



TELECOMMUNICATIONS AUTHORITY OF TRINIDAD AND TOBAGO  
TELECOMMUNICATIONS AND BROADCASTING SECTORS  
**ANNUAL MARKET REPORT 2019**



**Celebrating**  
**25**  
**YEARS**  
**of Internet Service**  
**in Trinidad and Tobago**

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# FOREWORD

2019 ANNUAL MARKET REPORT

## Foreword

As the Telecommunications Authority of Trinidad and Tobago (the Authority) celebrates 16 years of regulating the telecommunications and broadcasting sectors, it gives us great pleasure to present the *14<sup>th</sup> Annual Market Report: Telecommunications and Broadcasting Sectors 2019* (the Report). Notably, this year also marks the significant milestone of 25 years of Internet services and connectivity in Trinidad and Tobago.

This Report is a comprehensive compilation of statistics on the performance of the two sectors during the period January to December 2019. It contains data relating to a range of telecommunications and broadcasting indicators, such as subscription figures, penetration rates, gross revenues and traffic volumes. The data collected by concessionaires are used by the Authority to monitor and inform regulatory policy decisions aimed at facilitating the growth of these sectors.

The 2019 findings reaffirm the vibrant and robust nature of Trinidad and Tobago's telecommunications and broadcasting sectors, which generated an estimated TT\$5.02 billion<sup>1</sup> in revenues over the review period. The fixed voice, mobile voice, fixed Internet, mobile Internet and pay TV market subscriptions collectively totalled approximately 3.74 million — an increase of 200,000, or 5.6%, when compared to the same period in 2018.

Such an increase is encouraging, as it has been shown that the deployment and availability of high-quality information and communications technology (ICT) services is a major factor in enabling emerging economies to attain higher levels of development. To this end, the Authority will continue to collect, analyse and disseminate timely market statistics, which significantly contributes to effective market regulation.

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

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<sup>1</sup> Throughout this Report, figures have been rounded.

## **Executive Summary**

The Authority's 14<sup>th</sup> *Annual Market Report: Telecommunications and Broadcasting Sectors 2019* (the Report) presents and reviews statistical information on the performance and market trends observed within the telecommunications and broadcasting industry for the period January to December 2019.

### **Reduction in total revenues observed within the telecommunications and broadcasting sectors**

The telecommunications and broadcasting sectors produced an estimated TT\$5.02 billion in revenues during 2019. This represents an 11% decrease in total revenues when compared to 2018. The telecommunications sector contributed TT\$4.1 billion, or 81.7%, while the broadcasting sector contributed TT\$0.92 billion, or 18.3%, of total industry revenues.

### **Internet market retains its position as top revenue earner**

With an estimated TT\$2,079.7 million generated, the Internet market continued to be the dominant revenue earner, accounting for 41.4% of total industry revenues. Next in the hierarchy was mobile voices services and the pay TV market, which generated TT\$1,038 million (20.7%) and TT\$726.9 million (14.5%), respectively.

### **Total telecommunications and broadcasting subscriptions increase while fixed Internet subscriptions decline**

The fixed voice, mobile voice, fixed Internet, mobile Internet and pay TV markets together amassed approximately 3.74 million subscriptions — an increase of 200,000, or 5.6%, compared to the previous year. After four years of continuous growth in the number of subscriptions, the fixed Internet market contracted by 0.6%, to record 339,400 subscriptions — 1,900 subscriptions fewer than in 2018.

### **Rise in subscriptions to both mobile voice services as well as pay TV**

The number of subscriptions within the mobile voice market increased from 1.97 million in 2018 to 2.16 million in 2019 — representing a rise of 9.6%, or 190,000 subscribers in the span of one year. After two years of decline in subscriptions, the pay TV market figure rose in 2019, recording 249,800 subscriptions, which was an increase of 6.4% from the previous year.

### **Decreases in revenue are observed in both FTA TV and FTA radio broadcasting markets**

The trend of falling gross revenue for FTA TV continued in 2019. Total gross revenue for this market amounted to TT\$60.2 million — a drop of TT\$11 million, or 15.4%, compared to 2018. Likewise, in the FTA radio market, there was a decrease in revenue amounting to TT\$5.4 million, which represented a 3.9% contraction from the previous year.

### **Decreases in market concentrations continue in fixed Internet and fixed voice markets, while increases in mobile voice and pay TV concentration are recorded**

Market concentration within the fixed Internet market, as measured by the Herfindahl-Hirschman Index (HHI), declined for the fifth consecutive year, dropping by 0.9% from 2018 to an HHI value of 2,973.3. Similarly, the market concentration for the fixed voice market also registered a fifth yearly decrease of 11%, dropping from 4,132.5 in 2018 to end 2019 with a value of 3,677. In contrast, the level of concentration in the mobile voice market increased by 1.7% to record an HHI of 5,119.3, while pay TV rose by 3.4% to register 3,136.4 at the end of December 2019.



# OVERVIEW

2019 ANNUAL MARKET REPORT

# 1 Overall Market Review

## 1.1 Overview and methodology

This 14<sup>th</sup> Annual Market Report: *Telecommunications and Broadcasting Sectors 2019* (the Report) presents statistics relating to the performance of the telecommunications and broadcasting sectors in Trinidad and Tobago. For the purposes of this Report, the telecommunications sector is classified into four markets:

1. Fixed voice
2. Mobile voice
3. International voice
4. Internet (fixed and mobile)

The broadcasting sector is categorised into three markets:

1. Free-to-air (FTA) television (TV)
2. Free-to-air (FTA) radio
3. Pay TV

The information presented is based primarily on data submitted by operational concessionaires within the two sectors for the period January to December 2019. Additionally, historical data series and other information made available to the Authority

at the time of publication are also utilised within the Report.

The data received by concessionaires are compiled, reviewed and analysed to produce statistical market indicators. These indicators measure the evolution of the telecommunications and broadcasting sectors, based on the number of subscriptions, gross revenues and traffic. The information in this Report is used by the Authority to inform and monitor policy decisions which will facilitate the orderly development of these sectors.

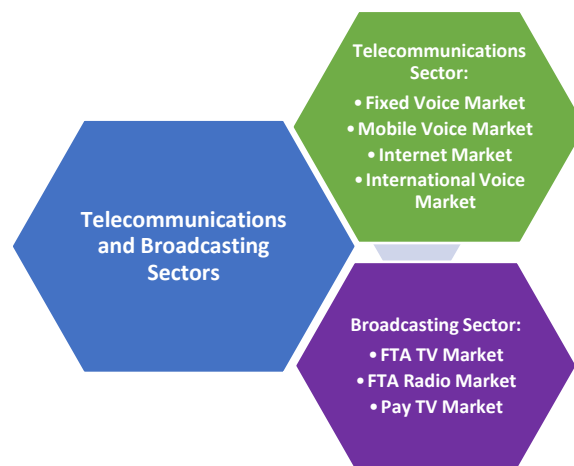


Figure 1. Classification of markets

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](http://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. It should be noted that a concessionaire may be granted more than one type of concession.

As at December 2019, a total of 94 concessions were granted by the Authority. A detailed list of these concessions can be found in Appendix II.

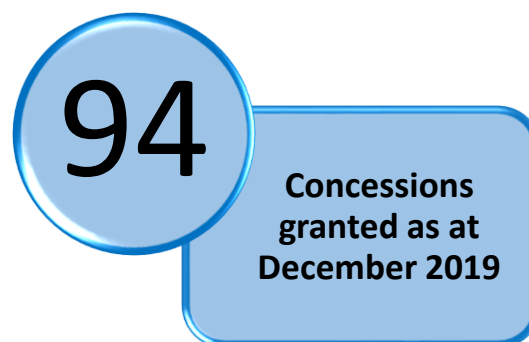


Table 1 lists the number of operational concessionaires in the various markets as at December 2019.

**Table 1. Number of operational concessionaires by market**

Network Category	Service Provided	Operational Concessionaires
<b>International Telecommunications</b>	Network only	1
	Services only	-
	Network and services	6
<b>Mobile Telecommunications</b>	Mobile voice and Internet services	2
<b>Fixed Telecommunications</b>	Fixed telephony	6
	Fixed Internet	12
<b>Pay TV (Subscription TV)</b>		13
<b>Free-to-Air Radio Broadcasting</b>		36
<b>Free-to-Air TV Broadcasting</b>		4
<b>TV Broadcasting via Cable</b>		14



## 1.3 Review of the Telecommunications and Broadcasting Sectors

### 1.3.1 Total Revenue Contributions by the Sectors

In 2019, the telecommunications and broadcasting sectors produced a combined total revenue of TT\$5.02 billion<sup>2</sup>, or US\$740.7 million<sup>3</sup>, which, as a proportion of gross domestic product (GDP)<sup>4</sup>, equates to 3.0%. This represents an 11.0% decrease in total revenues generated by these sectors compared to 2018.

Internet services generated the largest share of revenues, garnering TT\$2,079.7 million (41.4%) of the total telecommunications and broadcasting industry revenues. The second largest earner was the mobile voice market, which contributed TT\$1,038 million (20.7%) to total revenues. The next highest earners were pay TV and fixed voice<sup>5</sup> services, which generated TT\$726.9 million (14.5%) and TT\$525.9 million (10.5%), respectively. Following this was the international voice market, which earned TT\$237 million

(4.7%). The FTA radio and leased line<sup>6</sup> markets each accounted for TT\$133.5 million (2.7%) and TT\$105.6 million (2.1%), respectively. The FTA TV market contributed revenues of TT\$60.2 million (1.2%).

Other revenues<sup>7</sup> accounted for TT\$114.8 million, representing a 2.3% share of total industry revenues. Other revenues comprised both other telecommunications revenues, which produced TT\$110.1 million, and other broadcasting revenues, which generated TT\$4.7 million.

The aforementioned information is depicted in Figure 2, while Figure 3 gives a percentage breakdown of revenue contributions by each market towards total industry revenues.

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<sup>2</sup> This figure includes revenues from telecommunications and broadcasting services offered to members of the general public and private leased line services.

<sup>3</sup> Central Bank of Trinidad and Tobago (CBTT) exchange rate: US\$1 =TT\$6.78

<sup>4</sup> GDP at current market prices for 2019 was TT\$165,937.4 million (Source: TT Ministry of Finance (MOF) Review of the Economy 2019).

<sup>5</sup> Fixed voice market revenues include those earned from fixed voice services and access (excluding international services).

<sup>6</sup> Leased lines include both international and domestic circuits.

<sup>7</sup> Other revenues include revenues earned from both the telecommunications sector and the broadcasting sector, such as those received from wholesale services, and production and airtime for local programming on pay TV. See sections 1.3.2 and 1.3.3 for further definitions.

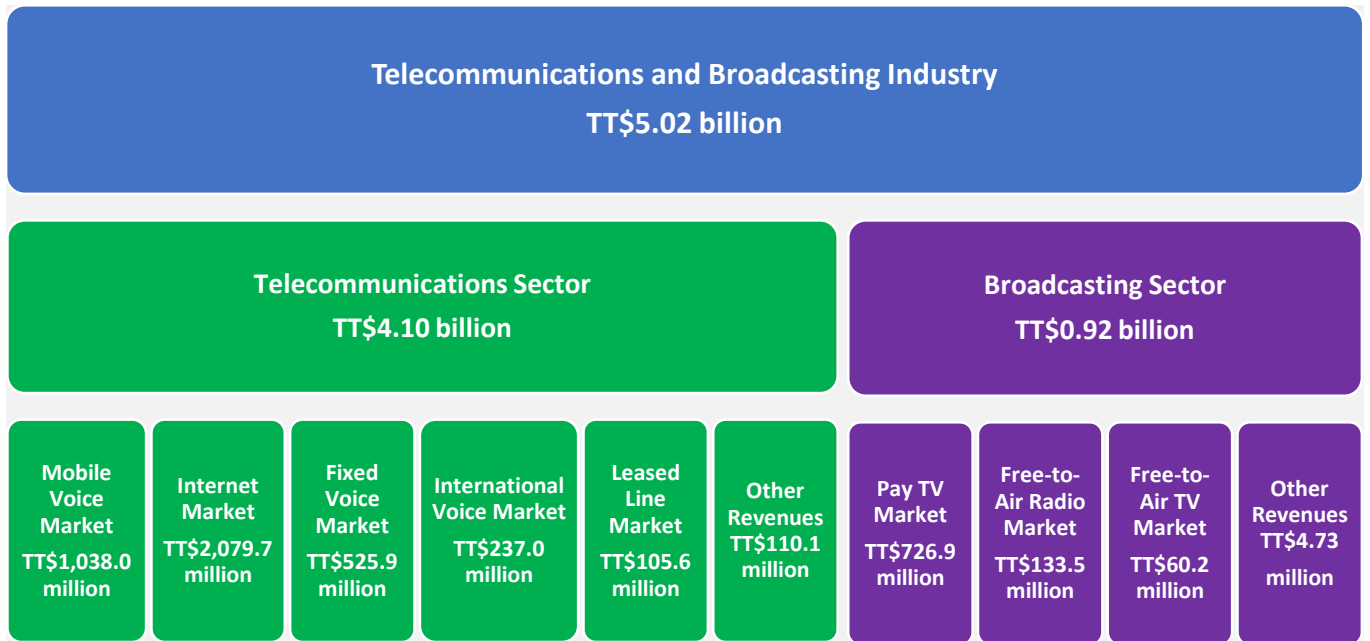


Figure 2. Gross revenues by industry, sector and market in 2019

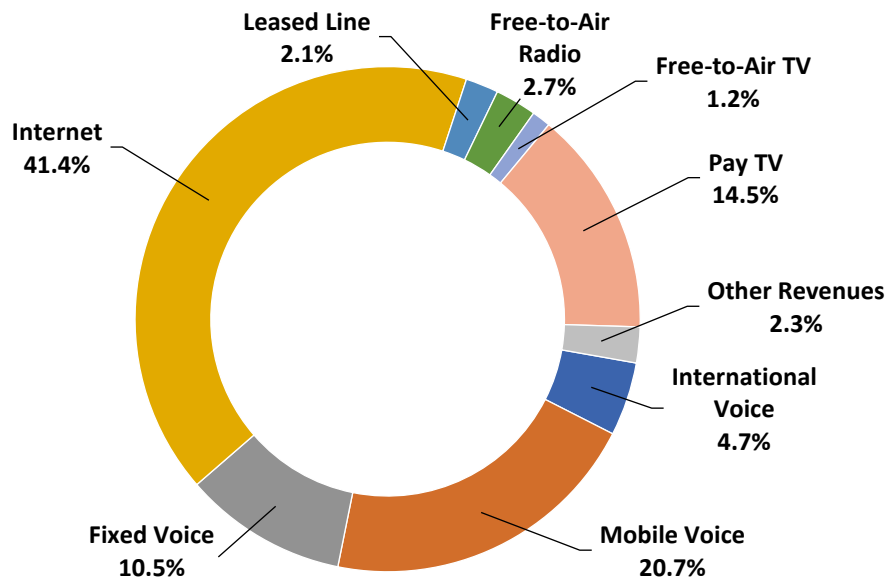


Figure 3. Percentage of total revenues contributed by market in 2019

### 1.3.2 Market Revenue Trends in the Telecommunications Sector

In 2019, the telecommunications sector earned TT\$4.1 billion, which represents an 81.7% share of total industry revenues.

The percentage contribution of the various markets toward total telecommunications revenues over the past five years is illustrated in Figure 4.

Of the five main markets within this sector, the Internet market generated most of the gross revenues, i.e., 50.8%. The mobile voice market held the second largest proportion of revenues, with 25.3%, while revenues from the fixed voice and international voice markets followed with 12.8% and 5.8%, respectively. The leased line market produced 2.6%, with other revenues<sup>8</sup> contributing the remaining 2.7%.

The Internet market continued its fifth consecutive year of increased percentage contribution to total telecommunications revenues, rising from 46% in 2018 to 50.8% in 2019.

Despite retaining its position as the second highest revenue generating market, mobile voice services decreased from 27.8% in 2018 to 25.3% in 2019.

The percentage contributions of fixed voice, international voice and other (telecommunications) revenues decreased from 2018, while the leased line market maintained a share of 2.6%.

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<sup>8</sup> Other revenues earned from service providers in the telecommunications sector include other wholesale

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

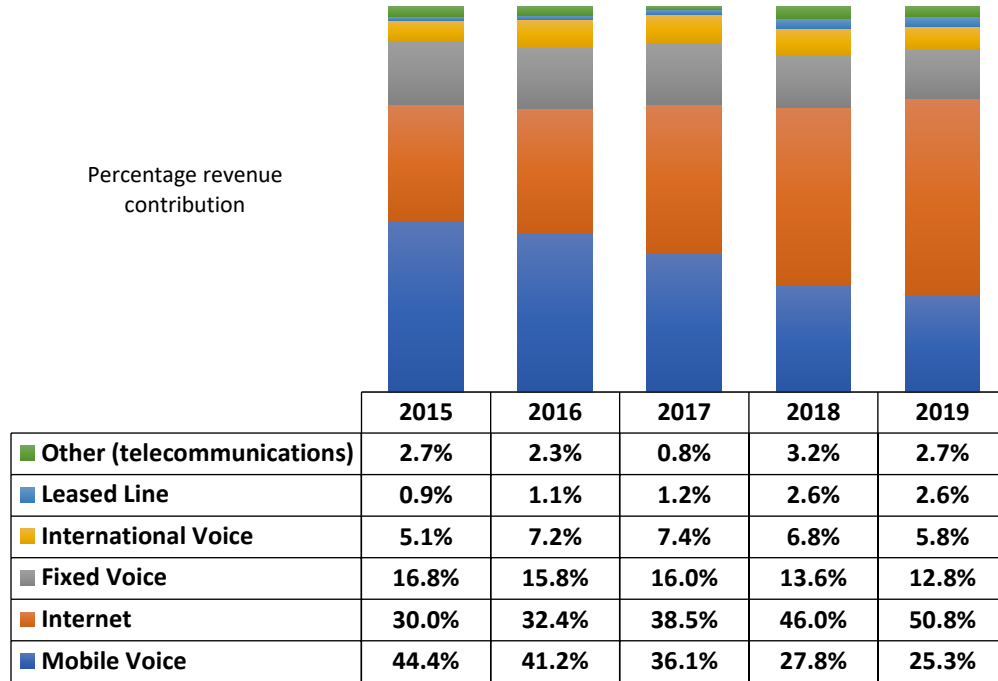


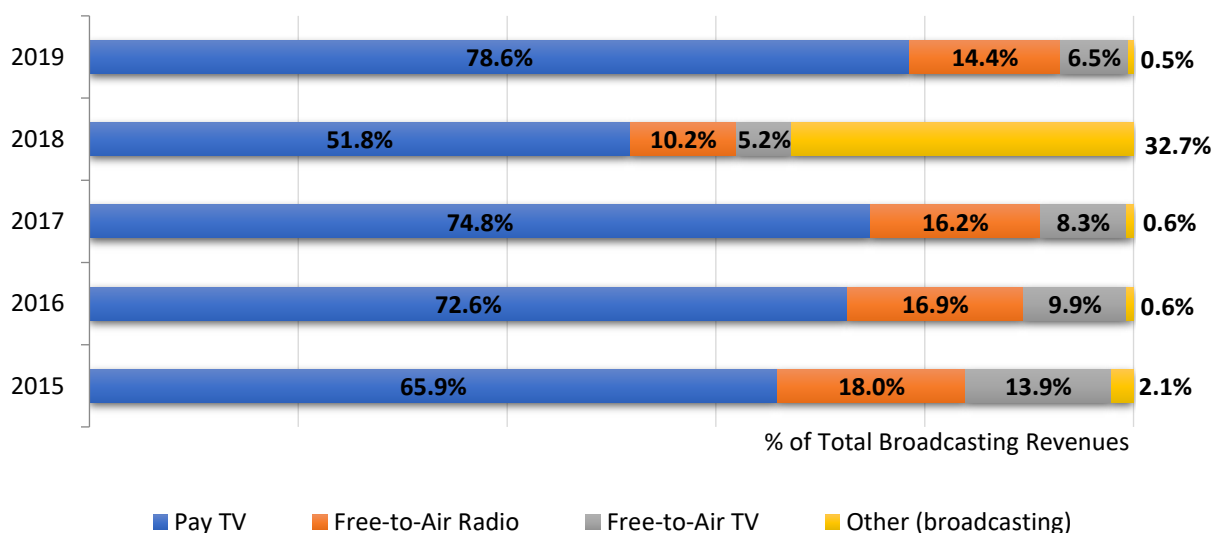
Figure 4. Percentage revenue contribution by telecommunications markets from 2015 to 2019

### 1.3.3 Market Revenue Trends in the Broadcasting Sector

For the 2019 period, the broadcasting sector contributed TT\$0.92 billion, or 18.3%, of total industry revenues. Of the three main markets in this sector, pay TV<sup>9</sup> continued its dominance as the major revenue earner, generating 78.6% of total broadcasting revenues. The remaining share of revenues was split between FTA radio and FTA TV

markets, which earned 14.4% and 6.5%, respectively. Other (broadcasting) revenues<sup>10</sup> contributed 0.5% to total broadcasting revenues.

Figure 5 highlights the revenue contributions by the individual markets towards total broadcasting sector revenues for the period 2015 to 2019.



**Figure 5. Percentage revenue contributions by broadcasting markets from 2015 to 2019**

<sup>9</sup> Also referred to as subscription TV

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

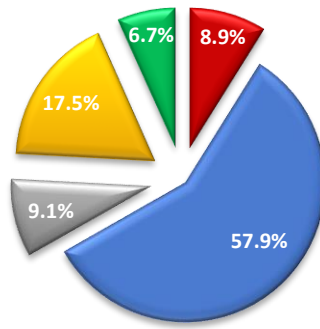
### 1.3.4 Telecommunications and Broadcasting Subscriptions

Table 2 shows that, at the end of 2019, the fixed voice, mobile voice, fixed Internet, mobile Internet and pay TV markets garnered approximately 3.74 million subscriptions. This represents an increase of 200,000 subscriptions, or 5.6%, compared to the same period in 2018.

Figure 6 portrays the percentage contributions by the various markets towards total industry subscriptions as at December 2019.

The mobile voice market had 2.16 million subscriptions, which accounted for 57.9% of all subscriptions within the telecommunications and broadcasting sectors. The mobile Internet market held the

second largest subscription share, registering 653,300 subscribers, or 17.5%. This was followed by the fixed Internet market with 339,400 subscriptions, equating to a share of 9.1%. The fixed voice market amassed 332,300 subscriptions, or 8.9%, while the pay TV market contributed 249,800 subscriptions, or 6.7%, of total subscriptions.



■ Fixed Voice Subscriptions   
 ■ Mobile Voice Subscriptions   
 ■ Fixed Internet Subscriptions  
■ Mobile Internet Subscriptions   
 ■ Pay TV Subscriptions

**Figure 6. Percentage of subscriptions by market as at December 2019**

**Table 2. Number of subscriptions by market from 2015 to 2019**

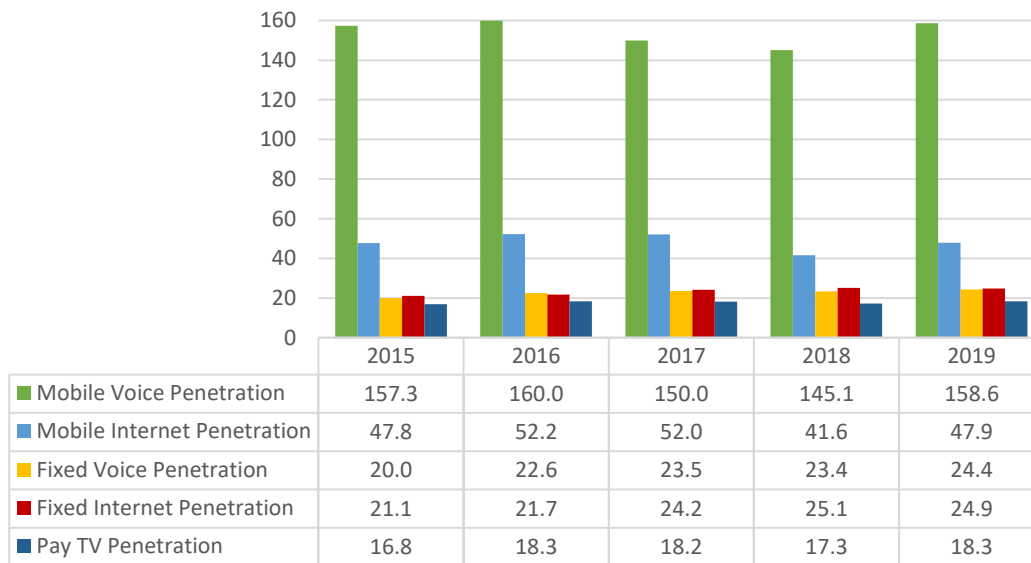
	2015	2016	2017	2018	2019
<b>Mobile Voice Subscriptions (millions)</b>	2.12	2.17	2.03	1.97	2.16
<i>Growth rate</i>	7.2%	2.0%	-6.2%	-2.9%	9.7%
<b>Fixed Voice Subscriptions ('000)</b>	269.8	305.7	318.7	317.7	332.3
<i>Growth rate</i>	-6.9%	13.3%	4.2%	-0.3%	4.6%
<b>Fixed Internet Subscriptions ('000)</b>	279.8	294.4	327.0	341.3	339.4
<i>Growth rate</i>	12.1%	5.2%	11.1%	4.4%	-0.5%
<b>Mobile Internet Subscriptions ('000)</b>	645.4	707.3	704.6	678.6	653.3
<i>Growth rate</i>	13.1%	9.6%	-0.4%	-3.7%	-3.7%
<b>Pay TV Subscriptions ('000)</b>	232.8	248.4	246.8	234.7	249.8
<i>Growth rate</i>	1.7%	6.7%	-0.6%	-4.9%	6.4%
<b>Total Subscriptions (millions)</b>	<b>3.55</b>	<b>3.72</b>	<b>3.63</b>	<b>3.54</b>	<b>3.74</b>
<i>Growth rate</i>	<b>7.0%</b>	<b>4.8%</b>	<b>-2.5%</b>	<b>-2.3%</b>	<b>5.6%</b>

### 1.3.5 Subscription Penetration Rates

Figure 7 shows the penetration rates<sup>11</sup> for all subscription-based markets from 2015 to 2019. The penetration rate for fixed Internet decreased from 2018, while those of mobile voice, mobile Internet, fixed voice and pay TV all increased.

The fixed Internet penetration rate declined from approximately 25 out of every 100

inhabitants having a fixed Internet subscription to 24 per 100 inhabitants. The mobile voice market's penetration rate increased, from 145.1 in 2018 to 158.6 in 2019. The fixed voice market recorded a rise in penetration rate, from 23.4 in 2018 to 24.4 at the end of 2019. Likewise, the pay TV penetration rate increased from 17.3 in 2018 to 18.3 in 2019.



**Figure 7. Penetration rates by market from 2015 to 2019**

<sup>11</sup> The penetration rates are based on the number of subscriptions per 100 inhabitants of the population.



## **Box 1: Overview of the Domestic Economy**

Data published by the Central Bank of Trinidad and Tobago (CBTT) indicate that the country's real GDP was estimated to have grown by 1.7% in 2019, based on first quarter estimates<sup>1</sup>. This expansion in economic activity follows two consecutive years of negative growth of -2.3% in 2017 and -0.2% in 2018<sup>2</sup>.

### **The Energy and Non-Energy Sectors**

The domestic energy sector was reported to have grown by approximately 3.9% in 2019. This was due to the steady production of natural gas and notable increases in the production of crude oil — 3.8% (year-on-year improvement) and methanol by 8.1%<sup>3</sup>. Furthermore, a generally growth-supportive environment of favourable financing conditions and an expansionary fiscal stance accounted for the moderate improvements in the finance, construction, and wholesale and retail trade sectors. This resulted in a slight improvement of 0.6% in the non-energy sector.

### **Inflation Rates**

In fiscal 2019, inflation remained low throughout the year, requiring no Central Bank action to control it<sup>4</sup>. The inflation rate was said to be generally slow due to "...a soft labour market and muted wage growth..." This means that headline inflation measured 1.0 % in 2019 and remained unchanged when compared to fiscal 2018. Core inflation, however, increased marginally from 1% in 2018 to 1.1% in 2019. Also noteworthy is the fact that food inflation decreased to 0.6% in 2019 from its previously recorded rate of 1.1% in 2018. This was due to declines in the prices of fresh fruit and vegetables locally.

### **Unemployment Rate**

In the absence of official unemployment statistics for 2019, data from the Ministry of Labour and Small Enterprise Development on retrenchments were utilised as a proxy. These data indicate that the rate of retrenchment had slowed considerably, to reach 16.9%, or 1,397 persons in 2019<sup>5</sup>, down from 1,681 in 2018. Most retrenchments in 2019 occurred in the manufacturing, construction and energy industries. Furthermore, a 27.8% decrease in hours worked and an unchanged wage growth rate

<sup>1</sup> In 2017, the Central Statistical Office (CSO) rebased the annual GDP estimates to the year 2012. Commencing in 2019, the CSO discontinued the forecasting of GDP for the current year, in accordance with international best practice for national statistical agencies. From this year (2019) also, the CSO will produce only historical GDP estimates for past annual and quarterly periods.

<sup>2</sup> <https://www.central-bank.org.tt/sites/default/files/latest-news/2019-annual-economic-survey.pdf>

<sup>3</sup> [https://www.central-bank.org.tt/sites/default/files/page-file-uploads/economic-bulletin-january-2020\\_5.pdf](https://www.central-bank.org.tt/sites/default/files/page-file-uploads/economic-bulletin-january-2020_5.pdf)

<sup>4</sup> <https://www.central-bank.org.tt/sites/default/files/latest-news/2019-annual-economic-survey.pdf>

<sup>5</sup> Ibid.

since 2017 pointed to conditions which characterised a soft labour market. Based on the evidence presented, the domestic unemployment rate is expected to be lower than the rates for the two preceding periods, which were 4.5% in 2017 and 4.0% in 2018<sup>6</sup>.

### **Central Government Revenue and Expenditure**

The central government's estimated total revenue for fiscal 2019 amounted to TT\$46.6 billion. The main contributors to revenue were taxes on income and profits, non-tax revenue and taxes on goods and services, along with increased energy revenues. This marked an increase of approximately TT\$3.4 billion when compared to the previous fiscal year, 2018. Aggregate expenditure was projected to have increased by TT\$1.6 billion from fiscal 2018, to record TT\$50.5 billion in fiscal 2019. This increase in government expenditure came about as a result of higher spending on wages and salaries, interest payments and transfers and subsidies. However, there was a notable improvement in the fiscal deficit in 2019, which was TT\$3.9 billion, or 2.4% of GDP, when compared with the fiscal deficit of the previous year, 2018, which was recorded at TT\$5.7 billion, or 3.6% of GDP.

### **International Credit Rating**

The international credit rating for Trinidad and Tobago is currently undertaken by three credit rating agencies, namely: Moody's Investor Services (Moody's), Standard and Poor's Global Rating (S&P) and the Caribbean Information and Credit Rating Services (CariCRIS).

#### ***Moody's Investor Services***

Trinidad and Tobago received a credit profile rating of Ba1<sup>7</sup> which is stable but is one notch below investment grade. According to Moody's, this rating is supported by the accumulation of savings in the Heritage and Stabilization Fund (HSF), along with low external risks anchored by a current account surplus and robust foreign exchange reserves. Although Trinidad and Tobago's high resiliency to shocks due to its comparatively high-income levels was noted, the international credit rating agency also cited the following as contributory factors to the country's rating:

- i. elevated debt ratios in comparison to peers,
- ii. its reliance on volatile energy revenue and one-off asset sales,
- iii. low institutional capacity
- iv. weak fiscal policy execution and,
- v. significantly low growth rates relative to peers.

Hence, according to the Moody's report, an improvement in Trinidad and Tobago's credit profile is hinged on an improvement in government debt ratios and debt affordability, supported by an increase in non-energy revenue and improved tax collection, as opposed to asset sales or draw down of fiscal buffers.

<sup>6</sup> <https://www.finance.gov.tt/wp-content/uploads/2019/10/REVIEW-OF-THE-ECONOMY-2019-1.pdf>

<sup>7</sup> Ibid- Ba1 rating is "...one notch below investment grade."

### ***Standard and Poor's Global Rating (S&P)***

Standard and Poor's stable rating of (BBB/A-2) was specified for Trinidad and Tobago as a result of the large and considerably liquid financial assets possessed by its government. S&P posited that these assets will continue to provide fiscal and external safeguards that would mitigate economic volatility by supporting the sovereign's strong external asset position and limiting the impact of fiscal deficits on the government's net debt burden over an approximate two-year period.

The expectations of a subdued gas sector, the slow recovery in oil production and a gradual acceleration in economic growth are all factored into S&P's stable credit rating. Additionally, S&P opined that expected growth in government revenues will in turn, shrink its deficits. Furthermore, S&P also advised that improved GDP growth, combined with a reduced debt burden and a reduction in balance of payments outflows would contribute to lower foreign exchange reserves and lead to a ratings upgrade for Trinidad and Tobago over the next two years<sup>8</sup>.

### ***Caribbean Information and Credit Rating Services Limited (CariCRIS)***

CariCRIS maintained a stable outlook for Trinidad and Tobago with respect to both its regional and national investment grade of CariAA+ and ttAAA respectively.

The agency stated that its rating was mainly due to the following factors:

- i. the country's well-regulated financial system with relatively stable monetary conditions and exchange rate performance and policies which are expected to be maintained or improved;
- ii. the sovereign's comfortable debt service coverage when compared to its Caribbean peers and
- iii. Trinidad and Tobago being one of the largest and most diversified economies in the Caribbean, which provides a level of resilience in difficult times.

However, CariCRIS noted that there were some challenges faced i.e. to effect fiscal consolidation, falling currency reserves despite improvements in export earnings, rising unemployment and heightened crime levels, and continued lack of reliable macro-economic data that could effectively hamper efforts to strengthen the economic turnaround.

The agency also opined that Trinidad and Tobago's rating and assigned outlook can be potentially improved as a result of the following:

- i. a decrease in the total public sector debt to below 65% of GDP;
- ii. an improvement in debt servicing capability to above seven times fiscal revenue;
- iii. a fiscal surplus in excess of 3% of GDP sustained over two consecutive years; and
- iv. a rise in import cover to twelve months or more.

Although each agency employed differing rating methodologies, all three agencies have assigned a stable outlook to the country.

<sup>8</sup> S&P credit ratings and domestic outlook

<https://www.finance.gov.tt/wp-content/uploads/2019/10/REVIEW-OF-THE-ECONOMY-2019-1.pdf>

Table 3 provides an overview of some of the key performance indicators over a five-year period 2015 to 2019, pertaining to the Trinidad and Tobago's economic activity.

**Table 3. Economic performance indicators for T&T from 2015 to 2019**

Economic Indicator	2015	2016	2017	2018	2019
<sup>9</sup> Real GDP Growth (current prices, % Δ)	1.8	-6.3	-2.3	-0.2	1.7
<sup>10</sup> Energy Sector (% Δ)	-0.8	-9.8	0.7	-3.2	3.9
<sup>11</sup> Non-energy Sector (% Δ)	2.1	-3.1	-3.4	0.4	0.6
<sup>12</sup> Inflation Rate (%)	4.7	3.1	1.9	1.0	1.0
<sup>13</sup> Unemployment Rate (%)	3.4	4.0	4.8	4.1	n.a.
<sup>14</sup> Current Account Balance (% of GDP)	6.9	-4.4	5.4	5.8	6.3
<sup>15</sup> Overall BOP (MM- US\$)	-1,564.2	-467.2	-1,096.0	-381.9	-224.5
<sup>16</sup> Moody Ratings	Baa2	Baa3(-)	Ba1	Ba1	Ba1
<sup>17</sup> Standard and Poor's (S&P)	A/A-1(-)	A-/A-2(-)	BBB+/ A-2	BBB+/ A-2(-)	BBB/ A-2
<sup>18</sup> CariCRIS	CariAAA/ ttAAA	CariAA+/ ttAAA	CariAA+/ ttAAA	CariAA+/ ttAAA	CariAA+/ ttAAA
<sup>19</sup> Exchange Rate (USD)	6.33	6.67	6.78	6.78	6.78
<sup>20</sup> Population (000's)	1,349	1,353	1,356	1,359	1,363
<sup>21</sup> Net Official Reserves (MM- US\$)	9,933.0	9,465.8	8,369.8	7,575.0	6,898.9
<sup>22</sup> Import Cover (Month's)	11.2	10.5	9.7	8.0	7.7
<sup>23</sup> GDP (current Prices - MM-TT\$)	159,836.1	148,617.2	152,368.1	161,200.2	165,937.4

<sup>9</sup> Source: CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

<sup>10</sup> Source: CBTT, Annual Economic Survey 2019, sectoral GDP percentage change (constant 2012 prices)

<sup>11</sup> Source: CBTT, Annual Economic Survey 2019, Changes in the Index of Retail Prices (RPI0 January 2015 = 100)

<sup>12</sup> Source: CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

<sup>13</sup> Source: CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1, 2019 refers to the period Jan- Sept

<sup>14</sup> Source: TT MOF Review of the Economy 2019

<sup>15</sup> Source: TT MOF Review of the Economy 2019, refers to the period Jan- March 2019

<sup>16</sup> Source: Moody's. Accessed 5<sup>th</sup>, June 2020. [www.moodys.com/research](http://www.moodys.com/research)

<sup>17</sup> Source: TT MOF Review of the Economy 2019

<sup>18</sup> Source: TT MOF Review of the Economy 2019

<sup>19</sup> Source: Central Bank of Trinidad and Tobago, US Buying

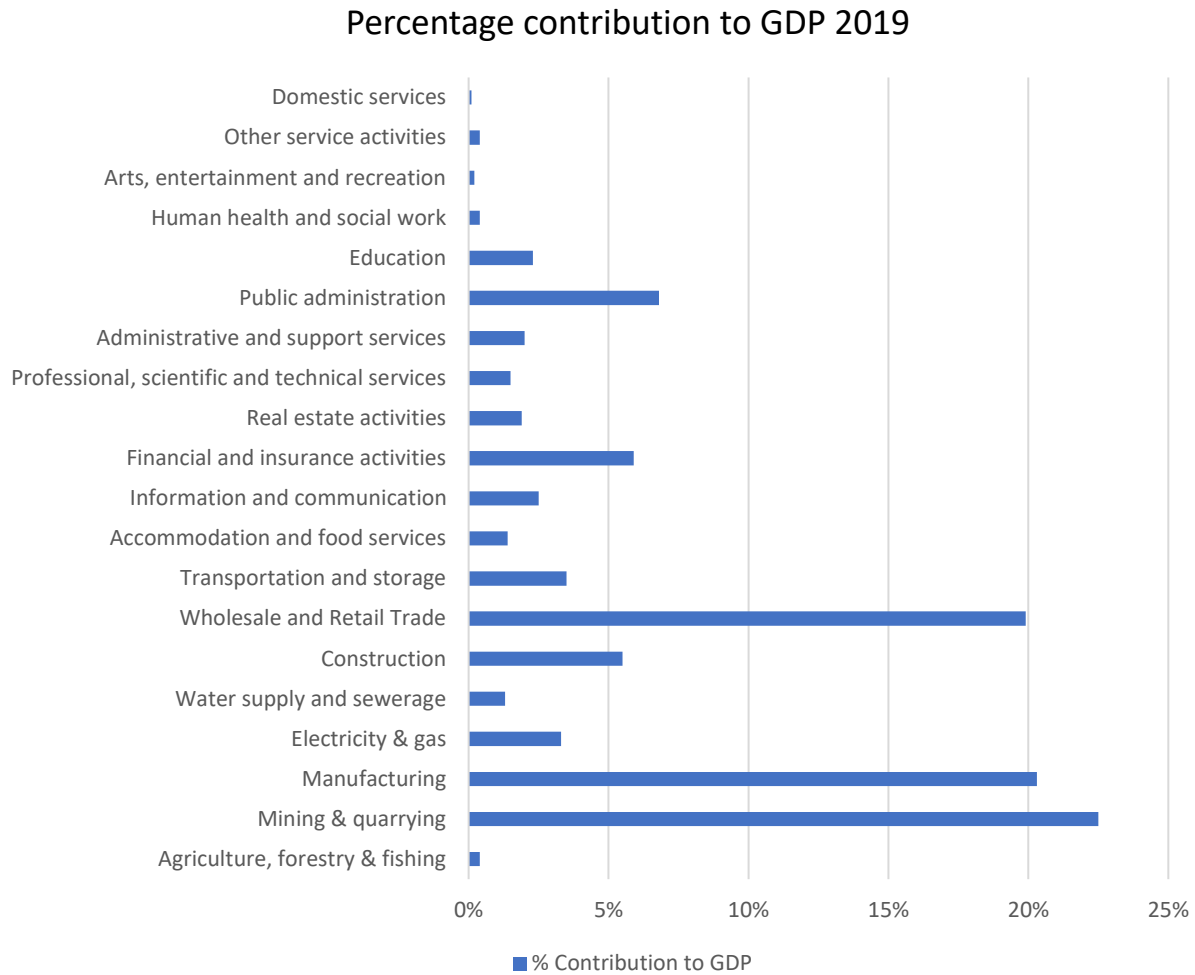
<sup>20</sup> Source: TT MOF Review of the Economy 2019

<sup>21</sup> Source: CBTT, Annual Economic Survey 2019

<sup>22</sup> Source: CBTT Economic Bulletin 2019: January 2019, Volume XXI, No 1

<sup>23</sup> Source: TT MOF Review of the Economy 2019, Revised GDP, Current Prices

According to the Review of the Economy 2019, the main contributors to positive economic activity were the following industries: mining and quarrying, manufacturing, trade and repairs, public administration, financial and insurance activities, electricity and gas, and transport and storage. Figure 8 depicts the percentage contribution by industry to GDP, at constant prices, for 2019.



**Figure 8. Percentage contribution of domestic industries to GDP, at constant prices, 2019.**

Source: *Review of the Economy 2019*, Ministry of Finance

## **Outlook**

The emergence and outbreak of the coronavirus disease (COVID-19) is expected to significantly dampen economic activity globally, which will pose a severe threat to growth in 2020. According to the CBTT, a weakened global economy will stymie the resurgence of the domestic economy. Additionally, plummeting commodity prices due to the Saudi Arabia versus Russia price war is expected to adversely impact the profitability of local energy producers, who may have to reduce production in light of COVID-19. Activity in the domestic non-energy sector is also expected to be impacted due to containment measures implemented and travel restrictions. It is anticipated that this, in turn, will further hinder the productivity and profitability of local firms and, by extension, their ability to continue to provide employment opportunities.

The Trinidad and Tobago government has estimated that COVID-19, coupled with the price-war induced shock to energy prices, will worsen the budget deficit from the initially estimated TT\$5 billion to TT\$8.5 billion for fiscal 2020, which is an increase of 70%. Government revenue is also expected to be lower than forecasted because of plunging oil and natural gas prices, as well as lower tax revenues from domestic firms, as their profitability declines. As a result of shortfalls in revenues generated, the state's capital expenditure is expected to decrease significantly.

Imported inflation is projected to increase due to curtailed supplies of some products globally, while domestic inflation is estimated to remain low. A deterioration of the country's external accounts is also predicted, as a result of the exogenous shocks to the domestic economy's mainstay and the anticipated disruptions to travel and shipping. Moreover, gross official reserves are expected to decline sharply but may be bolstered by the government's intention to draw down on resources from the HSF to aid in the country's response to the impact of the COVID-19 pandemic.

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<https://www.finance.gov.tt/wp-content/uploads/2019/10/REVIEW-OF-THE-ECONOMY-2019-1.pdf>



**FIXED VOICE** MARKET  
2019 ANNUAL MARKET REPORT





## 2 Fixed Voice Market Review

As at December 2019, there were 18 operators authorised by the Authority to provide fixed domestic telecommunications services to the public, over wired and/or wireless facilities. In 2019, only the following six operators 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. Prism Services (Trinidad) Limited
6. Telecommunications Services of Trinidad and Tobago Limited (TSTT)

TSTT offered fixed voice services through their public switched telephone network and are migrating its customers to either its fixed wireless network or Amplia Communications Limited.

CCTL offered fixed voice services 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<sup>12</sup> and Lisa Communications Limited offer fixed voice services via their fixed wireless networks. Prism Services (Trinidad) Limited offered hosted PBX<sup>13</sup> services.

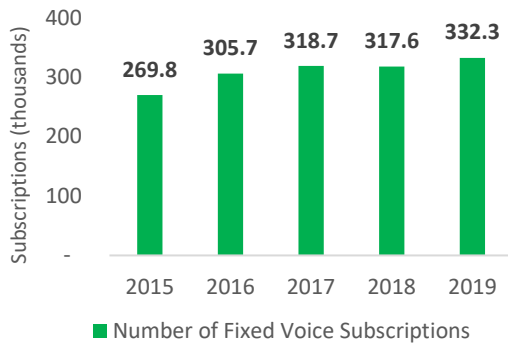
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<sup>12</sup> Open Telecom Ltd. had not supplied data at the time of publication.

<sup>13</sup> A private branch exchange (PBX) is a telephone exchange or switching system that serves a private organisation.

## 2.1 Annual Fixed Voice Telephony Subscriptions

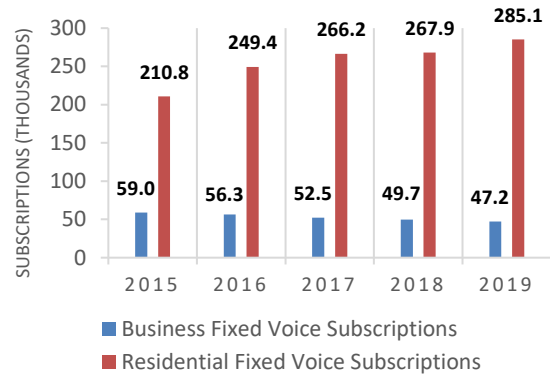
There were three consecutive years of growth in fixed voice subscriptions, from 2015 to 2017, before a small dip in 2018, followed by an increase in 2019. Subscriptions to fixed voice services in 2019 totalled 332,300, which represents a 4.6% increase from 2018. Figure 9 illustrates the trend in the fixed voice market over the last five years.



**Figure 9. Fixed voice subscriptions from 2015 to 2019**

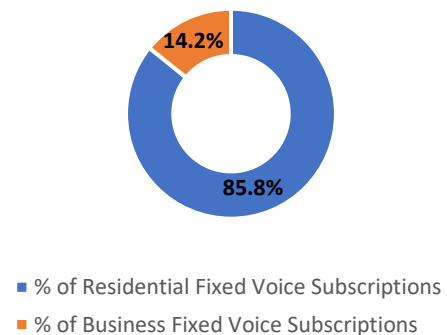
Figure 10 shows the classification of the fixed voice market into residential and business subscriptions from 2015 to 2019 (inclusive of companies subscribing to systems services e.g., PBX trunks). In 2019, there were 285,100 residential subscriptions and 47,200 business subscriptions. Compared to 2018, there was a rise in residential subscriptions by 17,200, representing an increase of 6.4%. The declining trend of business fixed voice subscriptions continued, with a decrease by

4.8%, or 2,500 fewer subscriptions, compared to the previous year.



**Figure 10. Residential and business fixed voice subscriptions from 2015 to 2019**

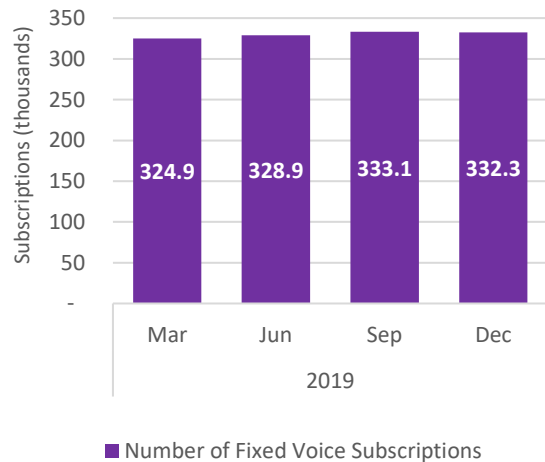
As illustrated in Figure 11, residential fixed voice subscriptions accounted for 85.8% of the total market, whereas the remaining 14.2% were business fixed voice subscriptions.



**Figure 11. Proportion of residential and business fixed voice subscriptions for 2019**

## 2.2 Quarterly Fixed Voice Subscriptions

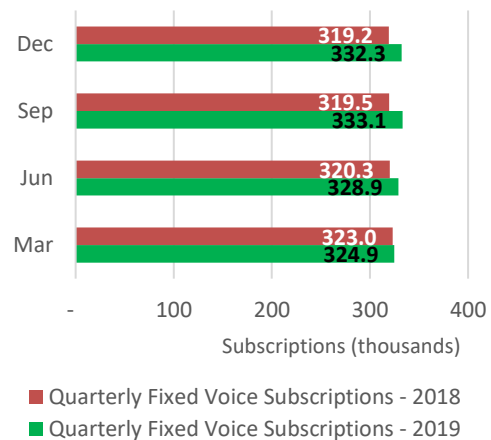
As shown in Figure 12, the number of fixed voice subscriptions grew across each of the first three quarters of 2019, before declining in the fourth quarter. The first quarter ended with 324,900 subscriptions, while quarter two recorded 328,900. The third quarter amassed 333,100 subscriptions — the highest subscription figures of the year, marking an increase of 1.3% from the previous quarter. Quarter four had a subscription tally of 332,300, representing a decrease of 800 subscriptions, or 0.3%, from the third quarter.



**Figure 12. Quarterly fixed voice subscriptions**

A comparison of quarterly fixed voice subscriptions for the years 2018 and 2019 is given in Figure 13. The fixed voice market performed more favourably across all quarters of 2019 compared to the

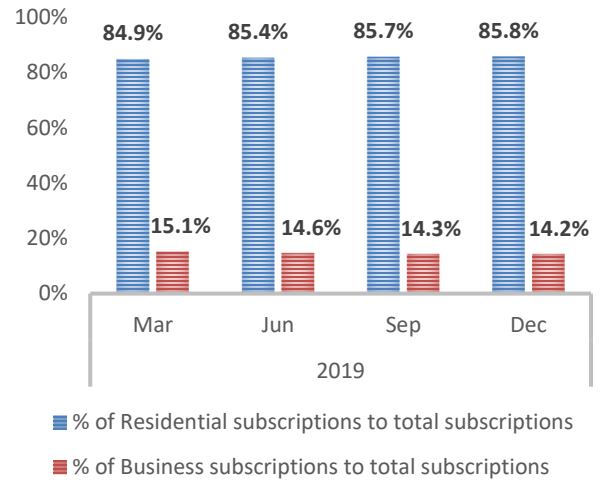
corresponding periods in 2018. The first quarter of 2019 had 1,900 more subscriptions than the first quarter of 2018, while the second quarter recorded 8,600 additional subscriptions when compared to the corresponding period in 2018. The third and fourth quarters of 2019 recorded increases in subscriptions of 13,600 and 13,100, respectively, in comparison with the same periods in 2018.



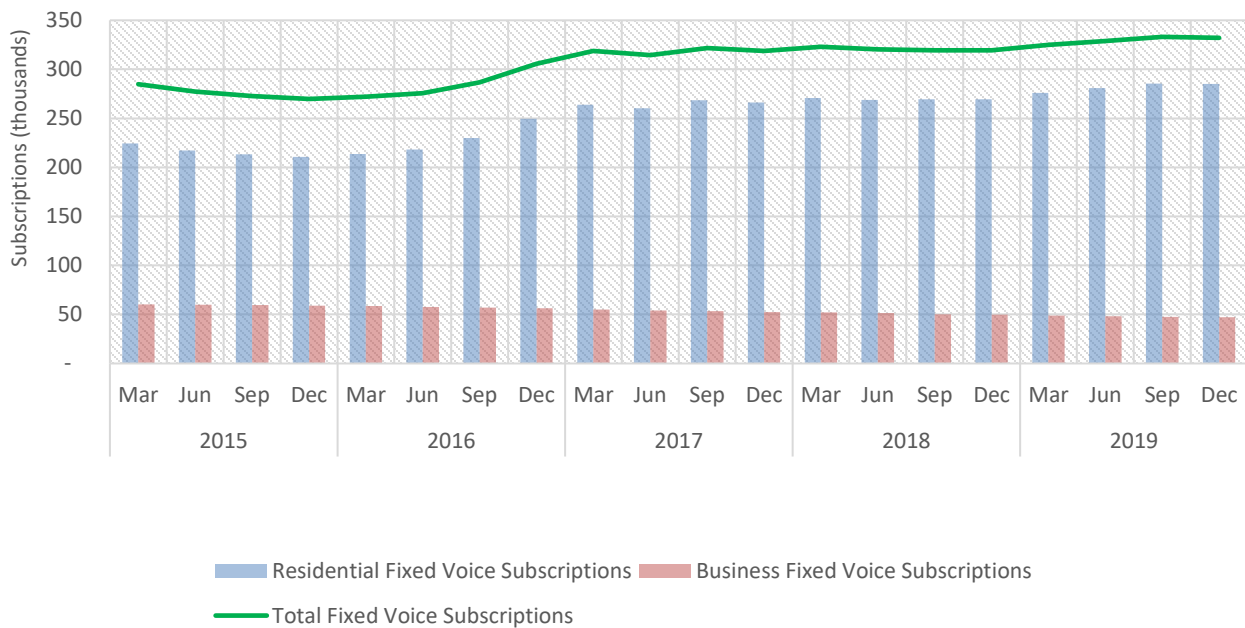
**Figure 13. Quarterly fixed voice subscriptions for 2018 and 2019**

The percentage breakdown of residential and business fixed voice subscriptions at the end of each quarter of 2019 is given in Figure 14. Residential fixed voice subscriptions remained relatively stable across all quarters of 2019, while business subscriptions decreased across each of the four quarters.

As Figure 15 indicates, the prevailing trend over the last five years has been the consistent decline in business subscriptions at the end of each quarter. With respect to quarterly residential subscriptions, there was a steady decrease across 2015 before a gradual rise during 2016, followed by fluctuations across 2017. In 2018, the number of fixed voice subscriptions remained stable, while the quarterly periods in 2019 had gradual increases in subscription figures.



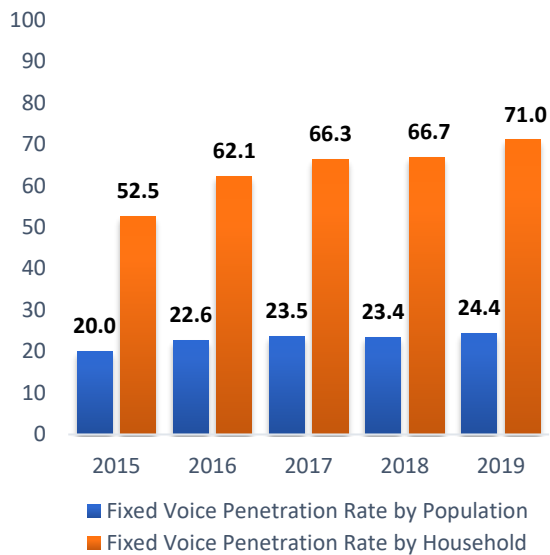
**Figure 14. Percentage of quarterly residential and business fixed voice subscriptions in 2019**



**Figure 15. Comparison of quarterly fixed voice subscriptions from 2015 to 2019**

## 2.3 Fixed Voice Penetration

Fixed voice penetration<sup>14</sup>, the standard metric internationally recognised by the International Telecommunication Union (ITU) for measuring the adoption of fixed voice services, is calculated using the number of fixed voice subscriptions per 100 inhabitants of the population.



**Figure 16. Fixed voice penetration rates from 2015 to 2019**

Figure 16 illustrates the fixed voice penetration rates from 2015 to 2019 for both population and households. The number of fixed voice subscriptions in 2019 stood at 332,300 and, given a population of

approximately 1.4 million persons, the fixed voice penetration rate was calculated as 24.4 as at December 2019. This means that there were approximately 24 fixed voice subscriptions to every 100 persons within Trinidad and Tobago.

Fixed voice household penetration<sup>15</sup> was also calculated to assess the number of households with fixed voice telephone services. For 2019, the fixed voice household penetration rate was 71. This figure indicates that, out of every 100 households, approximately 71 subscribed to fixed voice services.

In 2019, there were increases in both fixed voice penetration rate by population, as well as the household penetration rate when compared to 2018.

<sup>14</sup> Fixed voice penetration = (number of residential fixed voice subscriptions / total population) x 100. The total population figure used is based on the CSO's 2019 mid-year population estimate.

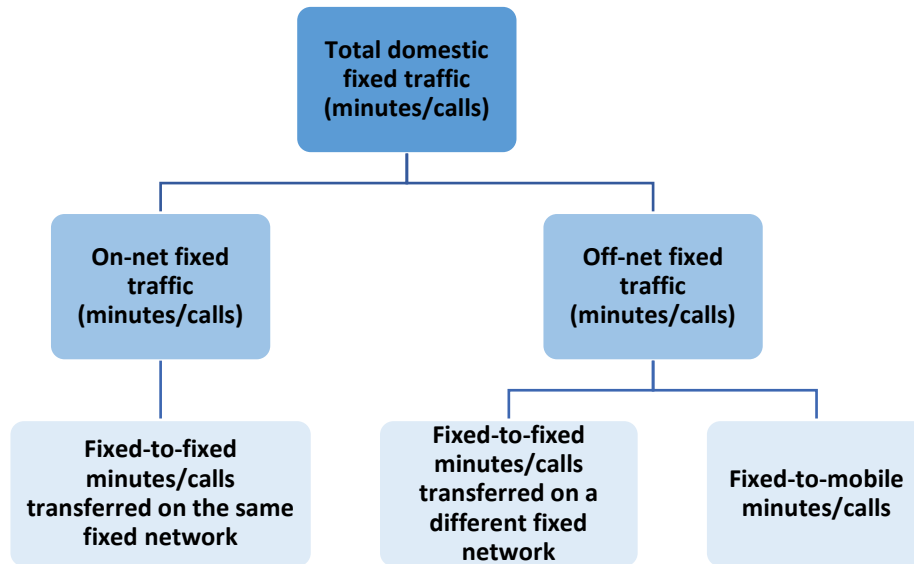
<sup>15</sup> Fixed voice household penetration was calculated using the number of residential fixed voice

subscriptions divided by the total number of households, multiplied by 100. The number of households was obtained from the CSO's *Trinidad and Tobago 2011 Population and Housing Census Demographic Report*.

## 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 classified into several types, as shown in Figure 17.



**Figure 17. Classification of domestic fixed voice traffic**

### 2.4.1 Annual Domestic Fixed Voice Traffic in Minutes

In 2019, there were approximately 703.3 million minutes generated in fixed voice traffic — a decrease of 22.8% from 2018. Of the total 2019 figure, 353 million minutes were on-net<sup>16</sup> while 350.3 million were off-net<sup>17</sup>. Fixed-to-fixed minutes transferred on a

different network (off-net) amounted to 42.1 million, while fixed-to-mobile recorded 308.2 million. The breakdown of fixed voice traffic minutes for 2019 is provided in Figure 18.

<sup>16</sup> On-net fixed traffic refers to traffic originating on a service provider’s fixed network and terminating on the same fixed network.

<sup>17</sup> 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.

In 2019, on-net traffic represented 50.2% of the fixed voice market, decreasing from the 55.1% recorded in 2018. Total off-net traffic contributed 49.8%, which comprised

off-net fixed-to-mobile minutes (43.8%) and off-net fixed-to-fixed minutes (6.0%). This information is reflected in Figure 19.

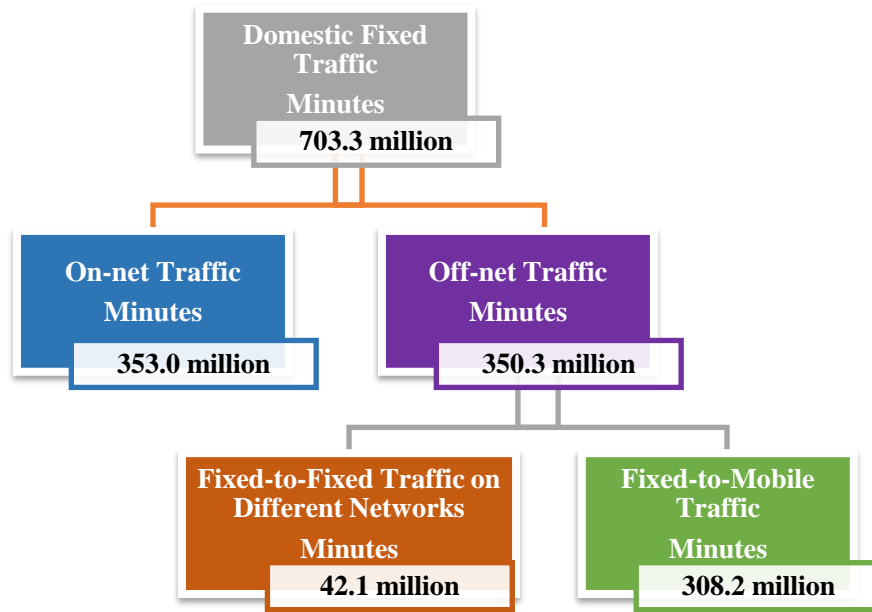


Figure 18. Breakdown of domestic fixed voice traffic minutes in 2019

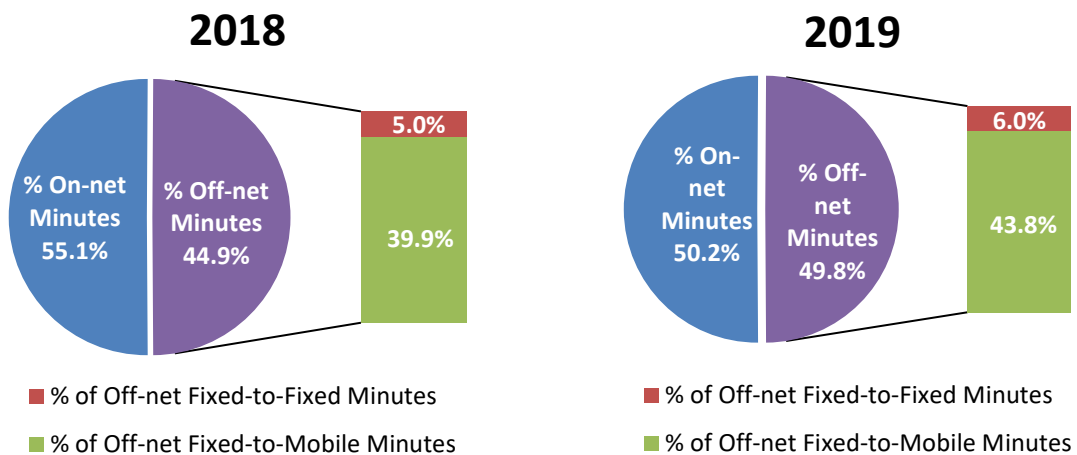
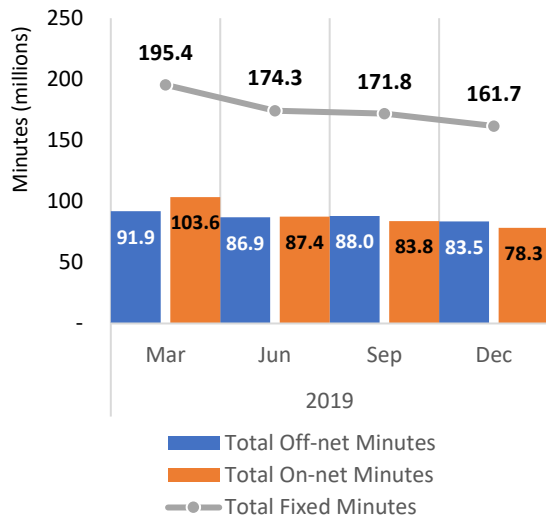


Figure 19. Total domestic fixed voice traffic minutes by type for 2018 and 2019

### 2.4.2 Quarterly Domestic Fixed Voice Traffic in Minutes

The largest number of on-net fixed voice minutes in 2019 was recorded in the first quarter, with 103.6 million, before gradually declining across the remaining quarters to end 2019 at 78.3 million. Off-net fixed voice minutes, however, fluctuated across all four quarters of 2019, as shown in Figure 20.



**Figure 20. Quarterly fixed voice traffic minutes for 2019**

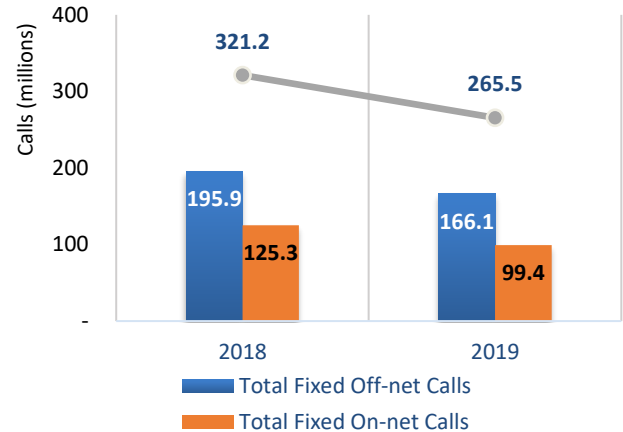
### 2.4.3 Annual Domestic Fixed Voice Call Volumes

A comparison of domestic call volumes by traffic type for 2018 and 2019 is illustrated in Figure 21. There was a reduction in the number of domestic calls across all fixed networks, similar to the decline in the number

of fixed voice minutes reported in section 2.4.1.

Domestic fixed voice calls dropped to 265.5 million in 2019 — a reduction of 17.3% from the 321.2 million calls made in 2018. Total on-net calls accounted for 99.4 million (37.4%) of total fixed voice calls in 2019, while total off-net calls accounted for 166.1 million (62.6%) of total fixed voice calls.

Off-net calls decreased by 15.2% compared to the previous year, while the number of on-net calls decreased by 20.7%.



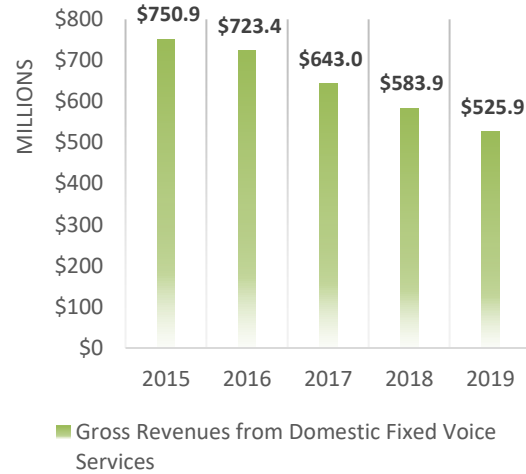
**Figure 21. Comparison of domestic call volumes by traffic type for 2018 and 2019**



## 2.5 Fixed Telephony Revenues

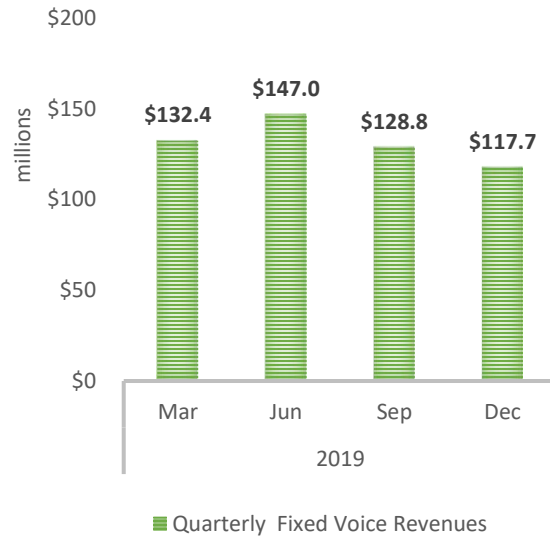
### 2.5.1 Annual Fixed Voice Revenues

The fixed voice market of 2019 amassed a total of TT\$525.9 million in gross revenues — a decrease of TT\$58 million, or 9.9%, from the TT\$583.9 million recorded in 2018. As Figure 22 illustrates, there has been consistent decline in the gross revenues of the fixed voice market over the last five-year period.



**Figure 22. Fixed voice revenues from 2015 to 2019**

The quarterly fixed voice revenues for 2019 are highlighted in Figure 23. Revenues generated from fixed voice services amounted to TT\$132.4 million in the first quarter and rose to TT\$147 million in the second quarter. Subsequently, revenues decreased in the third quarter by TT\$18.2 million, or 12.4%, to record TT\$128.8 million. Revenues declined further to TT\$117.7 million in the final quarter of 2019 — a reduction of TT\$11.1 million, or 8.6%, from the previous quarter.

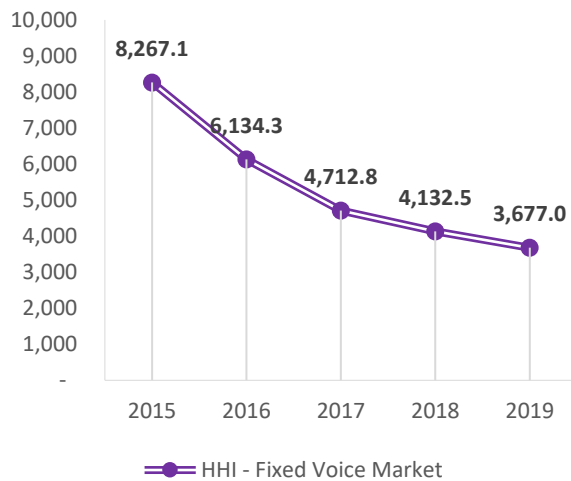


**Figure 23. Quarterly fixed voice revenues for 2019**

## 2.6 Fixed Market Concentration

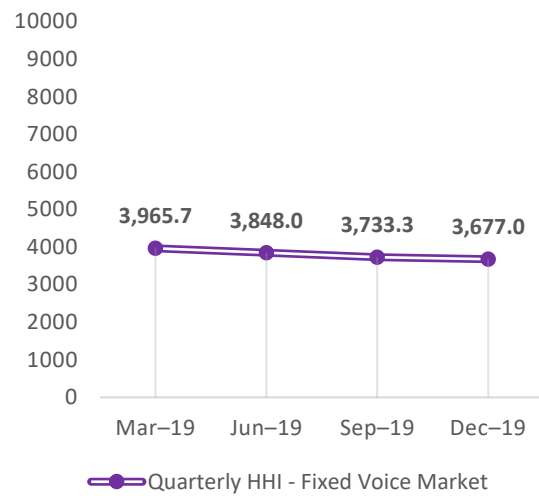
The Herfindahl-Hirschman Index (HHI) is a tool that measures the concentration of firms within a market. It is calculated as the sum of the squares of the market share of all firms within the market, and ranges from approximately 0 to 10,000.

Over the last five years, the HHI values in the fixed voice market have been diminishing consistently, with 2019 recording a value of 3,677<sup>18</sup> points. During this period, several new players emerged, which contributed to the trend depicted in Figure 24.



**Figure 24. HHI for fixed voice market from 2015 to 2019**

The level of concentration decreased continuously across the four quarters of 2019, beginning with an HHI value of 3,965.7 and ending the year on 3,677 points. This trend is illustrated in Figure 25.



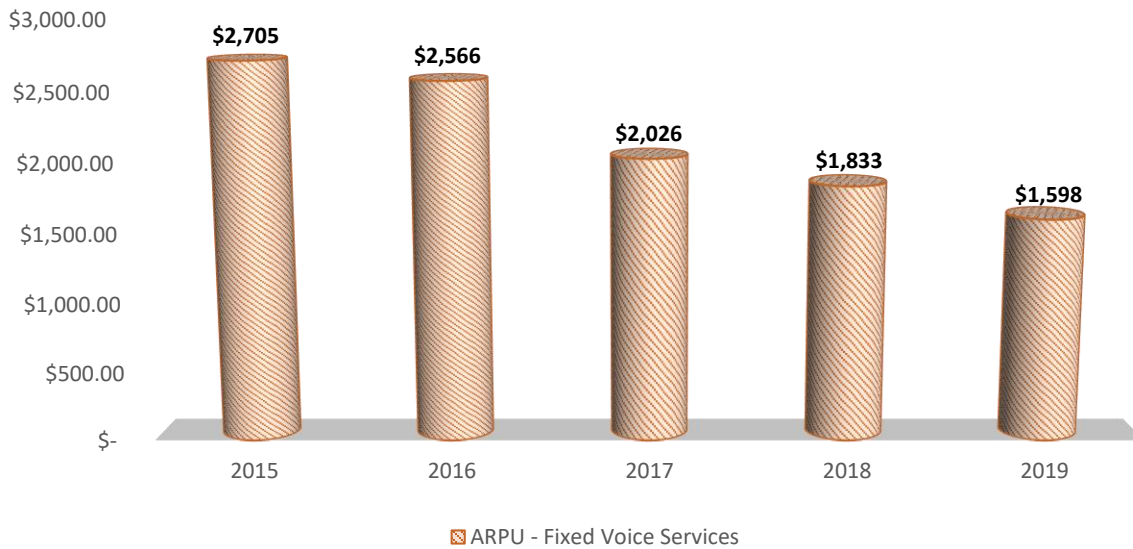
**Figure 25. Quarterly HHI for 2019**

<sup>18</sup> Based on subscription market share

## 2.7 Fixed Voice Average Revenue Per User (ARPU)

ARPU measures the average revenue generated by one subscriber and is calculated as total revenues divided by the total number of subscriptions. For 2019, the ARPU of the fixed voice market was calculated as TT\$1,598. This figure was TT\$235 less than the ARPU of 2018, representing a decrease of

12.8%. Over the past five years, the ARPU peaked in 2015 with a figure of TT\$2,705, after which there were annual declines each year, as displayed in Figure 26.

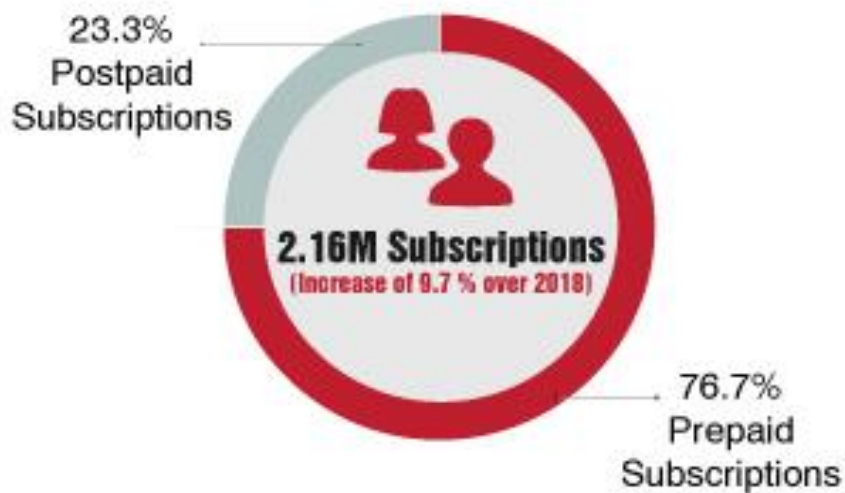


**Figure 26. ARPU of the fixed voice market from 2015 to 2019**



# MOBILE VOICE MARKET

2019 ANNUAL MARKET REPORT



### 3 Mobile Voice Market Review

For the period January to December 2019, mobile voice and Short Messaging Service (SMS) telecommunications services were offered by the following two authorised mobile service providers:

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

These operators 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 continue to be phased out as the primary networks for voice services, and their use is focussed on machine-to-machine systems and voice services, in conjunction with GSM data enhancements, General Packet Radio Service (GPRS) and Enhanced Data rates for GSM Evolution (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+.

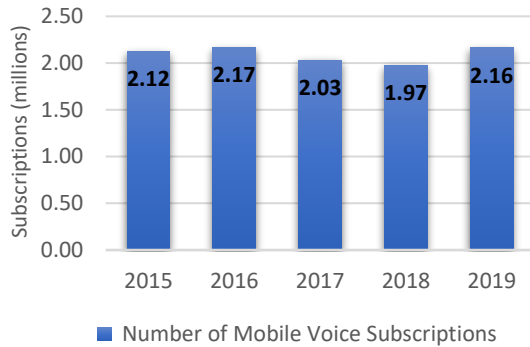
The following is an overview of the mobile voice market in Trinidad and Tobago, which was compiled using data submitted by the two mobile operators.

### 3.1 Mobile Voice Subscriptions

#### 3.1.1 Annual Mobile Voice Subscriptions

The number of mobile voice subscriptions for 2019 totalled 2.16 million, representing an increase of 9.6% from the previous year.

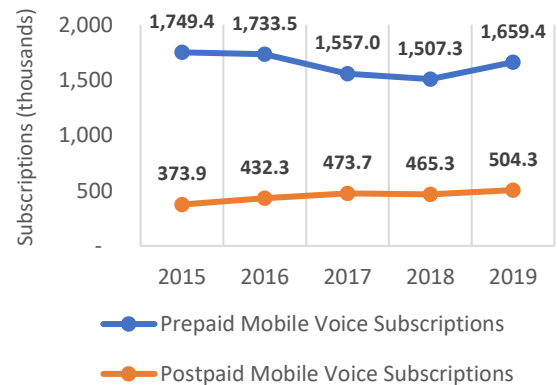
Figure 27 presents the annual trend in mobile subscriptions for the last five years.



**Figure 27. Number of mobile voice subscriptions from 2015 to 2019**

Mobile voice subscriptions are classified into two categories: prepaid and postpaid. Prepaid mobile voice customers purchase credit prior to service use, while postpaid customers enter into a contractual billing agreement with their respective service providers. Of the 2.16 million mobile subscriptions recorded in 2019, 1.66 million were prepaid and 504,300 were postpaid.

Prepaid subscriptions increased in 2019 after four years of steady decline. There were 152,100 more subscriptions in 2019 — a 10.1% increase from 2018. There was also an increase in postpaid subscriptions by 39,000, or 8.4%, when compared to the previous year. The number of prepaid and postpaid mobile voice subscriptions for the period 2015 to 2019 is illustrated in Figure 28.

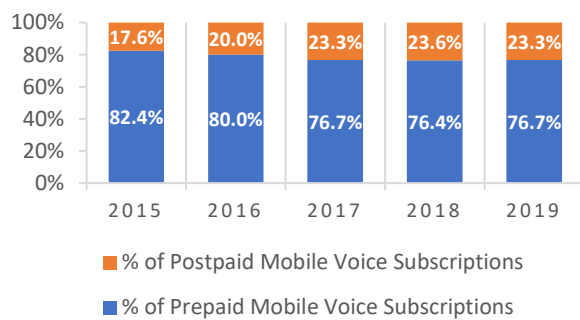


**Figure 28. Mobile prepaid and postpaid subscriptions from 2015 to 2019**

In 2019, prepaid subscriptions accounted for 76.7% of total mobile voice subscriptions, increasing from 76.4% in 2018. The percentage of postpaid subscriptions

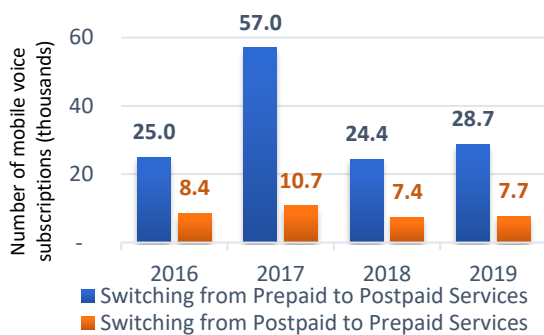
decreased from 23.6% in 2018 to 23.3% in 2019.

Figure 29 depicts the comparison of the percentage of prepaid and postpaid subscriptions from 2015 to 2019. Prior to 2019, there had been a steady increase in the percentage of postpaid subscriptions between 2015 and 2018.



**Figure 29. Percentage of prepaid and postpaid subscriptions from 2015 to 2019**

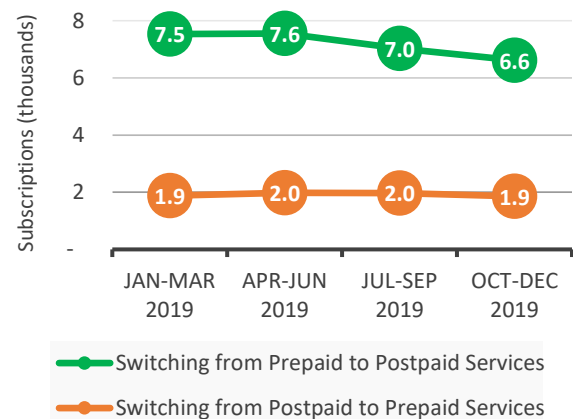
A comparison of the switching patterns between prepaid and postpaid service options from 2016 to 2019 is presented in Figure 30.



**Figure 30. Number of mobile prepaid and postpaid subscriptions switched between 2016 and 2019**

Over the last four years, a greater number of mobile voice subscription plans were switched from prepaid to postpaid than from postpaid to prepaid. In 2019, the number of subscriptions that were switched from prepaid to postpaid rose by 17.6%, or 4,300, to record 28,700 subscriptions. The number of subscriptions that switched from postpaid to prepaid plans went from 7,400 in 2018 to 7,700 in 2019, marking an increase of 4.1%.

The 2019 quarterly trends indicate a rise in the number of subscriptions switched from prepaid to postpaid between the first and second quarters, followed by a consistent decline to the last quarter. The second quarter recorded the highest yearly figure of 7,600, while the fourth quarter had the lowest figure of 6,600 changed subscriptions.



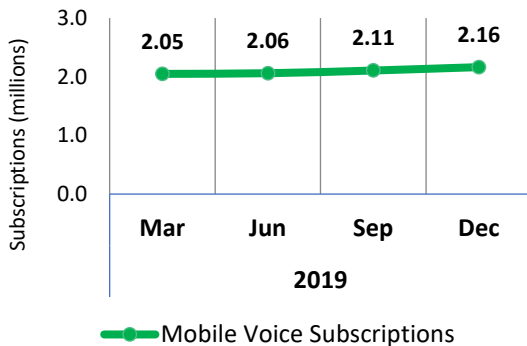
**Figure 31. Number of mobile prepaid and postpaid subscriptions switched in 2019**



In 2019, subscriptions converted from postpaid to prepaid stood at 1,900 for quarter one and rose to a yearly high of 2000 in quarter two. This figure was maintained in quarter three before decreasing to 1,900 in the last quarter.

### 3.1.2 Quarterly Mobile Voice Subscriptions

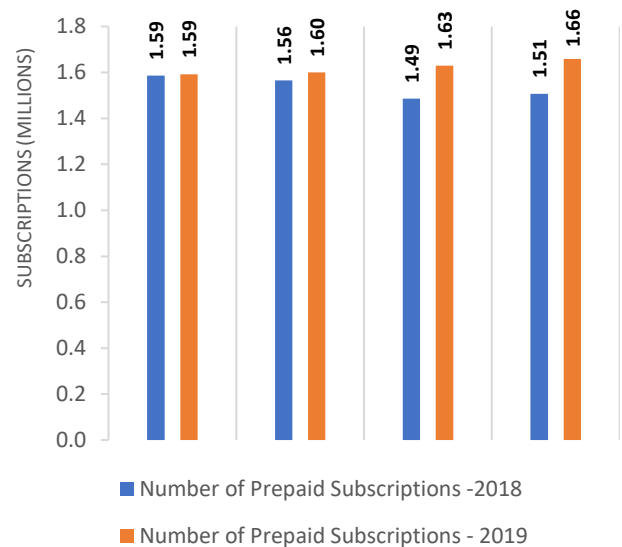
Figure 32 shows the quarterly trend in mobile voice subscriptions for 2019. The number of mobile subscriptions recorded at the end of the first quarter was 2.05 million. There was a constant increase in subscriptions across both the second and third quarters, culminating with 2.16 million subscriptions in the fourth quarter.



**Figure 32. Quarterly mobile voice subscriptions in 2019**

The two-year quarterly trends for subscriptions to the two mobile service

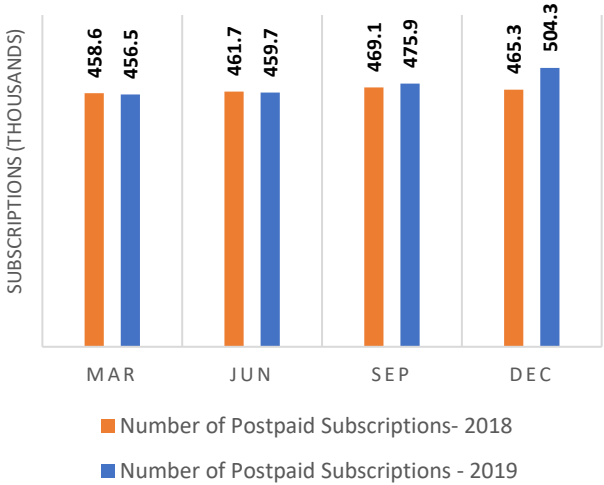
options — prepaid and postpaid — are illustrated in Figures 33 and 34, respectively. In 2019, prepaid subscriptions trended upwards, from 1.59 million in the first quarter to 1.66 million in the final quarter, representing an increase of 4.4%. In comparison to 2018, prepaid subscriptions were greater in each quarter of 2019.



**Figure 33. Quarterly mobile prepaid subscriptions for 2018 and 2019**

Similar to the trend for prepaid subscriptions, 2019 postpaid subscriptions also increased consistently across all four quarters. The first quarter for 2019 had 456,500 subscriptions, while the fourth quarter recorded a figure of 504,300. The first two quarters of 2019 had fewer postpaid subscriptions compared to the same quarters of 2018. However, the last two quarters of 2019 recorded higher figures when compared to the corresponding 2018

quarters. The third quarter of 2019 showed an increase of 6,800 compared to the same quarter of 2018, while the fourth quarter of 2019 recorded 39,000 more subscriptions than the last quarter of 2018, i.e., an increase of 8.4%.



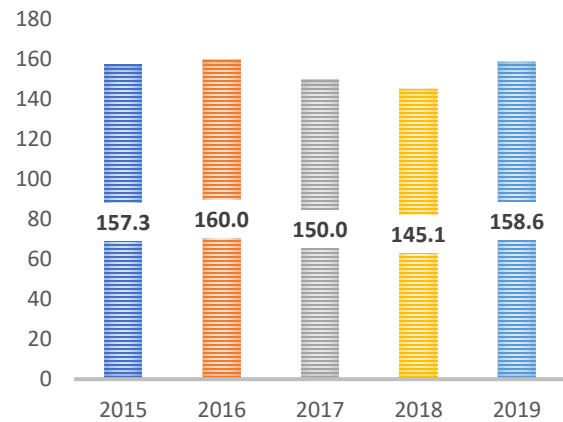
**Figure 34. Quarterly mobile postpaid subscriptions for 2018 and 2019**

## 3.2 Mobile Penetration

### 3.2.1 Domestic Mobile Voice Penetration Rate

The mobile voice penetration rate<sup>19</sup> increased from 145.1 in 2018 to 158.6 in 2019. Figure 35 presents the mobile voice penetration rate per 100 inhabitants, spanning the years 2015 to 2019.

There was an increase in the penetration rate from 2015 to 2016, followed by subsequent declines in 2017 and 2018, resulting in penetration rates of 150.0 and 145.1, respectively. Compared to 2018, the penetration rate increased by 9.3% in 2019.

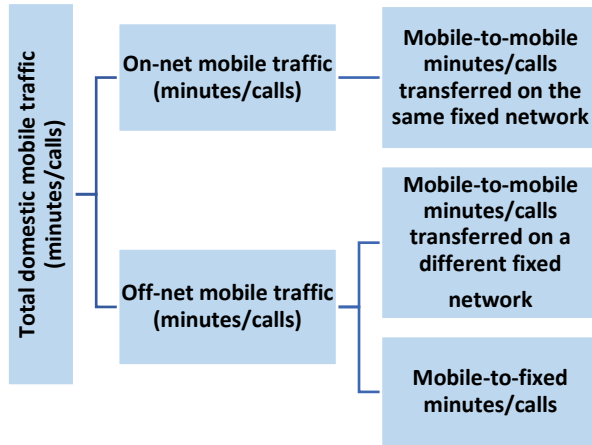


**Figure 35. Mobile voice penetration rate per 100 inhabitants for 2015 to 2019**

<sup>19</sup> Mobile penetration is calculated as the number of mobile subscriptions divided by the total population

multiplied by 100. Total population is based on the CSO's 2019 mid-year population estimate.

### 3.3 Domestic Mobile Voice Traffic



**Figure 36. Classification of domestic mobile voice traffic**

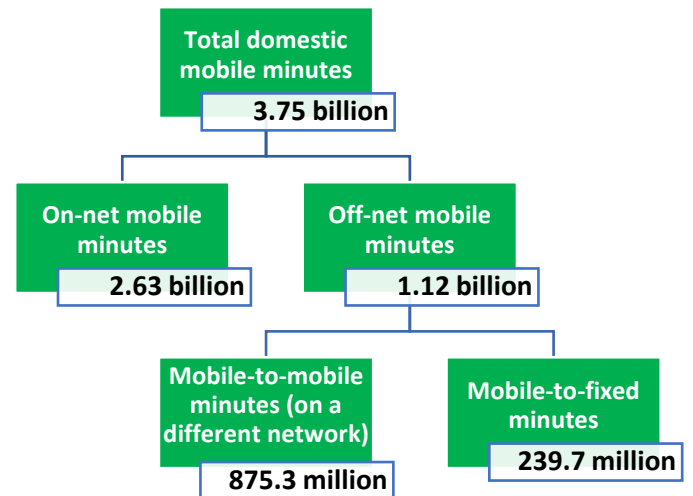
Domestic mobile voice traffic comprises several categories. These are outlined in Figure 36 and explain the types of calls made by consumers and, hence, the minutes originated and terminated on the domestic mobile networks.

In 2019, the total number of mobile phone calls made by consumers decreased by 6.9% from the previous year, to record approximately 2.7 billion. The number of

minutes generated from these calls was approximately 3.75 billion — a decrease of 3.1% when compared to the 2018 figures.

#### 3.3.1 Annual Domestic Mobile Voice Traffic in Minutes

The 3.75 billion minutes of domestic traffic for 2019 were derived from the summation of both on-net<sup>20</sup> and off-net<sup>21</sup> traffic, which recorded 2.63 billion and 1.12 billion minutes, respectively. Compared with 2018,



**Figure 37. Breakdown of domestic mobile minutes for 2019**

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

<sup>21</sup> 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.

the number of mobile on-net minutes for 2019 decreased by 6.1%, while the number of off-net minutes increased by 4.7%.

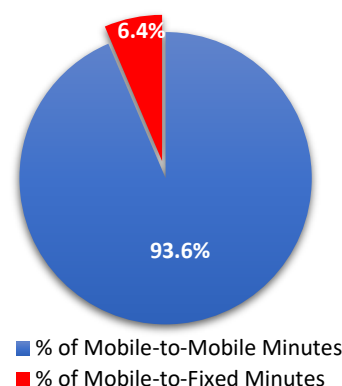
The 1.12 billion off-net minutes was comprised of 875.3 million mobile-to-mobile minutes transferred on a different mobile network and 239.7 million mobile-to-fixed minutes. From 2018 to 2019, mobile-to-mobile off-net minutes increased by 52.4 million minutes, or 6.4%, while mobile-to-fixed off-net minutes decreased by 12.2 million, or 4.8%.

Figure 37 shows a breakdown of domestic mobile minutes for 2019, while a comparison of domestic mobile voice minutes for 2018 and 2019 is outlined in Table 4.

Figure 38 illustrates the percentage of mobile-to-mobile and mobile-to-fixed minutes for 2019. Mobile-to-mobile minutes represented a share of 93.6% of all domestic

mobile minutes in 2019, while the remaining 6.4% belonged to mobile-to-fixed minutes.

In comparison with 2018, mobile-to-mobile minutes continued as the main category of minutes consumed in this market. The proportion of mobile-to-fixed minutes decreased from 6.5% in 2018 to 6.4% in 2019. However, there was an increase in mobile-to-mobile minutes, from 93.5% in 2018 to 93.6% in 2019.



**Figure 38. Percentage of mobile-to-mobile and mobile-to-fixed minutes for 2019**

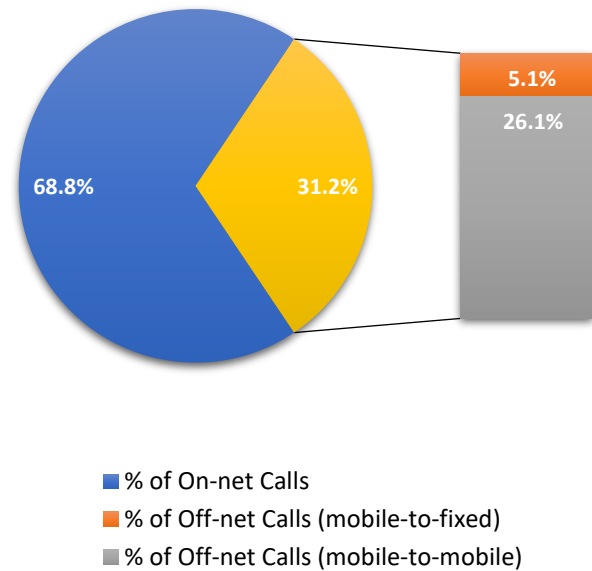
**Table 4. Breakdown of domestic minutes for 2018 and 2019**

	2018	2019	Change in minutes	Percentage change
<b>On-net mobile traffic minutes (billions)</b>	<b>2.80</b>	<b>2.63</b>	<b>(0.17)</b>	<b>(6.1%)</b>
<b>Off-net mobile traffic minutes (billions)</b>	<b>1.07</b>	<b>1.12</b>	<b>0.04</b>	<b>4.7%</b>
Mobile-to-mobile traffic minutes on different networks (millions)	822.9	875.3	52.4	6.4%
Mobile-to-fixed traffic minutes (millions)	251.9	239.7	(12.2)	(4.8%)
<b>Total domestic mobile traffic minutes (billions)</b>	<b>3.87</b>	<b>3.75</b>	<b>(0.12)</b>	<b>(3.1%)</b>

### 3.3.2 Annual Domestic Mobile Voice Call Volumes

In 2019, there was a total of 2.7 billion domestic voice calls, which represents a decrease of 6.9% from the previous year. In comparison to 2018, the number of on-net calls decreased by 10% and the number of off-net calls decreased by 2.8%.

For 2019, the total number of on-net calls was 1.8 billion, representing a 68.8% share of all mobile voice calls. The remaining 31.2%, or 832.4 million, were off-net calls, which are subdivided into mobile-to-mobile and mobile-to-fixed off-net calls. There were 135.7 million mobile-to-fixed off-net calls made in 2019, representing 5.1% of all domestic calls, while there were 696.7 million mobile-to-mobile off-net calls, or 26.1%. Figure 39 highlights the percentage of



**Figure 39. Percentage of domestic mobile voice calls**

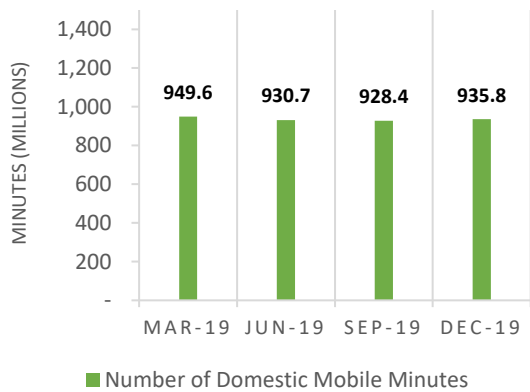
on-net and off-net calls for 2019, and Table 5 provides a comparative breakdown of domestic mobile voice calls for 2018 and 2019.

**Table 5. Number of domestic mobile voice calls in 2018 and 2019**

	2018	2019	Percentage change
<b>On-net mobile traffic calls (billions)</b>	<b>2.0</b>	<b>1.8</b>	<b>(10.0%)</b>
<b>Off-net mobile traffic calls (millions)</b>	<b>856.8</b>	<b>832.4</b>	<b>(2.8%)</b>
Mobile-to-mobile calls (millions)	711.9	696.7	(2.1%)
Mobile-to-fixed traffic calls (millions)	144.9	135.7	(6.3%)
<b>Total domestic mobile voice calls (billions)</b>	<b>2.9</b>	<b>2.7</b>	<b>(6.9%)</b>

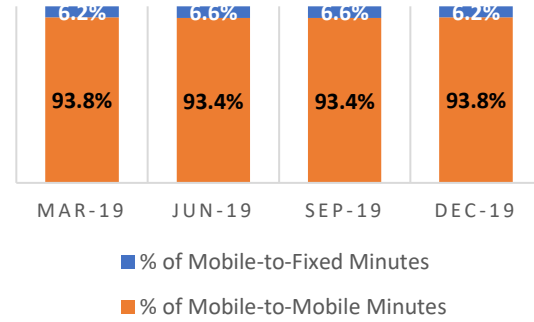
### 3.3.3 Quarterly Domestic Mobile Voice Minutes

The trend in mobile voice minutes for the four quarters of 2019 is presented in Figure 40. Quarter one had the largest number of minutes consumed, with a tally of 946.6 million. The number of mobile voice minutes then decreased over the next two quarters — with the lowest figure of the year, 928.4 million, recorded in the third quarter — before increasing in the final quarter.



**Figure 40. Number of quarterly mobile voice minutes in 2019**

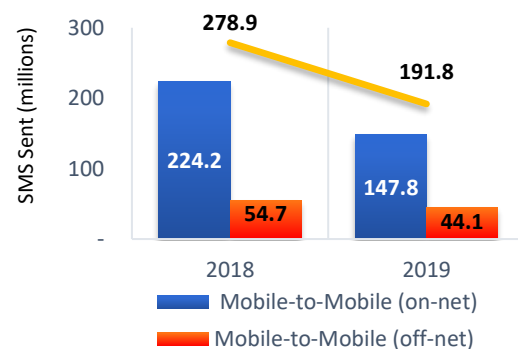
Figure 41 illustrates the percentage of quarterly mobile voice minutes by type for 2019. On average, the proportion of mobile voice minutes that were mobile-to-mobile was 93.6%, with 6.4% being mobile-to-fixed.



**Figure 41. Percentage of quarterly mobile voice minutes by type for 2019**

### 3.3.4 Short Messaging Services (SMS)

Figure 42 shows the total number of domestic SMS sent in 2018 and 2019. There was a 31.2% reduction in the number of SMS sent, from 278.9 million in 2018 to 191.8 million in 2019. SMS sent were classified as either on-net or off-net, with 2019 figures of 147.8 million and 44.1 million, respectively. From 2018 to 2019, on-net SMS decreased by 34.1% and off-net SMS by 19.4%.

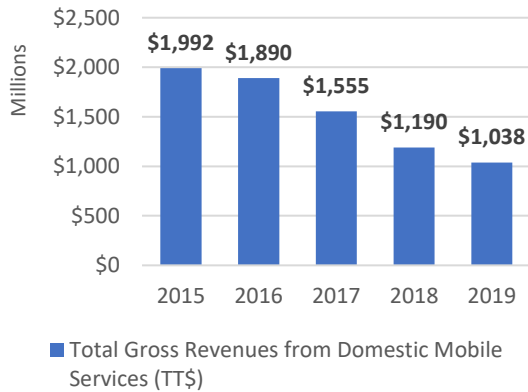


**Figure 42. Number of on-net and off-net SMS sent in 2018 and 2019**

### 3.4 Mobile Voice Revenues

#### 3.4.1 Annual Revenues from Mobile Voice Services<sup>22</sup>

Figure 43 portrays the annual trend in mobile voice revenues<sup>23</sup> from 2015 to 2019. Total mobile voice revenues generated for 2019 amounted to TT\$1,038 million, which continued the downward trend in mobile voice revenues, and represents a 12.8% contraction from 2018.



**Figure 43. Annual revenues from mobile voice services from 2015 to 2019**

Table 6 shows the percentage changes in mobile revenues from 2015 to 2019. Over this period, the greatest decline in mobile

<sup>22</sup> These revenues exclude mobile Internet revenues, which are reported in section 4: Internet Market Review.

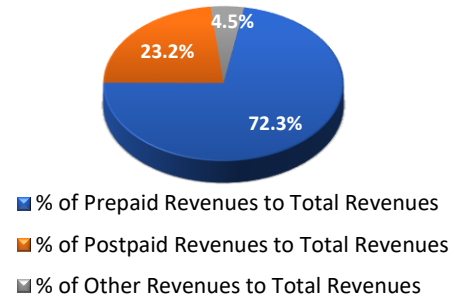
<sup>23</sup> Mobile voice revenues comprise revenues from mobile voice and SMS services.

revenues was observed in 2018, with a percentage decrease of 23.4%.

**Table 6. Percentage changes in mobile revenues from 2015 to 2019**

Period	Percentage Change in Mobile Voice Revenues
2015	(9.6%)
2016	(5.2%)
2017	(17.7%)
2018	(23.4%)
2019	(12.8%)

In 2019, total revenues generated in the mobile voice market consisted of earnings from prepaid, postpaid and other mobile services<sup>24</sup>. Prepaid services produced



**Figure 44. Percentage breakdown of mobile voice revenues by service type for 2019**

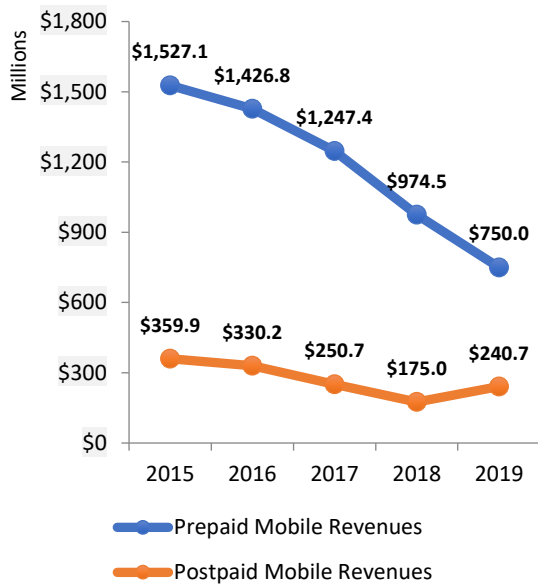
TT\$750 million in revenue and postpaid generated TT\$240.7 million, representing 72.3% and 23.2% of gross revenues,

<sup>24</sup> Other mobile services comprise revenues from equipment sales, SIM card sales and administrative charges.



respectively. Other mobile services produced TT\$46.8 million, or 4.5% of total revenues. Figure 44 depicts the percentage share of mobile revenues by service type for 2019.

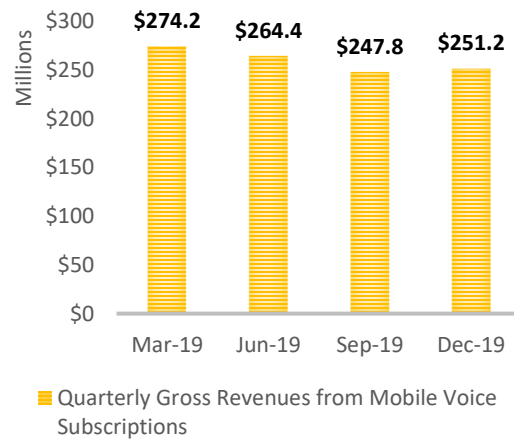
Figure 45 compares prepaid and postpaid revenues for the years 2015 to 2019. Prepaid revenues declined each year while postpaid revenues trended downwards from 2015 to 2018. However, from 2018 to 2019, postpaid revenues rose to TT\$240.7 million — an increase of 37.5%.



**Figure 45. Mobile prepaid and postpaid revenues for 2015 to 2019**

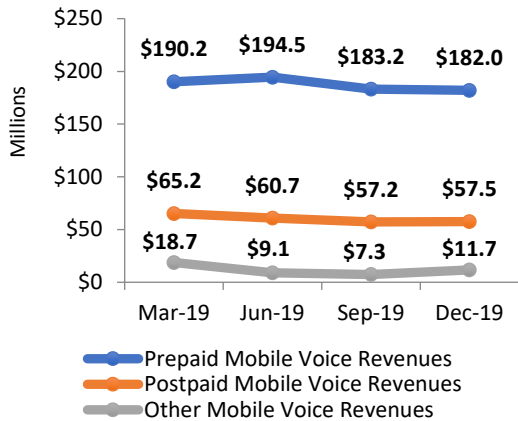
### 3.4.2 Quarterly Revenues from Mobile Voice Services

The largest revenue for mobile voice services was recorded in quarter one of 2019, with a value of TT\$274.2 million. In quarters two and three, there were consecutive decreases in revenue, with the latter period registering the lowest figure of TT\$247.8 million. The fourth quarter saw a resurgence in revenue, to end 2019 with a figure of TT\$251.2 million. Figure 46 illustrates the quarterly trends in mobile voice revenues for 2019.



**Figure 46. Quarterly revenues from mobile services in 2019**

Figure 47 gives a breakdown of quarterly revenues by prepaid, postpaid and other mobile services for 2019. Prepaid revenues grew from quarter one to quarter two, registering the highest figure of TT\$194.5



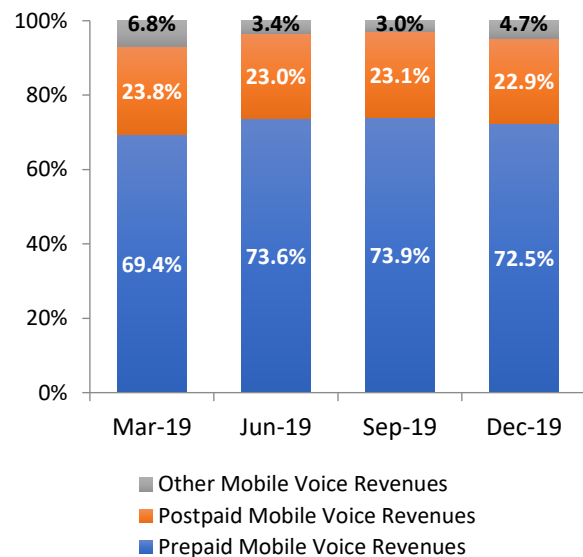
**Figure 47. Quarterly mobile voice revenues by service type for 2019**

million in the second quarter. Subsequent declines in revenue were observed across quarters three and four, with the lowest prepaid revenue of TT\$182.0 million observed in the fourth quarter.

There was a consistent decline in postpaid revenues across the first three quarters, followed by an upturn of TT\$0.3 million in the final quarter.

Revenues from other mobile services varied across all four quarters of 2019. Quarter one had the largest revenue figure of TT\$18.7 million before a decrease to TT\$9.1 million in quarter two. In the third quarter, revenue declined further, with TT\$7.3 million reported, followed by a rise to TT\$11.7 million in the final quarter.

Figure 48 provides a quarterly comparison, by service type, of the percentage share of revenues generated in 2019. Prepaid revenues accounted for the largest share of mobile voice revenues, averaging 72.4% of total revenues each quarter. Postpaid revenues averaged 23.2% per quarter of total mobile voice revenues, while the other mobile services category had an average share of 4.5% per quarter.



**Figure 48. Percentage share of revenues by service type for 2019**

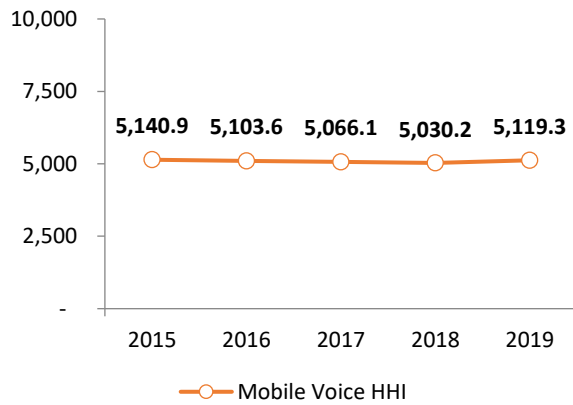
The percentage of prepaid revenues increased from quarter one to quarter three, registering a high of 73.9% of total mobile voice revenues. This growth was curtailed in the fourth quarter as the proportion of prepaid revenues declined to 72.5%. The percentage

of postpaid revenues varied during 2019, with the highest share observed in quarter one and the lowest in the final quarter.

In contrast to prepaid revenues, the share of other mobile service revenues decreased from quarter one to quarter three, before rising in the fourth quarter to record a share of 4.7%.

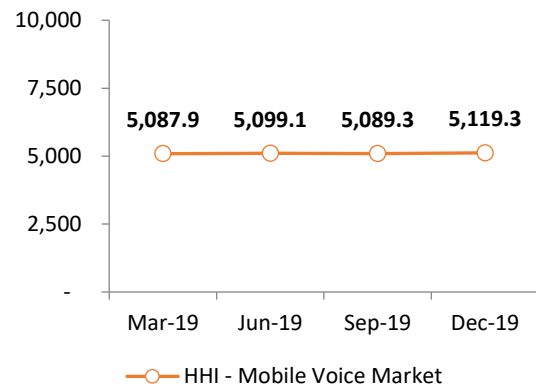
### 3.5 Mobile Voice Market Concentration

Figure 49 illustrates the level of concentration in the domestic mobile voice market using the HHI<sup>25</sup> for the period 2015 to 2019. There was a consistent decrease in the level of concentration from 2015 to 2018, before an increase in 2019 with an HHI value of 5,119.3.



**Figure 49. HHI for the mobile voice market from 2015 to 2019**

The quarterly HHI trend for the mobile voice market for 2019 is depicted in Figure 50. There were variations across the quarters, with a rise from the first to second quarter, followed by a dip in the third quarter and a small upturn in HHI to end the year.

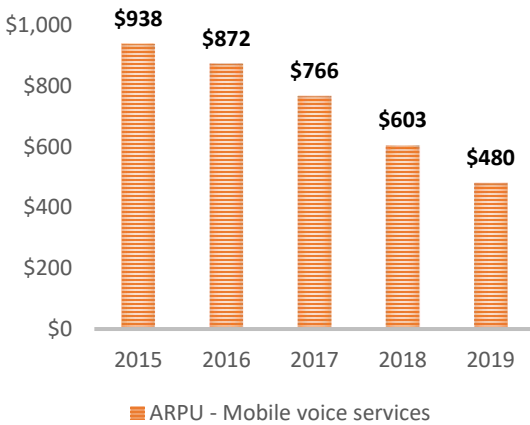


**Figure 50. Quarterly HHI for the mobile voice market in 2019**

<sup>25</sup> 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

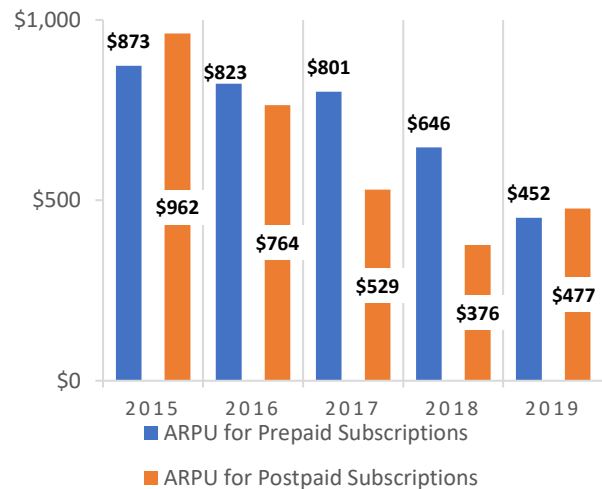
The ARPU for mobile voice services contracted by 20.4% from the previous year, registering a figure of TT\$480 for 2019. This indicates that the average expenditure per customer on mobile voice services had decreased by TT\$123 from 2018. Figure 51 shows the continuous downward trajectory of the ARPU over the past five years.



**Figure 51. ARPU for mobile voice services from 2015 to 2019**

Figure 52 presents a comparison of the ARPU for both prepaid and postpaid mobile services for the period 2015 to 2019. There were consistent declines in ARPU for prepaid subscriptions over the past five years. The postpaid ARPU trended downwards from 2015 to a low of TT\$376 in 2018, before some growth in 2019 with an ARPU of TT\$477.

In 2019, the prepaid ARPU decreased by TT\$194, or 30%, while postpaid increased by TT\$101, or 26.9%, relative to 2018.



**Figure 52. Mobile voice prepaid and postpaid ARPU from 2015 to 2019**



**INTERNET** MARKET  
2019 ANNUAL MARKET REPORT



MOBILE INTERNET REVENUES

TT\$904.2 Million

7.6% increase over 2018



MOBILE INTERNET  
PENETRATION  
40 per 100 inhabitants



653,300  
Subscriptions  
(Decrease of 3.7 % over  
2018)



FIXED INTERNET REVENUES

TT\$1,175.5 Million

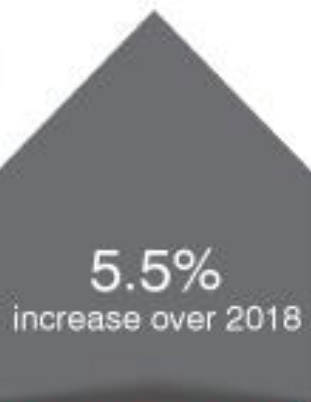
3.9% increase over 2018



FIXED INTERNET  
PENETRATION  
25 per 100 inhabitants



339,400  
Subscriptions  
(Decrease of 0.5 % over  
2018)



5.5%  
increase over 2018

**TT\$2,079.7 M**  
INTERNET MARKET REVENUES

## 4 Internet Market Review

This review of Trinidad and Tobago's Internet market for 2019 examines the delivery of Internet services over domestic fixed (wired and wireless) and mobile public telecommunications networks. The country has 18 authorised fixed domestic telecommunications service 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. Telecommunications Services of Trinidad and Tobago Limited (TSTT)
11. Mora's Weather Network

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, using a Gigabit Passive Optical Network (GPON). Fixed wireless broadband Internet operators employ technologies such as WiMAX and Long Term Evolution (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. Its fixed wireless network will replace the existing copper access network in the provision of these services.



Two mobile operators were authorised to provide domestic mobile telecommunications services, including the provision of (mobile broadband) 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 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 in rural areas not yet covered by the 3G and 4G technologies during this reporting period.

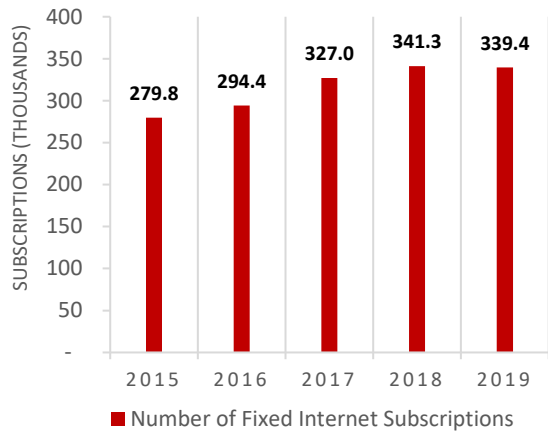
This Internet market review presents the market trends based on data provided by the two mobile operators and 10 of the 11 fixed Internet service providers.<sup>26</sup>

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<sup>26</sup> Mora's Weather Network had not supplied data at the time of publication.

## 4.1 Fixed Internet Subscriptions

The trend of increasing annual subscriptions in the fixed Internet market came to an end in 2019. The number of subscriptions recorded in December 2019 stood at 339,400 — a decrease of 1,900 subscriptions, or 0.6%, from the previous year. Figure 53 illustrates this trend over the last five-year period.

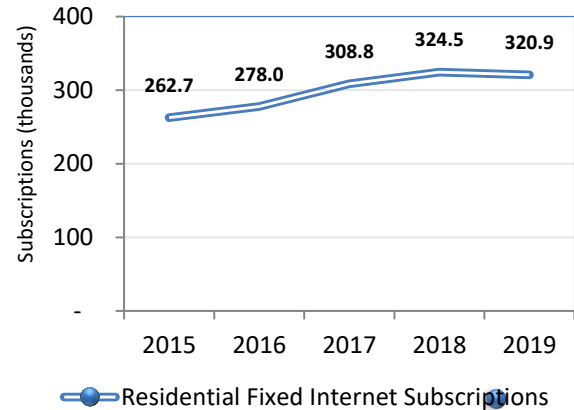


**Figure 53. Fixed Internet subscriptions from 2015 to 2019**

### 4.1.1 Fixed Internet Subscriptions: Residential and Business

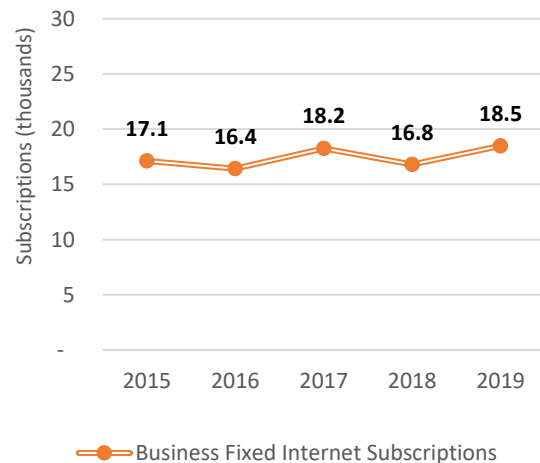
Fixed Internet subscriptions can be classified into residential and business categories. In 2019, residential subscriptions decreased from the previous year, while there was growth in business subscriptions. As Figure 54 indicates, the number of residential subscriptions amounted to 320,900 — a

reduction of 3,600 subscriptions, or 1.1%, from 2018.



**Figure 54. Residential fixed Internet subscriptions from 2015 to 2019**

Business fixed Internet subscriptions were recorded at 18,500, as seen in Figure 55, reflecting an increase of 1,700 subscriptions, or 10.1%, compared to 2018.



**Figure 55. Business fixed Internet subscriptions from 2015 to 2019**

#### 4.1.2 Residential Fixed Broadband Internet Subscriptions by Speed Tier

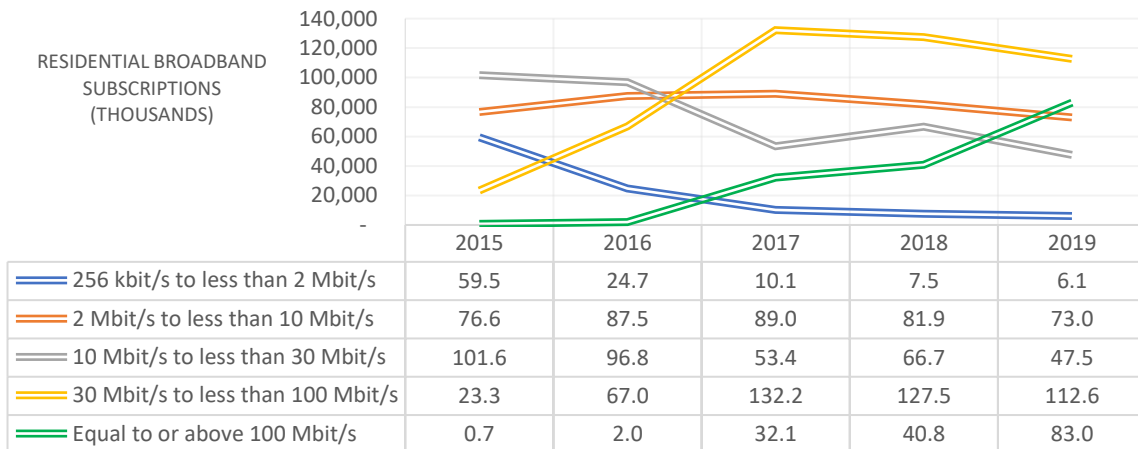
The Internet speeds<sup>27</sup> that residential broadband customers subscribed to in 2019 ranged from 256 kbit/s to 350 Mbit/s. Figure 56 shows these subscriptions by the following Internet speed tiers<sup>28</sup>:

- 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

The speed tier *30Mbit/s to less than 100 Mbit/s* continued to be the most popular

choice among residential customers, even though the number of subscriptions in this tier decreased from 127,500 in 2018 to 112,600 in 2019. This was the second consecutive year of decline in subscriptions to this speed tier after considerable growth from 2015 to 2017.

The *equal to or above 100Mbit/s* category was the second most subscribed to speed choice by residential fixed broadband Internet customers. The number of subscriptions to this speed tier more than doubled between 2018 and 2019, increasing from 40,800 to 83,000.



**Figure 56. Number of residential broadband subscriptions by download speed tier from 2015 to 2019**

<sup>27</sup> Refers to advertised speeds by service provider

<sup>28</sup> The fixed Internet speed tiers were revised in 2017, consistent with the international classification by the International Telecommunication Union (ITU).

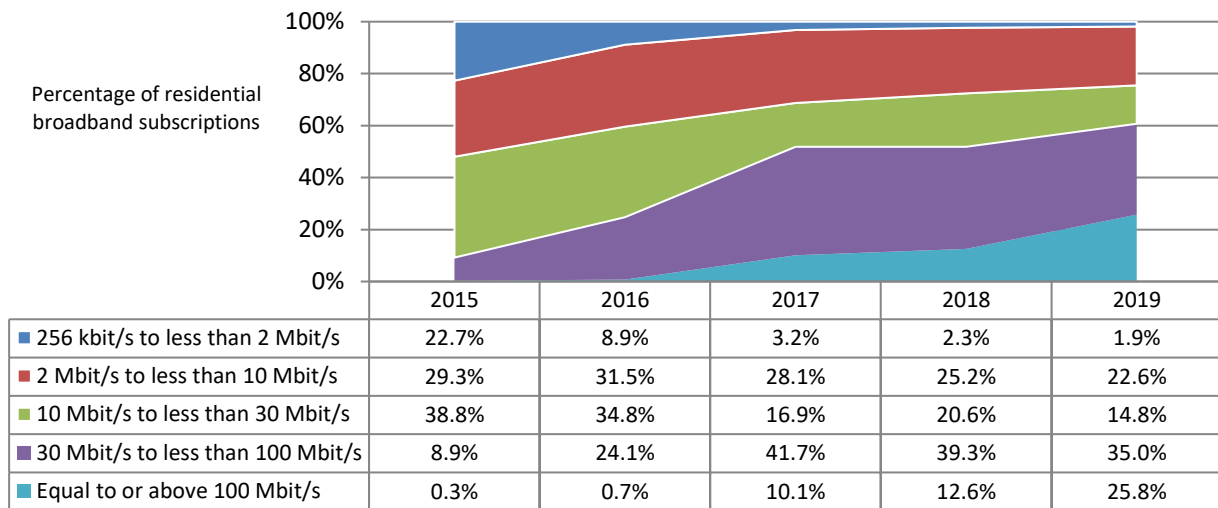
The number of subscriptions to the *2Mbit/s to less than 10 Mbit/s* speed tier decreased from 81,900 in 2018 to 73,000 in 2019. This speed tier was the third most popular option of residential fixed broadband Internet customers.

Subscriptions to the *10 Mbit/s to less than 30 Mbit/s* speed tier decreased from 66,700 in 2018 to 47,500 in 2019 — a drop of 28.8%.

The *256 kbit/s to less than 2Mbit/s* continued its downward trend, registering 6,100 subscriptions, which was an 18.7% decrease in comparison to 2018. This speed tier remained the least subscribed to option for the third consecutive year.

Figure 57 shows the proportion of residential subscriptions by download speed tier for the period 2015 to 2019.

In 2019, the *30 Mbit/s to less than 100Mbit/s* speed tier was the largest, at 35%. The percentage of subscriptions in the *equal to or above 100Mbit/s* speed tier increased from 12.6% in the previous year to 25.8%. The *256 kbit/s to less than 2Mbit/s* speed tier held the smallest share of the residential broadband Internet market, with 1.9%.



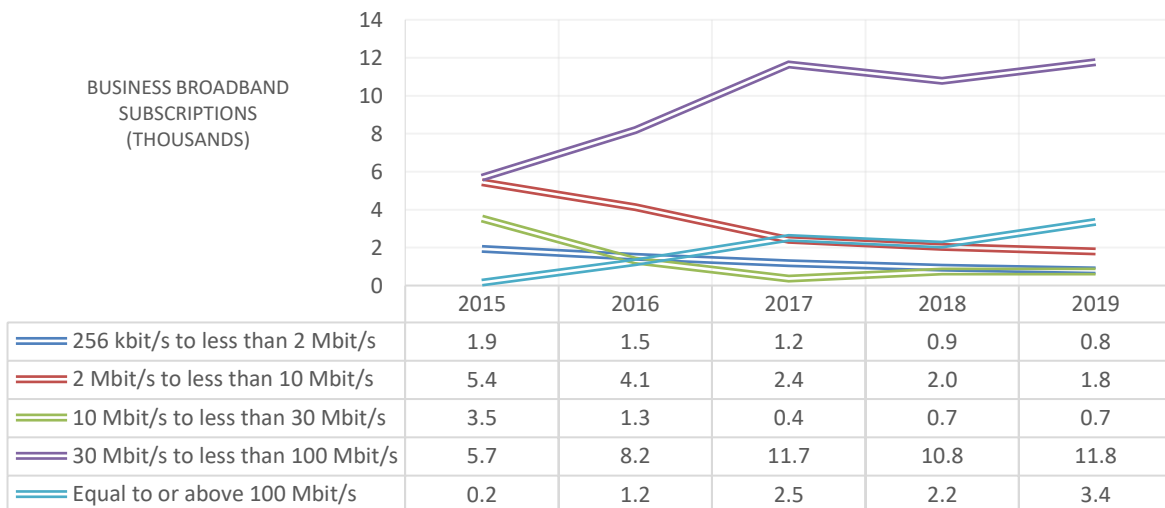
**Figure 57. Percentage of residential broadband subscriptions by download speed tier from 2015 to 2019**

### 4.1.3 Business Fixed Broadband Internet Subscriptions by Speed Tier

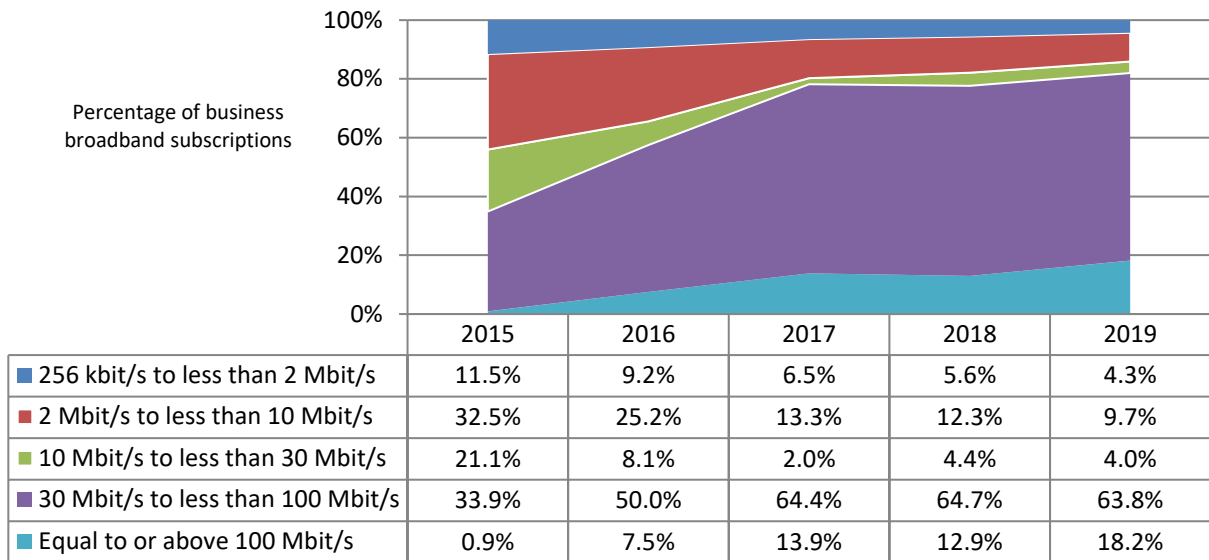
As reported in section 4.1.1, the total number of business broadband subscriptions increased in 2019 by 1,700 subscriptions. As Figure 58 indicates, this increase was observed in only two speed tiers, specifically, *30 Mbit/s to less than 100Mbit/s* and *equal to or above 100Mbit/s*, which rose by 9.3% and 54.5%, respectively.

In terms of proportion, the *30Mbit/s to less than 100 Mbit/s* tier was the largest, with 63.8%, while the *10Mbit/s to less than 30 Mbit/s* speed tier held the smallest share, with 4.0%. These results are displayed in Figure 59 and highlight the evolution of business broadband subscriptions by speed tier across the last five years.

The number of subscriptions in the *10Mbit/s to less than 30Mbit/s* speed tier stood at 700 in 2019, equal to the figure recorded in 2018. The downward trend in the *2Mbit/s to less than 10Mbit/s* speed tier continued, with subscriptions decreasing by 10% from 2018 to register 1800.



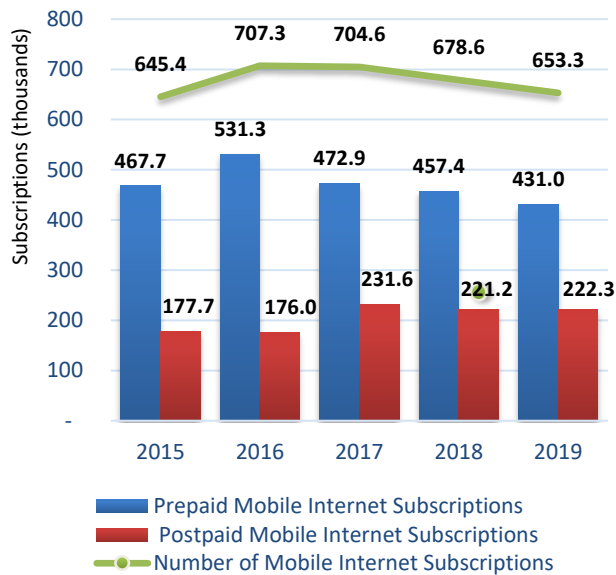
**Figure 58. Number of business broadband subscriptions by download speed from 2015 to 2019**



**Figure 59. Percentage of business broadband subscriptions by download speed tier from 2015 to 2019**

## 4.2 Active Mobile Internet Subscriptions

In 2019, there were 2.16 million mobile voice subscriptions, with approximately 1.54 million enabled to access mobile Internet services. Out of the 1.54 million, there were 653,300 active mobile Internet subscriptions<sup>29</sup> — a decrease of 3.7% from 2018. In keeping with the trend in mobile voice subscriptions in which prepaid had the greater share of the market, the number of prepaid mobile Internet users also exceeded postpaid users. As Figure 60 indicates, there were 431,000 prepaid active mobile Internet



**Figure 60. Prepaid and postpaid mobile Internet subscriptions from 2015 to 2019**

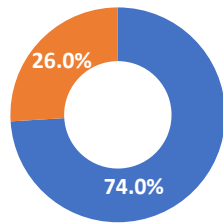
<sup>29</sup> Active mobile Internet subscriptions refer to subscribers who have used mobile Internet services within the last three months.

subscriptions and 222,300 postpaid recorded at the end of 2019.

The number of prepaid mobile Internet subscriptions contracted by 26,400, representing a 5.8% decrease from 2018. However, with postpaid mobile Internet subscriptions, there was growth of 0.5%, with 1,100 more subscribers compared to the previous year.

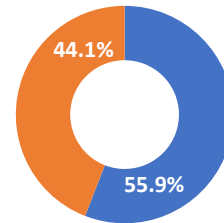
Figure 61 provides a comparison of prepaid and postpaid subscriptions classified by mobile voice-only users and mobile voice and Internet users for 2019. A larger proportion of postpaid mobile subscribers utilised mobile Internet. As reported in section 3.1.1, there were 1.66 million prepaid and 504,300 postpaid mobile voice subscriptions recorded in 2019. Of the 1.66 million prepaid subscribers, only 26% utilised mobile Internet services, while the remaining 74% used only mobile voice. Of the 504,300 postpaid mobile subscribers, 44.1% utilised mobile Internet services while 55.9% had mobile voice only.

### Prepaid Mobile Subscriptions



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

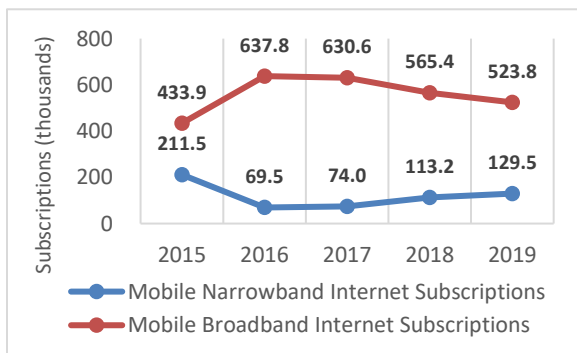
### Postpaid Mobile Subscriptions



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

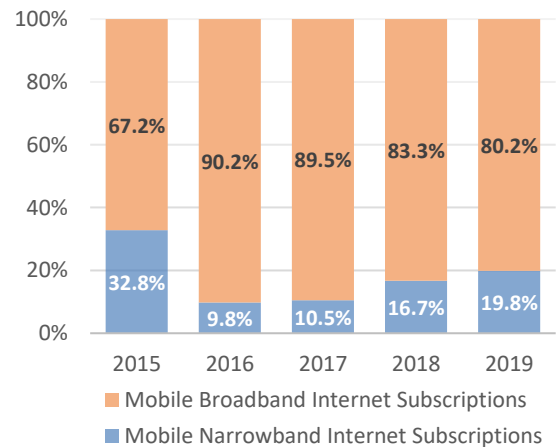
**Figure 61. Comparison of prepaid and postpaid mobile Internet subscriptions for 2019**

In 2019, there were 523,800 mobile broadband Internet subscriptions and 129,500 mobile narrowband Internet subscriptions, as highlighted in Figure 62. Compared to 2018, the number of mobile broadband subscriptions decreased by 7.4%, while the number of mobile narrowband Internet subscriptions increased by 16,300, or 14.4%.



**Figure 62. Mobile narrowband and broadband Internet subscriptions from 2015 to 2019**

decreased from the previous year, accounting for 80.2% of all mobile Internet subscriptions in 2019. Conversely, the percentage of mobile narrowband Internet subscriptions rose from 16.7% in 2018 to 19.8% in 2019.



**Figure 63. Percentage of mobile narrowband and broadband Internet subscriptions from 2015 to 2019**

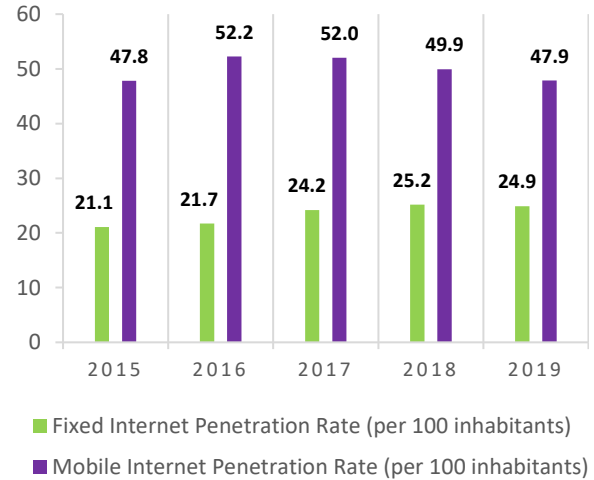
As illustrated in Figure 63, the proportion of mobile broadband Internet subscriptions



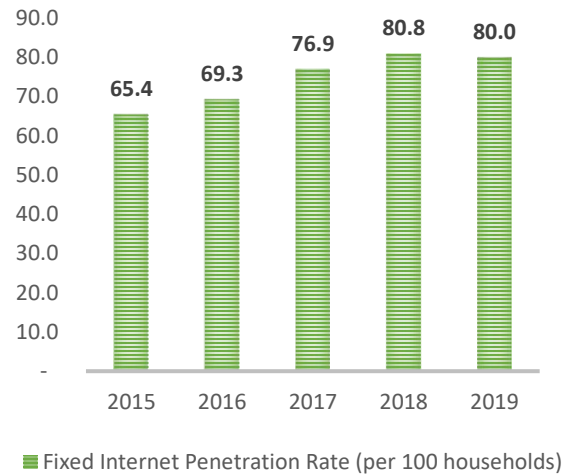
### 4.3 Internet Penetration Rates: Fixed and Mobile

There was a gradual increase in fixed Internet penetration rates from 2015 to 2018, before a decline in 2019. The fixed Internet penetration rate for 2019 stood at 24.9, which indicates that approximately 25 out of every 100 individuals had a fixed Internet subscription. The mobile Internet penetration rate had been trending downwards since 2016 and continued to do so, with a value of 47.9 registered in 2019. This suggests that approximately 48 out of every 100 persons were using mobile Internet services — a decrease from the 50 persons in 2018. The Internet penetration rates for the past five years are shown in Figure 64.

Internet household penetration<sup>30</sup> is used to measure the percentage of households with a fixed Internet subscription. Figure 65 shows that approximately 80 out of every 100 households subscribed to a fixed Internet service in 2019 — a drop from the 81 estimated for 2018.



**Figure 64. Fixed and mobile Internet penetration rates from 2015 to 2019**



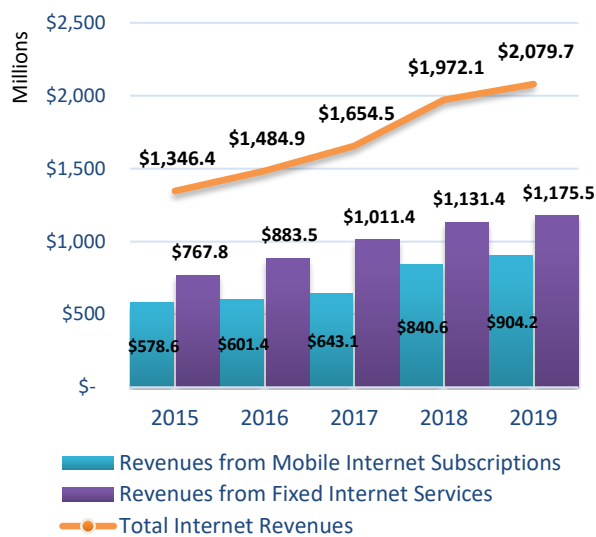
**Figure 65. Fixed Internet household penetration from 2015 to 2019**

<sup>30</sup> Internet household penetration is calculated as the number of residential fixed Internet subscriptions

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

## 4.4 Total Internet Revenues

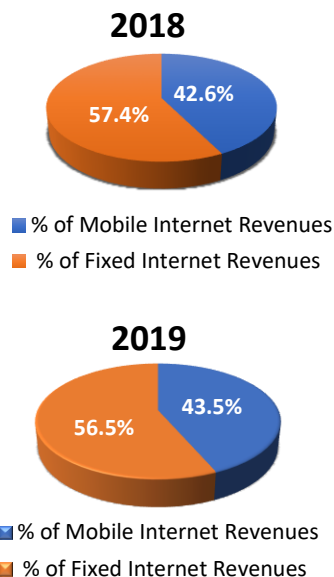
In 2019, fixed and mobile Internet services generated TT\$2,079.7 million in revenue. This represents an increase of TT\$107.6 million, or 5.5%, from 2018. Increases in revenues for both fixed and mobile Internet were recorded for 2019. Figure 66 highlights the Internet revenues spanning the years 2015 to 2019.



**Figure 66. Internet revenues from 2015 to 2019**

A comparison of the data for the last two years reveals that the greater share of total Internet revenues was held by fixed Internet subscriptions, as highlighted in Figure 67. Fixed Internet revenues accounted for 56.5% of total Internet revenues in 2019, which is a decrease from the 57.4% recorded in 2018.

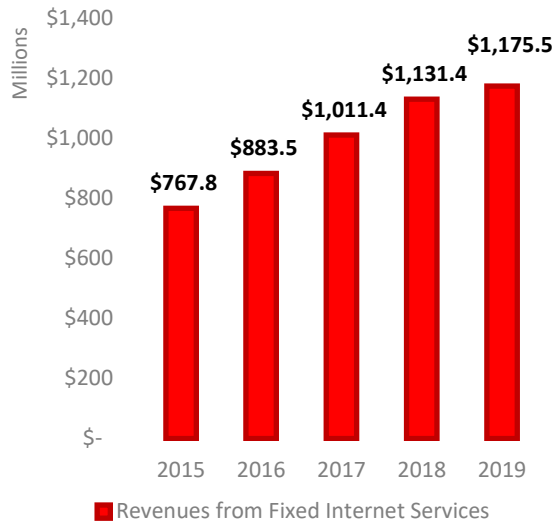
The percentage of mobile Internet revenues increased from 42.6% in 2018 to 43.5% in 2019.



**Figure 67. Percentage of fixed and mobile Internet revenues in 2018 and 2019**

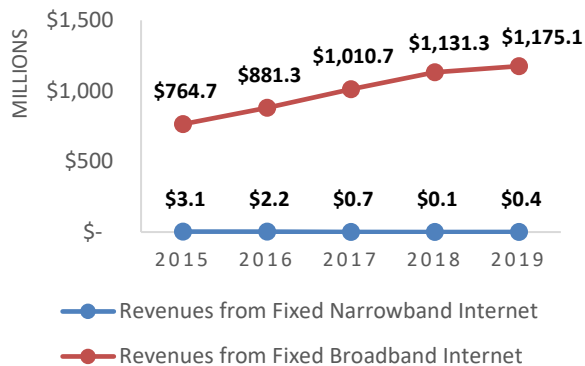
### 4.4.1 Fixed Internet Revenues

The total revenues earned within the fixed Internet market in 2019 was TT\$1,175.5 million, reflecting an increase of TT\$44.1 million, or 3.9%, from 2018. Figure 68 illustrates the upward trend of revenues derived from fixed Internet over the past five-year period.



**Figure 68. Fixed Internet revenues from 2015 to 2019**

Total fixed revenues comprised TT\$0.4 million earned from narrowband Internet, while broadband Internet accounted for TT\$1,175.1 million, as depicted in Figure 69.

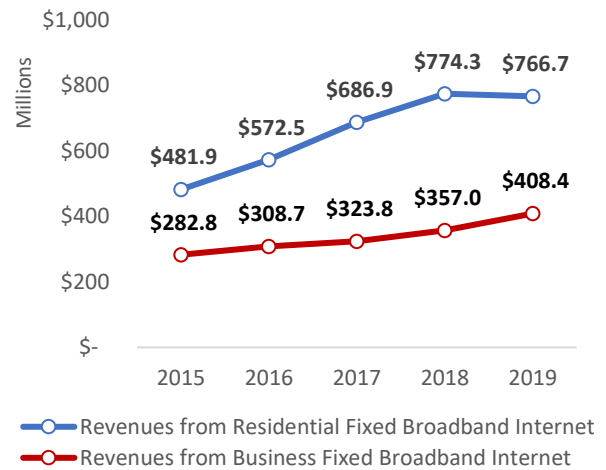


**Figure 69. Fixed narrowband and broadband Internet revenues from 2015 to 2019**

Fixed broadband Internet revenues are also classified into residential and business revenues, as highlighted in Figure 70.

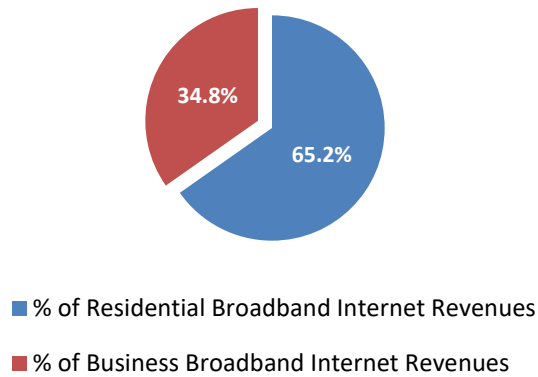
Business fixed broadband Internet revenues rose by 14.4%, to record TT\$408.4 million in 2019.

However, there was a reduction in residential fixed broadband revenues by TT\$7.6 million, or 1%, compared to the previous year.



**Figure 70. Residential and business fixed broadband Internet revenues from 2015 to 2019**

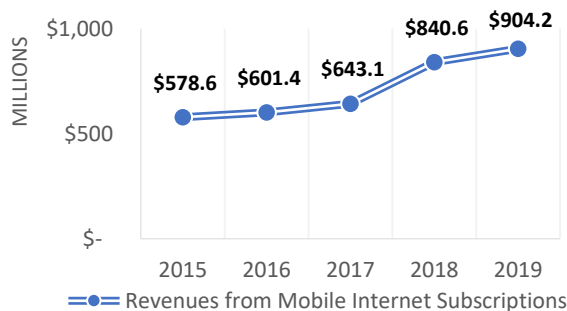
Revenues generated from residential fixed broadband Internet subscriptions accounted for most of the fixed broadband revenues, as Figure 71 shows. Residential broadband subscriptions contributed 65.2% of total fixed broadband revenues, whereas revenues derived from business broadband subscriptions held a share of 34.8%.



**Figure 71. Percentage of residential and business fixed broadband Internet revenues in 2019**

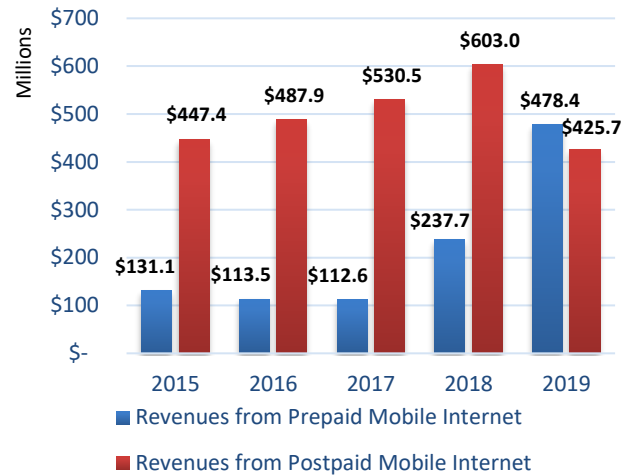
#### 4.4.2 Mobile Internet Revenues

Mobile Internet subscriptions continued to be a significant source of revenue in the Internet market. Figure 72 depicts a pattern of consistent growth from 2015 to 2019 to record TT\$904.2 million. The increase in revenue of 7.6% from 2018 to 2019 amounted to TT\$63.6 million.



**Figure 72. Revenues from mobile Internet subscriptions**

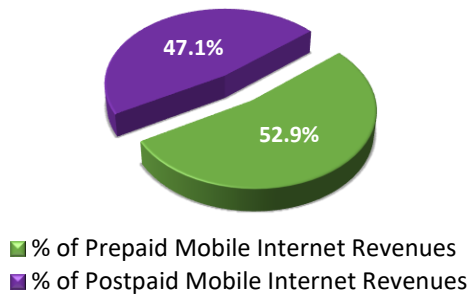
Figure 73 presents the revenues generated from prepaid and postpaid mobile Internet for 2015 to 2019.



**Figure 73. Mobile Internet revenues by type for 2015 to 2019**

In 2019, prepaid and postpaid mobile Internet amassed revenues of TT\$478.4 million and TT\$425.7 million, respectively. For the second consecutive year, prepaid mobile Internet doubled its revenue, marking the first time within the last five years prepaid outearned postpaid in this market. In contrast, 2019 postpaid mobile Internet revenues dropped by 29.4% from 2018.

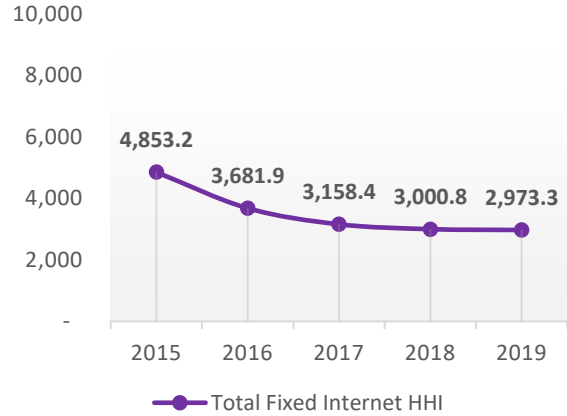
Prepaid services accounted for 52.9% of mobile Internet revenues, while postpaid accounted for the remaining 47.1%, as illustrated in Figure 74.



**Figure 74. Percentage of prepaid and postpaid mobile Internet revenues in 2019**

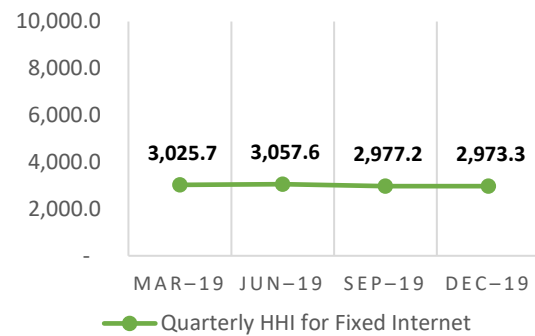
#### 4.5 Fixed Internet Market Concentration

The Authority utilised the HHI to gauge the level of concentration in the fixed Internet market<sup>31</sup> for 2019. There has been a continuous decline in concentration level within this market for the last five years, as depicted in Figure 75. The HHI at the end of 2019 stood at 2,973.3, decreasing from the 3,000.8 recorded in 2018 — a dip of 0.9%.



**Figure 75. Fixed Internet market HHI for 2019**

A comparison of the 2019 quarterly HHI for fixed Internet reveals a rise from first quarter to second quarter before a fall in quarter three and further decline in the final quarter. This pattern is reflected in Figure 76.



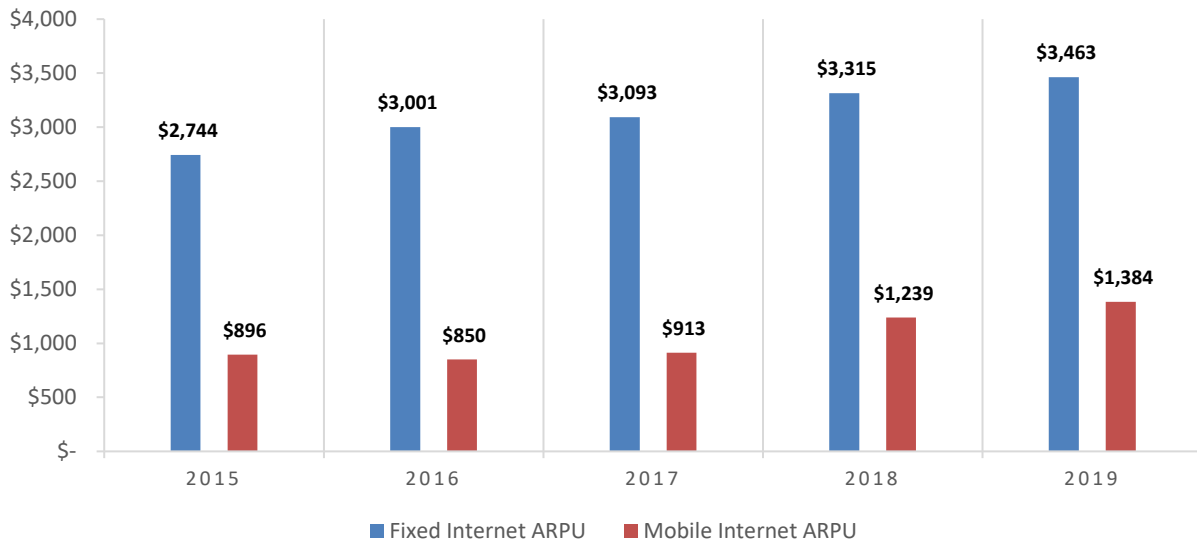
**Figure 76. Quarterly HHI for the fixed Internet market in 2019**

<sup>31</sup> Market share based on the number of subscriptions was used in the calculation of the HHI.

## 4.6 Average Revenue Per user (ARPU) for Internet Services

In 2019, the fixed Internet ARPU<sup>32</sup> increased by TT\$148, or 4.5%, compared to the previous year, with each subscription earning an average of TT\$3,463. Mobile Internet services generated an average of TT\$1,384<sup>33</sup> per customer in 2019 — an increase of

TT\$145, or 11.7%. The 2019 ARPU figures for both fixed and mobile Internet continued the upward trajectory of the past five years, as depicted in Figure 77.



**Figure 77. ARPUs for fixed and mobile Internet services from 2015 to 2019**

<sup>32</sup> The 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.

<sup>33</sup> The 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.



**INTERNATIONAL VOICE** MARKET  
2019 ANNUAL MARKET REPORT



# Key Indicators for the International Voice Market

GROWTH 2018-2019



## INCOMING INTERNATIONAL REVENUES

**TT\$150.5 Million**



91.9 Million  
Minutes  
decrease of 27.7%  
over 2018



## OUTGOING INTERNATIONAL REVENUES

**TT\$86.5 Million**



79.7 Million  
Minutes  
decrease of 38.2%  
over 2018

19.2%  
decrease over 2018

**TT\$237.0M**

TOTAL INTERNATIONAL REVENUES



## 5 International Voice Market Review

Seven concessionaires were authorised to provide international telecommunications services in 2019, which included the provision of international voice services.

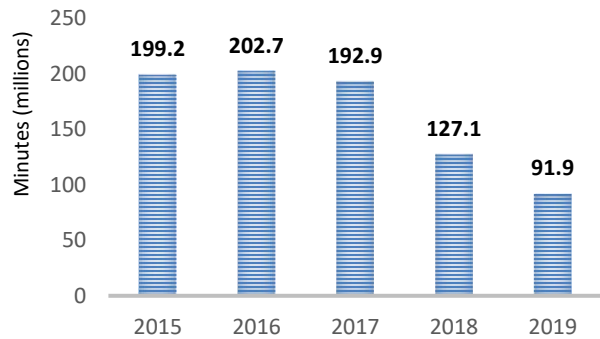
These operators were:

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

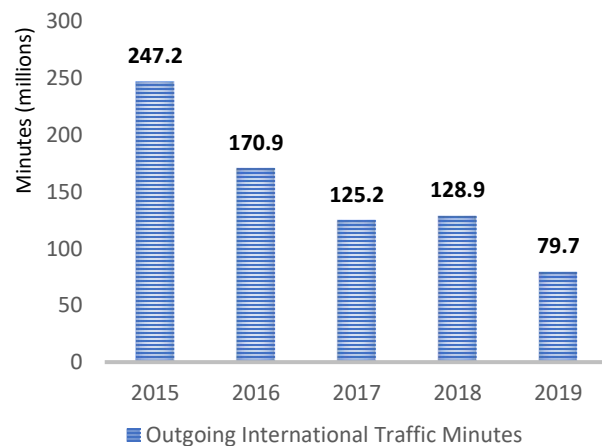
### 5.1 International Voice Traffic (Incoming and Outgoing Minutes)

The number of minutes generated from both incoming and outgoing international calls decreased in 2019. There were 91.9 million minutes from incoming international calls, which is a reduction of 27.7% from the previous year. The reduction of minutes in outgoing international calls was greater, with a decrease of 38.2%, to record a figure of 79.7

million. The number of international voice minutes for both incoming and outgoing calls over the past five years is given in Figures 78 and 79, respectively.

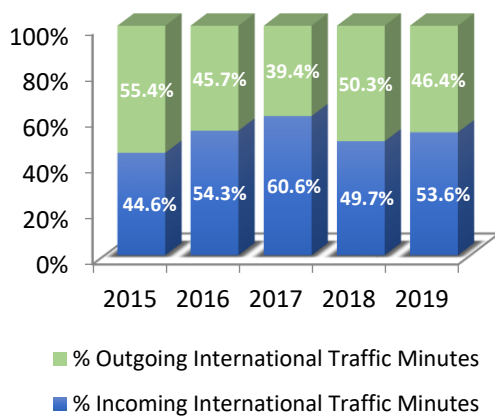


**Figure 78. Incoming international voice traffic (minutes) from 2015 to 2019**



**Figure 79. Outgoing international voice traffic (minutes) from 2015 to 2019**

The proportions of incoming traffic and outgoing traffic over the last five years are displayed in Figure 80. Minutes generated by incoming international calls accounted for 53.6% of all international minutes, increasing from 49.7% in 2018. The share of outgoing international traffic minutes dropped from 50.3% in 2018 to 46.4% in 2019.

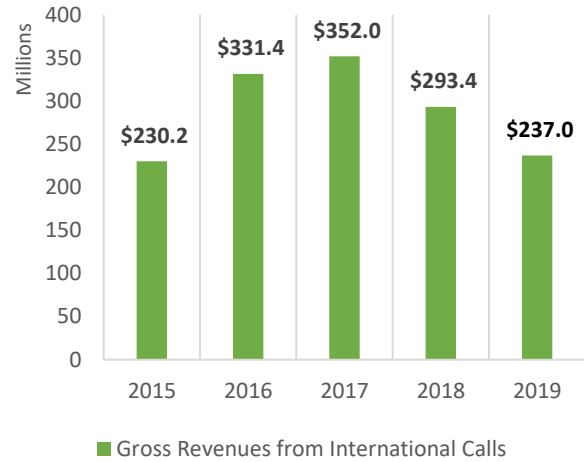


**Figure 80. Percentage of incoming and outgoing international voice traffic (minutes) from 2015 to 2019**

## 5.2 International Voice Revenues

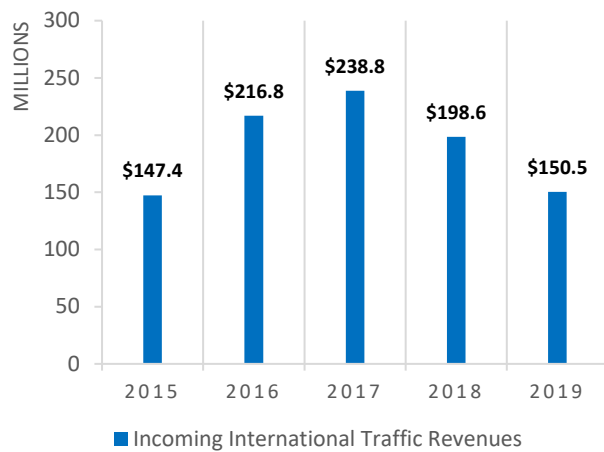
The trend in gross revenues generated by the international voice market between 2015 and 2019 is highlighted in Figure 81. There was a decline in gross revenues generated by international voice services in 2019. This marked the second consecutive year within the last five years in which gross revenues fell. At the end of 2019, gross revenues stood

at TT\$237 million, decreasing by TT\$56.4 million, or 19.2%, from 2018.

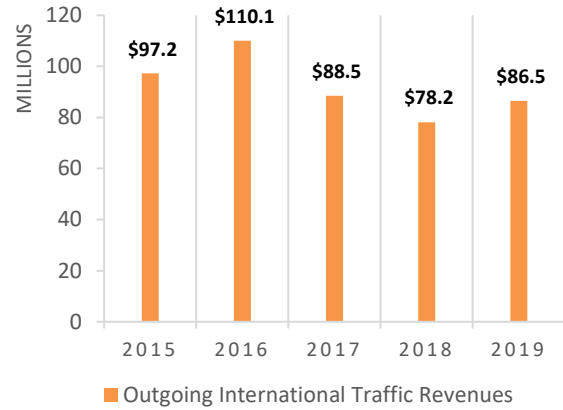


**Figure 81. Gross revenues from international (incoming and outgoing) voice services from 2015 to 2019**

As shown in Figure 82, incoming international revenues grew from 2015, peaking in 2017 with TT\$238.8 million, before a gradual decline over the next two years to end 2019 at TT\$150.5 million. The decrease from 2018 amounted to TT\$48.1 million, or 24.2%.



**Figure 82. Revenues from incoming international voice traffic (minutes) from 2015 to 2019**



**Figure 83. Revenues from outgoing international voice traffic (minutes) from 2015 to 2019**

In 2019, the amount of revenues earned from outgoing international voice services was TT\$86.5 million, as illustrated in Figure 83. This represents an increase of TT\$8.3 million, or 10.6%, from the previous year.

### 5.3 International Voice Market Concentration

The HHI for the international voice market is calculated using the number of international incoming and outgoing minutes.

Figure 84 indicates that the HHI for the incoming market fluctuated across all quarters of 2019. The first quarter recorded the highest level of concentration for the year, at 4,590.1, which was followed by a dip to 3,746.9 in the second quarter. There was some resurgence in the third quarter, for which an HHI of 4,104 was calculated, before the final quarter ended with a value of 3,641.9.

As shown in Figure 85, the outgoing market recorded its highest HHI in the first quarter of 2019, with a value of 4,546, which dropped to 4,446.6 in the second quarter. The decline continued in the third quarter, with a figure of 4,439.3 being registered, before a rise in the fourth quarter to 4,486.2 points.

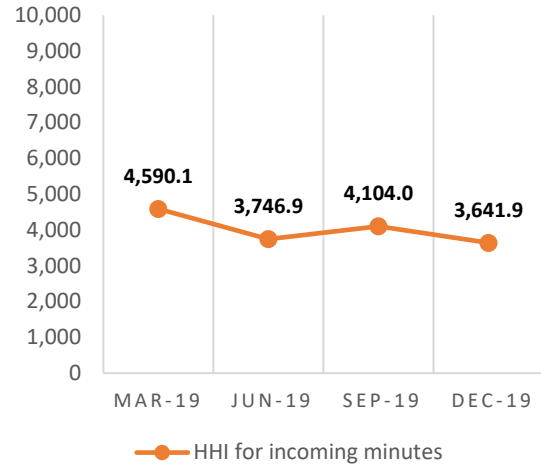


Figure 84. HHI for international incoming minutes in 2019

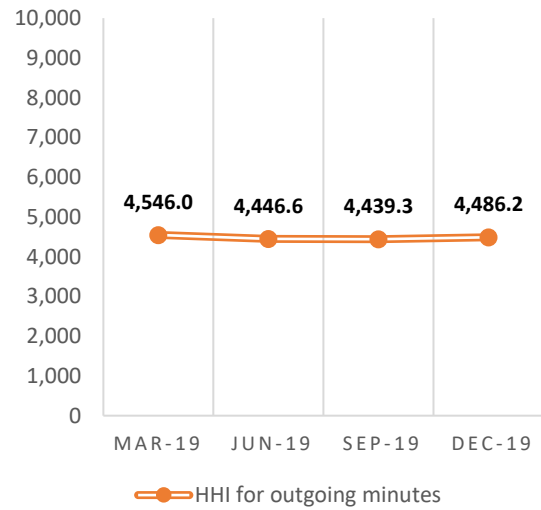


Figure 85. HHI for international outgoing minutes in 2019



# **BROADCASTING** MARKET

2019 ANNUAL MARKET REPORT



FREE TO AIR TV  
REVENUES  
**TT\$60.2 Million**  
Decrease 15.4%  
over 2018



PAY TV REVENUES  
**TT\$726.9 Million**  
Increase 3.4%  
over 2018



FREE TO AIR RADIO  
REVENUES  
**TT\$133.5 Million**  
Decrease 3.9%  
over 2018



249,800  
Subscriptions

32.4%  
decrease over 2018

**TT\$0.92B**

BROADCAST MARKET REVENUES



## 6 Broadcasting Market Review

The broadcasting market is classified based on the following categories: free-to-air (FTA) television (TV), TV broadcasting via cable, subscription or pay TV and FTA radio. Operators are granted a concession to provide broadcasting services to any 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 7 lists the number of concessions granted in the last five years for the provision of public broadcasting services.

**Table 7. Number of concessions in the broadcasting market from 2015 to 2019**

Type of Concession	Number of Concessions				
	2015	2016	2017	2018	2019
<b>FTA TV</b>	<b>7</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>4</b>
National	6	5	5	4	3
Major territorial	1	1	1	1	1
<b>Subscription Television</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>13</b>	<b>13</b>
National	8	8	8	7	7
Major territorial	1	1	1	1	1
Niche	4	4	4	4	4
Minor territorial	1	1	1	1	1
<b>TV Broadcasting via Cable</b>	<b>10</b>	<b>9</b>	<b>9</b>	<b>8</b>	<b>14</b>
National	8	8	8	8	14
Major territorial	2	1	1	0	0
<b>FTA Radio</b>	<b>38</b>	<b>37</b>	<b>37</b>	<b>36</b>	<b>36</b>
National	30	29	29	28	29
Major territorial	6	6	6	6	5
Minor/niche territorial	2	2	2	2	2
<b>Total</b>	<b>69</b>	<b>66</b>	<b>66</b>	<b>62</b>	<b>67</b>

## **6.1 Free-to-Air (FTA) Television (TV) Broadcasting Market**

In 2019, the market for FTA TV broadcasting services consisted of the following operational concessionaires<sup>34</sup>:

1. Advance Community Television Network Limited (ACTS 25)
2. CCN Television Limited (CCN TV6)
3. Government Information Services Limited (GISL)
4. TTT Limited (formerly Caribbean New Media Group Limited)

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

1. Central Broadcasting Services Ltd. (Jaagriti TV)
2. Darut Tarbiyah
3. Environmental Management Authority (EMA)
4. Gayelle Limited
5. Guardian Media Limited (CNC3)
6. IBN Communications Company Limited
7. Ice Media Group Limited

8. Liming Monkey
9. Living Water Community
10. Sankyha Television Limited
11. SWAHA Media Limited
12. Synergy Entertainment Network
13. Twenty-Four Seven News and Sports Limited
14. WI Sports

At the time of publication of this Report, the EMA, Ice Media Group, Liming Monkey and Twenty Four Seven News and Sports Limited had not yet launched services to the public.

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

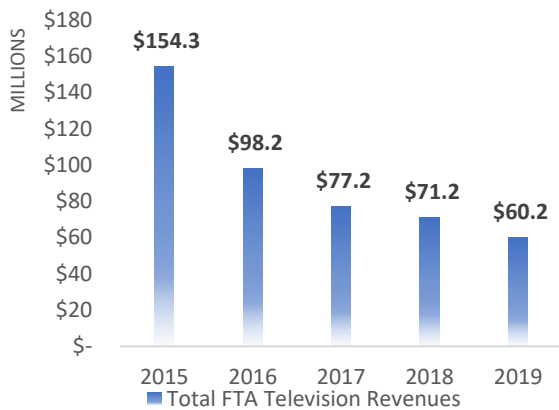
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<sup>34</sup> Refer to Appendix II for a detailed listing of concessionaires.



### 6.1.1 FTA TV Revenues

The downward trend for gross revenues of the FTA TV market continued in 2019. The revenues generated totalled TT\$60.2 million — a decline of TT\$11 million, or 15.4%, compared to 2018. Figure 86 shows the constant decline in revenues of the FTA television broadcasting market for the past five-year period.

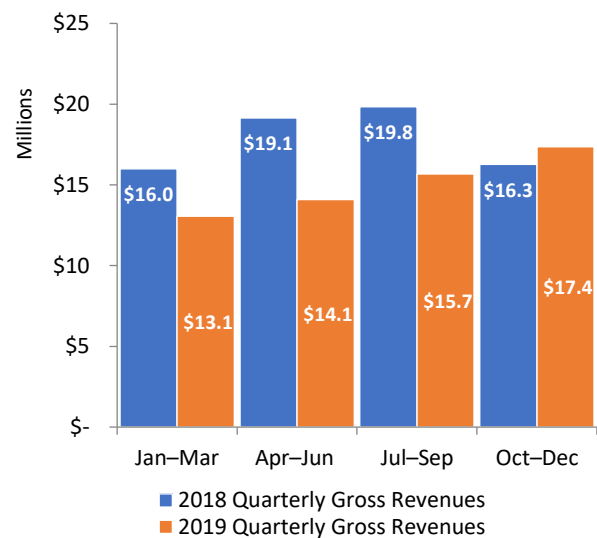


**Figure 86. Gross revenues for the FTA TV market from 2015 to 2019**

Figure 87 compares quarterly gross revenues earned in the FTA television market between 2018 and 2019. In 2019, there was consistent growth in revenues across all quarters. However, revenues obtained for the first three quarters of 2019 were less compared to the corresponding quarters of 2018. The

fourth quarter of 2019 recorded the highest revenues of TT\$17.4 million — an increase of TT\$1.1 million, or 6.7%, compared to the final quarter of 2018.

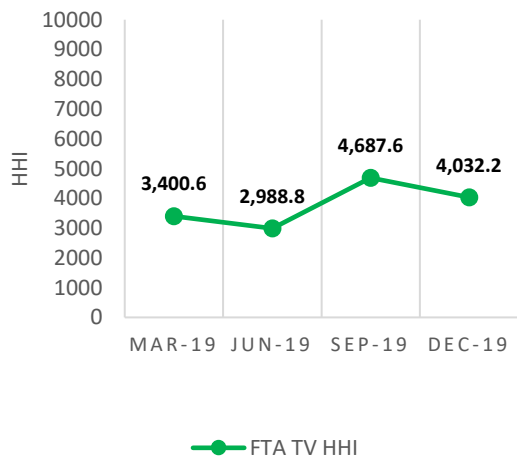
For both 2018 and 2019, the first quarter recorded the lowest revenue earnings, with TT\$16.0 million and TT\$13.1 million for the respective years. The greatest variation in revenues was observed in the second quarter, with a reduction of TT\$5.0 million, or 26.2%, when compared to the same period in 2018. Third quarter revenues in 2019 contracted by TT\$4.1 million, or 20.7%, compared to 2018.



**Figure 87. Quarterly gross revenues for FTA TV in 2018 and 2019**

### 6.1.2 FTA TV Market Concentration

The Authority calculated the level of concentration for the FTA TV broadcasting market using the HHI, based on revenues generated in that market. For 2019, the HHI fluctuated across all four quarters. The first quarter recorded a figure of 3,400.6 before the HHI dropped to 2,988.8 by the end of the second quarter. In the third quarter, the value peaked to 4,687.6 before declining in the final quarter to a figure of 4,032.2. Figure 88 illustrates this alternating trend in quarterly HHI for 2019.

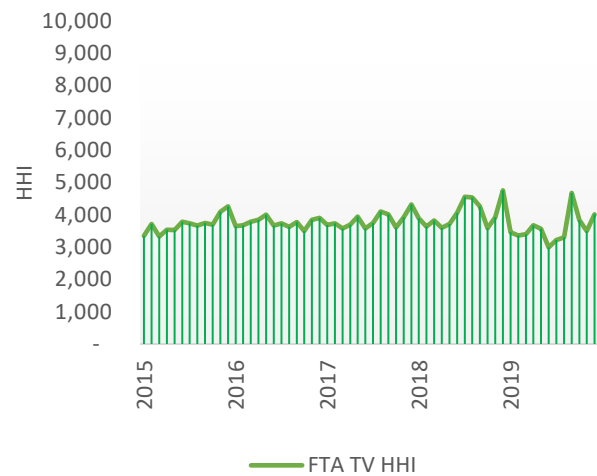


**Figure 88. Quarterly HHI for the FTA TV broadcasting market in 2019**

Figure 89 portrays the annual trend in HHI for the period 2015 to 2019. Relative stability was observed for the years 2015 to 2017, with

more pronounced peaks and troughs in HHI recorded from 2018 to 2019.

The monthly average HHI for 2019 was lower, at 3,579.8, compared to the mean value of 4,026.8 calculated for 2018.



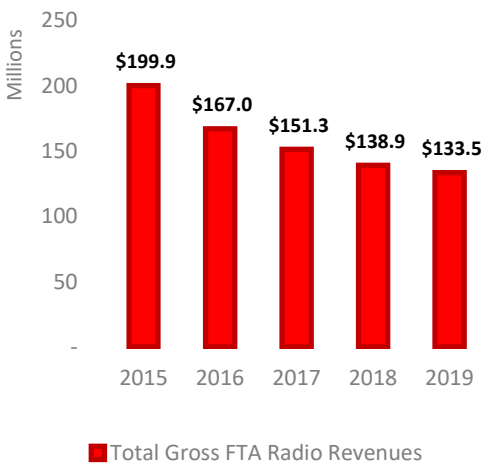
**Figure 89. HHI for the FTA TV broadcasting market from 2015 to 2019**

## 6.2 FTA Radio Broadcasting Market

In 2019, the FTA radio broadcasting market consisted of 36 radio stations<sup>35</sup> (see Appendix II for a detailed listing). It should be 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 Revenue

In 2019, the FTA radio broadcasting market earned TT\$133.5 million in gross revenue. This represents a decrease of TT\$5.4 million, or 3.9%, compared to 2018. Figure 90 compares revenue earnings in the FTA radio market for the period 2015 to 2019 and shows

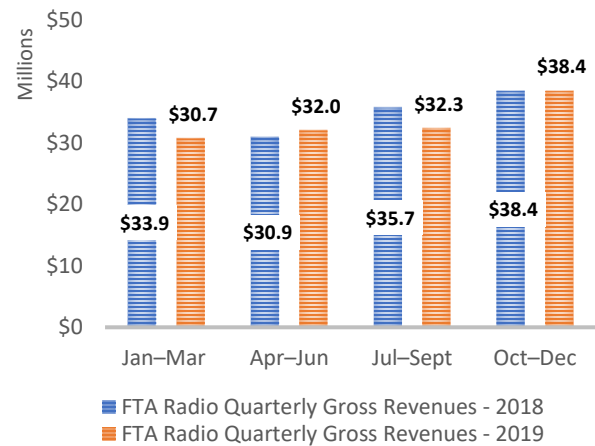


**Figure 90. Gross revenue for the FTA radio broadcasting market from 2015 to 2019**

<sup>35</sup> TRICO Industries Limited was not operational during this period.

the continuous downward trend in annual revenue.

Figure 91 illustrates the quarterly gross revenues earned in the FTA radio broadcasting market in 2018 and 2019.



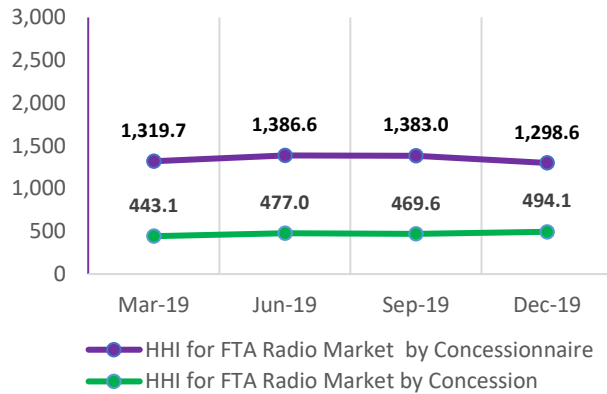
**Figure 91. Quarterly revenue for FTA Radio in 2018 and 2019**

Overall, there was a consistent increase in gross revenue across each quarter of 2019. April to June registered revenues of TT\$32 million — the only quarter to earn revenues exceeding the corresponding quarter of 2018. The first and third quarters of 2019 each recorded decreases of TT\$3.2 million and TT\$3.4 million, respectively, when compared with the corresponding quarters of

2018. In the final quarter of both years, equal revenues of TT\$38.4 million were reported.

### 6.2.2 FTA Radio Market Concentration

Using revenue data, 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. Figure 92 provides an illustration of the quarterly trends in HHI for both concessionaires and concessions.

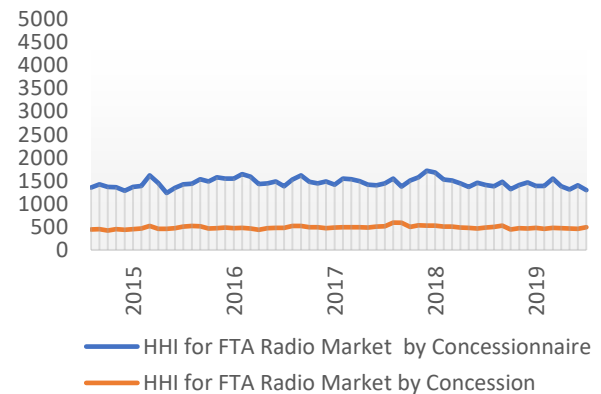


**Figure 92. HHI for the FTA radio broadcasting market for 2019**

With respect to the HHI by concessionaire, there was an increase from 1,319.7 in the first quarter to 1,386.6 in the second quarter. This was followed by subsequent declines in the third and fourth quarters, to end 2019 at 1,298.6 — the lowest value of the year. The HHI, based on the number of concessions in the market, increased from 443.1 in the first quarter to 477 in the second. It dipped in the

third quarter to 469.6 before rising to 494.1 in the final quarter.

In 2019, the average HHI by concessionaire was lower, at 1397.8, than the previous year’s figure of 1507.4. Similarly, the average 2019 HHI by concession was 475.3, which was less than the 2018 average of 517. Overall, the level of concentration in the FTA radio market, for both concessions and concessionaires, decreased in 2019.



**Figure 93. HHI for the FTA radio broadcasting market from 2015 to 2019**

As Figure 93 shows, the HHI based on concessions was relatively stable from 2015 to 2019, while the HHI based on concessionaires had more pronounced fluctuations over this same period.

### 6.3 Pay Television<sup>36</sup> (TV) Broadcasting Market

The Trinidad and Tobago pay TV market comprised 13 authorised service providers as at December 2019, 12 of which were operational in the review period<sup>37</sup>. Business entities operating in the market provided

services to subscribers within their respective authorised coverage areas. Table 8 lists each service provider, the type of service utilised to deliver pay TV services and their authorised coverage areas.

**Table 8. List of operational pay TV providers in 2019**

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

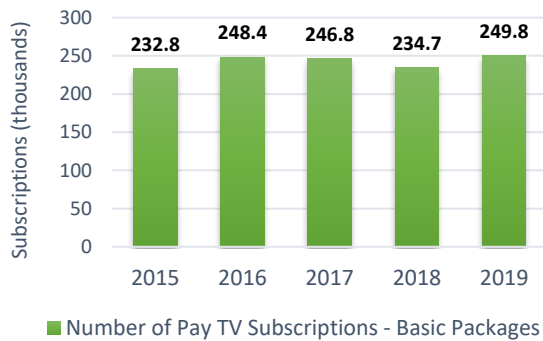
<sup>36</sup> Also referred to as subscription TV

<sup>37</sup> Open Telecom 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.

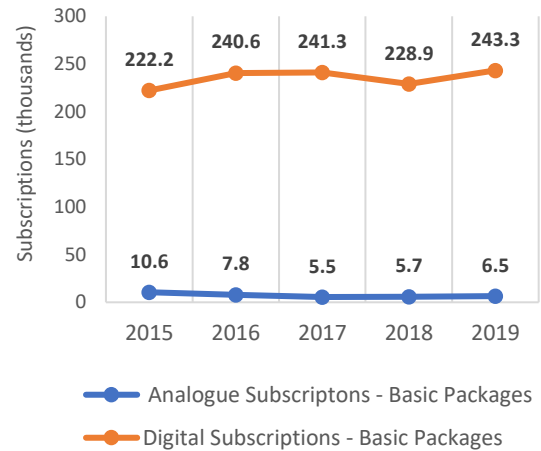
Following a decline in 2018, subscriptions rose by 6.4% in 2019, with a tally of 249,800. This was the largest number of pay TV subscriptions over the last five years, as shown in Figure 94.



**Figure 94. Number of pay TV basic subscriptions**

A comparison of pay TV subscriptions by type of service for the years 2015 to 2019 is given in Figure 95. There was a steady increase in the number of subscriptions using digital technologies from 2015 to 2017, before a decline to 228,900 subscriptions in

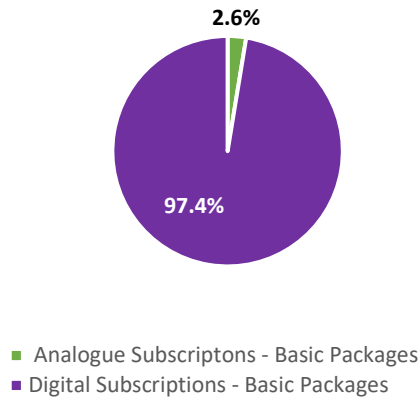
2018. In 2019, there was an increase of 14,400 subscriptions, or 6.3%, to record final subscription figures of 243,300 — the highest for the five-year period.



**Figure 95. Pay TV subscriptions by type of service from 2015 to 2019**

Subscriptions utilising analogue technologies trended downward from 2015 to 2017, with the lowest figure of 5,500 recorded in 2017. Analogue subscriptions increased by 3.6% in 2018, before further growth of 14% in 2019, amounting to 6,500 subscriptions.

The proportion of subscriptions by type of platform for 2019 is depicted in Figure 96.



**Figure 96. Proportion of analogue and digital pay TV subscriptions for 2019**

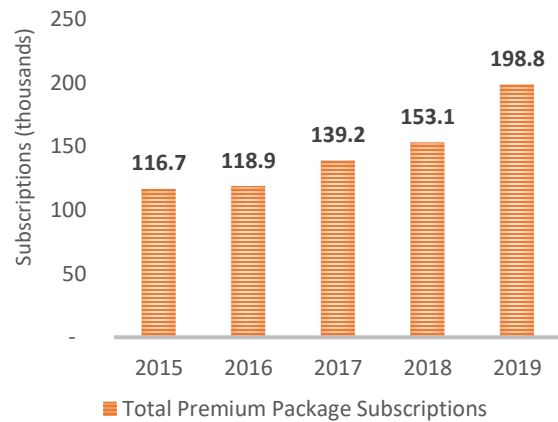
For 2019, 97.4% of all pay TV subscriptions were digital, while the remaining 2.6% were analogue.

### 6.3.1.1 Premium Package Subscriptions

Premium channels are additional channels or a group of channels offered by pay TV service providers that consumers may subscribe to, alongside their basic package. It should be noted that consumers can subscribe to more than one premium package.

The total number of premium package subscriptions as at the end of December 2019 was 198,800. This represents an increase of 45,700 subscriptions, or 29.8%, from the previous year. As shown in Figure 97, such growth was consistent with the upward trend

of premium subscription packages over the last few years.



**Figure 97. Number of premium package subscriptions from 2015 to 2019**

Data shown in Table 9 indicate that 2019 was the third consecutive year in which the pay TV market recorded double digit growth in subscriptions.

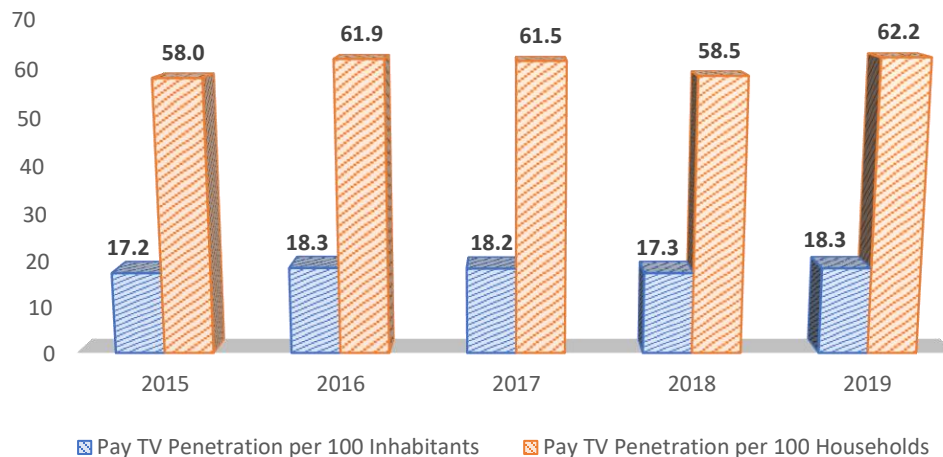
**Table 9. Year-on-year rate of growth in premium subscriptions from 2015 to 2019**

Period	Change in Premium Subscriptions	Year-on-Year Rate of Growth (%)
2014-2015	7,100	6.5%
2015-2016	2,200	1.9%
2016-2017	20,300	17.0%
2017-2018	13,900	10.0%
2018-2019	45,700	29.8%

### 6.3.2 Pay TV Penetration

The penetration rate for pay TV services is calculated as the number of pay TV subscriptions divided by the population size. For 2019, the penetration rate per 100 inhabitants was 18.3, which means that an estimated 18 out of every 100 inhabitants subscribed to pay TV services. The pay TV household penetration rate, defined as the number of subscriptions per 100 households, had a value of 62.2 in 2019. The interpretation is that, for every 100 households in the country, 62 had a pay TV subscription.

In comparison with 2018, both the penetration rate per 100 inhabitants and the penetration rate per 100 households for 2019 were higher. Figure 98 gives a comparison of pay TV penetration rates per 100 inhabitants and penetration rates per 100 households for the period 2015 to 2019. The average penetration rate per 100 inhabitants for this five-year period was 17.9, whereas the average penetration rate per 100 households was 60.4.



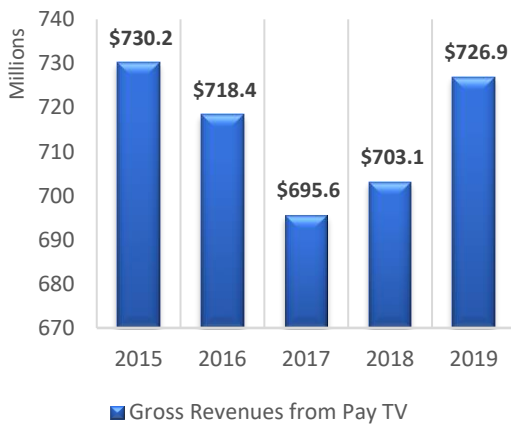
**Figure 98. Pay TV penetration per 100 inhabitants versus pay TV penetration per 100 households**



### 6.3.3 Pay TV Revenues

Gross revenues<sup>38</sup> generated in the pay TV market include service providers' earnings from the provision of services using both analogue and digital technologies.

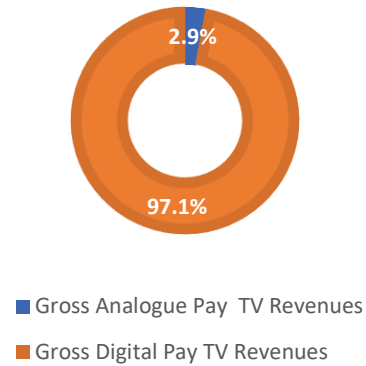
For 2019, the pay TV market earned TT\$726.9 million in revenues. This represents a growth of 3.4% from the previous year, equivalent to an increase of TT\$23.8 million. Figure 99 provides an overview of the trend in gross revenues in the pay TV market for the past five years.



**Figure 99. Pay TV gross revenues from 2015 to 2019**

Most of the revenues generated in the pay TV market were due to digital technologies, as

depicted in Figure 100. Digital pay TV revenues comprised 97.9% of total revenues, or TT\$711.8 million. The remaining 2.1% were acquired from analogue pay TV services and amounted to TT\$15.1 million.

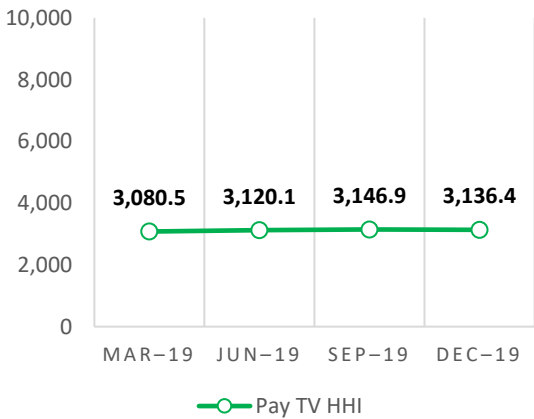


**Figure 100. Pay TV revenues by type for 2019**

<sup>38</sup> Revenues include income generated from connection, re-connection, installation and usage.

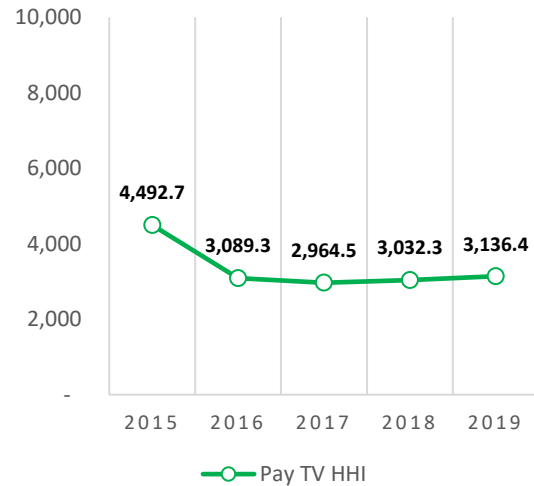
### 6.3.4 Pay TV Market Concentration

The level of concentration increased across the first three quarters of 2019, as shown in Figure 101. The first quarter recorded an HHI of 3,080.5. The HHI rose in both the second and third quarters, ending the latter with a value of 3,146.9 — the highest figure of the year — before declining in quarter four to end the year with 3,136.4 points.



**Figure 101. Quarterly HHI for pay TV market in 2019**

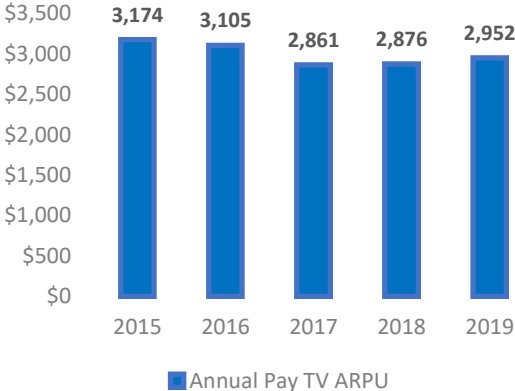
As highlighted in Figure 102, the HHI for the pay TV market decreased from 2015 to 2017, recording a five-year low of 2,964.5 points. However, the level of concentration rose in 2018 and 2019, with figures of 3,032.3 and 3,136.4, respectively. The year-on-year increase from 2018 to 2019 was 3.4%, or 104.1 points.



**Figure 102. HHI for pay TV market from 2015 to 2019**

**6.3.5 Pay TV Average Revenue per User (ARPU)**

For 2019, the ARPU was TT\$2,952 — an increase of TT\$76 from 2018. This represents a 2.6% rise in the average revenue earned by each pay TV subscription. As indicated in Figure 103, there was a decline in the annual ARPU from 2015 to 2017, before a gradual increase in both 2018 and 2019.



**Figure 103. Pay TV ARPU from 2015 to 2019**

## Appendix I: Domestic Telecommunications Statistics

**Table 10. Domestic telecommunications statistics**

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>General</b>	Population (millions)	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	<b>1.4</b>
	Telecommunications revenues (US\$ million)	497.9	521.3	775.3	685.2	713.1	737.0	834	864.4	881.5	876.7	836.0	771.8 <sup>39</sup>	832.1	<b>740.7</b>
	Total telephone subscriptions ('000s)	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	<b>2,496.0</b>
	Total telephone penetration	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	<b>183.0</b>
	Average revenue per user <sup>40</sup> (ARPU) US\$	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	<b>296.7</b>
<b>Fixed Voice</b>	Fixed voice subscriptions ('000s)	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	<b>332.3</b>
	Fixed voice penetration	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	<b>24.4</b>
	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	<b>71.0</b>
	Average revenue per user (ARPU) US\$	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	<b>235.6</b>
	Fixed voice subscription growth (%)	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	<b>4.6</b>

<sup>39</sup> Telecommunications revenues for 2017 were revised from US\$758.1 million previously reported to US\$771.8.

<sup>40</sup> ARPU is calculated as the total revenues generated from the service divided by the total number of subscriptions to the service.

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Mobile	Mobile subscriptions ('000s)	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	<b>2,163.7</b>
	Mobile penetration	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	<b>158.6</b>
	Average revenue per user (ARPU) US\$	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	<b>70.7</b>
	Mobile subscription growth (%)	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	<b>9.7</b>
Internet	Total Internet subscriptions <sup>41</sup> ('000s)	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	<b>992.7</b>
	Fixed Internet subscriptions <sup>42</sup> ('000s)	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	<b>339.4</b>
	Mobile Internet subscriptions <sup>43</sup> ('000s)	-	10.7	15.6	93.3	138.8	133.2	422.5 <sup>44</sup>	450.6	570.5	645.4	707.3	704.6	678.6	<b>653.3</b>
	Fixed broadband subscriptions <sup>45</sup> ('000s)	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	<b>339.3</b>
	Fixed Internet users <sup>46</sup> ('000s)	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	<b>1,059.1</b>
	Fixed Internet penetration	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	<b>24.9</b>
	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	<b>47.9</b>
	Fixed Internet users penetration	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	<b>77.6</b>
	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	<b>79.9</b>
	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	<b>510.8</b>
	Fixed Internet subscription growth (%)	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	<b>-0.5</b>

<sup>41</sup> Total Internet subscriptions are the sum of fixed Internet subscriptions and mobile postpaid Internet subscriptions.

<sup>42</sup> Fixed Internet subscriptions are the total number of subscriptions with fixed wired or fixed wireless Internet access.

<sup>43</sup> Mobile Internet subscriptions from 2003 to 2011 include postpaid mobile customers who subscribe to monthly Internet airtime and who are billed accordingly.

<sup>44</sup> Mobile Internet subscriptions from 2012 to 2016 include prepaid and postpaid mobile Internet users.

<sup>45</sup> Fixed broadband subscriptions are the number of Internet subscriptions with access to download speeds of 256kbits or above.

<sup>46</sup> Fixed Internet users are the number of persons who regularly use fixed Internet services.

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
International Traffic	International: outgoing (min. million)	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	<b>79.7</b>
	International: incoming (min. million)	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	<b>91.9</b>
	Inbound/outbound int'l traffic ratio	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	<b>1.2</b>
Pay TV	Pay TV subscriptions ('000s)	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	<b>249.8</b>
	Pay TV penetration	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	<b>18.3</b>
	Subscription TV household penetration	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	<b>62.2</b>
	Average revenue per user (ARPU) US\$	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	<b>435.4</b>
	Pay TV subscription growth	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	<b>6.4</b>

## Appendix II: List of Concessionaires and Concessions as at December 2019

Concessions granted (July 1, 2004 – December 31, 2019)

CONCESSIONAIRE	NETWORK AND/ OR SERVICE	TERRITORY	TYPE	TERM	DATE OF GRANT	EXPIRY DATE	FREQUENCY/ SPECTRUM
<b>INTERNATIONAL TELECOMMUNICATIONS</b>							
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
<b>FIXED TELECOMMUNICATIONS</b>							
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

### FIXED TELECOMMUNICATIONS (Cont'd)

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
<sup>8</sup> 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
Mora's Weather Network	Public Domestic Telecommunications Services via a Public Domestic Fixed (Wireless) Telecommunications Network	Niche - Lopinot	Type 2	10 Years	10 April 2019	9 April 2029	N/A
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
<sup>9</sup> NOVO Communications Limited (formerly Diversified Technologies Limited)	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	4 February 2020	3 February 2030	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
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



FIXED TELECOMMUNICATIONS (Cont'd)							
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
Wired Technologies Limited (formerly Santa Flora Cable Network Ltd)	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
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
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 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
<sup>2</sup> Gem Radio Five Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	95.5 FM
<sup>2</sup> Gem Radio Five Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	107.1 FM
<sup>2</sup> 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
<sup>2</sup> 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

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

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
<sup>5</sup> 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 <i>(formerly Kenny Phillips)</i>	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2019	22 February 2029	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	10 October 2012	9 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
<sup>3</sup> 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
<sup>4</sup> 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 <i>(formerly Caribbean New Media Group Limited)</i>	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	91.1 FM
TTT Limited <i>(formerly Caribbean New Media Group Limited)</i>	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2016	22 February 2026	99.1 FM

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

TTT Limited ( <i>formerly Caribbean New Media Group Limited</i> )	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

### 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
TTT Limited ( <i>formerly Caribbean New Media Group Limited</i> )	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
<sup>8</sup> 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

SUBSCRIPTION TELEVISION BROADCASTING (Cont'd)							
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
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
Wired Technologies Limited (formerly 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
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
Gayelle Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	21 February 2019	20 February 2029	N/A
Guardian Media Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	21 February 2019	20 February 2029	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
Liming Monkey	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	21 February 2019	20 February 2029	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

### TELEVISION BROADCASTING SERVICE VIA CABLE (Cont'd)

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
Synergy Entertainment Network Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	21 February 2019	20 February 2029	N/A
<sup>7</sup> SWAHA Media Limited (formerly Video Associates Limited)	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	23 February 2016	22 February 2026	N/A
Twenty Four Seven News and Sports Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	21 February 2019	20 February 2029	N/A
WI Sports	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	21 February 2019	20 February 2029	N/A

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

<sup>2</sup>Concession 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.

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

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

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

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

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

<sup>8</sup>Concession obligations of ICNTT have been novated to Galavant Networks Limited as of October 21, 2019.

<sup>9</sup>EMA requested the surrender of its Type 5 Broadcast Concession via PDFTN pending Board and Ministerial approval as of December 31, 2019.

## 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: <https://discoverflow.co/trinidad/>
- Digicel (Trinidad & Tobago) Limited: <http://www.digiceltt.com/>
- DirecTV Trinidad Limited: <http://www.directvcaribbean.com/tt/>
- Novo Communications Limited: <https://novocommunications.net/>
- 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/>

## Appendix IV: Glossary of Terms

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

<b>Terms</b>	<b>Definition</b>
<b>Average revenue per user</b>	Measures the average revenue generated by one subscriber
<b>Broadband</b>	Internet speeds > 256 kbits/s
<b>Concession</b>	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
<b>Free-to-air (FTA)</b>	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
<b>Gross domestic product (GDP)</b>	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
<b>Herfindahl-Hirschman Index</b>	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.
<b>Interconnection</b>	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

<b>International settlement rate</b>	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
<b>Licence</b>	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
<b>Mobile voice subscription</b>	Refers to an activated (prepaid or postpaid) SIM card that enables the user to make and/or receive a call
<b>Narrowband</b>	Internet speeds $\leq 256$ kbits/s
<b>Off-net traffic</b>	Refers to traffic originating on a service provider's network and terminating on another network
<b>On-net traffic</b>	Refers to traffic originating on a service provider's network and terminating on the same network
<b>Pay TV</b>	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
<b>Penetration rate</b>	Defined as the number of persons per 100 inhabitants who subscribe to telecommunications and/or broadcasting services





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