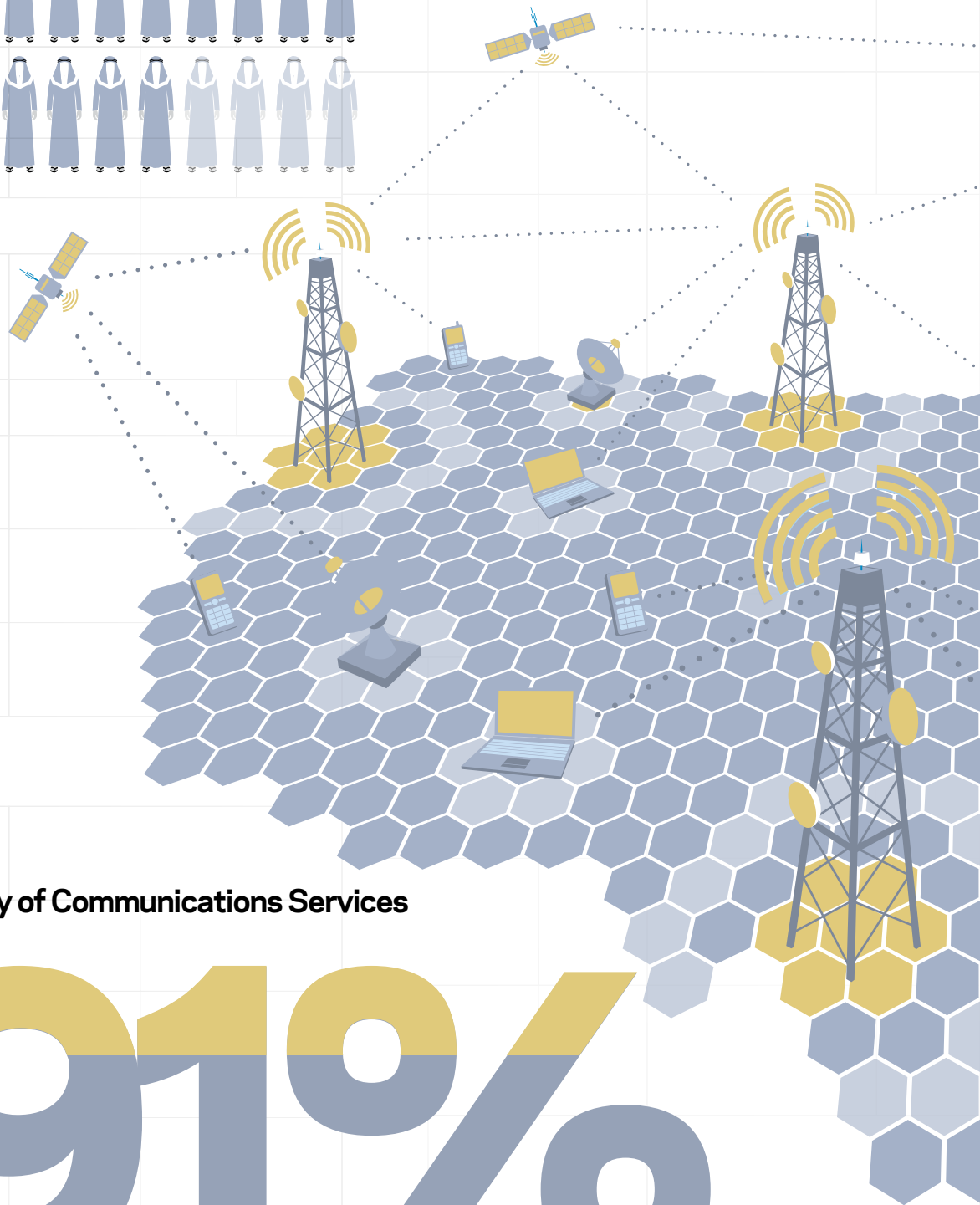
Quality of Communications Services

91%
satisfied
business customers

FIXED VOICE AND
FIXED INTERNET
SERVICES

80%

49

FIXED INTERNET SERVICES	87%
MOBILE INTERNET USERS	69%
MOBILE INTERNET	48%
FIXED LINK	41%
MOBILE VOICE	32%
FIXED INTERNET	31%
FIXED VOICE	31%
MOBILE VOICE SERVICES (NETWORK COVERAGE)	81%
CONTRAST WITH MOBILE INTERNET	59%
MOBILE VOICE NETWORK COVERAGE LEVELS (OOREDOO)	83%
MOBILE VOICE NETWORK COVERAGE LEVELS (VODAFONE)	74%
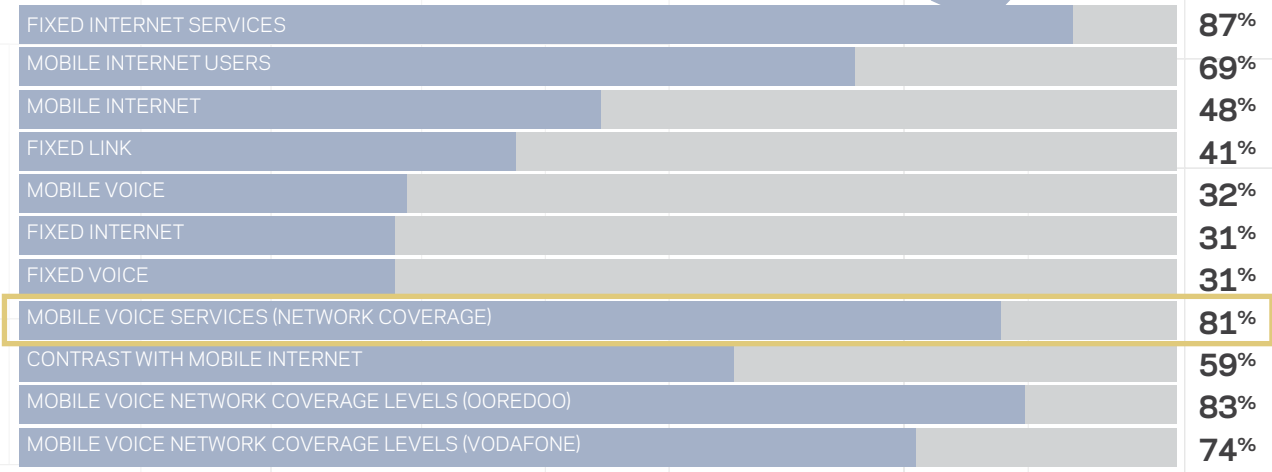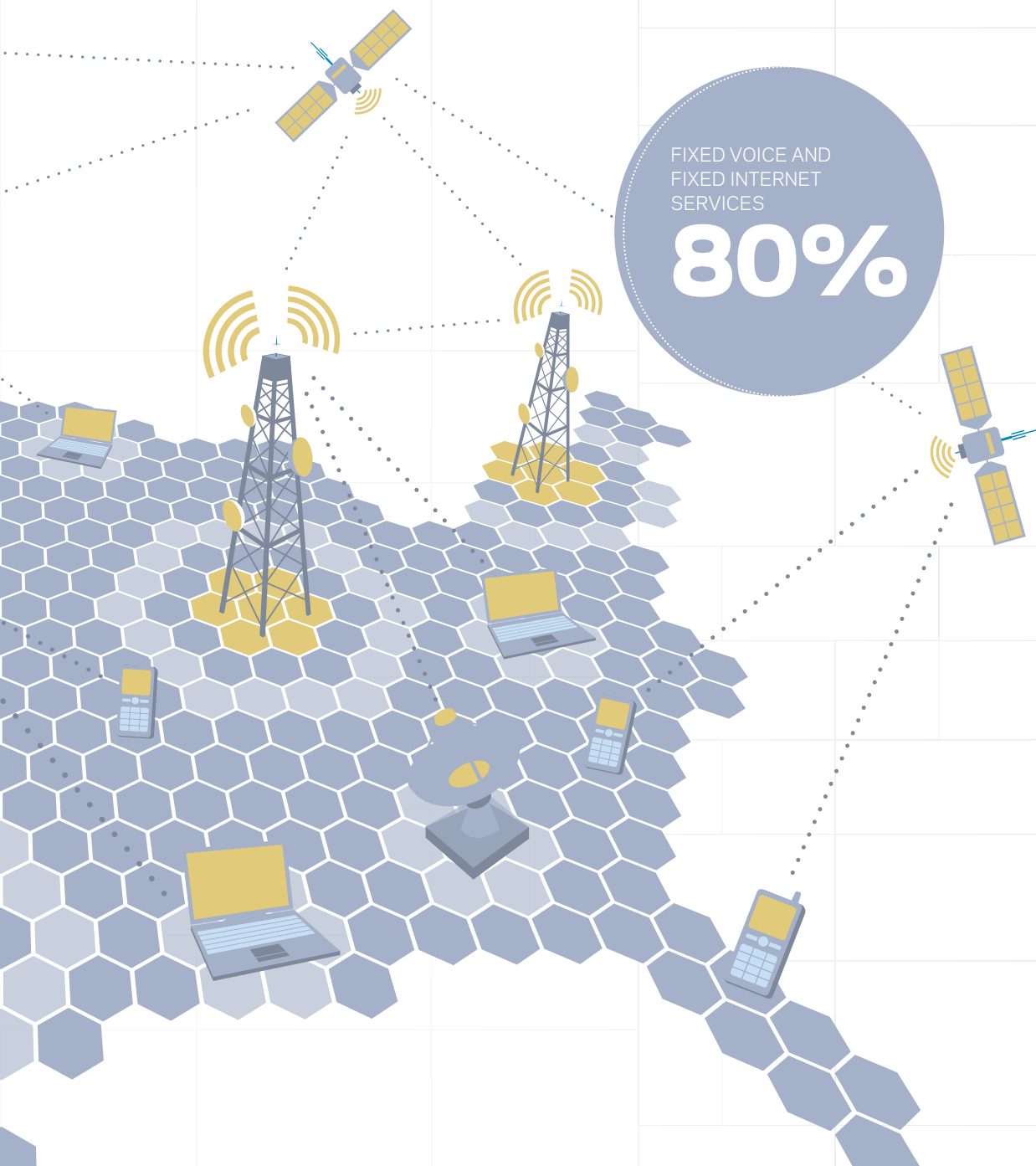
Consumer and Business Terms of Services

In 2016, CRA reviewed all Consumer Terms of Service on pre-paid and post-paid services for both service providers, and identified the gaps that require service providers' attention in order for consumers to receive clear, accurate, relevant and timely information related to service providers' services.

In 2017, CRA will be reviewing all Business Terms of Service for pre-paid and post-paid services provided by both service providers to identify the gaps that require service providers' attention. The goal is to ensure that business customers receive clear, accurate and relevant information related to service providers' services.

Spam Regulation

After monitoring issues related to online scams for over a year, in June 2016 CRA drafted a Spam Code in order to enhance consumer experience. This Code has been transformed into a regulation to better protect telecommunications subscribers from unsolicited communications (e.g. SMS messages). Furthermore, it will help control and limit the amount of spam that unnecessarily inundates customers. The regulations will clearly define and reinforce the rules that CRA will enforce against service providers in collecting, disseminating and controlling customer information.

Premium Rate Service Regulation

The Premium Service Code was drafted in June 2016 to bring transparency to charges associated with premium rate services. The Code has been transformed into a regulation to also enhance consumer protection and improve the consumer experience in reducing customer complaints. The regulation will also help to limit the number of Premium Service complaints lodged by customers with service providers and CRA for investigation and resolution.

Joint Directory

The Consumer Protection Policy mandates that both service providers (Ooredoo Qatar and Vodafone Qatar) cooperate in publishing and distributing a joint telephone directory with all customer and business contact details. As a result of these efforts, the directory was issued in April 2016. The directory ensures that any retail customer can access directory services containing directory information on all end users in Qatar who have been assigned a fixed telephone number by their service provider (excluding those who have exercised their right to have their directory information removed).

Mobile Applications

CRA issued a consumer alert about inappropriate content on mobile applications such as Snapchat. This outreach made the public aware of the inappropriate content that may be available on those services and increased their awareness on how to deal with it appropriately in staying safe and keeping children protected from inappropriate content. In addition to this, CRA issued a press release on the Pokémon Go game, providing some tips to increase the public awareness about safety while using this application.

Postal Consumer Protection Framework

As part of its mandate to regulate the postal sector, CRA has this year begun to establish a framework of consumer rights and a complaints management process for consumers of postal services. This framework will regulate the relationship between customers of postal services in Qatar and the postal service providers in Qatar.

Policy and Regulation an Operator Behavior towards Consumer

CRA is working on a Policy and Regulation on Operator Behavior toward Consumers that will consolidate all consumer protection obligations contained in the Regulatory Framework into one document for the purposes of monitoring and compliance. This Policy and Regulation on Operator Behavior toward Consumers is designed to improve the levels of customer satisfaction with telecommunications services through a transparent and uniform process, including publication and transparency of terms of services, tariffs, charges and other consumer protection obligations. Consumers will also be able to better understand the obligations of service providers through clear, accurate and relevant information on consumer protection and service providers will have a clear understanding of their obligations vis-a-vis consumers and businesses.

Consumer Protection Policy (CPP) Compliance Assessment

The Consumer Protection Policy (CPP) establishes a core set of consumer protection rules that are binding for service providers, as well as a dispute resolution system that enables customers to see redress from an entity that is independent of the service providers.

This year CRA conducted an assessment of the service providers' obligations contained in the CPP to ensure compliance. CRA is addressing all non-compliance and considering appropriate action against service providers (Ooredoo and Vodafone). This will result in a better consumer experience and protection from any inappropriate practice of the service providers.

Quality of Service Policy and Regulation

CRA is in the process of developing a QoS policy that will establish CRA's position and approach to the regulation of the quality of telecommunications services provided to the public. The QoS Policy provides overarching benefits to consumers, including:

- Introducing greater clarity, transparency, predictability and equality with respect to QoS regulation for the benefit of service providers and customers.

- Establishing levels of QoS and quality of customer experience consistent with international standards and best practice.

- Raising awareness of the different levels of QoS offered by service providers serving as a means of differentiation between both service providers in a competitive environment.

Based on this policy, CRA will develop a Quality of Service Regulation that will establish the requirements for the quality of telecommunications services to be provided to the public. It will also define the criteria to be monitored and reported in the form of Key Performance Indicators (KPI), and will identify measurement methods with reporting requirements on service providers.

Arsel Mobile app Upgrades

Arsel is CRA's mobile app, which empowers telecommunications consumers in Qatar to lodge complaints or inquiries to CRA. The word Arsel means 'to send' in Arabic. The app is available on Android and iOS operating systems. The app also contains a network coverage map feature that empowers app users to locate specific types of complaints lodged by fellow users related to coverage issues. The application also has a data speed test function and gives users an option to give their feedback on the speed test results.

This year, CRA continued to upgrade all the existing services on the Arsel app to make it more user-friendly, and to enrich its functionality, so that the consumer can follow the progress of their complaints and inquiries. Another key feature to be added soon is the addition of a quality of service function that allows CRA to collect more objective feedback from the consumer rather than the subjective feedback that appeared within the original app. The analysis from the data collected will help CRA manage the quality of service enhancement with the telecommunications service providers in Qatar.

Complaint Management System

As an independent government entity, CRA is in the process of producing a fully automated management system to handle the receipt, investigation and resolution of consumer complaints filed against their service providers. This system will ensure complaints are lodged and followed through to resolution in an efficient and timely manner. This comprehensive tracking system will include all stakeholders' correspondence and be integrated within CRA's website, social media, email, call center and Arsel mobile application. CRA is extending the use of the system to service providers for the follow up and finalization of complaints lodged by CRA.

The system will be an asset to CRA in expediting and easing the complaints handling process into a more efficient process, improving overall quality as well as enhancing the consumer experience.

The system will track and follow complaints/inquiries through all stages – from the lodging of a complaint to the investigation to the final decision and closure. The system will also produce detailed reports that will help identify bottlenecks that can be corrected. The system will be a central drop point for all complaint channels (e.g. Arsel Mobile app, CRA website, call center, email, social media and walk-in customers).

Consumer Complaint Process

After discussions with Ooredoo and Vodafone, CRA implemented a revised formal internal complaints process to which these service providers agreed. Formalizing and updating the existing consumer complaints process details how consumer complaints should be handled by both CRA and the service providers. The process includes all potential complaint scenarios and how to deal with them.

Consumer Complaints Statistics

CRA resolved more than 94% of complaints received in 2016. To address issues raised by consumers related to billing, network coverage, disconnections and delays in activation, CRA has also engaged with the service providers to discuss solutions to the challenges posed in the delivery of communication services in Qatar.

Consumers complained mostly about billing, network coverage, service disconnections and delays in installation and activation as shown below.

World Consumer Rights Day

To mark the World Consumer Rights Day, CRA launched a 4-day public education campaign through an outreach event. One of the major goals was to raise consumers' awareness of their rights and responsibilities as well as to promote the Consumer Protection Policy and CRA's Code on Advertising, Marketing and Branding. In addition to this, CRA highlighted the complaint resolution process – consumers who cannot resolve complaints with their service providers can go to CRA to help resolve their complaint. The event also publicized Arsel, CRA's mobile app and the consumer protection hotline (103).

Capacity Building Workshops

As part of Qatar's IPv6 National Strategy, CRA in collaboration with RIPE National Coordination Center organized an IPv6 technical 3-day workshop in May 2016. RIPE NCC is one of five Regional Internet Registries providing Internet resources allocation, registration services, and coordination activities. The workshop was attended by representatives from service providers, academia and the public and private sectors. The core objective of the IPv6 workshop was to allow the participants to recognize the importance of adopting this latest Internet protocol in their networks, build technical capacities to accommodate the applications and services and ensure the transition to the latest version within the coming years.

A SWOT workshop for national DNS Markets, co-hosted by CRA and ICANN, was held in October 2015. CRA took this as an opportunity to facilitate ICANN's DNS Entrepreneurial Center (DNS-EC) initiative created to support the DNS ecosystem in Africa and the Middle East.

The workshop was attended by representatives from CRA, accredited registrars, both national telecom operators, ISPs and an Internet entrepreneurs group in Qatar.

The CRA team, in collaboration with ICANN, conducted a training workshop in October 2016 to build capacity and skills of senior technical officials and law enforcement officers responsible for investigating cybercrime, specifically related to misuse and abuse of the Domain Name System (DNS).

The workshop covered topics such as the challenges of distinguishing criminal use from legitimate use of DNS; accessing DNS; domain registration; and vital information related to IP addresses. Attendees were also provided with useful tools to collect DNS and registration data and to locate and observe hosting sites and hosted data.

Participants in the workshop included representatives from CRA, Ministry of Transport and Communications (MoTC), Ministry of Interior (MoI), Public Prosecutor, QCERT, Qatar Armed Forces, Q-Post, Ooredoo, Woqod, Qatar Electricity and Water Company, Oryx GTL, Qatar Petroleum, Commercial Bank, Qatar Petrochemical Company, Qatar International Islamic Bank and Kahramaa.
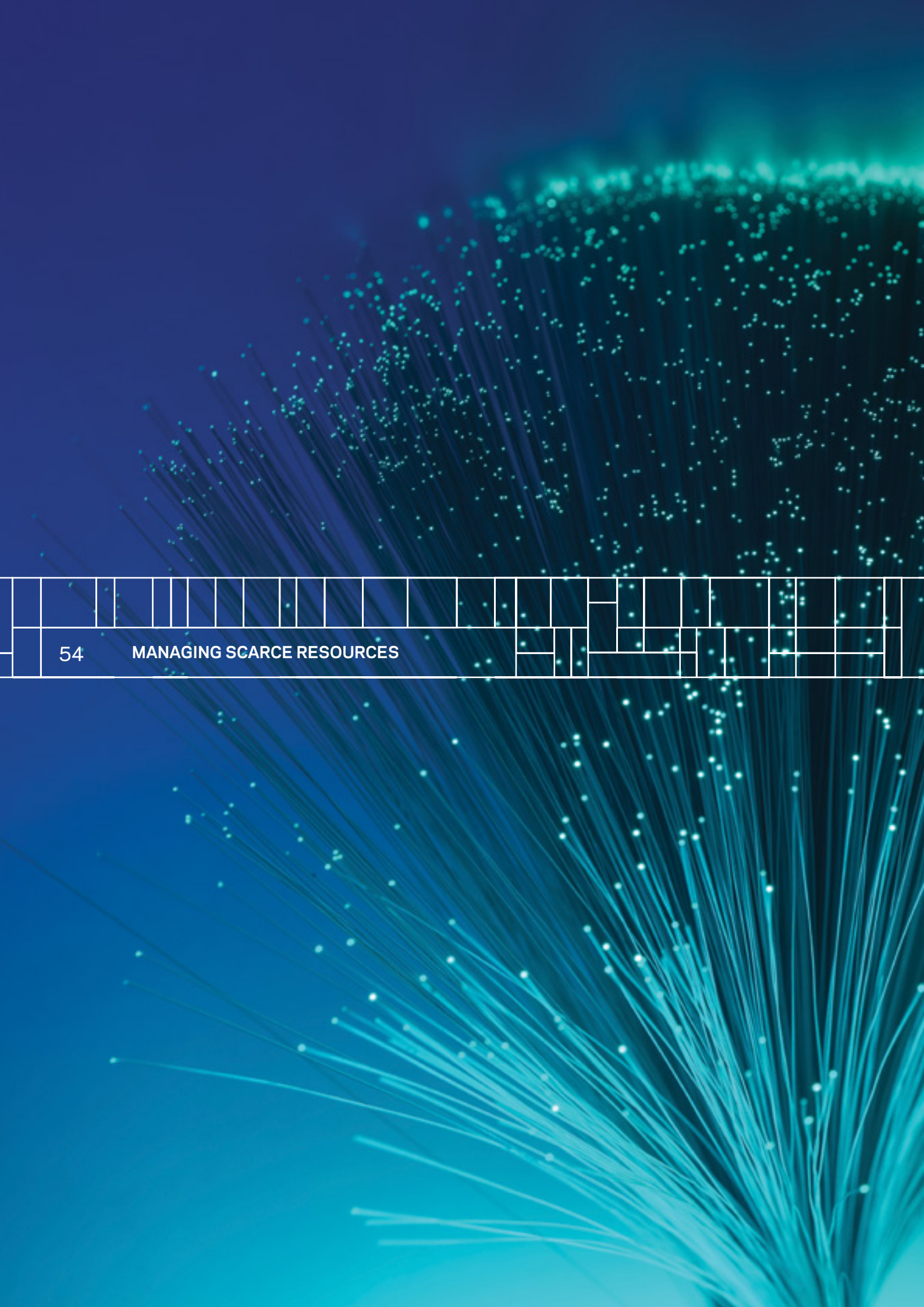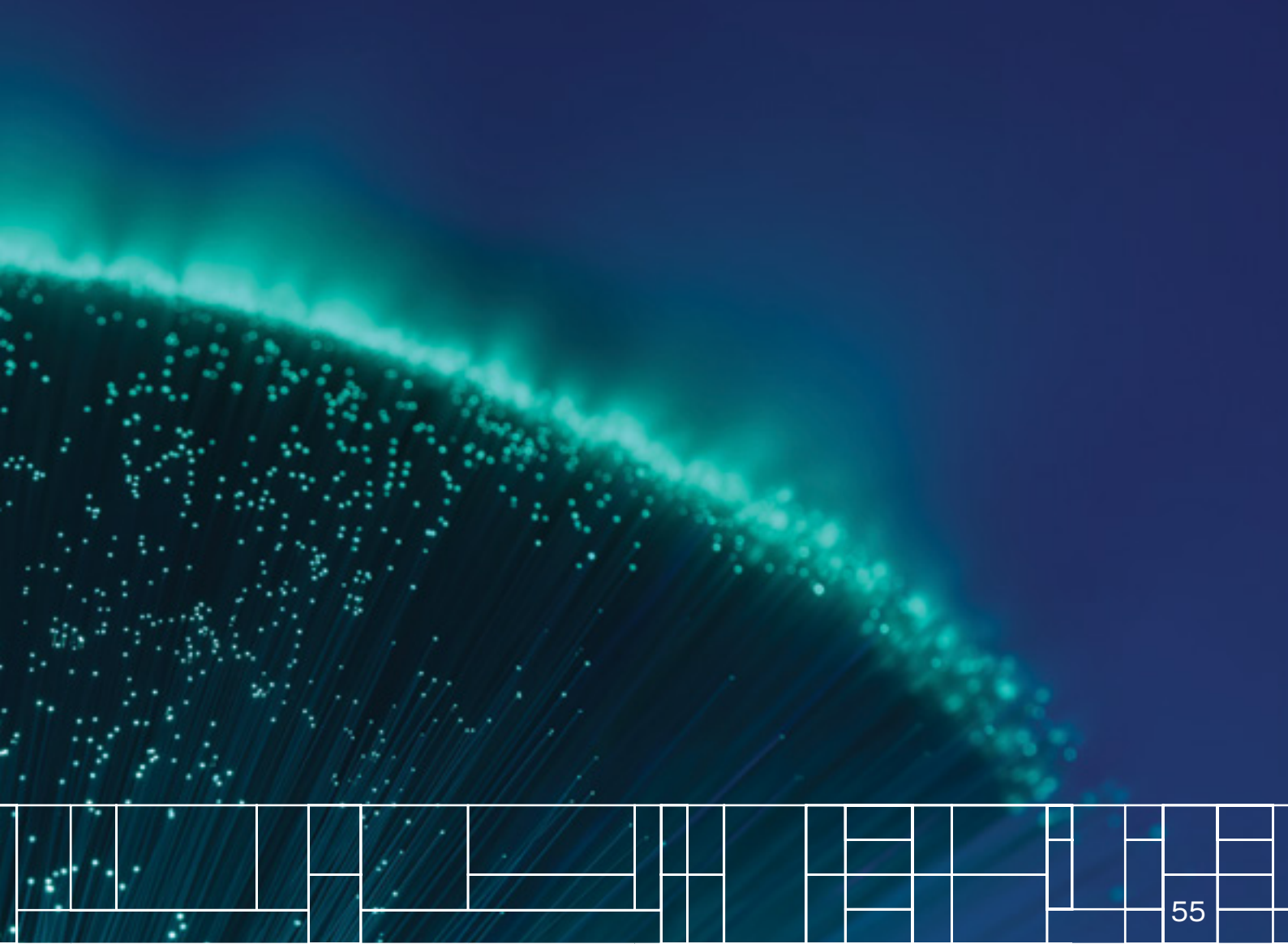
The continuous evolution of sophisticated wireless technologies and the rapid growth in the demand for Spectrum from different users and services has made Spectrum management a critical task of CRA. As the country's telecommunications regulator, its major responsibility is to balance the needs of existing Spectrum users while facilitating Spectrum access for new technologies. The following projects and initiatives were accomplished this year in managing this scarce resource.

ESTABLISHMENT OF AUTOMATED FREQUENCY MANAGEMENT SYSTEM (AFMS)

The Automated Frequency Management System (AFMS) – one of the most advanced automated systems in the region – will be launched on January 1, 2017. This will mark the beginning of a new era of Spectrum management in Qatar. The system will allow:

- Online submission of applications

- Online payment of fees

- Automated workflow regarding communications during the assignment, renewal, or cancelation of licenses, including issuance of invoices, licenses, reminders, acknowledgments, etc.

- Detailed coverage and interference analysis before assignment of frequencies relating to various types of Spectrum uses, for example: aeronautical, maritime, fixed, PMR and PMSE services

- Detailed coordination check and automated submission of notifications to the International Telecommunications Union (ITU)

The system will greatly benefit Spectrum users and improve the Spectrum management capabilities of CRA's Spectrum Management Department. The AFMS has been already tested thoroughly to ensure the official launch in January will provide a smooth transition from the current process to the new system.

Spectrum Licenses

Every year around 3,000 licenses are issued to authorized Spectrum users in different industries such as aeronautical, amateur, maritime, fixed, PMR, PMSE, satellite, etc. The table below shows the licenses issued this year.

Type of License issued in 2016	No. of Licenses issued in 2016	No. of Licenses issued in 2015
Aircraft Radio Station License	36	88
Aeronautical Ground Station License	2	7
Aeronautical Navigational Aids and Radar Station License	2	11
Amateur Radio Station License	11	42
Broadcasting Station License	5	37
Fixed Services License	32	118
Ship Station (Non-SOLAS) License	3250	1529
Ship Station (SOLAS) License	87	124
Maritime Navigational Aids and Radar Station License	4	22
Maritime Coastal Station License	1	17
Private Mobile Radio License	80	135
Satellite Fixed Earth Stations License	1	37
Satellite Transportable Earth Stations License	6	22
Test and Development Radio Spectrum License	9	12
Total	**3526**	**2201**

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Authorized Import Licenses

All importers of radio and telecom equipment are required to acquire the authorized importer license to import and sell such equipment. The table below shows the permits issued this year.

Activity Name	No. of Permit
Block Wiring	3
GSM Tracking System	31
Marine Equipment	3
Radio Equipment	13
W-Lan Outdoor	16
W-Lan Indoor	23
Radio Equipment	8
PABX	15
Import, Sale & Installation Of Radars And Navigation Equipment	4
GSM Phones	173
Radio Telecom - "Import, Sale And Renting Of Passive SNG Equipment"	1
Short Range Devices	32
DTH Satellite Dish	40
Others	1
Total	**363**

Class License for Camel Racing Radio Equipment

CRA updated and published the Class License for Camel Racing Radio Equipment, the first version of which was published in 2010.

Issuance of Fee Regulations

CRA published the Decision of the Minister for Information and Communication Technology No. (15) which determined the fees for the use of radio spectrum. The document includes the fee schedule for different services and detailed terms and conditions to be fulfilled by Spectrum users regarding the payment of Spectrum fees.

Technical Inspections to Ensure Compliance with the National Regulatory Framework

In order to ensure transparency regarding different types of technical inspections and achieve higher efficiency regarding management of the task, CRA issued Technical Inspection Guidelines this year. The guidelines include the detailed procedure involved in conducting different types of technical inspections as well as guidance to the applicants to launch complaints regarding non-compliance.

CRA is mandated to conduct technical inspections to ensure that Radio and Telecommunications Terminal Equipment (RTTE) operating in Qatar complies with the National Regulatory Framework.

CRA conducts inspection activities, which include:

- Customs Clearance - These are inspections on a daily basis at airports (cargo and courier), land ports and seaports in coordination with the General Customs Authority to stop the import of unauthorized radio and telecommunication terminal equipment.

- Write-off - Such inspections are conducted within a licensee's premises in order to witness the demolishing of the faulty/unused radio and telecommunication terminal equipment at the time of cancellation of the license.

- Judicial Seizure - These inspections are conducted to stop the illegal sale or use of radio and telecommunication terminal equipment by seizing such equipment. These judicial seizure inspections may be carried out on a routine basis, to randomly check for unauthorized activities in various locations, and by request from a complainant.

Bi-Annual Inspections for Stopping the Illegal Sale of Radio Equipment

In accordance with the technical inspection guidelines, two judicial seizure inspection campaigns were launched this year. The details are as follows:

Description	2016
Number of Inspected Sites	195
Number of Violation Notice	79
% of Violation	41%
Targeted Locations	Hypermarkets, Malls Commercial Streets and Souq Areas.

Inspections to Resolve Interference Cases

Resolving interference is crucial for the operation of radio equipment on authorized Spectrum. Inspections are conducted to eliminate these interferences caused by unauthorized radio equipment. The table below shows the cases handled this year.

	No. of Cases
Interference Complaints Received	84
Complaints Investigated for Interference analysis & identification	84
Cases Closed / Resolved by Inspection	65

Inspections for Customs Clearance

Every year, thousands of radio and telecommunications equipment are imported through land, sea and airport. Technical inspectors are present at these entry points 24/7 to ensure the lawful import of authorized equipment. The table below shows the cases handled this year.

Description	Applications Received	Approved	Rejected
Communication Equipment	20,416	20,273	143
Non Communication	1,702	1,696	6
Security Equipment	2,693	2,512	181
Total	**24,811**	**24,487**	**330**

National Frequency Allocation Plan (NFAP)

Based on the outcomes of WRC-15, CRA updated the Qatar National Frequency Allocation Table (QNFAT) as the National Frequency Allocation Plan (NFAP). A new document that updates the outcomes of WRC-15 and republishes the existing allocation table as the frequency allocation plan has been recommended by the Qatar National Spectrum Coordination Committee (QNSCC) and endorsed by the Minister of Transport and Communications. This is a comprehensive document that includes the National Frequency Allocation Table (NFAT) as well as other important sections like Harmonized Frequency Bands, Allotment Plans relevant to Qatar, etc.

Qatar Domain Registry

Growth of the Qatari Domain Registry has continued its upward trajectory. The number of Qatari domains surpassed the 22,000 mark by December 2016 and is showing steady growth in registration from regional and international entities. The growth has been consistently strong considering the Internet Corporation for Assigned Names and Numbers (ICANN) has delegated hundreds of new domain extensions that have been launched and available for registration, giving consumers more choice. On average, the Qatar Domain Registry system has performed more than 1,000 billing transactions monthly. Of that number, about 60% are renewals, 30% new registrations and 5% to 10% are transfers.

Additionally, CRA is pursuing Qatar-based web solution companies to be a part of its registrar community. There are currently 17 registrars, including 5 based in Qatar. Several additional companies are expected to be accredited in 2017.

Regional and International Meetings

CRA has participated in and contributed to a variety of regional and international meetings, including a contribution to the GCC Technical Committee of the GCC Telecommunication Bureau, Arab Spectrum Management Group and ITU Working Party responsible for International Mobile Telecommunication Systems.

Hardware Upgrade of QoS Monitoring System

The measurement system needs to be capable of carrying out tests on the latest technology provided by the service providers. The QoS systems available to CRA have been upgraded to monitor the LTE-Advanced capabilities of the operators.

Registration of Monitoring Stations in ITU

CRA registered its Fixed and Mobile Monitoring Stations with ITU to be part of the regional and international monitoring activities. The ITU list of International Monitoring Systems comprises monitoring stations designated by administrations, that meet the ITU-R Technical Standards, in accordance with Resolution ITU-R 23-2 (2012).

National Numbering

In July 2015, CRA implemented an annual fee for National Numbering resources. The fee was determined based on the type/category of numbers. Beginning July 2015, all numbering resources were subject to the annual fee as per the rates approved by the Cabinet. Short codes used for emergency services and for public services are exempt from the annual fee.

Enhancement of Numbering Management System (NMS)

In January 2016, CRA completed the implementation of a new release (9.0.3.1) of the Numbering Management System to align it with the new changes made in Qatar's National Numbering Plan in 2014. NMS allows service providers to request numbering allocations in accordance with the revised allocation procedures. The breakdown of application requests received by CRA through NMS is provided in figures 15 A and 15 B.

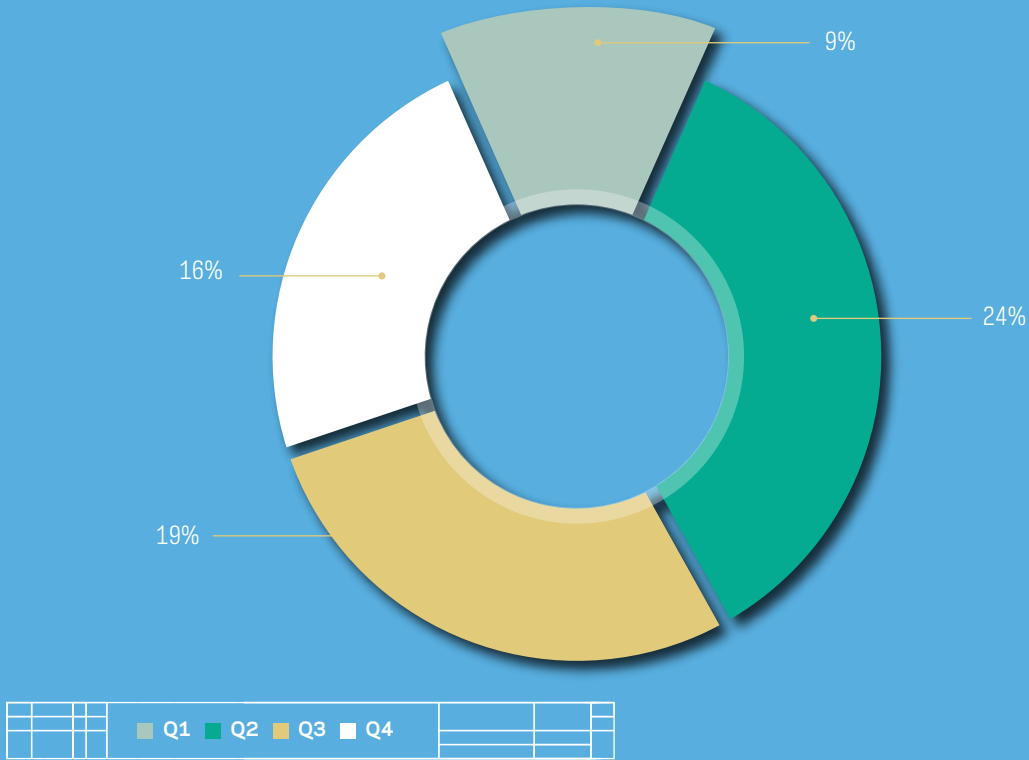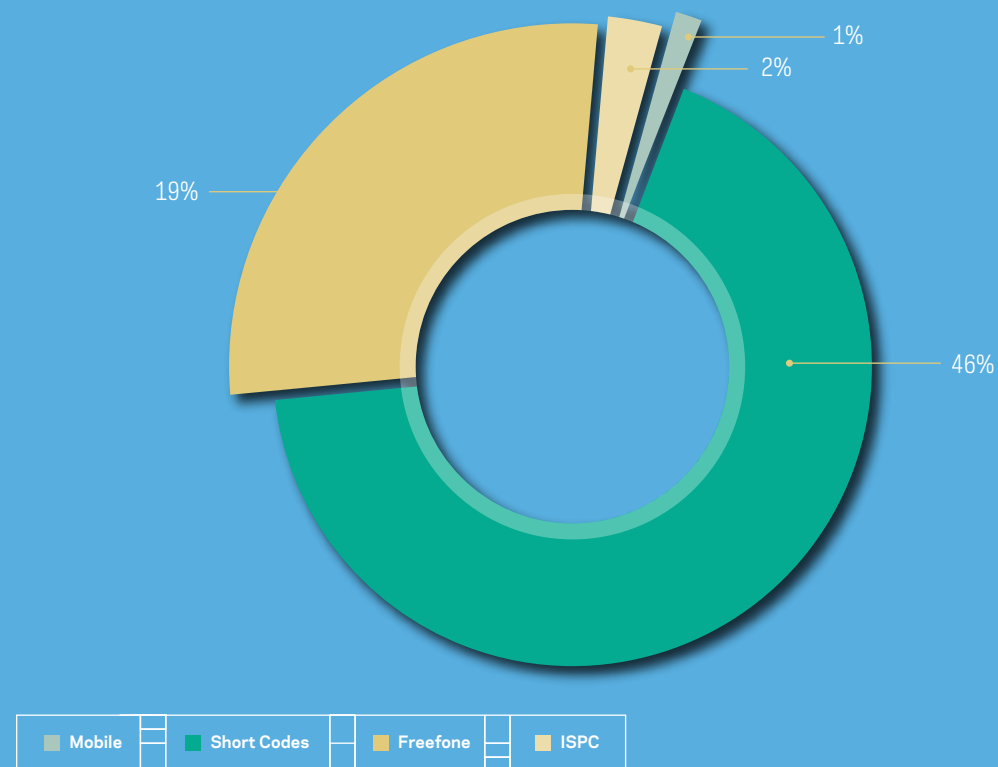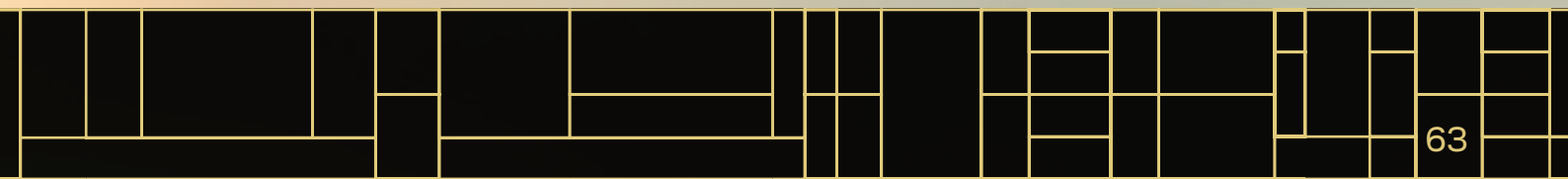FIGURE 15 A. Quaterly Status Application Requests in NMS (2016)

9%

24%

16%

19%

■ Q1 ■ Q2 ■ Q3 ■ Q4

FIGURE 15 B. Breakdown of Numbering Ranges Allocated for Different Type of Services

1%

2%

19%

46%

■ Mobile ■ Short Codes ■ Freefone ■ ISPC

The Communications Regulatory Authority (CRA) continues to play an important role in the development of and investment in state-of-the-art infrastructure. Specifically, this includes developing, setting, monitoring, implementing and ensuring compliance with the technical standards for the Internet, broadband and next-generation networks; developing and monitoring implementation of technical standards for interconnection, access and sharing telecommunications infrastructure; and managing and monitoring implementation of the national numbering plan, among others.

Toward the Future: Preparing for new developments in the sector

New developments in the telecommunications sector (high speed networks, new transmission technologies which deliver various data, smaller and higher performing processors) are leading the way towards a new dimension of communication that is going beyond the traditional telecommunications paradigm.

These developments are charging towards a new scenario characterized by convergence of means, media and messages. Convergence brings new services (e.g. IoT and M2M) new actors (not only traditional telecommunications operators but also providers of innovative services, IT providers, postal service providers), and new business models.

The borders of the various sectors within the communications ecosystem are today blurring. CRA therefore, is looking beyond the traditional sector of telecommunications and into the ICT and postal sectors and access to digital media. CRA is analyzing these sectors to prepare them for future developments (i.e. regulating for the future) but also in adherence to the wide mandate, the Emiri Decision No. 42 (2014) gives to CRA.

To that end, CRA has conducted a study on the forward-looking competitive dynamics of the traditional telecommunications sector and the enlarged digital media sector. The study highlighted a definition of digital media in line with technological and business evolutions (at Qatari and global levels), identified the future challenges to come and proposed a path in order to address the identified issues stemming from this new environment.

The conclusion of this study was shared with service providers in two workshops, which led to a new stream of work: a report on the overall communications sector and setting the scene for a strategy review of the markets.

Telecommunications Infrastructure Model

In March 2016, CRA finalized the updated Telecommunications Infrastructure Model and the associated specifications for materials to be used. These documents are required based on the MoU signed between CRA and Ashghal, Qatar's Public Works Authority. This enables Ashghal to design and build the new passive government duct network along its expressway and local roads projects that CRA will then manage.

In addition to this, in September 2016 CRA launched the Automated Duct Management System to enable the efficient management of government-owned telecommunications ducts that will be constructed by Ashghal and managed by CRA.

Fixed Number Portability Framework

The introduction of Fixed Number Portability (FNP) allows individuals and businesses with fixed line phones to change service providers and retain their phone numbers. In August 2016, CRA clarified its position on FNP framework documentation and provided its decision on the requirements with regard to the porting of fixed numbers. Furthermore, in December 2016, CRA published an amended order for FNP that included the list of milestones to be completed by the service providers before the official launch.

Launch of .doha

CRA is preparing to launch ".doha", a new city top-level domain (TLD) for eligible entities and organizations in Doha to register their websites. This is part of CRA's strategy to foster the development of Qatar's domain extensions as a key public resource by providing stable, secure and trusted domain name services to help shape Qatar's role in the digital economy.

Since the successful formation of a delegation supporting the .doha extension by ICANN in March 2015, CRA has prepared all the groundwork to establish the extension as a new city TLD under the managed registry service along with its relevant set of policies. The extension's normal business operations are expected to commence pending approval of the proposed pricing scheme by the Ministerial Cabinet at which point CRA's QDR team will initiate the process of signing up the extension's registrars. This will eventually facilitate the launch and availability of the .doha extension to its defined target market.

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The Communications Regulatory Authority (CRA) is empowered by the Telecommunications Law (Decree 34 of 2006) and the Emiri Decree (No. 42 of 2014 establishing the CRA) to monitor licensees and to ensure compliance with regulatory frameworks and take the necessary measures to warrant such compliance. The following pages outline CRA's strategy and action plan towards compliance by its licensed stakeholders.
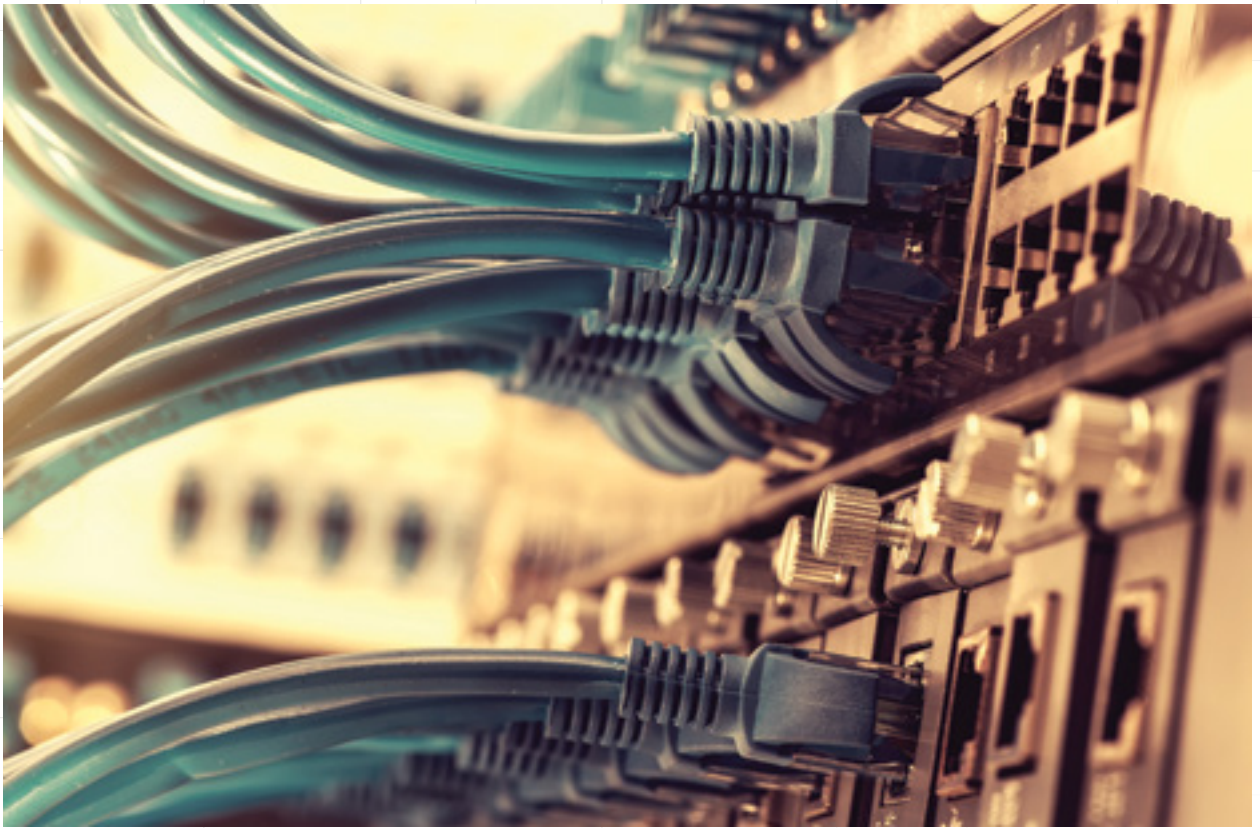
PURPOSE OF MONITORING AND COMPLIANCE

The activities of the telecommunications sector are regulated in accordance with the requirements set out in the various legal instruments governing the sector. These include laws, regulations, licenses, decisions and orders. Establishing a monitoring and compliance regime drives adherence to the various legislative and regulatory instruments governing the sector while ensuring that CRA meets its objectives and mandate in accordance with the Emiri Decree and the Telecommunications law. Formulating and imposing obligations through license terms and conditions as well as regulations would be meaningless without a robust and engrained compliance and enforcement program. There would be no incentive for conformity to these rules and regulations embedded in the legal framework, if compliance is not monitored and assessed at regular intervals.

MONITORING, COMPLIANCE AND ENFORCEMENT STRATEGY

During the year 2016, CRA developed a compliance program to facilitate the implementation of its mandate. The program will be strengthened in the coming period to provide more in-depth information on compliance and to focus regulatory and monitoring interventions in areas where compliance has a significant impact on the telecommunications sector to fully cover the mandate of CRA.

In order to effectively manage and implement the compliance process, CRA developed a clear strategy that includes a detailed process and procedures to be followed in reporting compliance and to address cases of non-compliance as described below. The main objective of that strategy is to identify and regulate the current mandatory basic obligations on telecommunication service providers to comply with them.

Compliance of telecommunications service providers with those obligations is monitored to ensure that their legal obligations are met. The strategy stimulates the examination and detection of areas of non-compliance and allows for the settlement of what has been examined through legal or regulatory provisions before implementing the enforcement provisions in the legal framework.

NON-COMPLIANCE PROCESS

As part of the escalation process and procedures to address issues of non-compliance and enforcement, the CRA established an internal compliance committee for the telecommunications sector responsible for making recommendations to the President of the CRA in the areas of non-compliance and enforcement. The following illustration refers to the stages and procedures of the Committee, in coordination with the administrations concerned to address compliance issues.

Suspicion of non compliance
(Monitoring or Complaint)

Phase 1-A
Internal assessment - HoD prepares assessment report and decides whether formal assessment is required

Phase 2-A
Legal Assessment

Phase 1-B
Formal assessment (involving third parties) - HoD prepares Compliance Report

Phase 2-B
Compliance Committee decides whether Legal notice issued or not (Warning or Non Compliance)

Phase 2-C
HoD monitors compliance to the Notice HoD prepares Compliance Monitoring report

Phase 3-B
President decides on enforcement measures

Phase 3-A
Compliance Committee evaluates the report and prepares Memo to the President

Phase 3-C
Legal proceed to enforcement measures

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The above process involves a fair and transparent mechanism that allows the CRA to deal with non-compliance issues. This process also allows telecommunication service providers to respond and provide justification in areas where non-compliance is presumed. The responses and justifications of service providers are taken into account in the reports

AREAS OF MONITORING AND COMPLIANCE ADDRESSED IN 2016

By applying the strategy adopted by the CRA to monitor the compliance of telecommunication service providers with all their regulatory obligations, CRA discovered the following cases throughout its dealing with telecommunication service providers:

1. The obligation of telecommunication service providers to comply with compliance rules, through alerts issued to them by CRA, in a rapid and efficient manner, especially when not related to the fixed telecommunications market;

2. The obligation of telecommunication service providers to comply with the compliance rules and the considerable time and effort required for discussions and meetings between the CRA and telecommunication service providers as well as the notices, orders or decisions that may require telecommunication service providers to comply with certain regulations;

3. Ooredoo specifically rejected continued compliance with the decisions relating to the fixed telecommunication market and the consequent lack of competition in this market. Examples include:

A. Issuing a number of decisions and orders for telecommunications service providers in relation to the fixed telecommunications market based on the text of Article (61) of the Telecommunications Law. Although these orders and decisions were final and binding, Ooredoo insisted that no decision or order relating to the fixed telecommunications market and other associated markets was binding (leased lines, access to infrastructure, access to QDC, Fixed number portability, etc.).

B. Issuing a notice to Ooredoo regarding the presentation of reference offers and retail charges. Ooredoo has on many occasions refrained from complying with the fee requirements set forth in the retail fee instructions and reference offerings, and Ooredoo continues to opt out of the instructions selectively, especially with respect to the fixed telecommunications market.

CRA has issued non-compliance notices to relevant telecommunications service providers whenever it has established that telecommunication service providers have breached their obligations under the regulatory framework.

ABSENCE OF ENFORCEMENT POWERS

Under the Telecommunications Law, CRA is free to publish notices to telecommunication service providers on its website. A few notices were posted on the CRA official website for public awareness. Due to non-compliance notices, telecommunication service providers are granted an opportunity to correct cases of non-compliance.

Although CRA has issued non-compliance notices in cases where this is required, non-compliance with a number of important and major cases continues. The delay or lack of compliance from telecommunication service providers may be related to the lack of direct enforcement powers of CRA, and reluctance from Qatari courts to consider CRA and/or the Ministry of Transport and Communications as a continuation of ictQATAR in the absence of amendments to the Telecom Law No. 34 of 2006 clarifying the transfer of ictQATAR roles and duties.

Currently, according to the provisions of Chapter 16 of the Telecommunications Law, any sanction or enforcement measures shall be initiated by the Public Prosecutor.

In an attempt to rectify this situation, CRA, with the approval of His Excellency the Minister of Transport and Communications, proposed various amendments to the Telecommunications Law in force. These amendments include the power to impose fines to telecommunication service providers, in case of breach of their obligations. The proposed amendments are a step towards ensuring that the organization of the sector is in line with international best practices, and would provide greater flexibility and efficiency in implementing the provisions of the regulatory framework.

In the meantime, ensuring compliance will remain a challenge. As a result, outstanding issues of non-compliance have serious implications for the telecommunications sector as a whole.

CONCLUSION AND RECOMMENDATIONS

Although CRA has implemented a thorough monitoring and compliance process in accordance with the provisions of the Emiri Decree and the Telecommunications Law, neither CRA nor the Ministry of Transport and Communications have direct enforcement powers, which prevents direct action before the courts.

Therefore, while the amendments to the Telecommunications Law are pending in accordance with the ongoing process, the General Prosecutor is the only authority capable of implementing the sanctions set out in Chapter 16 of the Telecommunications Law regarding offenses and penalties.

NOT ALLOCATED

RADIONAVIGATION

340Hz
Very Low Frequency

FIXED

MARITIME MOBILE

RADIONAVIGATION

FIXED

MARITIME MOBILE

RADIONAVIGATION

FIXED

MARITIME MOBILE

FIXED

Fixed

RADIONAVIGATION

FIXED

Fixed

Maritime Mobile

FIXED

MARITIME MOBILE

RADIONAVIGATION

30KHz
Low Frequency

AERONAUTICAL RADIONAVIGATION

RADIONAVIGATION

Aeronautical Radionavigation

MARITIME MOBILE

AERONAUTICAL RADIONAVIGATION

MARITIME MOBILE

BROADCASTING

FIXED

LAND MOBILE

MARITIME MOBILE

RADIOLOCATION

RADIOLOCATION

AMATEUR

FIXED

MOBILE

300KHz
Medium Frequency

3MHz
High Frequency

FIXED

MOBILE

FIXED

MOBILE

SPACE RESEARCH

FIXED

MOBILE

BROADCASTING

BROADCASTING

30MHz
Very High Frequency

FIXED

MOBILE

AERONAUTICAL RADIONAVIGATION

FIXED

MOBILE

MOBILE SATELLITE

MOBILE SATELLITE

AERONAUTICAL RADIONAVIGATION

RADIOLOCATION

FIXED

MOBILE

BROADCASTING

300MHz
Ultra High Frequency

RADIOLOCATION

FIXED

FIXED

MOBILE

Mobile

FIXED

FIXED SATELLITE

EARTH EXPLORATION SATELLITE

RADIOLOCATION

RADIONAVIGATION

SPACE RESEARCH

3GHz
Super High Frequency

FIXED

FIXED SATELLITE

MOBILE

FIXED

INTER SATELLITE

MOBILE

FIXED SATELLITE

MOBILE

FIXED

MOBILE

RADIO INTERFEROMETRY

RADIOLOCATION

Amateur

MOBILE SATELLITE

Space Research

30GHz
Extremely High Frequency

Legend:

- Aeronautical Mobile
- Aeronautical Radionavigation
- Amateur
- Amateur Satellite
- Broadcasting
- Broadcasting Satellite
- Earth Exploration Satellite
- Fixed
- Fixed Satellite
- Inter Satellite
- Land Mobile
- Maritime Mobile
- Maritime Radionavigation
- Meteorological Aids
- Meteorological Satellite
- Mobile
- Mobile Satellite
- Radio Astronomy
- Radiolocation
- Radionavigation

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Legend:
- Radionavigation Satellite
- Space Operation
- Space Research
- Standard Frequency
- SF & Time Signal Satellite

المسافة الفاصلة بين الخدمات الراديوية لا تمثل القيمة
الحقيقية للنطاق المشغول فعليا للطيف الترددي.

The spacing between the radio services in the frequency allocation
chart is not proportional to actual amount of spectrum occupied.