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**EXPANDING YOUR
HORIZONS**
TELECOMMUNICATIONS AND BROADCASTING SECTORS
ANNUAL MARKET REPORT 2018

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FOREWORD



Foreword

As the Telecommunications Authority of Trinidad and Tobago (the Authority) celebrates 15 years of regulating the telecommunications and broadcasting sectors, it is our pleasure to present the *13th Annual Market Report: Telecommunications and Broadcasting Sectors 2018* (the Report).

This Report is a comprehensive compilation of statistics on the performance of the two sectors during the period January to December 2018. It contains data relating to a range of telecommunications and broadcasting indicators, such as subscription numbers, penetration rates, gross revenues and traffic volumes. The data collected is used by the Authority to monitor and inform regulatory policy decisions aimed at facilitating the growth of these sectors.

The 2018 findings reaffirm the vibrant and robust nature of Trinidad and Tobago's telecommunications and broadcasting sectors, which generated approximately TT\$5.64 billion in revenues over the review period. Over the past five years, the Internet market has shown steady growth and, in 2018, was the only market recording growth in the number of subscriptions. There were 341,300 fixed Internet subscriptions at the end of 2018 — a 4.4% increase when compared to the same period in 2017. This growth in fixed Internet resulted in an increase in the number of households accessing fixed broadband services from 77 to 81 out of every 100 households. Total revenues generated by the telecommunications and broadcasting sectors increased by 7.8% in 2018. This increase is encouraging, given the reduction in revenues recorded in 2017.

The Authority wishes to thank all operators in both sectors for their substantial input to this Report, through their submission of sector-specific information and statistics, which we are confident will be beneficial to all industry stakeholders.

Executive Summary

The Authority's *13th Annual Market Report: Telecommunications and Broadcasting Sectors 2018* presents and reviews statistical information on performance and market trends observed within the telecommunications and broadcasting industry up to and during the period January to December 2018.

Upturn in total revenues observed within the telecommunications and broadcasting sectors

In 2018, the telecommunications and broadcasting sectors generated an estimated TT\$5.64 billion in revenues. When compared to the previous year, this represented a 7.8% increase in total revenues generated. During the period under review, the telecommunications sector contributed TT\$4.28 billion, or 75.9%, while the broadcasting sector contributed 1.36 billion, or 24.1%.

Internet market retains its lead in total revenues earned

With an estimated TT\$1,972.1 million, the Internet market continued to be the major revenue earner, accounting for approximately 30.5% of total revenues. This was followed by mobile voice services (21.1%) which contributed TT\$1,190.1 million and pay TV services (12.5%) which contributed TT\$703.1 million of revenues earned.

Total telecommunications and broadcasting subscriptions fall; however, fixed Internet subscriptions continue to increase

The fixed voice market decreased minimally in 2018, with subscriptions standing at 317,500 — a decrease of 1,200, or 0.4%, when compared to 2017. Similarly, mobile voice subscriptions and mobile Internet subscriptions also decreased, by 2.9% and 3.7%, respectively. Pay TV subscriptions decreased by 4.9%, to record 234,700 at the end of 2018.

The number of subscriptions in the fixed Internet market, however, continued to grow in 2018, approximating 341,300 subscriptions — a 4.4% increase when compared to the same period in 2017.

Decreases in revenue observed in both FTA television and FTA broadcasting markets

Gross revenues from the free-to-air (FTA) television market continued to decline. Total gross revenues for this market amounted to TT\$71.2 million — a decrease of TT\$5.9 million, or 7.7%, when compared to the previous year. Similarly, a decrease in revenues of TT\$12.4 million, or approximately 8.1%, within the FTA radio broadcasting market was also observed.

Decreases in market concentrations continue in fixed Internet, fixed voice and mobile voice markets; however, minimal increases in Pay TV concentration observed

Using the Herfindahl-Hirschman Index (HHI), the calculated level of concentration in the fixed Internet market for 2018 stood at 2,432.0, decreasing from 3,158.4 in December 2017. Similarly, the HHI in the fixed voice market and the mobile voice market also decreased in 2018, by 12.3%, (4,132.5) and 0.71% (5030), respectively. Conversely, the level of concentration in the pay TV market increased minimally by 2.3%, from 2,964.5 points at the end of 2017 to 3,032.3 points at the end of 2018.

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OVERVIEW OF THE MARKETS



1. Overall Market Review

1.1. Overview and methodology

The *Annual Market Report: Telecommunications and Broadcasting Sectors 2018* (the Report) presents statistical information on the performance of the telecommunications and broadcasting sectors of Trinidad and Tobago. For the purposes of this Report, the telecommunications sector is classified into four markets: fixed voice, mobile voice, international voice and Internet (fixed and mobile), and the broadcasting sector is classified into three markets: FTA television, FTA radio and pay TV.

The information presented is based primarily on data submitted by operational concessionaires within the telecommunications and broadcasting sectors for the period January 1 to December 31, 2018, as well as historical data series and other information made available to the Authority at the time of publication of the Report.

The data received by concessionaires are compiled, reviewed and analysed and thereafter the indicators are generated. The

indicators measure the evolution of the telecommunications and broadcasting sectors based on the number of subscriptions, gross revenues and traffic.

The information contained in this report is used by the Authority to inform and monitor policy decisions, which will facilitate the orderly development of these sectors.



Figure 1. Classification of markets

The Authority also publishes quarterly market updates on the telecommunications and broadcasting sectors to supplement the Report, which can be accessed from the Authority's website: tatt.org.tt.

1.2. Concessions Granted

Under sections 21 and 31 of the Telecommunications Act, Chap. 47:31 (the Act), the Authority is responsible for making recommendations to the Minister with responsibility for telecommunications regarding the granting and renewal of concessions to telecommunications and broadcasting operators. Concessions are issued to concessionaires who are authorised to operate a public telecommunications network, provide public telecommunications services or provide public broadcasting services. A concessionaire may be granted more than one type of concession.

As at December 2018, a total of 89 concessions were granted by the Authority. A detailed list of these concessions can be found in Appendix II.

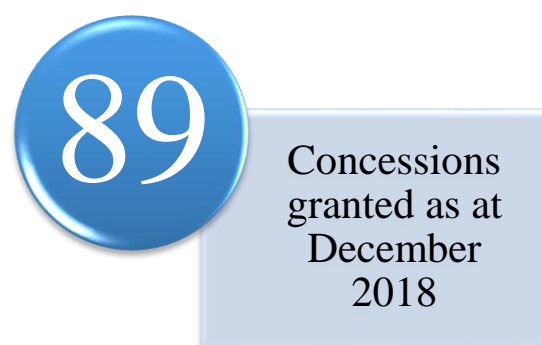


Table 1 lists the number of operational concessionaires in the various markets as at December 2018.

Table 1. Number of operational concessionaires by market as at December 2018

Network Category	Service Provided	Operational Concessionaires
International Telecommunications	Network only	1
	Services only	-
	Network and services	6
Mobile Telecommunications	Mobile voice and Internet services	2
Fixed Telecommunications	Fixed telephony	7
	Fixed Internet	11
Pay TV (Subscription TV)		13
Free-to-Air Radio Broadcasting		36
Free-to-Air Television Broadcasting		5
TV Broadcasting via Cable		8

1.3. Review of the Telecommunications and Broadcasting Sectors

1.3.1. Total Revenue Contributions by the Sectors

The telecommunications and broadcasting sectors generated an estimated TT\$5.64 billion¹ (US\$832.1 million²) in 2018, which, as a percentage of GDP³, equates to 3.7%. This represented a 7.8% increase in total revenues generated by these sectors when compared to 2017⁴.

Of the total telecommunications and broadcasting revenues, Internet services accounted for the majority of revenues, with TT\$1,972.1 million (30.5%). This was followed by mobile voice services, which contributed TT\$1,190.1 million (21.1%). The next highest revenue earners for the industry were pay TV services and fixed voice⁵ services, contributing a total of TT\$703.1 million (12.5%) and TT\$583.8 million (10.3%), respectively. The international voice market was next, generating TT\$293.4

million (5.2%) in revenues. The FTA radio and television markets each contributed TT\$138.9 million (2.5%) and TT\$71.2 million (1.3%), respectively. Leased line services⁶ contributed TT\$109.3 million (1.9%).

Other revenues⁷ generated TT\$580.5 million, which contributed 10.3% to total industry revenues. Of that TT\$580.5 million, other telecommunications revenues generated TT\$135.9 million while other broadcasting revenues generated TT\$444.6 million.

To illustrate the above information, Figure 2 depicts the revenues earned within the industry while Figure 3 shows the percentage revenue contribution by each market towards overall total revenues from the industry.

¹ This figure includes revenues from telecommunications and broadcasting services offered to members of the general public and private leased line services.

² Exchange rate US\$1=TT\$6.68

³ Gross domestic product (GDP) at current market prices for 2018 was TT\$150,847.0 million (Source: TT Ministry of Finance *Review of the Economy 2018*).

⁴ Total Telecommunications Revenues for 2017 were revised from TT\$5.14 billion previously reported to TT\$5.23.

⁵ Fixed voice market revenues include revenues earned from fixed voice services and access (excluding international services).

⁶ Leased lines include both international and domestic leased circuits.

⁷ "Other revenues" comprise revenues earned from both the telecommunications sector and the broadcasting sector, such as revenues received from wholesale services, and production and airtime for local programming on pay TV. See sections 1.2.2 and 1.2.3 for further definitions.

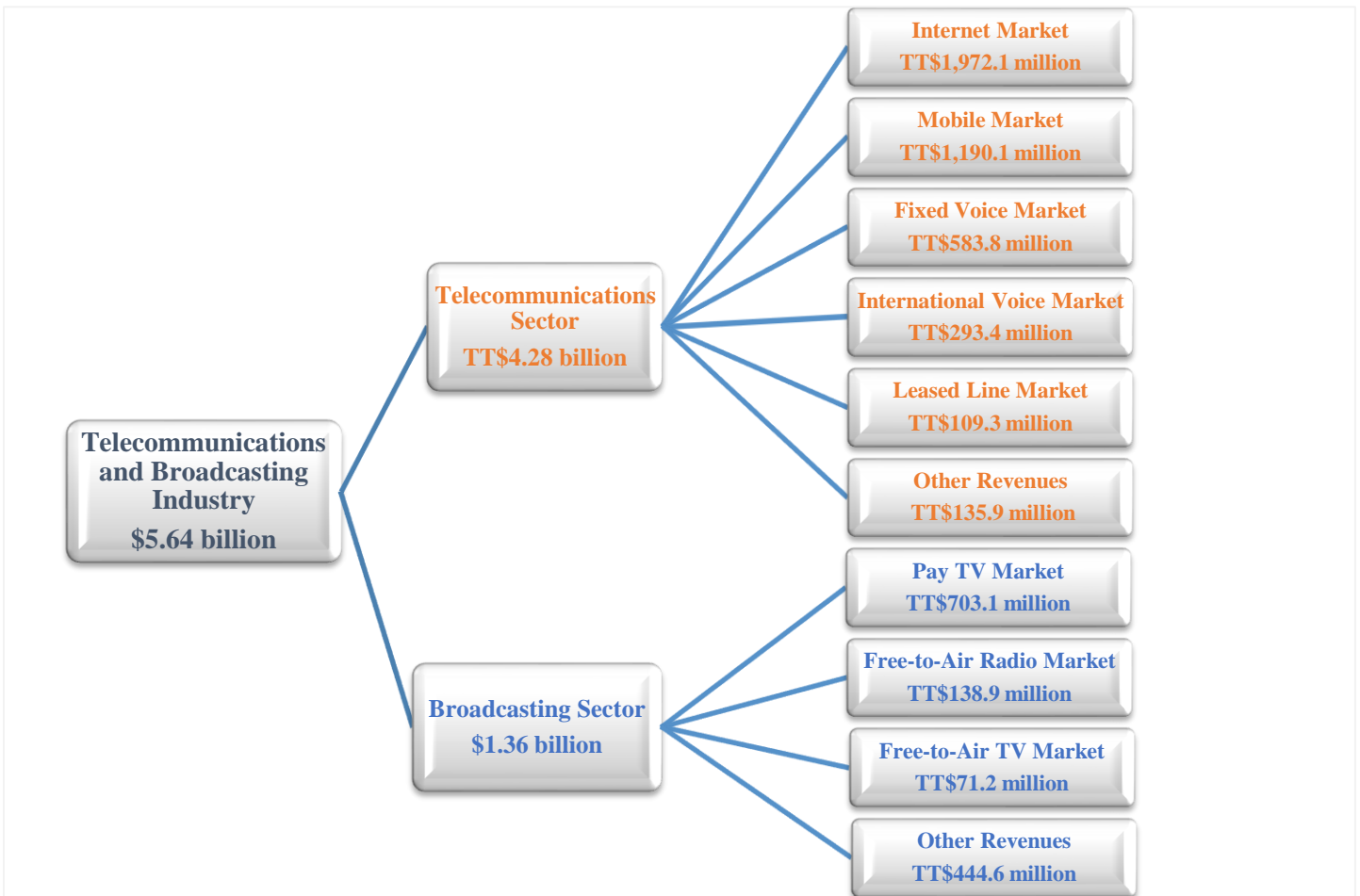


Figure 2. Gross revenues by industry, sectors and markets in 2018

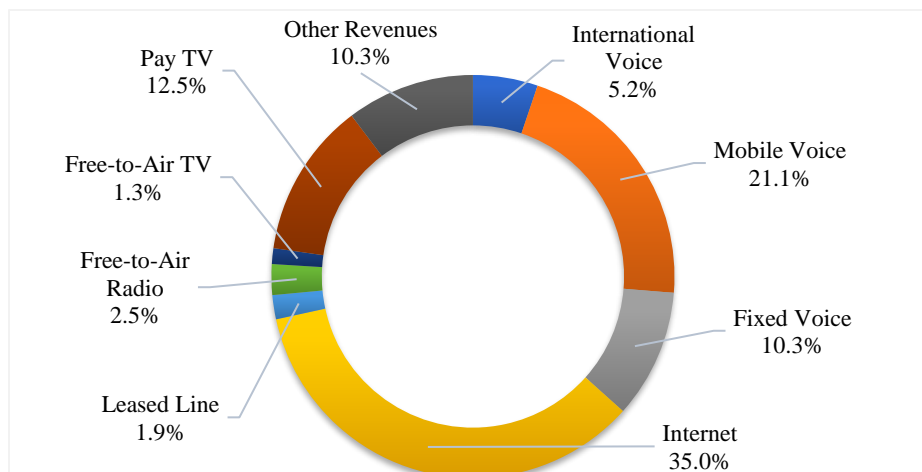


Figure 3. Percentage of total revenues contributed by markets in 2018

1.3.2. Market Revenue Trends in the Telecommunications Sector

For the 2018 period, the telecommunications sector contributed TT\$4.28 billion, or 75.9%, to total industry revenues.

Of the five main markets within this sector, the Internet market generated the majority of revenues, accounting for 46.0% of total telecommunications revenues. The mobile voice market generated the second highest with 27.8%, while revenues from the fixed voice and international voice markets followed with 13.6% and 6.8%, respectively. The leased line market earned 2.6% of total telecommunications revenues while other (telecommunications) revenues⁸ contributed 3.2%.

Figure 4 depicts the revenue contributions of the individual markets toward total revenues

generated from the telecommunications sector. As shown, the Internet market continued to expand its percentage contribution to total telecommunications revenues, increasing from 38.5% in 2017 to 46.0% in 2018.

While the percentage of revenues generated by the mobile voice market decreased from 36.1% in 2017 to 27.8% in 2018, it was the second highest revenue earning market in the sector.

The percentage contributed by the fixed voice and international voice markets decreased marginally, while leased line and other (telecommunications) revenues increased during the period.

⁸Other telecommunications revenues earned from service providers in the sector include other wholesale

services (excluding leased line), high-capacity wireless links and two-way radios.

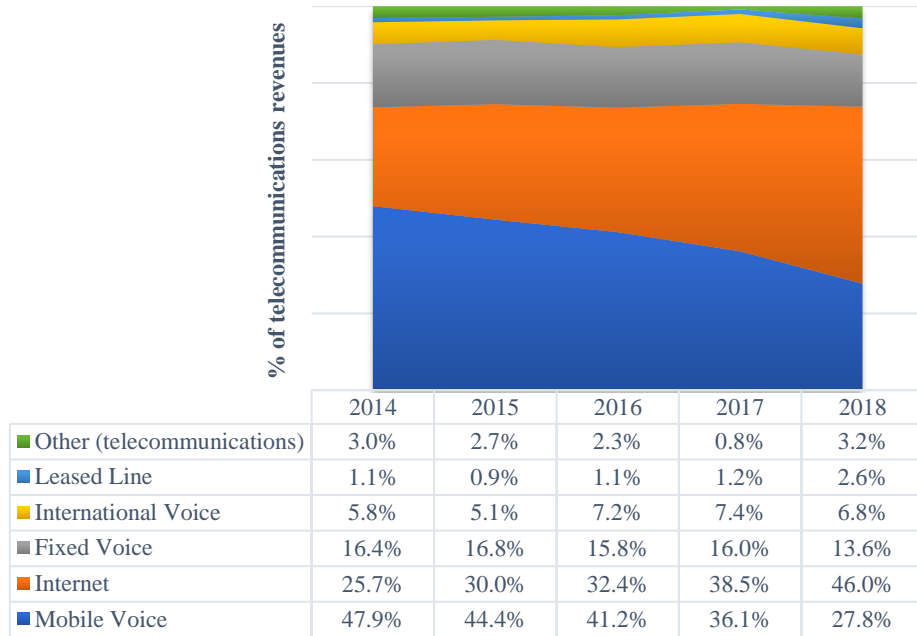


Figure 4. Percentage revenue contributions by telecommunications markets from 2014 to 2018

1.3.3. Market Revenue Trends in the Broadcasting Sector

During the review period, the broadcasting sector contributed TT\$1.36 billion, or 24.1%, towards total industry revenues. This sector is divided into three main markets: pay TV⁹, FTA television and free-to-air radio. In keeping with the trend observed over the past five years, the pay TV market continued to earn the majority of revenues in the sector, accounting for 51.8% of total broadcasting revenues for 2018. Trailing behind significantly were both the FTA radio and

FTA television markets which earned 10.2% and 5.2%, respectively, of total broadcasting revenues. Other (broadcasting) revenues¹⁰ contributed 32.7% to total broadcasting revenues.

Figure 5 highlights the yearly trends with respect to the revenue contributions by the individual markets towards total broadcasting sector revenues.

⁹ Also known as subscription TV

¹⁰ Other revenues earned from service providers in the broadcasting sector include production and airtime for local programming on pay TV.

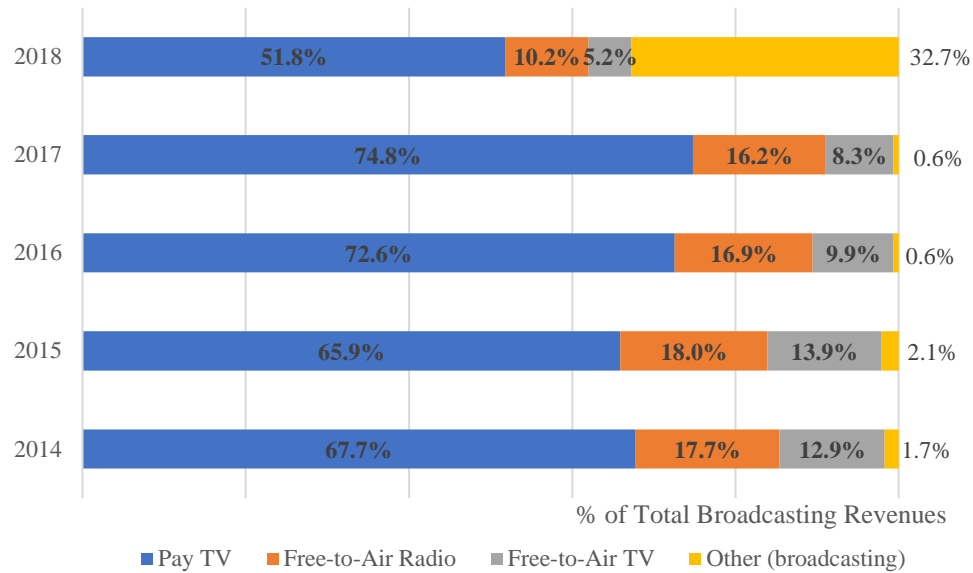


Figure 5. Percentage revenue contributions by broadcasting markets from 2014 to 2018

1.3.4. Telecommunications and Broadcasting Subscriptions

At the end of 2018, the number of subscriptions within the fixed voice, mobile voice, fixed Internet, mobile Internet and pay TV market segments totalled approximately 3.55 million. This represents a decrease of 2.3%, or 82,800 subscriptions, when compared to the same period in 2017.

Figure 6 shows the percentage contributions by the various market segments towards total industry subscriptions as at December 2018, while Table 2 lists the number of subscriptions for the period 2014 to 2018. The mobile voice market contributed 1.97 million subscriptions, representing 54.4% of all subscriptions in the telecommunications

and broadcasting sectors. The number of fixed Internet subscriptions was 341,300 as at December 2018, contributing 9.4% to total subscriptions, whereas the number of mobile Internet subscriptions totalled 678,600, or 18.7%, of total subscriptions. The fixed voice

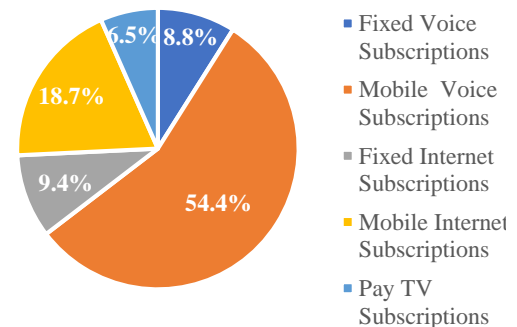


Figure 6. Percentage of subscriptions by market as at December 2018

market contributed 317,700 subscriptions, representing 8.8% of total subscriptions. Pay TV services contributed 6.5% with 234,700 subscriptions.

Table 2. Number of subscriptions by market from 2014 to 2018

	2014	2015	2016	2017	2018
Mobile Voice Subscriptions (millions)	1.98	2.12	2.17	2.03	1.97
<i>Growth rate</i>	<i>1.90%</i>	<i>7.20%</i>	<i>2.00%</i>	<i>-6.2%</i>	<i>-2.9%</i>
Fixed Voice Subscriptions ('000)	289.8	269.8	305.7	318.7	317.7
<i>Growth rate</i>	<i>-0.50%</i>	<i>-6.90%</i>	<i>13.31%</i>	<i>4.2%</i>	<i>-0.3%</i>
Fixed Internet Subscriptions ('000)	249.6	279.8	294.4	327.0	341.3
<i>Growth rate</i>	<i>7.80%</i>	<i>12.10%</i>	<i>5.22%</i>	<i>11.1%</i>	<i>4.4%</i>
Mobile Internet Subscriptions ('000)	570.5	645.4	707.3	704.6	678.6
<i>Growth rate</i>	<i>26.60%</i>	<i>13.10%</i>	<i>9.59%</i>	<i>-0.4%</i>	<i>-3.7%</i>
Pay TV Subscriptions ('000)	228.8	232.8	248.4	246.8	234.7
<i>Growth rate</i>	<i>9.30%</i>	<i>1.70%</i>	<i>6.71%</i>	<i>-0.6%</i>	<i>-4.9%</i>
Total Subscriptions ('millions)	3.32	3.55	3.72	3.63	3.54
<i>Growth rate</i>	<i>6.20%</i>	<i>7.00%</i>	<i>4.80%</i>	<i>-2.5%</i>	<i>-2.3%</i>

1.3.6.Subscription Penetration Rates

Figure 7 shows the penetration rates¹¹ for all subscription-based markets from 2014 to 2018. The penetration rates for fixed Internet services increased in 2018, while the penetration rates for mobile voice, fixed voice, pay TV and mobile Internet decreased.

The fixed Internet penetration rate increased from approximately 24 out of every 100

inhabitants having a fixed Internet subscription to 25 out every 100 inhabitants. As in the previous year, there was a decline in the mobile voice penetration rate, from 150.0 in 2017 to 145.1 in 2018. The mobile Internet penetration rate also decreased, from 52.0 in 2017 to 41.6 in 2018. The pay TV penetration rate decreased marginally from 18.2 in 2017 to 17.3 in 2018.

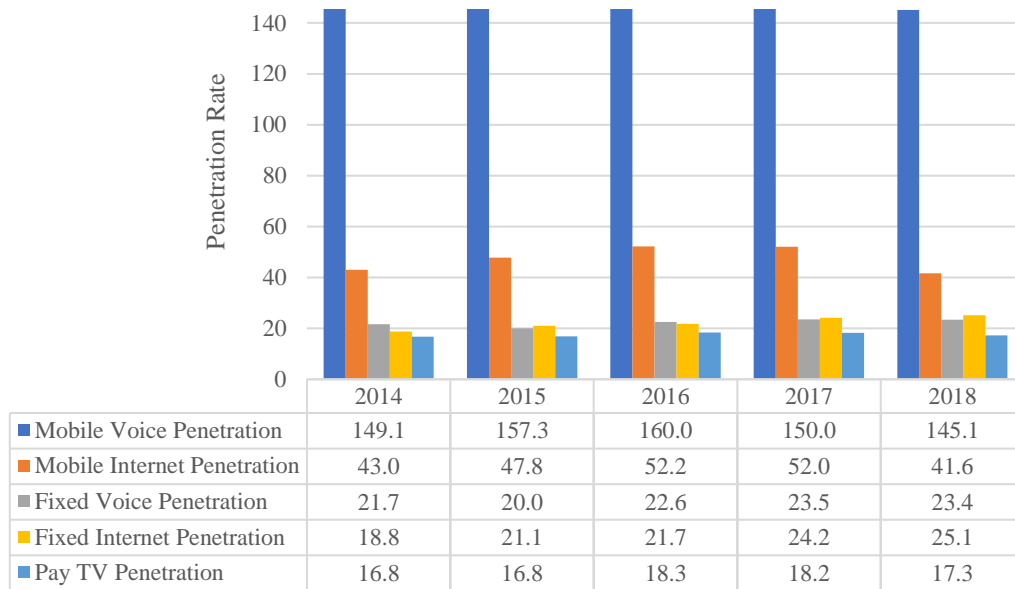


Figure 7. Penetration rates from 2014 to 2018

¹¹ The penetration rates are based on the number of subscriptions per 100 of the population.

Box 1: Review of the Domestic Economy

The domestic economy improved after two successive years of negative economic growth.

According to initial projections from the Central Statistical Office (CSO), real gross domestic product (GDP) grew by 1.9% in 2018, after declining by 1.9% in 2017 and by 6.5% in 2016.

Boosted primarily by higher natural gas production (6.5% increase), the energy sector grew by 2.4% in 2018, while the non-energy sector remained flat¹. Crude oil production, however, declined by 11.6% and overall refinery throughput fell by 9.3%, with a sharp decline observed following the closure of the Petrotrin refinery in November 2018².

While the natural gas subsector fuelled the much needed economic turnaround, the performance of the main non-energy contributors to GDP remained relatively muted³. Although manufacturing increased by 7.3%, mining and quarrying decreased by 1.8%, and trade and repair by 1.2%. The absence of growth in these subsectors has heightened the need for a new paradigm on diversification of the Trinidad and Tobago economy⁴.

*Inflation remained generally low while unemployment conditions are likely to worsen.*⁵

Inflationary pressure remained low in 2018, stemming from the combination of measured growth in aggregate demand for commodities, low imported inflation and the application of monetary policy that managed liquidity conditions effectually⁶. Headline inflation averaged 1.0% in 2018, down from 1.9% in 2017. Core inflation measured 1.0% while food inflation was marginally higher at 1.1%. Notably, food prices were relatively well contained, aided by lower international food prices and the increase in local agricultural production⁷.

¹ CBTT Annual Economic Survey 2018, Review of the National Economy

² Ibid.

³ CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

⁴ Trinidad and Tobago's Budget Statement 2018 "Changing the Paradigm: Putting the Economy on a Sustainable Path <http://www.finance.gov.tt/wp-content/uploads/2017/10/revised-BUDGET-STATEMENT-2018-BOOKLET-faw1.pdf>

⁵ CBTT Annual Economic Survey 2018, Review of the National Economy

⁶ Ibid.

⁷ Ibid.

In the absence of official unemployment statistics for 2018, retrenchment notices, which are a supplementary indicator of job separation, suggest an increase in job losses in 2018, particularly in the petroleum, gas, transport, storage, business and communication services subsectors⁸. The number of persons retrenched increased by 38.0% during 2018. Added to this were job cuts by Petrotrin of approximately 5,000 workers and a decline in the number of job advertisements, which suggests that the demand for labour has diminished⁹. Consequently, the unemployment rate for the year ending 2018 is likely to vary markedly from the reported figure for 2017 of 4.8%) and the projected 4.9% reported by the International Monetary Fund (IMF) at the beginning of 2018¹⁰.

*Central government's fiscal consolidation efforts resulted in a much lower deficit in fiscal year 2017/18.*¹¹

As published by Trinidad and Tobago's Ministry of Finance, central government's total revenue increased by roughly TT\$6.0 billion, while expenditure fell by TT\$2.1 billion in fiscal year 2017/18. This resulted in the fiscal accounts recording an overall deficit of TT\$5.4 billion (3.4% of GDP) in FY2017/18 compared with a deficit of TT\$13.5 billion (9.1% of GDP) one year earlier. The former deficit was financed by a combination of domestic and external borrowings.

According to Moody's Investors Service (Moody's), Trinidad and Tobago's government debt ratios have contributed to an erosion of sovereign creditworthiness. Nonetheless, Trinidad and Tobago maintained a stable rating of Ba1, despite low economic resiliency and institutional strength. Added to this, the country's score was very low in its susceptibility to risk and moderate in the assessment of fiscal strength. As stated by Moody's, Trinidad and Tobago's credit profile is supported by large financial buffers, relatively high wealth levels and significant international reserves, which limit external vulnerabilities.

A view of several key performance measures of Trinidad and Tobago's economic activity is given in Table 1 for the five-year period 2014 to 2018:

⁸ CBTT Annual Economic Survey 2018, Review of the National Economy

⁹ CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

¹⁰ International Monetary Fund Report for Selected Countries and Subjects, Accessed 26th June 2019

https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/weorept.aspx?sy=2016&ey=2023&scsm=1&ssd=1&sort=country&ds=.&br=0&pr1.x=29&pr1.y=8&c=369&s=NGDP_R%2CNGDP_RPCH%2CPCPI%2CPCPIPCH%2CPCPIE%2CLUR%2CBCA%2CBCA_NGDPD&grp=0&a=#cs6

Table 1. Economic Performance Measures for T&T from 2014 to 2018

Economic Indicator	2014	2015	2016	2017	2018
¹² Real GDP Growth (current prices, % Δ)	-1.0	1.8	-6.5	-1.9	1.9
¹³ Energy Sector (% Δ)	-3.8	-0.9	-9.8	1.1	2.4
¹⁴ Non-energy Sector (% Δ)	1.3	2.1	-3.5	-3.5	0.0
¹⁵ Inflation Rate (%)	5.8	4.7	3.1	1.9	1.0
¹⁶ Unemployment Rate (%)	3.3	3.4	4.0	4.8	NA
¹⁷ % of GDP)	14.5	7.4	-3.9	4.9	4.6
¹⁸ Overall BOP (MM- US\$)	1,321.3	-1,564.2	-467.2	-1,096.0	-381.9
¹⁹ Moody Ratings	Baa1	Baa2	Baa3(-)	Ba1	Ba1
²⁰ Exchange Rate (USD)	6.36	6.33	6.67	6.78	6.78
²¹ Population (000's)	1,345	1,349	1,353	1,356	1,359
²² Net Official Reserves (MM- US\$)	11,497.1	9,933.0	9,465.8	8,369.8	7,575.0
²³ Import Cover (Month's)	9.8	9.7	9.0	8.6	8.1
²⁴ GDP (current Prices - MM-TT\$)	174,660.6	176,109.0	160,210.0	145,026.7	150,847.0

¹² CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

¹³ CBTT, Annual Economic Survey 2018, sectoral GDP percentage change (constant 2012 prices)

¹⁴ CBTT, Annual Economic Survey 2018, Changes in the Index of Retail Prices (RPI0 January 2015 = 100)

¹⁵ CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

¹⁶ CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1, 2018 refers to the period Jan- Sept

¹⁷ TT MOF Review of the Economy 2018

¹⁸ TT MOF Review of the Economy 2018, refers to the period Jan- March 2018

¹⁹ Moody's. Accessed 12th, June 2019. www.moodys.com/research

²⁰ Central Bank of Trinidad and Tobago, US Buying

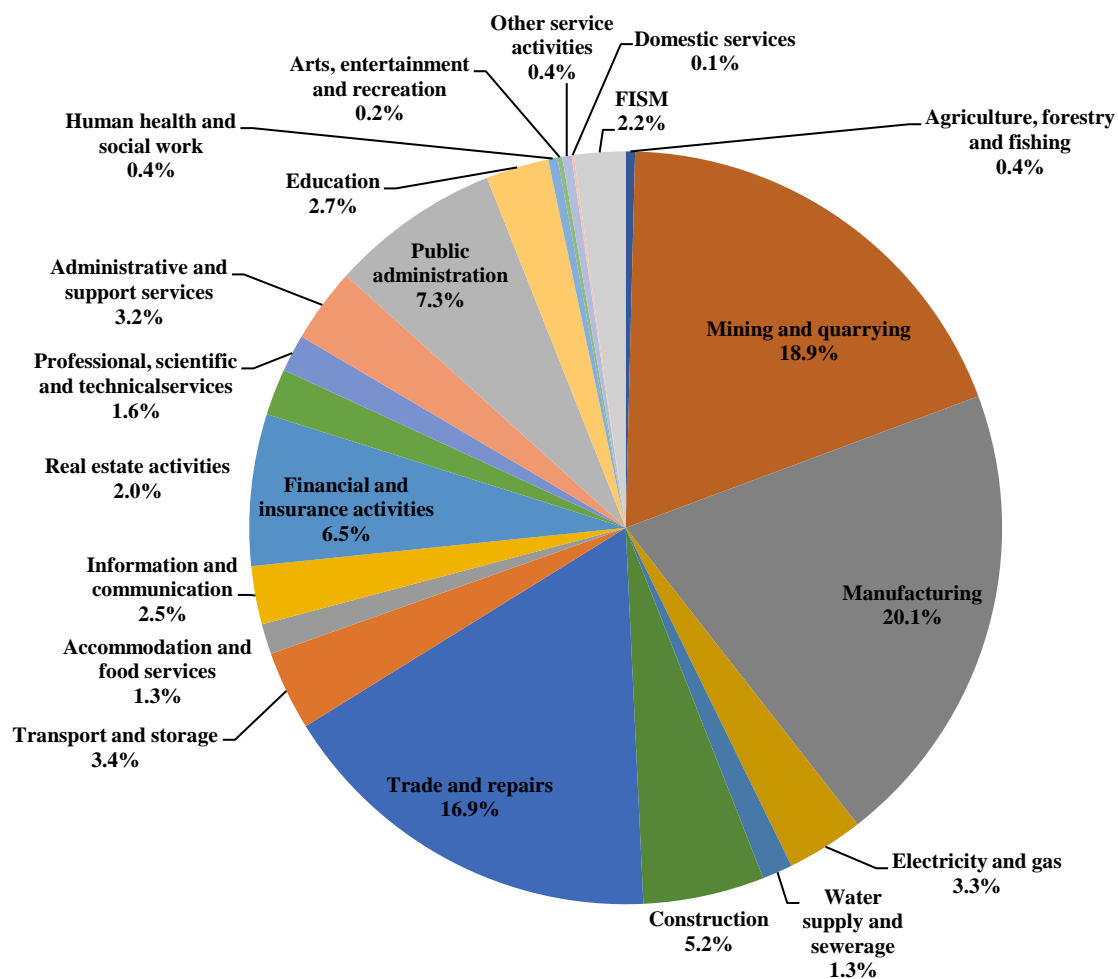
²¹ TT MOF Review of the Economy 2018

²² CBTT, Annual Economic Survey 2018

²³ CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

²⁴ TT MOF Review of the Economy 2018, Revised GDP, Current Prices

A snapshot of the economic output of Trinidad and Tobago is presented in Figure 1. The leading contributors to real economic growth in 2018 are expected to be manufacturing, financial and insurance activities, transport and storage, administrative and support services, education and electricity and gas. The information and communication sector is expected to achieve a mild turnaround, moving from a 1.6% contraction in 2017 to an expansion of 1.1% in 2018 and maintaining its economic contribution at 2.5% of GDP.



Source: Ministry of Finance Trinidad and Tobago

Figure 1: Gross Domestic Product of Trinidad and Tobago at Constant (2012) Market Prices/Percentage Contribution

Outlook

The changes that have taken place in global energy markets since 2014 and their impact on public finances in Trinidad and Tobago have clearly indicated that the way forward requires improved revenue administration, significantly altered expenditure patterns and intensified efforts to diversify beyond the energy sector. While the stated improvement in the energy sector is being praised for the turnaround in the Trinidad and Tobago economy, and the country's GDP is estimated improve marginally in the next two years, long-term sustainable growth is less certain.

According to the Central Bank of Trinidad and Tobago (CBTT), inflation is expected to remain stable in 2019. However, harsh weather conditions (drought or floods) could lead to a rise in the prices of local produce. In addition to this uncertainty, the vulnerability on the international front is also likely to affect the Trinidad and Tobago economy and, in particular, developments in nearby Venezuela, tensions among major trading nations, volatility in energy prices, Brexit, and swings in financial market earnings. Consequently, domestic policies and macroeconomic management need to be closely coordinated and alert in dealing with a rapidly evolving external landscape²⁴.

²⁴ CBTT Economic Bulletin 2019: January 2019, Volume XXI, No1

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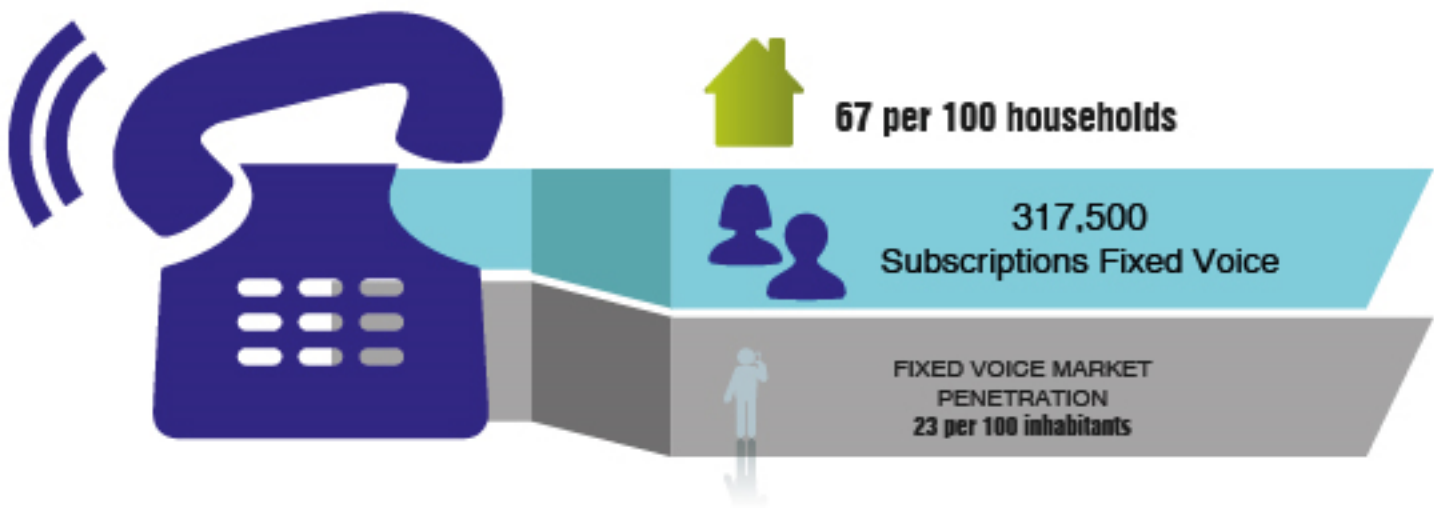
2018 ANNUAL MARKET REPORT

FIXED VOICE MARKET



Key Indicators for the Fixed Voice Market

GROWTH 2017-2018



9.2%
decrease over 2017

\$583.8 M

FIXED VOICE MARKET REVENUES

2. Fixed Voice Market Review

As at December 2018, there were 16 operators authorised by the Authority to provide fixed domestic telecommunications services to the public, over wired and/or wireless facilities. In 2018, the following seven offered domestic fixed voice services:

1. Amplia Communications Limited
2. Columbus Communications Trinidad Limited (CCTL)
3. Digicel (Trinidad & Tobago) Limited
4. Lisa Communications Limited
5. Massy Technologies Infocom
6. Prism Services (Trinidad) Limited
7. Telecommunications Services of Trinidad and Tobago Limited (TSTT)

TSTT offered fixed voice services through their public switched telephone network, CCTL via their Hybrid Fibre-Coaxial Network, and Amplia Communications Limited and Digicel (Trinidad & Tobago) Limited provided fixed voice services through their Gigabit Passive Optic Networks (GPON). Open Telecom Limited and Lisa Communications Limited offer fixed voice services via their fixed wireless networks. Prism Services (Trinidad) Limited offered hosted PBX services.

This fixed voice review presents the market trends based on data provided by six out of the seven operators¹².

¹² Open Telecom had not supplied data at the time of publication.

2.1. Annual Fixed Voice Telephony Subscriptions

Following two years of growth in 2016 and 2017, the fixed voice market decreased minimally in 2018. Subscriptions to fixed voice services stood at 317,500 at the end of 2018 — a decrease of 1,200, or 0.4%, when compared to 2017. The five-year trend for fixed voice subscriptions is illustrated in Figure 8.

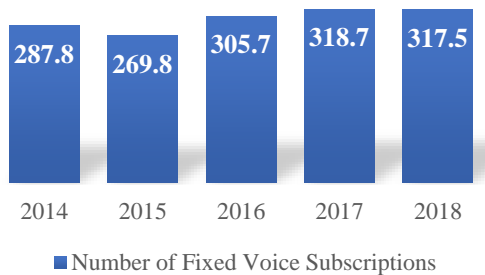


Figure 8. Fixed voice subscriptions from 2014 to 2018

The categorisation of the fixed voice market into residential and business subscriptions over the last five years (inclusive of companies subscribing to systems services, e.g., PBX trunks) is illustrated in Figure 9. In 2018, there were 267,900 residential subscriptions and 49,600 business subscriptions in this market. Up by 0.6%, there were 1,700 more residential fixed voice subscriptions recorded in 2018 when

compared to 2017. Business fixed voice subscriptions continued to decline, recording 2,900 fewer subscriptions in 2018.

In terms of percentage, residential fixed voice

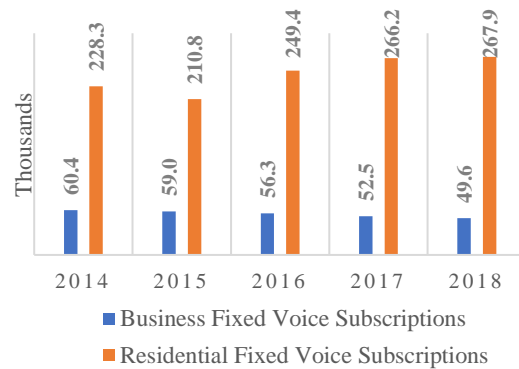


Figure 9. Residential and business fixed voice subscriptions from 2014 to 2018

subscriptions accounted for 84.4% of total subscriptions in this market, while business subscriptions accounted for the remaining 15.6%, as depicted in Figure 10.

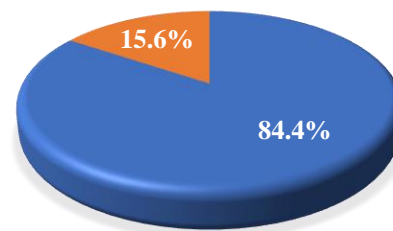


Figure 10. Percentage of residential and business fixed voice subscriptions for 2018

2.2. Quarterly Fixed Voice Subscriptions

Based on the quarterly trends, it was observed that the number of fixed voice subscriptions decreased during each quarter of 2018. Recording 323,000 subscriptions at the end of the first quarter, subscriptions decreased to 320,000 in the second quarter. This represented a 0.9% decrease in subscriptions between these two quarters. Subscriptions decreased again in the third quarter by approximately 0.7% to record 317,900 and by a further 0.1% in the fourth quarter, to end the year at 317,500. Figure 11 shows the quarterly trend in fixed voice subscriptions in 2018.

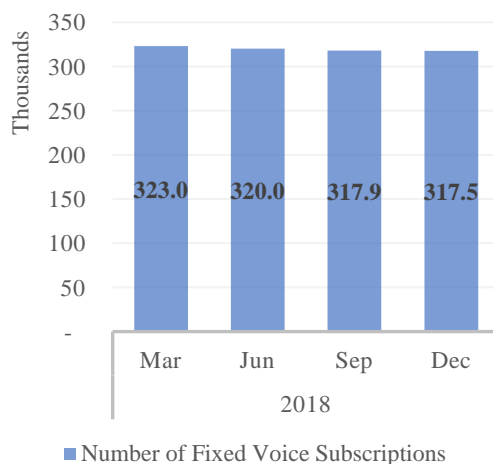


Figure 11. Quarterly fixed voice subscriptions in 2018

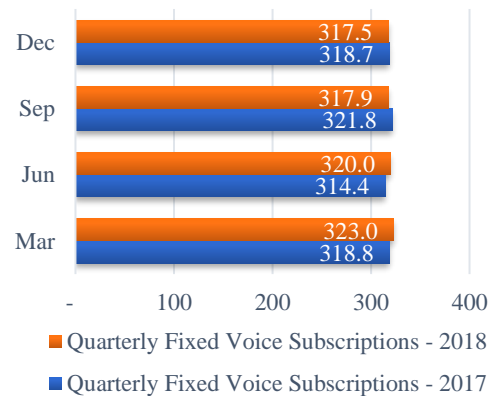


Figure 12. Quarterly fixed voice subscriptions for 2017 and 2018

A year-on-year comparison revealed that the fixed voice market performed more favourably in the first and second quarters of 2018 when compared to the same quarters of 2017, as Figure 12 highlights. The first quarter of 2018 recorded 4,200 more subscriptions than the first quarter of 2017. This result was also observed in the second quarter with 5,600 more subscriptions being recorded in 2018 compared to the same quarter of 2017. The year-on-year comparison of fixed voice subscriptions showed negative growth in the third and fourth quarters of 2018 when compared to the same quarters of 2017. There were 3,900

fewer subscriptions in the third quarter of 2018 compared to the same quarter of 2017.

Figure 13 shows a percentage breakdown of residential and business fixed voice subscriptions at the end of each quarter of 2018. At the end of the first quarter, residential fixed voice subscriptions captured

83.8% of the market while business accounted for 16.2%. During the year, the percentage of residential subscriptions increased minimally in each quarter. At the end of the year, the ratio of residential to business subscriptions stood at 84.4 to 15.6.

Over the past five years, the number of fixed voice business subscriptions at the end of each quarter declined slowly over the period. Quarterly residential subscriptions were relatively stable during 2014, decreased from 2015 to 2016 and then fluctuated during 2017. In 2018, the number of fixed voice subscriptions remained relatively stable, as Figure 14 shows.

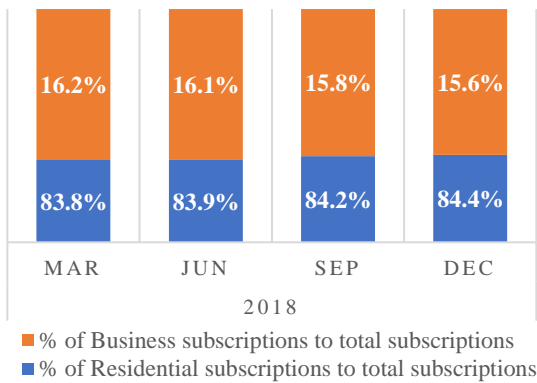


Figure 13. Percentage of quarterly residential and business fixed voice subscriptions in 2018

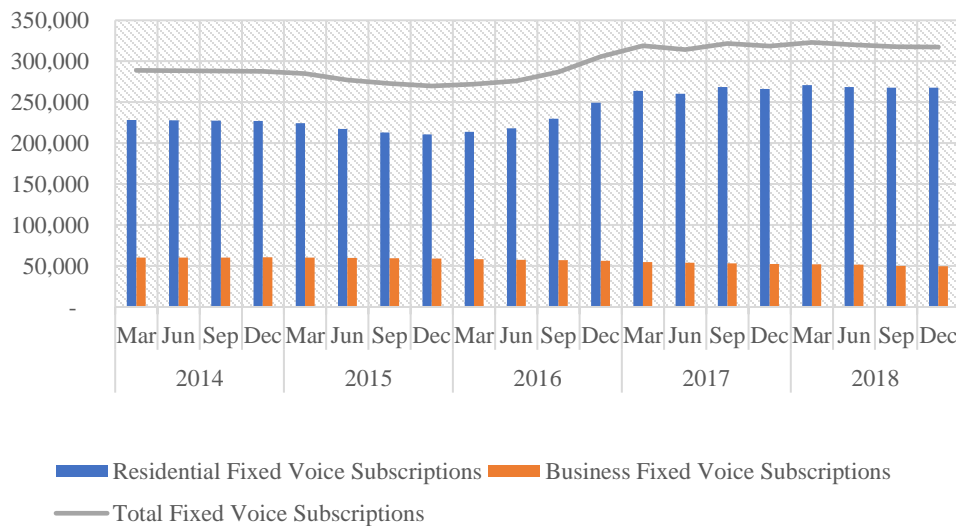


Figure 14. Comparison of quarterly fixed voice subscriptions from 2014 to 2018

2.3. Fixed Voice Penetration

As the standard metric recognised internationally by the International Telecommunication Union (ITU) to measure the adoption of fixed voice services, fixed voice penetration¹³ is calculated using the number of fixed voice subscriptions per 100 of the population.

With 317,500 subscriptions for a population of approximately 1.4 million, the fixed voice penetration rate in Trinidad and Tobago was approximately 23.4 as at December 2018. This means there were approximately 24 fixed voice subscriptions to every 100 persons within Trinidad and Tobago.

Fixed voice household penetration¹⁴ was also calculated to assess the number of households with fixed voice telephone services. In 2018, the fixed voice household penetration was 66.7. This number indicates that out of every

100 households, approximately 67 subscribed to fixed voice services.

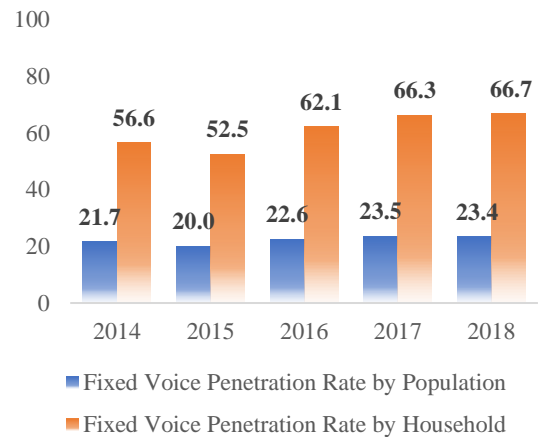


Figure 15. Fixed voice penetration rates from 2014 to 2018

An illustration of the fixed voice penetration trend from 2014 to 2018 is given in Figure 15 for both population and households. When compared to the previous year, both the fixed voice penetration by population and fixed voice household penetration increased minimally in 2018.

households, multiplied by 100. The number of households was obtained from the Central Statistical Office's *Trinidad and Tobago 2011 Population and Housing Census, Demographic Report*.

¹³ Fixed voice penetration = (number of residential fixed voice subscriptions / total population) *100). Total population used is based on the Central Statistical Office's 2018 midyear population estimate.

¹⁴ Fixed voice household penetration was calculated using the number of residential fixed voice subscriptions divided by the total number of

2.4. Domestic Fixed Voice Traffic

Domestic fixed voice traffic refers to the number of domestic minutes or calls originating on local fixed networks.

This traffic can be categorised by the following types, as shown in Figure 16.

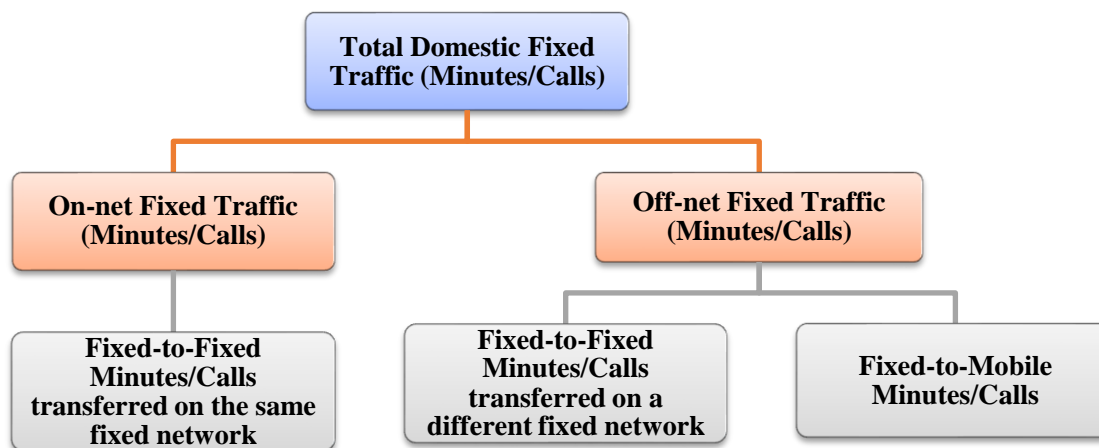


Figure 16. Classification of domestic fixed voice traffic

2.4.1. Annual Domestic Fixed Voice Traffic in Minutes

There were approximately 911.6 million fixed voice traffic minutes generated in 2018. Of this number, on-net¹⁵ and off-net¹⁶ minutes accounted for 503.2 million and 408.4 million, respectively. Fixed-to-fixed minutes transferred on a different network (off-net) were recorded at 46.0 million minutes, and fixed-to-mobile minutes

amounted to 636.4 million. Figure 17 reflects this data.

Consumption patterns for fixed voice minutes remained relatively stable in 2018 when compared to 2017. On-net traffic minutes contributed 58.5% to total minutes in

¹⁵ On-net fixed traffic refers to traffic originating on a service provider's fixed network and terminating on the same fixed network.

¹⁶ Off-net fixed traffic refers to traffic originating on a service provider's fixed network and terminating on

another network (intra and inter service provider). For example, a call originating on TSTT's fixed network and terminating on Flow, bmobile or Digicel's network will be included in these minutes.

the fixed voice market, increasing from the 55.1% recorded in 2017. Total off-net traffic contributed 441.5%, of which the majority comprised off-net fixed-to-mobile minutes

(39.9%) and the minority were off-net fixed-to-fixed minutes (4.9%). This percentage breakdown of minutes by traffic type over the last two years is shown in Figure 18.

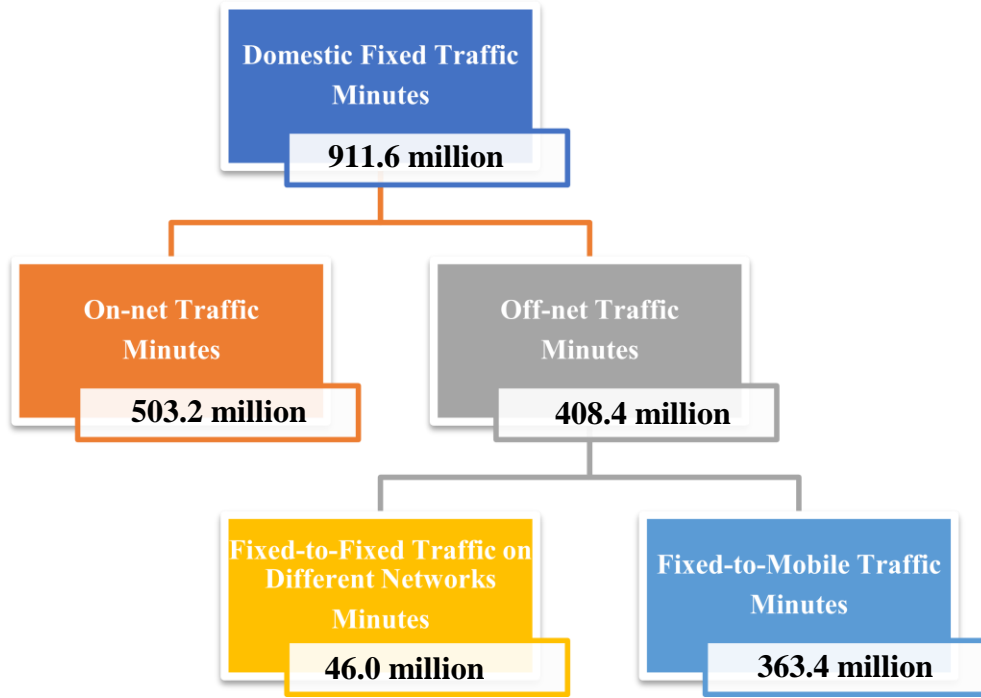


Figure 17. Breakdown of domestic fixed voice traffic minutes for 2018

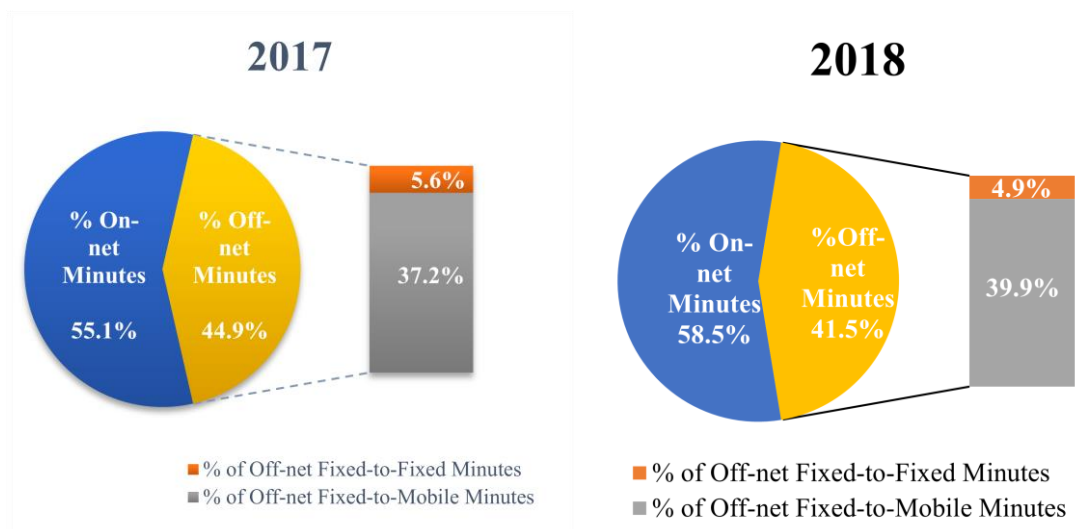


Figure 18. Total domestic fixed voice traffic minutes by traffic types between 2017 and 2018

2.4.2. Quarterly Domestic Fixed Voice Traffic in Minutes

In terms of quarterly fixed voice minutes by traffic type, on-net voice minutes peaked in the second quarter with 135.3 million minutes and then gradually declined during the subsequent quarters of 2018. Off-net fixed voice minutes were relatively stable during 2018. The quarterly trend by traffic type is depicted in Figure 19.

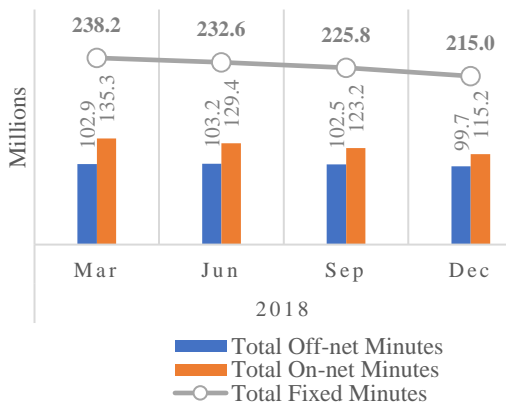


Figure 19. Quarterly fixed voice traffic minutes in 2018

2.4.3. Annual Domestic Fixed Voice Call Volume

In addition to the reduction in the number of fixed voice minutes, as reported in section 2.4.1, there was also a reduction in the

number of domestic calls across all fixed networks.

There were 321.2 million domestic fixed voice calls during the 2018 period — a 5.8% decrease when compared to the 341.0 million calls recorded for 2017. Total on-net calls accounted for 125.3 million (39.0%) of total fixed voice calls, while total off-net calls accounted for 195.9 million (61.0%) of total fixed voice calls.

As was the case in the previous two years, the number of on-net calls in 2018 decreased at a higher rate than off-net calls. While off-net calls declined by only 3.4% in 2018, the number of on-net calls dropped by 9.4%. Figure 20 provides a breakdown of domestic fixed voice calls in 2017 and 2018.

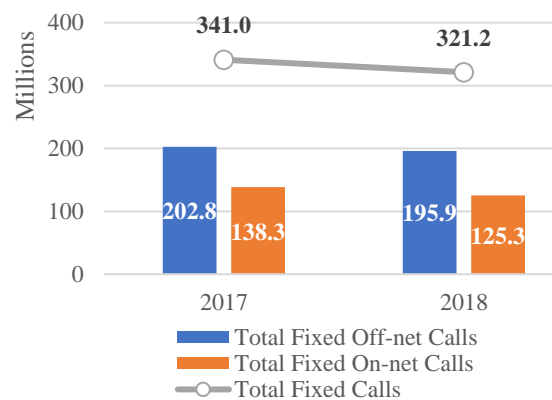


Figure 20. Comparison of domestic call volumes by traffic type for 2017 and 2018

2.5. Fixed Telephony Revenues

2.5.1. Annual Fixed Voice Revenues

Gross revenues received from fixed voice services totalled TT\$583.8 million in 2018, compared to TT\$643.0 million in 2017 — a TT\$59.2 million, or a 9.2%, decrease in revenues. The annual trend in fixed telephony subscription revenues for the period 2014 to 2018 is illustrated in Figure 21. As the figure shows, there was a constant decline in fixed voice revenues generated over the period.

During 2018, quarterly fixed voice revenues decreased steadily. Revenues generated from fixed voice services recorded TT\$160.1 million in the first quarter. Fixed voice revenues decreased to TT\$147.0 million in the second quarter — a TT\$13.1 million, or an 8.2% decrease. The decline in revenues slowed in the third quarter to record TT\$141.9. In the fourth quarter, revenues decreased further to TT\$134.8 million. The quarterly fixed voice revenues for 2018 are depicted in Figure 22.

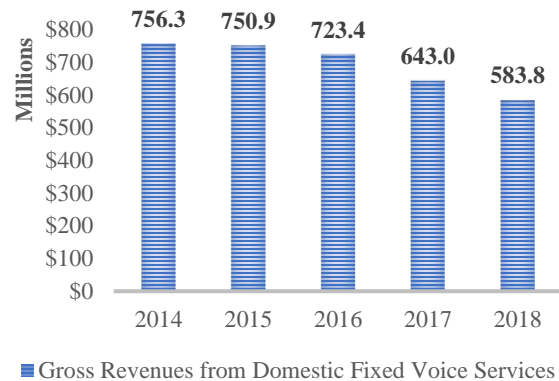


Figure 21. Fixed voice revenues from 2014 to 2018

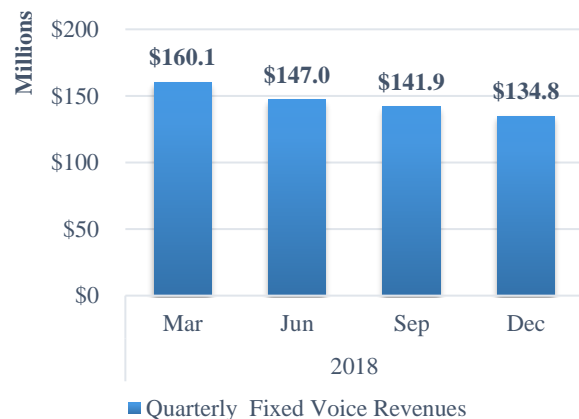


Figure 22. Quarterly fixed voice revenues for 2018

2.6. Fixed Market Concentration

The Herfindahl-Hirschman Index (HHI) is a tool that measures the concentration of firms within a particular market. It is computed as the sum of squares of the market share of all firms within a particular market and ranges from approximately 0 to 10,000. Comparing the last five years, Figure 23 shows that the HHI for the fixed voice market has been trending downward.

As in the past two years, the level of the HHI in the fixed voice market decreased sharply in 2018, by 12.3%, to record 4,132.5¹⁷ points at the end of the year. For the period 2014 to 2018, several new players entered this market, which contributed to the trend observed in the level of concentration.

During 2017, the level of concentration decreased continuously from an HHI of 4,507.7 in the first quarter to 4,303.9 in the second quarter. The HHI continued to decline in the third and fourth quarters, as reflected in Figure 24.

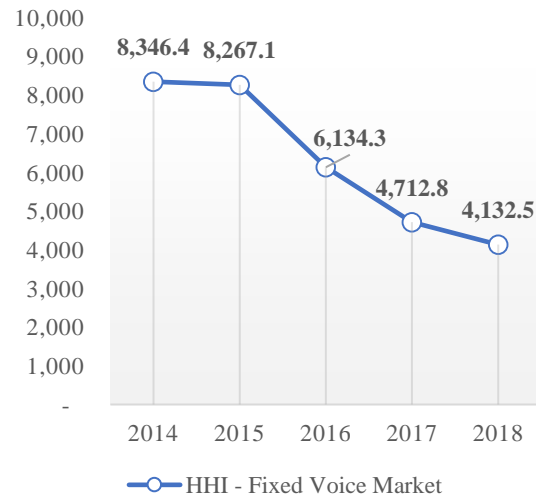


Figure 23. HHI for the fixed voice market from 2014 to 2017

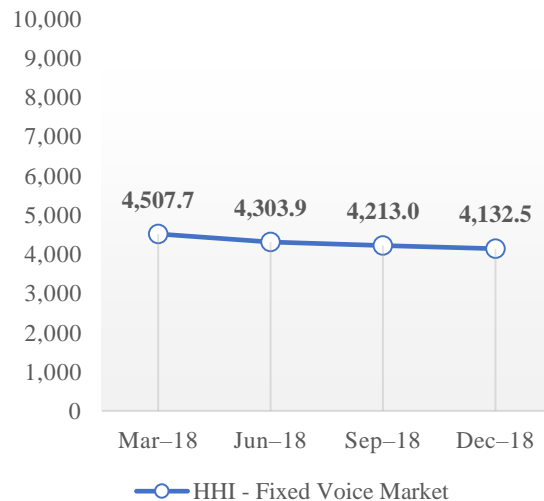


Figure 24 . HHI for the fixed voice market for 2018

¹⁷ Based on subscription market share

2.7. Fixed Voice Average Revenue Per User (ARPU)

On average, each subscription to fixed voice services generated TT\$1,833 in 2018. This represented a decrease of TT\$192, or 9.5%, in the ARPU¹⁸ over the amount recorded for 2017.

This was the third consecutive decline in the ARPU for fixed voice services, following the five-year peak of TT\$2,705 in the ARPU generated in 2015. The changes in the ARPU for the last five years are highlighted in Figure 25.

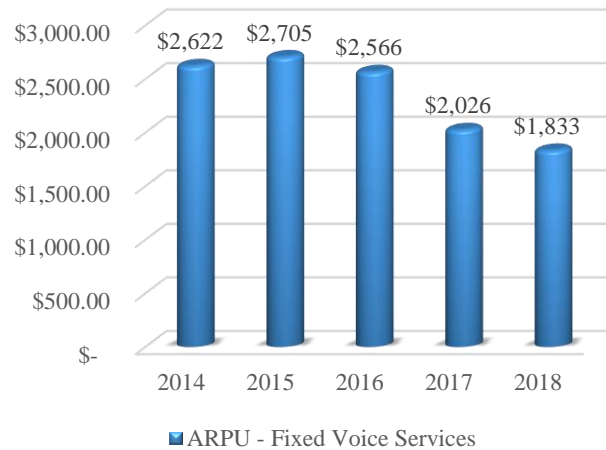


Figure 25. ARPU fixed voice services from 2014 to 2018

¹⁸ARPU measures the average revenue generated by one subscriber. It is calculated as total fixed voice

revenues divided by the total number of fixed voice subscriptions.

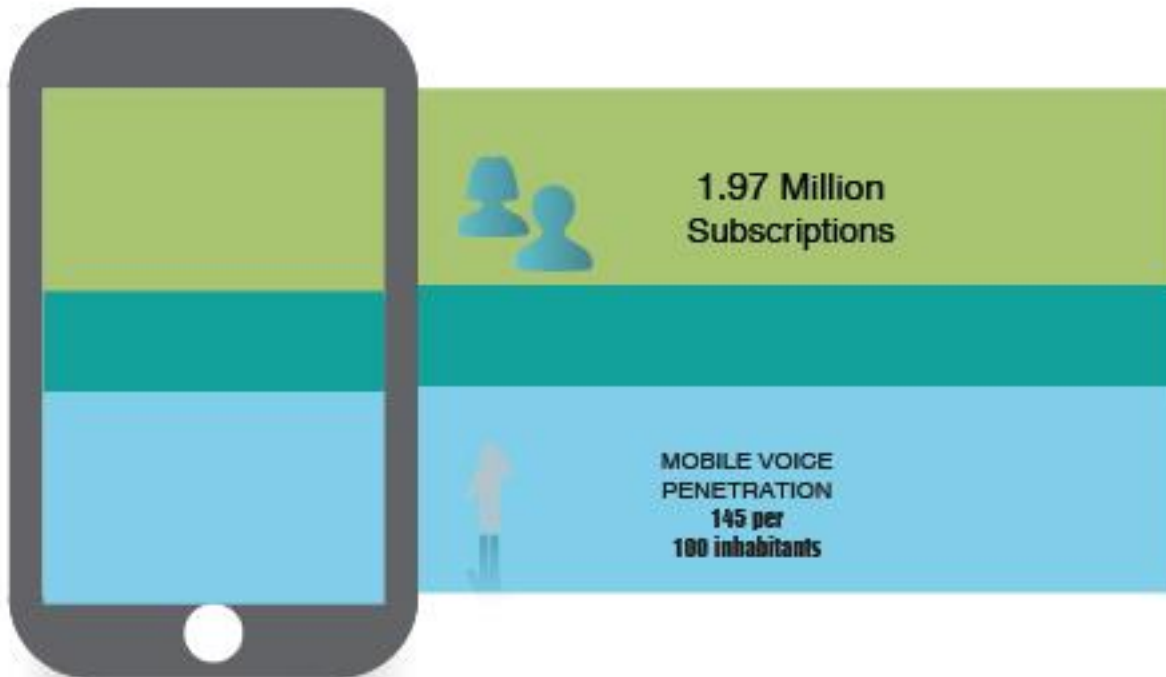
2018 ANNUAL MARKET REPORT

MOBILE VOICE MARKET



Key Indicators for the Mobile Voice Market

GROWTH 2017-2018



76.4%
Prepaid Subscriptions



23.6%
Postpaid Subscriptions

23.4
decrease over 2017

\$1,190 M
FIXED VOICE MARKET REVENUES

3. Mobile Voice Market Review

For the period January to December 2018, mobile voice and Short Messaging Service (SMS) telecommunications services were provided by two authorised mobile service providers:

1. Telecommunications Services of Trinidad and Tobago Limited (bmobile)
2. Digicel (Trinidad & Tobago) Limited

These providers currently use the following technologies for the provision of mobile voice services in Trinidad and Tobago:

I. **Global System for Mobile communication (GSM)**

GSM networks are being phased out as the primary network for voice services, and its use is focussed on machine-to-machine systems and voice services, in conjunction with GSM data enhancements, GPRS and EDGE in rural areas.

II. **Universal Mobile Telecommunications Service (UMTS)**

UMTS networks are currently deployed for voice services, in conjunction with—UMTS data enhancements, HSPA and HSPA+.

The following is an overview of the mobile voice market in Trinidad and Tobago, which was compiled using data submitted by the two mobile operators.

3.1. Mobile Voice Subscriptions

3.1.1. Annual Mobile Voice Subscriptions

For the second consecutive year, mobile voice subscriptions decreased. Recording 1.97 million subscriptions, the number of mobile voice subscriptions declined by 2.9% in 2018. Figure 26 illustrates the annual trend in mobile subscriptions over the last five years.

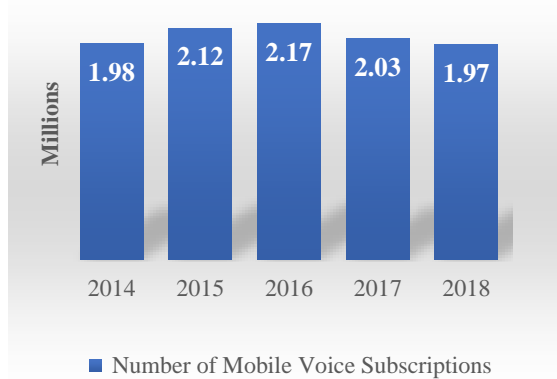


Figure 26. Number of mobile voice subscriptions from 2014 to 2018

Mobile voice subscriptions are categorised into prepaid and postpaid. Prepaid mobile voice customers purchase credit prior to service use, while postpaid customers enter into a contractual billing arrangement with their respective service provider. Of the 1.97 million mobile subscriptions recorded in 2018, 1.51 million were prepaid and 465,300 were postpaid.

Prepaid subscriptions decreased over the past three years. There were 49,600 fewer subscriptions recorded in 2018 — a 3.2% reduction when compared to the previous year. Postpaid subscriptions also fell in 2018, by 1.8%, or 8,400, following four years of steady growth. The number of mobile voice subscriptions for both prepaid and postpaid for the period 2014 to 2018 is shown in Figure 27.

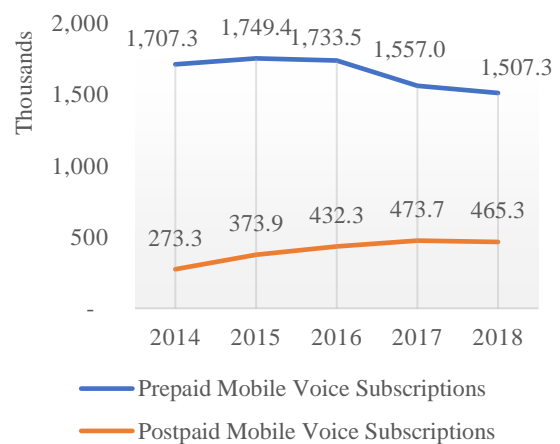


Figure 27. Mobile prepaid and postpaid subscriptions from 2014 to 2018

In 2018, prepaid subscriptions accounted for 76.4% of total mobile voice subscriptions, decreasing minimally from 76.7% in 2017. The percentage of postpaid subscriptions increased from 23.3% in 2017 to 23.6% in 2018. Figure 28 shows the comparison of the percentage of prepaid and postpaid subscriptions from 2014 to 2018. Over the

past five years, there has been a steady increase in the percentage of postpaid subscriptions.

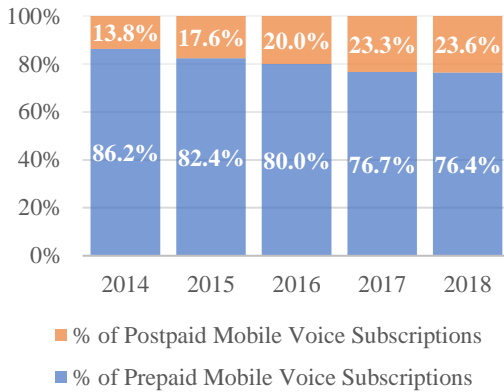


Figure 28. Percentage of prepaid and postpaid subscriptions from 2014 to 2018

A comparison of the switching patterns between prepaid and postpaid service options from 2015 to 2018 is illustrated in Figure 29. A larger number of mobile voice subscription plans were switched from prepaid to postpaid than from postpaid to prepaid

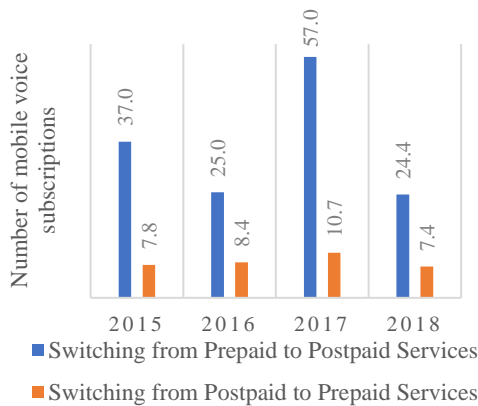


Figure 29. Number of mobile prepaid and postpaid subscriptions switched from 2015 to 2018

In 2018, the number of subscriptions that were switched from prepaid to postpaid decreased significantly, by 57.1%, or 32,500, to record 24,400 subscriptions. The number of subscriptions switched from postpaid to prepaid plans decreased from 10,700 in 2017 to 7,400 in 2018, marking a 30.7% decrease.

In 2018, quarterly trends revealed that the number of subscriptions converted from prepaid to postpaid decreased sharply from the first quarter to the third quarter. 7,400 subscriptions were reported as having been switched from prepaid to postpaid during the first quarter. The number reached its lowest point in the third quarter to record 3,100 subscriptions, and then increased in the fourth quarter to record 7,600 subscriptions.

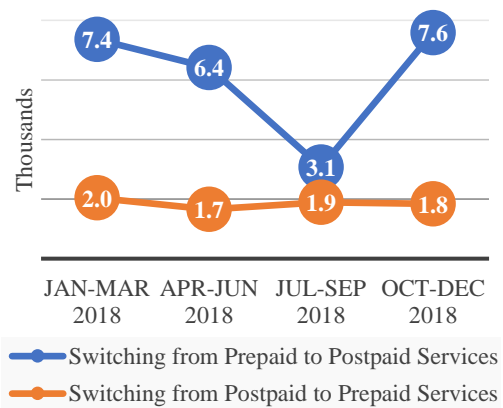


Figure 30. Number of mobile prepaid and postpaid subscriptions switched in 2018

In 2018, subscriptions transferred from postpaid to prepaid fluctuated, with 2,000 being recorded during quarter one — the highest for the year. By the fourth quarter, the number of subscriptions switched from postpaid to prepaid had decreased to 1,800. Figure 30 highlights the quarterly switching patterns for 2018.

3.1.2. Quarterly Mobile Voice Subscriptions

Illustrated in Figure 31 is the quarterly trend in mobile voice subscriptions for 2018. At the end of the first quarter, the number of mobile voice subscriptions was 2.04 million. The number of mobile voice subscriptions declined in the second and third quarters and subsequently increased marginally in the fourth quarter, ending the year with 1.97 million subscriptions.

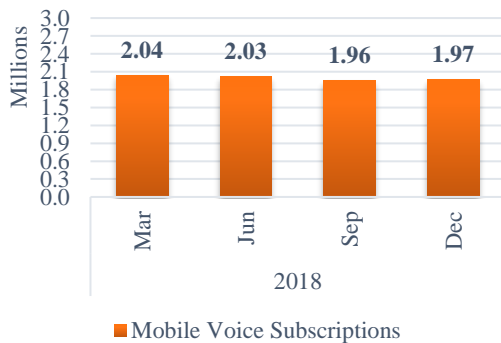


Figure 32. Quarterly mobile voice subscriptions in 2018

The two-year quarterly trends for subscriptions to the two mobile service options — prepaid and postpaid — is highlighted in Figures 32 and 33. During 2018, prepaid subscriptions declined from approximately 1.59 million in the first quarter to 1.49 million in the third quarter, i.e., a 6.3% decrease. Prepaid subscriptions subsequently increased in the fourth quarter to record 1.51 million. When compared to 2017, prepaid subscriptions were fewer for each quarter of 2018.

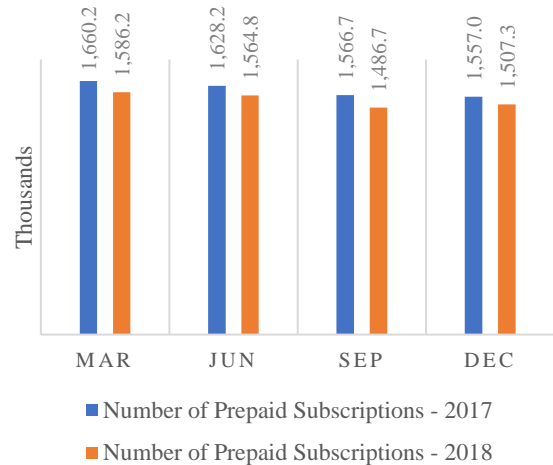


Figure 31. Quarterly mobile prepaid subscriptions for 2017 and 2018

While postpaid subscriptions decreased from the fourth quarter of 2017 to the first quarter of 2018, the number of these subscriptions increased gradually from the second to the third quarters of 2018. Recording 458,600 subscriptions in the first quarter, postpaid subscriptions increased to 469,100 in the

third quarter, i.e., a 2.3% growth. It was observed that the number of postpaid subscriptions in each quarter of 2018 was higher than the corresponding quarters of 2017 except for the fourth quarter. There were 18,400 fewer postpaid subscriptions in the fourth quarter of 2018 compared to the same quarter of 2017.

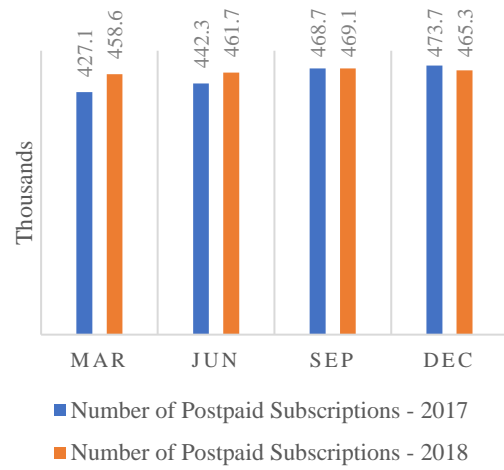


Figure 33. Quarterly mobile postpaid subscriptions for 2017 and 2018

3.2. Mobile Penetration

3.2.1. Domestic Mobile Voice Penetration Rate

The mobile voice penetration¹⁹ rate decreased from 150.0 per 100 inhabitants in 2017 to 145.1 in 2018. As illustrated in Figure 34, Trinidad and Tobago's mobile penetration rate showed steady growth from 2014 to 2016. However, with the drop in the number of mobile subscriptions in 2017 and 2018, the mobile voice penetration rate also decreased in these years. Compared to 2017, the penetration rate declined by 3.2% in 2018.

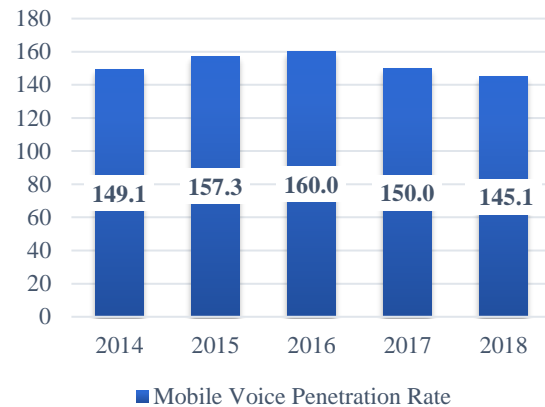


Figure 34. Mobile penetration rate per 100 inhabitants for 2014 to 2018

¹⁹ Mobile penetration is calculated as the number of mobile subscriptions divided by the total population,

multiplied by 100. Total population is based on the Central Statistical Office's 2018 midyear population estimate.

3.3. Domestic Mobile Voice Traffic

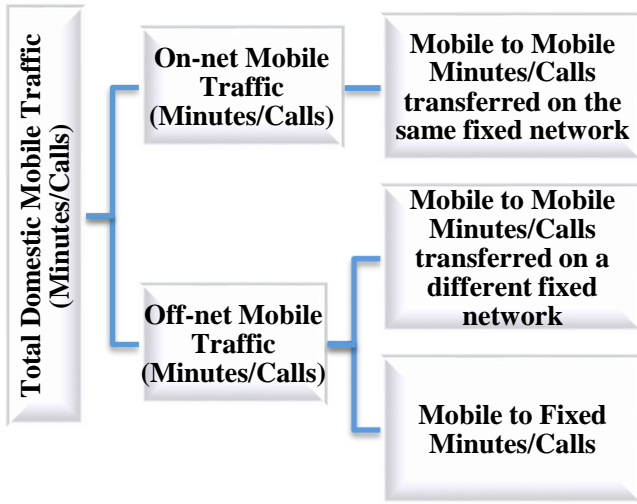


Figure 35. Classification of domestic mobile voice traffic

Domestic mobile voice traffic comprises several categories. These are captured in Figure 35 and explain the types of calls made by consumers and, hence, the minutes originated and terminated on the domestic mobile networks.

In 2018, the total number of mobile telephone calls made by consumers decreased by 6.3% from the previous year to approximately 2.90 billion calls. The number of minutes

generated from these calls were approximately 3.88 billion minutes — an increase of 0.6% when compared to the previous year.

3.3.1. Annual Domestic Mobile Voice Traffic in Minutes

The 3.88 billion minutes of domestic mobile traffic for 2018 were derived from the summation of both on-net²⁰ and off-net²¹ traffic, which recorded 2.80 billion and 1.08 billion minutes, respectively. When

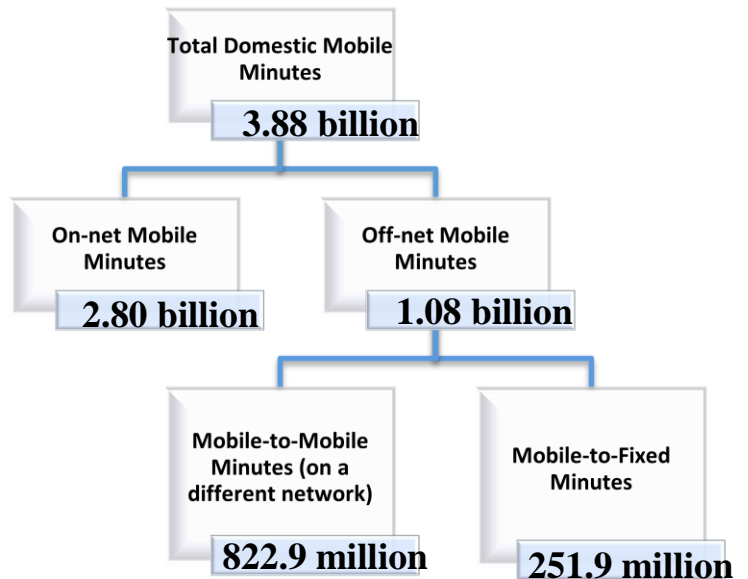


Figure 36. Breakdown of domestic mobile minutes for 2018

²⁰ On-net mobile traffic refers to traffic originating on a service provider’s mobile network and terminating on the same mobile network.

²¹ Off-net mobile traffic refers to traffic originating on a service provider’s mobile network and terminating

on another network (intra and inter service provider). For example, a call originating on Digicel’s network and terminating on bmobile, Flow or TSTT’s fixed network will be included in these minutes.

compared to 2017, the number of mobile on-net minutes for 2018 decreased by 4.3%, while the number off-net minutes for 2018 increased by 16.0%.

Of the 1.08 billion off-net minutes, 822.9 million were mobile-to-mobile minutes transferred on a different mobile network, while the remaining 251.9 million minutes were mobile-to-fixed.

Mobile-to-mobile off-net minutes increased by 142.5 million minutes, or 20.9%, while mobile-to-fixed off-net minutes increased marginally by 5.7 million minutes, or 2.3%, between 2017 and 2018. Figure 36 is a breakdown of the number of domestic mobile voice minutes for 2017, while a comparison of total mobile traffic minutes between 2017 and 2018 is shown in Table 3.

for 93.5% of all domestic mobile minutes consumed in 2018, while the remaining 6.5% were mobile-to-fixed minutes. Compared to 2017, this result was relatively the same, as mobile-to-mobile minutes continued to be the main category of minutes consumed in this market. The percentage of mobile-to-fixed minutes increased from 6.4% in 2017 to 6.5% in 2018. However, the mobile-to-mobile minutes category decreased from 93.6% in 2017 to 93.5% in 2018.

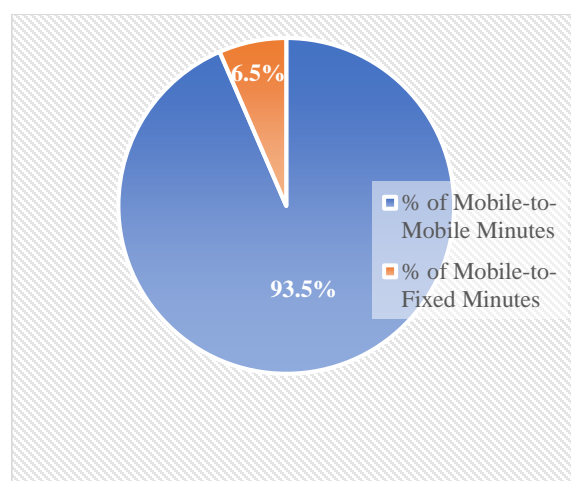


Figure 37. Percentage of mobile-to-mobile and mobile-to-fixed minutes for 2018

Figure 37 outlines the percentage of mobile-to-mobile and mobile-to-fixed minutes for 2017. Mobile-to-mobile minutes accounted

Table 3. Breakdown of domestic minutes for 2017 and 2018

	2017	2018	Change in minutes	Percentage change
On-net mobile traffic minutes (billions)	2.93	2.80	(0.13)	-4.3%
Off-net mobile traffic minutes (billions)	0.93	1.08	0.15	16.0%
Mobile-to-mobile traffic minutes on different networks (millions)	680.4	822.9	142.5	20.9%
Mobile-to-fixed traffic minutes (millions)	246.2	251.9	5.7	2.3%
Total domestic mobile traffic minutes (billions)	3.85	3.88	0.21	0.6%

3.3.2. Annual Domestic Mobile Voice Call Volumes

In 2017, there was a 6.3% decrease in the number of domestic mobile voice calls, which approximated 2.9 billion calls. When compared to 2017, the number of on-net calls decreased by 10.2 %, while there was a 4.3% increase in total off-net calls.

Of the total calls that originated and terminated on the mobile networks for 2018, 70.4%, or 2.0 billion, were on-net calls. The remaining 29.6%, or 856.8 million, were off-net calls, which are subdivided into mobile-to-fixed and mobile-to-mobile off-net calls. Of total domestic calls, mobile-to-fixed off-net calls accounted for 5.0%, or 144.9 million calls, while there were 711.9 million, or 24.6%, mobile-to-mobile off-net calls. Figure 38 is an illustration of the percentage of off-net and on-net calls for 2018, and Table 4 gives a comparison of both 2017 and 2018

data pertaining to the number of mobile voice calls.

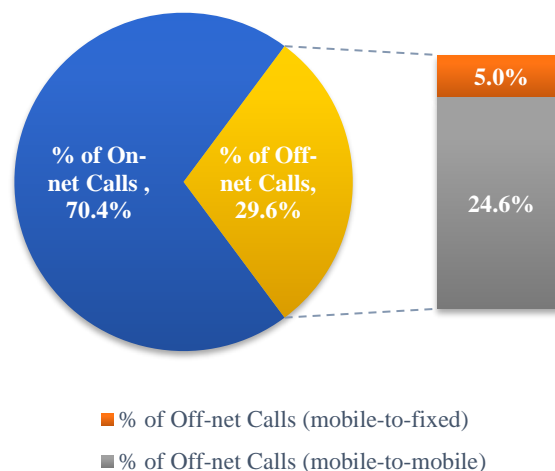


Figure 38. Percentage of domestic mobile voice calls in 2018

Table 4. Number of domestic mobile voice calls in 2017 and 2018

	2017	2018	Percentage Change
On-net mobile voice calls (billions)	2.3	2.0	-10.2%
Off-net mobile voice calls (millions)	821.4	856.8	4.3%
Off-net mobile-to-fixed calls (millions)	153.6	144.9	-10.2%
Off-net mobile-to-mobile calls (millions)	667.7	711.9	6.6%
Total domestic mobile voice calls (billions)	3.1	2.9	-6.3%

3.3.3. Quarterly Domestic Mobile Voice Minutes

Figure 39 highlights the trend in mobile voice minutes from quarters one through four in 2018. The number of minutes consumed were the highest in the first quarter, with 978.7 million minutes. The number of mobile voice minutes decreased in the next two quarters then increased in the fourth quarter. For each quarter of 2018, the percentage of mobile-to-fixed minutes and mobile-to-mobile minutes consumed remained relatively unchanged.

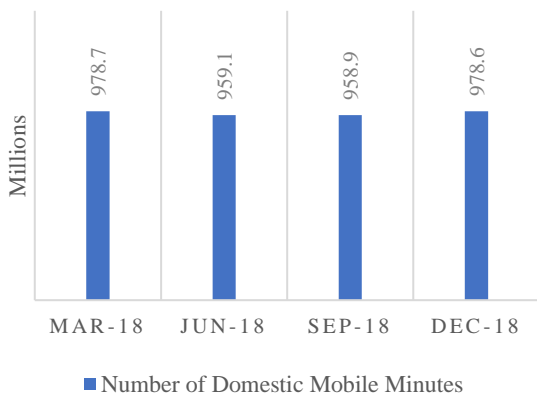


Figure 39. Number of quarterly mobile voice minutes in 2018

On average, 93.5% of mobile voice minutes consumed were mobile-to-mobile, while 6.5% were mobile-to-fixed, as shown in Figure 40.

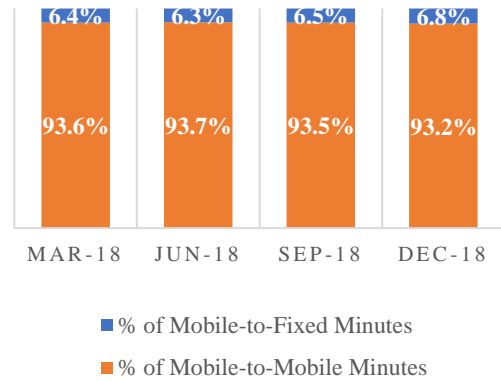


Figure 40. Percentage of quarterly mobile voice minutes by type for 2018

3.3.4. Short Messaging Services (SMS)

Figure 41 illustrates the total number of domestic SMS sent in 2018. The number decreased from 387.2 million in 2017 to 278.9 million in 2018, representing a 28.1% reduction. SMS sent were broken down into on-net and off-net, which accounted for 224.2 and 54.7 million messages, respectively. On-net SMS sent declined by 31.1% between 2017 and 2018, while off-net SMS sent declined by 12.4%.

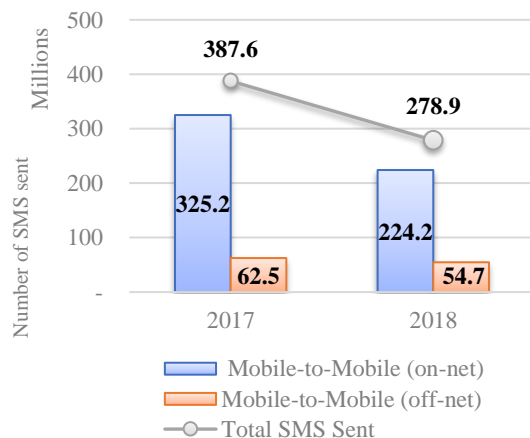


Figure 41. Number of on-net and off-net SMS sent in 2018

3.4. Mobile Voice Revenues

3.4.1. Annual Revenues from Mobile Voice Services²²

Figure 42 depicts the trend in mobile voice revenues²³ over the five-year period 2014 to 2018. Total mobile voice revenues generated for 2018 were TT\$1,190 million. This represented a continuation of the downward trend observed in mobile voice revenues from 2014 to 2017. In 2018, mobile voice revenues declined by 23.4% from to 2017.

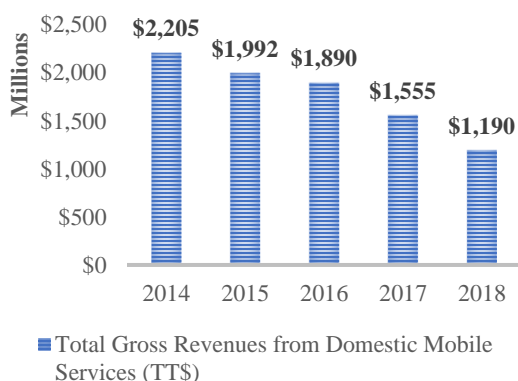


Figure 42. Annual revenues from mobile voice services from 2014 to 2018

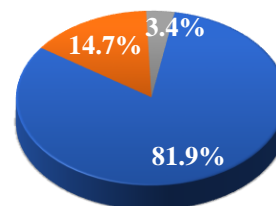
Table 5 highlights the percentage change in mobile voice revenues from 2014 to 2018. Over this period, mobile revenues dropped

for five consecutive years, with the greatest decline observed in 2018.

Table 5. Percentage changes in mobile revenues from 2014 to 2018

Period	Percentage Change in Mobile Voice Revenues
2014	-4.9%
2015	-9.6%
2016	-5.2%
2017	-17.7%
2018	-23.4%

Total revenues in the mobile voice market for 2018 comprised earnings generated from prepaid, postpaid and other²⁴ mobile services. Prepaid services accounted for TT\$974.5 million, or 81.9%, while postpaid revenues



- % of Prepaid Revenues to Total Revenues
- % of Postpaid Revenues to Total Revenues
- % of Other Revenues to Total Revenue

Figure 43. Percentage breakdown of mobile voice revenues by service type, 2018

²² These revenues exclude mobile Internet revenues, which are reported on in the Internet Market Review in section 4 of this Report.

²³ Mobile voice revenues comprise revenues from mobile voice and SMS services.

totalled approximately TT\$175.0 million, or 14.7%. Other mobile services generated TT\$40.6 million, or 3.4%, of total revenues. Figure 43 is a disaggregation of the mobile revenue percentage contribution by service type.

Figure 44 shows a comparison of the trends of postpaid and prepaid revenues over the five-year period 2014 to 2018. Revenues from both prepaid and postpaid mobile calls decreased in each year during the five-year review period.

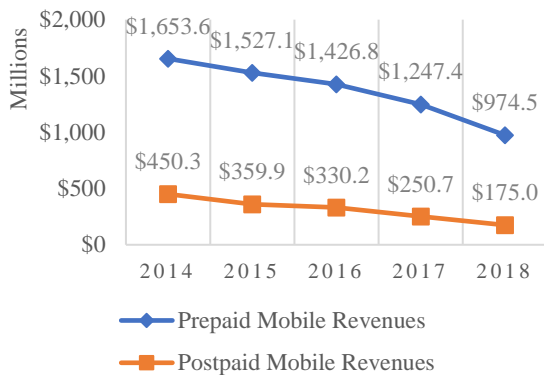


Figure 44. Mobile prepaid and postpaid revenues from 2014 – 2018

3.4.2. Quarterly Revenues from Mobile Voice Services

The first quarter of 2018 registered the highest mobile voice revenues, i.e., TT\$363.8 million. Thereafter, consecutive decreases in revenues were observed, with the third

quarter recording the lowest mobile voice revenues — TT\$271.2 million. Quarterly mobile voice revenues increased in the fourth quarter to TT\$279.3 million. Figure 45 highlights the quarterly trends in mobile voice revenues generated in 2018.

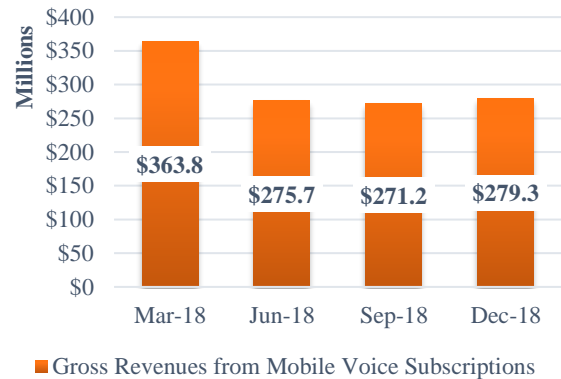


Figure 45. Quarterly revenues from mobile voice services in 2018

Figure 46 illustrates quarterly revenues broken down by prepaid, postpaid and other mobile voice services. Revenues generated from prepaid services fluctuated during 2018.

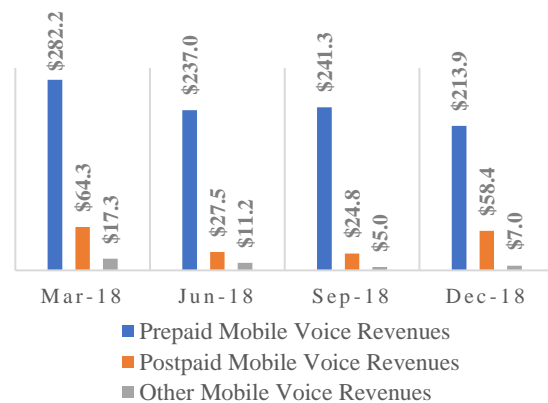


Figure 46. Quarterly prepaid and postpaid mobile voice revenues in 2018

Recording TT\$282.2 million in quarter one, prepaid mobile voice revenues decreased to TT\$237.0 million in the second quarter, and increased to TT\$241.3 million in the third quarter. Prepaid revenues decreased subsequently in the fourth quarter, to record TT\$213.9 million.

Postpaid mobile voice revenues declined significantly in 2018, from TT\$64.3 million in the first quarter to TT\$27.5 million in the second quarter. Postpaid revenues decreased again in the third quarter, generating TT\$24.8 million in revenues. Thereafter, postpaid revenues increased, registering TT\$58.4 in the fourth quarter. Revenues from other mobile voice services declined from the first quarter to the third quarter but increased marginally in the fourth quarter, to record TT\$7.0 million.

Figure 47 gives a quarter-on-quarter comparison of the percentage of total revenues generated in 2018 by prepaid, postpaid and other mobile voice services. Revenues generated from prepaid services were the greatest contributor to mobile voice revenues in 2018, averaging 82.3% of total mobile voice revenues per quarter. Revenues from postpaid services averaged 14.4% per quarter of total mobile voice revenues, while

other mobile voice services averaged 3.3% per quarter.

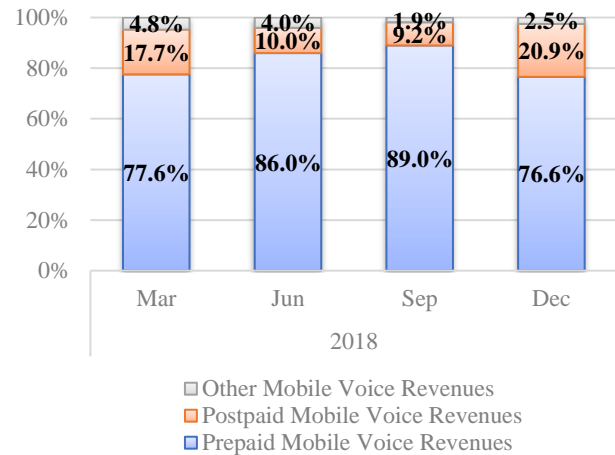


Figure 47. Percentage of revenues contributed by prepaid, postpaid and other mobile voice services for 2018

The percentage of revenues generated from prepaid voice services increased from the first quarter to the third quarter, peaking at 89.0% of total mobile voice revenues. The percentage of prepaid revenues subsequently decreased in the fourth quarter, contributing 76.6% to total mobile voice revenues in this quarter.

The percentage of postpaid revenues declined from 17.7% in the first quarter to 10.0% in the second quarter. After experiencing a second decline in the third quarter, the share of total revenues attributed to prepaid voice services increased to 20.1% in the fourth quarter. The proportion contributed by other mobile services fluctuated during 2018 with the highest, 4.8%, being observed in the first quarter.

3.5. Mobile Voice Market Concentration

Figure 48 depicts the level of concentration in the domestic mobile voice market using the HHI²⁵ for the period 2014 to 2018. Following an increase in 2015, the level of concentration in this market decreased in each year from 2016 to 2018.

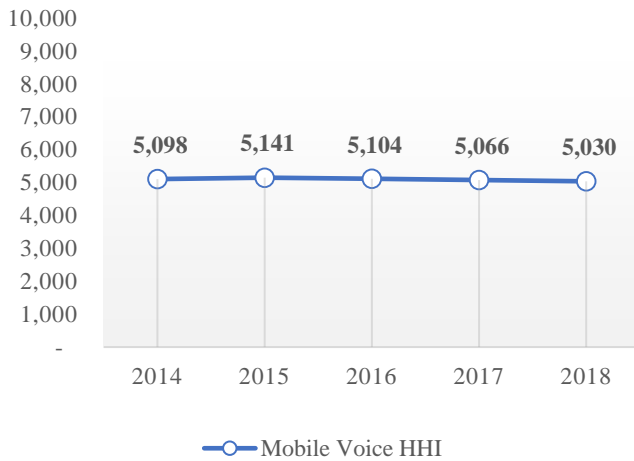


Figure 48. HHI for the mobile voice market from 2014 to 2018

During 2018, as Figure 49 shows, the quarterly HHI for the mobile voice market for 2017 declined consecutively from the first to the third quarters. There was a marginal increase in the HHI in the fourth quarter, ending the year at 5,030 points.

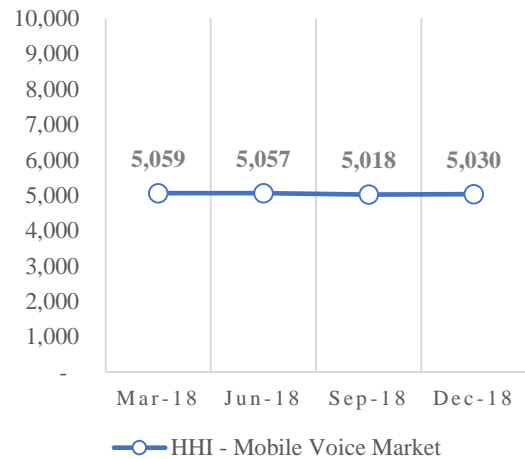


Figure 49. HHI for the mobile voice market in 2018

²⁵ The number of subscriptions was used to determine market share for the service providers.

3.6. Average Revenue Per User (ARPU) for Mobile Voice Services

In 2018, the ARPU for mobile voice services²⁶ declined by 21.2% over the previous year, to record TT\$603. This means that the average expenditure per customer on mobile voice services, decreased by TT\$163 from the previous year. The ARPU has been on a downward trend over the past five years, as illustrated in Figure 50.

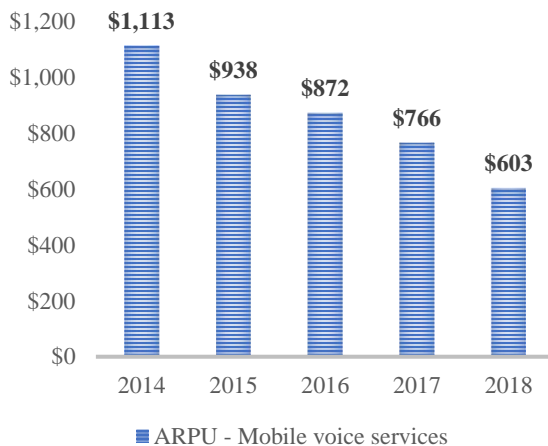


Figure 50. ARPU for mobile voice services from 2014 to 2018

Figure 51 depicts the comparison of the ARPU generated from prepaid and postpaid mobile voice services from 2014 to 2018. There were consistent declines in both the prepaid and postpaid ARPUs over the past five years.

In 2018, the prepaid ARPU decreased by 19.3%, or TT\$155, whereas the postpaid decreased by 28.9%, or TT\$153.

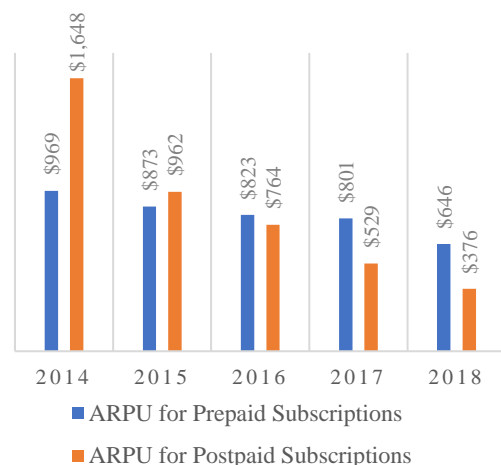
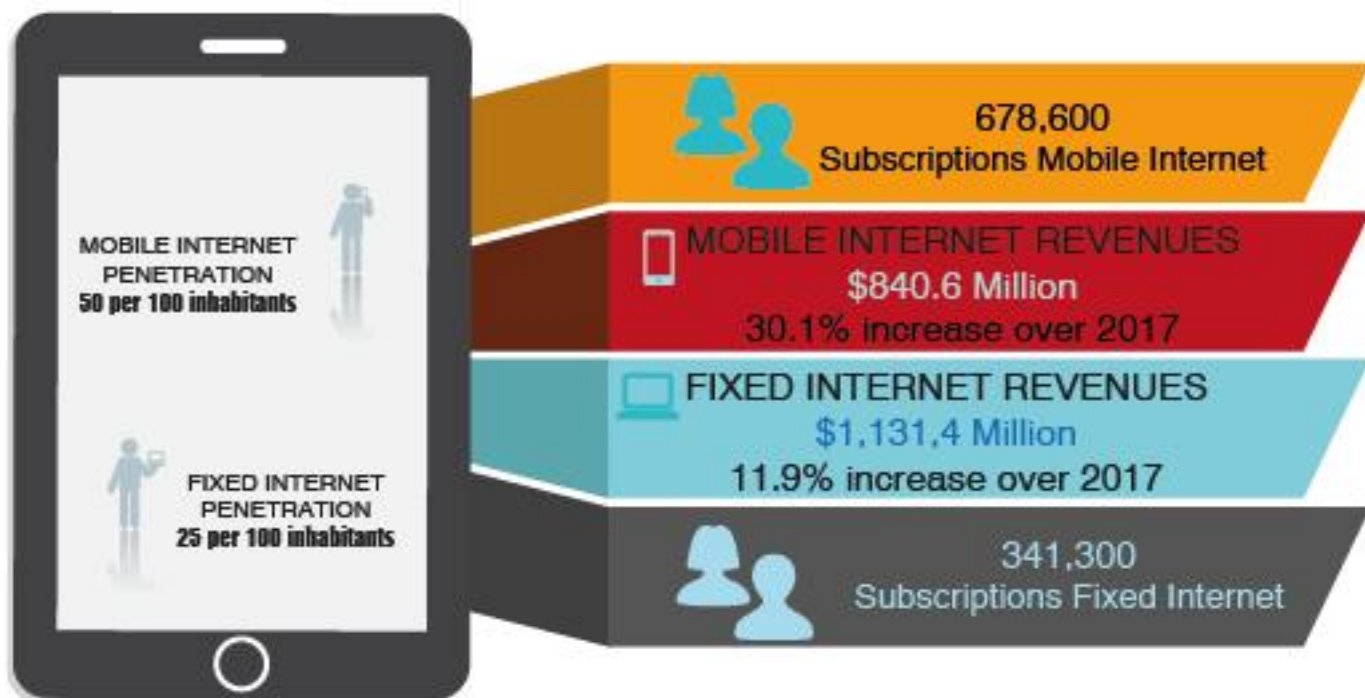


Figure 51. Mobile voice prepaid and postpaid ARPUs from 2014 to 2018

²⁶ The ARPU from mobile voice services includes mobile voice and SMS.





4. Internet Market Review

This review of Trinidad and Tobago's Internet market for 2018 examines the delivery of Internet services over domestic fixed (wired and wireless) and mobile public telecommunications networks. The country has 16 authorised fixed domestic telecommunications services concessionaires. The following 11 of those provide fixed Internet services:

1. Air Link Communications Limited
2. Amplia Communications Limited
3. Columbus Communications Trinidad Limited (CCTL)
4. Digicel (Trinidad & Tobago) Limited
5. Green Dot Limited
6. Lisa Communications Limited
7. Massy Technologies (Infocom) Trinidad Limited
8. Novo Communications Limited
9. Open Telecom Limited
10. RVR International Limited
11. Telecommunications Services of Trinidad and Tobago Limited (TSTT)

These operators used a mix of technologies to provide fixed wired and wireless broadband Internet services to the public. Fixed wired broadband Internet services employ ADSL2+ over copper cables, Hybrid Fibre Coaxial Networks utilising DOCSIS 3.0 technology, as well as a mix of Fibre to the Curb (FTTC), Fibre to the Business (FTTB), Metro-Ethernet or Fibre to the Home (FTTH) topologies. Fixed wireless broadband Internet operators employ technologies such as WiMAX and LTE technologies to support the need for services demanding higher speeds on the access network.

One fixed operator, TSTT, has indicated that they are phasing out the use of twisted pair copper cables for the provision of fixed broadband Internet and fixed telephony services.

Two mobile operators were authorised to provide domestic mobile telecommunications services, including the provision of Internet services:

1. Telecommunications Services of Trinidad and Tobago Limited (bmobile)
2. Digicel (Trinidad & Tobago) Limited

Mobile Internet operators offered customers mobile broadband Internet services utilising Evolved High-Speed Packet Access (HSPA+) as well as Long Term Evolution (LTE). LTE is the main technology employed for the provision of mobile broadband Internet services, with HSPA+ utilised in areas not covered by LTE. Mobile Internet services via 2.5G technology, i.e., Enhanced Data rates for GSM Evolution (EDGE), were also offered during this reporting period.

4.1. Fixed Internet Subscriptions

The number of subscriptions in the fixed Internet market continued to grow in 2018. Approximately 341,300 subscriptions were recorded at the end of December 2018 — a 4.4% increase when compared to the same period in 2017. Figure 52 shows the trend for fixed Internet subscriptions over the last five years.

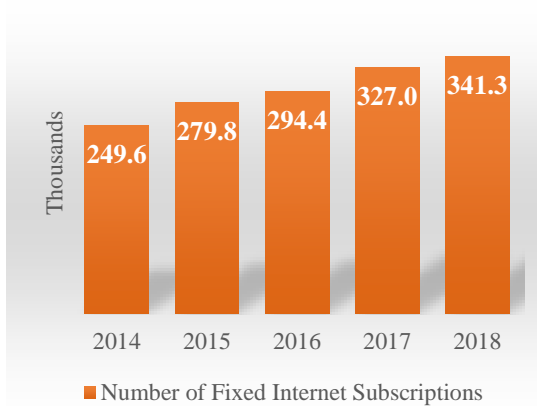


Figure 52. Fixed Internet subscriptions from 2014 to 2018

4.1.1. Fixed Internet Subscriptions — Residential and Business

Fixed Internet subscriptions can be subdivided into residential and business categories. In 2018, residential subscriptions maintained steady growth while business subscriptions declined. As depicted in Figure 53, residential fixed Internet subscriptions amounted to approximately 324,500,

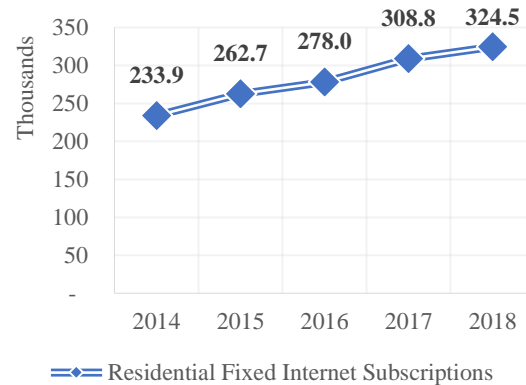


Figure 53. Residential fixed Internet subscriptions from 2014 to 2018

increasing by 5.1%, or 15,700 subscriptions, from 2017. Business fixed Internet subscriptions were recorded at 16,800, as shown in Figure 54, reflecting a decrease of 8.0%, or 1,400 subscriptions, when compared to 2017.

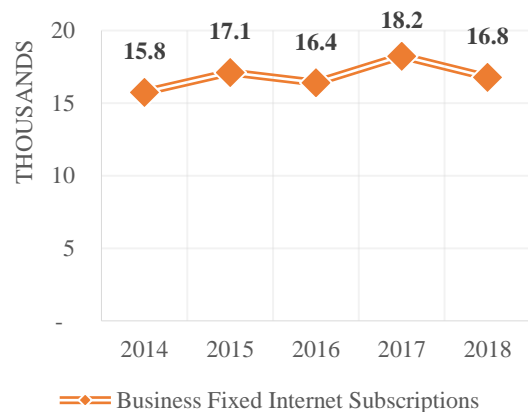


Figure 54. Business fixed Internet subscriptions from 2014 to 2018

4.1.2. Residential Fixed Broadband Internet Subscriptions by Speed Tier

In 2018, residential broadband customers subscribed to Internet speeds²⁷ of 256 kbit/s up to 350 Mbit/s. Figure 55 depicts these subscriptions in the following Internet speed tiers²⁸:

- I. 256 kbit/s to less than 2 Mbit/s
- II. 2 Mbit/s to less than 10 Mbit/s
- III. 10 Mbit/s to less than 30 Mbit/s
- IV. 30 Mbit/s to less than 100 Mbit/s
- V. equal to or above 100 Mbit/s

Although the number of subscriptions within the speed tier 30 Mbit/s to less than 100 Mbit/s decreased, subscriptions in this tier continued to be the most popular choice among residential customers in 2018. The number of subscriptions to this tier decreased from 132,200 in 2017 to 127,500 in 2018. This is the first decline in subscriptions to this speed tier after four years of significant growth.

The number of subscriptions to the 2 Mbit/s to less than 10 Mbit/s speed tier decreased

minimally from 89,000 subscriptions in 2017 to 81,900 in 2018. This speed tier is the second most subscribed to by residential fixed broadband Internet customers.

Subscriptions to the 10 Mbit/s to less than 30 Mbit/s speed tier increased in 2018, following four years of steady declines. The number of subscriptions in this tier increased by 29.9% in 2018, to record 66,700. This speed tier continued to be the third most subscribed to by residential fixed broadband Internet customers in the country.

The 256 kbit/s to less than 2 Mbit/s continued in a downward trend, recording 7,500 subscriptions — a 25.9% decrease when compared to 2017. This speed tier is the least subscribed to tier.

Significant growth continued in the speed tier equal to or above 100Mbit/s with subscriptions increasing from 32,100 in 2017 to 40,800 in 2018.

²⁷ Refers to advertised download speeds

²⁸ The fixed Internet speed tiers were revised in 2017, consistent with the international classification agreed to by the ITU.

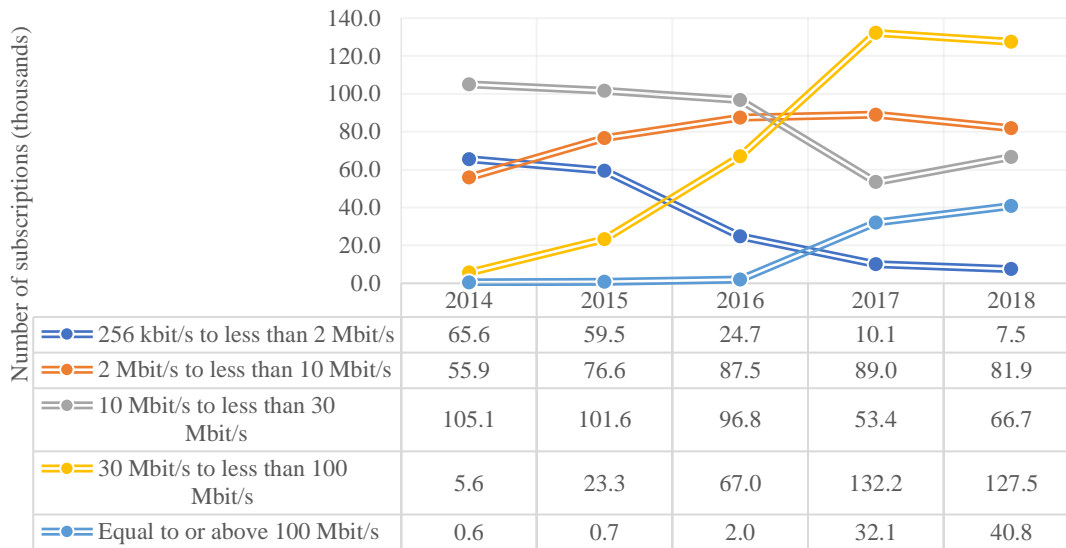


Figure 55. Number of residential broadband subscriptions by download speed tier from 2014 to 2018

In terms of percentage, the 30 Mbit/s to less than 100 Mbit/s speed tier is the largest, with 39.3%. As Figure 56 shows, the percentage of subscriptions to this speed tier increased substantially over the past five years. The percentage of subscriptions in the equal to or above 100 Mbit/s also increased, from 10.4% in 2017 to 12.6% in 2018. The percentage of

subscriptions to the 256 kbit/s to less than 2 Mbit/s speed tier continued to decrease in 2018 and now account for only 2.3% of all residential broadband Internet subscriptions. The percentage of subscriptions to the 10 Mbit/s to less than 30 Mbit/s speed tier increased, from 16.9% in 2017 to 20.6% in 2018.

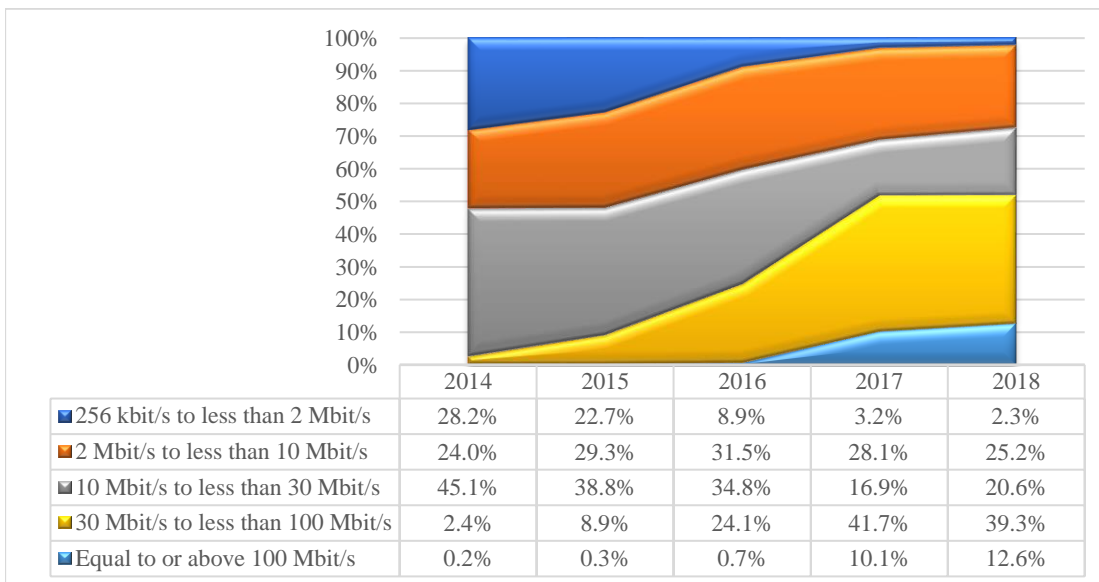


Figure 56. Percentage of residential broadband subscriptions by download speed tier from 2014 to 2018

4.1.3. Business Fixed Broadband Internet Subscriptions by Speed Tier

As reported in section 4.11, the total number of business broadband subscriptions decreased in 2018. This decrease was observed in each business speed tier except for the 10 Mbit/s to less than 30 Mbit/s tier. The number of business broadband subscriptions within the 10 Mbit/s to less than 30 Mbit/s almost doubled from 400 in 2017 to 700 in 2018.

A downward trend was observed for the remaining speed tiers, with the 30 Mbit/s to less than 100 Mbit/s tier recording the largest decline. There were 10,800 business subscriptions to the 30 Mbit/s to less than 100 Mbit/s tier in 2018 — 900 fewer than that recorded in 2017.

The number of business broadband subscriptions within the equal to or above 100 Mbit/s speed tier decreased by 14.1%, to record 2,200 subscriptions in 2018.

In terms of percentage, the 30 Mbit/s to less than 100 Mbit/s tier was the largest for the year, comprising 64.7% of business broadband subscriptions.

These results are illustrated in Figures 57 and 58, highlighting the evolution of business broadband subscriptions by speed tiers over the past five years.

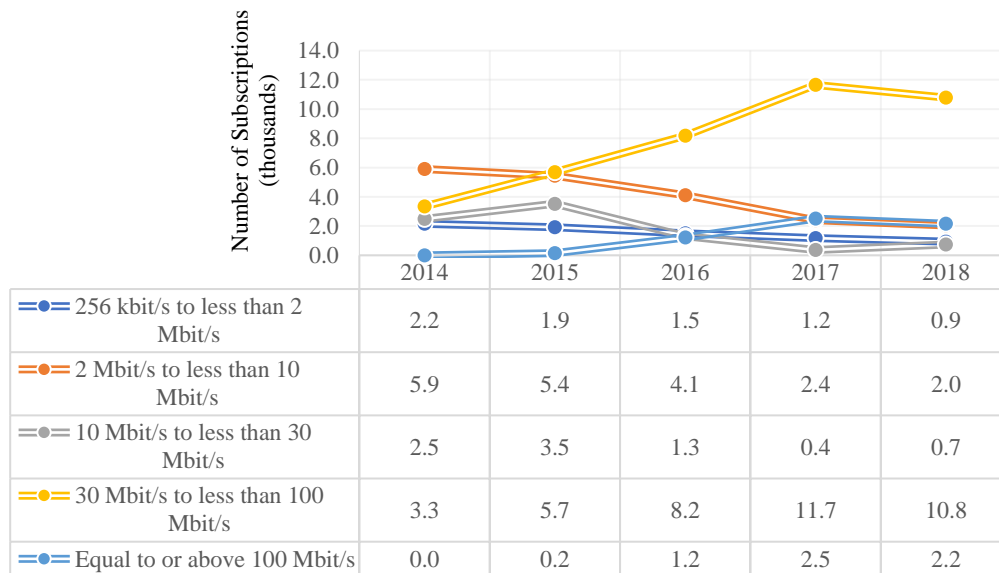


Figure 57. Number of business broadband subscriptions by download speed from 2014 to 2018

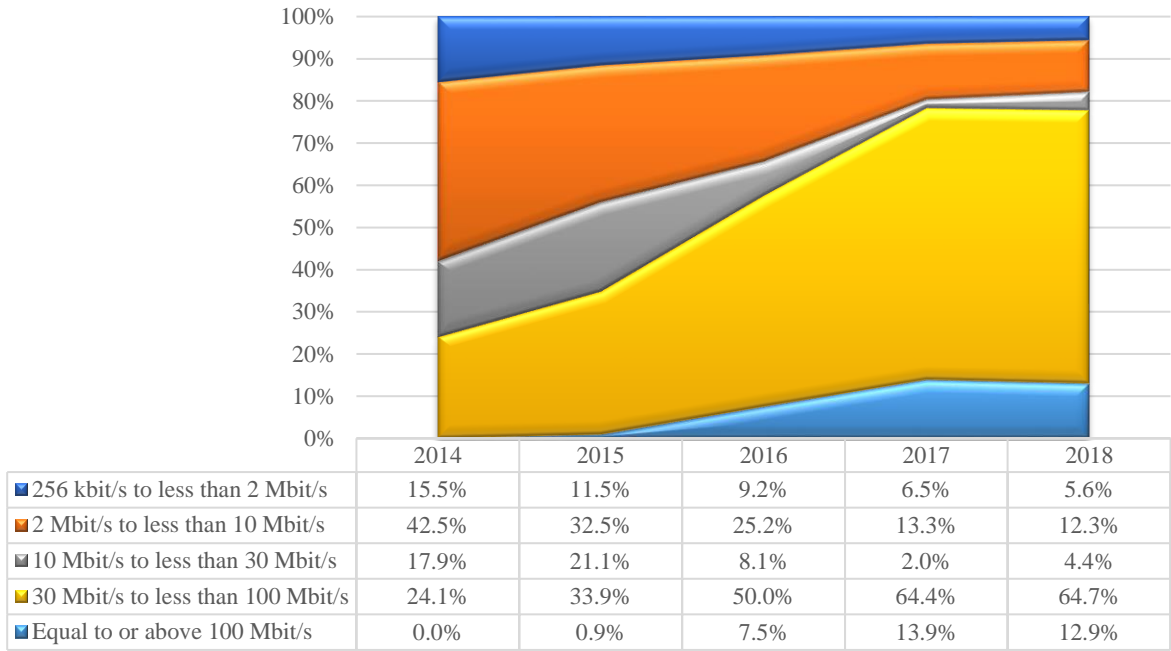


Figure 58. Percentage of business broadband subscriptions by download speed tier from 2014 to 2018

4.3. Active Mobile Internet Subscriptions

Of the 1.97 million mobile voice subscriptions in 2018, approximately 1.31 million enabled access to mobile Internet services. Out of this 1.31 million, there were 678,600 active mobile Internet subscriptions²⁹ — a decrease of 3.7% from the previous year. Consistent with the percentage of prepaid mobile voice subscriptions, the number of prepaid mobile Internet users also exceeded that of postpaid. As shown in Figure 59, there were 457,400 prepaid active mobile Internet subscriptions compared to 221,200 postpaid at the end of 2018.

As in 2017, prepaid mobile Internet subscriptions decreased in 2018, recording 15,500 fewer subscriptions — a 3.3% decrease when compared to 2017. Following a double digit increase in the previous year, postpaid mobile Internet subscriptions declined in 2018, decreasing by 4.5%, or 10,400 subscriptions.

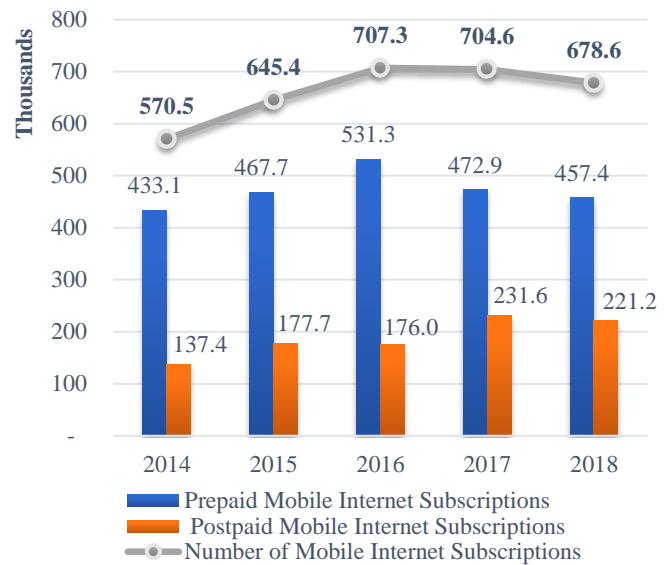


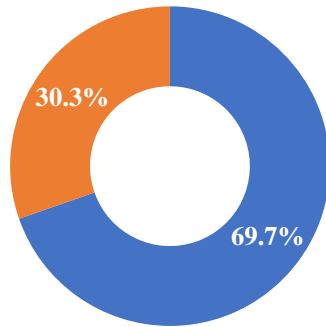
Figure 59. Prepaid and postpaid mobile Internet subscriptions from 2014 to 2018

Although the number of prepaid mobile Internet users was greater than the number of postpaid mobile Internet users, a higher percentage of postpaid mobile subscribers used mobile Internet. Out of the 1.51 million prepaid mobile subscriptions in 2018 (see Figure 26), 30.3% used mobile Internet services while the other 69.7% used only voice and SMS services. With respect to the 465,300 postpaid mobile subscriptions, 47.5% used mobile Internet services. The foregoing is illustrated in Figure 60, which compares prepaid and postpaid mobile subscriptions subdivided into mobile voice-

²⁹ Active mobile Internet subscriptions refer to subscribers who have used mobile Internet services within the last three months.

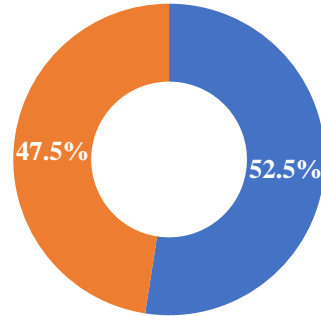
only users and mobile voice and Internet users for 2018.

Prepaid Mobile Subscriptions



- Prepaid Mobile Voice-only Subscriptions
- Prepaid Mobile Voice and Internet subscriptions

Postpaid Mobile Subscriptions



- Postpaid Mobile Voice-only Subscriptions
- Postpaid Mobile Voice and Internet subscriptions

Figure 60. Comparison of prepaid and postpaid mobile Internet subscriptions for 2018

As Figure 60 illustrates, there were 565,400 mobile broadband Internet subscriptions and 113,200 mobile narrowband Internet subscriptions recorded at the end of 2018. The number of mobile broadband subscriptions declined by 65,200 subscriptions, or 10.3%, while the number of

mobile narrowband Internet subscriptions increased sharply by 39,200 subscriptions, or 53.2%.

The percentage of mobile broadband Internet subscriptions decreased in 2018, accounting

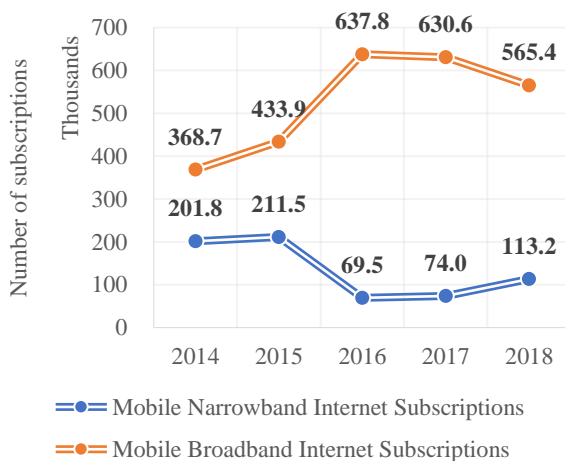


Figure 61. Mobile narrowband and broadband Internet subscriptions from 2014 to 2018

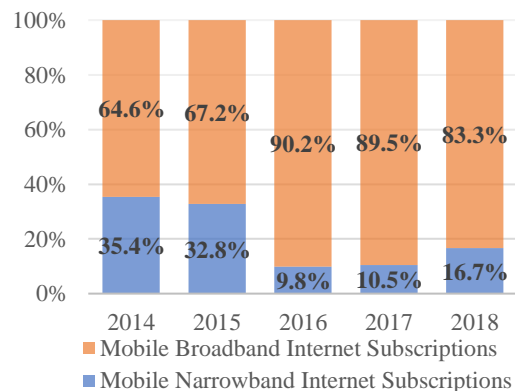


Figure 62. Percentage of mobile narrowband and broadband Internet subscriptions from 2014 to 2018

for 83.3% of all mobile Internet subscriptions in 2018. At 10.5% in 2017, the percentage of mobile narrowband Internet subscriptions increased and accounted for 16.7% of the market in 2018. The percentage of mobile broadband and narrowband subscriptions over the period 2014 to 2018 is illustrated in Figure 62.

4.4. Internet Penetration Rates — Fixed and Mobile

The fixed Internet penetration rate increased steadily over the past five years. At the end of 2018, approximately 25 out of every 100 persons had a fixed Internet subscription — an increase from the 24 calculated in 2017. The level of mobile Internet penetration was

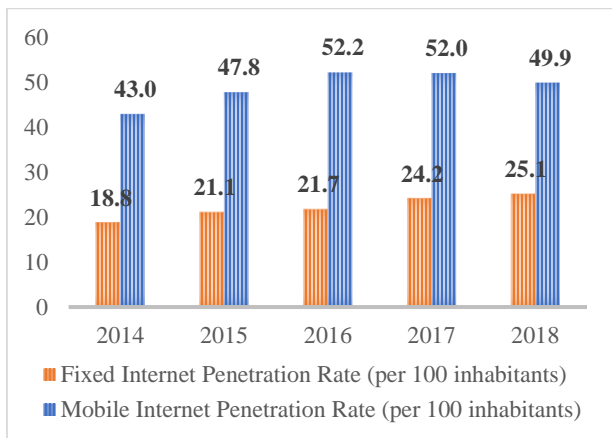


Figure 63. Fixed and mobile Internet penetration from 2014 to 2018

³⁰ Internet household penetration is calculated as the number of residential fixed Internet subscriptions

less in 2018 compared to 2017. At the end of 2018, approximately 50 out of every 100 persons were using mobile Internet services.

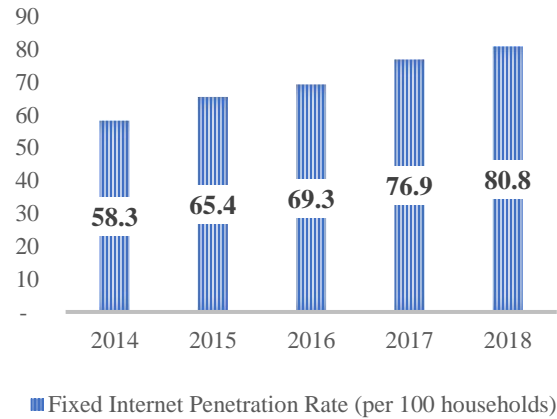


Figure 64. Fixed Internet household penetration from 2014 to 2018

Figure 63 depicts the Internet penetration rates over the last five years.

Internet household penetration³⁰ is used to measure the percentage of households with a fixed Internet subscription. Approximately 81 out of every 100 households subscribed to a fixed Internet service in 2018 — an increase from the 77 calculated in 2017. Figure 64 shows fixed Internet household penetration for the period 2014 to 2018.

divided by the total number of households, multiplied by 100.

4.5. Total Internet Revenues

Fixed and mobile Internet services generated TT\$1,972.1 million in revenues for 2018, as illustrated in Figure 65. Increasing by TT\$317.5 million, or 19.2%, from 2017³¹, the rate of growth for total Internet revenues continued to be significant, with double-digit growth observed during the 2014 to 2018 period. Both fixed and mobile Internet revenues increased in 2018, with mobile Internet revenues growing at a faster rate than fixed Internet revenues.

Over the past two years, revenues generated from fixed Internet subscriptions accounted for the majority of total Internet revenues, as shown in Figure 66. Fixed Internet revenues accounted for 57.4% of total Internet revenues in 2018, while mobile Internet revenues comprised the remaining 42.6%. The percentage of mobile Internet revenues increased from 39.9% in 2017 to 42.6% in 2018.

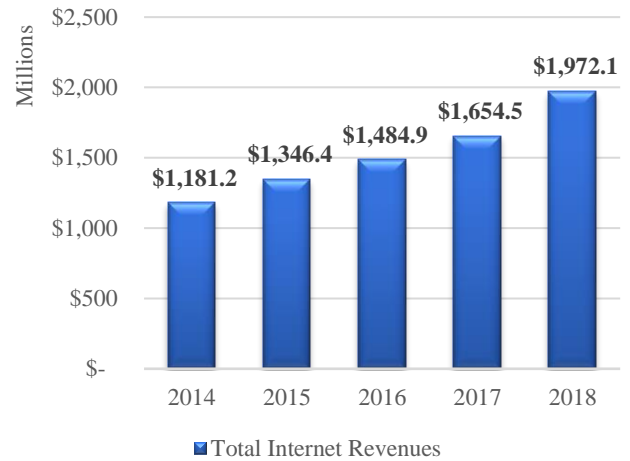


Figure 65. Total Internet revenues from 2014 to 2018

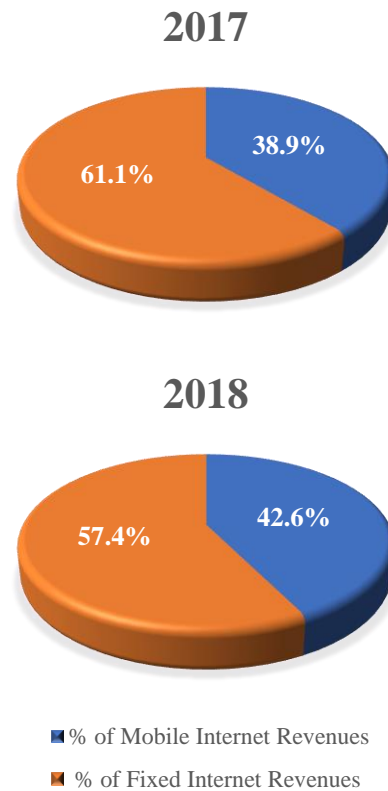


Figure 66. Percentage of fixed and mobile to Internet revenues in 2017 and 2018

³¹ Total Internet Revenues for 2017 were revised from TT\$1,561.6 million previously reported to TT\$1654.5.

4.5.1.Fixed Internet Revenues

For the period under review, the total revenues for the fixed Internet market amounted to TT\$1,131.4 million, reflecting an increase of TT\$120.0 million, or 11.9%, from the previous year³². As shown in Figure 67, total revenues from fixed Internet services increased steadily from 2014 to 2018. Of total fixed Internet revenues, narrowband Internet accounted for TT\$0.1 million, while broadband Internet contributed TT\$1,113.3 million, as illustrated in Figure 68.

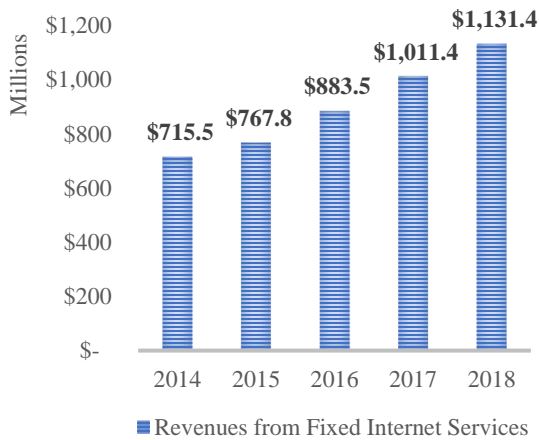


Figure 67. Fixed Internet revenues from 2014 to 2018

Fixed broadband Internet revenues are also broken down into residential and business revenues. The rate of growth of both

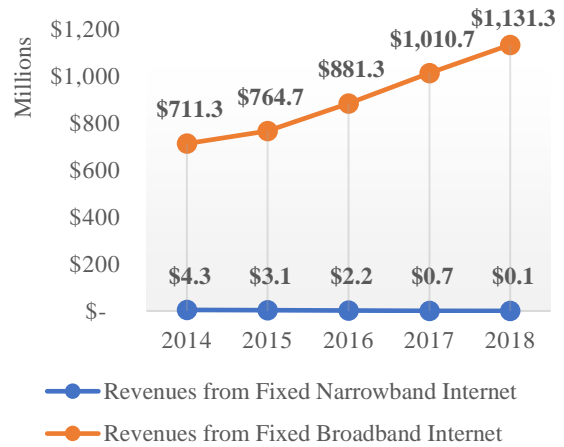


Figure 68. Fixed narrowband and broadband Internet revenues from 2014 to 2018

residential and business fixed broadband Internet revenues continued their strong upward trend over the period 2014 to 2018. Residential fixed broadband Internet revenues increased by 12.7% to record TT\$774.3 million. Business fixed broadband Internet revenues continued to grow,

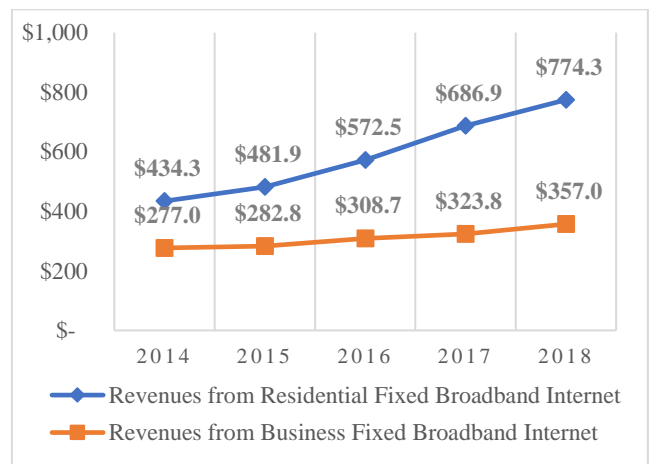


Figure 69. Residential and business fixed broadband Internet revenues from 2014 to 2018

³² Fixed Internet Revenues for 2017 were revised from TT\$918.5 million previously reported to TT\$1,010.7.

increasing by 10.2% in 2018, to record TT\$357.0 million. Figure 69 shows the upward trend in fixed broadband revenues for both categories over the past five years.

Revenues generated from residential fixed broadband Internet subscriptions accounted for most of fixed broadband revenues, as shown in Figure 70. Of total fixed broadband

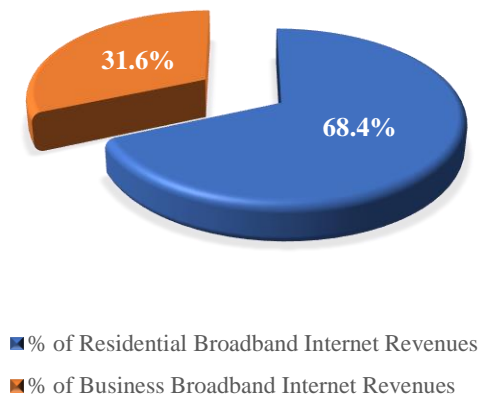


Figure 70. Residential and business fixed broadband Internet revenues in 2018

revenues, residential broadband subscriptions contributed 68.4%, while revenues from business broadband subscriptions accounted for 31.6%.

4.5.2. Mobile Internet Revenues

Revenues generated from mobile Internet services continued to be a significant contributor to revenues in the Internet market. Following a slowed growth in 2016

and 2017, total gross revenues from mobile Internet services rose sharply, from TT\$643.1 million in 2017 to TT\$840.6

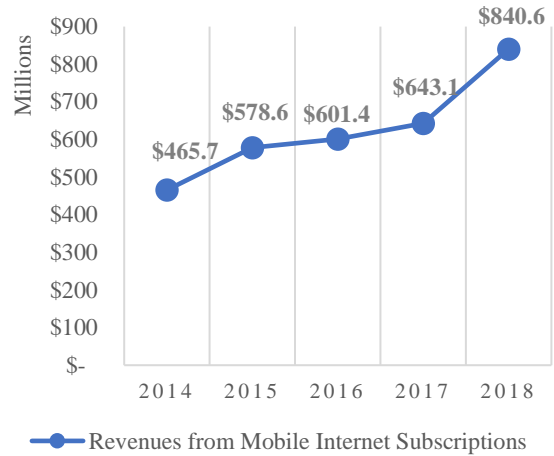


Figure 71. Total mobile Internet revenues from 2014 to 2018

million in 2018, i.e., a 30.1% increase. Figure 71 highlights the annual trend for gross revenues generated by mobile Internet users.

In 2018, prepaid and postpaid mobile Internet revenues totalled TT\$237.7 million and TT\$603.0 million, respectively. Revenues from prepaid mobile Internet services doubled in 2018 compared to 2017, while postpaid mobile Internet revenues stayed on a growth path with a 13.7% increase for the period. Figure 72 shows the prepaid and postpaid revenues earned from 2014 to 2018, while Figure 73 depicts the percentage of prepaid and postpaid mobile Internet revenues for 2018. Most of the mobile Internet revenues was earned from postpaid

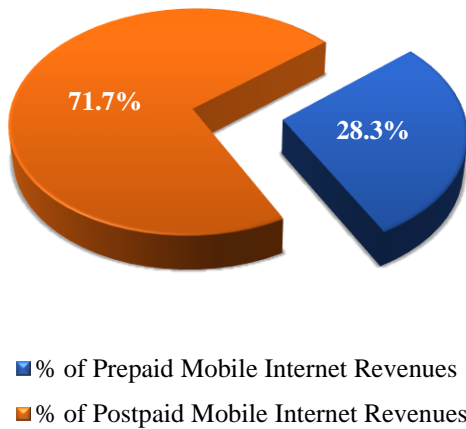


Figure 73. Percentage of prepaid and postpaid mobile Internet revenues in 2018

mobile Internet users, contributing 71.7% of total mobile Internet revenues.

4.6. Fixed Internet Market Concentration

Using the HHI, the Authority calculated the level of concentration in the fixed Internet market³³ for 2018. The level at the end of the year stood at 2,432.0, decreasing from the 3,158.4 calculated in December 2017. This represented a significant 23.0% decrease over the previous year. Overall, there has been a downward trend in the level of concentration in the fixed Internet market from 2014 to 2018. Figure 74 illustrates this.

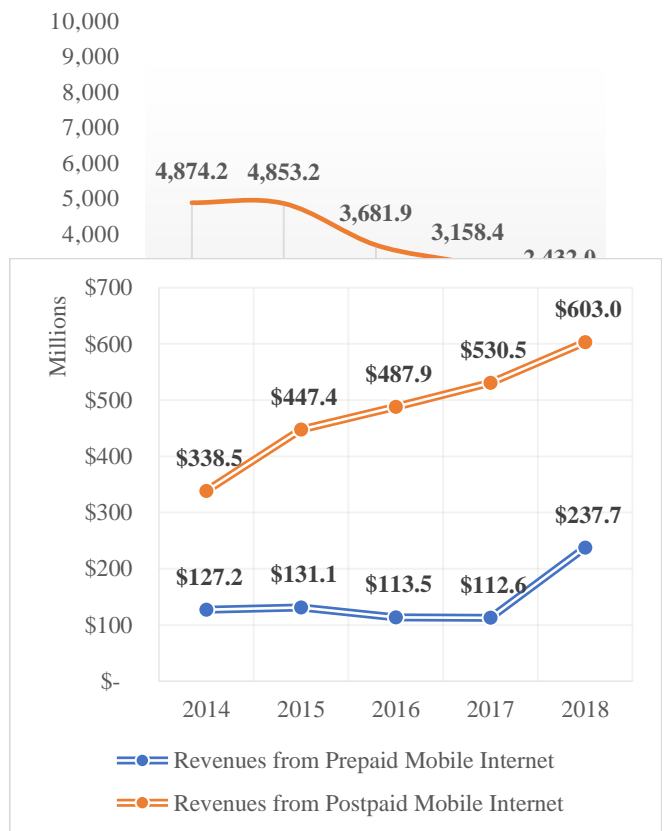


Figure 72. Prepaid and postpaid mobile Internet revenues from 2014 to 2018

³³ Market share based on the number of subscriptions was used in the calculation of the HHI.

Based on the quarterly comparisons, there was a consistent reduction in the level of concentration during 2018. The HHI

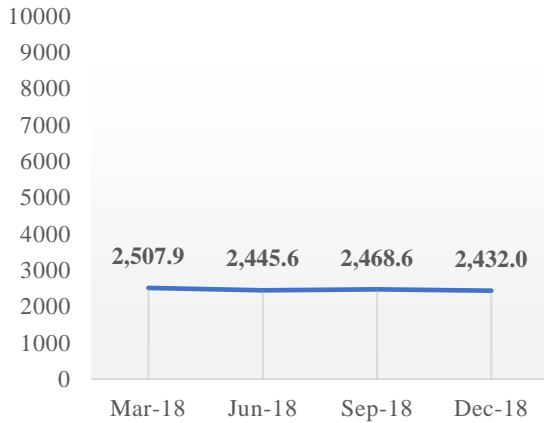


Figure 75. Quarterly fixed Internet market HHI in 2018

decreased from 2,507.9 in the first quarter to

2,432.0 in the fourth quarter, as reflected in Figure 75.

4.7. Average Revenue Per User (ARPU) for Internet Services

Fixed Internet ARPU decreased by 7.2% (TT\$222), with each subscription contributing an average of TT\$3,315³⁴ during 2018. For mobile Internet services, customers spent an average of TT\$1,239³⁵ in 2018 — an increase of TT\$326, or 35.7%. Figure 76 shows the trends for individual categories over the last five years.

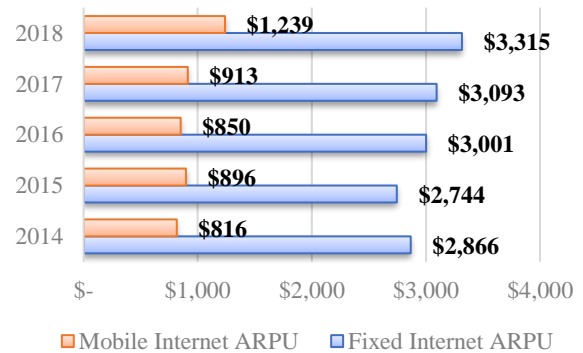


Figure 76. ARPUs for fixed and mobile Internet services from 2014 to 2018

³⁴ ARPU for fixed Internet services is measured by the average revenue generated by one fixed Internet subscription. It is calculated as the total revenues from fixed Internet subscriptions divided by the total number of fixed Internet subscriptions.

³⁵ ARPU for mobile Internet services is calculated as the total revenues from active prepaid and postpaid mobile subscriptions divided by the total number of mobile prepaid and postpaid subscriptions.

2018 ANNUAL MARKET REPORT
INTERNATIONAL VOICE MARKET



Key Indicators for the International Voice Market

GROWTH 2017-2018



INCOMING INTERNATIONAL REVENUES

\$198.6 Million



127,100 Million
Minutes
Decrease 34.1%
over 2017



OUTGOING INTERNATIONAL REVENUES

\$128,900 Million



128,900 Million
Minutes
Decrease 3.0%
over 2017



16.6%
decrease over 2017

\$293.4 M

INTERNATIONAL VOICE MARKET

5. International Voice Market Review

Eight concessionaires were authorised to provide international telecommunications services in 2018, which included the provision of international voice services. These operators were:

1. Amplia Communications Limited
2. Columbus Networks International (Trinidad) Limited
3. Digicel (Trinidad & Tobago) Limited
4. Green Dot Limited³⁶
5. Open Telecom Limited
6. Telecommunications Services of Trinidad and Tobago Limited (TSTT)
7. Lisa Communications Limited
8. Southern Caribbean Fibre Limited

5.1. International Voice Traffic (Incoming and Outgoing Minutes)

In 2018, the number of minutes generated from incoming international calls decreased

significantly while the number of minutes from outgoing international calls increased for the first time over the five-year period. There were 127,100 million incoming international minutes in 2018, 34.1% fewer than the amount generated in 2017. Following consecutive years of double-digit

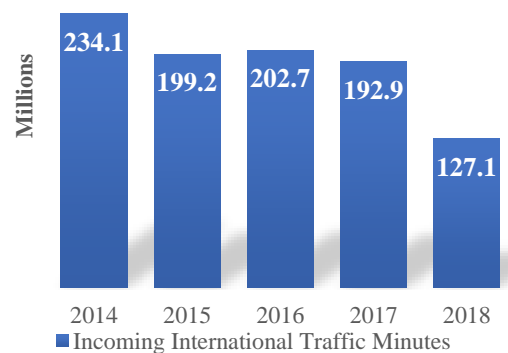


Figure 77. Incoming international voice traffic (minutes) from 2014 to 2018

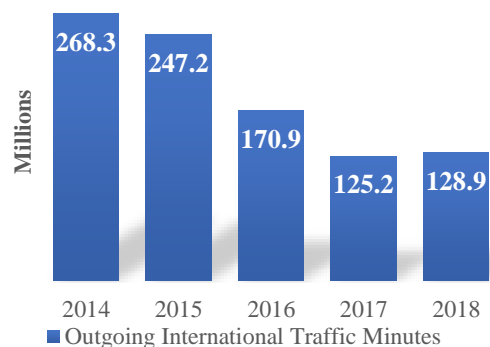


Figure 78. Outgoing international voice traffic (minutes) from 2014 to 2018

³⁶ Green Dot Limited was not operational in the international voice market for the review period.

decline, the number of outgoing minutes increased marginally by 3.0%, to record 128,900 million minutes in 2018. The number of international voice minutes for both incoming and outgoing are shown in Figures 78 and 78, respectively.

Figure 79 illustrates the percentage of incoming traffic compared to outgoing traffic over the past five years. The percentage of minutes generated by incoming international calls accounted for 49.7% of all international minutes, decreasing from 60.6% in 2017. Outgoing minutes now account for 50.3% of total international minutes compared to the 39.4% in 2017.

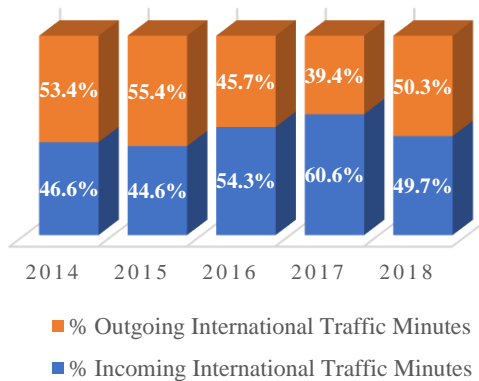


Figure 79. Incoming and outgoing international voice traffic (minutes) from 2014 to 2018

³⁷ Gross revenues refer to the total amount of money earned from international calls. Outgoing international call revenues are revenues earned from residents making calls from the domestic network to persons

5.2. International Voice Revenues

Gross revenues³⁷ generated by incoming and outgoing international telecommunications voice services declined significantly in 2018. Following increases in 2016 and 2017, international voice revenues decreased by approximately TT\$58.6 million, or 16.6%, when compared to the previous year, to reach TT\$293.4 million in 2018. Figure 80 depicts the trend in revenues generated by the international voice market from 2014 to 2018.

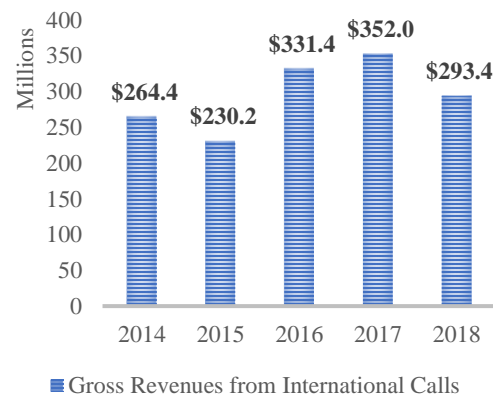


Figure 80. Revenues from international (incoming and outgoing) voice services from 2014 to 2018

abroad. Incoming international revenues are the settlement revenues earned from foreign exchange carriers who pay service providers to terminate calls locally.

Incoming and outgoing international voice revenues over the past five years are depicted in Figures 81 and 82, respectively. A review of the composition of international revenues in 2018 showed that both incoming and outgoing international revenues decreased over the period.

Incoming international revenues for 2018 totalled TT\$198.6 million — a TT\$40.2 million, or 16.8%, decrease when compared to 2017.

Outgoing international voice revenues generated TT\$78.2 million in 2018 — TT\$10.3 million, or 11.7%, lower than revenues generated in 2017.

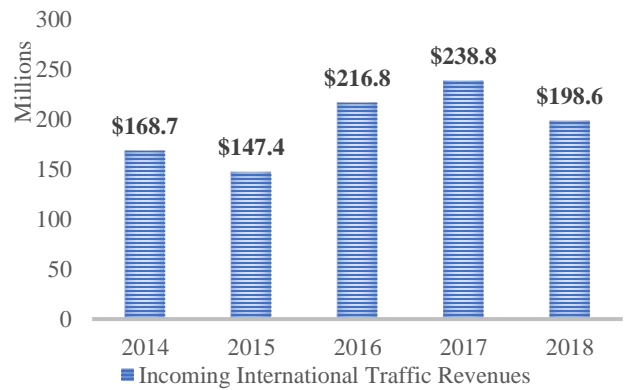


Figure 81. Revenues from incoming international voice traffic (minutes) from 2014 to 2018

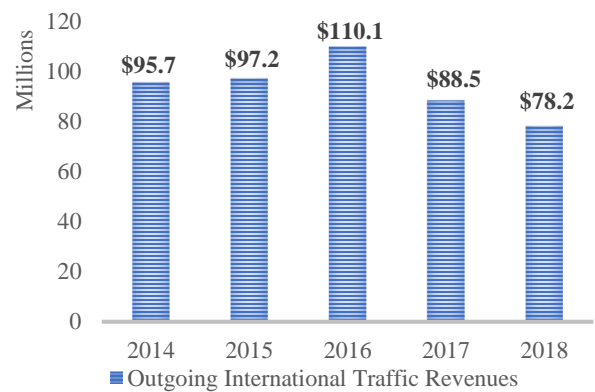


Figure 82. Revenues from outgoing international voice traffic (minutes) from 2014 to 2018

5.4. International Voice Market Concentration

The level of concentration (HHI) for Trinidad and Tobago's international voice market is calculated in terms of the number of international incoming and outgoing minutes. The HHI for the incoming market stood at 4,108.1 at the end of the fourth quarter of 2018, while the HHI for the outgoing market was 4,919.2 for the same period. This indicates that the international outgoing market was more concentrated than the

incoming market. The HHI for incoming minutes decreased from the first quarter, reaching a low of 3,544.7 in the third quarter. The HHI values for outgoing minutes, however, were relatively stable during the first three quarters of the year, subsequently increasing in the fourth quarter. Figures 83 and 84 show the HHI values for incoming and outgoing minutes in 2018.

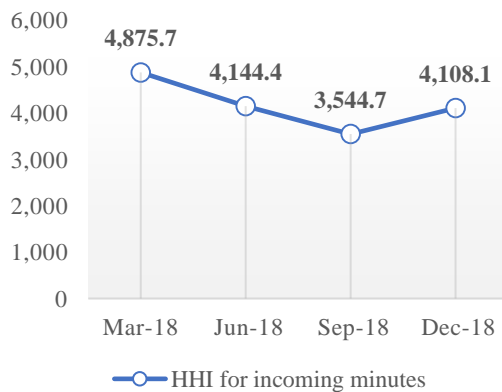


Figure 83. HHI for international incoming minutes in 2018

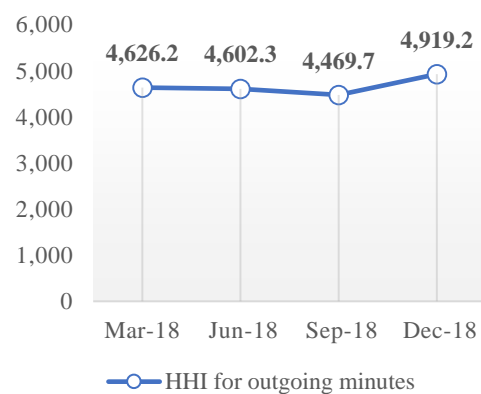


Figure 84. HHI of international outgoing minutes in 2018



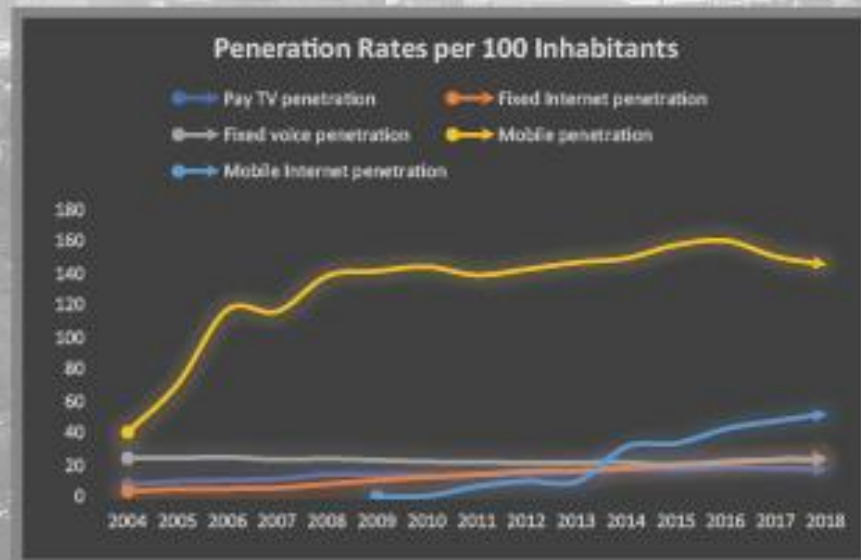
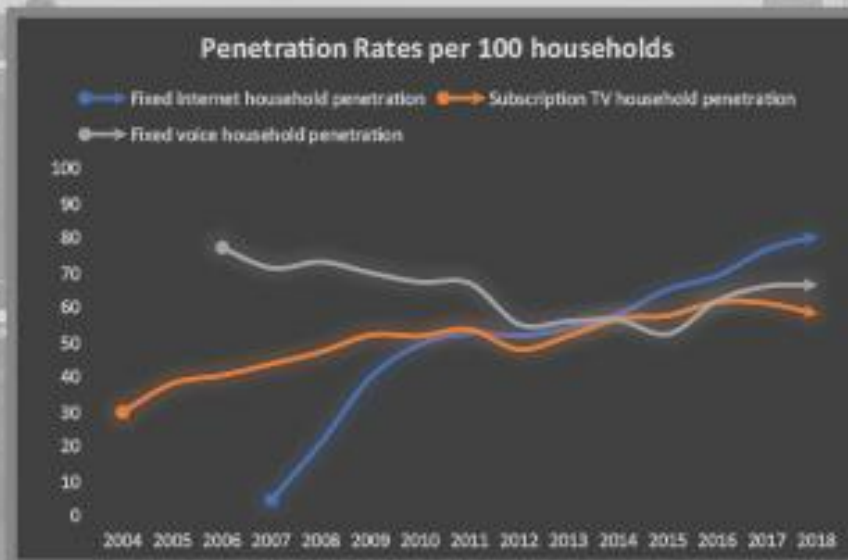
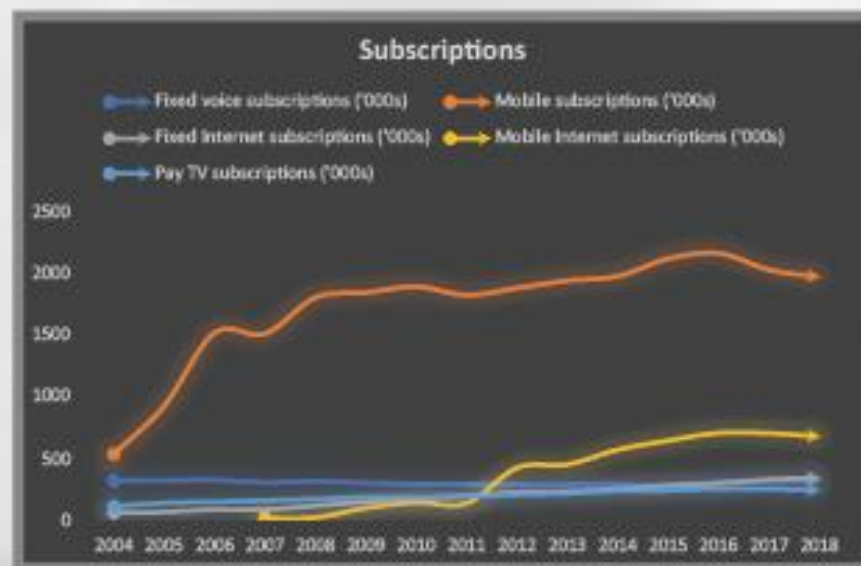
15th EXPANDING YOUR
HORIZONS
1994-2017

A tall, metal telecommunications tower stands on a green hillside. The tower is equipped with various antennas, including a large circular parabolic dish and a smaller cylindrical antenna. The background shows a cloudy sky and a hazy landscape of rolling hills. The bottom right corner of the image is overlaid with a green gradient.

TELECOMMUNICATIONS AND BROADCASTING SECTORS
ANNUAL MARKET REPORT 2018
SPECIAL PULL OUT

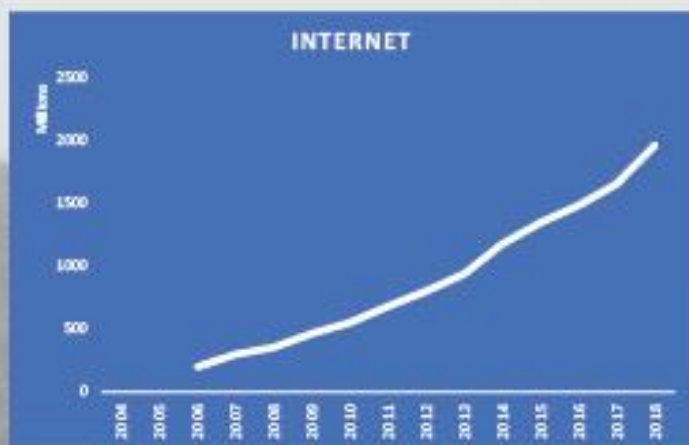
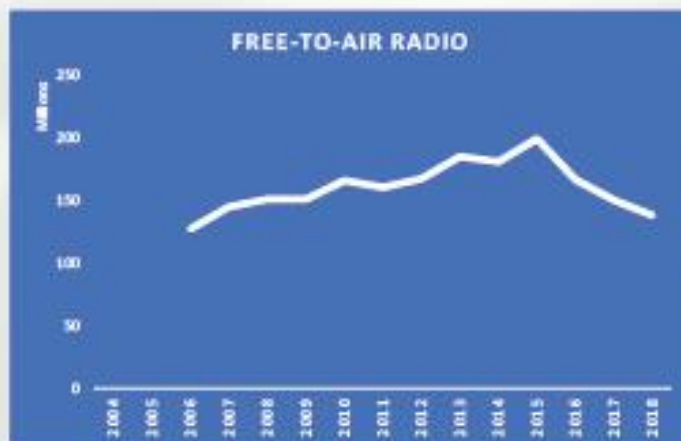
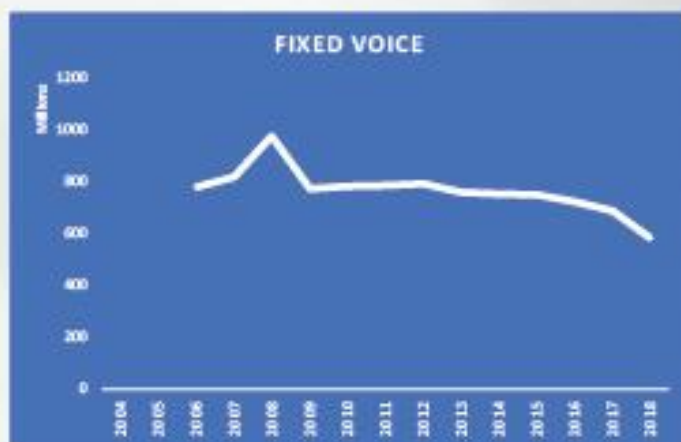
TELECOMMUNICATIONS AND BROADCASTING SECTORS
ANNUAL MARKET REPORT 2018

Quick Overview of the Sectors:
SUBSCRIPTIONS/PENETRATION



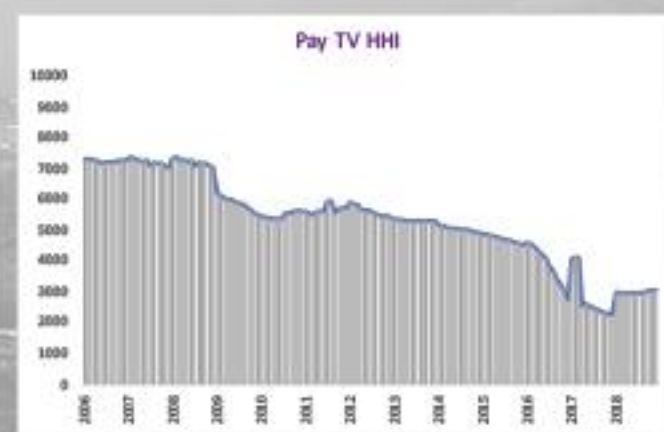
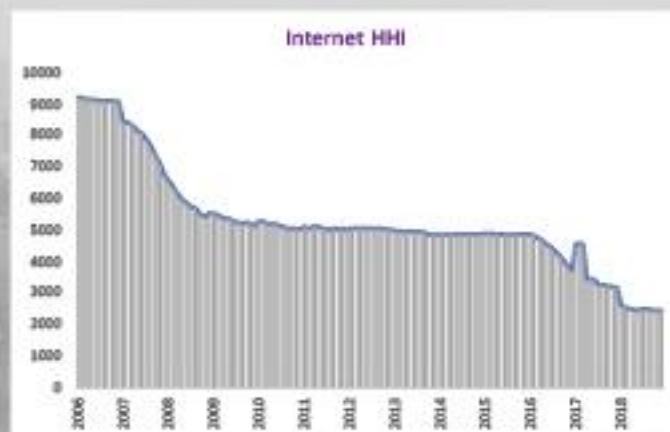
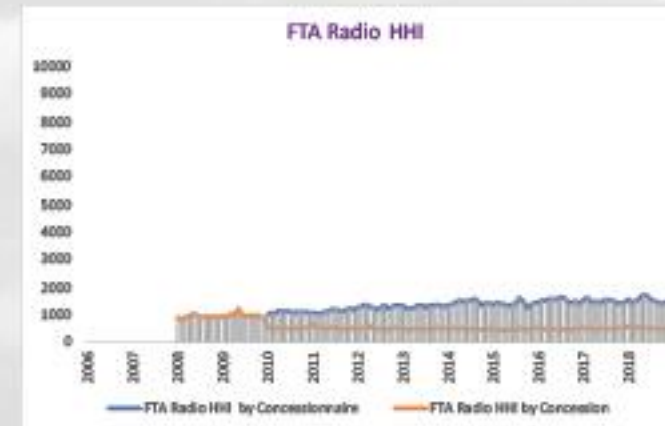
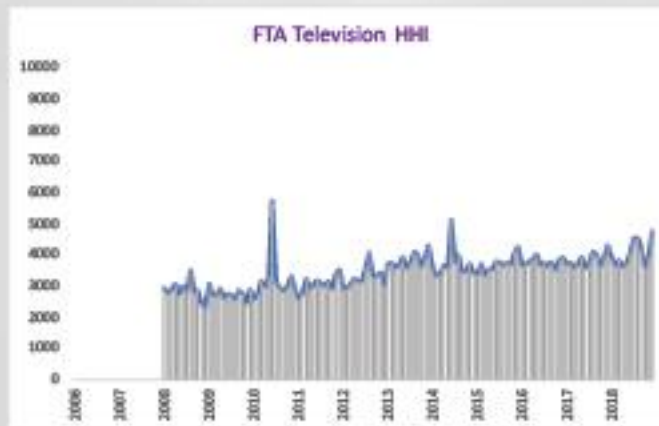
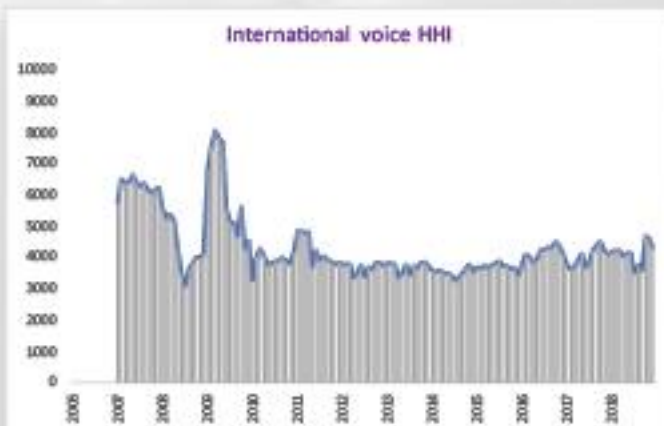
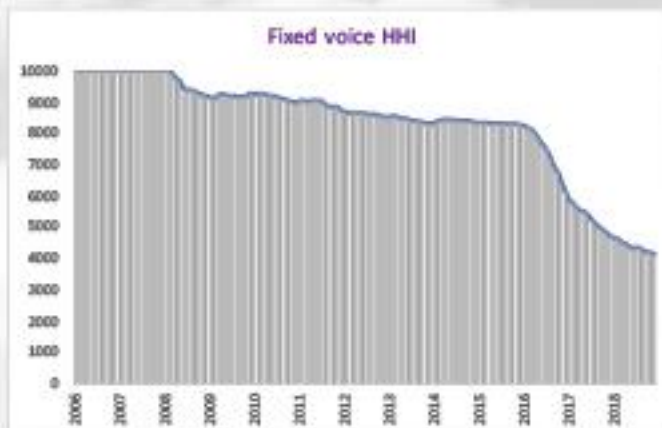
TELECOMMUNICATIONS AND BROADCASTING SECTORS
ANNUAL MARKET REPORT 2018


Quick Overview of the Sectors:
REVENUES BY MARKET



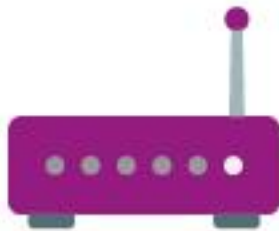
TELECOMMUNICATIONS AND BROADCASTING SECTORS
ANNUAL MARKET REPORT 2018

Quick Overview of the Sectors:
HHI BY MARKET





2018 ANNUAL MARKET REPORT
BROADCASTING MARKET



FREE TO AIR RADIO
REVENUES

138,9 Million
Decrease 8.1%
over 2017



FREE TO AIR TV
REVENUES

\$71.2 Million
Decrease 7.7%
over 2017



PAY TV REVENUES

\$703.1 Million
Decrease 1.1%
over 2017



234,700
Subscriptions

6. Broadcasting Market Review

The broadcasting market is classified based on the following categories: free-to-air (FTA) television, TV broadcasting via cable, free-to-air radio, and subscription or pay TV. Operators are granted a concession to provide broadcasting services to one of the following geographic regions:

- I. National — Trinidad and Tobago
- II. Major territorial — Trinidad only
- III. Minor territorial — Tobago only
- IV. Niche — specific geographic area

Table 6 outlines the number of concessions granted in the last five years for the provision of public broadcasting services.

Table 6. Number of concessions in the broadcasting market from 2014 to 2018

Type of Concession	Number of Concessions				
	2014	2015	2016	2017	2018
Free-to-Air (FTA) Television	8	7	6	6	5
National	6	6	5	5	4
Major Territorial	2	1	1	1	1
Subscription Television	13	14	14	14	13
National	7	8	8	8	7
Major Territorial	1	1	1	1	1
Niche	4	4	4	4	4
Minor Territorial	1	1	1	1	1
TV Broadcasting via Cable	7	10	9	9	8
National	6	8	8	8	8
Major Territorial	1	2	1	1	0
Free-to-Air (FTA) Radio	39	38	37	37	36
National	31	30	29	29	28
Major Territorial	6	6	6	6	6
Minor/Niche Territorial	2	2	2	2	2
Total	67	69	66	66	62

6.1. Free-to-Air (FTA) Television Broadcasting Market

In 2018, the market for FTA television (TV) broadcasting services comprised the following six operational concessionaires:

1. Advance Community Television Network Limited (ACTS 25)
2. CCN Television Limited (CCN TV6)
3. Caribbean New Media Group Limited (C TV)
4. Government Information Services Limited (GISL)
5. Guardian Media Limited (CNC3)
6. Parliament of the Republic of Trinidad and Tobago (Parliament Channel)

In addition to the above, the following concessionaires were authorised to provide television broadcasting services via cable:

1. Central Broadcasting Services Limited (Jaagriti TV)
2. Darut Tarbiyah
3. Environmental Management Authority (EMA)
4. IBN Communications Company Limited
5. Ice Media Group Limited
6. Living Water Community
7. Sankhya Television Limited

8. SWAHA Media Limited
9. Synergy Entertainment Network Limited

At the time of publication of this Report, the EMA and Ice Media Group Limited had not yet launched services to the public.

The following section provides information on the performance of both the FTA and local television broadcasting services via cable. Thus, all references to FTA television below include FTA television broadcasting and television broadcasting services via cable.

6.1.1.Free-to-Air (FTA) Television Revenues

Gross revenue trends from the FTA television market continued downward in 2018. Total gross revenues for this market amounted to TT\$71.2 million — a decrease of TT\$5.9 million, or 7.7%, when compared to the previous year. As illustrated in Figure 85, following a peak in 2015, revenues from the FTA television broadcasting market declined from 2016 to 2018.

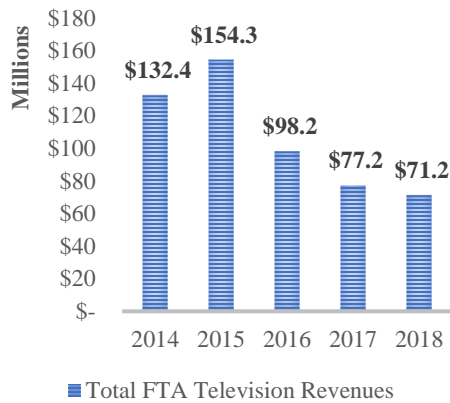


Figure 85. Annual gross revenues from FTA television from 2014 to 2018

Quarterly gross revenues earned in the FTA television market for 2017 and 2018 are compared in Figure 86. Revenues generated in that market were less for the first and fourth quarters of 2018 when compared to the corresponding quarters of 2017. FTA television revenues totalled TT\$16.0 million in the first quarter of 2018 — TT\$2.4 million less than the revenues generated in the first

quarter of 2017. Similarly, FTA television revenues totalled TT\$16.3 million in the fourth quarter of 2018 — TT\$3.0 million less than the revenues generated in the fourth quarter of 2017.

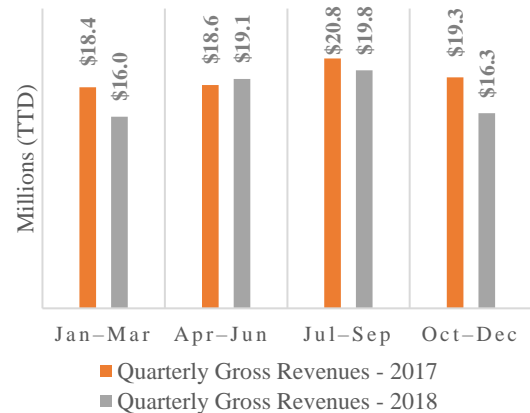


Figure 86. Quarterly gross revenues from FTA television in 2017 and 2018

There was a smaller variation in the revenues generated during the second and third quarters of 2018 compared to the corresponding quarters of 2017. The third quarter was the highest revenue earning period for the FTA television broadcasting market, generating \$19.8 million — TT\$1.0 million less than the revenues generated in the third quarter of 2017. Revenues generated in the second quarter of 2018 increased marginally, recording TT\$19.1 million compared to TT\$18.6 million in the second quarter of 2017.

6.1.2. Free-to-air (FTA) Television Market Concentration

Using the HHI, the Authority calculated the level of concentration for the FTA television broadcasting market based on revenues generated in that market. The HHI showed a steady upward movement during 2018. Increasing from 3,823.8 at the end of the first quarter of 2018, the HHI for that market recorded 4,752.8 at the end of the fourth quarter. Figure 87 highlights the quarterly changes in the HHI during 2018.

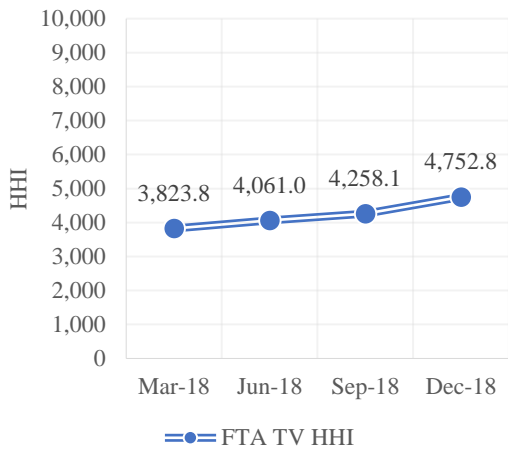


Figure 87. HHI for FTA television broadcasting market in 2018

Over the last five years, there were several marked fluctuations in the HHI in the FTA television market, with a relatively stable trend being observed. Figure 88 shows the five-year trend in the HHI. The average monthly HHI was higher in 2018, at 4,026.8, in contrast to the 3,823.8 computed for 2017.

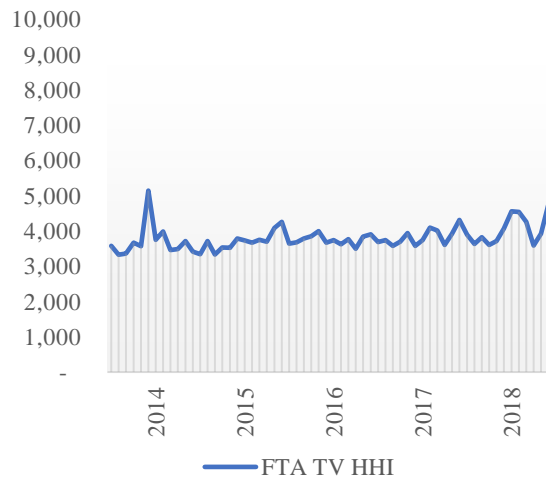


Figure 88. HHI for FTA television broadcasting market from 2014 to 2018

6.2. Free-to-Air (FTA) Radio Broadcasting Market

In 2018, the FTA radio broadcasting market consisted of 37 radio stations³⁸ (see Appendix II for the listing). It is noted that some concessionaires (owners) hold more than one concession and, as a result, operate more than one radio station.

6.2.1. FTA Radio Revenues

During 2018, the FTA radio broadcasting market earned TT\$138.9 million in gross revenues. When compared with the previous year's earnings of TT\$151.3 million, gross revenues generated in 2018 decreased by 8.1%. Revenue earnings in the FTA radio broadcasting market for the past five years

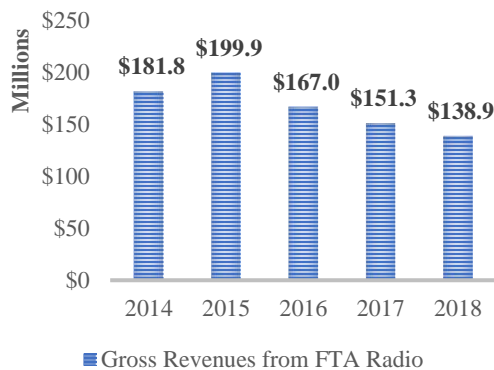


Figure 89. Gross revenues for FTA radio from 2014 to 2018

³⁸ TRICO Industries was not operational during this period.

are compared in Figure 89 and show an overall downward trend in the revenues generated annually between 2014 to 2018.

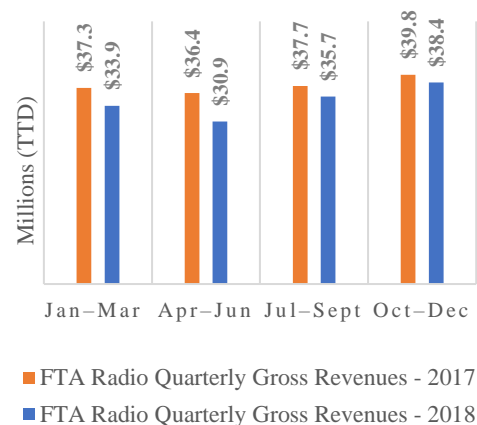


Figure 90. Quarterly revenues for free-to-air in 2017 and 2018

Figure 90 highlights the quarterly gross revenues earned in the FTA radio broadcasting market in 2017 and 2018. Revenues in each quarter of 2018 were less than those for the corresponding quarters of 2017, with the second quarter recording the largest variation in revenues generated. Gross revenues in the FTA radio market totalled TT\$36.4 million in the second quarter of 2018. This was 15.1%, or TT\$5.5 million,

less than the revenues generated in the second quarter of 2017.

6.2.2. Market Concentration Free-to-Air Radio

Using the revenues generated, the Authority calculated the HHI for the FTA radio market, based on both the number of concessions (radio stations) and the number of concessionaires (owners) in the market. Overall, the HHI results show that the level of concentration based on concessionaires decreased, while the level of concentration based on concessions increased in the FTA radio market.

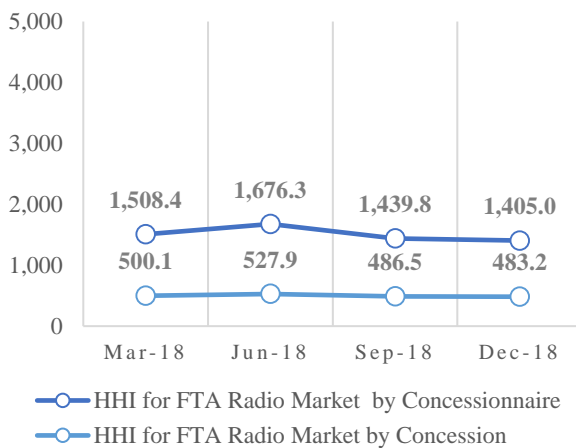


Figure 91. HHI for the FTA radio broadcasting market for 2018

The HHI based on the number of concessionaires in the market increased from 1,508.4 in the first quarter to 1,676.3 in the

second quarter. As Figure 91 illustrates, the HHI subsequently decreased in the third quarter and then decreased in the fourth quarter to 1,405.0 points.

On the other hand, the HHI based on the number of concessions in the market increased from 500.1 in the first quarter to 527.9 in the second quarter. The HHI subsequently decreased to 486.5 points in the third quarter and decreased further to 483.2 in the fourth quarter of 2018. The level of concentration in the FTA radio market based on concessions decreased overall in 2018.

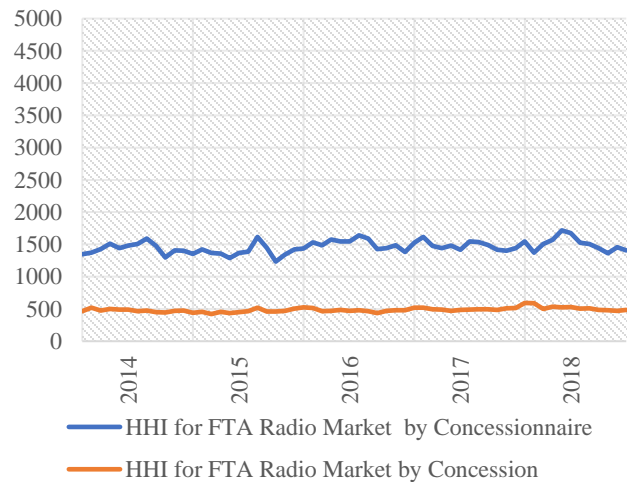


Figure 92. HHI for the FTA radio broadcasting market from 2014 to 2018

Over the last five years, there were several marked fluctuations in the HHI based on concessionaires in the FTA radio

broadcasting market, whereas the HHI based on concessions has been relatively stable over the period, as Figure 92 illustrates.

6.3. Pay Television³⁹ Broadcasting Market

The Trinidad and Tobago pay TV market comprised 14 authorised service providers as

at December 2018, 13 of which were operational in the review period⁴⁰. Entities operating in this market provided services to subscribers within their respective authorised coverage areas. Table 7 lists each service provider, the type of service (digital or analogue) employed to deliver pay TV services and the authorised coverage areas.

Table 7. List of operational pay TV providers in 2018

Name of Provider	Type of Service	Authorised Coverage Area
Amplia Communications Limited	Digital pay TV (wired)	National
Columbus Communications Trinidad Limited	Digital pay TV (wired)	
Digicel (Trinidad & Tobago) Limited	Digital pay TV (wired)	
DirecTV Trinidad Limited	Digital pay TV (satellite)	
Green Dot Limited	Digital pay TV (wireless terrestrial)	
RVR International Limited	Analogue pay TV (wired)	
Telecommunications Services of Trinidad and Tobago Limited (TSTT)	Digital pay TV (satellite)	
Independent Cable Network of Trinidad & Tobago (ICNTT)	Analogue pay TV (wired)	Major territorial
Network Technologies Limited	Analogue pay TV (wired)	Niche – Mayaro and Guayaguayare
Air Link Communications Limited	Analogue and digital pay TV (wired)	Niche – Mayaro and Rio Claro
NOVO Communications Limited	Analogue pay TV (wired)	Niche – Penal and environs
Santa Flora Cable Network Limited	Analogue pay TV (wired)	Niche – Santa Flora and environs
TRICO Industries Limited	Analogue and digital pay TV (wired)	Minor territorial

³⁹ Also referred to as subscription TV

⁴⁰ Open Telecom Limited did not provide pay TV services during the review period.

6.3.1. Pay TV Subscriptions

Service providers in the pay TV market offer different types of basic packages to their customers. Customers subscribed to a basic package of their choice have the option of purchasing additional or premium packages.

Following a marginal decline in 2017, subscriptions in the pay TV market decreased by 4.9%, to record 234,700 at the end of 2018. As Figure 93 highlights, 2016 recorded the highest number of pay TV subscriptions over the past five years.

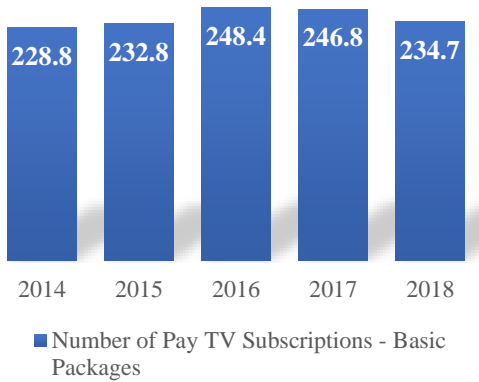


Figure 93. Number of pay TV subscriptions (basic) from 2014 to 2018

Figure 94 identifies the number of pay TV subscriptions by type of service over a five-year period. The number of subscriptions utilising digital technologies increased steadily from 2014 to 2017, then decreased from 241,300 in 2017 to 228,900 in 2018 — a decrease of 12,400, or 5.1%.

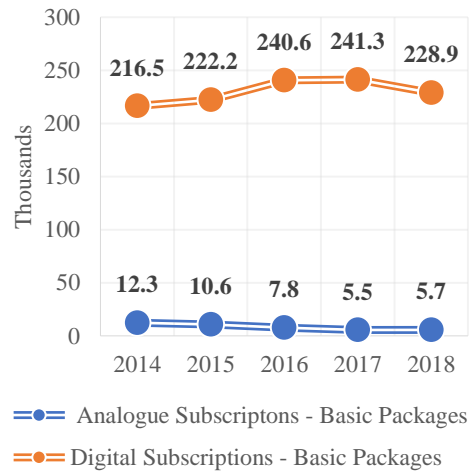


Figure 94. Pay TV subscriptions by platform from 2014 to 2018

For the five-year period 2014 to 2018, subscriptions utilising analogue technologies decreased gradually, reaching the lowest in 2017, with 5,500 subscriptions. Subsequently, analogue subscriptions increased minimally in 2018, by 3.2%, to record 5,700.

The share of analogue to digital pay TV subscriptions in 2018 is illustrated in Figure 95. Compared to 2017, there was a minimal change in the percentage of digital to analogue pay TV subscriptions in 2018. At the end of 2018, 97.6% of total pay TV subscriptions were digital, whereas 2.4% were analogue.

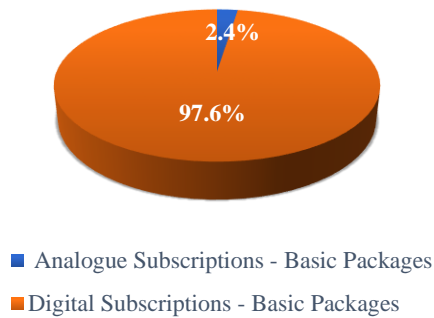


Figure 95. Percentage of analogue and digital pay TV subscriptions for 2018

6.3.1.1. Premium Package Subscriptions

Premium packages are additional channels, or a group of channels offered by pay TV service providers that consumers may subscribe to, in addition to their basic package. Consumers can subscribe to more than one premium package.

Subscriptions to premium packages as at December 2018 stood at 153,100. This marked an increase of 13,900, or 10.0%, between 2017 and 2018. As shown in Figure 96, premium subscriptions grew steadily over the 2014 to 2018 period. Notably, premium package subscriptions recorded double digit growth over the past two years. The growth

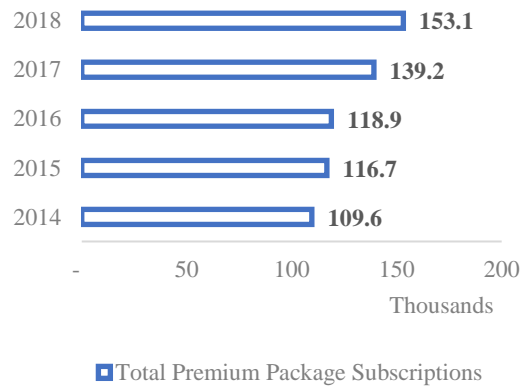


Figure 96. Number of premium package subscriptions from 2014 to 2018

rates for premium package subscriptions from 2014 to 2018 are shown in Table 8.

Table 8. Year-on-year growth rates in premium subscriptions from 2014 to 2018

<i>Period</i>	<i>Change in Premium Subscriptions</i>	<i>Growth Rate (y-o-y)</i>
2013-2014	3,900	3.7%
2014-2015	7,100	6.5%
2015-2016	2,200	1.9%
2016-2017	20,300	17.0%
2017-2018	13,900	10.0%

6.3.2. Pay TV Penetration

In 2018, the penetration rate for pay TV services, measured by the number of pay TV subscriptions per 100 inhabitants, was 17.3. This means that an estimated 17 out of every 100 inhabitants subscribed to pay TV services. The pay TV household penetration rate, measured by the number of subscriptions per 100 households, also decreased, to record 58.5 for 2018. This means that an estimated 59 out of every 100 households, therefore, had a pay TV subscription.

Compared to 2017, the penetration rate per 100 inhabitants and per 100 households decreased. In 2018, 17 out of every 100 inhabitants subscribed to pay TV services compared to the 18 out of every 100 inhabitants computed for 2017. In terms of pay TV household penetration, 59 out of every 100 households subscribed to pay TV services in 2018 compared to the 62 out of every 100 households computed for 2017.

Figure 97 is a comparison between pay TV penetration rates per 100 inhabitants and pay TV penetration rates per 100 households from 2014 to 2018.

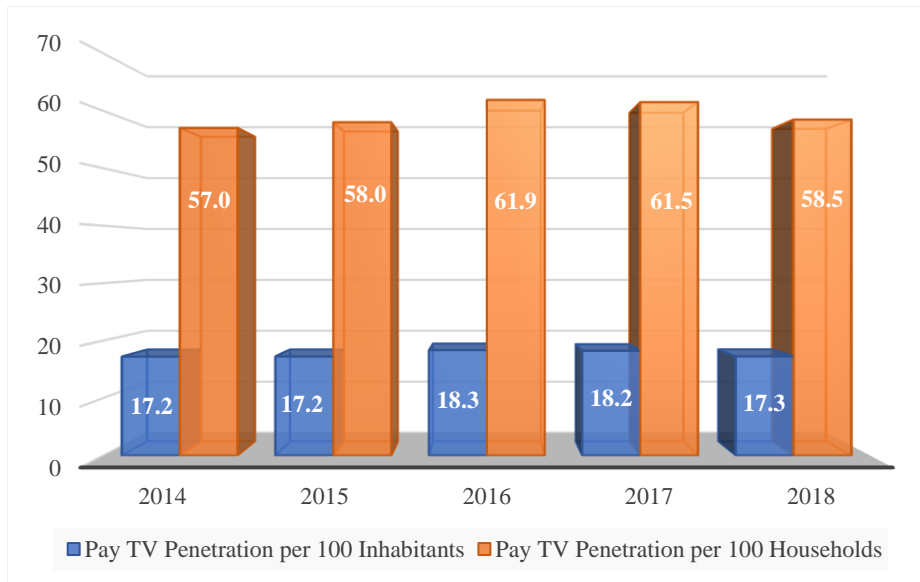


Figure 97. Pay TV penetration per 100 inhabitants versus pay TV penetration per 100 households

6.3.4. Pay TV Revenues

Gross revenues⁴¹ generated in the pay TV market include service providers' earnings from the provision of services using both analogue and digital technologies.

In 2018, the pay TV market generated TT\$703.1 million in revenues. This represented an increase of TT\$7.5 million, or 1.1%, over the previous year. Over the five-year review period illustrated in Figure 98, revenues generated in this market reached a high of TT\$730.2 million in 2015.

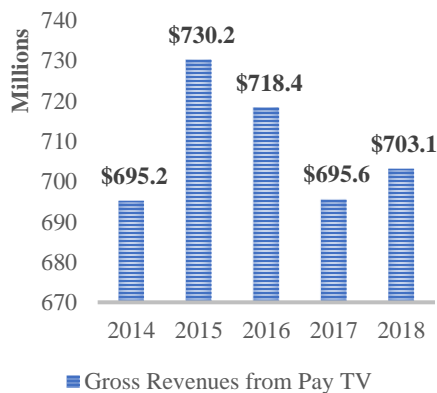


Figure 98. Pay TV gross revenues from 2014 to 2018

The majority of revenues was generated from digital pay TV services, as indicated in Figure 99. Digital pay TV services accounted for 97.8% of total revenues, or TT\$687.5 million. Revenues from analogue pay TV services accounted for the remaining 2.2%, or TT\$15.6 million.

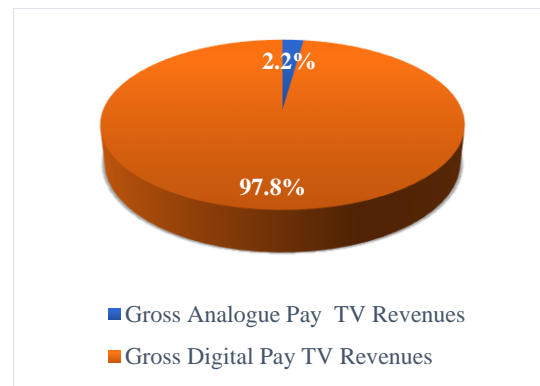


Figure 99. Breakdown of pay TV revenues for 2018

⁴¹ Revenues include income generated from connection, re-connection, installation and usage.

6.3.5. Pay TV Market Concentration

The HHI was used by the Authority to calculate the level of concentration in the pay TV market. Overall, as Figure 100 shows, the level of concentration increased minimally during 2018. At the end of the first quarter, the HHI stood at 2,936.2, then decreased to 2,930.6 points at the end of the second quarter. The pay TV market's concentration subsequently increased in the third and fourth quarters, ending the year with an HHI of 3,032.3 points.

Overall, there was a downward trend in the HHI for the pay TV market over the five-year period depicted in Figure 101, with a minor increase observed in 2018. Compared to the previous year, the level of concentration in the pay TV market increased minimally by 2.3%, from 2,964.5 points at the end of 2017 to 3,032.3 points at the end of 2018.

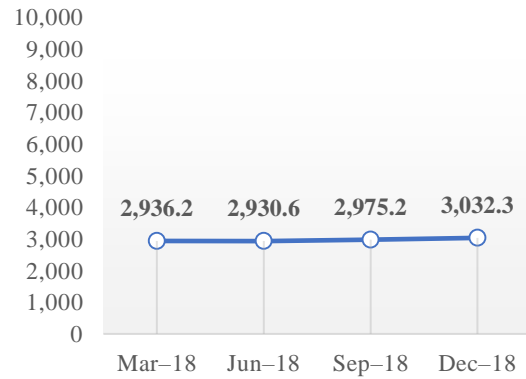


Figure 100. HHI for pay TV market from March to December 2018

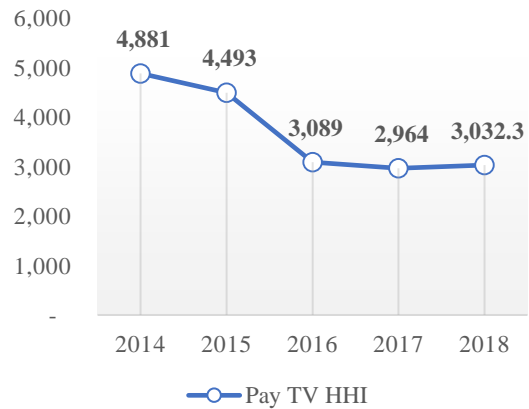


Figure 101. HHI for pay TV market from 2014 to 2018

6.3.6. Pay TV Annual Revenue Per User (ARPU)

The pay TV ARPU was TT\$2,876 in 2018 — an increase of TT\$15 per user from the previous year. This marked a 0.5% increase in the average revenue generated by each pay TV subscription. Figure 102 highlights the trend in the ARPU over the period 2014 to 2018.

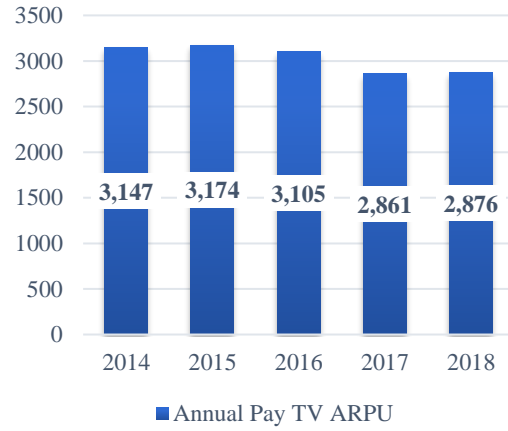


Figure 102. Pay TV average revenue per user (ARPU) from 2014 to 2018

Appendix I: Domestic Telecommunications Statistics

Table 9. Domestic telecommunications statistics

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
General	Population (millions)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4
	Telecommunications revenues (US\$ million)	379.3	497.9	521.3	775.3	685.2	713.1	737.0	834	864.4	881.5	876.7	836.0	771.8 ⁴²	832.1
	Total telephone subscriptions ('000s)	1,246	1,844	1,817	2,120.9	2,149.6	2,187.6	2,117.7	2,169.8	2,235.2	2,270.4	2,393.2	2,471.6	2,349.3	2,290.3
	Total telephone penetration	95.2	140.8	138.7	163.2.1	164.3	167.2	160.7	163.8	168.7	171.4	180.7	186.6	177.3	172.9
	Average revenue per user ⁴³ (ARPU) US\$	304.3	239.5	286.9	318.9	326.0	340.8	348.4	384.4	386.7	388.3	366.3	338.2	322.7	363.3
Fixed Voice	Fixed voice subscriptions ('000s)	322.3	325.5	307.3	314.8	303.2	293.3	291.5	286.1	291.3	289.8	269.8	305.7	318.7	317.7
	Fixed voice penetration	24.6	25.1	23.6	24.1	23.2	22.3	22.0	21.6	21.7	21.7	20.0	22.6	23.5	23.4
	Fixed voice household penetration	-	77.4	71.5	73.3	70.1	67.5	67.1	55.3	56.2	56.6	52.5	62.1	66.3	66.7
	Average revenue per user (ARPU) US\$	272.1	277.9	422.4	486.5	403.5	411.5	417.3	430.5	413.1	410.7	424.2	402.4	359.0	272.4
	Fixed voice subscription growth (%)	1.1	1.0	-5.6	2.4	-3.7	-3.3	-0.6	-1.9	1.6	-0.7	-6.3	13.3	4.2	-0.3

⁴² Telecommunications Revenues for 2017 were revised from US\$758.1 million previously reported to US\$771.8.

⁴³ ARPU is calculated as the total revenues generated from the service divided by the total number of subscriptions to the service.

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mobile	Mobile subscriptions ('000s)	924.0	1,518.8	1,511.1	1,806.1	1,846.3	1,894.2	1,826.2	1,883.7	1,943.9	1,980.6	2,123.4	2,165.8	2,031	1,972.6
	Mobile penetration	70.5	117.0	115.9	138.0	141.1	143.8	138.6	142.2	146.4	149.1	157.3	160.0	150.0	145.1
	Average revenue per user (ARPU) US\$	153.0	159.0	207.0	197.0	170.0	164.0	173.0	188.0	189.0	174.5	147.1	136.8	113.0	89.0
	Mobile subscription growth (%)	74.0	64.0	-0.6	19.6	2.2	2.6	-3.6	3.1	3.2	1.9	7.2	2.0	-6.2	-2.9
Internet	Total Internet subscriptions ⁴⁴ ('000s)	62.3	82.1	93.3	129.6	238.3	309.9	325.2	646.7	682.3	820.1	925.2	1001.7	1031.6	1,017.9
	Fixed Internet subscriptions ⁴⁵ ('000s)	62.3	82.1	82.6	114.1	145.0	171.1	192.0	224.2	231.7	249.6	279.8	294.4	327.0	341.3
	Mobile Internet subscriptions ⁴⁶ ('000s)	-	-	10.7	15.6	93.3	138.8	133.2	422.5 ⁴⁷	450.6	570.5	645.4	707.3	704.6	678.6
	Fixed broadband subscriptions ⁴⁸ ('000s)	14.0	21.1	35.5	85.4	130.1	162.9	187.9	221.3	229.6	248.1	278.5	294.3	326.8	341.1
	Fixed Internet users ⁴⁹ ('000s)	185.0	198.4	429.0	456.0	579.8	639.3	724.5	685.6	704.3	757.8	851.1	900.7	1001.4	1,051.4
	Fixed Internet penetration	5.5	5.7	6.3	8.7	11.1	13.0	14.6	16.9	17.4	18.7	21.1	21.7	24.2	25.1
	Mobile Internet penetration	-	-	0.8	1.2	7.1	10.5	10.1	31.9	33.9	43.0	47.8	52.2	52.0	49.9
	Fixed Internet users penetration	14.1	15.2	32.8	34.9	44.3	48.5	55.0	51.8	53.0	57.1	63.1	57.2	74.0	77.4
	Fixed Internet household penetration	-	-	4.9	21.4	40.1	49.6	52.8	52.1	54.2	58.3	65.4	69.3	76.9	80.8
	Average revenue per user (ARPU) US\$ for fixed Internet	-	392.3	552.3	491.8	433.2	409.9	431.9	422.8	442.5	448.6	430.3	470.5	417.5	492.7
	Fixed Internet subscription growth (%)	12.9	17.7	12.8	38.9	27.1	18.0	12.2	16.7	3.3	7.8	12.1	5.2	11.1	4.4

⁴⁴ Total Internet subscriptions are the sum of fixed Internet subscriptions and mobile postpaid Internet subscriptions.

⁴⁵ Fixed Internet subscriptions are the total number of subscriptions with fixed wired or fixed wireless Internet access.

⁴⁶ Mobile Internet subscriptions from 2003 to 2011 include postpaid mobile customers who subscribe to monthly Internet airtime and who are billed accordingly.

⁴⁷ Mobile Internet subscriptions from 2012 to 2016 include prepaid and postpaid mobile Internet users.

⁴⁸ Fixed broadband subscriptions are the number of Internet subscriptions with access to download speeds of 256kbits or above.

⁴⁹ Fixed Internet users are the number of persons who regularly use fixed Internet services.

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
International Traffic	International: outgoing (min. million)	160.2	203.2	265.9	304.3	259.2	282.9	274.5	263.5	277.9	268.3	247.2	170.9	125.2	125.9
	International: incoming (min. million)	337.8	296.5	323.0	375.4	399.4	358.5	256.2	245.7	234.8	234.1	199.2	202.7	192.9	127.1
	Inbound/outbound int'l traffic ratio	2.1	1.5	1.2	1.2	1.5	1.3	0.93	0.93	0.84	0.87	0.81	1.2	1.5	0.99
Pay TV	Pay TV subscriptions ('000s)	131.6	139.8	151.2	163.0	179.6	178.9	187.8	198.7	209.3	228.8	232.8	248.4	246.7	234.7
	Pay TV penetration	10.1	10.7	11.6	14.2	13.7	13.6	14.1	14.8	15.8	17.2	17.2	18.3	18.2	17.3
	Subscription TV household penetration	38.3	40.7	44.0	47.5	52.3	52.1	54.0	48.2	52.1	57.0	58.0	61.9	61.5	58.5
	Average revenue per user (ARPU) US\$	337.3	318.9	344.9	337.0	404.9	431.2	468.6	505.5	520.8	493.2	497.7	486.8	425.2	427.5
	Pay TV subscription growth	27.3	6.2	8.1	12.5	10.2	-0.4	5.0	5.8	5.3	9.3	1.7	6.7	-0.6	-4.9

Appendix II: List of Concessionaires as at December 2018

Concessions Granted (July 1, 2004 – December 31, 2018)

CONCESSIONAIRE	NETWORK AND/ OR SERVICE	TERRITORY	TYPE	TERM	DATE OF GRANT	EXPIRY DATE	FREQUENCY/ SPECTRUM
INTERNATIONAL TELECOMMUNICATIONS							
Amplia Communications Limited	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	4 April 2016	3 April 2026	N/A
Columbus Networks International (Trinidad) Limited	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	16 February 2017	15 February 2027	N/A
Digicel Trinidad and Tobago Limited	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	31 December 2015	30 December 2025	N/A
Lisa Communications Limited	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	1 September 2016	31 August 2026	N/A
Open Telecom Limited	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	5 January 2016	4 January 2026	N/A
Southern Caribbean Fibre Limited	Public International Telecommunications Network	N/A	Type 1	10 Years	17 August 2016	16 August 2026	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	30 December 2015	29 December 2025	N/A
FREE-TO-AIR RADIO BROADCASTING							
Caribbean Broadcasting Systems and Services Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	91.5 FM
Central Broadcasting Services Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	21 September 2016	20 September 2026	102.7 FM
Central Radio FM90 Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2016	22 February 2026	90.5 FM
Family Focus Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	98.1 FM
Gem Radio Five Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	93.5 FM
² Gem Radio Five Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	95.5 FM

FREE-TO-AIR RADIO BROADCASTING (Cont'd)

² Gem Radio Five Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	107.1 FM
² Gem Radio Five Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2016	22 February 2026	92.3 FM
² Gem Radio Five Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	96.7 FM
Guardian Media Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	95.1 FM
Guardian Media Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	105.1 FM
Guardian Media Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	106.1 FM
Guardian Media Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2016	22 February 2026	106.5 FM
Guardian Media Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2016	22 February 2026	100.5 FM
⁵ Guardian Media Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	99.5 FM
Heritage Communications Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	101.7 FM
Kaisoca Productions Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	92.7 FM
KMP Music Group Limited (formerly Kenny Phillips)	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2016	22 February 2026	90.1 FM
Parliament of the Republic of Trinidad and Tobago	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	1 March 2017	28 February 2027	105.5 FM
PBCT Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	104.7 FM
Radio News Network	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	104.1 FM
Radio Vision Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	102.1 FM
Superior Infinite Productions Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	94.1 FM
Telemedia Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	97.1 FM
Toco Multicultural Foundation for Integrated Development	Broadcasting Services (Free to Air FM)	Minor Territorial/Niche - Toco and environs	Type 5	10 Years	1 March 2016	28 February 2026	106.7 FM
Trico Industries Limited	Broadcasting Services (Free to Air FM)	Minor Territorial	Type 5	10 Years	11 October 2012	10 October 2022	89.5 FM
Trinibashment Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	91.9 FM
Trinidad and Tobago Radio Network Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	96.1 FM

FREE-TO-AIR RADIO BROADCASTING (Cont'd)							
³ Trinidad and Tobago Radio Network Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	107.7 FM
⁴ Trinidad and Tobago Radio Network Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	94.7 FM
TTT Limited (formerly Caribbean New Media Group Limited)	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	91.1 FM
TTT Limited (formerly Caribbean New Media Group Limited)	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	99.1 FM
TTT Limited (formerly Caribbean New Media Group Limited)	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	100.1 FM
United Cinemas Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	103.5 FM
Upward Trend Entertainment Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	97.5 FM
Winfield Aleong Broadcasting Company Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2016	22 February 2026	103.1 FM
MOBILE TELECOMMUNICATIONS							
Digicel Trinidad and Tobago Limited	Public Domestic Mobile Telecommunications Services over a Public Domestic Mobile Telecommunications Network	National	Type 2	10 Years	31 December 2015	30 December 2025	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public Domestic Mobile Telecommunications Services over a Public Domestic Mobile Telecommunications Network	National	Type 2	10 Years	30 December 2015	29 December 2025	N/A
FREE-TO-AIR TELEVISION BROADCASTING							
Advance Community Television Network Limited	Broadcasting Services (Free to Air Television)	Major Territorial	Type 5	10 Years	1 March 2016	28 February 2026	UHF 25
C.C.N. Television Limited	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	1 March 2016	28 February 2026	VHF 6, UHF 18, 19
Government Information Services Limited	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	12 January 2010	11 January 2020	VHF 4, UHF 16
Parliament of the Republic of Trinidad and Tobago	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	23 October 2008	22 October 2018	VHF 11, UHF 26, 29
TTT Limited (formerly Caribbean New Media Group Limited)	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	23 February 2016	22 February 2026	VHF 9, UHF 13, 20

SUBSCRIPTION TELEVISION BROADCASTING

Air Link Communications	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Princes Town and Environs	Type 5	10 Years	1 May 2010	30 April 2020	N/A
Amplia Communications Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	24 August 2014	23 August 2024	N/A
Columbus Communications Trinidad Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	5 January 2016	4 January 2026	N/A
Digicel Trinidad and Tobago Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	18 March 2015	17 March 2025	N/A
DirecTV Trinidad Limited	Subscription Broadcasting Service (direct from Satellite only)	National	Type 5	10 Years	28 February 2016	27 February 2026	N/A
Independent Cable Network of Trinidad & Tobago Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Major Territorial	Type 5	10 Years	1 November 2016	31 October 2026	N/A
Network Technologies Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Mayaro and Guayaguayare	Type 5	10 Years	5 January 2016	4 January 2026	N/A
⁶ NOVO Communications Limited (formerly Diversified Technologies Limited)	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Penal and Environs	Type 5	10 Years	11 October 2012	10 October 2022	N/A
Open Telecom Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	30 October 2013	29 October 2023	N/A
RVR International Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	20 May 2014	19 May 2024	N/A
Santa Flora Cable Network Ltd	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Santa Flora and Environs	Type 5	10 years	15 May 2014	14 May 2024	N/A
Telecommunications Services of Trinidad and Tobago Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	30 December 2015	29 December 2025	N/A
TRICO Industries Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Minor Territorial	Type 5	10 Years	1 September 2016	31 August 2026	N/A

TELEVISION BROADCASTING SERVICE VIA CABLE

Central Broadcasting Services Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	18 March 2013	17 March 2023	N/A
Darut Tarbiyah	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	7 May 2013	6th May 2023	N/A
Environmental Management Authority	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	3 September 2015	2 September 2025	N/A
IBN Communications Company Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	11 October 2012	10 October 2022	N/A
Ice Media Group Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	12 August 2015	11 August 2025	N/A
Living Water Community	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	7 May 2013	6th May 2023	N/A
Sankhya Television Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	7 May 2013	6th May 2023	N/A
⁷ SWAHA Media Limited (<i>formerly Video Associates Limited</i>)	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	23 February 2016	22 February 2026	N/A

FIXED TELECOMMUNICATIONS

Air Link Communications	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Niche - Princes Town and Environs	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Amplia Communications Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	1 December 2009	30 November 2019	N/A
Columbus Communications Trinidad Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	5 January 2016	4 January 2026	N/A
Digicel (Trinidad and Tobago) Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Digicel (Trinidad and Tobago) Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	3 October 2014	2 October 2024	N/A
Green Dot Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	1 October 2017	30 September 2027	N/A
Independent Cable Network of Trinidad & Tobago Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Major Territorial	Type 2	10 Years	1 November 2016	31 October 2026	N/A
Lisa Communications Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Massy Technologies Infocom (Trinidad) Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A

FIXED TELECOMMUNICATIONS (Cont'd)							
Network Technologies Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network	Niche - Mayaro and Guayaguayare	Type 2	10 Years	5 January 2016	4 January 2026	N/A
FIXED TELECOMMUNICATIONS (Cont'd)							
⁶ NOVO Communications Limited (formerly Diversified Technologies Limited)	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Niche - Penal and Environs	Type 2	10 Years	11 October 2012	10 October 2022	N/A
Open Telecom Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Prism Services (Trinidad) Limited	Public Domestic Fixed Telecommunications Services	National	Type 4	10 years	29 July 2013	28 July 2023	N/A
RVR International Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	20 May 2014	19 May 2024	N/A
Santa Flora Cable Network Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Niche - Santa Flora and Environs	Type 2	10 years	15 May 2014	14 May 2024	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired and Wireless)	National	Type 2	10 Years	30 December 2015	29 December 2025	N/A
TRICO Industries Limited	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network	Minor Territorial	Type 2	10 Years	1 September 2016	31 August 2026	N/A
Wireless Telecommunications Ltd	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 years	27 November 2013	26 November 2023	N/A

Notes:

¹Concession formerly held by Wonderland Entertainment has been transferred to Guardian Media Limited as of June 9, 2012.

²Concession obligations of Citadel Limited, Inner City Broadcasting Company Limited, Sidewalk Radio Limited and The Q Corporation Limited have been novated to Radio Five Limited as of September 7, 2012.

³Concession obligations of Marcel Mahabir have been novated to Trinidad and Tobago Radio Network Limited as of April 22, 2014.

⁴Concession obligations of VL Communications have been novated to Trinidad and Tobago Radio Network Limited as of March 18, 2014.

⁵Concession obligations of 21st Century Arts and Entertainment Limited have been novated to Guardian Media Limited as of March 26, 2015.

⁶Concession obligations of Diversified Technologies Limited have been novated to NOVO Communications Limited as of January 19, 2017.

⁷Concession obligations of Video Associates Limited have been novated to SWAHA Media Limited as of May 31, 2017.

Appendix III: Tariffs

Information on service providers' tariffs can be found at the following websites:

- Airlink Communications: <http://airlinktt.net/>
- Amplia Communications Limited: <https://amplia.co.tt/about/>
- bmobile: <http://www.bmobile.co.tt/>
- Columbus Communications Trinidad Limited: <http://www.flowtrinidad.com/>
- Digicel (Trinidad & Tobago) Limited: <http://www.digiceltt.com/>
- DirecTV Trinidad Limited: <http://www.directvcaribbean.com/tt/>
- Diversified Technologies Limited: <http://www.diversifiedtechltd.com/#>
- Green Dot Limited: <http://www.gd.tt/>
- Independent Cable Network of Trinidad & Tobago Limited: <http://www.icntt.com/>
- Massy Technologies Infocom (Trinidad) Limited: <http://www.massygroup.com/infocom/>
- Network Technologies Limited: <http://www.mayarocabletv.com/>
- Open Telecom: <http://www.opentelecomtt.com/>

Appendix IV: Glossary of Terms

The following definitions are included to assist readers of this Report.

Terms	Definition
Average revenue per user	Measures the average revenue generated by one subscriber
Broadband	Internet speeds > 256 kbits/s
Concession	A legal instrument granted by the Minister responsible for telecommunications and broadcasting to authorise the operation of a public telecommunications network and/or the provision of any public telecommunications service or broadcasting service
Free-to-air (FTA)	Relates to television and radio services, broadcast in clear (unencrypted) form on standard public or commercial networks, for which viewers do not have to subscribe or pay
Gross domestic product (GDP)	A measure of the total value of all goods and services produced in a given country in a given time period, usually a year, excluding net property income from abroad
Herfindahl-Hirschman Index	A tool that measures the concentration of firms within a particular market. It is computed as the sum of the squares of the market share of all firms in the market.
Interconnection	The linking of public telecommunications networks and public telecommunications services, to allow the users of one provider of a public telecommunications service to communicate with the users of another provider of a public telecommunications service, and to access the services provided by such other provider

International settlement rate	The share of the accounting rate paid by the public telecommunications operator in another country to cover the costs of carrying the originating public telecommunications operator's traffic on its network
Licence	A legal instrument granted by the Authority to authorise the operation or use of any radiocommunications service or any radio-transmitting equipment, including that on board any ship, aircraft or other vessel in the territorial waters or airspace of Trinidad and Tobago
Mobile voice subscription	Refers to an activated (prepaid or postpaid) SIM card that enables the user to make and/or receive a call
Narrowband	Internet speeds ≤ 256 kbits/s
Off-net traffic	Refers to traffic originating on a service provider's network and terminating on another network
On-net traffic	Refers to traffic originating on a service provider's network and terminating on the same network
Pay TV	Refers to terrestrial multichannel TV services such as cable TV, Internet protocol television (IPTV), digital terrestrial TV (DTT) and direct-to-home (DTH) satellite antenna multichannel TV receiving broadcasting directly from satellites. Pay TV is also known as subscription TV.
Penetration rate	Defined as the number of persons per 100 inhabitants who subscribe to telecommunications and/or broadcasting services



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FB: Telecommunications Authority of Trinidad and Tobago



TWITTER: @TATT2004



Website : www.tatt.org.tt