



# ANNUAL MARKET REPORT 20 17

TELECOMMUNICATIONS AND BROADCASTING SECTORS

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Nothing in this report shall be construed as prejudicing any determination or regulatory action undertaken by the Authority in accordance with the Telecommunications Act, Chap. 47:31.

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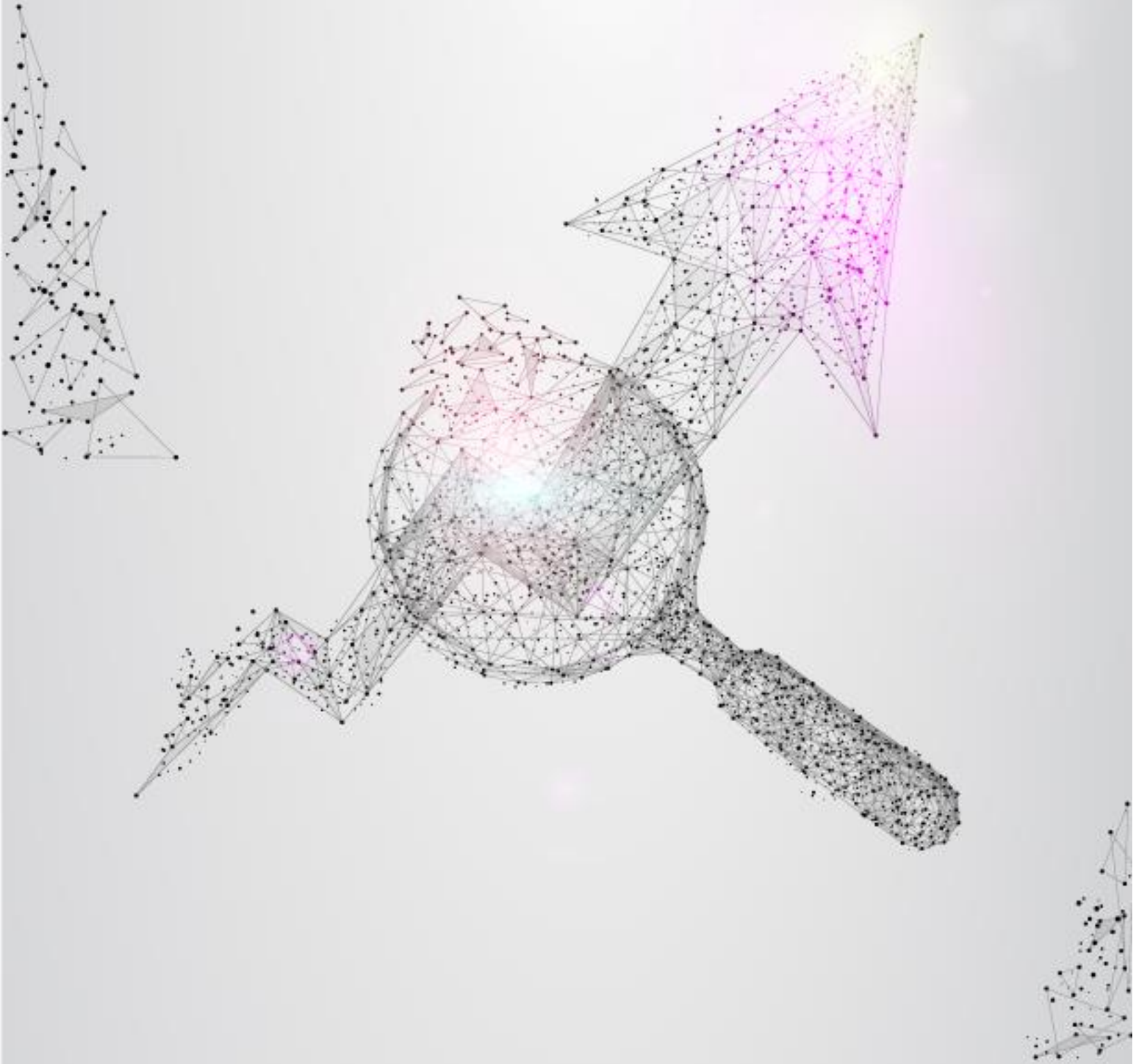
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## Foreword

As the Telecommunications Authority of Trinidad and Tobago (the Authority) celebrates 14 years of achievements in regulating the telecommunications and broadcasting sectors, it is our pleasure to present the *12th Annual Market Report: Telecommunications and Broadcasting Sectors 2017* (the Report).

This Report is a comprehensive compilation of statistics on the performance of the two sectors during the period January to December 2017. It contains data relating to a range of telecommunications and broadcasting indicators, such as subscription numbers, penetration rates, gross revenues and traffic volumes. The data collected is used by the Authority to monitor and inform regulatory policy decisions aimed at facilitating the growth of these sectors.

The 2017 findings reaffirm the vibrant and robust nature of Trinidad and Tobago's telecommunications and broadcasting sectors, which generated approximately TT\$5.14 billion in revenues over the review period. Over the past five years, the Internet market has shown steady growth and 2017 was no exception. There were 327,000 fixed Internet subscriptions at the end of 2017 — an 11% increase when compared to the same period in 2016. This growth in fixed Internet resulted in an increase in the number of households accessing fixed broadband services from 69 to 77 out of every 100 households.

These increases are encouraging, as it has been shown that the deployment and availability of high-quality information and communications technology (ICT) services, such as broadband at reasonable rates, is a significant factor in enabling emerging economies to attain higher levels of development. ICTs and the advancement of the digital economy globally are considered critical to the attainment of all 17 Sustainable Development Goals (SDGs). They promote economic and social transformation, stimulate efficiency in all areas of production and service, and are a key platform for building a competitive knowledge-based economy and information society.

In light of the central role the telecommunications and broadcasting sectors play in national socio-economic development, the Authority will continue to collect, analyse and disseminate

timely market information which significantly contributes to effective and efficient market regulation.

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

## **Executive Summary**

Similar to the reports prepared and published in previous years by the Telecommunications Authority of Trinidad and Tobago (the Authority), this Annual *Market Report: Telecommunications and Broadcasting Sectors 2017* (the Report) presents and reviews performance data and market trends observed within the telecommunications and broadcasting industry.

### ***Reduction in total revenues observed within the sectors***

Overall, the telecommunications and broadcasting sectors generated an estimated TT\$5.14 billion in revenues. This represented a 7.8% decrease in total revenues when compared to 2016. For the 2017 period, the telecommunications sector contributed TT\$4.21 billion while the broadcasting sector contributed TT\$0.93 billion.

### ***Internet services became the top revenue earner***

With an estimated TT\$1.56 billion in revenues earned, the Internet market surpassed the mobile market (TT\$1.55 billion) to become the top revenue earner in the industry. These two markets accounted for 30.4% and 30.2% of total revenues, respectively, with the pay TV and fixed voice markets being the next highest revenue earners, constituting 13.5% and 13.4% of the industry revenues, respectively.

### ***Rise in fixed Internet subscriptions, minimal decrease in mobile Internet users***

The number of subscriptions in the fixed Internet market increased significantly by 11.1%, to record 327,000 subscriptions in 2017. This growth was also reflected in increased fixed Internet penetration rates. At the end of 2017, 24 out of every 100 inhabitants, or 77 out of every 100 households, had a fixed Internet subscription. There were 704,500 mobile Internet users — a

decrease of 0.4% from the previous year. The level of mobile Internet penetration also decreased slightly, standing at approximately 52 per 100 persons.

***Fixed voice subscriptions increased while pay TV and mobile voice subscriptions recorded their first decrease in five years.***

Recording 318,800 subscriptions, the fixed voice market increased in 2017 by approximately 4.2% when compared to 2016. Conversely, subscriptions in the pay TV market decreased marginally (-0.6%) to record 246,800 subscriptions in 2017. Similarly, with 2.03 million subscriptions in 2017, the mobile voice market reported its first decrease (-6.2%) since 2013. Consequently, the mobile voice penetration rate decreased from 160.0 per 100 inhabitants in 2016 to 150.0 in 2017.

***Revenues continued to fall in free-to-air television and free-to-air radio broadcasting markets.***

Similar to 2016, gross revenues from the free-to-air television market decreased significantly in 2017. Total gross revenues for this market amounted to TT\$77.2 million — a decrease of TT\$21.0 million, or 21.4%, when compared to the previous year. During 2017, the free-to-air radio broadcasting market earned TT\$151.1 million in gross revenues. When compared with the previous year's earnings of TT\$167.0 million, gross revenues generated in 2017 decreased by 9.5%.

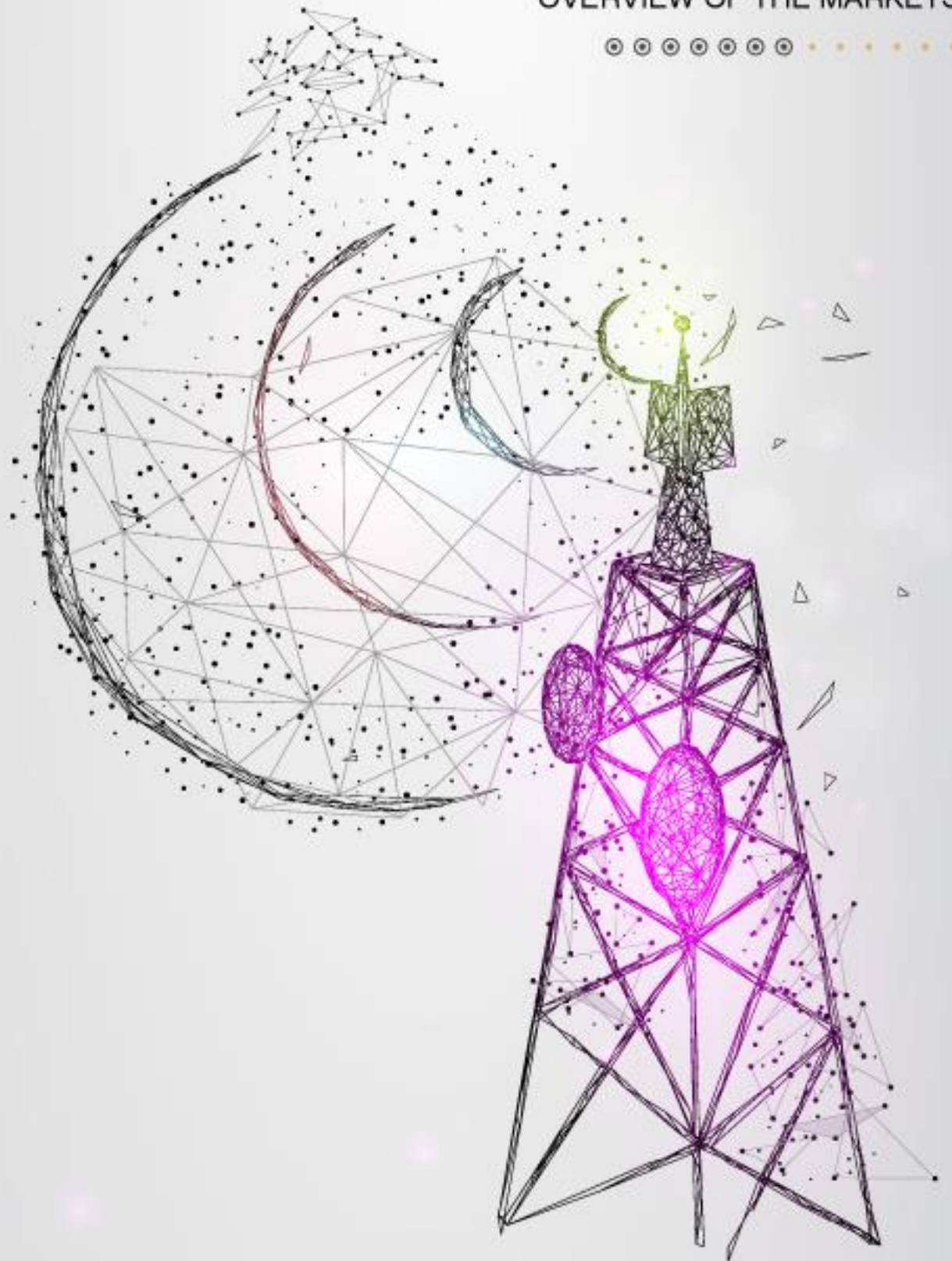
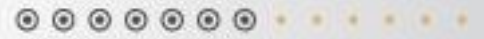
***Market concentration remained stable in the mobile market, while fixed voice, fixed Internet and pay TV markets recorded significant reductions.***

Market concentration, as measured by the Hirschman-Herfindahl Index (HHI), within the fixed voice market recorded 4,712.8 at the end of 2017 — a 23.2% reduction when compared to 2016. Within the fixed Internet market, the HHI at the end of the year stood at 3,158.4, decreasing from the 3,681.9 calculated in December 2016. Additionally, the HHI in the pay TV market declined sharply in 2017, recording 2,964.5 points — a 4.0% year-on-year decrease. Compared to 2016,

the HHI in the mobile voice market remained relatively constant in 2017, ending the year with a recorded 5,066 points.

2017 ANNUAL MARKET REPORT

OVERVIEW OF THE MARKETS



## **1. Overall Market Review**

The *Annual Market Report: Telecommunications and Broadcasting Sectors 2017* (the Report), published by the Telecommunications Authority of Trinidad and Tobago (the Authority), presents information on the markets within the telecommunications and broadcasting sectors, which includes data on subscriptions, gross revenues and traffic. The data collected is used by the Authority to inform and monitor policy decisions, which will facilitate the orderly development of these sectors.

The information presented is based primarily on data submitted by operational concessionaires within the telecommunications and broadcasting sectors for the period January 1 to December 31, 2017, as well as historical data series and other information made available to the Authority at the time of publication of the Report. In 2018, the Authority received revised data for the period 2016 and 2017. The new data has been incorporated in this Report and accounts for any differences between the 2016 and 2017 Reports.

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).

### **1.1. Total Authorisation**

Under section 21 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 of concessions to telecommunications and broadcasting operators. As at December 2017, a total of 97 concessions were granted by the Authority. A detailed list of these concessions can be found in Appendix II.



Concessions are issued to concessionaires who are authorised to operate a public telecommunications network, provide public telecommunications services or provide public broadcasting services. A concessionaire may be granted more than one type of concession<sup>1</sup>.

Table 1 lists the number of operational concessionaires in the various markets as at December 2017.

**Table 1. Number of operational concessionaires by market as at December 2017**

<b>Network Category</b>	<b>Service Provided</b>	<b>Operational Concessionaires</b>
<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	7
	Fixed Internet	11
<b>Pay TV (Subscription TV)</b>		13
<b>Free-to-Air Radio Broadcasting</b>		37
<b>Free-to-Air Television Broadcasting</b>		6
<b>TV Broadcasting via Cable</b>		9

In addition to the granting of concessions, under section 36 of the Act, the Authority is also responsible for the granting of licences. For the period January to December 2017, the Authority granted 534 licences<sup>2</sup>. Table 2 lists the categories and the number of licences granted during 2017.

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<sup>1</sup> The five types of concessions issued by the Authority can be found in the Authorisation Framework for the Telecommunications and Broadcasting Sectors of Trinidad and Tobago: <https://tatt.org.tt/Portals/0/Documents/Authorisation%20Framework.pdf>

<sup>2</sup> Licences granted include new as well as renewed.

**Table 2. Number of licences granted in 2017**

Type of Licence		2017
Spectrum	Cellular Mobile	-
	Land Mobile	136
	Point-to-Point	53
	Studio-to-Transmitter Link	1
	Point-to-Multipoint	3
	SCADA	4
General Radiocommunications	Satellite Earth Stations	8
	Amateur Stations	90
	Maritime Stations	157
	Aeronautical Stations	62
Broadcasting (Special Events)		20
<b>Total</b>		<b>534</b>

## 1.2. Review of the Telecommunications and Broadcasting Sectors

### 1.2.1. Total Revenue Contributions by the Sectors

The telecommunications and broadcasting sectors generated an estimated TT\$5.14 billion<sup>3</sup> (US\$758.1 million<sup>4</sup>) in 2017, which, as a percentage of GDP<sup>5</sup>, equates to 3.4%. This represented a 7.8% decrease in total revenues generated by this industry when compared to 2016.

Of the total telecommunications and broadcasting revenues, Internet services accounted for the majority of revenues, with TT\$1,561.6 million (30.4%). This was followed by mobile voice services, which contributed TT\$1,554.6 million (30.2%). The next highest revenue earners for the industry were pay TV services and fixed voice<sup>6</sup> services, contributing a total of TT\$695.6 million (13.5%) and TT\$689.0 million (13.4%), respectively. The international voice market was next, generating TT\$318.0 million (6.2%) in revenues. The free-to-air radio and television

<sup>3</sup> This figure includes revenues from telecommunications and broadcasting services offered to members of the general public and private leased line services.

<sup>4</sup> Exchange rate US\$1=TT\$6.68

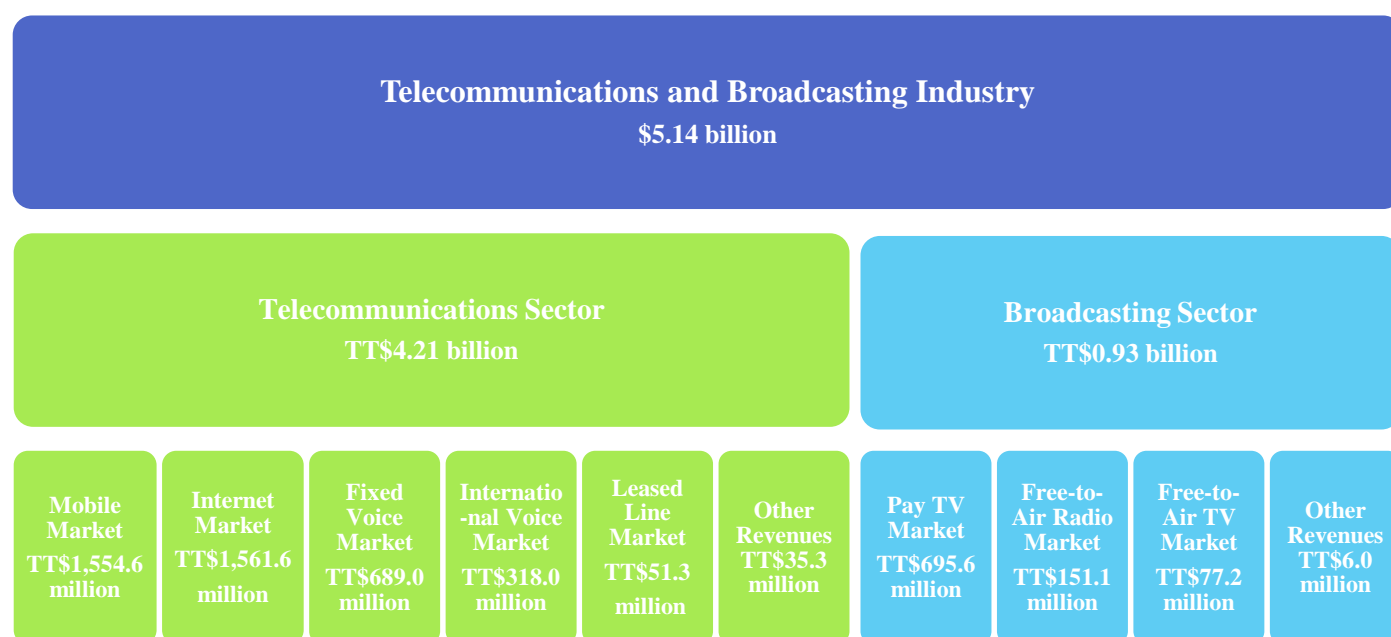
<sup>5</sup> Gross domestic product (GDP) at current market prices for 2017 was TT\$149,685 million. (Source: TT Ministry of Finance *Review of the Economy 2017*)

<sup>6</sup> Fixed voice market revenues include revenues earned from fixed voice services and access (excluding international services).

markets each contributed TT\$151.1 million (2.9%) and TT\$77.2 million (1.5%), respectively. Leased line services<sup>7</sup> contributed TT\$51.3 million (1.0%).

Other revenues<sup>8</sup> generated TT\$41.3 million, which contributed 0.8% to total industry revenues. Of that TT\$41.3 million, other telecommunications revenues generated TT\$35.3 million while other broadcasting revenues generated TT\$6.0 million.

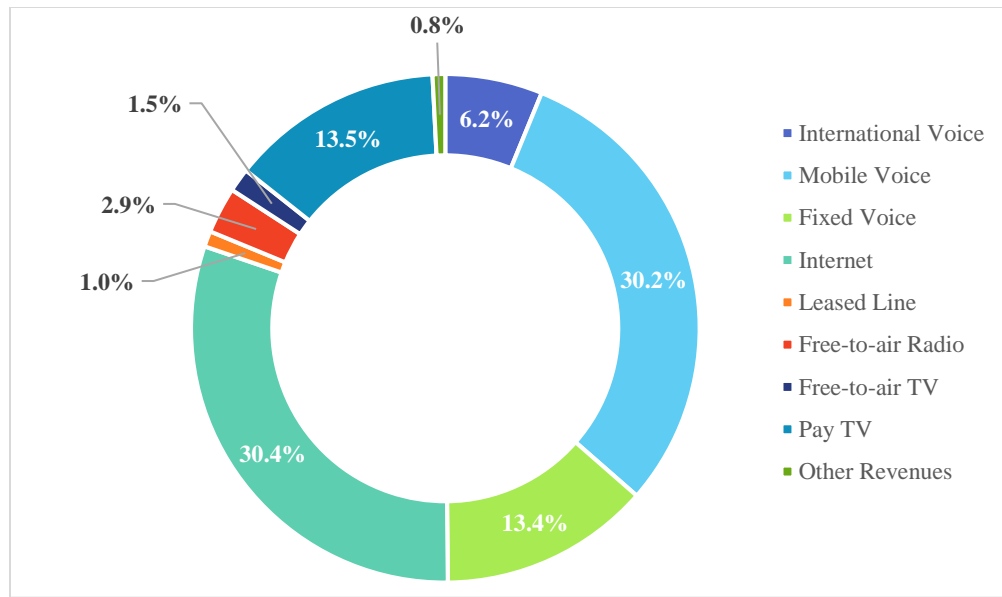
To illustrate the above information, Figure 1 depicts the revenues earned within the industry while Figure 2 shows the percentage revenue contribution by each market towards overall total revenues from the industry.



**Figure 1. Gross revenues by industry, sectors and markets in 2017**

<sup>7</sup> Leased lines include both international and domestic leased circuits.

<sup>8</sup> “Other revenues” comprise revenues earned from both the telecommunications sector and the broadcasting sector, such as revenues received from wholesale services, and production and airtime for local programming on pay TV. See sections 1.2.2 and 1.2.3 for further definitions.



**Figure 2. Percentage of total revenues contributed by markets in 2017**

### 1.2.2. Market Revenue Trends in the Telecommunications Sector

For the 2017 period, the telecommunications sector contributed TT\$4.21 billion, or 81.9%, to overall industry revenues.

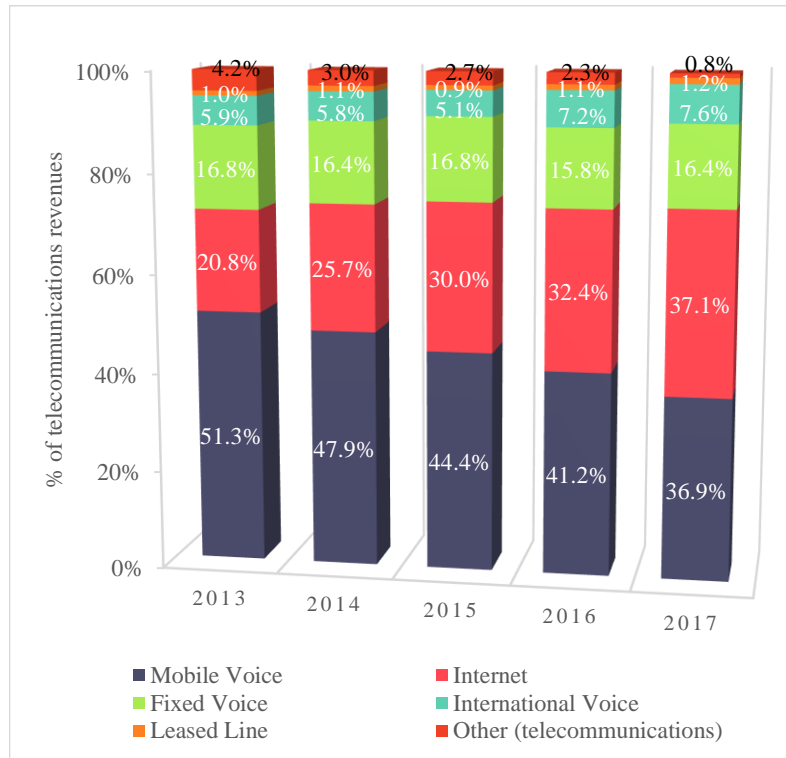
Of the five main markets within this sector, the Internet market generated the majority of revenues, accounting for 37.1% of total telecommunications revenues. The mobile voice market generated the second highest with 36.9%, while revenues from the fixed voice and international voice markets followed with 16.4% and 7.6%, respectively. The leased line market earned 1.2% of telecommunications revenues while other (telecommunications) revenues<sup>9</sup> contributed 0.8 % to total telecommunications revenues.

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<sup>9</sup>Other telecommunications revenues earned from service providers in the sector include other wholesale services (excluding leased line), high-capacity wireless links and two-way radios.

Figure 3 depicts the revenue contributions of the individual markets toward the total revenues generated from the telecommunications sector. As shown, the Internet market continued to expand its percentage contribution to total telecommunications revenues, which increased from 32.4% in 2016 to 37.1% in 2017. This significant increase resulted in this market attaining the position of highest revenue earning market for 2017.

The percentage of revenues generated by the mobile voice market decreased from 41.2% in 2016 to 36.9% in 2017, making it the second highest revenue earning market in the telecommunications sector.



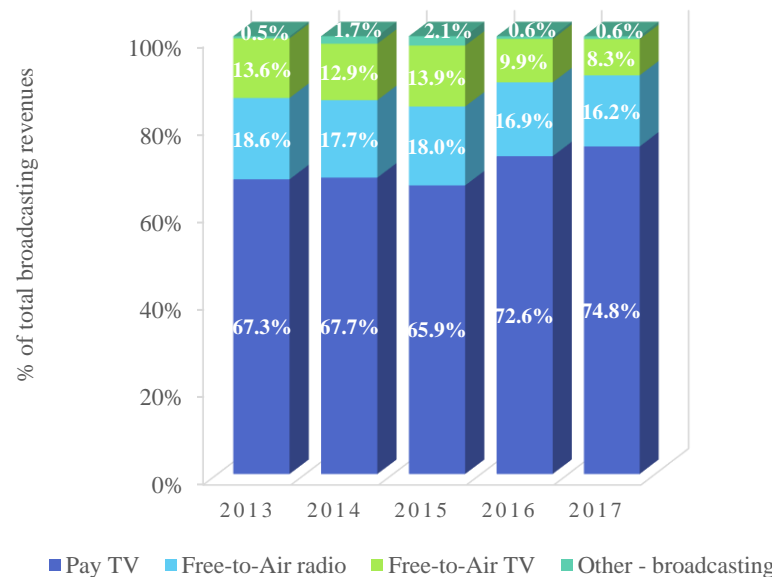
**Figure 3. Percentage revenue contributions by telecommunications markets from 2013 to 2017**

The percentage of revenues from all other telecommunications markets increased marginally, with the exception of other (telecommunications) revenues, which decreased from 2.3% in 2016 to 0.8% in 2017.

### 1.2.3. Market Revenue Trends in the Broadcasting Sector

For the review period, the broadcasting sector contributed TT\$0.93 billion, or 18.1%, towards overall industry revenues. The broadcasting sector is divided into three main markets: pay TV<sup>10</sup>, free-to-air television and free-to-air radio. Similar to the trends experienced over the past five years, the pay TV market continued to earn the majority of revenues in the broadcasting sector, accounting for 74.8% of total broadcasting revenues for 2017. Trailing behind significantly were both the free-to-air radio and free-to-air television markets which earned 16.2% and 8.3%, respectively, of total broadcasting revenues. Other (broadcasting) revenues<sup>11</sup> contributed 0.6% to total broadcasting revenues.

Figure 4 highlights the yearly trends with respect to the revenue contributions by the individual markets towards total broadcasting sector revenues. As seen, the percentage of revenues contributed by the pay TV market to total broadcasting revenues increased from 72.6% in 2016 to 74.8% in 2017.



**Figure 4. Percentage revenue contributions by broadcasting markets from 2013 to 2017**

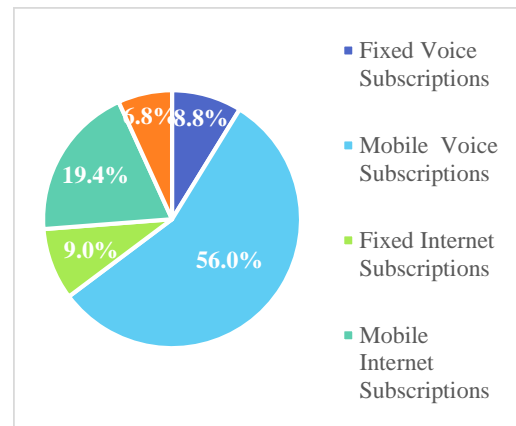
<sup>10</sup> Also known as subscription TV

<sup>11</sup> Other revenues earned from service providers in the broadcasting sector include production and airtime for local programming on pay TV.

#### 1.2.4. Telecommunications and Broadcasting Subscriptions

At the end of 2017, the number of subscriptions within the fixed voice, mobile voice, fixed Internet, mobile Internet and pay TV market segments totalled approximately 3.63 million. This represents a decrease of 2.5%, or 93,900 subscriptions, when compared to the same period in 2016.

Figure 5 shows the percentage contributions by the various market segments towards total industry subscriptions as at December 2017, while Table 3 lists the number of subscriptions for the period 2013 to 2017. The mobile voice market contributed 2.03 million subscriptions, representing 56.0% of all subscriptions in the telecommunications and broadcasting sectors. The number of fixed Internet subscriptions was 327,000 as at December 2017, contributing 9.0% to total subscriptions, whereas the number of mobile Internet subscriptions totalled 704,600, or 19.4%, of total subscriptions. The fixed voice market contributed 318,800 subscriptions, representing 8.8% of total subscriptions. Pay TV services contributed 6.8% with 246,800 subscriptions.



**Figure 5. Percentage of subscriptions by market as at December 2017**

**Table 3. Number of subscriptions by market from 2013 to 2017**

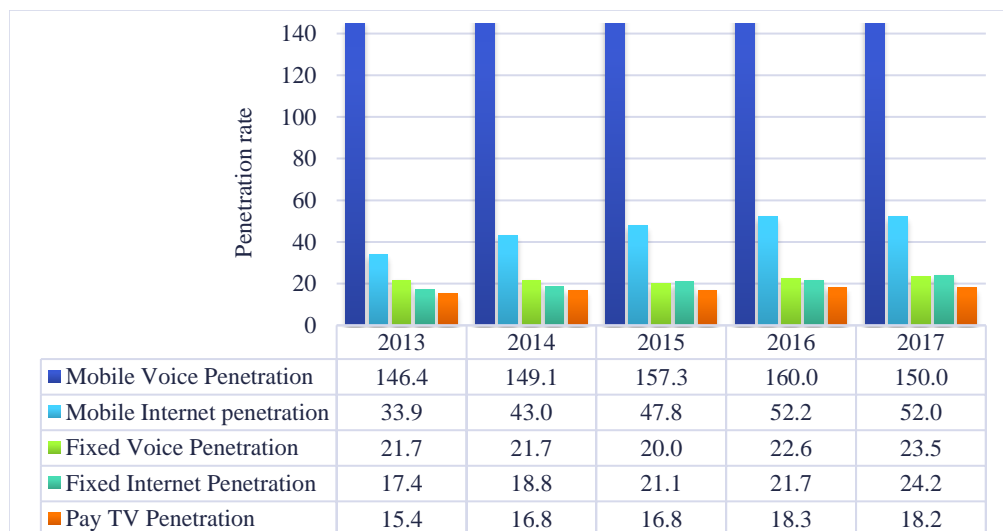
	2012	2013	2014	2015	2016	2017
<b>Mobile Voice Subscriptions (millions)</b>	<b>1.88</b>	<b>1.94</b>	<b>1.98</b>	<b>2.12</b>	<b>2.17</b>	<b>2.03</b>
<b>Growth rate</b>	3.1%	3.2%	1.9%	7.2%	2.0%	-6.2%
<b>Fixed Voice Subscriptions ('000)</b>	<b>286.1</b>	<b>291.3</b>	<b>289.8</b>	<b>269.8</b>	<b>305.7</b>	<b>318.7</b>
<b>Growth rate</b>	-1.8%	1.8%	-0.5%	-6.9%	13.3%	4.2%
<b>Fixed Internet Subscriptions ('000)</b>	<b>224.2</b>	<b>231.7</b>	<b>249.6</b>	<b>279.8</b>	<b>294.4</b>	<b>327.0</b>
<b>Growth rate</b>	16.7%	3.3%	7.8%	12.1%	5.2%	11.1%
<b>Mobile Internet Subscriptions ('000)</b>	<b>422.5</b>	<b>450.6</b>	<b>570.5</b>	<b>645.4</b>	<b>707.3</b>	<b>704.6</b>
<b>Growth rate</b>	217.2%	6.7%	26.6%	13.1%	9.6%	-0.4%

<b>Pay TV Subscriptions ('000)</b>	<b>198.7</b>	<b>209.3</b>	<b>228.8</b>	<b>232.8</b>	<b>248.4</b>	<b>246.8</b>
<b>Growth rate</b>	5.8%	5.3%	9.3%	1.7%	6.7%	-0.6%
<b>Total Subscriptions ('millions)</b>	<b>3.02</b>	<b>3.13</b>	<b>3.32</b>	<b>3.55</b>	<b>3.72</b>	<b>3.63</b>
<b>Growth rate</b>	14.6%	3.7%	6.2%	7.0%	4.8%	-2.5%

### 1.2.5.Subscription Penetration Rates

Figure 6 shows the penetration rates<sup>12</sup> for all subscription-based markets from 2013 to 2017. The penetration rates for fixed voice, fixed Internet and pay TV services increased, while the penetration rates for mobile voice and mobile Internet decreased in 2017.

The fixed Internet penetration rate increased from approximately 22 out of every 100 inhabitants having a fixed Internet subscription to 24 out every 100 inhabitants. There was similar growth in the penetration rate for fixed voice services in 2017, with 23.5 recorded per 100 inhabitants. There was a significant decline in mobile voice penetration from 160.0 in 2016 to 150.0 in 2017, while mobile Internet decreased only marginally, from 52.2 in 2016 to 52.0 in 2017. The pay TV penetration rate also decreased from 18.3 in 2016 to 18.2 in 2017.



**Figure 6. Penetration rates from 2013 to 2017**

<sup>12</sup> The penetration rates are based on the number of subscriptions per 100 of the population.



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

### ***Global Growth***

After a dismal start, characterized by uncertainty, dampened expectations (in the Euro Zone after Brexit), and depressed oil and commodity prices (impacting Latin America and other developing and emerging markets), global economic activity eventually gained momentum in 2017. According to the International Monetary Fund (IMF) *World Economic Outlook October 2017: Seeking Sustainable Growth: Short-Term Recovery, Long-Term Challenges*, this recovery was led by rebounds in investment and trade, rising consumer and business confidence, favourable financing conditions, and strengthened commodity (including energy) prices. In addition, there was steady growth among advanced and emerging markets and developing economies (EMDEs), which also aided boosted the strong overall global economic performance of 2017.<sup>1</sup>

### ***The Domestic Experience***

The Trinidad and Tobago economy was projected to register a milder contraction in 2017 when compared to 2016, with negative growth shrinking to -2.3 % in 2017, from -6.0% in 2016<sup>2</sup>. This projection came against the backdrop of Trinidad and Tobago's continued fiscal deficits and high debt levels, which had resulted in downgrades by international credit agencies in fiscal 2016/2017.

It was evident, at the onset of the fiscal year 2016/2017, that there was reduced activity by the oil and gas companies operating locally, in light of the depressed energy prices environment and a decline in discretionary spending by individuals/households.

It is pertinent to note that the four largest non-energy industrial groupings in Trinidad and Tobago, in terms of contribution to real gross domestic product (GDP), are: mining and quarrying (19.1%); manufacturing (18.3%); trade and repairs (15.6%); and financial and insurance activities (10.1%). Of this group, only financial and insurance activities (4.0%) were projected to register any form of growth in fiscal 2016/2017. Contractions were also expected in: mining and quarrying (-2.2%); manufacturing (-3.2%); and trade and repairs (-9.4 %). Negative growth of (-4.8%) was anticipated for the construction industry, with the transport and storage industry expected to record positive growth of 7.0% in 2017.

<sup>1</sup>[https://www.central-bank.org.tt/sites/default/files/reports/Annual\\_Economic\\_Survey\\_52017.pdf](https://www.central-bank.org.tt/sites/default/files/reports/Annual_Economic_Survey_52017.pdf)

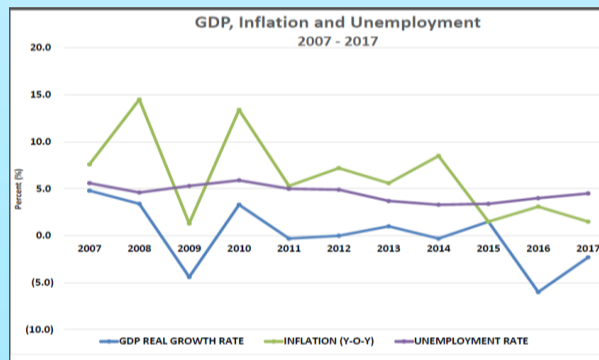
<sup>2</sup> [https://www.finance.gov.tt/wp-content/uploads/2017/10/Review\\_of\\_the\\_Economy\\_2017\\_for\\_web.pdf](https://www.finance.gov.tt/wp-content/uploads/2017/10/Review_of_the_Economy_2017_for_web.pdf)

According to the most recent CBTT estimate (Quarterly Index of Real Economic Activity (QIEA), 2018), output in the local non-energy sector did in fact decline, by 3.3% in the fourth quarter of 2017.

- **Positive Employment and Price Stability**

The labor force of Trinidad and Tobago expanded from 631,300 persons during October to December 2016 to 640,200 persons from January to March 2017, i.e., by 8,900 persons. This rise drove the participation rate up from 59.0% to 59.8% during the period. Similarly, the total number of persons employed in Trinidad and Tobago increased to 611,100 from 608,400 (or by 2,700 persons) (*Trinidad and Tobago Ministry of Finance Review of the Economy 2017*).

According to the CBTT, inflation remained well contained throughout 2017, partly due to the subdued economic conditions. As demonstrated in Figure 1, headline inflation measured 1.2% in September 2017 (year-on-year), with core inflation easing to 1.1% and food inflation measuring 1.8%. Other price indicators, such as at the wholesale level and for construction materials, showed similar patterns<sup>3</sup>.



**Figure 1. GDP, inflation and unemployment from 2007 to 2017**

<sup>3</sup> <https://www.central-bank.org.tt/sites/default/files/latest-news/November%202017%20Monetary%20Policy%20Announcement%20final.pdf>

A view of several key performance measures of Trinidad and Tobago's economic activity is given in Table 1 for the five-year period 2013 to 2017:

**Table 1. Economic Performance Measures for T&T from 2013 to 2017**

<b>Economic Indicator</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<sup>4</sup> <b>Real GDP Growth (current prices, % Δ)</b>	3.1	2.6	-5.4	-2.3	-2.3
<sup>5</sup> <b>Energy Sector (% Δ)</b>	1.3	-2.5	-4.0	-9.6	-3.1
<b>Non-energy Sector (% Δ)</b>	3.2	1.2	1.2	-1.8	-2.0
<sup>6</sup> <b>Inflation Rate (%)</b>	5.1	5.8	0.7	3.4	1.2
<sup>7</sup> <b>Unemployment Rate (%)</b>	3.7	3.3	3.7	4.1	4.5*
<sup>8</sup> <b>Current Account Balance (% of GDP)</b>	7.3	4.6	-5.4	-5.2	-3.8**
<sup>9</sup> <b>Overall BOP (MM- US\$)</b>	805.2	1,321.3	-1,564.2	-467.2	-959.2**
<sup>10</sup> <b>Moody Ratings</b>	Baa1	Baa1	Baa2	Baa3(-)	Ba1***
<sup>11</sup> <b>Exchange Rate (USD)</b>	6.39	6.36	6.33	6.67	6.78
<sup>12</sup> <b>Population (000's)</b>	1,340	1,345	1,349	1,353	1,356
<sup>13</sup> <b>Net Official Reserves (MM-US\$)</b>	9,427	10,119	10,312	10,077	8,711
<sup>14</sup> <b>Import Cover (Month's)</b>	12.2	12.9	11.2	10.5	9.8
<sup>15</sup> <b>GDP (current Prices -MM-TT\$)</b>	170,317	167,764	150,246	145,910	149,684

<sup>4</sup> Source: CBTT Economic Bulletin 2018: March 2018, Volume XX, No 1

<sup>5</sup> Source: CBTT National Accounts Dataset, sectoral GDP percentage change (constant 2000 prices)

<sup>6</sup> Source: TT MOF Review of the Economy 2017.

<sup>7</sup> Source: CBTT Economic Bulletin 2017: March 2017, Volume XVI, No 1

<sup>8</sup> Source: CBTT Economic Bulletin 2017: March 2017, Volume XVI, No 1

<sup>9</sup> Source: TT MOF Review of the Economy 2017.

<sup>10</sup> Source: Moody's. Accessed 3<sup>rd</sup>, April 2018. [www.moody.com/research](http://www.moody.com/research)

<sup>11</sup> Source: Central Bank of Trinidad and Tobago, US Buying

<sup>12</sup> Source: TT MOF Review of the Economy 2017

<sup>13</sup> Source: TT MOF Review of the Economy 2017

<sup>14</sup> Source: CBTT Economic Bulletin 2018: March 2018, Volume XX, No. 1

<sup>15</sup> Source: TT MOF Review of the Economy 2017

## *An Outlook for FY 2017/2018*

Global growth is likely to strengthen to 3.9% in both 2018 and 2019<sup>16</sup> and, according to the IMF, headline GDP for Trinidad and Tobago is projected to expand by 1.9% in 2018<sup>17</sup>.

It is opined that the Trinidad and Tobago economy will be at a point of economic inflection in 2017/2018. Despite the decline in discretionary spending by individuals in 2017, there should be a much-needed buoyant expectation in early 2018. Early estimates indicate that there is increased confidence in the private sector as private sector credit rebounded, with growth of 6.1% in March 2018 compared to 3.6% in September 2017<sup>18</sup>. A recent survey by Oxford Business Group also confirms there is growing optimism among the business community despite challenges associated with diversifying the economy and improving revenue generation.<sup>19</sup> Inflation will remain contained and may likely fall in 2018. In fact, early estimates have shown that inflation has fallen further, reaching 0.8% in March 2018<sup>20</sup>.

In an era of digitalisation and hyper growth, the global ICT sector remains a dynamic one, continuing to grow at an astounding rate. In like manner, the local telecommunications and broadcasting sectors demonstrate continued growth and are potentially key drivers of diversification and significant economic prospects. In line with the government's existing measures aimed at boosting non-energy revenues, the telecommunications sector in Trinidad and Tobago is a feasible option for pursuing economic development.

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- International Monetary Fund (IMF) World Economic Outlook, April 2018 Cyclical Upswing, Structural Change

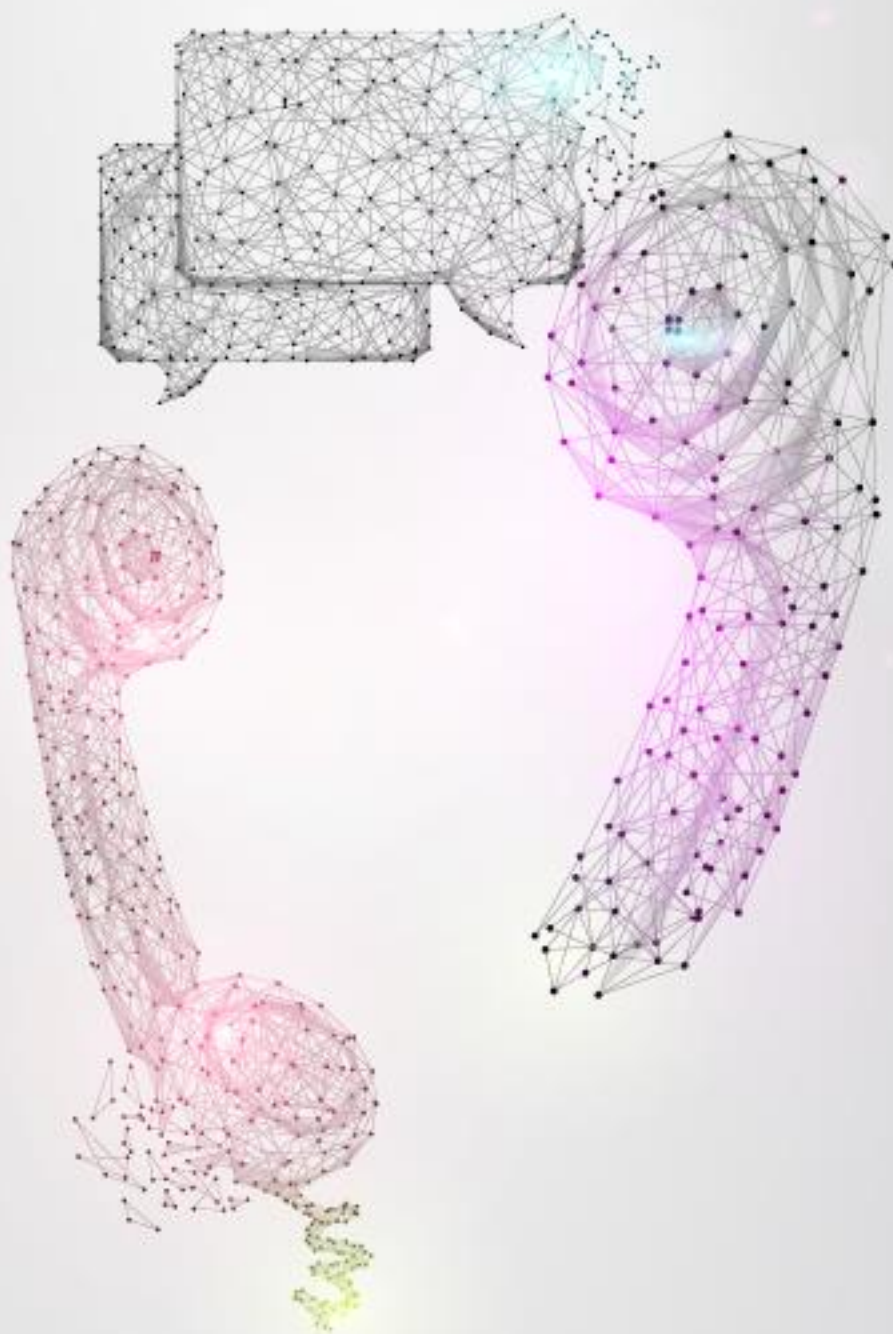
<sup>16</sup> <http://www.worldbank.org/en/news/press-release/2018/06/05/global-economy-to-expand-by-3-1-percent-in-2018-slower-growth-seen-ahead>

<sup>17</sup> <https://www.imf.org/en/Publications/WEO/Issues/2018/03/20/world-economic-outlook-april-2018>

<sup>18</sup> [https://www.central-bank.org.tt/sites/default/files/reports/MPR\\_VISUAL\\_SUMMARY\\_V5\\_0.pdf](https://www.central-bank.org.tt/sites/default/files/reports/MPR_VISUAL_SUMMARY_V5_0.pdf)

<sup>19</sup> OBG's most recent survey of CEOs in the country, published in November 2017, shows that 57% of respondents said they were positive about local business conditions for the coming 12 months, which was a marked improvement on the 18% recorded in the corresponding survey conducted in late 2016. C-suite executives also expressed a greater appetite for expansion, with 60.7% saying it was likely or very likely their firms would make significant capital investments in 2018, up from 44% the previous year.

<sup>20</sup> [https://www.central-bank.org.tt/sites/default/files/reports/MPR\\_VISUAL\\_SUMMARY\\_V5\\_0.pdf](https://www.central-bank.org.tt/sites/default/files/reports/MPR_VISUAL_SUMMARY_V5_0.pdf)



## Key Indicators for the Fixed Voice Market



GROWTH 2016-2017



### FIXED VOICE REVENUES

**\$689.0 Million**

4.8% decrease of over 2016



**318,700 Subscriptions**



**66 per 100 households**

## 2. Fixed Voice Market Review

As at December 2017, there were 16 operators authorised by the Authority to provide fixed domestic telecommunications services to the public, over wired and/or wireless facilities, as listed below:

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. Independent Cable Network of Trinidad & Tobago Limited (ICNTT)
7. Lisa Communications Limited
8. Massy Technologies Infocom
9. NOVO Communications Limited
10. Open Telecom Limited
11. Prism Services (Trinidad) Limited
12. RVR International Limited
13. Santa Flora Cable Network Limited
14. Telecommunications Services of Trinidad and Tobago Limited (TSTT)
15. TRICO Industries Limited
16. Wireless Telecommunications Limited

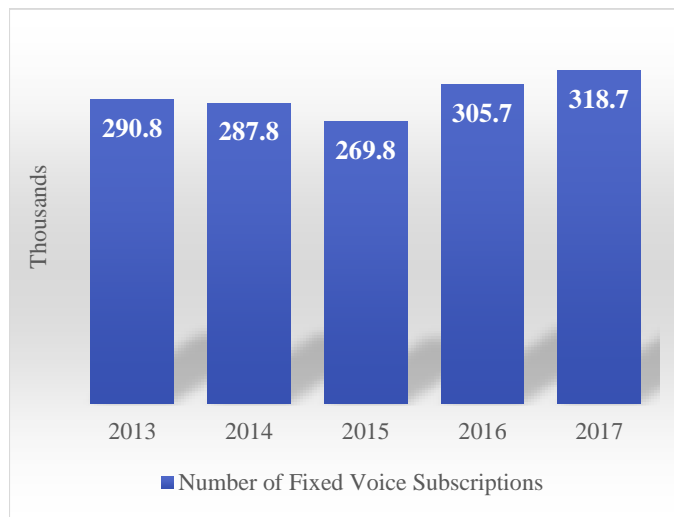
However, in 2017, only seven of these operators offered domestic fixed voice services.

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

services. This fixed voice review presents the market trends based on data provided by six out of the seven operational operators<sup>13</sup>.

## 2.1. Annual Fixed Voice Telephony Subscriptions

Following substantial growth in 2016, the fixed voice market increased minimally in 2017. Subscriptions to fixed voice services stood at 318,700 at the end of 2017 — an increase of 12,900, or 4.2%, when compared to 2016. The five-year trend for fixed voice subscriptions is illustrated in Figure 7.



**Figure 7. Fixed voice subscriptions from 2013 to 2017**

### 2.1.1. Annual Residential and Business Fixed Voice Subscriptions

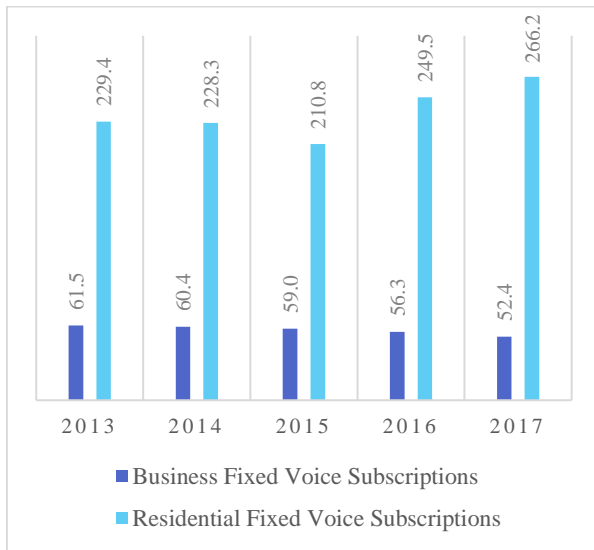
The categorisation of the fixed voice market into residential and business subscriptions over the last five years (inclusive of companies subscribing to systems services, e.g., PBX trunks) is illustrated in Figure 8. In 2017, there were 266,200 residential subscriptions and 52,400 business subscriptions in this market. Up by 6.7%, there were 16,800 more residential fixed voice subscriptions recorded in 2017 when compared to 2016. Conversely, business fixed voice

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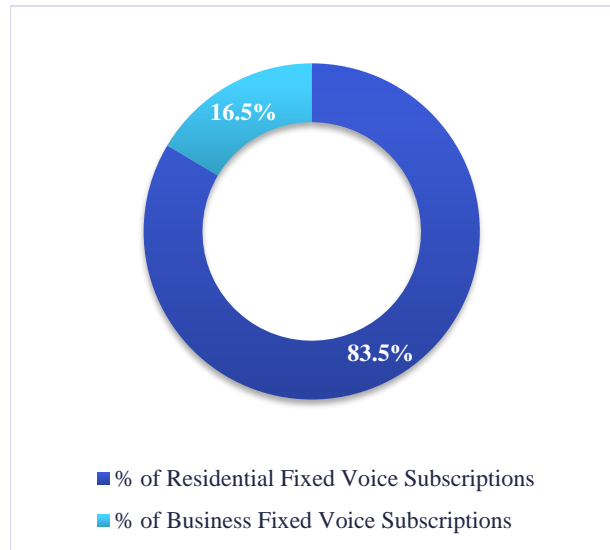
<sup>13</sup> Open Telecom had not supplied data at the time of publication.



subscriptions continued to decline, recording 3,800 fewer subscriptions in 2017. In terms of percentage, residential fixed voice subscriptions accounted for 83.5% of total subscriptions in this market, while business subscriptions accounted for the remaining 16.5%, as depicted in Figure 9.



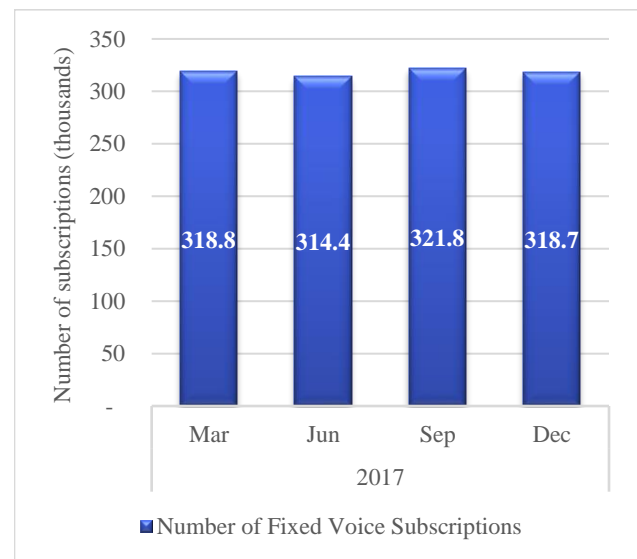
**Figure 8. Residential and business fixed voice subscriptions from 2013 to 2017**



**Figure 9. Percentage of residential and business fixed voice subscriptions for 2017**

### 2.1.2. Quarterly Fixed Voice Subscriptions

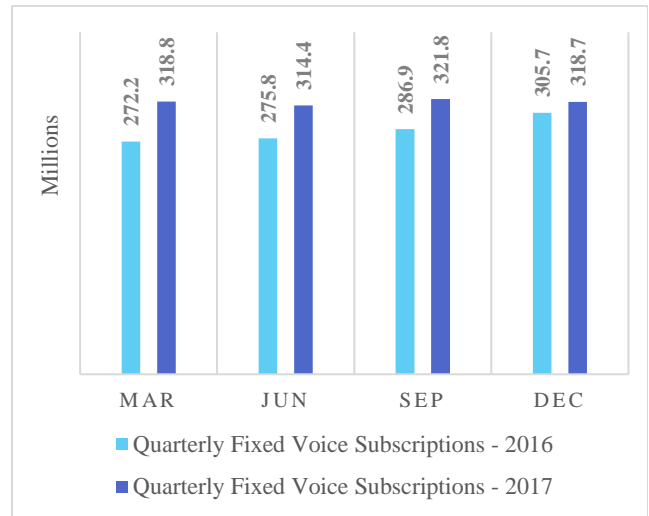
Based on the quarterly trends, it was observed that the number of fixed voice subscriptions remained relatively stable during each quarter of 2017, except for the third quarter. Recording 318,800 subscriptions at the end of the first quarter, subscriptions decreased to 314,400 in the second quarter. This represented a 1.4% decrease in subscriptions between these two quarters. Subscriptions increased in the third quarter by



**Figure 10. Quarterly fixed voice subscriptions in 2017**

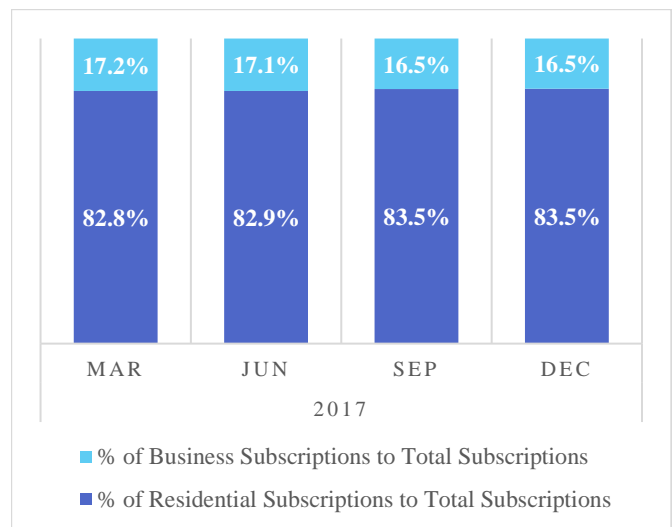
approximately 2.3%, recording 321,800 — the highest for 2017. Subscriptions decreased subsequently by 1.0% in the fourth quarter, to end the year at 318,700. Figure 10 shows the quarterly trend in fixed voice subscriptions in 2017.

A year-on-year comparison revealed that the fixed voice market performed more favourably in each quarter of 2017 when compared to the same quarters of 2016. The first quarter of 2017 recorded 49,600 more subscriptions than the first quarter of 2016. This trend continued in the second, third and fourth quarters of 2017, as the year-on-year comparison of fixed voice subscriptions during 2016 and 2017 in Figure 11 highlights.



**Figure 11. Quarterly fixed voice subscriptions for 2016 and 2017**

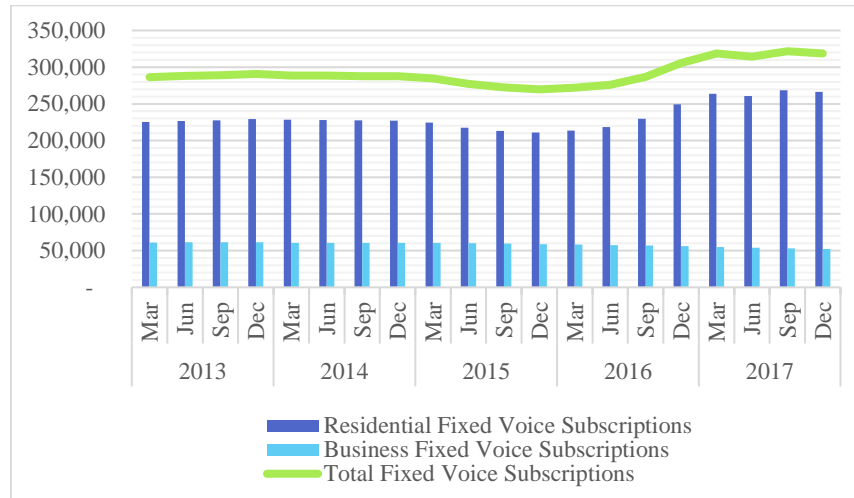
Figure 12 shows a percentage breakdown of residential and business fixed voice subscriptions at the end of each quarter of 2017. At the end of the first quarter, residential fixed voice subscriptions captured 82.8% of the market while business accounted for 17.2%. During the year, the percentage of residential subscriptions increased minimally in each quarter. At the end of the year, the ratio of residential to business subscriptions stood at 83.5 to 16.5.



**Figure 12. Percentage of quarterly residential and business fixed voice subscriptions in 2017**

Over the past five years, the number of fixed voice business subscriptions, at the end of each quarter, declined slowly over the period. Quarterly residential subscriptions were relatively stable

period  
2014,  
from 2015  
then  
in 2017.  
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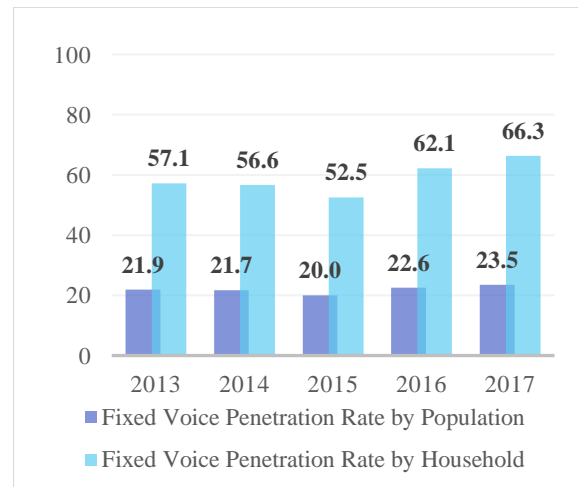


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**Figure 13. Comparison of quarterly fixed voice subscriptions from 2013 to 2017**

## 2.2. Fixed Voice Penetration

As the standard metric recognised internationally by the International Telecommunication Union (ITU) to measure the adoption of fixed voice services, fixed



**Figure 14. Fixed voice penetration rates from 2013 to 2017**

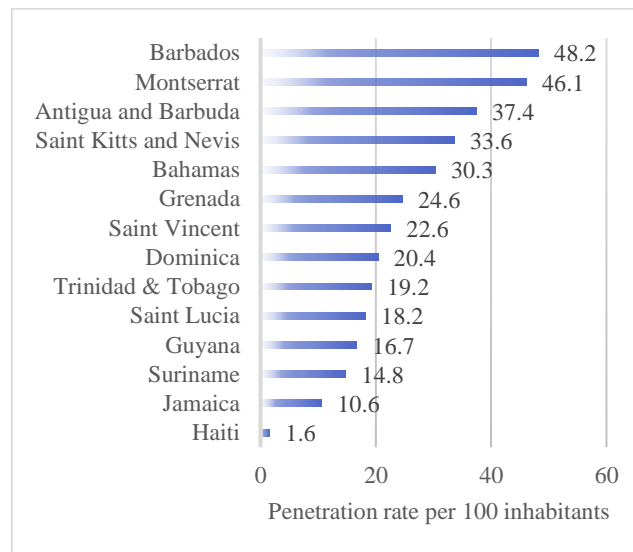
voice penetration<sup>14</sup> is calculated using the number of fixed voice subscriptions per 100 of the population. With 318,700 subscriptions for a population of approximately 1.4 million, the fixed voice penetration rate in Trinidad and Tobago was approximately 23.5 as at December 2017. This means there were approximately 24 fixed voice subscriptions to every 100 persons within Trinidad and Tobago in 2017.

Fixed voice household penetration<sup>15</sup> was also calculated to assess the number of households with fixed voice telephone services. In 2017, the fixed voice household penetration was 66.3. This number indicates that out of every 100 households, approximately 66 subscribed to fixed voice services.

An illustration of the fixed voice penetration trend from 2013 to 2017 is given in Figure 14 for both population and households. When compared to the previous year, both the fixed voice penetration by population and fixed voice household penetration increased in 2017.

### 2.2.1. Regional Fixed Voice Penetration Rates

A comparison among Caribbean Community (CARICOM) member countries places Trinidad and Tobago ninth in terms of fixed voice penetration. Based on data from Business Monitor International<sup>16</sup> (BMI), Barbados, with a fixed voice penetration rate of 48.2, had the highest number of fixed voice



**Figure 15. Fixed voice penetration rates among CARICOM countries for 2017**

<sup>14</sup> Fixed voice penetration = (number of residential fixed voice subscriptions / total population) \*100). Total population used is based on the Central Statistical Office’s 2016 midyear population estimate.

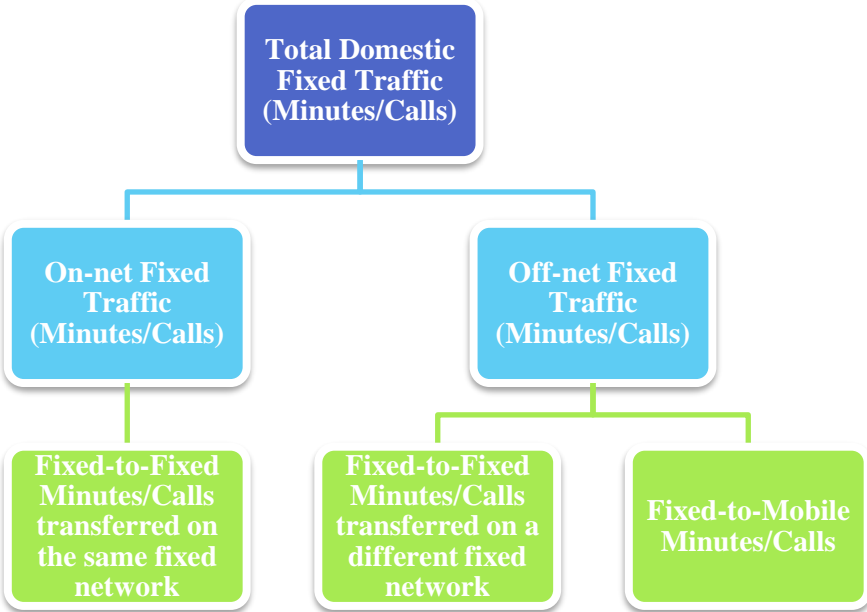
<sup>15</sup> Fixed voice household penetration was calculated using the number of residential fixed voice subscriptions divided by the total number of households, multiplied by 100. The number of households was obtained from the Central Statistical Office’s *Trinidad and Tobago 2011 Population and Housing Census, Demographic Report*.

<sup>16</sup> Data sourced from Business Monitor International database, accessed June 23, 2016.

subscriptions per 100 of its population. Following closely behind was Montserrat at 46.1. According to BMI’s calculation, Trinidad and Tobago’s fixed voice penetration stood at 19.2, as Figure 15 illustrates.

**2.3. Domestic Fixed Voice Traffic**

Domestic fixed voice traffic refers to the number of domestic minutes or calls originating on local fixed networks. This traffic can be categorised by the following types in Figure 16.



**Figure 16. Classification of domestic fixed voice traffic**

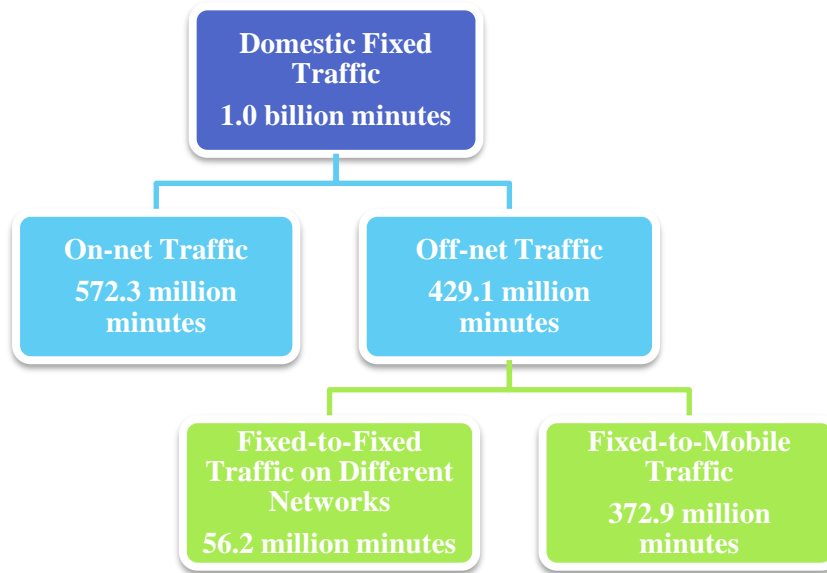
**2.3.1. Annual Domestic Fixed Voice Traffic in Minutes**

There were approximately 1.0 billion fixed voice traffic minutes generated in 2017. Of this number, on-net<sup>17</sup> and off-net<sup>18</sup> minutes accounted for 672.3 million and 429.1 million,

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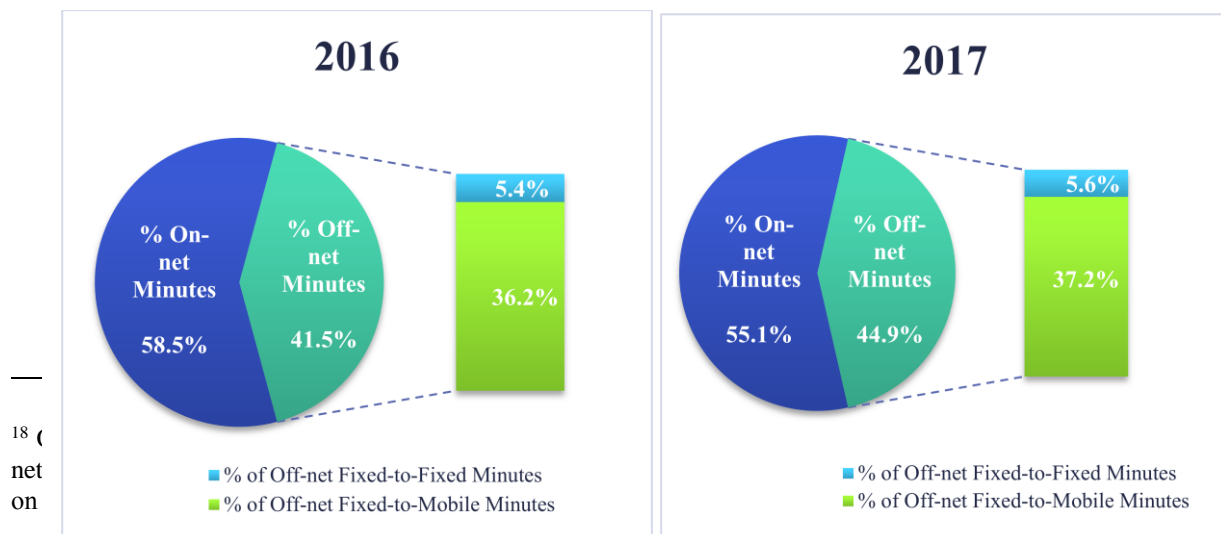
<sup>17</sup> On-net fixed traffic refers to traffic originating on a service provider’s fixed network and terminating on the same fixed network.

respectively. Fixed-to-fixed minutes transferred on a different network (off-net) were recorded at 56.2 million minutes, and fixed-to-mobile minutes amounted to 372.9 million. Figure 17 reflects this data.



**Figure 17. Breakdown of domestic fixed voice**

Consumption patterns for fixed voice minutes remained relatively stable in 2017 when compared to 2016. On-net traffic minutes contributed 55.1% to total minutes in the fixed voice market, decreasing from the 58.5% recorded in 2016. Total off-net traffic contributed 44.9%, of which the majority comprised off-net fixed-to-mobile minutes (37.2%) and the minority were off-net fixed-to-fixed minutes (5.6%). This percentage breakdown of minutes by traffic type over the last two years is shown in Figure 18.



**Figure 18. Total domestic fixed voice traffic minutes by traffic types 2016 and 2017**

18 (net on

### 2.3.2. Quarterly Domestic Fixed Voice Traffic in Minutes

The number of domestic fixed telephone minutes increased from the first to the third quarter and then fell minimally in the fourth quarter. Recording 246.7 million minutes in the first quarter, domestic fixed voice minutes increased in both the second and third quarters to 253.1 million minutes and 254.2 million minutes, respectively. Thereafter, there was a minimal decrease in fixed voice traffic minutes in the fourth quarter, with 247.4 million recorded.



**Figure 19. Quarterly fixed voice traffic minutes in 2017**

In terms of quarterly fixed voice minutes by traffic type, on-net voice minutes peaked in the second quarter with 146.7 million minutes and then gradually declined in the third and fourth quarters of 2017. Off-net fixed voice minutes was relatively stable during 2017, except for the third quarter, where the number of minutes peaked at 111.7 million. The quarterly trend by traffic type is depicted in Figure 19.

### 2.3.3. Annual Domestic Fixed Voice Call Volumes

In addition to the reduction in the number of fixed voice minutes, as reported in section 2.3.1, there was also an observed reduction in the number of domestic calls across all fixed networks.

There were 341.1 million domestic fixed voice calls during the 2017 period — an 8.2% decrease when compared to the 371.4 million calls recorded for 2016. Total on-net calls accounted for 138.3 million (40.5%) of total fixed voice calls, while total off-net calls accounted for 202.8 million calls (59.5%) of total fixed voice calls.

Similar to 2016, the number of on-net calls in 2017 decreased at a higher rate than off-net calls. While off-net calls declined by only 5.4% in 2017, the number of on-net calls reduced significantly by 11.9%. Figure 20 provides a breakdown of domestic fixed voice calls in 2016 and 2017.

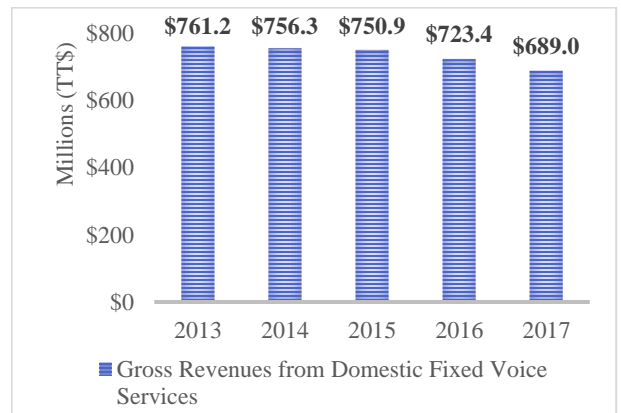


Figure 21. Fixed voice revenues from 2013 to 2017

## 2.4. Fixed Telephony Revenues

### 2.4.1. Annual Fixed Voice Revenues

Gross revenues received from fixed voice services totalled TT\$689.0 million in 2017, as compared to TT\$723.4 million in 2016 — a TT\$34.4 million, or a 4.8%, decrease in revenues. The annual trend in fixed telephony subscription revenues for the period 2013 to 2017 is illustrated in Figure 21. As the figure shows, there was a gradual decline in fixed voice revenues generated over the period.

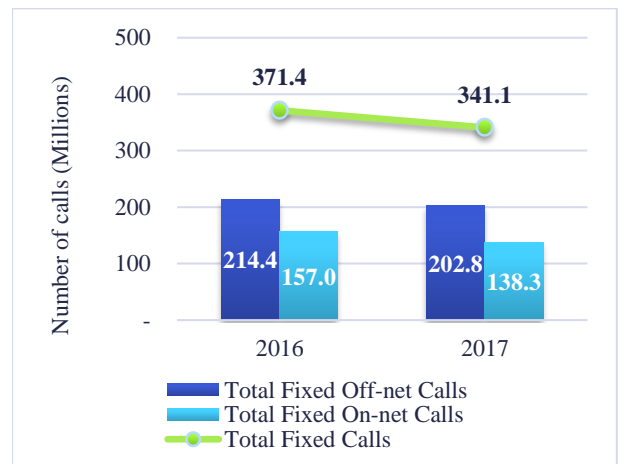


Figure 20. Comparison of domestic call volumes by traffic type for 2016 and 2017

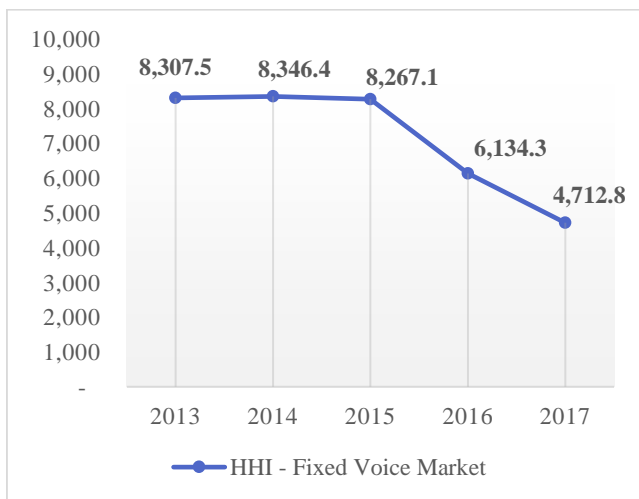


During 2017, quarterly fixed voice revenues decreased steadily in the first three quarters of the year. Revenues generated from fixed voice services recorded TT\$170.1 million in the first quarter. Fixed voice revenues decreased to TT\$166.4 million and TT\$144.0 in the second and third quarters, respectively. In the fourth quarter, revenues increased significantly to TT\$208.5 million. The quarterly fixed voice revenues for 2017 are depicted in Figure 22.

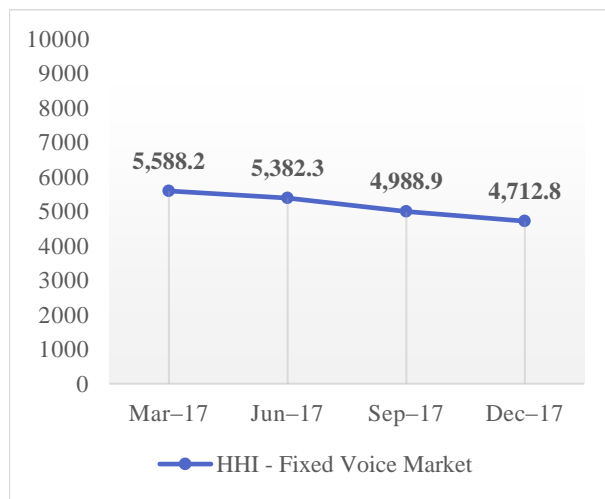
## 2.5. Fixed Market Concentration

The Hirschman-Herfindahl Index (HHI) is a tool that measures the concentration of firms within a particular market. It is computed as the sum of squares of the market share of all firms within a particular market and ranges from approximately 0 to 10,000. Comparing the last five years, Figure 23 shows that the HHI for the fixed voice market has been generally stable from 2013 to 2015 and then decreased in 2016 and 2017.

As was the case in 2016, the level of HHI in the fixed voice market decreased sharply in 2017, by 23.2%, to record 4,712.8<sup>19</sup> points at the end of the year. For the period 2013 to 2017, several new players entered this market, which contributed to the trend observed in the level of concentration in this market.



**Figure 23. HHI for the fixed voice market from 2013 to 2017**



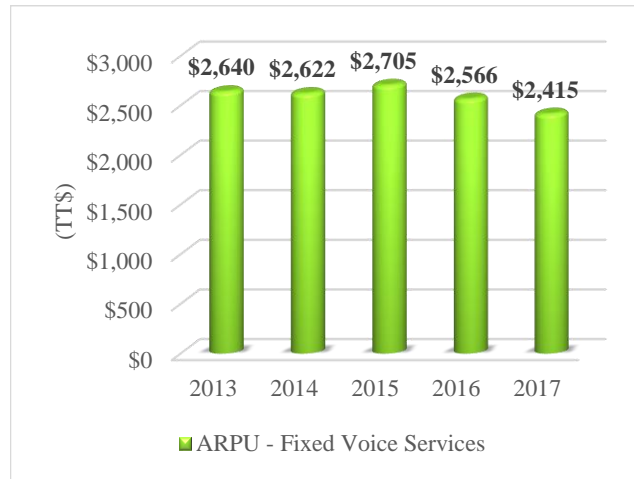
**Figure 22. Quarterly fixed voice revenues for 2017**  
**Figure 24 . HHI for the fixed voice market for 2017**

<sup>19</sup> Based on subscription market share

During 2017, the level of concentration decreased continuously from an HHI of 5,588.2 in the first quarter to 5,382.3 in the second quarter. The HHI continued to decline in the third and fourth quarters, as reflected in Figure 24.

## 2.6. Fixed Voice Average Revenue per User (ARPU)

On average, each subscription to fixed voice services generated TT\$2,415 annually in 2017. This represented a decrease of TT\$151, or 5.9%, in the ARPU<sup>20</sup> over the amount recorded for 2016. This was the second consecutive decline in the ARPU for fixed voice services, following the five-year peak of TT\$2,705 in ARPU generated in 2015. The changes in ARPU for the last five years are highlighted in Figure 25.



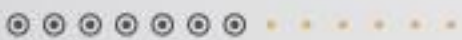
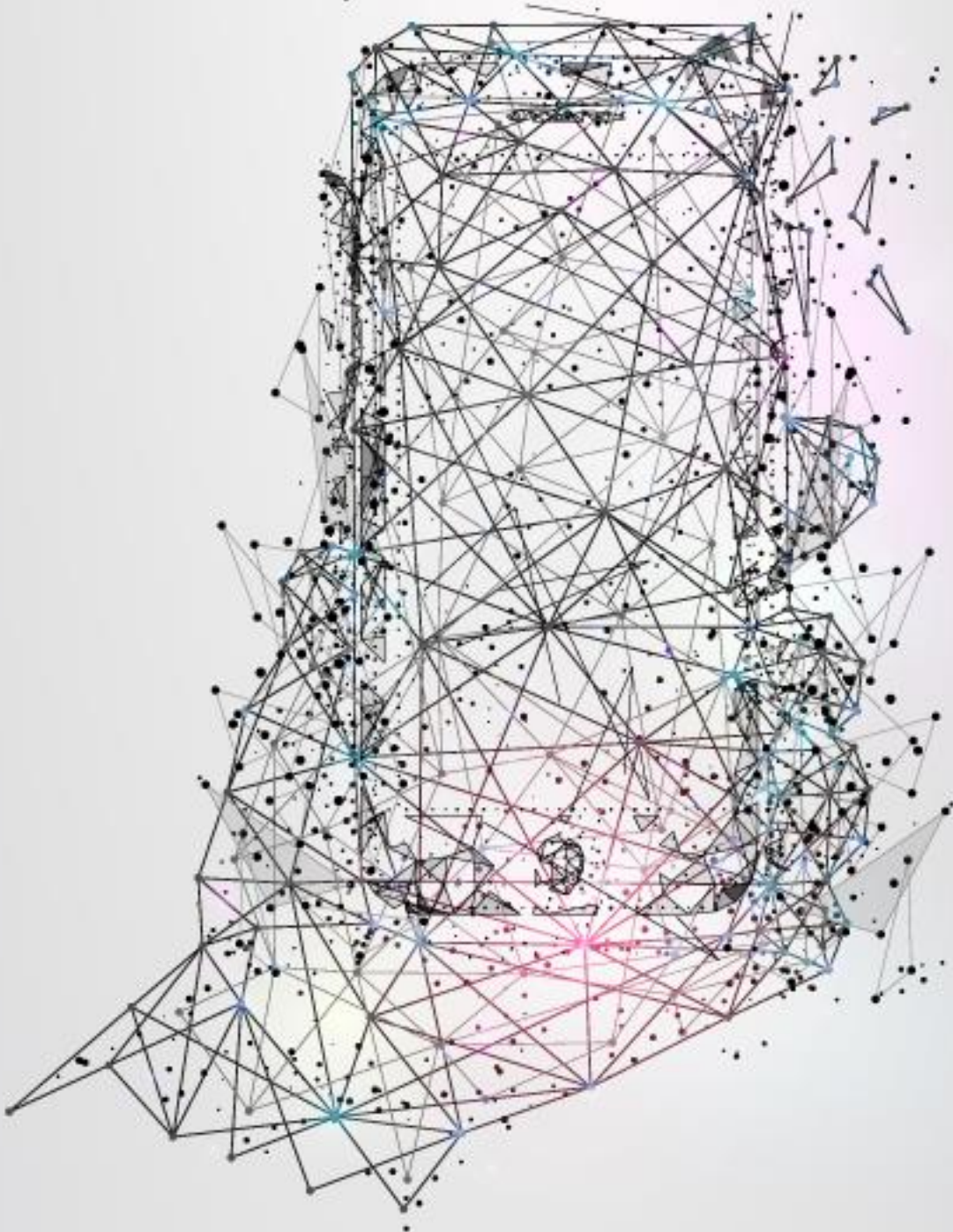
**Figure 25. ARPU fixed voice services from 2013 to 2017**

<sup>20</sup>ARPU measures the average revenue generated by one subscriber. It is calculated as total revenues for fixed voice subscriptions divided by the total number of fixed subscriptions.



2017 ANNUAL MARKET REPORT

MOBILE VOICE MARKET



# Key Indicators for the Mobile Voice Market



GROWTH 2016-2017



## MOBILE VOICE REVENUES

\$1,555.0 Million

17.7% decrease of over 2016



2.03 Million Subscriptions



### **3. Mobile Voice Market Review**

For the period January 2017 to December 2017, mobile voice and Short Messaging Service (SMS) telecommunications services were provided by two authorised mobile service providers:

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

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

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

GSM networks are actively used for voice services, in conjunction with GSM data enhancements, GPRS and EDGE.

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

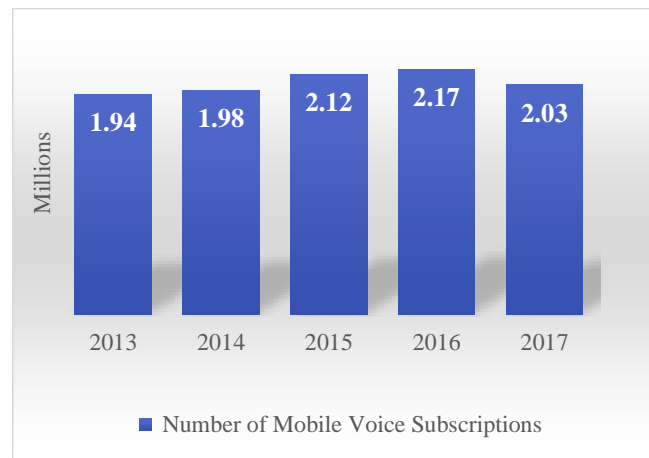
UMTS networks are currently deployed for voice services, in conjunction with-UMTS data enhancements, HSPA and HSPA+.

The following is an overview of the mobile voice market of 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

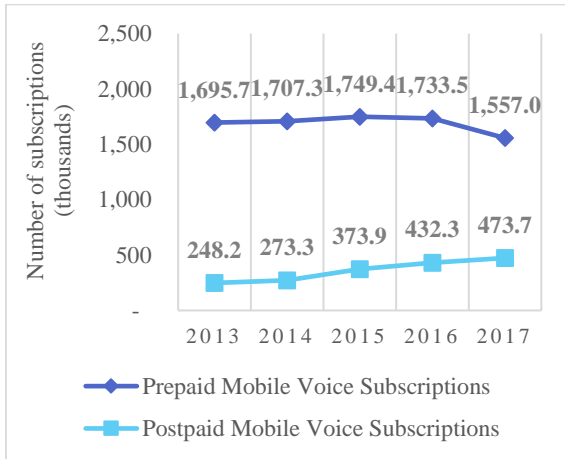
Recording 2.03 million subscriptions, the number of mobile voice subscriptions decreased by 6.2% in 2017. This decrease follows a 3.7% average annual growth in mobile voice subscriptions over the 2013 to 2016 period. Figure 26 illustrates the annual trend in mobile subscriptions over the last five years.



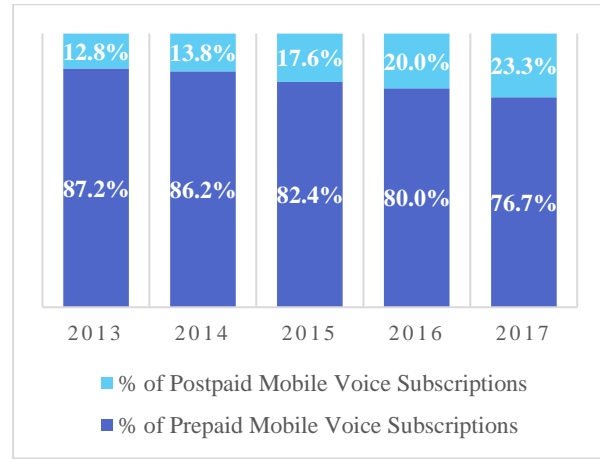
**Figure 26. Number of mobile voice subscriptions from 2013-2017**

Mobile voice subscriptions are categorised into prepaid and postpaid. Prepaid mobile voice customers purchase credit prior to service use, while postpaid customers enter into a contractual billing arrangement with their respective service provider. Of the 2.03 million mobile subscriptions recorded in 2017, 1.56 million were prepaid and 473,700 were postpaid.

For the second consecutive year, prepaid subscriptions decreased. There were 177,000 fewer subscriptions recorded in 2017 — a 10.2% reduction when compared to the previous year. Postpaid subscriptions, however, continued in an upward trend, increasing by 9.6%, or 42,000, in 2017.



**Figure 27. Mobile prepaid and postpaid subscriptions from 2013 to 2017**



**Figure 28. Percentage of prepaid and postpaid subscriptions from 2013 to 2017**

The number of mobile voice subscriptions for both prepaid and postpaid for the period 2013 to 2017 is shown in Figure 27.

In 2017, prepaid subscriptions comprised 76.7% of total mobile voice subscriptions, decreasing from 80.0% in 2016. The percentage of postpaid subscriptions increased from 20.0% in 2016 to 23.3% in 2017. Figure 28 shows the comparison of the percentage of prepaid and postpaid subscriptions from 2013 to 2017. Over the past five years, there has been a steady increase in the percentage of postpaid subscriptions.

A comparison of the switching patterns between prepaid and postpaid service options from 2015 to 2017 is illustrated in Figure 29. During this period, a larger number of mobile voice subscription plans were switched from prepaid to postpaid than from postpaid to prepaid.



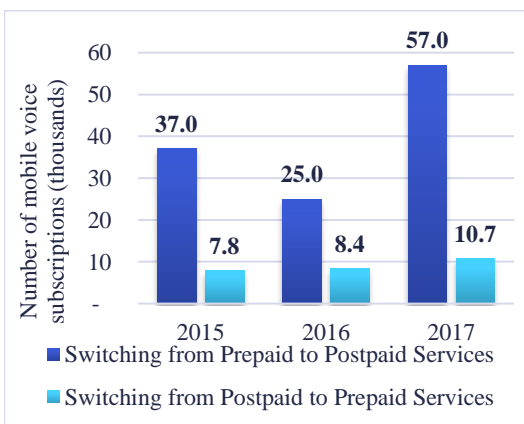
In 2017, the number of subscriptions that were switched from prepaid to postpaid increased significantly by 128.0%, or 32,000, to record 57,000 subscriptions. The number of subscriptions switched from postpaid to prepaid plans increased from 8,400 in 2016 to 10,700 in 2017. This marked an increase of 27.4% in the number of plans being switched from postpaid to prepaid.

In 2017, quarterly trends revealed that the number of subscriptions converted from prepaid to postpaid increased sharply from the first quarter to the third quarter. 7,500 subscriptions were reported as having been switched from prepaid to postpaid during the first quarter. The number peaked in the third quarter to record 20,800 subscriptions, and then slowed at the end of the fourth quarter to record 15,700 subscriptions.

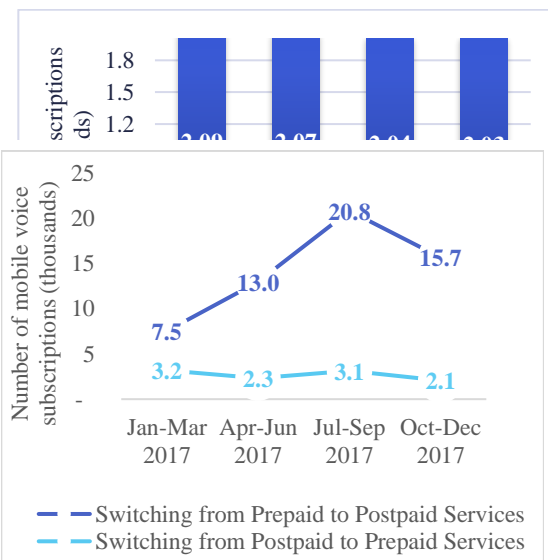
In 2017, subscriptions transferred from postpaid to prepaid fluctuated, with 3,200 being recorded during quarter one — the highest for the year. By the fourth quarter, the number of subscriptions switched from postpaid to prepaid had decreased to 2,100.

Figure 30 highlights the quarterly switching patterns for 2017.

### 3.1.2. Quarterly Mobile Voice Subscriptions

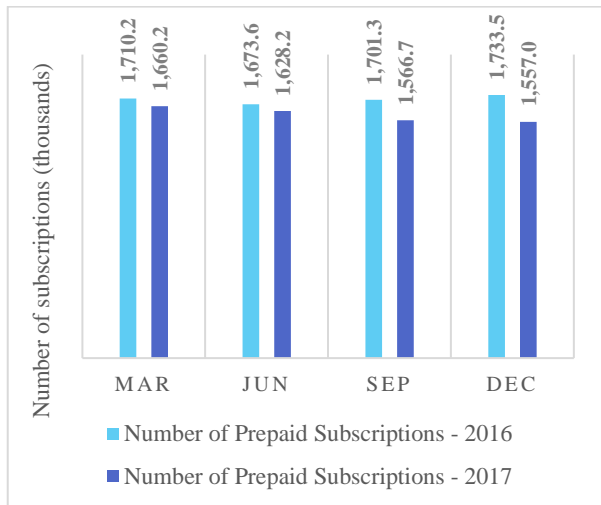


**Figure 29. Number of mobile prepaid and postpaid subscriptions switched from 2015 to 2017**

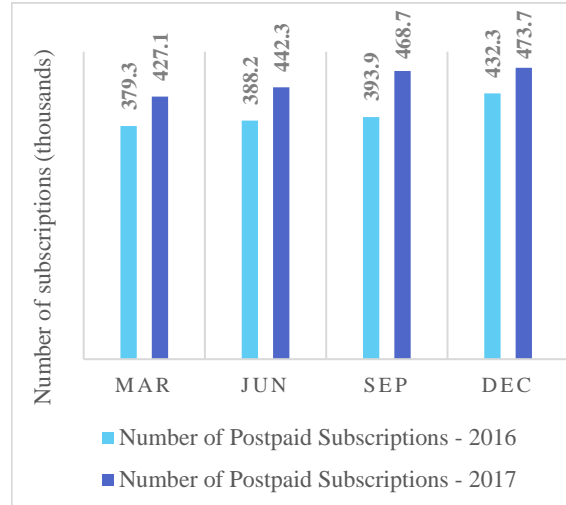


**Figure 30. Number of mobile prepaid and postpaid subscriptions switched in 2017**

Illustrated in Figure 31 is the quarterly trend in mobile voice subscriptions for 2017. At the end of the first quarter, the number of mobile voice subscriptions was 2.09 million. The number of mobile voice subscriptions recorded at the



**Figure 32. Quarterly mobile prepaid subscriptions for 2016 and 2017**



**Figure 33. Quarterly mobile postpaid subscriptions for 2016 and 2017**

end of each subsequent quarter declined marginally, ending the year with 2.03 million subscriptions.

Figures 32 and 33 show the two-year quarterly trends for the two mobile service options — prepaid and postpaid.

There was a notable downward trend in the number of prepaid subscriptions during 2017. These decreased steadily from quarters one through four, from 1.66 million to 1.56 million subscriptions. When compared to 2016, prepaid subscriptions were fewer for each quarter of 2017. This difference was more prominent in the third and fourth quarters of 2017, recording 7.9% and 10.2% fewer subscriptions, respectively.

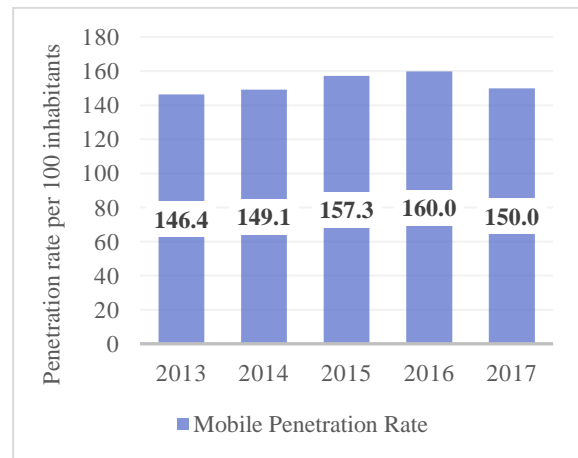
While postpaid subscriptions decreased from the fourth quarter of 2016 to the first quarter of 2017, the number of these subscriptions increased gradually from the second to the fourth quarters of 2017. Recording 423,700 subscriptions in the first quarter, postpaid subscriptions

ended the year at 473,700, i.e., a 10.9% growth. It was observed that the number of postpaid subscriptions in each quarter of 2017 was higher than the corresponding quarters of 2016.

## 3.2. Mobile Penetration

### 3.2.1. Mobile Voice Penetration Rate in the Domestic Market

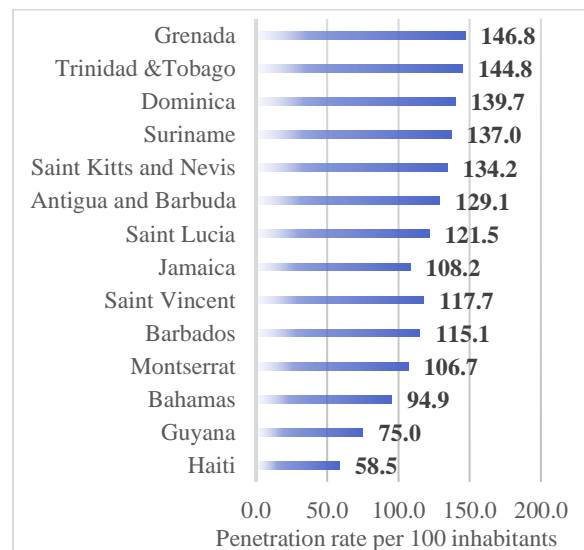
The mobile voice penetration<sup>21</sup> rate decreased from 160.0 per 100 inhabitants in 2016 to 150.0 in 2017. As illustrated in Figure 34, Trinidad and Tobago’s mobile penetration rate showed steady growth from 2013 to 2016. However, with the drop in the number of mobile subscriptions in 2017, the mobile voice penetration rate declined by 6.3%.



**Figure 34. Mobile penetration rate per 100 inhabitants in 2017**

### 3.2.2. Regional Mobile Voice Penetration Rates

Figure 35 compares the mobile penetration rates of CARICOM member states. The data collected and published by BMI<sup>22</sup> recorded Trinidad and Tobago’s mobile penetration rate as 144.8 per 100 inhabitants. Thus, Trinidad and Tobago ranked second to Grenada, whose mobile penetration rate for 2017 was 146.8 per 100 inhabitants. Dominica and Suriname followed, with penetration rates of 139.7 and 137.0, respectively.



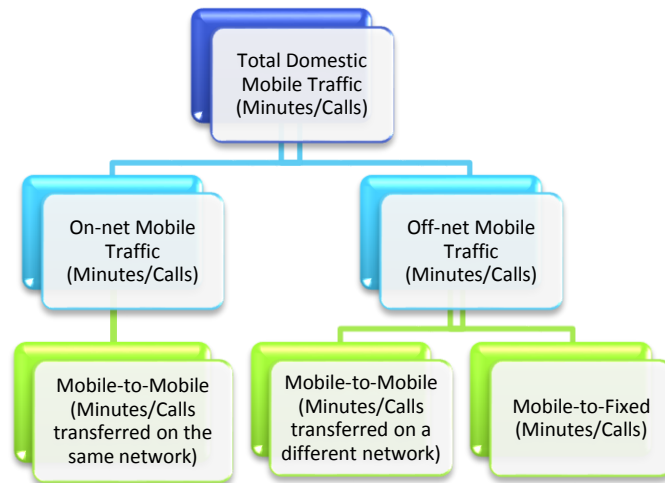
**Figure 35. Mobile penetration rates among CARICOM countries in 2017**

<sup>21</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 Central Statistical Office’s midyear population estimate.

<sup>22</sup> Data sourced from Business Monitor International database, accessed May 28, 2018

### 3.3. Domestic Mobile Voice Traffic

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



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

In 2017, the total number of mobile telephone calls made by consumers grew marginally by 1.0% from the previous year to approximately 3.09 billion calls. The number of minutes generated from these calls were approximately 3.85 billion minutes — an increase of 4.3% when compared to the previous year.

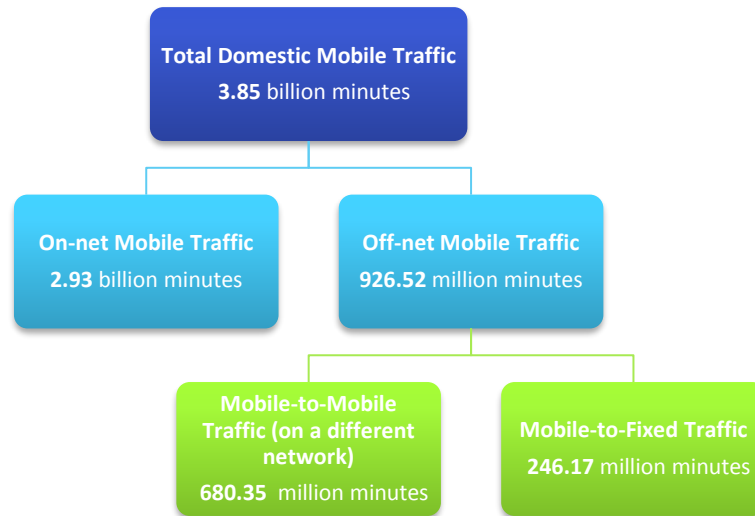
#### 3.3.1. Annual Domestic Mobile Voice Traffic in Minutes

The 3.85 billion minutes of domestic mobile traffic for 2017 were derived from the summation of both on-net<sup>23</sup> and off-net<sup>24</sup> traffic, which recorded 2.93 billion and 926.52 million minutes, respectively. The number of mobile on-net minutes for 2017 increased marginally by 1.4% when compared to 2016.

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<sup>23</sup> On-net mobile traffic refers to traffic originating on a service provider’s mobile network and terminating on the same mobile network.

<sup>24</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.



**Figure 37. Breakdown of domestic mobile traffic minutes for 2017**

Of the 926.52

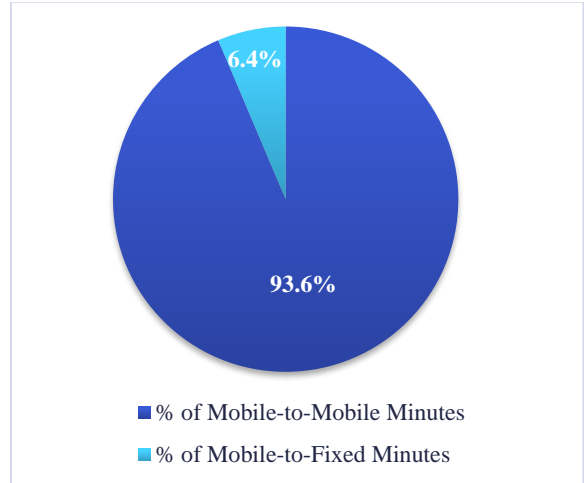
million off-net minutes, 680.35 million were mobile-to-mobile minutes transferred on a different mobile network while the remaining 246.17 million minutes were mobile-to-fixed.

Mobile-to-mobile off-net minutes increased by 132.17 million minutes or 24.1% while mobile-to-fixed off-net minutes decreased marginally by 6.74 million minutes or 2.7%, between 2016 and 2017. Figure 37 is a breakdown of the number of domestic mobile voice minutes for 2017, while a comparison of total mobile traffic minutes between 2016 and 2017 is shown in Table 4.

**Table 4. Breakdown of domestic minutes for 2016 and 2017**

	2016	2017	Change in minutes	Percentage change
<b>On-net mobile traffic minutes (billions)</b>	<b>2.89</b>	<b>2.93</b>	<b>0.04</b>	<b>1.4%</b>
<b>Off-net mobile traffic minutes (millions)</b>	<b>801.09</b>	<b>926.52</b>	<b>125.43</b>	<b>15.7%</b>
Mobile-to-mobile traffic minutes on different networks (millions)	548.18	680.35	132.17	24.1%
Mobile-to-fixed traffic minutes (millions)	252.91	246.17	6.74	-2.7%
<b>Total domestic mobile traffic minutes (billions)</b>	<b>3.69</b>	<b>3.85</b>	<b>0.16</b>	<b>4.3%</b>

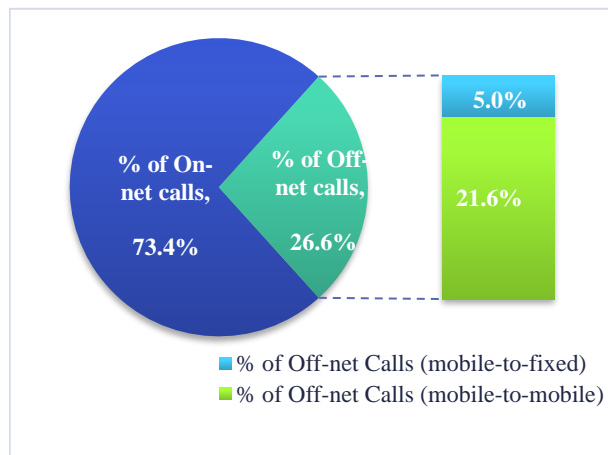
Figure 38 outlines the percentage of mobile-to-mobile and mobile-to-fixed minutes for 2017. Mobile-to-mobile minutes accounted for 93.6% of all domestic mobile minutes consumed in 2017, while the remaining 6.4% were mobile-to-fixed minutes. Compared to 2016, this result was relatively the same, as mobile-to-mobile minutes continued to be the main category of minutes consumed in this market. The percentage of mobile-to-fixed minutes decreased from 6.9% in 2016 to 6.4% in 2017. However, the mobile-to-mobile minutes category increased from 93.1% in 2016 to 93.6% in 2017.



**Figure 38. Percentage of mobile-to-mobile and mobile-to-fixed minutes for 2017**

### 3.3.2. Annual Domestic Mobile Voice Call Volumes

In 2017, there was a 1.0% increase in the number of domestic mobile voice calls, which approximated 3.09 billion calls. When compared to 2016, the number of on-net calls remained unchanged, while there was a 4.0% increase in total off-net calls.



**Figure 39. Percentage of domestic mobile voice calls in 2017**

Of the total calls that originated and terminated on the mobile networks for 2017, 73.4%, or 2.27 billion, were on-net calls. The remaining 26.6%, or 821.38 million, were off-net calls, which are subdivided into mobile-to-fixed and mobile-to-mobile off-net calls. Of total domestic calls, mobile-to-fixed off-net calls accounted for 5.0%, or 153.63 million calls, while there were 667.74 million, or 21.6% mobile-to-mobile off-net calls. Figure

39 is an illustration of the percentage of off-net and on-net calls for 2017, and Table 5 contains a

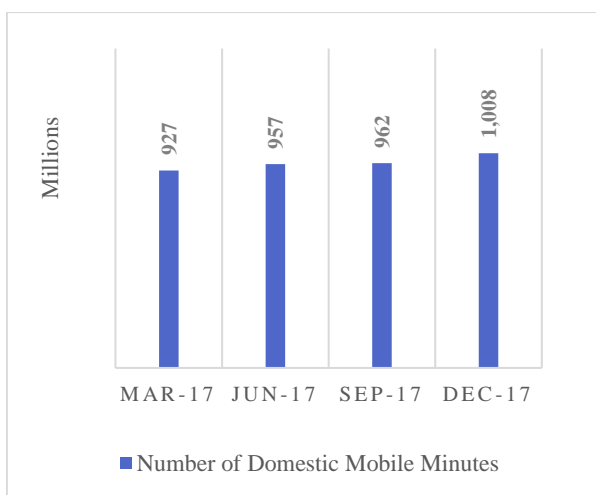
**Table 5. Number of domestic mobile voice calls in 2016 and 2017**

	2016	2017	Percentage Change
<b>On-net mobile voice calls (billions)</b>	<b>2.27</b>	<b>2.27</b>	<b>0%</b>
<b>Off-net mobile voice calls (millions)</b>	<b>790.07</b>	<b>821.38</b>	<b>4.0%</b>
Off-net mobile-to-mixed calls (millions)	161.95	153.63	-5.1%
Off-net mobile-to-mobile calls (millions)	628.11	667.74	6.3%
<b>Total domestic mobile voice calls (billions)</b>	<b>3.06</b>	<b>3.09</b>	<b>1.0%</b>

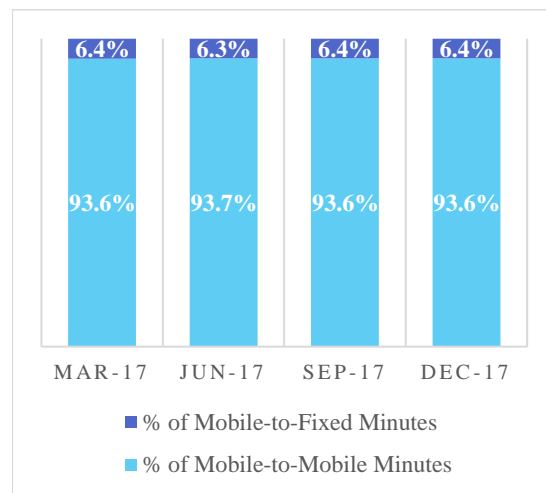
comparison of both 2016 and 2017 data pertaining to the number of mobile voice calls.

### 3.4. Quarterly Domestic Mobile Voice Minutes

Figure 40 highlights the trend in mobile voice minutes from quarters one through four in 2017. Overall, there was a prevailing upward trend in mobile voice minutes consumed quarter by quarter, with the highest number of minutes being consumed in the fourth quarter. For each quarter of 2017, the percentage of mobile-to-fixed minutes and mobile-to-mobile minutes consumed remained relatively constant. On average, 93.6% of mobile voice minutes consumed



**Figure 41. Number of quarterly mobile voice minutes in 2017**



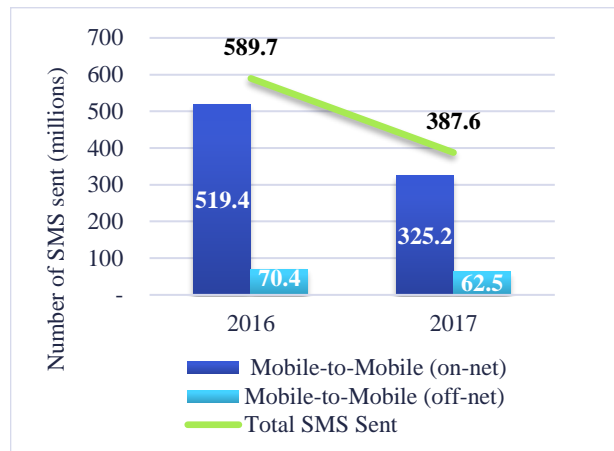
**Figure 40. Percentage of quarterly mobile voice minutes by type for 2017**



were mobile-to-mobile, while 6.4% were mobile-to-fixed, as in Figure 41.

### 3.5. Short Messaging Services (SMS)

Figure 42 illustrates the total number of domestic SMS sent in 2017. The number decreased considerably from 589.8 million in 2016 to 387.7 million in 2017, representing a 34.1% reduction. SMS sent were broken down into on-net and off-net, which accounted for 325.2 and 62.5 million messages, respectively. On-net SMS sent declined by 37.4%, while off-net SMS sent declined by 11.2% between 2016 and 2017.

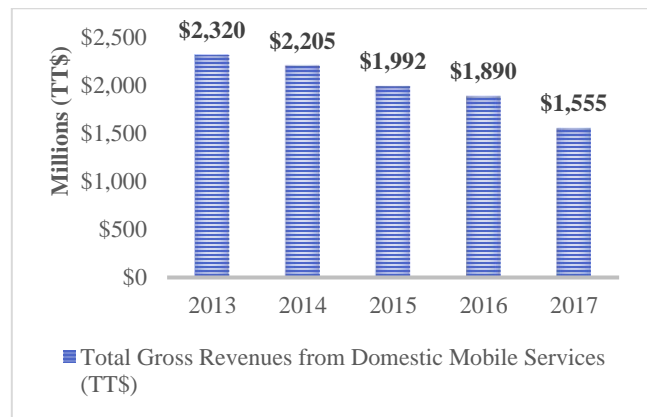


**Figure 42. Number of on-net and off-net SMS sent in 2017**

### 3.6. Mobile Voice Revenues

#### 3.6.1. Annual Revenues from Mobile Voice Services<sup>25</sup>

Figure 43 depicts the trend in mobile voice revenues<sup>26</sup> over the five-year period 2013 to 2017. Total mobile voice revenues generated for 2017 were TT\$1,555 million. This represented a continuation of the downward trend observed in mobile voice revenues from 2013 to 2016. In 2017, mobile voice revenues declined by 17.7% over the previous year.



**Figure 43. Annual revenues from mobile voice services from 2013 to 2017**

<sup>25</sup> These revenues exclude mobile Internet revenues, which are reported within the Internet section of this report.

<sup>26</sup> Mobile voice revenues comprise revenues from mobile voice and SMS services.

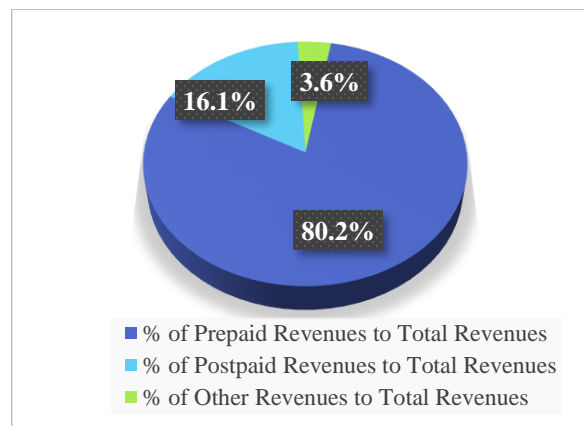
Table 6 below highlights the percentage change in mobile voice revenues from 2013 to 2017.

**Table 6. Percentage changes in mobile revenues from 2013 to 2017**

Period	Percentage Change in Mobile Voice Revenues
2013	3.5%
2014	-4.9%
2015	-9.6%
2016	-5.2%
2017	-17.7%

Over this period, the greatest decline in revenues was generated

ed by the mobile voice market was in 2017.



**Figure 44. Percentage breakdown of mobile voice revenues by service type, 2017**

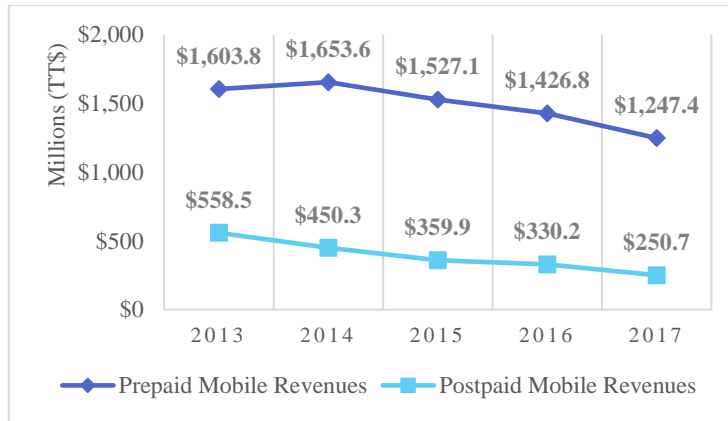
Total revenues in the for 2017 comprised from prepaid, mobile services. accounted for

mobile voice market earnings generated postpaid and other<sup>27</sup> Prepaid services TT\$1,247.4 million,

<sup>27</sup> Other mobile services comprise revenues generated from equipment sales, SIM card sales and administrative charges.

or 80.2%, while postpaid revenues totalled approximately TT\$250.7 million, or 16.1%. Other mobile services generated TT\$56 million, or 3.6%, of total revenues. Figure 44 is a disaggregation of the mobile revenue percentage contribution by service type.

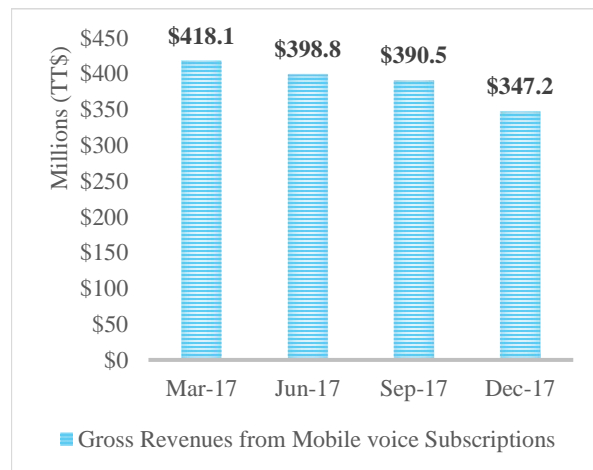
Figure 45 shows a comparison of the trends of postpaid and prepaid revenues over the five-year period 2013 to 2017. With the exception of 2014, there was a downward trend in revenues from prepaid mobile calls, while postpaid revenues decreased in all five years.



**Figure 45. Mobile prepaid and postpaid revenues from 2013 – 2017**

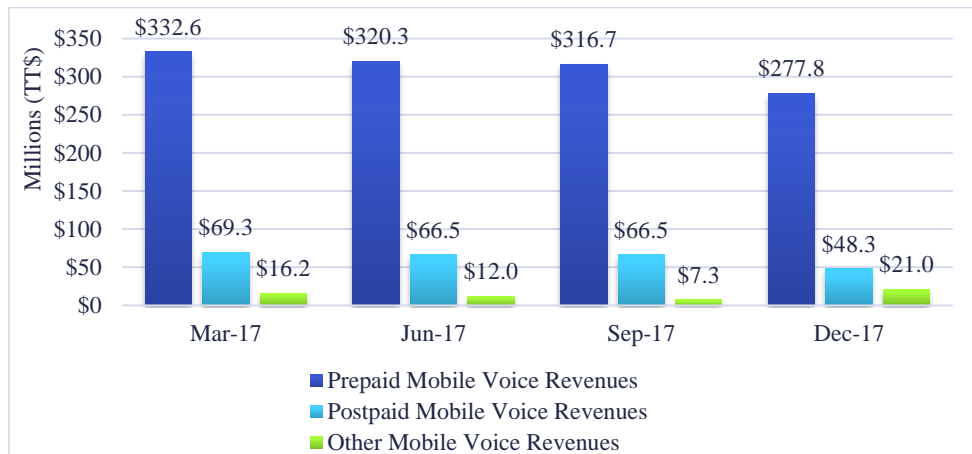
### 3.6.2. Quarterly Revenues from Mobile Voice Services

There was a decrease in mobile voice revenues for each quarter of 2017. The first quarter of 2017 registered the highest mobile voice revenues of TT\$418.1 million. Thereafter, consecutive decreases in revenues were observed, with the fourth quarter recording the lowest mobile voice revenues of TT\$347.2 million. Figure 46 highlights the quarterly trends in mobile voice revenues generated in 2017.



**Figure 46. Quarterly revenues from mobile voice services in 2017**

Figure 47 illustrates quarterly revenues broken down by prepaid, postpaid and other mobile voice services. Recording TT\$332.6 million in quarter one, revenues generated from prepaid services trended downwards throughout 2017, ending the year at TT\$277.8 million.

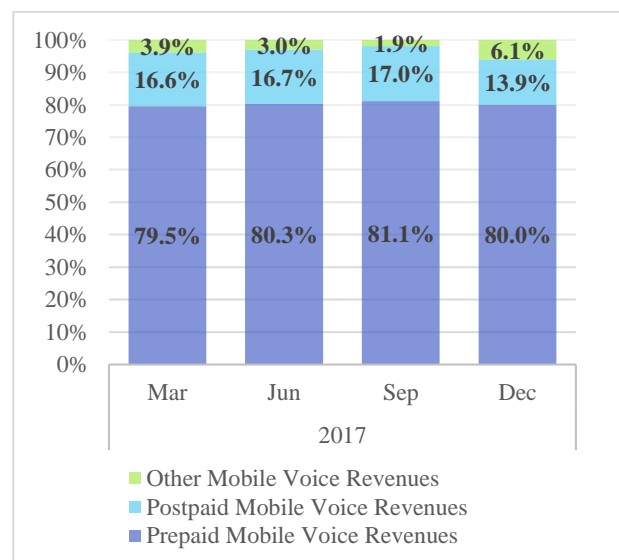


**Figure 47. Quarterly prepaid and postpaid mobile voice revenues in 2017**

After remaining relatively stable for the first three quarters of 2017, there was a significant decline in postpaid mobile voice revenues in the last quarter — 27.4%, or TT\$18.2 million.

Revenues from other mobile voice services declined from the first quarter of 2017 to the third quarter but recovered in the fourth quarter to record TT\$21.0 million.

Figure 48 illustrates a quarter-on-quarter comparison of the percentage of total revenues generated in 2017 by prepaid, postpaid and other mobile voice services. Revenues generated from prepaid services were the greatest contributor to mobile voice revenues in 2017, averaging 80.2% of total mobile voice revenues per quarter. Revenues from postpaid services averaged



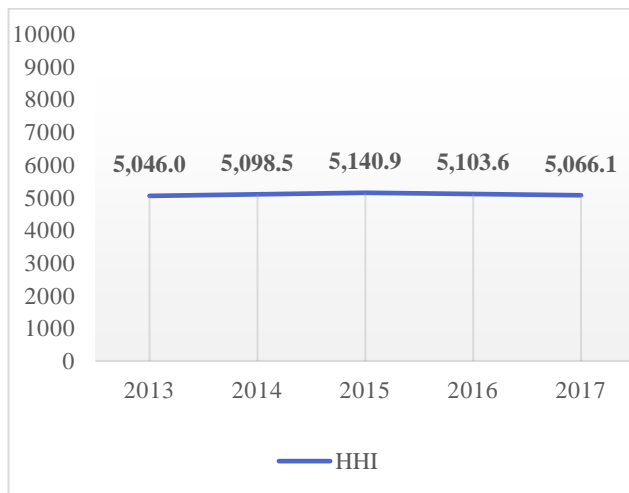
**Figure 48. Percentage of revenues contributed by prepaid, postpaid and other mobile voice services for 2017**

16.1% per quarter of total mobile voice revenues, while other mobile voice services averaged 3.7% per quarter.

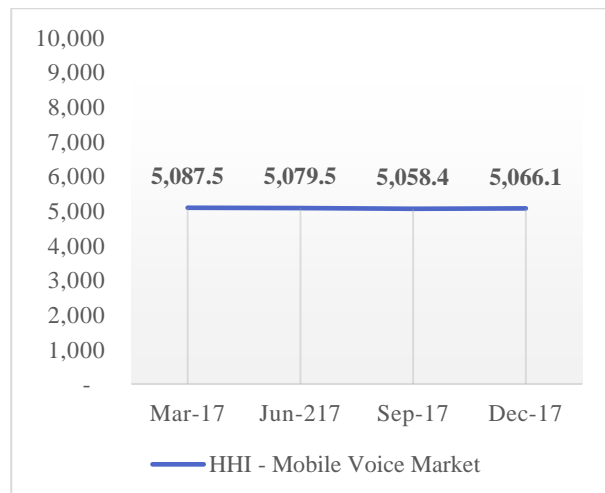
The percentage of revenues generated from prepaid services remained relatively constant throughout 2017. For the first three quarters of the year, the percentage of postpaid revenues was relatively constant with the exception of the fourth quarter in which there was a reduction from 17.0% to 13.9%. After experiencing two consecutive declines, the share of total revenues attributed to other mobile services increased to 6.1% during the last quarter — the highest for the year.

### 3.7. Mobile Voice Market Concentration

Figure 49 illustrates the level of concentration in the domestic mobile voice market using the HHI<sup>28</sup> for the period 2013 to 2017. During this period, the HHI remained relatively stable, approximating 5,000 points. Figure 50 depicts the quarterly HHI for the mobile voice market for 2017. After consecutive declines from the first to the third quarters in 2017, there was a marginal



**Figure 49. HHI for the mobile voice market from 2013 to 2017**



**Figure 50. HHI for the mobile voice market in 2017**

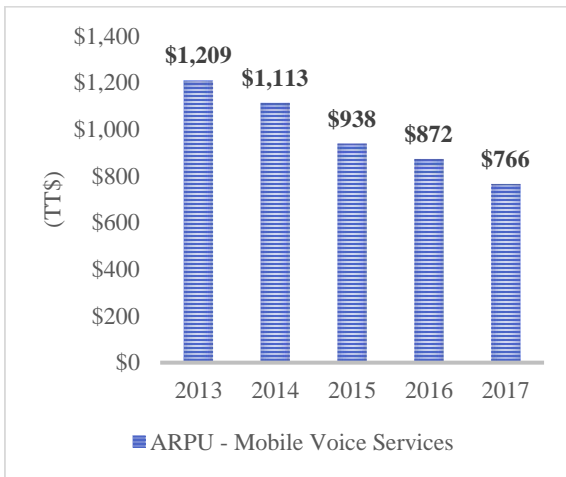
increase in the HHI in the fourth quarter,

<sup>28</sup> The number of subscriptions was used to determine market share for the service providers.

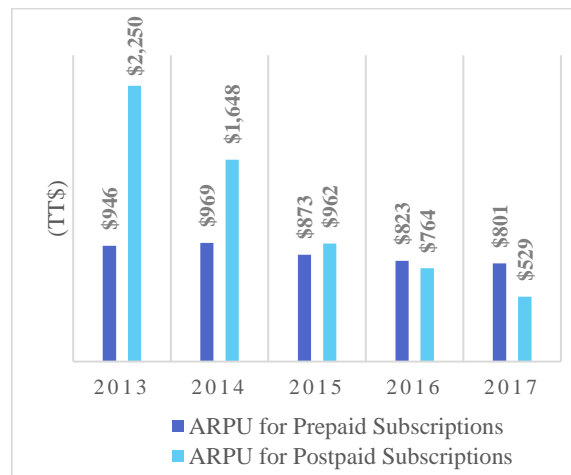
ending the year at 5,066.1 points.

### 3.8. Average Revenue per User (ARPU) for Mobile Voice Services

In 2017, the ARPU for mobile voice services<sup>29</sup> experienced a 12.2% decline over the previous year to record TT\$766. This means that the average expenditure per customer on mobile voice



**Figure 52. ARPU for mobile voice services from 2013 to 2017**



**Figure 51. Mobile voice prepaid and postpaid ARPUs from 2013 to 2017**

services, per annum, decreased by TT\$106

from the previous year. The ARPU has been on a downward trend over the past five years as illustrated in Figure 51.

Figure 52 depicts the comparison of the ARPU generated from prepaid and postpaid mobile voice services from 2013 to 2017. There were consistent declines in both the prepaid and postpaid ARPUs over the past five years.

In 2017, the prepaid ARPU decreased marginally by 2.7%, or TT\$22, whereas the postpaid decreased significantly by 30.7%, or TT\$235.

<sup>29</sup> The ARPU from mobile voice services includes mobile voice and SMS.





2017 ANNUAL MARKET REPORT

INTERNET MARKET



# Key Indicators for the Internet Market



GROWTH 2016-2017



## MOBILE INTERNET REVENUES

\$643.1 Million

6.9% increase over 2016



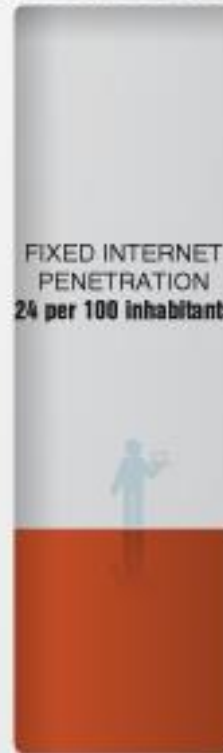
704,500  
Subscriptions



## FIXED INTERNET REVENUES

\$918.5 Million

4.0% increase over 2016



327,000  
Subscriptions

5.2%  
increase ov

**\$1561.6 M**

INTERNET MARKET REVENUES

## 4. Internet Market Review

This review of Trinidad and Tobago's Internet market for 2017 examines the delivery of Internet services over domestic fixed (wired and wireless) and mobile public telecommunications networks. The country has 16 authorised fixed domestic telecommunications services concessionaires. The following 11 of those provide fixed Internet services:

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

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

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

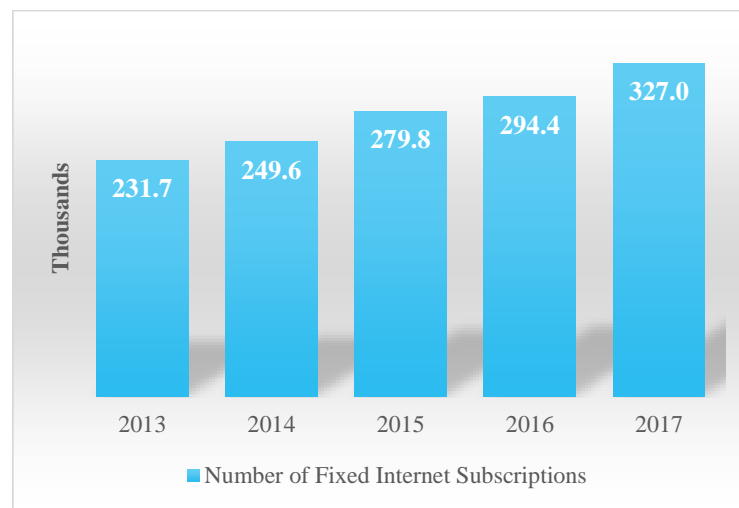
1. Telecommunications Services of Trinidad and Tobago Limited (bmobile)

## 2. Digicel (Trinidad & Tobago) Limited

Mobile Internet operators offered customers mobile broadband Internet services utilising Evolved High Speed Packet Access (HSPA+) as well as Long Term Evolution (LTE). Mobile Internet services via 2.5G technology, i.e., Enhanced Data rates for GSM Evolution (EDGE), were also offered during this reporting period.

### 4.1. Fixed Internet Subscriptions

Following a 5.2% increase in 2016, the number of subscriptions in the fixed Internet market increased significantly in 2017. Approximately 327,000 subscriptions were recorded at the end of December 2017 — an 11.1% increase when compared to the same period in 2016. Figure 53 illustrates the trend for fixed Internet subscriptions over the last five years.

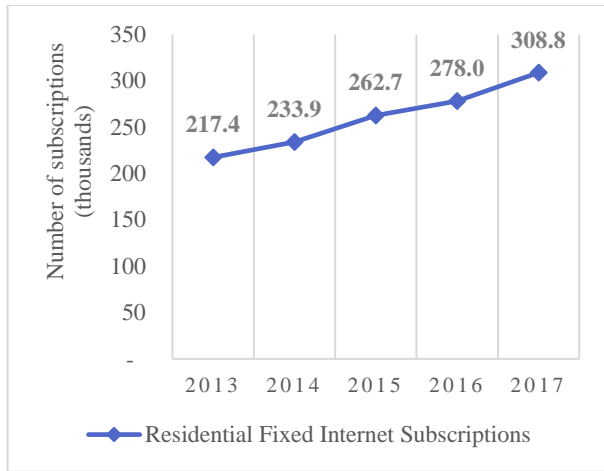


**Figure 53. Fixed Internet subscriptions from 2013 to 2017**

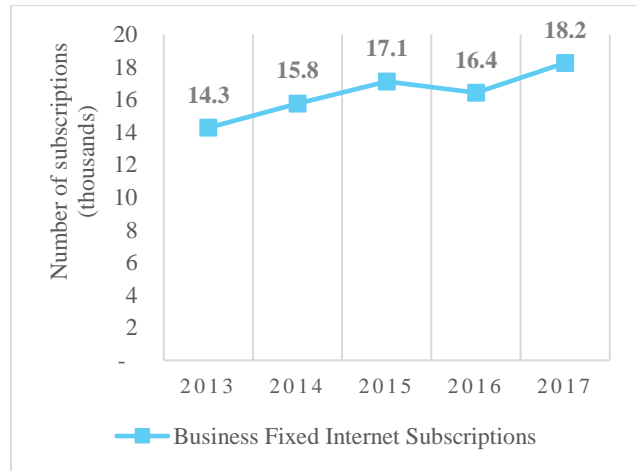
#### 4.1.1. Fixed Internet Subscriptions — Residential and Business

Fixed Internet subscriptions can be subdivided into residential and business categories. In 2017, both residential and business subscriptions contributed to the growth in total fixed Internet

subscriptions, with each increasing by approximately the same percentage. As depicted in Figure 54, residential fixed Internet subscriptions amounted to approximately 308,800, increasing by 11.1%, or 30,800 subscriptions, from 2016. Business fixed Internet subscriptions were recorded at 18,200, as shown in Figure 55, reflecting an increase of 11.2%, or 1,800 subscriptions, when compared to 2016.



**Figure 54. Residential fixed Internet subscriptions from 2013 to 2017**



**Figure 55. Business fixed Internet subscriptions from 2013 to 2017**

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

In 2017, residential broadband customers subscribed to Internet speeds<sup>30</sup> from 256 kbit/s up to 350 Mbit/s. Figure 56 depicts these subscriptions in the following Internet speed tiers<sup>31</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

<sup>30</sup> Refers to advertised download speeds

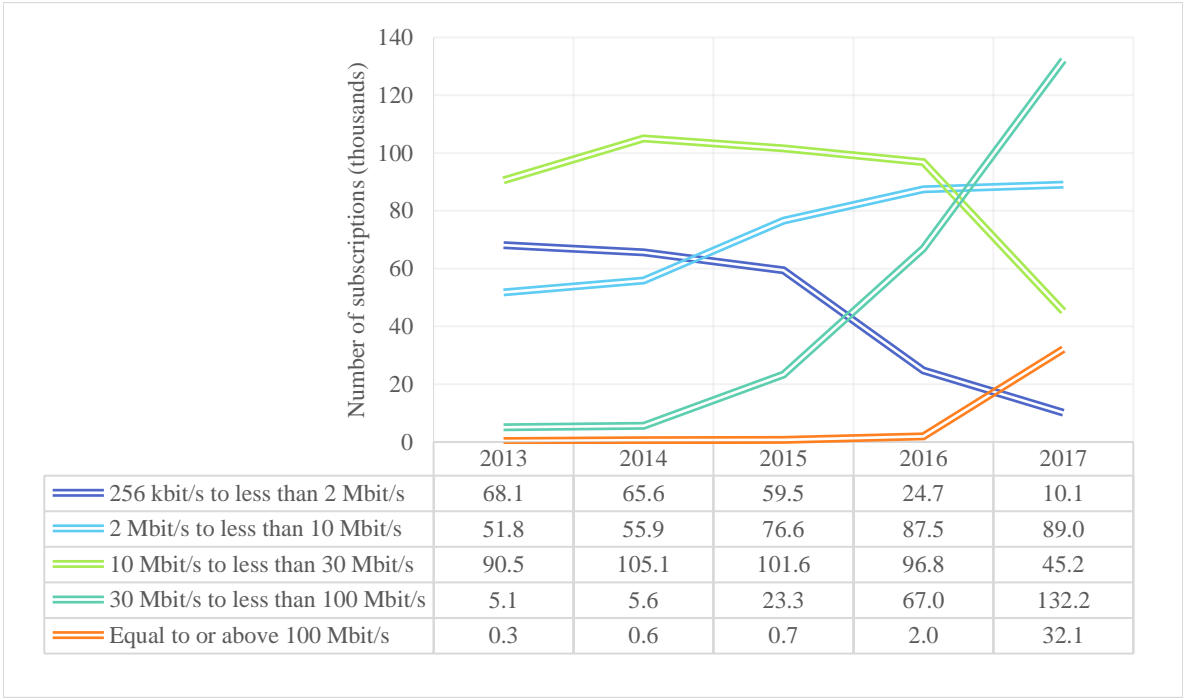
<sup>31</sup> The fixed Internet speed tiers were revised in 2017, consistent with the international classification agreed to by the ITU.

Subscriptions within the broadband Internet speed tier 30 Mbit/s to less than 100 Mbit/s was the most popular choice among residential customers in 2017. The number of subscriptions to this tier almost doubled from 67,000 in 2016 to 132,200 in 2017.

While the 10 Mbit/s to less than 30 Mbit/s speed tier was the most popular in 2016, the number of subscriptions in this tier decreased sharply by 53.3% in 2017 to record 45,200. As a result, this speed tier is now the third most subscribed to by residential fixed broadband Internet customers in the country.

The number of subscriptions to the 2 Mbit/s to less than 10 Mbit/s speed tier increased minimally from 87,500 subscriptions in 2016 to 89,000 in 2017. This speed tier is now the second most subscribed to by residential fixed broadband Internet customers.

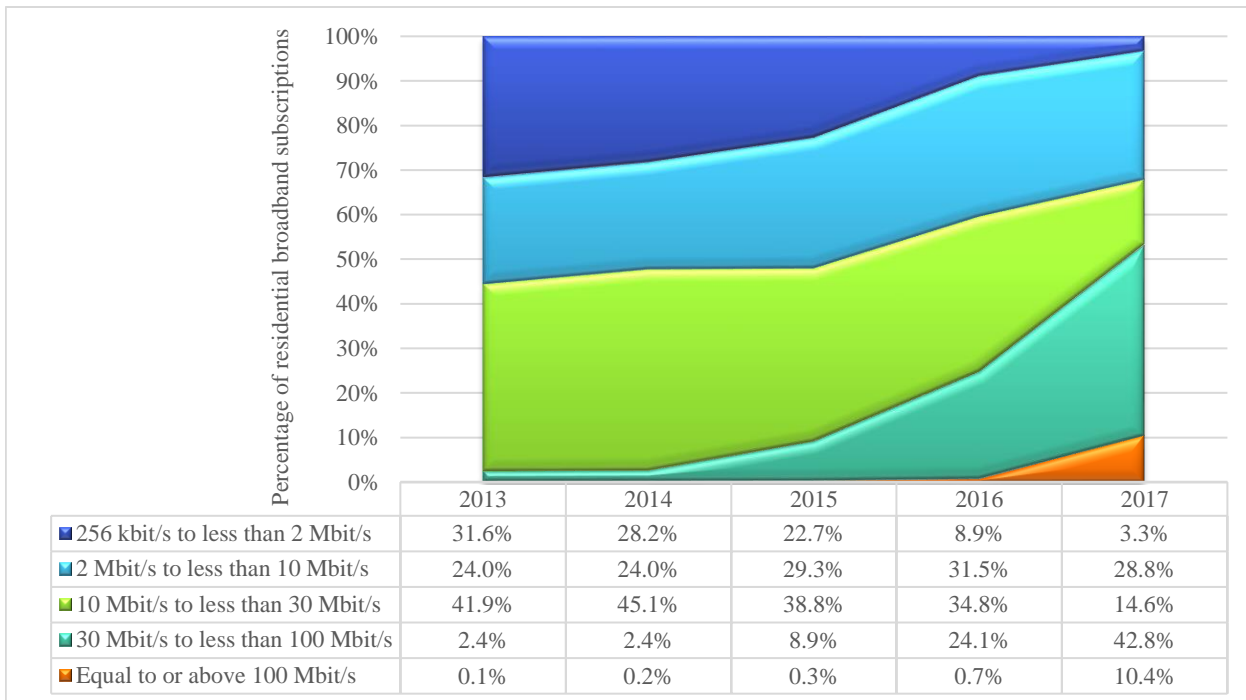
The 256 kbit/s to less than 2 Mbit/s continued in a downward trend, recording 10,100 subscriptions — a 59.1% decrease when compared to 2016. This speed tier is now the least subscribed to tier.



**Figure 56. Number of residential broadband subscriptions by download speed tier from 2013 to 2017**

Over the past five years, there has been a movement of residential fixed Internet subscriptions from the lower Internet speed tiers to the higher ones. This trend intensified in 2017, as significant growth was observed in the highest Internet speed tier, i.e., equal to or above 100Mbit/s. Following moderately stable growth between 2013 and 2016, subscriptions to the equal to or above 100Mbit/s speed tier increased sharply from 2,000 in 2016 to 32,100 in 2017.

In terms of percentage, the 30 Mbit/s to less than 100 Mbit/s speed tier is the largest, with 42.8%. As Figure 57 shows, the percentage of subscriptions to this speed tier increased substantially over the past two years.



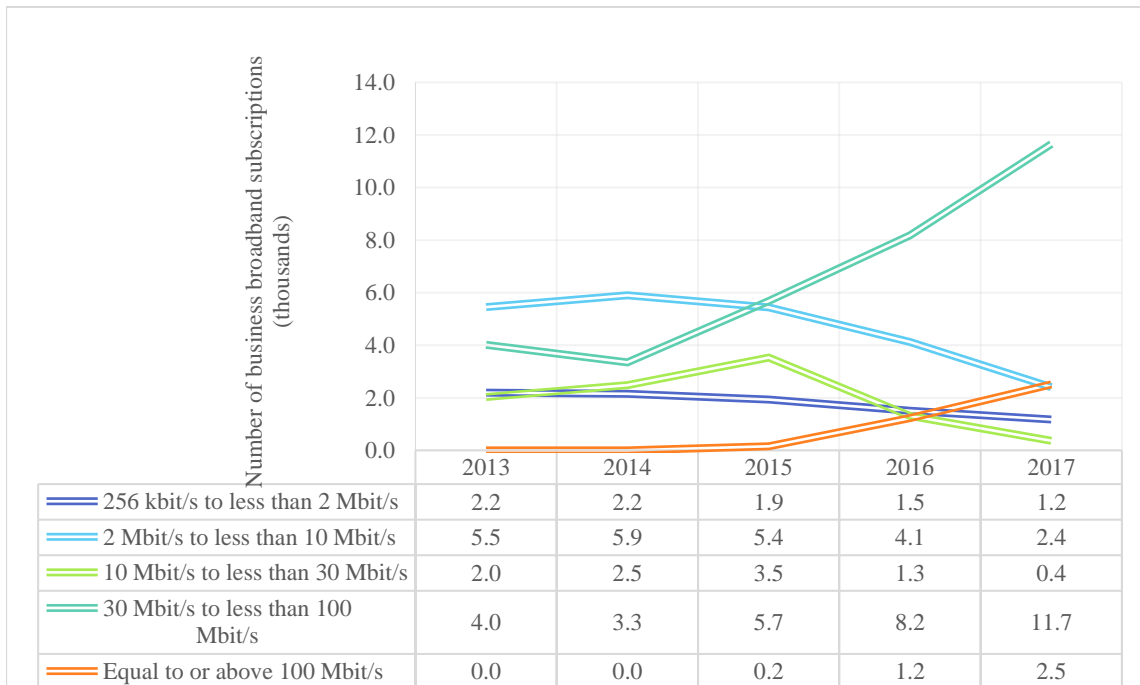
**Figure 57. Percentage of residential broadband subscriptions by download speed tier from 2013 to 2017**

The percentage of subscriptions in the equal to or above 100 Mbit/s also increased significantly from 0.7% in 2016 to 10.4% in 2017. The percentage of subscriptions to the 256 kbit/s to less than 2 Mbit/s speed tier continued to decrease in 2017 and now account for only 3.3% of all residential broadband Internet subscriptions. The percentage of subscriptions to the 10 Mbit/s to less than 30 Mbit/s speed tier decreased significantly, from 34.8% in 2016 to 14.6% in 2017.

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

The number of business broadband subscriptions within the 30 Mbit/s to less than 100 Mbit/s and the equal to or above 100 Mbit/s speed tiers continued to climb steeply in 2017. Subscriptions in the 30 Mbit/s to less than 100 Mbit/s tiers increased by 42.4% in 2017 to record 11,700, while subscriptions in the equal to or above 100 Mbit/s tier doubled in 2017 to record 2,500.

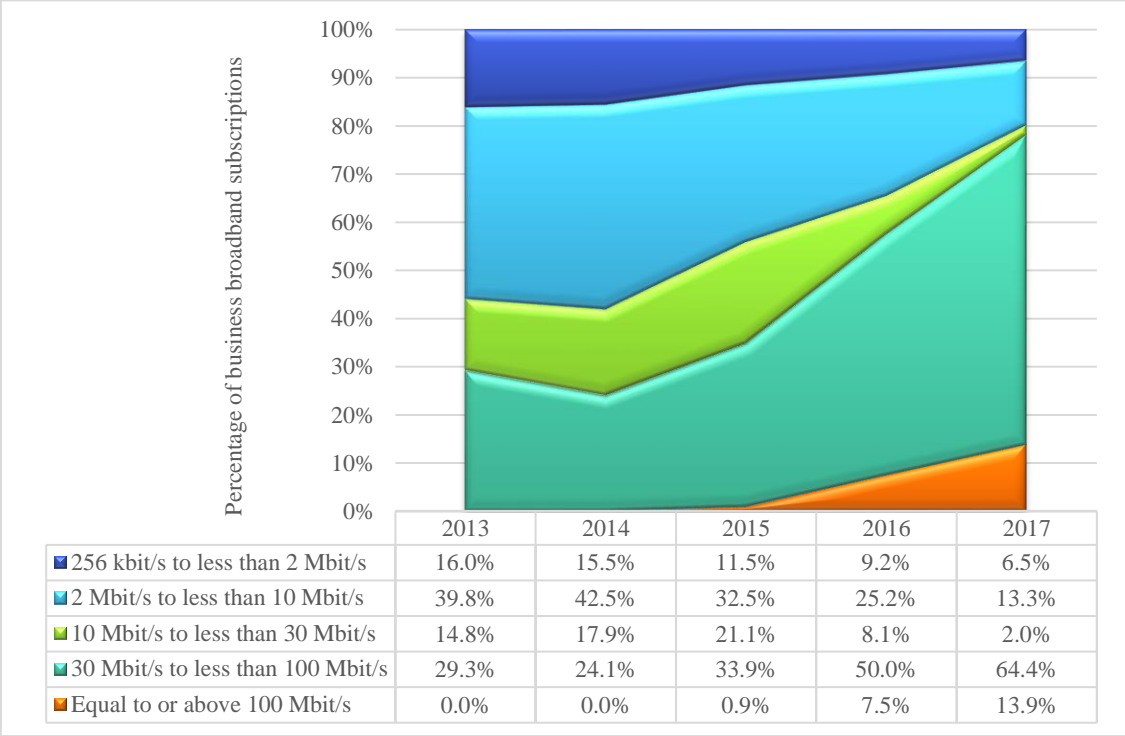
A downward trend was observed for the remaining speed tiers, with the 2 Mbit/s to less than 10 Mbit/s tier recording the largest decline. There were 2,400 business subscriptions to the 2 Mbit/s to less than 10 Mbit/s tier in 2017 — 1,700 fewer than that recorded in 2016.



**Figure 58. Number of business broadband subscriptions by download speed from 2013 to 2017**



The growth observed in the 30 Mbit/s to less than 100 Mbit/s speed tier is also reflected in the significant increase in the percentage of subscriptions in this category. In 2017, the percentage of business broadband customers who utilised speeds between 30 Mbit/s to less than 100 Mbit/s increased from 50.0% to 64.4% of total business broadband subscriptions. The trend in the equal to or above 100 Mbit/s tier is also noteworthy, as the percentage increased from 7.5% to 13.9% of total business broadband subscriptions in 2017. These results are illustrated in Figure 59, which also highlights that the percentage of business subscriptions to the other tiers decreased over the past five years.

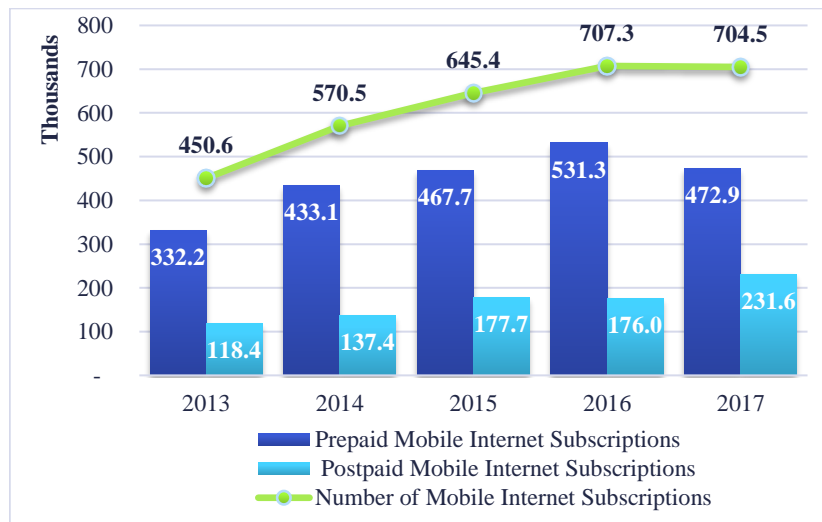


**Figure 59. Percentage of business broadband subscriptions by download speed tier from 2013 to 2017**

## 4.2. Mobile Internet Users

Of the 2.03 million mobile voice subscriptions in 2017, approximately 1.34 million had the capability to access mobile Internet services. Out of this 1.34 million, there were 704,500 mobile Internet users<sup>32</sup> — a decrease of 0.4% from the previous year. Consistent with the percentage of prepaid mobile voice subscriptions, the number of prepaid mobile Internet users also exceeded that of postpaid. As shown in Figure 60, there were 472,900 prepaid mobile Internet users compared to 231,600 postpaid at the end of 2017.

Following four years of steady growth between 2013 and 2016, prepaid mobile Internet subscriptions decreased in 2017, recording 58,400 fewer subscriptions — an 11.0% decrease when compared to 2016. Postpaid mobile Internet subscriptions recovered from a moderate decline in 2016, increasing by 31.6%, or 55,600 subscriptions, in 2017.



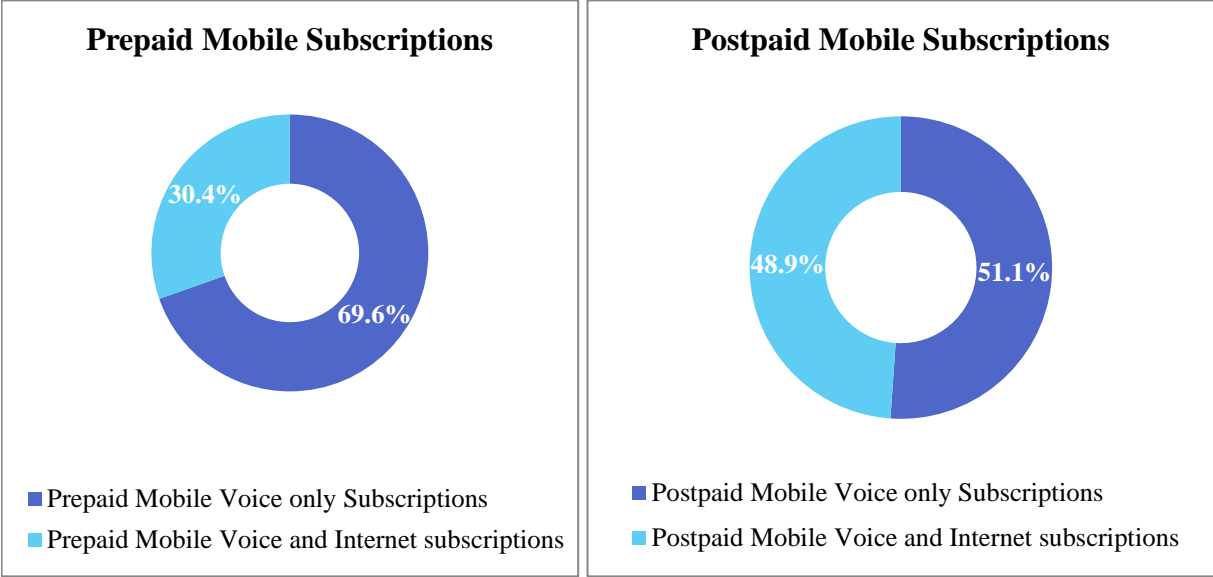
**Figure 60. Prepaid and postpaid mobile Internet subscriptions from 2013 to 2017**

Although the number of prepaid mobile Internet users was greater than the number of postpaid mobile Internet users, a higher percentage of postpaid mobile subscribers used mobile Internet.

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<sup>32</sup> Mobile Internet users are defined as active mobile Internet users.

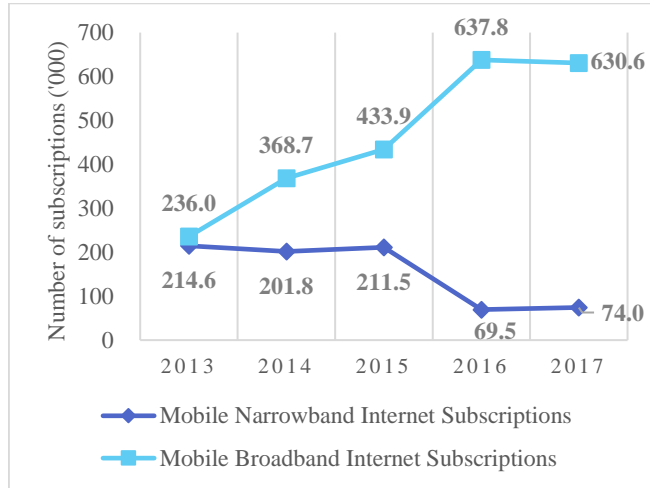
Out of the 1.56 million prepaid mobile subscriptions in 2017 (see Figure 27), 30.4% used mobile Internet services while the other 69.6% used only voice and SMS services. With respect to the 473,700 postpaid mobile subscriptions, 48.9% used mobile Internet services. The foregoing is illustrated in Figure 61, which compares prepaid and postpaid mobile subscriptions subdivided by mobile voice-only users and mobile voice and Internet users for 2017.



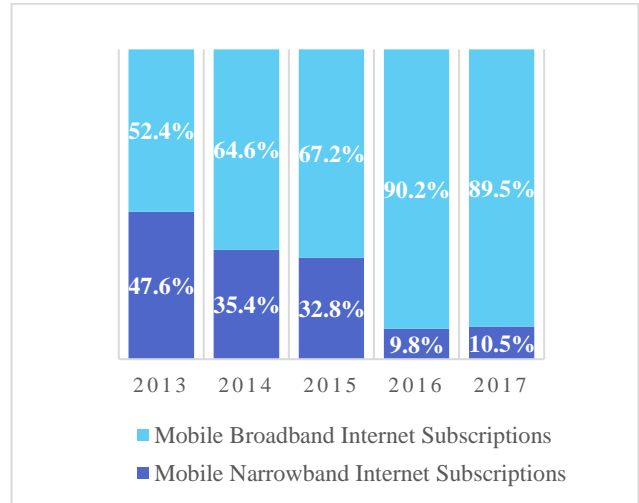
**Figure 61. Comparison of prepaid and postpaid mobile Internet subscriptions for 2017**

As Figure 62 illustrates, there were 630,600 active mobile broadband Internet users and 74,000 active mobile narrowband Internet users recorded at the end of 2017. The number of active mobile broadband users declined moderately, by 7,100 users or 1.1%, while the number of mobile narrowband Internet users increased by 4,500 users, or 6.5%.

The percentage of mobile broadband Internet users remained relatively constant in 2017, following the significant increase observed in 2016. The number of mobile broadband Internet



**Figure 62. Mobile narrowband and broadband Internet users from 2013 to 2017**



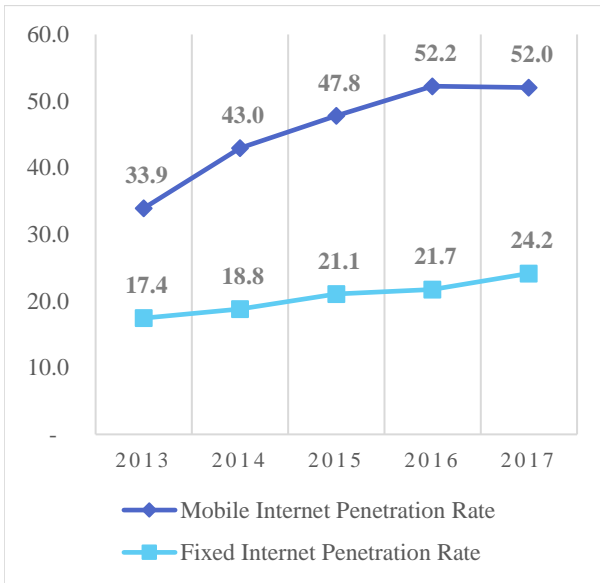
**Figure 63. Percentage of mobile narrowband and broadband Internet users from 2013 to 2017**

users accounted for 89.5% of all mobile Internet users in 2017. At 9.8% in 2016, the percentage of mobile narrowband Internet users increased minimally and accounted for 10.5% of the market in 2017. The percentage of mobile broadband and narrowband subscriptions over the period 2013 to 2017 is illustrated in Figure 63.

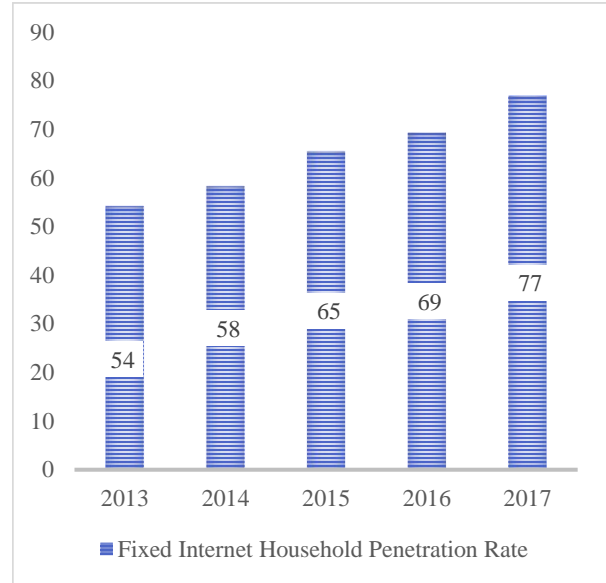
### 4.3. Internet Penetration Rates — Fixed and Mobile

The fixed Internet penetration rate increased steadily over the past five years. At the end of 2017, approximately 24 out of every 100 persons had a fixed Internet subscription — an increase from the 21 calculated in 2016. The level of mobile Internet penetration decreased slightly in 2017, following steady growth between 2013 and 2016. At the end of 2017, approximately 52 out of every 100 persons were using mobile Internet services. Figure 64 depicts the Internet penetration rates over the last five years.

Internet household penetration<sup>33</sup> is used to measure the percentage of households with a fixed Internet subscription. Approximately 77 out of every 100 households subscribed to a fixed



**Figure 64. Fixed and mobile Internet penetration from 2013 to 2017**

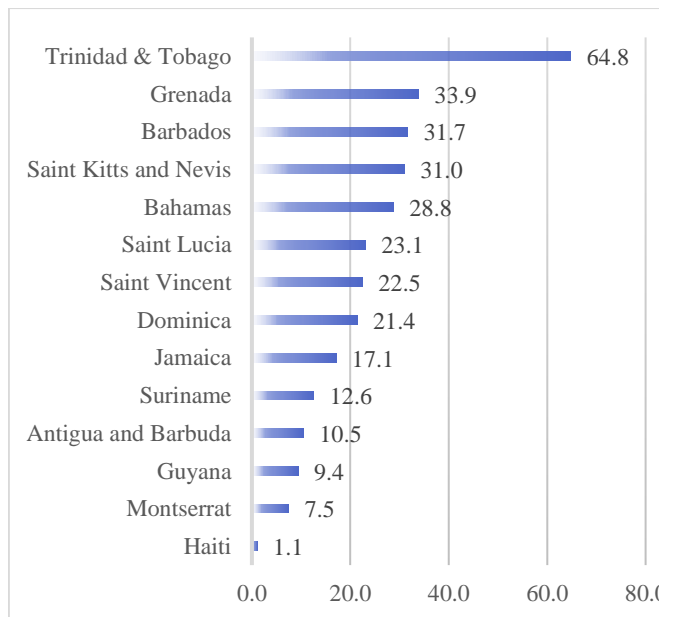


**Figure 65. Internet household penetration from 2013 to 2017**

Internet service in 2017 — an increase

from the 69 calculated in 2016. Figure 65 shows fixed Internet household penetration for the period 2013 to 2017.

From a regional perspective, in 2017, Trinidad and Tobago was ranked first in terms of broadband Internet subscribers per 100 inhabitants, according to data from BMI<sup>34</sup>. Based on BMI’s definition, broadband Internet subscribers include fixed and mobile



**Figure 66. Broadband Internet subscribers per 100 inhabitants among CARICOM countries in 2017**

<sup>33</sup> Internet household penetration is calculated as the number of households with a fixed Internet subscription divided by the total number of households, multiplied by 100.

<sup>34</sup> Data sourced from Business Monitor International (BMI) database, accessed May 16, 2017

connections. Approximately 65 out of every 100 persons in Trinidad and Tobago subscribed to broadband Internet services — almost double that of second-placed Grenada. Figure 66 compares the number of broadband subscribers per 100 inhabitants among the CARICOM countries.

#### 4.4. Total Internet Revenues

Fixed and mobile Internet services generated TT\$1,561.6 million in revenues for 2017, as illustrated in Figure 67. Increasing by TT\$76.7 million, or 5.2%, the rate of growth for total Internet revenues slowed compared to the double-digit growth observed during the 2013 to 2016 period. Both fixed and mobile Internet revenues increased in 2017, with mobile Internet revenues growing at a faster rate than fixed Internet revenues.

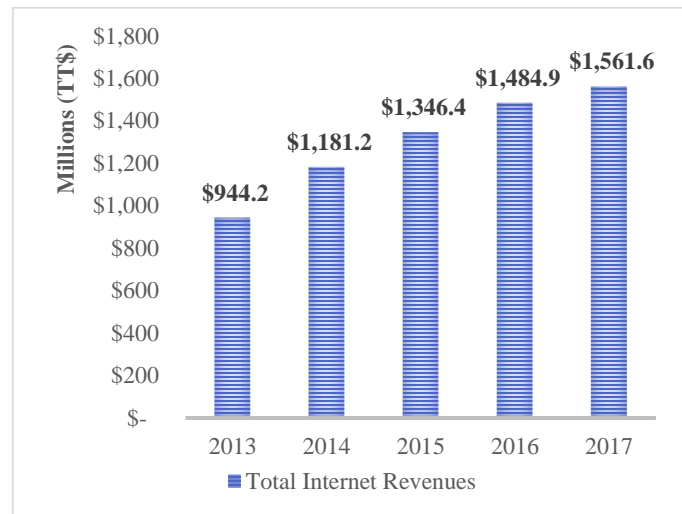
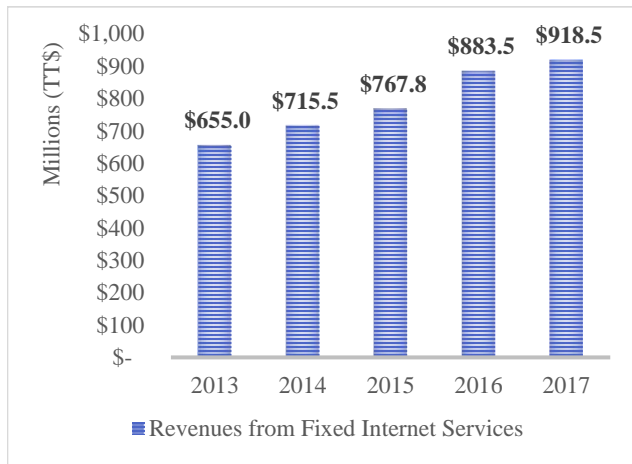
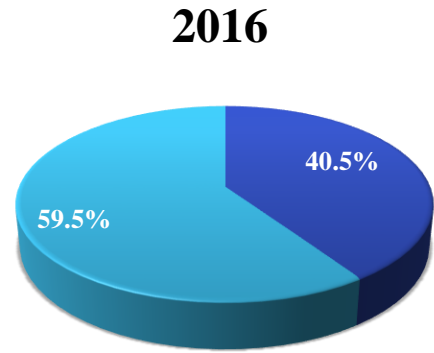


Figure 67. Total Internet revenues from 2013 to 2017

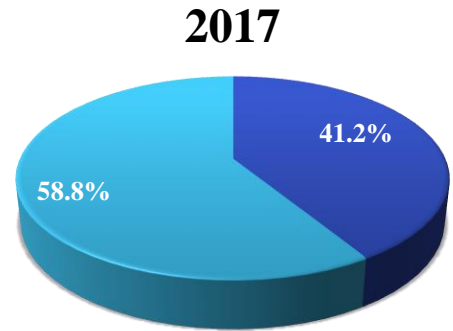
Over the past two years, revenues generated from fixed Internet subscriptions accounted for the majority of total Internet revenues, as shown in Figure 68. Fixed Internet revenues accounted for 58.8% of total Internet revenues in 2017, while mobile Internet revenues comprised the remaining 41.2%. The percentage of mobile Internet revenues increased from 40.5% in 2016 to 41.2% in 2017.



**Figure 69. Fixed Internet revenues from 2013 to 2017**



■ % of Mobile Internet Revenues  
 ■ % of Fixed Internet Revenues

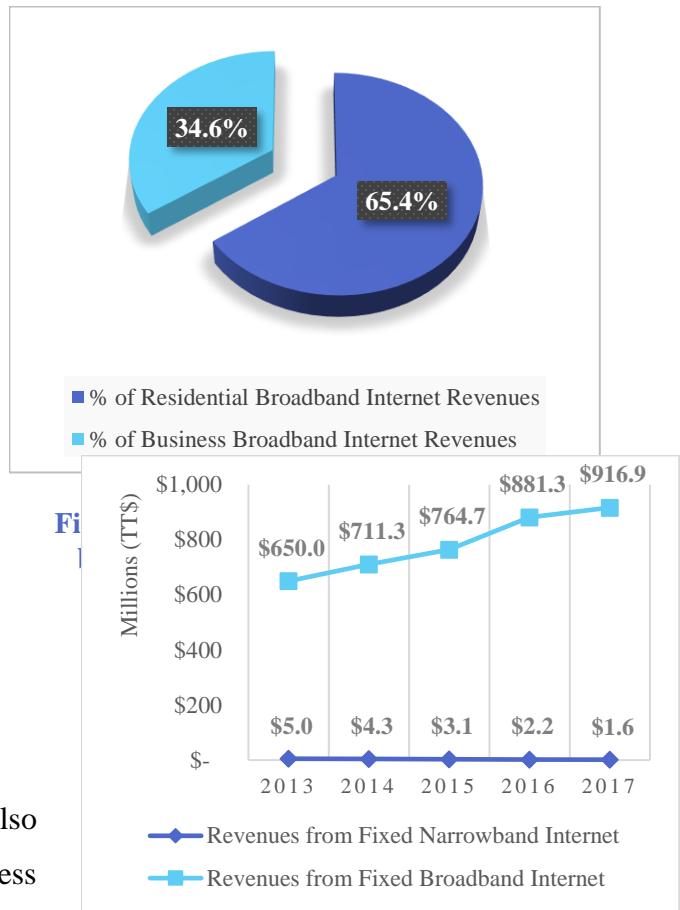


■ % of Mobile Internet Revenues  
 ■ % of Fixed Internet Revenues

**Figure 68. Percentage of fixed and mobile to Internet revenues in 2016 and 2017**

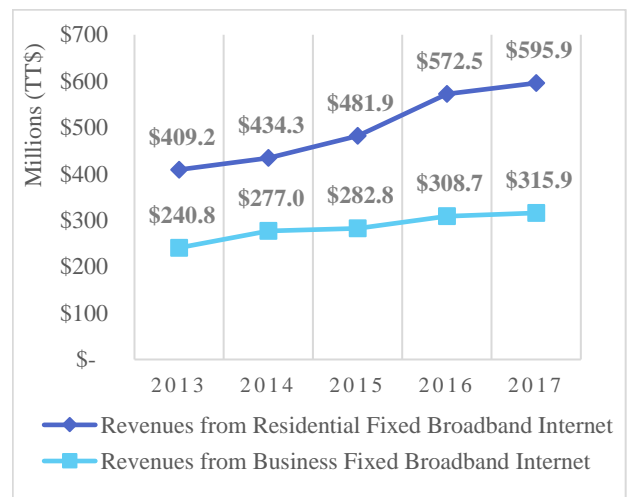
#### 4.4.1. Fixed Internet Revenues

For the period under review, the total revenues for the fixed Internet market amounted to TT\$918.5 million, reflecting an increase of TT\$35.0 million, or 4.0%, from the previous year. As shown in Figure 69, total revenues from fixed Internet services increased steadily from 2013 to 2017. Of total fixed Internet revenues, narrowband Internet accounted for TT\$1.6 million, while broadband Internet contributed TT\$916.9 million, as illustrated in Figure 70.



**Figure 70. Fixed narrowband and broadband Internet revenues from 2013 to 2017**

Fixed broadband Internet revenues are also broken down into residential and business revenues. The rate of growth of residential fixed broadband Internet revenues slowed in 2017 after a strong upward trend over the period 2013 to 2016. Residential fixed broadband Internet revenues increased by 4.1% to record TT\$595.9 million. Business fixed broadband Internet revenues continued to grow, increasing by 2.3% in 2017, to record TT\$315.9 million. Figure 71 shows the upward trend in fixed broadband revenues for both categories over the past five years.



**Figure 71. Residential and business fixed broadband Internet revenues from 2013 to 2017**

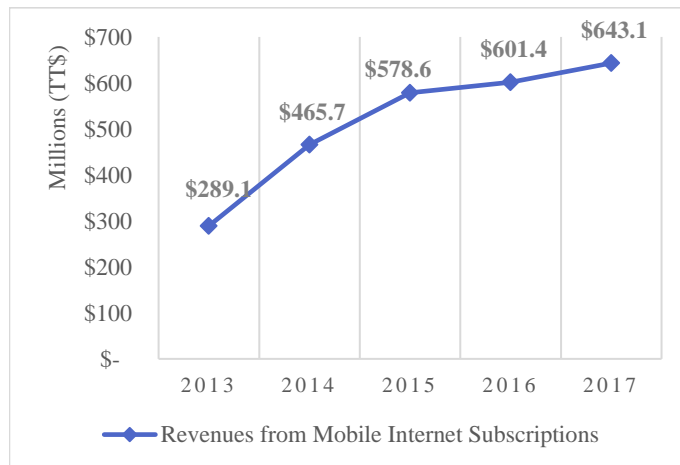
Revenues generated from residential fixed broadband Internet subscriptions accounted for most of fixed broadband revenues, as shown in Figure 72. Of total fixed broadband revenues, residential broadband



subscriptions contributed 65.4%, while revenues from business broadband subscriptions accounted for 34.6%.

#### 4.4.2. Mobile Internet Revenues

Revenues generated from mobile Internet services continued to be a significant contributor to revenues in the Internet market. Following a slowed growth in 2016, total gross revenues from mobile Internet services rose from TT\$601.4 million in 2016 to TT\$643.1 million in 2017, i.e., a 6.9% increase. Figure 73 highlights the annual trend for gross revenues generated by mobile Internet users.



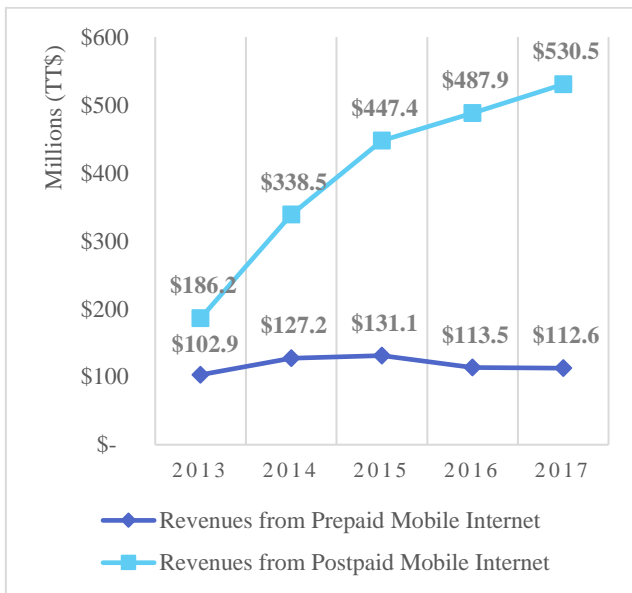
**Figure 73. Total mobile Internet revenues from 2013 to 2017**

In 2017, mobile Internet revenues totalled TT\$530.5 million, a downward

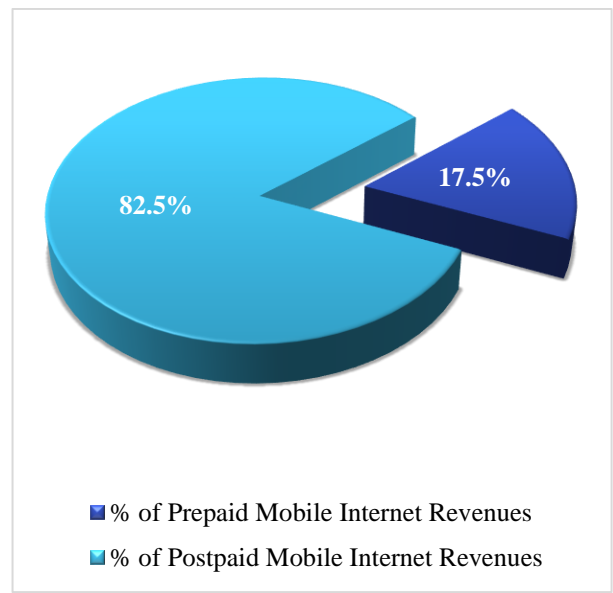
prepaid and postpaid Internet revenues totalled TT\$112.6 million and million, respectively. from prepaid mobile services continued in trend with a 13.4%

decline, while postpaid mobile Internet revenues stayed on a growth path with a 9.0% increase

for the period. Figure 74 shows the prepaid and postpaid revenues earned from 2013 to 2017, while Figure 75 depicts the percentage of prepaid and postpaid mobile Internet revenues for 2017. Most of the mobile Internet revenues is earned from postpaid mobile Internet users, contributing 82.5% of total mobile Internet revenues.



**Figure 74. Prepaid and postpaid mobile Internet revenues from 2013 to 2017**

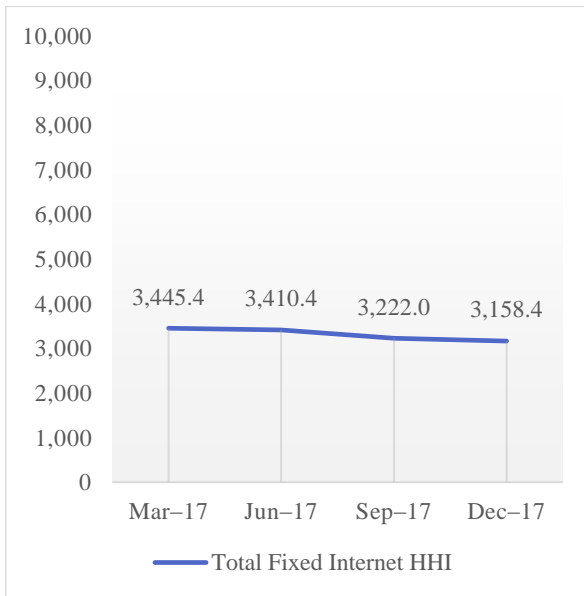


**Figure 75. Percentage of prepaid and postpaid mobile Internet revenues in 2017**

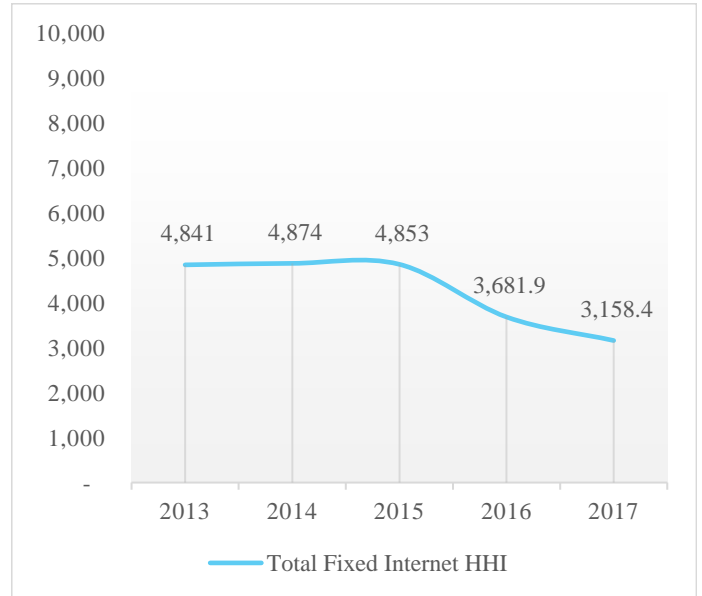
#### 4.5. Fixed Internet Market Concentration

Using the HHI, the Authority calculated the level of concentration in the fixed Internet market<sup>35</sup> for 2017. The level at the end of the year stood at 3,158.4, decreasing from the 3,681.9 calculated in December 2016. This represented a significant 14.2% decrease over the previous year.

Based on the quarterly comparisons, there was a consistent reduction in the level of concentration during 2017. The HHI decreased from 3,445.4 in the first quarter to 3,158.4 in the fourth quarter, as reflected in Figure 76.



**Figure 76. Quarterly fixed Internet market HHI in 2017**



**Figure 77. Fixed Internet HHI from 2013 to 2017**

Overall, the annual fixed Internet HHI was relatively stable from 2013 to 2015. This was followed by significant decreases in 2016 and 2017. Figure 77 illustrates this.

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<sup>35</sup> Market share based on the number of subscriptions was used in the calculation of the HHI.

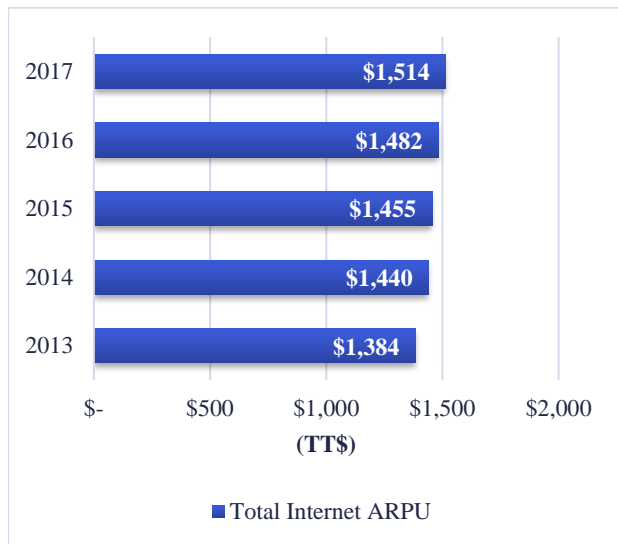


#### 4.6. Average Revenue per User (ARPU) for Total Internet Services

Average revenue per user<sup>36</sup> (ARPU) in the Internet market increased minimally in 2017. During the review period, customers with Internet (fixed and mobile) subscriptions spent an average of TT\$1,514 for Internet services, which was an increase of TT\$32, or 2.1%, when compared to 2016.

Fixed Internet ARPU decreased by 6.4% (TT\$192), with each subscription contributing approximately TT\$2,809<sup>37</sup> during 2017. For mobile Internet services, customers spent an average of TT\$913<sup>38</sup> in 2017 — an increase of TT\$63, or 7.3%. Figures 78 and 79 show the total Internet

ARPU trends and the trends for individual categories, respectively, over the last five years.



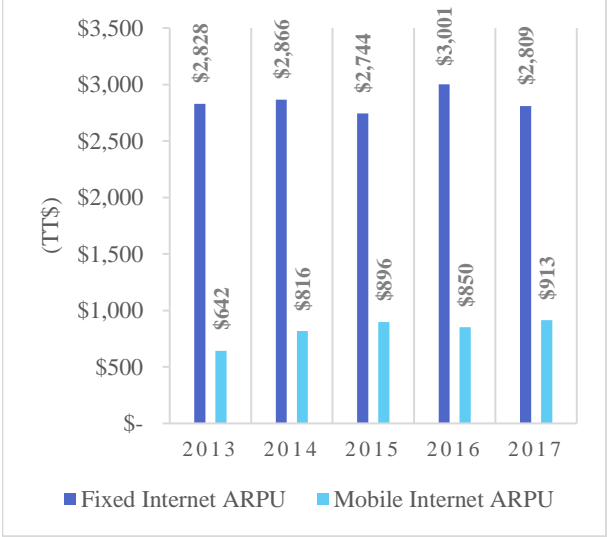
**Figure 78. ARPU for total Internet services from 2013 to 2017**

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<sup>36</sup> ARPU for fixed and mobile Internet subscriptions combined

<sup>37</sup> 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>38</sup> ARPU for mobile Internet services is calculated as the total revenues from prepaid and postpaid mobile subscriptions with Internet access divided by the total number of mobile prepaid and postpaid subscriptions with Internet access.



**Figure 79. ARPUs for fixed and mobile Internet services from 2013 to 2017**

## Box 2: Global ICT Trends 2017

ICTs are a key enabler of economic and social development. The International Telecommunication Union (ITU) plays a pivotal role in the global efforts to bridge the digital divide and foster an inclusive digital economy. An important part of fulfilling this mission is the monitoring of progress towards ICT development globally. According to the ITU, ICT development today is driven by mobile broadband services. The growth of mobile broadband has largely outpaced fixed broadband, and mobile broadband prices have dropped by 50% on average over the last three years.

A review of global ICT trends in 2017 revealed the following:

### 1. Youths dominate online population.

- ❖ More than 80% of the world's youth population are online.
- ❖ In developed countries, 94% of young people aged 15–24 use the Internet, compared to 67% in developing countries and only 30% in least developed countries (LDCs).
- ❖ Out of the 830 million young people who are online, 320 million (39%) are in China and India.
- ❖ Nearly 9 out of 10 young persons not using the Internet live in Africa or Asia and the Pacific.
- ❖ The proportion of young people aged 15–24 using the Internet (71%) is significantly higher than the proportion of the total global population using the Internet (48%).

### 2. Digital gender divide persists.

- ❖ The proportion of men using the Internet is 12% higher than the proportion of women using the Internet in two-thirds of countries worldwide.
- ❖ While the gender gap has narrowed in most regions since 2013, it has widened in Africa. In Africa, the proportion of women using the Internet is 25% lower than the proportion of men using the Internet. In LDCs, only one out of seven women is using the Internet, compared with one out of five men.

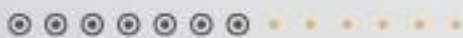
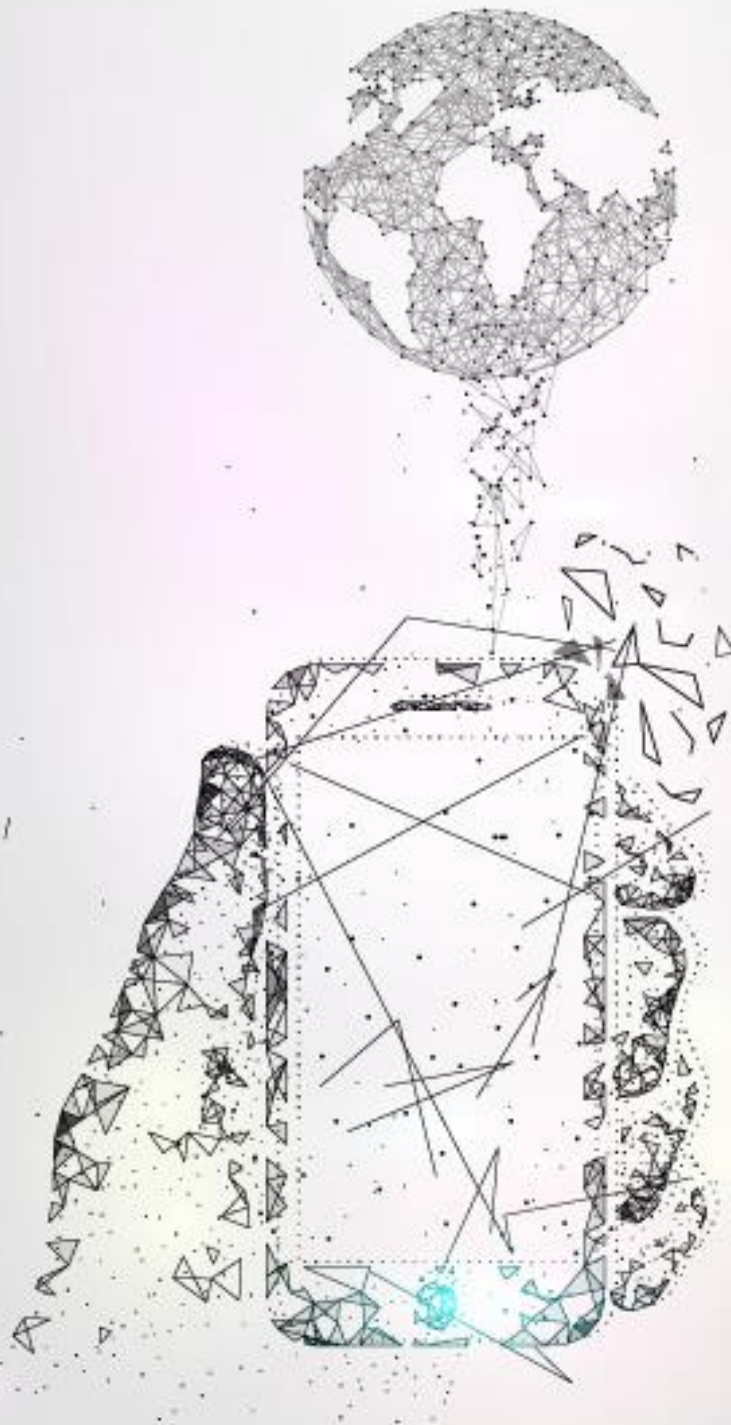
### 3. Broadband is progressively mobile.

- ❖ Mobile broadband subscriptions have grown more than 20% annually in the last five years.
- ❖ There are twice as many mobile broadband subscriptions per 100 inhabitants in developed countries as in developing countries, and four times as many in developed countries as in LDCs.
- ❖ Mobile broadband is more affordable than fixed broadband services in most developing countries.
- ❖ Mobile broadband prices represent more than 5% of gross national income (GNI) per capita in most LDCs and are, therefore, unaffordable to the majority of the populations. In LDCs, on average, an entry-level fixed broadband subscription is 2.6 times more expensive than an entry-level mobile broadband subscription.

*Source: <http://www.itu.int/en/ITU-D/Statistics/Documents/facts>*

2017 ANNUAL MARKET REPORT

INTERNATIONAL VOICE MARKET





## Key Indicators for the International Voice Market



GROWTH 2016-2017



### INCOMING INTERNATIONAL REVENUES

\$235.8 Million



192,900 Million  
Minutes



### OUTGOING INTERNATIONAL REVENUES

\$88.5 Million



125,200 Million  
Minutes

6.2%  
increase over 2016

**\$325.0M**

TOTAL INTERNATIONAL REVENUES

## **5. International Voice Market Review**

Eight concessionaires were authorised to provide international telecommunications services in 2017, which included the provision of international voice services. These operators were:

1. Amplia Communications Limited
2. Columbus Networks International (Trinidad) Limited
3. Digicel (Trinidad & Tobago) Limited
4. Green Dot Limited<sup>39</sup>
5. Open Telecom Limited
6. Telecommunications Services of Trinidad and Tobago Limited (TSTT)
7. Lisa Communications Limited
8. Southern Caribbean Fibre Limited

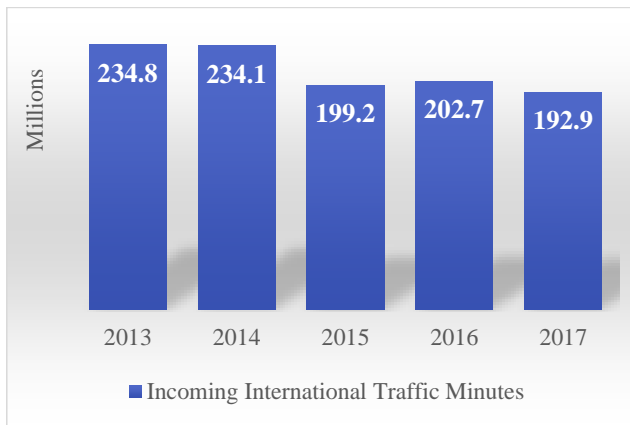
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<sup>39</sup> Green Dot Limited was not operational in the international voice market for the review period.

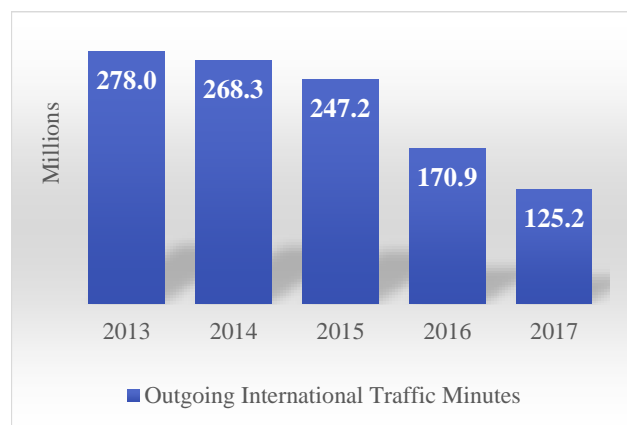
## 5.1. International Voice Traffic (Incoming and Outgoing Minutes)

The number of minutes generated from both incoming international calls and outgoing international calls in 2017 were less when compared to 2016.

Following a moderate increase in 2016, incoming international minutes decreased by 4.9% to 192,900 million minutes. For the second consecutive year, the number of outgoing minutes showed a double-digit decline, decreasing by 26.8% to record 125,200 million minutes in 2017. The number of international voice minutes for both incoming and outgoing are shown in Figures 80 and 81, respectively.

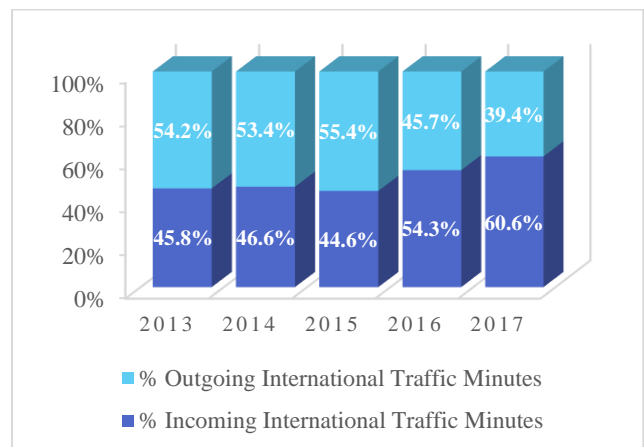


**Figure 80. Incoming international voice traffic (minutes) from 2013 to 2017**



**Figure 81. Outgoing international voice traffic (minutes) from 2013 to 2017**

Figure 82 illustrates the percentage of incoming traffic compared to outgoing traffic over the past five years. The percentage of minutes generated by incoming international calls accounted for 60.6% of all international minutes, increasing from 54.3% in 2016. Incoming minutes now account for 39.4% of

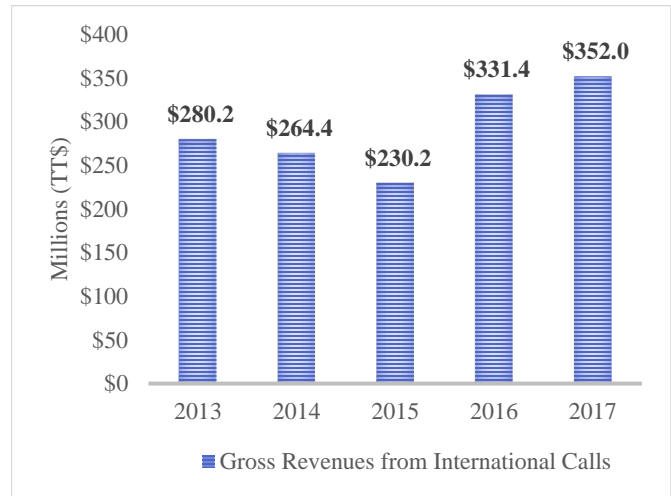


**Figure 82. Incoming and outgoing international voice traffic (minutes) from 2013 to 2017**

total international minutes compared to the 45.7% in 2016.

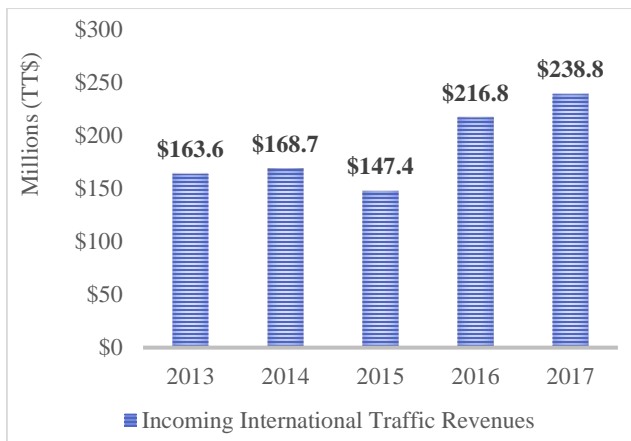
## 5.2. International Voice Revenues

Gross revenues<sup>40</sup> generated by incoming and outgoing international telecommunications voice services increased moderately in 2017. Following a sharp increase in 2016, international revenues increased by approximately TT\$20.6 million, or 6.2%, when compared to the previous year, to reach TT\$352.0 million in 2017. Figure 83 depicts the trend in revenues generated by the international voice market from 2013 to 2017.

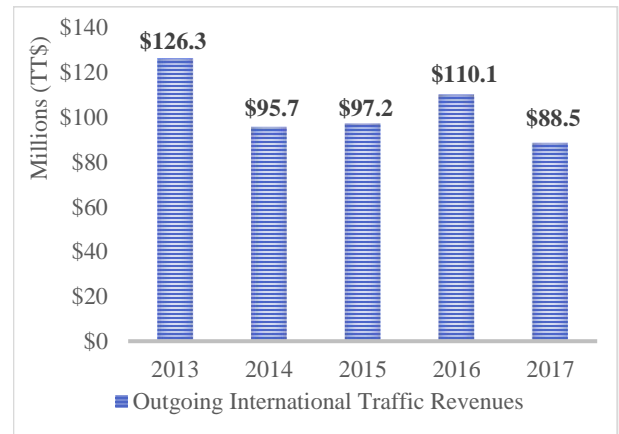


**Figure 83. Revenues from international (incoming and outgoing) voice services from 2013 to 2017**

A review of the composition of international revenues in 2017 showed incoming international revenues increased while outgoing international revenues decreased. Incoming international revenues for 2017 totalled TT\$238.8 million — a TT\$22.0 million, or 10.1%, increase when compared to 2016. Outgoing international voice revenues generated TT\$88.5 million in 2017 —



**Figure 84. Revenues from incoming international voice traffic (minutes) from 2013 to 2017**

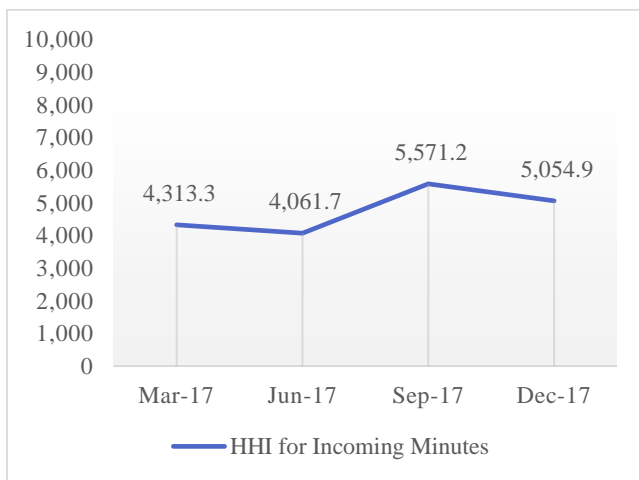


**Figure 85. Revenues from outgoing international voice traffic (minutes) from 2013 to 2017**

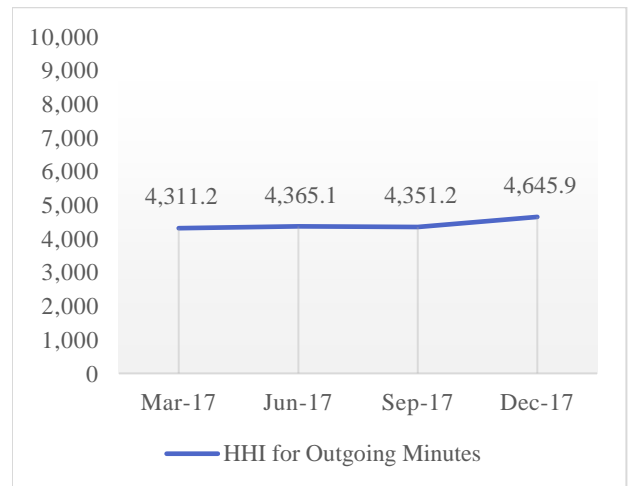
TT\$21.6 million, or 19.6% lower than revenues generated in 2016. Incoming and outgoing international voice revenues over the past five years are illustrated in Figure 84 and 85, respectively.

### 5.3. International Voice Market Concentration

The Authority calculated the level of concentration (HHI) for Trinidad and Tobago’s international voice market in terms of the number of international incoming and outgoing minutes. The HHI for the incoming market stood at 5,054.9 at the end of the fourth quarter of 2017, while the HHI for the outgoing market was 4,645.9 for the same period. This indicates that the international incoming market was more



**Figure 86. HHI for international incoming minutes in 2017**

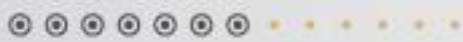


**Figure 87. HHI of international outgoing minutes in 2017**

concentrated than the outgoing market. The HHI for incoming minutes fluctuated during 2017, reaching a high of 5,571.2 in the third quarter. The HHI values for outgoing minutes, however, were relatively stable during the period. Figures 86 and 87 shows the HHI values for incoming and outgoing minutes in 2017.

2017 ANNUAL MARKET REPORT

BROADCASTING MARKET



# Key Indicators for the Broadcasting Market



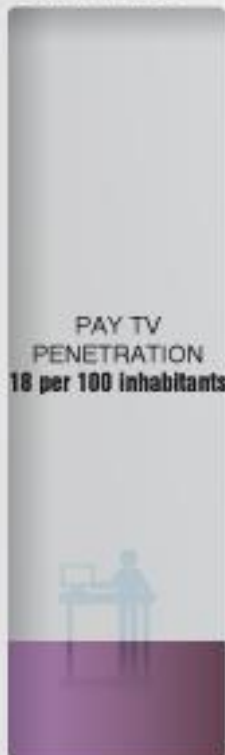
GROWTH 2016-2017



## PAY TV REVENUES

**\$695.6 Million**

Decrease 3.2%  
over 2016



**246,800**  
Subscriptions



**62 per 100 households**



## FREE TO AIR RADIO REVENUES

**\$151.1 Million**

Decrease 9.5%  
over 2016



## FREE TO AIR TV REVENUES

**\$77.5 Million**

Decrease 21.4%  
over 2016



**6.1%**  
decrease over 2016

**\$0.93B**

BROADCAST MARKET REVENUES

## 6. Broadcasting Market Review

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

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

Table 7 outlines the number of concessions granted in the last five years for the provision of public broadcasting services. There were no changes in the number of operators in this market in 2017.

**Table 7. Number of concessions in the broadcasting market from 2013 to 2017**

Type of Concessions	Number of Concessions				
	2013	2014	2015	2016	2017
<b>Free-to-Air (FTA) Television</b>	<b>9</b>	<b>8</b>	<b>7</b>	<b>6</b>	<b>6</b>
National	6	6	6	5	5
Major Territorial	3	2	1	1	1
<b>Subscription Television</b>	<b>11</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>14<sup>41</sup></b>
National	5	7	8	8	8
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>6</b>	<b>7</b>	<b>10</b>	<b>9</b>	<b>9</b>
National	6	6	8	8	8
Major Territorial		1	2	1	1
<b>Free-to-Air (FTA) Radio</b>	<b>39</b>	<b>39</b>	<b>38</b>	<b>37</b>	<b>37<sup>42</sup></b>
National	31	31	30	29	29
Major Territorial	6	6	6	6	6
Minor/Niche Territorial	2	2	2	2	2

<sup>41</sup> Renewal concessions pending execution by the Minister: Independent Cable Network of Trinidad & Tobago Limited (ICNTT)

<sup>42</sup> Renewal concessions pending execution by the Minister: British Broadcasting Corporation (BBC)



<b>Total</b>	<b>65</b>	<b>67</b>	<b>69</b>	<b>66</b>	<b>66</b>
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### 6.1. Free-to-Air (FTA) Television Broadcasting Market

In 2017, the market for FTA television (TV) broadcasting services comprised the following six operational concessionaires:

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

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

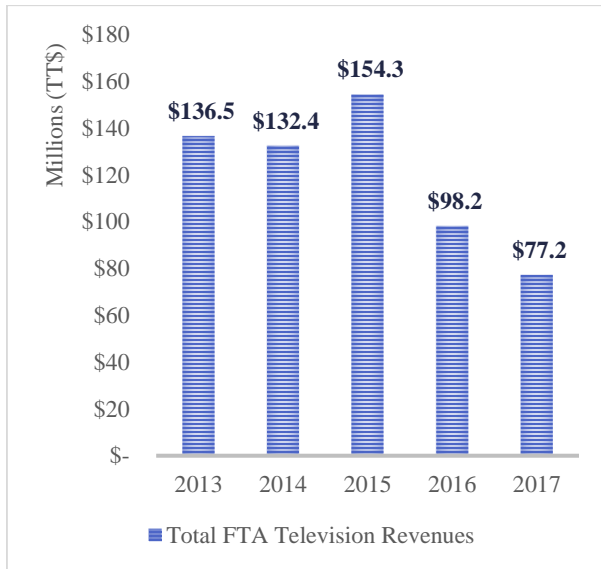
1. Central Broadcasting Services Limited (Jaagriti TV)
2. Darut Tarbiyah
3. Environmental Management Authority (EMA)
4. IBN Communications Company Limited
5. Ice Media Group Limited
6. Living Water Community
7. Sankhya Television Limited
8. SWAHA Media Limited
9. Synergy Entertainment Network Limited

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

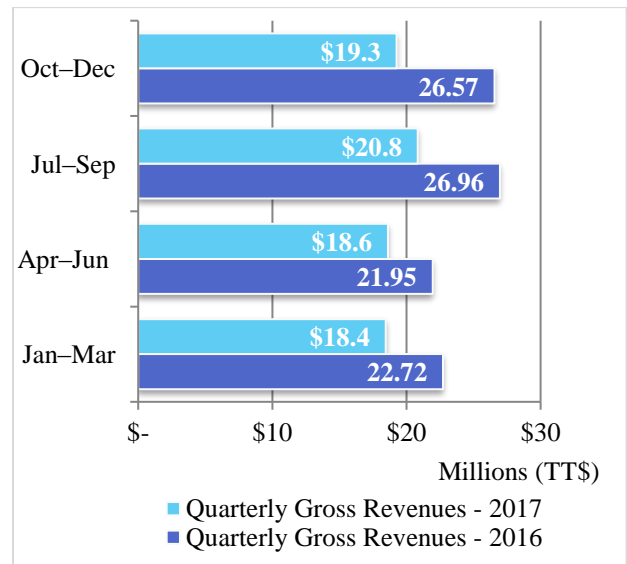
The following section provides information on the performance of both the FTA and local television broadcasting services via cable. Thus, all references to FTA television below include FTA television broadcasting and television broadcasting services via cable.

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

As was the case in 2016, gross revenues from the FTA television market declined significantly in 2017. Total gross revenues for this market amounted to TT\$77.2 million — a decrease of TT\$21.0 million, or 21.4%, when compared to the previous year. As illustrated in Figure 88, following a peak in 2015, revenues from the FTA television broadcasting market dropped, reaching the lowest point over the five-year period.



**Figure 88. Annual gross revenues from FTA television from 2013 to 2017**



**Figure 89. Quarterly gross revenues from FTA television in 2016 and 2017**

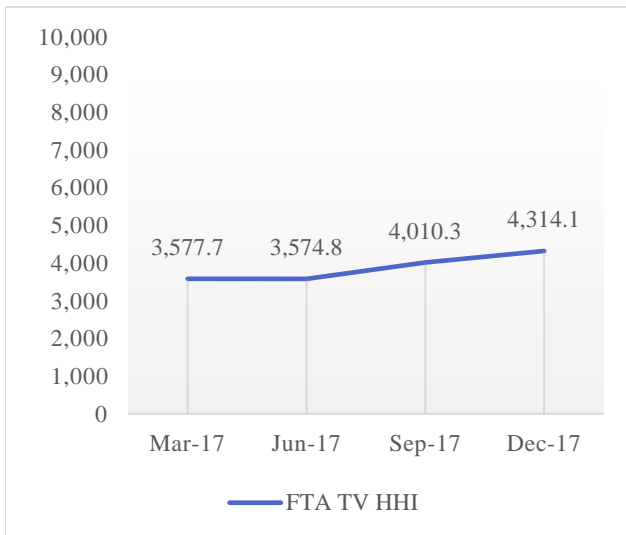
Quarterly gross revenues earned in the FTA television market for 2016 and 2017 are compared in Figure 89. Revenues generated in that market were less for each quarter of 2017 when compared to the corresponding quarters of 2016. Additionally, it was noted that this variation in these revenues was significant in the first and second quarters and increased further in the third and fourth quarters.

FTA television revenues totalled TT\$20.8 million in the third quarter of 2017 — TT\$6.2 million less than the revenues generated in the third quarter of 2016. Notwithstanding the significant fall in revenues in the third quarter, that quarter was the highest revenue earning period for the FTA

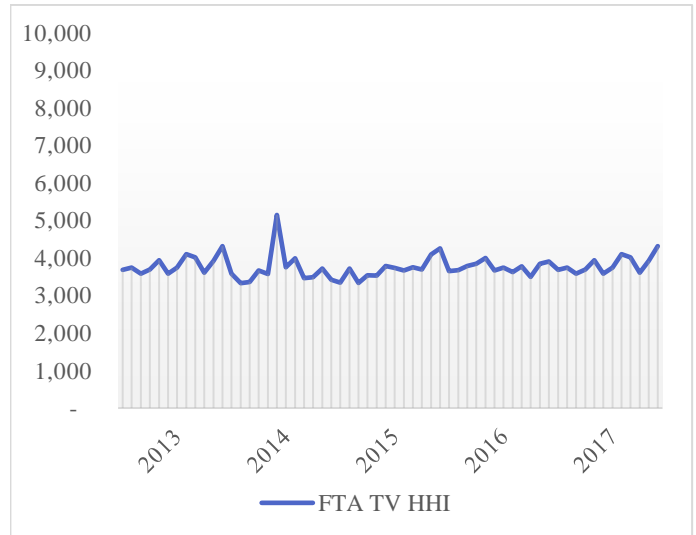
television broadcasting market, both in 2016 and 2017. Revenues generated in the fourth quarter of 2017 also decreased sharply, recording TT\$26.6 million in the fourth quarter of 2016 compared to TT\$19.3 million in the fourth quarter of 2017. This represented a 27.5% year-on-year variation in the revenues generated for the fourth quarters of 2016 and 2017.

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

Using the HHI, the Authority calculated the level of concentration for the FTA television broadcasting market based on revenues generated in that market. The HHI showed an upward movement overall, notwithstanding the minor decrease observed in the second quarter. Increasing from 3,577.7 at the end of the first quarter of 2017, the HHI for that market recorded 4,314.1 at the end of the fourth quarter. Figure 90 highlights the quarterly changes in the HHI for the FTA broadcasting market during 2017.



**Figure 90. HHI for FTA television broadcasting market in 2017**



**Figure 91. HHI for FTA television broadcasting market from 2013 to 2017**

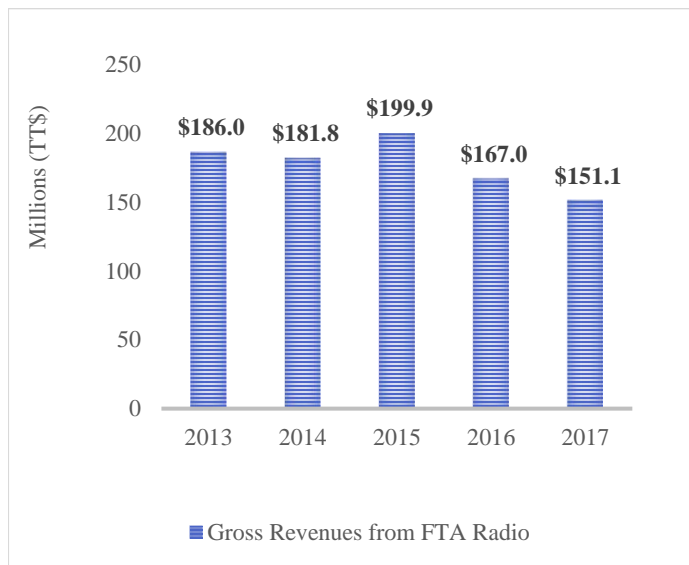
Over the last five years, there were several marked fluctuations in the HHI in the FTA television market, with a general upward trend being observed. Figure 91 shows the five-year trend in the HHI for the FTA television market. The average monthly HHI was higher in 2017, at 3,823.8, in contrast to the 3,747.4 computed for 2016.

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

In 2017, the FTA radio broadcasting market consisted of 37 radio stations<sup>43</sup> (see Appendix II for the listing). It is noted that some concessionaries (owners) hold more than one concession and, as a result, operate more than one radio station.

### 6.2.1.FTA Radio Revenues

During 2017, the FTA radio broadcasting market earned TT\$151.1 million in gross revenues. When compared with the previous year's earnings of TT\$167.0 million, gross revenues generated in 2017 decreased by 9.5%. Revenue earnings in the FTA radio broadcasting market for the past five years are compared in Figure 92 and show an overall downward trend in the amount of revenues generated annually from 2013 to 2017.

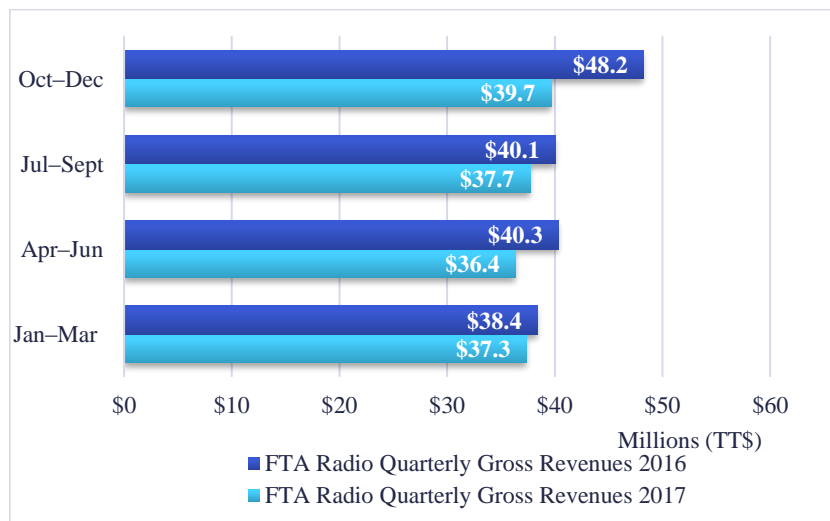


**Figure 92. Gross revenues for FTA radio from 2013 to 2017**

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<sup>43</sup> TRICO Industries was not operational during this period.

Figure 93 highlights the quarterly gross revenues earned in the FTA radio broadcasting market in 2016 and 2017. Revenues generated in each quarter of 2017 were moderately less than those for the corresponding quarters of 2016, except for the fourth quarter, where a significant variation was observed. Gross revenues in the FTA radio market generated TT\$39.7 million in the fourth quarter of 2017. This was 17.8%, or TT\$8.5 million, less than the revenues generated in the fourth quarter of 2016.



**Figure 93. Quarterly revenues for free-to-air in 2016 and 2017**

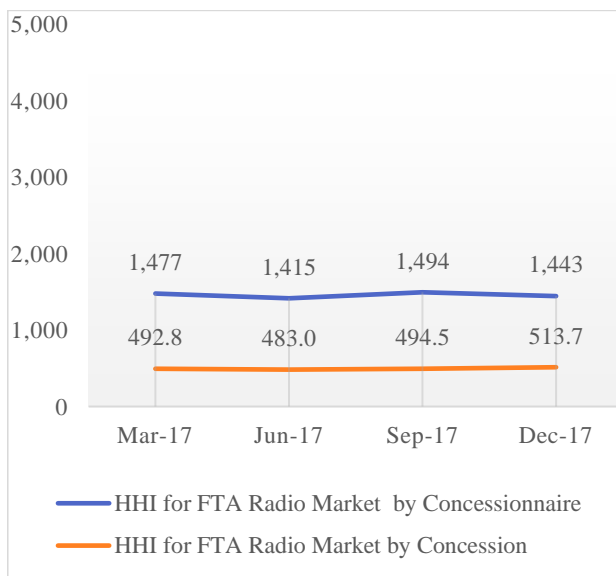
### 6.2.2. Market Concentration Free-to-Air Radio

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

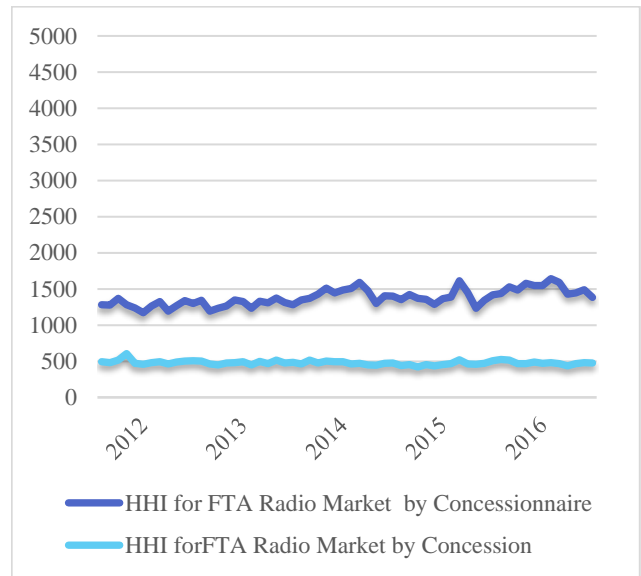
The HHI based on the number of concessionaires in the market decreased from 1,477 in the first quarter to 1,415 in the second quarter. As Figure 93 illustrates, the HHI subsequently increased in the third quarter and then decreased in the fourth quarter to 1,443 points.

On the other hand, the HHI based on the number of concessions in the market decreased from 492.8 in the first quarter to 483.0 in the second quarter. The HHI subsequently increased to 494.5 points in the third quarter and increased further to 513.7 in the fourth quarter of 2017. The level of concentration in the FTA radio market based on concessions increased overall in 2017, as Figure 94 illustrates.

Over the last five years, there were several fluctuations in the HHI based on concessionaires in the FTA radio broadcasting market, whereas the HHI based on concessions has been relatively stable over the period, as Figure 95 illustrates.



**Figure 94. HHI for the FTA radio broadcasting market for 2017**



**Figure 95. HHI for the FTA radio broadcasting market from 2013 to 2017**

### 6.3. Pay Television<sup>44</sup> Broadcasting Market

The Trinidad and Tobago pay TV market comprised 14 authorised service providers as at December 2017, 13 of which were operational in the review period<sup>45</sup>. Entities operating in this market provided services to subscribers within their respective authorised coverage area. Table 8 lists each service provider, the type of service employed to deliver pay TV services and the authorised coverage areas.

**Table 8. List of operational pay TV providers in 2017**

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>Green Dot Limited</b>	Digital pay TV (wireless terrestrial)	
<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>Santa Flora Cable Network Limited</b>	Analogue pay TV (wired)	Niche – Santa Flora and environs
<b>TRICO Industries Limited</b>	Analogue and digital pay TV (wired)	Minor territorial

<sup>44</sup> Also referred to as subscription TV

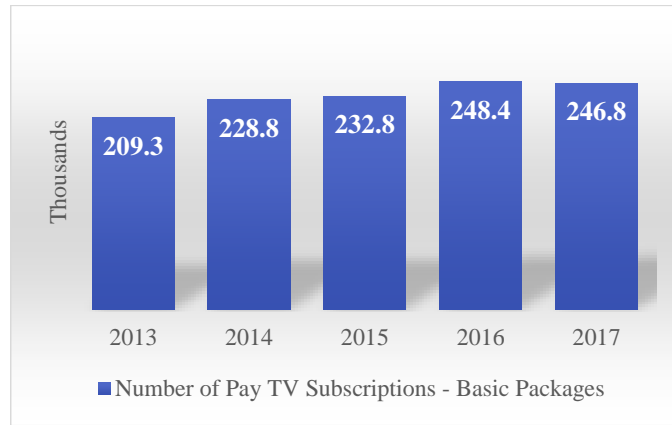
<sup>45</sup> Open Telecom Limited did not provide pay TV services during the review period.



### 6.3.1. Pay TV Subscriptions

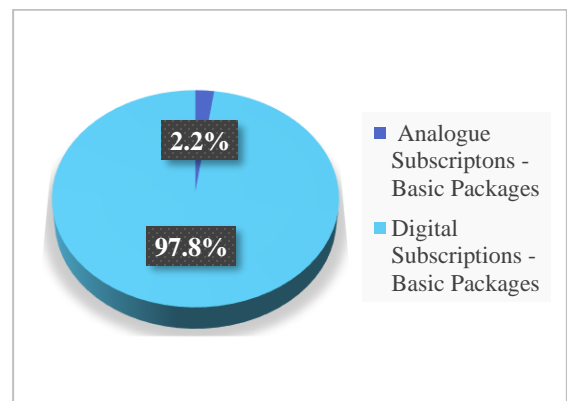
Service providers in the pay TV market offered different types of basic packages to their customers. Customers subscribed to a basic package of their choice and had the option of purchasing additional or premium packages.

Subscriptions in the pay TV market decreased marginally by 0.6%, to record 246,800 at the end of 2017. This decrease followed steady growth in subscriptions from 2013 to 2016. Figure 96 illustrates the trend in the number of subscriptions to pay TV basic packages from 2013 to 2017.



**Figure 96. Number of pay TV subscriptions (basic) in 2017**

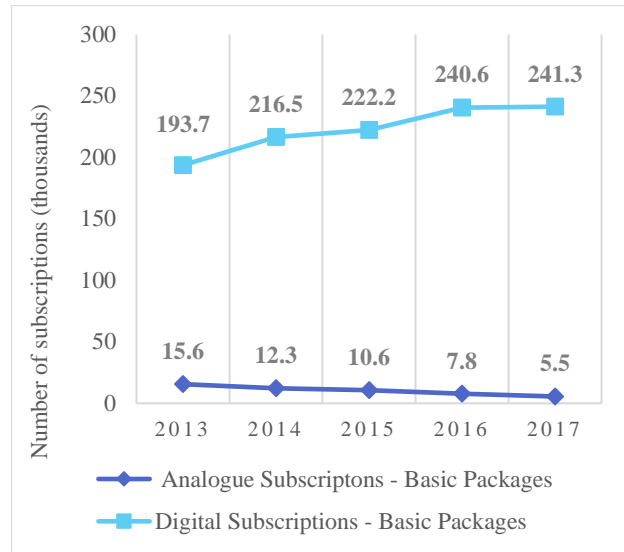
The percentage of basic pay TV subscriptions utilising digital technologies grew from 96.0% in 2016 to 97.8% in 2017, recording 241,300 digital pay TV subscriptions — an increase of 700. Conversely, the share of basic analogue subscriptions decreased from 4.0% to 2.2%, to record 5,500 analogue subscriptions at the end of 2017. The percentage of analogue to digital pay TV subscriptions in 2017 is illustrated in Figure



**Figure 97. Percentage of analogue and digital pay TV subscriptions for 2017**

97.

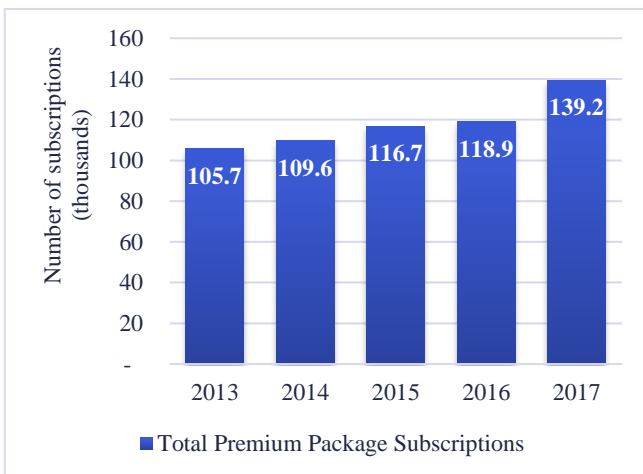
Figure 98 identifies the number of pay TV subscriptions by platform over a five-year period. From 2013 to 2016, a steady increase in digital subscriptions was observed. After an 8.3% increase in 2016, the number of subscriptions in 2017 increased minimally by 0.3%, from 240,600 to 241,300 subscriptions. For the five-year period 2013 to 2017, analogue subscriptions decreased steadily. Having decreased to approximately 7,800 in 2016, analogue pay TV subscription numbers further decreased to 5,500 in 2017. This represented a 29.0% drop from the previous year.



**Figure 98. Pay TV subscriptions by platform in 2017**

### 6.3.2. Premium Package Subscriptions

Premium packages are additional channels, or a group of channels offered by pay TV service providers that consumers may subscribe to in addition to their basic package. Consumers can subscribe to more than one premium package. Subscriptions to premium packages as at December 2017 stood at 139,200. This marked an increase of 20,300, or 17.0%, between 2016 and 2017. As shown in Figure 99,



**Figure 99. Number of premium package subscriptions from 2013 to 2017**

**Table 9. Year-on-year growth rates in premium subscriptions from 2013 to 2017**

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

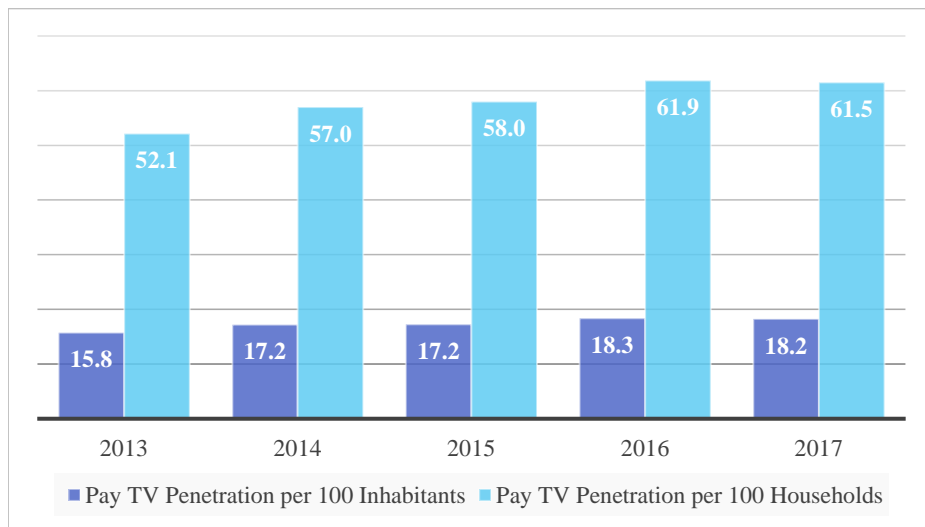
premium subscriptions grew gradually over the 2013 to 2016 period and then the growth rate increased substantially in 2017. The growth rates for premium package subscriptions from 2013 to 2017 are listed in Table 9.

### 6.3.3. Pay TV Penetration

In 2017, the penetration rate for pay TV services, measured by the number of pay TV subscriptions per 100 inhabitants, was 18.2 a slight decrease from the 18.3 recorded in 2016. This means that an estimated 18 out of every 100 inhabitants subscribed to pay TV services in 2017.

The pay TV household penetration rate, measured by the number of subscriptions per 100 households, also decreased minimally, to record 61.5 for 2017. An estimated 62 out of every 100 households, therefore, had a pay TV subscription. The pay TV household penetration rate decreased in 2017 from the 61.9 which was recorded in 2016.

Figure 100 is a comparison between pay TV penetration rates per 100 inhabitants and pay TV penetration rates per 100 households from 2013 to 2017.

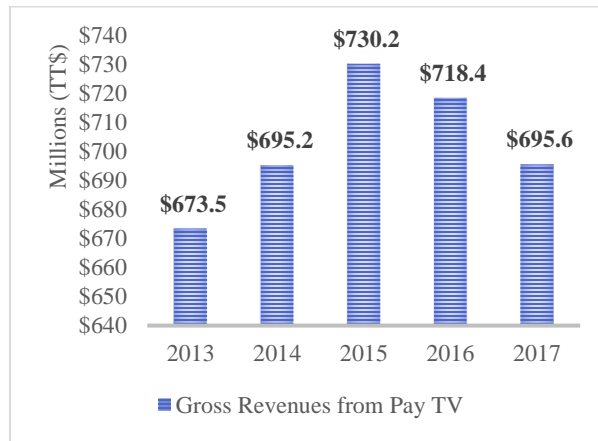


**Figure 100. Pay TV penetration per 100 inhabitants versus pay TV penetration per 100 households**

### 6.3.4. Pay TV Revenues

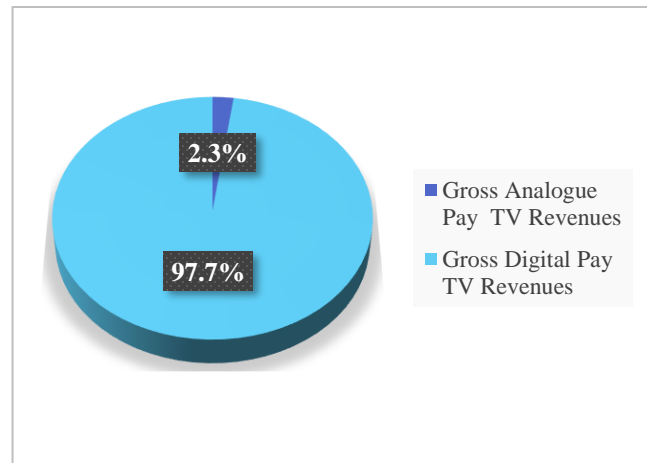
Gross revenues<sup>46</sup> generated in the pay TV market include service providers' earnings from the provision of services using both analogue and digital technologies.

In 2017, the pay TV market generated TT\$695.6 million in revenues. This represented a decrease of 3.2% over the previous year. This decrease in revenue was experienced for the second consecutive year as illustrated in Figure 101.



**Figure 101. Pay TV gross revenues from 2013 to 2017**

The majority of revenues was generated from digital pay TV services, as indicated in Figure 102. Digital pay TV services accounted for 97.7% of total revenues, or TT\$679.9 million. Revenues from analogue pay TV services accounted for the remaining 2.3%, or TT\$15.7 million.



**Figure 102. Breakdown of pay TV revenues for 2017**

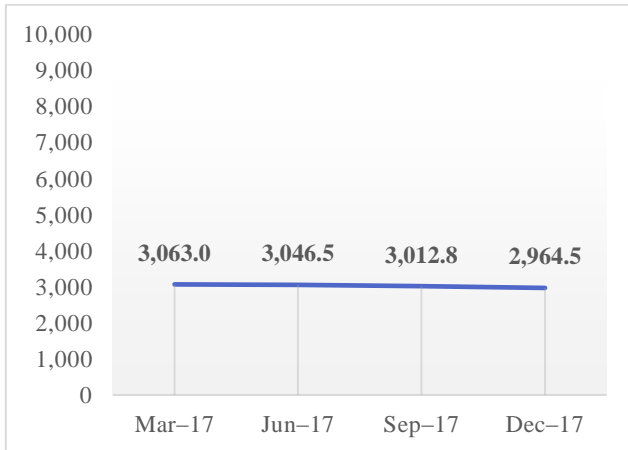
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<sup>46</sup> Revenues include income generated from connection, re-connection, installation, usage.

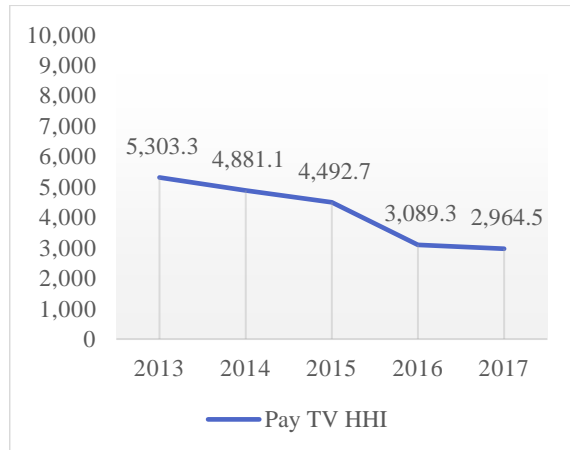
### 6.3.5. Pay TV Market Concentration

The HHI was used by the Authority to calculate the level of concentration in the pay TV market. Overall, as Figure 103 illustrates, the level of concentration trended downward during 2017. At the end of the first quarter, the HHI stood at 3,063.0, then decreased 3,046.5 points at the end of the second quarter. A steady downward trend in the pay TV market's concentration persisted from the second to the fourth quarter, ending the year with an HHI of 2,964.5 points.

Overall, there was a downward trend in the HHI for the pay TV market over the five-year period. The HHI declined gradually from 2013 to 2015 and subsequently decreased by 31.2% in 2016. Thereafter, the level of concentration in the pay TV market decreased by 4.0%, year-on-year, to record 2,964.5 points at the end of 2017.



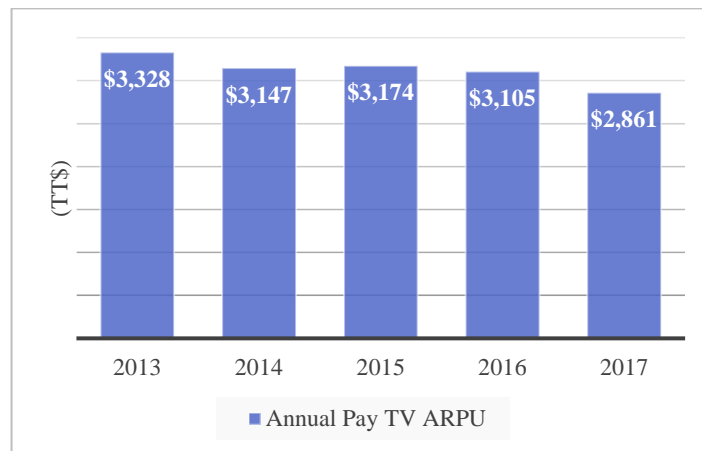
**Figure 103. HHI for pay TV market from March to December 2017**



**Figure 104. HHI for pay TV market from 2013 to 2017**

### 6.3.6. Pay TV Annual Revenue per User (ARPU)

The pay TV ARPU was TT\$2,861 in 2017 — a decrease of TT\$244 per user from the previous year. This marked a 7.9% decrease. This was notably the lowest ARPU recorded over the past five years, as illustrated in Figure 105.



**Figure 105. Pay TV average revenue per user (ARPU) from 2013 to 2017**

## Appendix I: Domestic Telecommunications Statistics

Table 10. Domestic telecommunications statistics

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
General	Population (millions)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	<b>1.4</b>
	GDP per capita (US\$ millions) <sup>47</sup>	8,470	11,560	14,576	16,683	21,408	15,067	15,924	17,042	19,018	27,855	28,183	19,311	16,637	<b>20,077</b>
	Telecommunications revenues (US\$ million)	357.0	379.3	497.9	521.3	775.3	685.2	713.1	737.0	834	864.4	881.5	876.7	836.0	<b>758.1</b>
	Total telephone subscriptions ('000s)	849.3	1,246	1,844	1,817	2,120.9	2,149.6	2,187.6	2,117.7	2,169.8	2,235.2	2,270.4	2,393.2	2,471.6	<b>2,349.3</b>
	Total telephone penetration	65.0	95.2	140.8	138.7	163.2.1	164.3	167.2	160.7	163.8	168.7	171.4	180.7	186.6	<b>177.3</b>
	Average revenue per user <sup>48</sup> (ARPU) US\$	420.3	304.3	239.5	286.9	318.9	326.0	340.8	348.4	384.4	386.7	388.3	366.3	338.2	<b>322.7</b>
Fixed Voice	Fixed voice subscriptions ('000s)	318.9	322.3	325.5	307.3	314.8	303.2	293.3	291.5	286.1	291.3	289.8	269.8	305.7	<b>318.7</b>
	Fixed voice penetration	24.4	24.6	25.1	23.6	24.1	23.2	22.3	22.0	21.6	21.7	21.7	20.0	22.6	<b>23.5</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	<b>66.3</b>
	Average revenue per user (ARPU) US\$	254.8	272.1	277.9	422.4	486.5	403.5	411.5	417.3	430.5	413.1	410.7	424.2	402.4	<b>359.0</b>
	Fixed voice subscription growth (%)	0.5	1.1	1.0	-5.6	2.4	-3.7	-3.3	-0.6	-1.9	1.6	-0.7	-6.3	13.3	<b>4.2</b>

<sup>47</sup> GDP per capita is recorded at current market prices.

<sup>48</sup> ARPU is calculated as the total revenues generated from the service divided by the total number of subscriptions to the service.



		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>Mobile</b>	Mobile subscriptions ('000s)	530.0	924.0	1,518.8	1,511.1	1,806.1	1,846.3	1,894.2	1,826.2	1,883.7	1,943.9	1980.6	2,123.4	2,165.8	<b>2,031</b>
	Mobile penetration	40.6	70.5	117.0	115.9	138.0	141.1	143.8	138.6	142.2	146.4	149.1	157.3	160.0	<b>150.0</b>
	Average revenue per user (ARPU) US\$	204.0	153.0	159.0	207.0	197.0	170.0	164.0	173.0	188.0	189.0	174.5	147.1	136.8	<b>113.0</b>
	Mobile subscription growth (%)	45.0	74.0	64.0	-0.6	19.6	2.2	2.6	-3.6	3.1	3.2	1.9	7.2	2.0	<b>-6.2</b>
<b>Internet</b>	Total Internet subscriptions <sup>49</sup> ('000s)	55.2	62.3	82.1	93.3	129.6	238.3	309.9	325.2	646.7	682.3	820.1	925.2	1001.7	<b>1031.6</b>
	Fixed Internet subscriptions <sup>50</sup> ('000s)	55.2	62.3	82.1	82.6	114.1	145.0	171.1	192.0	224.2	231.7	249.6	279.8	294.4	<b>327.0</b>
	Mobile Internet subscriptions <sup>51</sup> ('000s)	-	-	-	10.7	15.6	93.3	138.8	133.2	422.5 <sup>52</sup>	450.6	570.5	645.4	707.3	<b>704.6</b>
	Fixed broadband subscriptions <sup>53</sup> ('000s)	-	14.0	21.1	35.5	85.4	130.1	162.9	187.9	221.3	229.6	248.1	278.5	294.3	<b>326.8</b>
	Fixed Internet users <sup>54</sup> ('000s)	160.0	185.0	198.4	429.0	456.0	579.8	639.3	724.5	685.6	704.3	757.8	851.1	900.7	<b>1001.4</b>
	Fixed Internet penetration	4.2	5.5	5.7	6.3	8.7	11.1	13.0	14.6	16.9	17.4	18.7	21.1	21.7	<b>24.2</b>
	Mobile Internet penetration	-	-	-	0.8	1.2	7.1	10.5	10.1	31.9	33.9	43.0	47.8	52.2	<b>52.0</b>
	Fixed Internet users penetration	12.2	14.1	15.2	32.8	34.9	44.3	48.5	55.0	51.8	53.0	57.1	63.1	57.2	<b>74.0</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	<b>76.9</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	<b>417.5</b>
Fixed Internet subscription growth (%)	24.8	12.9	17.7	12.8	38.9	27.1	18.0	12.2	16.7	3.3	7.8	12.1	5.2	<b>11.1</b>	

<sup>49</sup> Total Internet subscriptions are the sum of fixed Internet subscriptions and mobile postpaid Internet subscriptions.

<sup>50</sup> Fixed Internet subscriptions is the total number of subscriptions with fixed wired or fixed wireless Internet access.

<sup>51</sup> Mobile Internet subscriptions from 2003 to 2011 include postpaid mobile customers who subscribe to monthly Internet airtime and who are billed accordingly.

<sup>52</sup> Mobile Internet subscriptions from 2012 to 2016 include prepaid and postpaid mobile Internet users.

<sup>53</sup> Fixed broadband subscriptions are the number of Internet subscriptions with access to download speeds of 256kbits or above.

<sup>54</sup> Fixed Internet users are the number of persons who regularly use fixed Internet services.

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
International Traffic	International: outgoing (min. million)	117.2	160.2	203.2	265.9	304.3	259.2	282.9	274.5	263.5	277.9	268.3	247.2	170.9	<b>125.2</b>
	International: incoming (min. million)	379.2	337.8	296.5	323.0	375.4	399.4	358.5	256.2	245.7	234.8	234.1	199.2	202.7	<b>192.9</b>
	Inbound/outbound int'l traffic ratio	3.2	2.1	1.5	1.2	1.2	1.5	1.3	0.93	0.93	0.84	0.87	0.81	1.2	<b>1.5</b>
Pay TV	Pay TV subscriptions ('000s)	103.4	131.6	139.8	151.2	163.0	179.6	178.9	187.8	198.7	209.3	228.8	232.8	248.4	<b>246.7</b>
	Pay TV penetration	7.9	10.1	10.7	11.6	14.2	13.7	13.6	14.1	14.8	15.8	17.2	17.2	18.3	<b>18.2</b>
	Subscription TV household penetration	30.1	38.3	40.7	44.0	47.5	52.3	52.1	54.0	48.2	52.1	57.0	58.0	61.9	<b>61.5</b>
	Average revenue per user (ARPU) US\$	376.5	337.3	318.9	344.9	337.0	404.9	431.2	468.6	505.5	520.8	493.2	497.7	486.8	<b>425.2</b>
	Pay TV subscription growth	11.7	27.3	6.2	8.1	12.5	10.2	-0.4	5.0	5.8	5.3	9.3	1.7	6.7	<b>-0.6</b>

## Appendix II: List of Concessionaires as at December 2017

Concessions Granted (July 1, 2004 – December 31, 2017)

CONCESSIONAIRE	NETWORK AND/ OR SERVICE	TERRITORY	TYPE	TERM	DATE OF GRANT	EXPIRY DATE	FREQUENCY/ SPECTRUM
<b>INTERNATIONAL TELECOMMUNICATIONS</b>							
<b>Amplia Communications Limited</b> (formerly <i>Massy Communications Limited</i> )	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	April 4, 2016	April 3, 2026	N/A
<b>Columbus Networks International Limited</b> (Trinidad)	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	February 16, 2017	February 15, 2027	N/A
<b>Digicel (Trinidad &amp; Tobago) Limited</b>	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	December 31, 2015	December 30, 2025	N/A
<b>Lisa Communications Limited</b>	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	September 1, 2016	August 31, 2026	N/A
<b>Open Telecom Limited</b>	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	January 5, 2016	January 4, 2026	N/A
<b>Southern Caribbean Fibre Limited</b>	Public International Telecommunications Network	N/A	Type 1	10 Years	August 17, 2016	August 16, 2026	N/A
<b>Telecommunications Services of Trinidad and Tobago Limited</b>	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	December 30, 2015	December 29, 2025	N/A
<b>FREE-TO-AIR RADIO BROADCASTING</b>							

<b>Caribbean Broadcasting Systems and Services Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	91.5 FM
<b>Caribbean New Media Group Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	91.1 FM
<b>Caribbean New Media Group Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	99.1 FM
<b>Caribbean New Media Group Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	100.1 FM
<b>Central Broadcasting Services Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	September 21, 2016	September 20, 2026	102.7 FM
<b>Central Radio FM90 Limited</b>	Broadcasting Services (Free-to-Air FM)	Major Territorial	Type 5	10 Years	February 23, 2016	February 22, 2026	90.5 FM
<b>Family Focus Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	98.1 FM
<b>Gem Radio Five Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	93.5 FM
<sup>2</sup> <b>Gem Radio Five Limited (formerly Citadel Limited)</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	95.5 FM
<sup>2</sup> <b>Gem Radio Five Limited (formerly Inner City Broadcasting Company Limited)</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	107.1 FM
<sup>2</sup> <b>Gem Radio Five Limited (formerly Sidewalk Radio Limited)</b>	Broadcasting Services (Free-to- Air FM)	Major Territorial	Type 5	10 Years	February 23, 2016	February 22, 2026	92.3 FM
<sup>2</sup> <b>Gem Radio Five Limited (formerly The Q Corporation Limited)</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	96.7 FM
<b>Guardian Media Limited (formerly Trinidad Publishing Company Limited)</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	95.1 FM
<b>Guardian Media Limited (formerly Trinidad Publishing Company Limited)</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	105.1 FM

<b>Guardian Media Limited</b> <i>(formerly Publishing Trinidad Company Limited)</i>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	106.1 FM
<b>Guardian Media Limited</b> <i>(formerly Publishing Trinidad Company Limited)</i>	Broadcasting Services (Free-to-Air FM)	Major Territorial	Type 5	10 Years	February 23, 2016	February 22, 2026	106.5 FM
<sup>1</sup> <b>Guardian Media Limited</b> <i>(formerly Wonderland Entertainment Limited)</i>	Broadcasting Services (Free-to-Air FM)	Major Territorial	Type 5	10 Years	February 23, 2016	February 22, 2026	100.5 FM
<sup>5</sup> <b>Guardian Media Limited</b> <i>(formerly 21st Century Arts and Entertainment Limited)</i>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	99.5 FM
<b>Heritage Communications Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	101.7 FM
<b>Kaisoca Productions Limited</b>	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	February 23, 2016	February 23, 2026	92.7 FM
<b>KMP Music Group Limited</b> <i>(formerly Kenny Phillips)</i>	Broadcasting Services (Free-to-Air FM)	Major Territorial	Type 5	10 Years	February 23, 2016	February 22, 2026	90.1 FM
<b>Parliament of the Republic of Trinidad and Tobago</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	March 1, 2017	February 28, 2027	105.5 FM
<b>PBCT Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	104.7 FM
<b>Radio News Network</b>	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	104.1 FM
<b>Radio Vision Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	102.1 FM
<b>Superior Productions Limited</b> <b>Infinite</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	94.1 FM
<b>Telemedia Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	97.1 FM
<b>Toco Multicultural Foundation for Integrated Development</b> <i>(formerly Trinidad and Tobago Citizen's Agenda Network)</i>	Broadcasting Services (Free-to-Air FM)	Minor Territorial/Niche - Toco and environs	Type 5	10 Years	March 1, 2016	February 28, 2026	106.7 FM
<b>Trico Industries Limited</b>	Broadcasting Services (Free-to-Air FM)	Minor	Type 5	10 Years	October 11,	October 10,	89.5 FM

	FM)	Territorial			2012	2022	
<b>Trinibashment Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	91.9 FM
<b>Trinidad and Tobago Radio Network Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	96.1 FM
<b><sup>3</sup>Trinidad and Tobago Radio Network Limited (formerly Marcel Mahabir)</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	107.7 FM
<b><sup>4</sup>Trinidad and Tobago Radio Network Limited (formerly VL Communications Limited)</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	94.7 FM
<b>United Cinemas Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	103.5 FM
<b>Upward Trend Entertainment Limited</b>	Broadcasting Services (Free-to-Air FM)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	97.5 FM
<b>Winfield Aleong Broadcasting Company Limited</b>	Broadcasting Services (Free-to-Air FM)	Major Territorial	Type 5	10 Years	February 23, 2016	February 22, 2026	103.1 FM
<b>MOBILE TELECOMMUNICATIONS</b>							
<b>Digicel (Trinidad &amp; Tobago) Limited</b>	Public Domestic Mobile Telecommunications Services over a Public Domestic Mobile Telecommunications Network	National	Type 2	10 Years	December 31, 2015	December 30, 2025	N/A
<b>Telecommunications Services of Trinidad and Tobago Limited (TSTT)</b>	Public Domestic Mobile Telecommunications Services over a Public Domestic Mobile Telecommunications Network	National	Type 2	10 Years	December 30, 2015	December 29, 2025	N/A
<b>REE-TO-AIR TELEVISION BROADCASTING</b>							
<b>Advance Community Television Network Limited</b>	Broadcasting Services (Free-to-Air Television)	Major Territorial	Type 5	10 Years	March 1, 2016	February 28, 2026	UHF 25
<b>C.C.N. Television Limited</b>	Broadcasting Services (Free-to-Air Television)	National	Type 5	10 Years	March 1, 2016	February 28, 2026	VHF 6, UHF 18, 19
<b>Caribbean New Media Group Limited</b>	Broadcasting Services (Free-to-Air Television)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	VHF 9, UHF 13, 20
<b>Government Information</b>	Broadcasting Services (Free-to-Air Television)	National	Type 5	10 Years	January 12,	January 11,	VHF 4, UHF 16

<b>Services Limited</b>	Television)				2010	2020	
<b>Guardian Media Limited</b> <i>[formerly Trinidad Publishing Company Limited]</i> (CNC3)	Broadcasting Services (Free-to-Air Television)	National	Type 5	10 Years	April 14, 2008	April 13, 2018	VHF 12, UHF 14, 22
<b>Parliament of the Republic of Trinidad and Tobago</b>	Broadcasting Services (Free-to-Air Television)	National	Type 5	10 Years	October 23, 2008	October 22, 2018	VHF 11, UHF 26, 29
<b>SUBSCRIPTION TELEVISION BROADCASTING</b>							
<b>Air Link Communications</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Princes Town and Environs	Type 5	10 Years	May 1, 2010	April 30, 2020	N/A
<b>Amplia Communications Limited</b> <i>(formerly Massy Communications Limited)</i>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	August 24, 2014	August 23, 2024	N/A
<b>Columbus Communications Trinidad Limited</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	January 5, 2016	January 4, 2026	N/A
<b>Digicel (Trinidad &amp; Tobago) Limited</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	March 18, 2015	March 17, 2025	N/A
<b>DirecTV Trinidad Limited</b>	Subscription Broadcasting Service (direct from Satellite only)	National	Type 5	10 Years	February 28, 2016	February 27, 2026	N/A
<b>Green Dot Limited</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	July 11, 2008	July 10, 2018	N/A
<b>Network Technologies Limited</b> <i>(transferred from Computer Technologies and Services Limited)</i>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Mayaro and Guayaguayare	Type 5	10 Years	January 5, 2016	January 4, 2026	N/A
<b>NOVO Communications Limited</b> <i>(formerly Diversified Technologies Limited)</i>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Penal and Environs	Type 5	10 Years	October 11, 2012	October 10, 2022	N/A
<b>Open Telecom Limited</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	October 30, 2013	October 29, 2023	N/A
<b>RVR International Limited</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	May 20, 2014	May 19, 2024	N/A

<b>Santa Flora Cable Network Ltd</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Santa Flora and Environs	Type 5	10 years	May 15, 2014	May 14, 2024	N/A
<b>Telecommunications Services of Trinidad and Tobago Limited (TSTT)</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	December 30, 2015	December 29, 2025	N/A
<b>TRICO Industries Limited</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Minor Territorial	Type 5	10 Years	September 1, 2016	August 31, 2026	N/A
<b>TELEVISION BROADCASTING SERVICE VIA CABLE</b>							
<b>Central Broadcasting Services Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	March 18, 2013	March 17, 2023	N/A
<b>Darut Tarbiyah</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	May 7, 2013	May 6, 2023	N/A
<b>Environmental Management Authority</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	September 3, 2015	September 2, 2025	N/A
<b>IBN Communications Company Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	October 11, 2012	October 10, 2022	N/A
<b>Ice Media Group Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	August 12, 2015	August 11, 2025	N/A
<b>Living Water Community</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	May 7, 2013	May 6, 2023	N/A
<b>Sankhya Television Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	May 7, 2013	May 6, 2023	N/A
<b><sup>7</sup>SWAHA Media Limited (formerly Video Associates Limited)</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	February 23, 2016	February 22, 2026	N/A
<b>Synergy Entertainment Network Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Major Territorial	Type 5	10 Years	April 14, 2008	April 13, 2018	N/A



FIXED TELECOMMUNICATIONS							
<b>Air Link Communications</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Niche - Princes Town and Environs	Type 2	10 Years	May 1, 2010	April 30, 2020	N/A
<b>Amplia Communications Limited (formerly Massy Communications Limited)</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	December 1, 2009	November 30, 2019	N/A
<b>Columbus Communications Trinidad Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	January 5, 2016	January 4, 2026	N/A
<b>Digicel (Trinidad &amp; Tobago) Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	May 1, 2010	April 30, 2020	N/A
<b>Digicel (Trinidad &amp; Tobago) Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	October 3, 2014	October 2, 2024	N/A
<b>Lisa Communications Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	May 1, 2010	April 30, 2020	N/A
<b>Massy Technologies Infocom (Trinidad) Limited [formerly Illuminat (Trinidad &amp; Tobago) Limited]</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	May 1, 2010	April 30, 2020	N/A
<b>Network Technologies Limited (transferred from Computer Technologies and</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed	Niche - Mayaro and Guayaguayare	Type 2	10 Years	January 5, 2016	January 4, 2026	N/A

<i>Services Limited)</i>	Telecommunications Network							
<b>NOVO Communications Limited</b> ( <i>formerly Diversified Technologies Limited</i> )	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Niche - Penal and Environs	Type 2	10 Years	October 11, 2012	October 10, 2022	N/A	
<b>Open Telecom Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	May 1, 2010	April 30, 2020	N/A	
<b>Prism Services (Trinidad) Limited</b>	Public Domestic Fixed Telecommunications Services	National	Type 4	10 years	July 29, 2013	July 28, 2023	N/A	
<b>RVR International Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	National	Type 2	10 Years	May 20, 2014	May 19, 2024	N/A	
<b>Santa Flora Cable Network Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Niche - Santa Flora and Environs	Type 2	10 years	May 15, 2014	May 14, 2024	N/A	
<b>Telecommunications Services of Trinidad and Tobago Limited (TSTT)</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired and Wireless)	National	Type 2	10 Years	December 30, 2015	December 29, 2025	N/A	
<b>TRICO Industries Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network	Minor Territorial	Type 2	10 Years	September 1, 2016	August 31, 2026	N/A	
<b>Wireless Telecommunications Ltd</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 years	November 27, 2013	November 26, 2023	N/A	
<b>RENEWAL CONCESSIONS PENDING EXECUTION BY THE MINISTER</b>								

<b>British Broadcasting Corporation</b>	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	June 15, 2007	June 14, 2017	98.7FM
<b>Green Dot Limited</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wireless)	National	Type 2	10 Years	October 1, 2017	September 30, 2027	N/A
<b>Green Dot Limited</b>	Public International Telecommunications Services via a Public International Telecommunications Network	N/A	Type 2	10 Years	October 1, 2007	September 30, 2017	N/A
<b>Independent Cable Network of Trinidad &amp; Tobago Limited (ICNTT)</b>	Public Domestic Fixed Telecommunications Services via a Public Domestic Fixed Telecommunications Network (Wired)	Major Territorial	Type 2	10 Years	November 1, 2016	October 31, 2026	N/A
<b>Independent Cable Network of Trinidad &amp; Tobago Limited</b>	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Major Territorial	Type 5	10 Years	November 1, 2016	October 31, 2026	N/A
<b>Parliament of the Republic of Trinidad and Tobago</b>	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	March 1, 2017	February 28, 2027	105.5 FM
<b>DEEMED RECOMMENDATIONS FOR CONCESSIONS PENDING EXECUTION BY THE MINISTER</b>							
<b>Gayelle Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5				N/A
<b>Guardian Media Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5				N/A
<b>Mora's Weather Network</b>	Public Domestic Telecommunications Services via a Public Domestic Fixed (Wireless) Telecommunications Network	Niche - Lopinot	Type 2				N/A
<b>KMP Music Group Limited</b>	Broadcasting Services (Free to Air FM)	National	Type 5				90.1FM
<b>Liming Monkey</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5				N/A

<b>Twenty Four Seven News and Sports Limited</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5				N/A
<b>WI Sports</b>	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5				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.

### Appendix III: Tariffs

Lists of tariffs offered by service providers can be found at the following websites:

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

## Appendix IV: Glossary of Terms

The following definitions are included to assist the 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>Hirschman-Herfindahl 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 that subscribe to telecommunications and/or broadcasting services

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