



# Annual Market Report 2013: 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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# EXECUTIVE SUMMARY

## EXECUTIVE SUMMARY

The Telecommunications Authority of Trinidad and Tobago is pleased to present its 8<sup>th</sup> edition of the *Annual Market Report: Telecommunications and Broadcasting Sectors*. This report brings together performance statistics on key segments of the telecommunications and broadcasting sectors and information on prevailing market trends observed during 2013.

### MOBILE REVENUES DRIVE THE THRIVING TELECOMMUNICATIONS AND BROADCASTING INDUSTRY

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In the year 2013, the telecommunications and broadcasting industry continued its pattern of sustained revenue growth, with an estimated 4.1 percent increase in total revenues as compared to 2012. Similar to previous years, the telecommunications sector generated more revenues than its broadcasting counterpart contributing TT\$4.5 billion or 81.9 percent of overall industry revenues, when compared to TT\$100.1 million (18.1 percent) earned by the broadcasting sector.

The mobile voice services market continued to be the leading source of revenues, generating an estimated TT\$2.3 billion or 42.0 percent of the total industry revenues. Internet services and fixed voice services generated the second and third most revenues within the industry, contributing an estimated 17.0 percent and 13.8 percent of total revenues respectively.

### CONTINUED UPTAKE OF COMMUNICATIONS SERVICES, WITH A FIVE YEAR RECOVERY IN FIXED VOICE SUBSCRIPTIONS

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In 2013, mobile voice subscriptions continued its upward trend, increasing by 3.2 percent when compared to the figure reported in 2012. This increase is also reflected in the 2.9 percent increase in the market penetration rate, which now stands at 146.4. A noteworthy change experienced in 2013, is the substantial differential growth rates observed in the number of prepaid and postpaid subscriptions within the mobile market, which both grew at a rate of 2.3

# EXECUTIVE SUMMARY

percent and 9.6 percent respectively. Additionally, the year 2013 also saw a 42.8 percent increase in domestic mobile short messaging service (SMS) when compared to 2012.

For the first time in five years, the fixed voice market experienced an increase in subscriptions, when compared to the previous year. Namely, subscriptions increased by 1.6 percent or 4.7 thousand subscriptions between the periods of 2012 to 2013. Likewise, there was a slight increase in fixed line household penetration from 55.3 to 56.2 per 100 households. Fixed voice penetration however, remained unchanged in 2013 when compared to 2012 at 21.6 per 100 persons.

Internet subscriptions also increased in 2013, albeit at a slower rate than observed in previous years. Following two years of consecutive double digit growth, internet subscriptions increased by just 3.3 percent. Similarly, for the period under review there was also an observed increase in the number of pay-tv subscriptions of 5.3 percent when compared to the previous year. The market penetration rates for both the internet market (fixed and mobile) and the Pay TV market as at December 2013 stood at 51.4 and 15.4 per 100 persons respectively.

## MIX OF TECHNOLOGIES OFFERED BY INTERNET SERVICE PROVIDERS

In 2013, operators in Trinidad and Tobago used a mix of technologies to provide fixed wired and wireless broadband Internet services to the public. Namely, fixed wired broadband Internet services employed the following:

- ADSL2+ over copper cables,
- hybrid Fibre-coax networks utilizing DOCSIS 3.0 technology,
- Fibre to the Curb (FTTC), Fibre to the Business (FTTB) or Home (FTTH) topologies

Fixed wireless Broadband Internet operators employed WiMAX technologies while Mobile Internet operators offered customers mobile broadband Internet services utilizing:

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- Evolved High Speed Packet Access (HSPA+).
- Mobile Internet services via 2.5G technology (i.e. Enhanced Data Rates for GSM Evolution (EDGE)) were also offered in 2013.

## MINIMAL FLUCTUATIONS IN MARKET CONCENTRATION OBSERVED

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As at December 2013, most markets showed minor fluctuations in their levels of market concentration as measured by the Hirschman-Herfindahl Index (HHI). In the fixed market, a slight decrease in HHI of 2.5 percent in the level of concentration was observed while in the mobile market a minimal increase of 19 points was reported. During the review period, the fixed internet market experienced a 3.2 percent reduction in the level of concentration similar in kind to the 5.4 percent reduction recorded in the Pay TV market. On the other hand, the Free-to-Air television market became slightly more concentrated in 2013 as compared to the previous year with an increase in HHI of 219 points.

# OVERALL REVIEW

## 1. OVERALL MARKET REVIEW

As in previous reports published by the Telecommunications Authority of Trinidad and Tobago (the Authority), this report presents annual information on the markets within the telecommunications and broadcasting sectors which includes data on subscriptions, gross revenues and traffic of the relevant markets. The data collected is also used by the Authority to monitor and inform policy decisions that will facilitate the orderly development of markets within these sectors.

The data presented is based primarily on the results of completed questionnaires by operational concessionaires within the telecommunications and broadcasting sectors for the period 1st January to 31st December 2013, as well as historical data series and other information made available to the Authority at the time of publication of the report.

The Authority also publishes quarterly market updates on the telecommunications and broadcasting sectors to supplement this Annual Market Report which can be accessed from the Authority's website: <http://www.tatt.org.tt>.

### 1.1. TOTAL AUTHORISATION

Under the Telecommunications Act Chap. 37:42, the Authority is responsible for making recommendations to the Minister of Science and Technology for the granting of concessions to telecommunications and broadcasting operators (Section 21(5)). To date, one hundred and twenty (120) concessions were granted to ninety-three (93) service providers (concessionaires) by the Minister based on the Authority's recommendations.

While this figure represents the number of authorisations granted, it may not reflect the total number of telecommunications and broadcasting service providers currently operating in the industry. In particular,

# OVERALL REVIEW

there are some concessionaires who have been granted concessions but are yet to launch their services to the public.

Table 1 provides a list of the number of authorised and operational concessionaires in the various markets as at December 2013.

**Table 1: Number of Concessions, Concessionaires and Operators as at December 2013**

Network Category	Service Provided	Authorised Concessionaires <sup>1</sup>	Operational Concessionaires
<b>International Telecommunications</b>	Network only	1	1
	Services only	1	1
	Network and Services	9	5
<b>Mobile Telecommunications</b>	Mobile voice and Internet services	2	2
<b>Fixed Telecommunications<sup>2</sup></b>	Fixed Telephony	15	3
	Fixed Internet		9
<b>Pay TV (Subscription TV)</b>		11	11
<b>Free-to-Air Radio Broadcasting</b>		39	38
<b>Free-to-Air Television Broadcasting</b>		9	9
<b>TV Broadcasting via Cable</b>		6	6
<b>Total</b>		93	85

Source: TATT

<sup>1</sup> Concessions are granted to persons or companies to provide telecommunications and/ or broadcasting services.

<sup>2</sup> One concession is granted for the provision of both fixed telephony and fixed Internet services and/or networks

# OVERALL REVIEW

A detailed list of concessions granted by the Authority can be found in Appendix II and on the Authority's website.

In addition to the granting of concessions, under Section 36 of the Telecommunications Act, the Authority is also authorised and responsible for the granting of licences. In accordance with its legislative powers, for the period January to December 2013, the Authority granted a total of 271 licences. Table 2 lists the categories and the number of licences granted during 2013.

**Table 2: Number of Licences Granted for the period January to December 2013**

Type of Licence		2013
Spectrum	Cellular Mobile	0
	Land Mobile	27
	Point-to-Point	64
	Point-to-Multipoint	5
	SCADA	2
General Radiocommunications	Satellite Earth Stations	39
	Amateur Stations	66
	Maritime Stations	32
	Aeronautical Stations	11
Broadcasting (Special Events)		25
<b>Total</b>		<b>271</b>

Source: TATT

# OVERALL REVIEW

## 1.2. OVERVIEW OF THE TELECOMMUNICATIONS AND BROADCASTING SECTORS

### 1.2.1. MARKET REVENUE CONTRIBUTIONS TO THE SECTORS

The Telecommunications and Broadcasting sectors generated an estimated TT\$5.5 billion<sup>3</sup> (US\$0.9 billion<sup>4</sup>) in 2013, which as a percentage of GDP<sup>5</sup> equates to 3.1 percent. This represented a 4.0 percent increase in total revenues generated by this industry compared to last year. Of total telecommunications and broadcasting revenues, mobile voice services accounted for the majority of revenues with TT\$2.3 billion (42.0 percent). This was followed by Internet services which contributed TT\$0.9 billion or 17.0 percent. The next highest revenue earners for the industry were Fixed<sup>6</sup> Voice services and Pay TV services whose contributions totalled TT\$0.8 billion and TT\$0.7 respectively (13.8 and 12.2 percent). International voice services was next in line, generating, TT\$0.3 billion (4.8 percent) in revenues. Free-to-Air radio and television services contributed TT\$0.2 billion and TT\$0.1 billion respectively (3.4 and 2.5 percent). Finally, other contributors included “other revenues”<sup>7</sup> and “leased line services” with earnings of TT\$0.2 billion and TT\$0.04 billion respectively, with 3.6 and 0.8 percent.

To summarise the above information, Figure 1 below illustrates the revenues earned within the industry while Figure 2 shows the percentage revenue contribution by each market towards overall gross revenue of the industry.

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<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\$6.39

<sup>5</sup> Gross Domestic Product (GDP) at current market prices for 2013 TT\$178,273 million (Source: International Monetary Fund)

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

<sup>7</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 Air time for local programming on Pay TV. See sections 1.2.2 and 1.2.3 for further definitions.

# OVERALL REVIEW

Figure 1: Industry, Sectors and Markets Revenues 2013

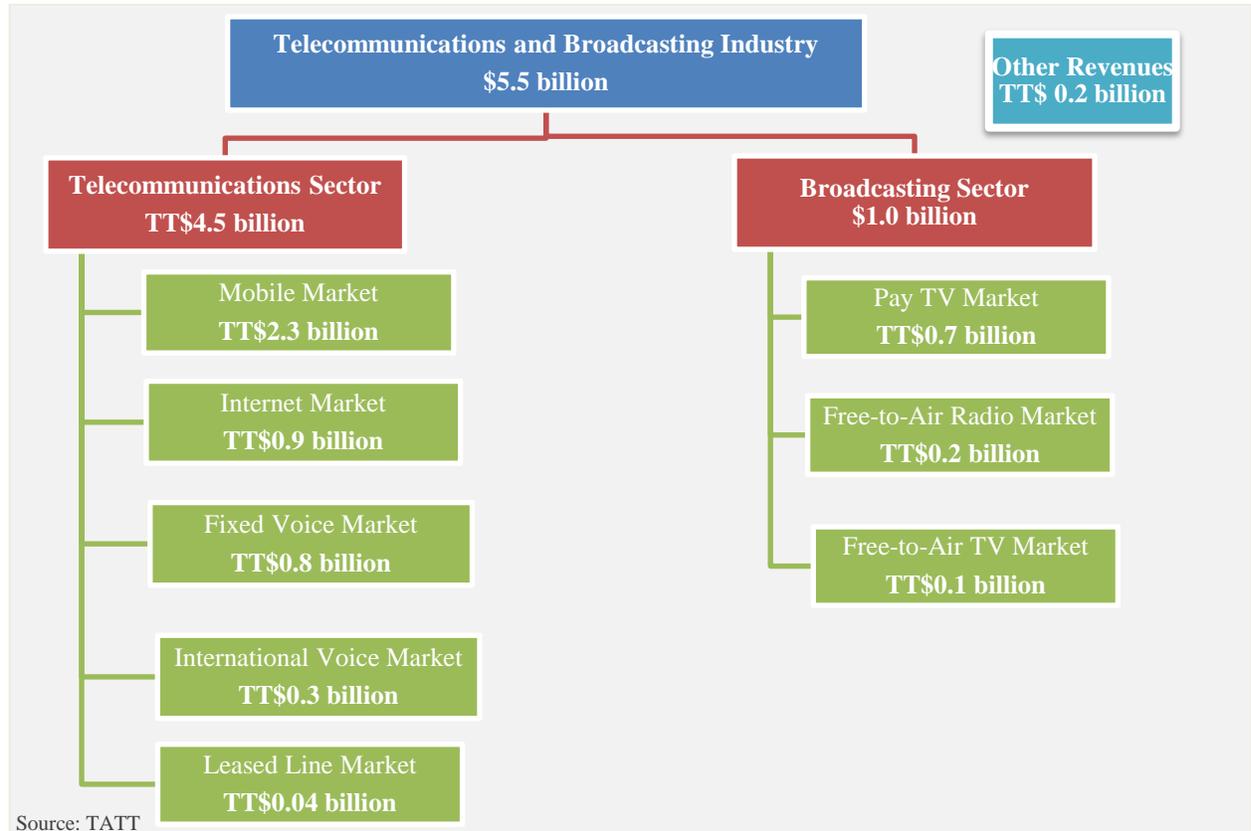
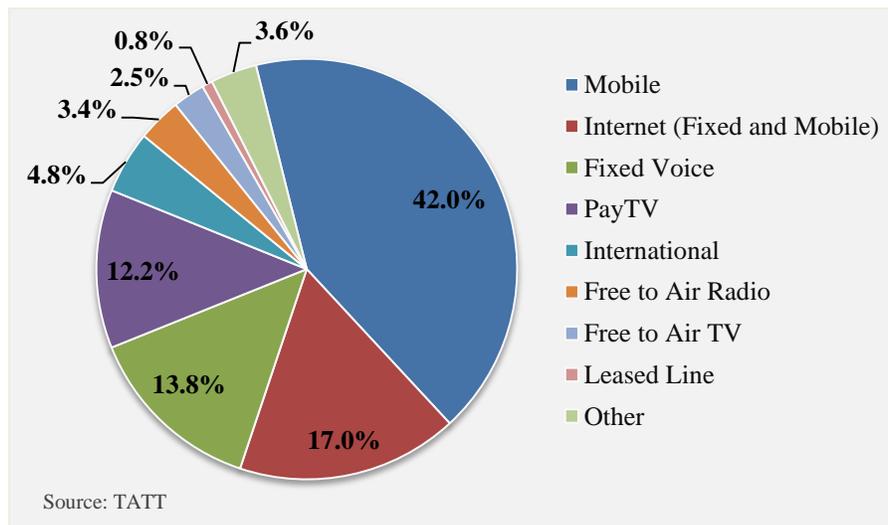


Figure 2: Percentage of Gross Revenues contributed by Markets - 2013



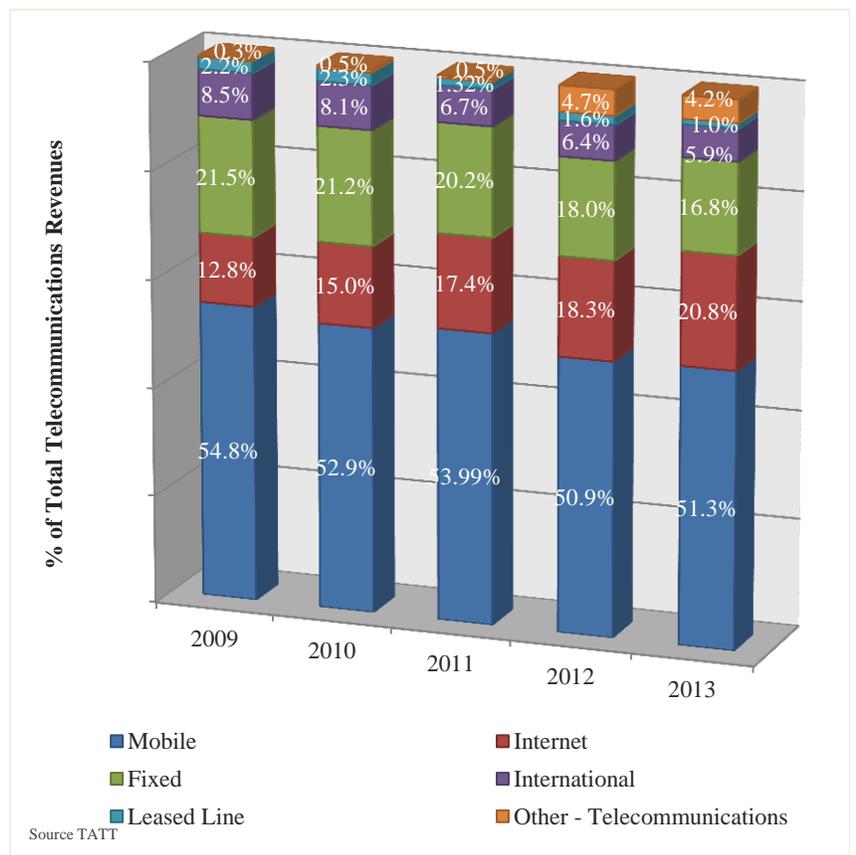
# OVERALL REVIEW

## 1.2.2. MARKET REVENUE TRENDS IN THE TELECOMMUNICATIONS SECTOR

For the 2013 period, the Telecommunications sector contributed TT\$4.5 billion or 81.9 percent to overall industry revenues. Of the five main markets within this sector, the mobile market continued to generate the majority of revenues, accounting for 51.3 percent of total telecommunications revenues. The Internet market generated the second highest with 20.8 percent, while revenues from the fixed voice services and international markets followed thereafter with 16.8 percent and 5.9 percent respectively. The leased line market earned 1.0 percent of telecommunications revenues and continued to be the smallest revenue contributor to the sector.

‘Other’ telecommunications revenues<sup>8</sup> contributed 4.2 percent to total telecommunications revenues. Figure 3 depicts the revenue contributions of the individual markets toward the total revenues generated from the telecommunications sector. As seen in this Figure, the Internet and mobile voice market experienced growth in their percentage contribution to total telecommunications revenue, while the

Figure 3: Percentage Contributions of Telecommunications Markets – 2009 to 2013



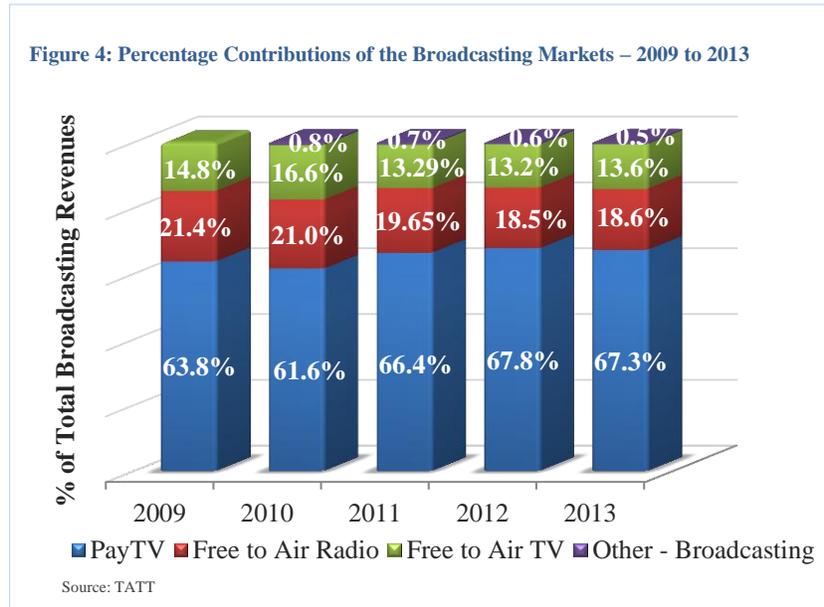
<sup>8</sup> Other telecommunications revenues earned from service providers in the telecommunications sector include other wholesale services (excluding leased line), high capacity wireless links and two-way radios.

# OVERALL REVIEW

proportion of revenues generated by all other telecommunications services decreased. The Internet market increased its contribution to total telecommunications revenues from 18.3 percent in 2012 to 20.8 percent in 2013.

## 1.2.3. MARKET REVENUE TRENDS IN THE BROADCASTING SECTOR

For the review period, the broadcasting sector contributed TT\$1 billion, or 18.1 percent towards overall industry revenues. The broadcasting sector is divided into three main markets: Pay TV<sup>9</sup>, Free-to-Air television and Free-to-Air radio.



Similar to the trends experienced over the last five years, the Pay TV market continued to earn the majority of revenues in the broadcasting sector, accounting for 67.3 percent of total broadcasting revenues for 2013. Trailing behind significantly were the Free-to-Air radio and Free-to-Air television markets earning 18.6 percent and 13.6 percent

of broadcasting revenues respectively. ‘Other’ broadcasting revenues<sup>10</sup> contributed 0.5 percent 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 in this Figure, the Free-to-Air television market increased its percentage contribution to revenues in the broadcasting sector from 13.2 percent in 2012 to 13.6 percent in 2013. The percentage of revenue earned from the Pay TV market marginally declined from 67.8 percent in 2012 to 67.3 percent in 2013.

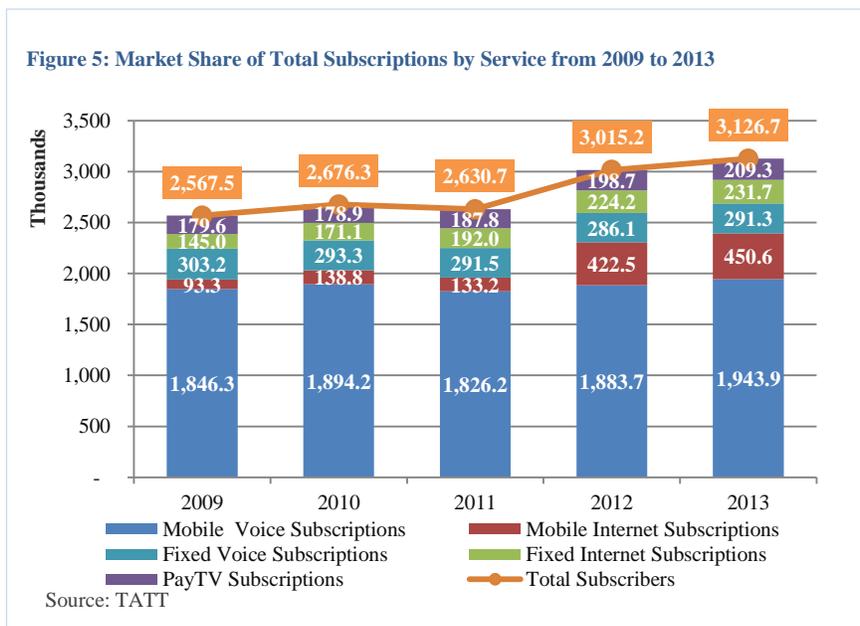
<sup>9</sup> Also known as Subscription TV

<sup>10</sup> Other revenues earned from service providers in the broadcasting sector include Production and Air time for local programming on Pay TV

# OVERALL REVIEW

## 1.2.4. TELECOMMUNICATIONS AND BROADCASTING SUBSCRIPTIONS

For the year ending December 2013, the number of subscriptions within the fixed voice, mobile voice, fixed Internet, mobile Internet and Pay TV market segments totalled approximately 3.1 million<sup>11</sup>. This represents an increase of 3.7 percent or 111.1 thousand subscriptions when compared to the same period in 2012. The mobile voice market contributed 1.9 million subscriptions representing 62.2 percent, whereas the fixed voice market contributed 291.3 thousand subscriptions representing 9.3 percent of total subscriptions. Fixed Internet subscriptions stood at 231.7 thousand as at December 2013, contributing 7.4 percent to total subscriptions, whereas the number of Mobile Internet subscriptions totalled 450.6 thousand or 14.4 percent of total subscriptions. Pay TV services contributed 6.7 percent with 209.3 thousand subscriptions. Figure 5

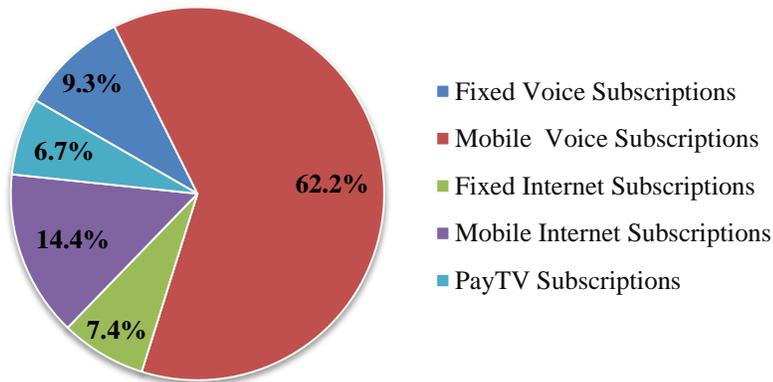


compares total industry subscriptions for the period 2009-2013 while contributions by the various market segments towards total industry subscriptions as at December 2013 are shown in Figure 6 below.

<sup>11</sup> The significant increase in the number of subscriptions mainly is due to the Authority's revision of the calculation of the Mobile Internet Penetration to include actual prepaid Internet subscriptions.

# OVERALL REVIEW

Figure 6: Market Shares of Total Industry Subscriptions by Service as at December 2013

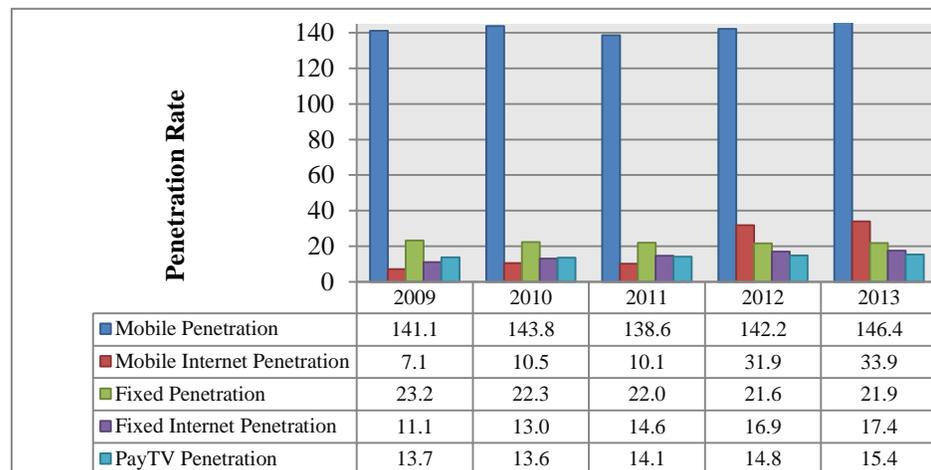


Source: TATT

## 1.2.5. SUBSCRIPTION PENETRATION RATE

As seen in Figure 7, the penetration rates for all subscription based markets increased for the 2013 period. Mobile voice penetration sustained its dominant position with a penetration rate of 146 percent while the level of Mobile Internet penetration in the country maintained its second place, increasing from 31.9 percent in 2012 to 33.9 in 2013.

Figure 7: Penetration Rate of Subscriptions 2009 to 2013

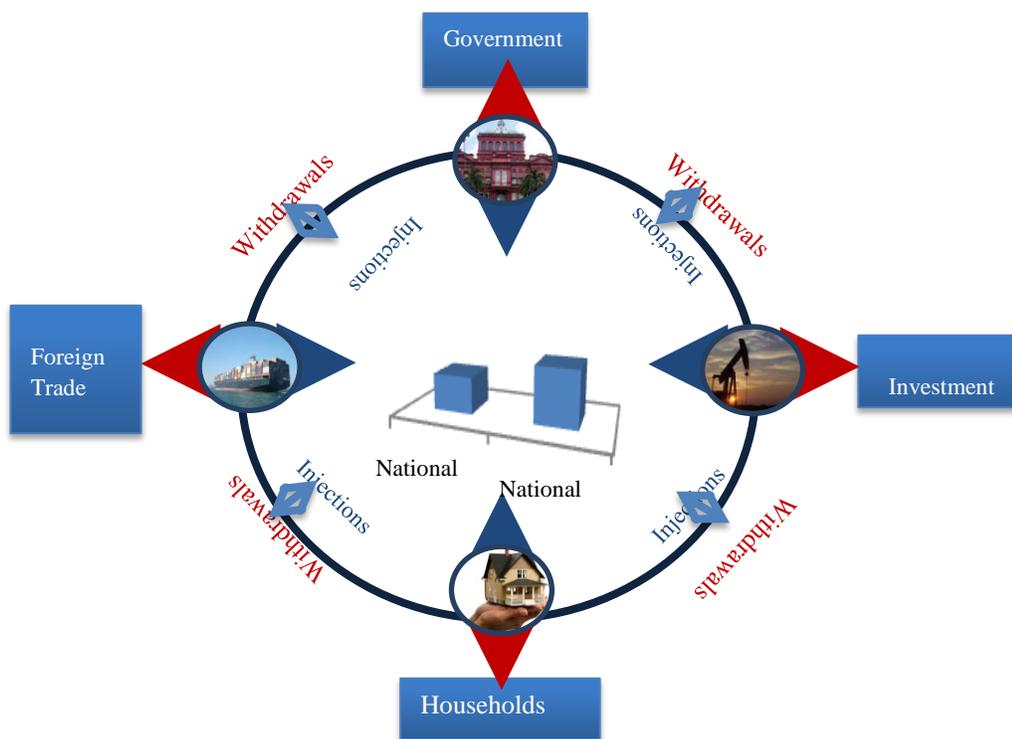


Source: TATT

# OVERALL REVIEW

## BOX 1: SUMMARY OF THE DOMESTIC MACRO-ECONOMY

Trinidad and Tobago's economy is estimated to have grown by 1.6% in 2013. This growth rate which, is slightly up from the 1.2% achieved in 2012, is reflective of continued moderate growth from the non-energy sector which, measured 2.5% and relatively marginal growth by the energy sector, which crept 0.5% in 2013. The country continues to record one of the region's lowest levels of unemployment with the said rate decreasing to 4.9% in 2013<sup>12</sup> concurrent with a relatively steady participation rate of 61.9 %. Trinidad and Tobago inflation rate settled at 6.8% in June 2013 mirroring food and non-alcoholic beverages price movements. However, core inflation remained relatively stable over the same period.



**Trinidad and Tobago Economic Flow 2013**

Trinidad and Tobago's total expenditure is projected to have outstripped total revenue by TT\$6,485 million or 4% of GDP<sup>13</sup> in 2013, recording the country's largest deficit in four years<sup>14</sup> and providing a

<sup>12</sup> As at June 2013

<sup>13</sup> Source MOF TT

# OVERALL REVIEW

considerable economic injection into the local economy. Notably over the same period central government deficit is reported to have declined to TT\$861 million, and hence would have accounted for approximately only 13% of the said deficit. Therefore, the largely non-governmental economic injection may have resulted from increased private sector participation in the local economy over the period or may be attributable to other foreign and or local non-governmental disbursements. Other performance measures of Trinidad and Tobago economic activity are presented below for the five year period 2009 to 2013:

Economic Indicator	2009	2010	2011	2012	2013
<sup>15</sup> Real GDP Growth (2000=100)	-3.3	0.0	-1.4	1.2	1.6
Energy Sector	2.5	2.0	0.0	-1.0	0.5
Non-energy Sector	-6.7	-3.8	-1.0	1.9	2.5
Inflation Rate (%)	7.2	10.5	5.3	9.3	6.8
Unemployment Rate	5.3	5.9	5.0	5.4	4.9
Exports (% of GDP)	47.9	54.3	62.9	44.3	n.d
Imports (% of GDP)	36.3	31.14	42.3	25.0	n.d
Current Account Balance (% of GDP)	8.5	20.2	12.3	5.5	n.d
Overall BOP TT\$MM	4,489	2,652	4,794	-662	n.d
<sup>16</sup> Standard and Poor's Credit Rating	A	A	A	A	A
<sup>17</sup> Exchange Rate (USD)	6.30	6.34	6.37	6.37	6.39
<sup>18</sup> Gross National Savings % GDP	24.0	34.2	26.3	18.9	24.1
<sup>7</sup> GDP (current Prices -\$Mn-TT)	121,281	131,289	150,373	161,151	178,273
<sup>7</sup> GDP per capita (Current Prices -TT)	92,209	99,079	113,530	121,146	132,630

<sup>14</sup> Source MOF TT

<sup>15</sup> Source: MOF

<sup>16</sup> Source: Standard & Poor's Local Currency Sovereign Rating

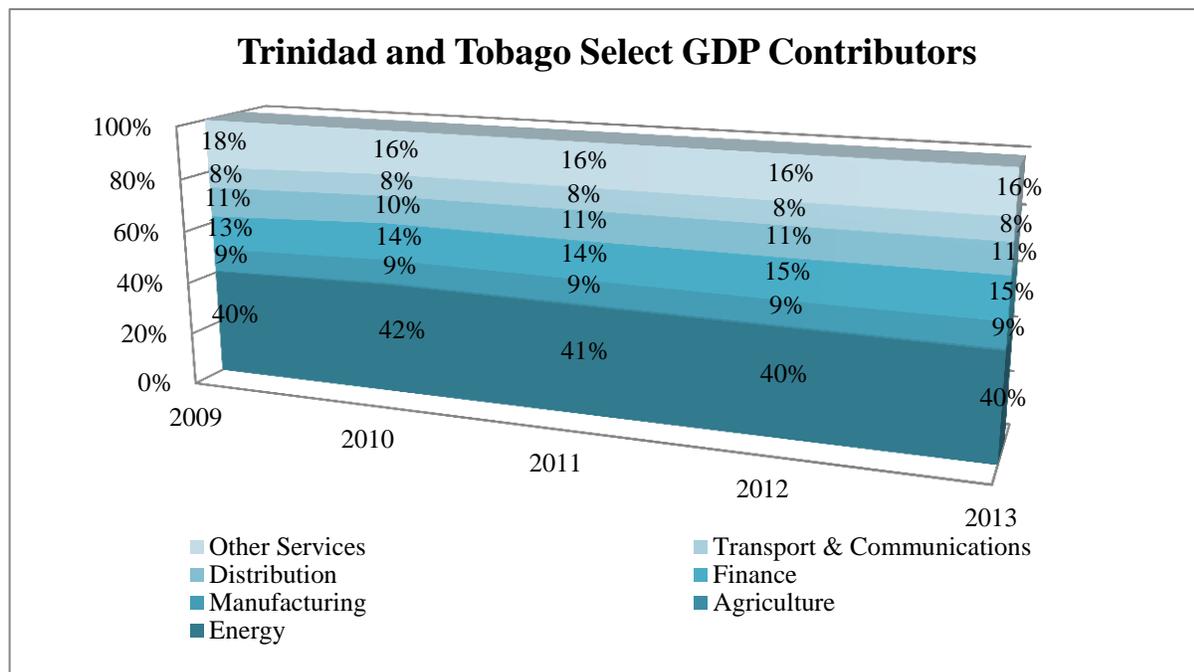
<sup>17</sup> Source: Central Bank of Trinidad and Tobago

<sup>18</sup> Source: International Monetary Fund

# OVERALL REVIEW

Trinidad and Tobago’s economy appears to be bearing fruit, albeit slowly, of its economic diversification and sustainability efforts. This may be discerned from consecutive marginal increases in the non-energy sector’s contribution to GDP, and to a lesser extent from the 2013 upturn in gross national savings observed in Table 1.0 above. This observation is further delineated in diagram 2.0 below, which shows several key sectors GDP contribution over the period 2009-2013. The said diagram reveals notable improvements in GDP contribution from the Banking and Finance and Manufacturing sectors and sustained economic contributions from the Transport and Communication, Distribution and Agriculture sector despite their improved individual sector performances.

In the absence of 2013 current account balances<sup>19</sup> however, it is undiscernible whether the country’s growing non-energy income has translated into sustained or perhaps improved foreign exchange earnings.



<sup>19</sup> Not disclosed by the CBTT at the time of writing

# OVERALL REVIEW

## **Outlook:**

Trinidad and Tobago's ability to sustain trotting economic activity or high levels of expenditure will depend on its long term recurring income and foreign exchange earning potential, and hence rests heavily on the country's current account balances, *ceteris paribus*. The increased contribution and improved performance of the country's non-energy sectors and increased gross national savings are indeed positive economic signals and support strong short term outlook of most rating agencies. However, to establish an equally smooth long-term consumption position, more aggressive and targeted sustainability measures are required. The Telecommunication and Broadcasting sectors continue to present growth opportunities for established economic hubs and provide an invaluable platform for new creative industries and growth poles. Thus, it is paramount that the communications and ICT sectors in conjunction with other services industries be given proportional national consideration, as it is an empirically proven road to sustainable growth and economic stability.

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# FIXED VOICE REVIEW

## Key Market trends and Observations in the Fixed Voice Telephony Market

- **Fixed voice subscription experiences its first increase in five years with approximately 291,000 subscriptions in 2013**
- **Residential subscriptions grow while business subscriptions decline slightly**
- **Fixed voice market generates TT\$761.2 million in gross revenues**
- **About 56 out of every 100 households in Trinidad and Tobago have access to a fixed line telephone**
- **Fixed voice consumers spends less time on fixed voice calls**

## 2. FIXED VOICE TELEPHONY MARKET DATA

As at December 2013, there were fifteen (15) operators authorised to provide fixed domestic telecommunications services to the public over wired or wireless facilities as listed below.

Table 3: Operators Authorised to Provide Public Fixed Domestic Telecommunications Services as at December 31<sup>st</sup> 2013

Name of Provider		
1. Telecommunications Services of Trinidad and Tobago (TSTT)	2. Columbus Communications Trinidad Limited (FLOW)	3. Green Dot Limited
4. Three Sixty Communications Limited	5. Lisa Communications Limited	6. Illuminat (Trinidad and Tobago Limited )
7. Open Telecom Limited	8. Air Link Communications	9. Digicel (Trinidad and Tobago) Limited
10. Independent Cable Network of Trinidad & Tobago Limited	11. Prism Services (Trinidad) Limited	12. TRICO Industries Limited
13. Wireless Telecommunications Ltd	14. RVR International Limited	15. Network Technologies Limited

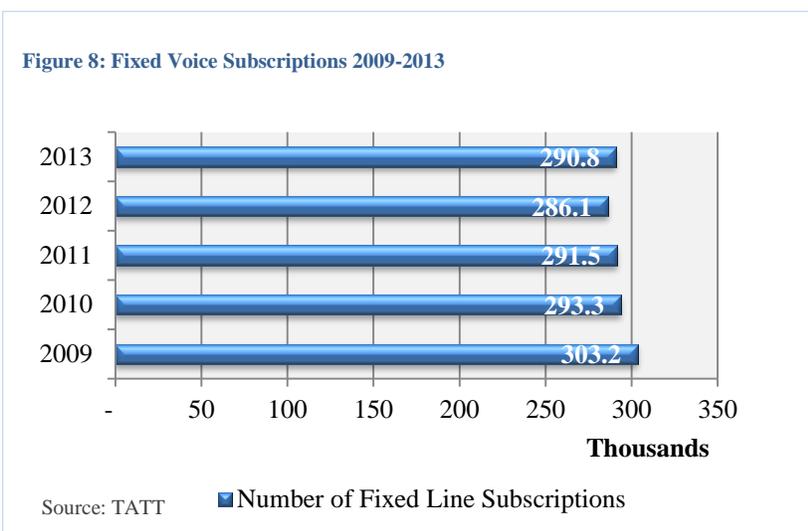
Source: TATT

While the above fifteen (15) operators were authorised by the Authority to provide fixed telecommunications services, only three operators offered domestic fixed voice services in 2013. TSTT offered fixed voice services through their Public Switched Telephone Network, FLOW via their Hybrid Fibre Coax network and Three Sixty Communications Limited provided fixed voice services through its Gigabit Passive Optic Network (GPON).

# FIXED VOICE REVIEW

## 2.1. ANNUAL FIXED VOICE TELEPHONY SUBSCRIPTIONS

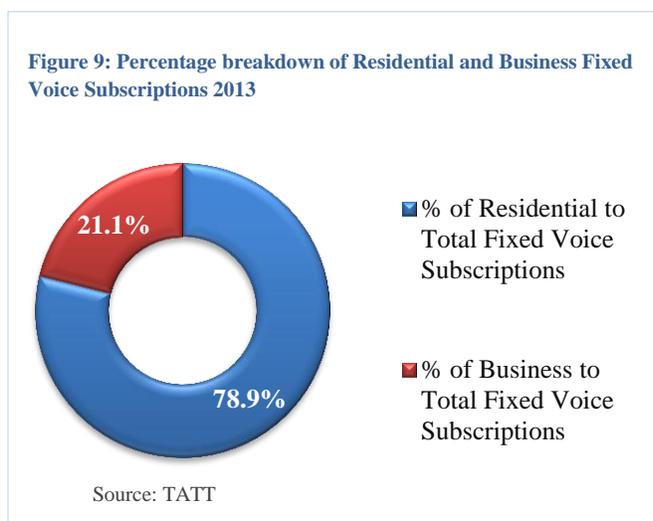
For the first time in five years, the number of subscriptions in the fixed voice market increased. In 2013, total subscriptions recorded approximately 290.8 thousand compared to 286.1 thousand



in 2012 as illustrated in Figure 8. This represented an overall 1.6 percent or 4.7 thousand growth in subscriptions as compared to the last period.

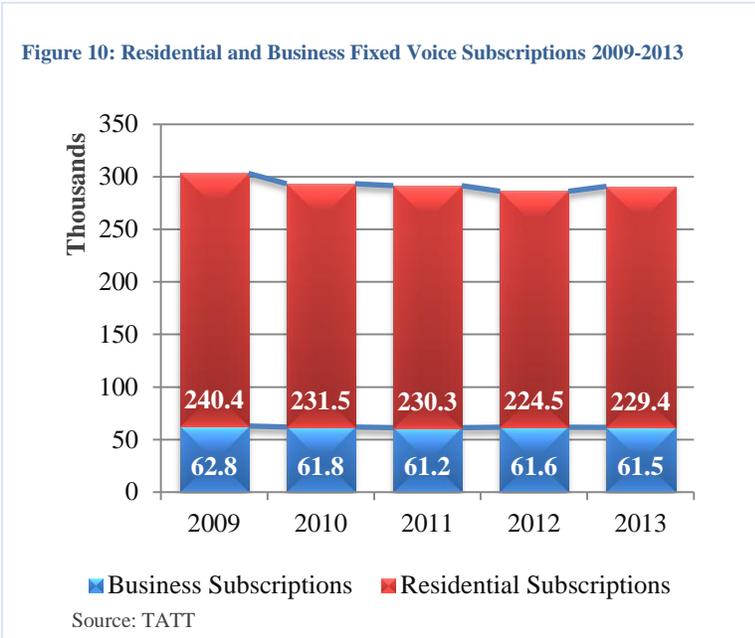
### 2.1.1. ANNUAL RESIDENTIAL AND BUSINESS FIXED VOICE SUBSCRIPTIONS

The fixed voice market in Trinidad and Tobago can be grouped into two categories - residential subscriptions and business subscriptions (inclusive of companies subscribing to systems services, e.g. PBX trunks). As at December 2013, out of the recorded 290.8 thousand fixed voice subscriptions, 229.4 thousand (78.9 per cent) were residential, and 61.5 thousand (21.1 per cent) comprised business. Figure 9 illustrates the percentage breakdown of fixed voice subscriptions toward these two categories.



# FIXED VOICE REVIEW

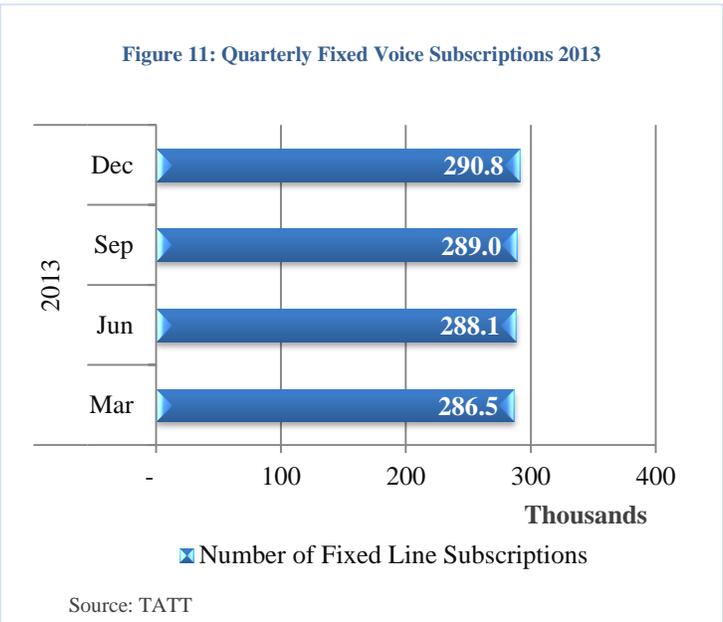
Following four consecutive declines over the past four years, residential fixed subscriptions increased in 2013. At the end of 2013, residential fixed subscriptions recorded approximately 4.9



thousand more subscriptions than that of 2012, a 2.2 percent increase. On the other hand, the number of subscriptions in the business market for fixed voice recorded a small decrease in subscriptions in 2013 after experiencing a marginal increase in 2012. Business subscriptions decreased by just over 100 subscriptions, representing a 0.2 percentage decrease. Figure 10 illustrates.

## 2.1.2. QUARTERLY FIXED VOICE SUBSCRIPTIONS

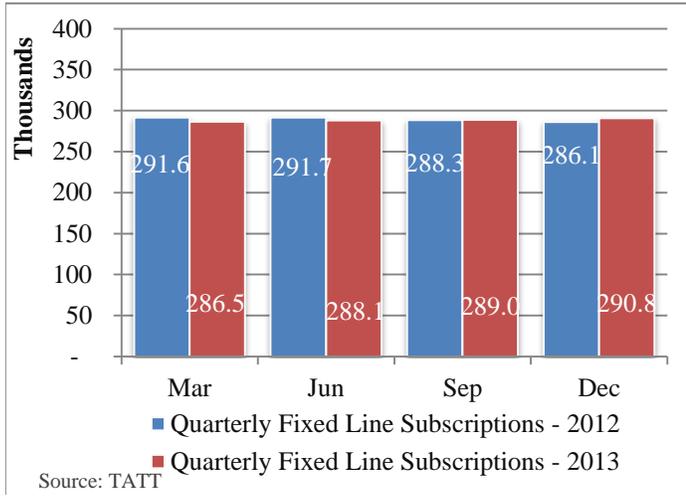
Figure 11 shows the quarterly trend in fixed voice subscriptions during 2013. Steady increases were observed throughout the year with fixed voice subscriptions peaking in the fourth quarter. With 290.8 thousand subscriptions, the fourth quarter experienced the largest quarter on quarter growth with an increase of approximately 1.8 thousand subscriptions.



# FIXED VOICE REVIEW

Compared to 2012, the fixed voice market performed better in the second half of 2013 with fewer subscriptions in the first and second quarters of 2013 compared to the same period of 2012. There were 286.5 thousand subscriptions in quarter one compared to 291.6 thousand subscriptions for the corresponding period in 2012 and 288.1 thousand subscriptions in 2013 compared to 291.7 thousand in 2012. However, while subscriptions declined in the second half of 2012, steady increases were observed for the third and fourth quarter of 2013 as shown in Figure 12.

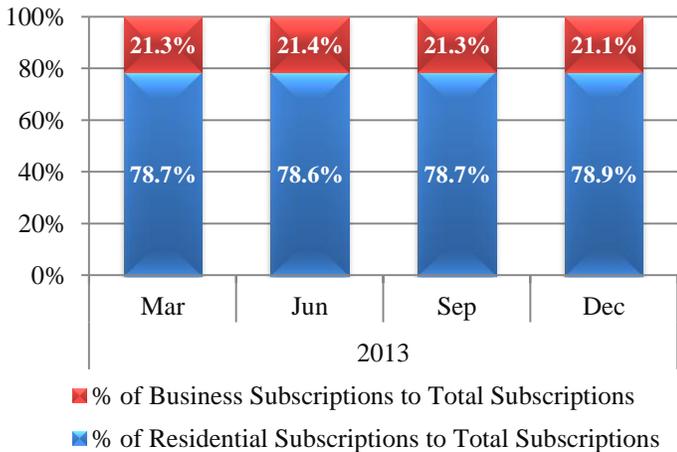
Figure 12: Comparison of Quarters 2012 and 2013



### 2.1.3. QUARTERLY RESIDENTIAL AND BUSINESS FIXED VOICE SUBSCRIPTIONS

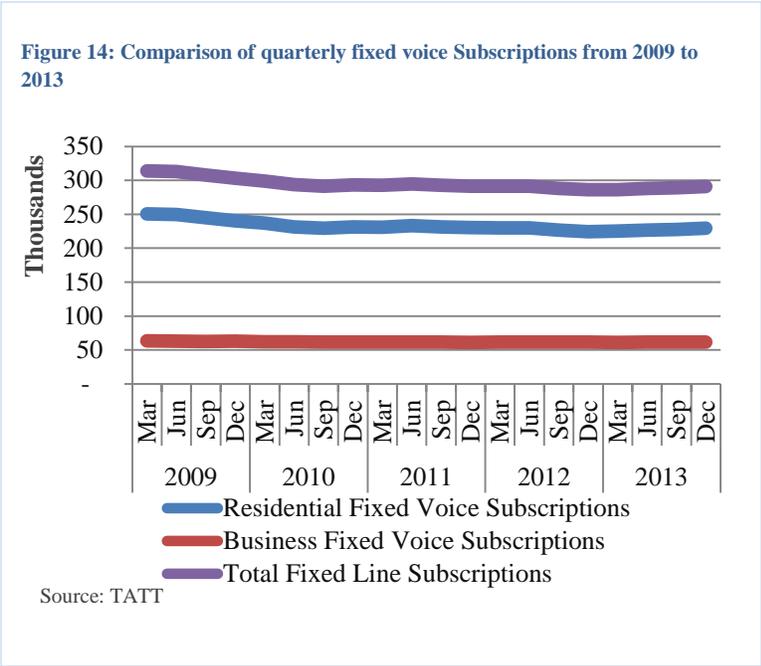
Figure 13 shows a percentage breakdown of residential and business fixed voice subscriptions as at the end of each quarter for 2013. With almost 225 thousand subscriptions, residential fixed voice subscriptions captured 78.7 percent of the market, as at the end of the first quarter of 2013. Business fixed voice subscriptions captured 21.3 percent of the market with just over 61 thousand subscriptions. This result remained relatively stable throughout the remaining quarters of 2013 as residential subscriptions consistently constituted the majority of the fixed voice market.

Figure 13: Percentage Breakdown of Quarterly Residential and Business Fixed Voice Subscriptions 2013



# FIXED VOICE REVIEW

Over the past five years, there was a general downward trend in the number of subscriptions with a greater effect being observed in the residential category. As seen in Figure 14, residential subscriptions declined slowly over the years while business subscriptions remained relatively stable.



## 2.2. FIXED LINE PENETRATION

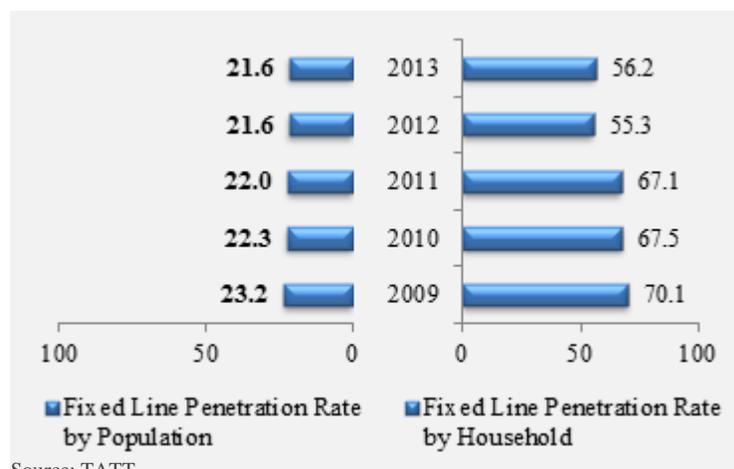
As the standard metric recognised internationally by the International Telecommunications Union (ITU), to measure the adoption of fixed voice services, fixed voice penetration<sup>20</sup> is calculated based on the number of fixed voice subscriptions per 100 of the population. As at December 2013, fixed voice penetration was calculated at 21.6. This implies that in 2013 there were approximately 22 fixed voice subscriptions available to every 100 persons in Trinidad and

<sup>20</sup> Fixed line penetration = (number of residential fixed voice subscriptions / total population) \*100  
 Total population used from the Central Statistical Office’s Trinidad and Tobago 2011 Population and Housing Census, Demographic Report

# FIXED VOICE REVIEW

Tobago. Fixed line household penetration<sup>21</sup> increased slightly from 55.3 to 56.2 in 2013, signifying that approximately 56 out of every 100 households had access to fixed voice services in Trinidad and Tobago as at the end of 2013. An illustration of the fixed voice penetration trend from 2009 to 2013 is given in Figure 15 for both population and household.

Figure 15: Fixed Voice Penetration 2009-2013



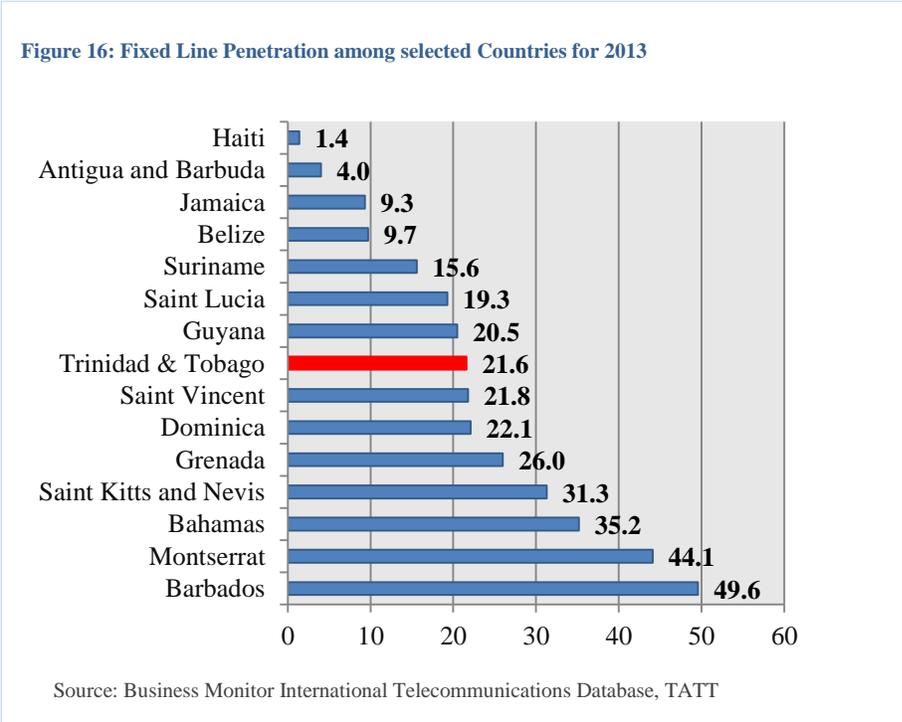
Source: TATT

<sup>21</sup> Fixed line household penetration = (number of residential fixed voice subscriptions / total number of households) \*100. Number of households from the Central Statistical Office's Trinidad and Tobago 2011 Population and Housing Census, Demographic Report

# FIXED VOICE REVIEW

## 2.2.1. FIXED PENETRATION RATES CARICOM CARIBBEAN COUNTRIES

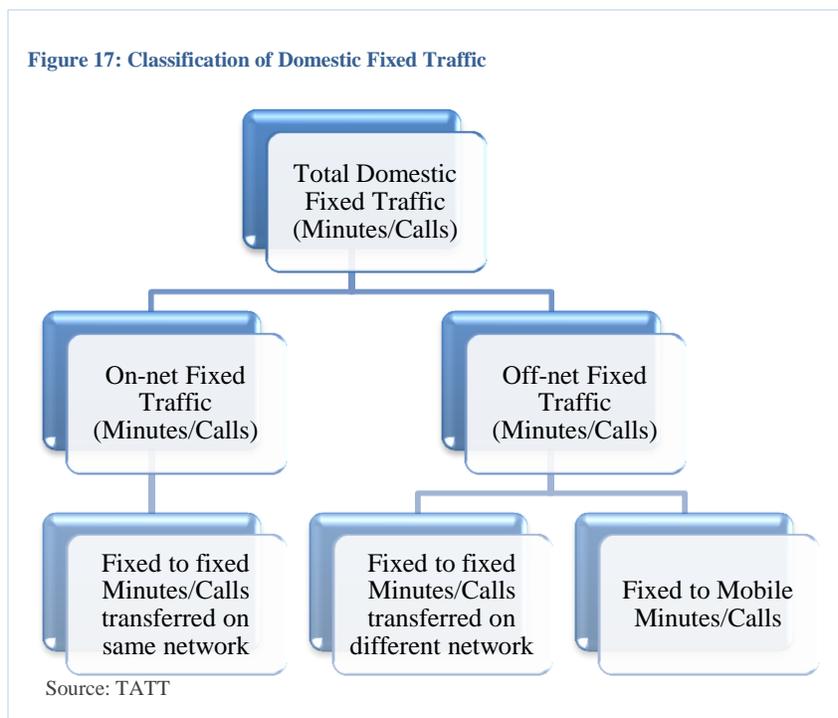
Comparison among Caricom countries as listed in Figure 16, places Trinidad and Tobago eight in terms of fixed line penetration. Based on data from Business Monitor International, Barbados ranks first with a fixed line penetration of 49.6 followed closely behind by Montserrat (44.1).



# FIXED VOICE REVIEW

## 2.3. DOMESTIC FIXED VOICE TRAFFIC

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



### 2.3.1. ANNUAL DOMESTIC FIXED VOICE TRAFFIC IN MINUTES

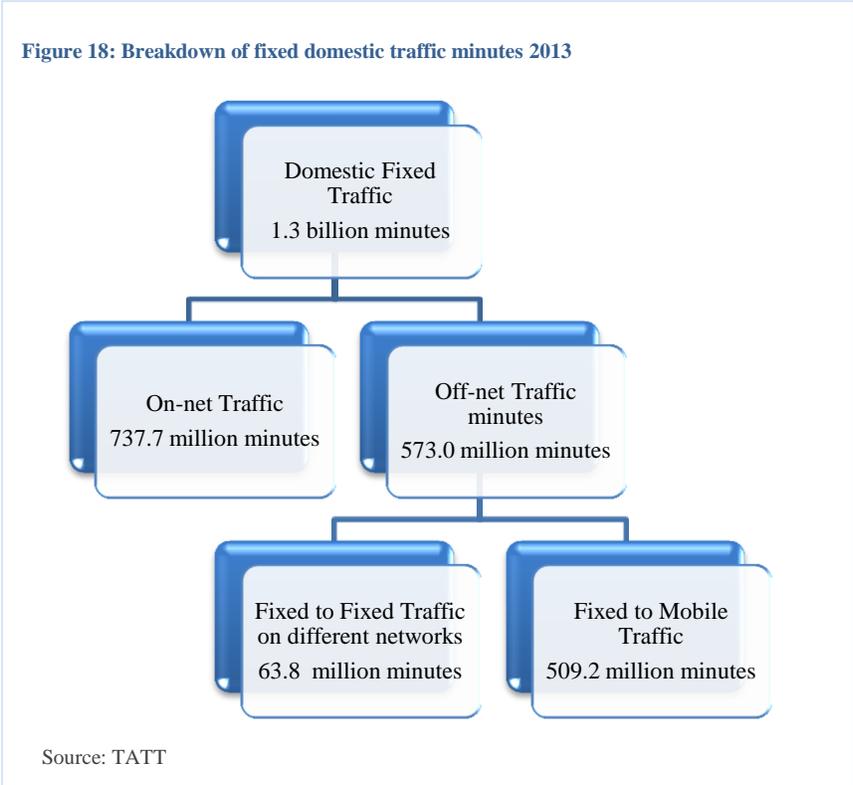
Consumers in the fixed voice market spent less time on fixed voice phone calls in 2013 as compared to 2012. There were 1.3 billion fixed voice traffic minutes in 2013, a 1.9 percentage decrease over the previous period. Both on-net<sup>22</sup> and off-net<sup>23</sup> minutes dropped slightly in 2013;

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<sup>22</sup> On-net fixed traffic refers to traffic originating on a service provider's fixed network and terminating on the same fixed network.

# FIXED VOICE REVIEW

recording 737.7 million and 573.0 million minutes respectively. A greater reduction was observed for on-net minutes as compared to off-net minutes. Although total off-net minutes decreased by 2.9 percent, off-net fixed to fixed minutes increased while fixed to mobile minutes decreased. Fixed to fixed minutes transferred on different networks (off-net) continued its upward trend, increasing by 7.6 percent to 63.8 million minutes. Fixed to mobile minutes continued its downward trend, recording 509.2 million minutes as it decreased by 1.5 percent in 2013. The number of fixed voice minutes by traffic types is given in Figure 19 below.



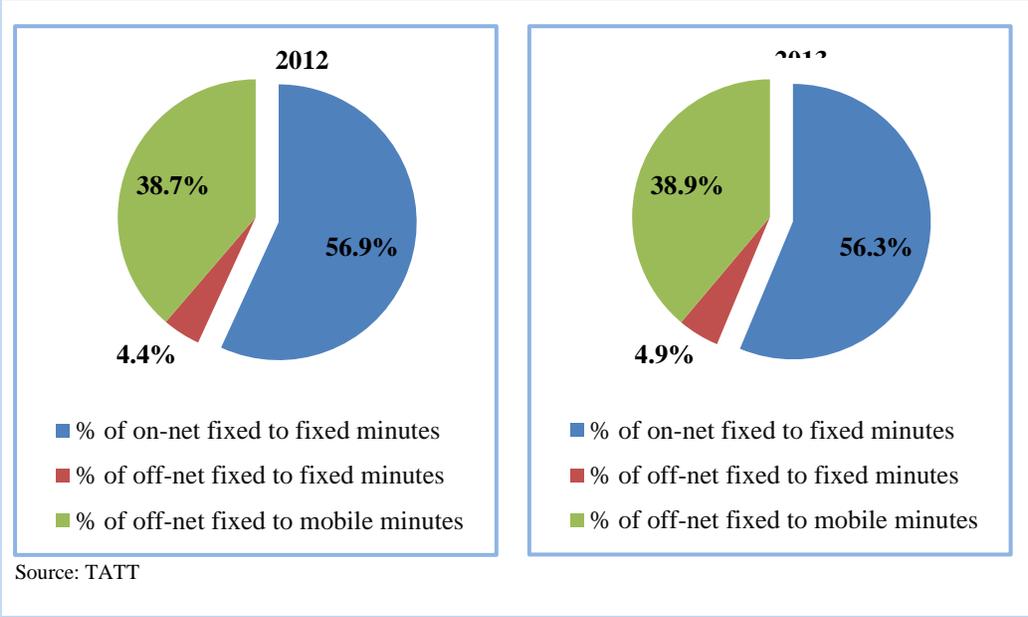
Consumers’ consumption patterns for fixed voice minutes have not changed in 2013. The proportion of on-net traffic minutes to total off-net traffic minutes remained relatively stable, with a slight decline being observed in the proportion of on-net traffic minutes. On-net traffic minutes contributed 56.3 percent of total minutes in the fixed voice market while off-net traffic

<sup>23</sup> Off-net fixed traffic refers to traffic originating on a service provider’s fixed network and terminating on another network (intra and inter service provider). For example, a call originating on TSTT’s fixed network and terminating on Flow, bmobile or Digicel’s network will be included in these minutes.

# FIXED VOICE REVIEW

contributed 43.8 percent. Furthermore, off-net fixed to mobile minutes comprised the majority of total off-net minutes with 38.9 percent of total fixed voice traffic minutes. Alternatively, off-net fixed to fixed minutes comprised the minority with 4.9 percent of total fixed voice traffic minutes. This percentage breakdown of minutes by traffic-types is shown in Figure 20 below over the last 2 years.

Figure 19: Total domestic fixed traffic minutes by traffic-types 2012 to 2013

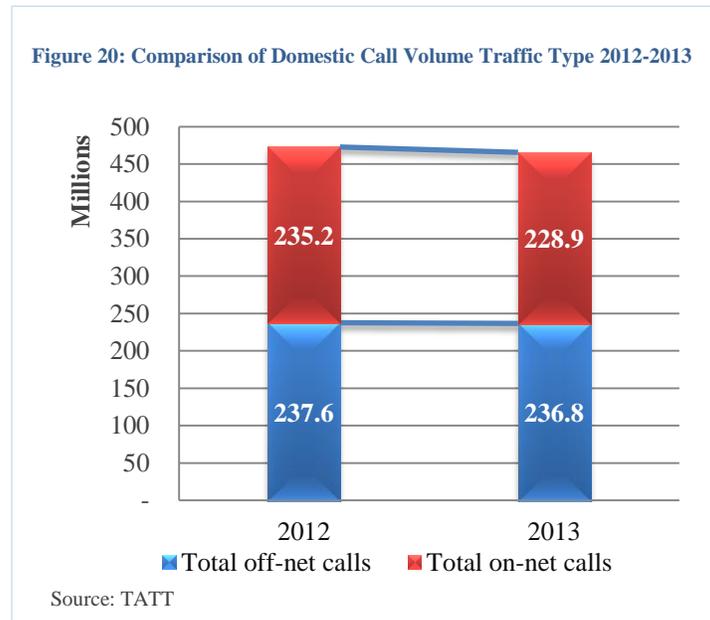


## 2.3.2. ANNUAL DOMESTIC FIXED VOICE CALL VOLUMES

In addition to spending less time on fixed voice calls, consumers also reduced their number of calls in 2013. The number of domestic fixed voice calls totalled 465.7 million during the 2013 period, dipping by 1.5 percent when compared to the 2012 period. Similar to fixed voice minutes, call volumes can be broken down into traffic-types, as outlined in Figure 18 above. Total on-net calls accounted for 228.9 million or 49 percent of total fixed voice calls while total off-net calls accounted for 236.8 million calls or 51 percent of total fixed voice calls. When compared to 2012, both the number of on-net and off-net calls declined with a greater reduction being observed for on-net calls. The number of on-net calls decreased by 2.7 percent while total

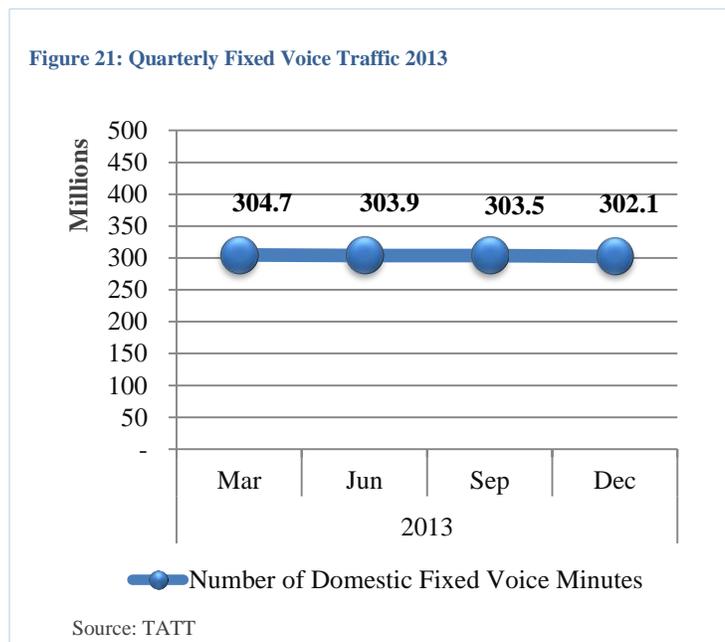
# FIXED VOICE REVIEW

off-net calls experienced a smaller decrease of 0.4 percent. Figure 20 below provides a breakdown of domestic fixed line calls from 2012 to 2013.



## 2.3.3. QUARTERLY DOMESTIC FIXED VOICE TRAFFIC

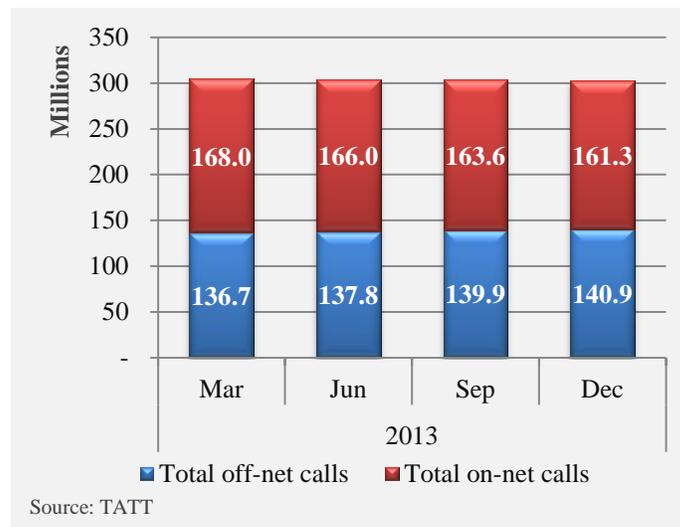
Fixed voice minutes fell continuously during 2013, reaching its lowest in the fourth quarter as shown in Figure 21. During the first quarter, there were 304.7 million fixed voice minutes. Subsequently, marginal decreases were observed for each remaining quarter, reaching 302.1 million minutes in the fourth quarter (app. 1 percent decrease). In terms of fixed voice minutes by traffic type, on-net fixed voice minutes decreased steadily during 2013 whereas off-net minutes increased during the year. It is important to note that although off-net minutes increased from the second to fourth quarter, a significant decrease was observed from the fourth quarter of



# FIXED VOICE REVIEW

2012 to the first quarter of 2013. This resulted in an overall year on year decrease in off net minutes. The quarterly trend by traffic-type is depicted in Figure 22 below.

Figure 22: Quarterly Fixed Voice Traffic Minutes by Type 2013



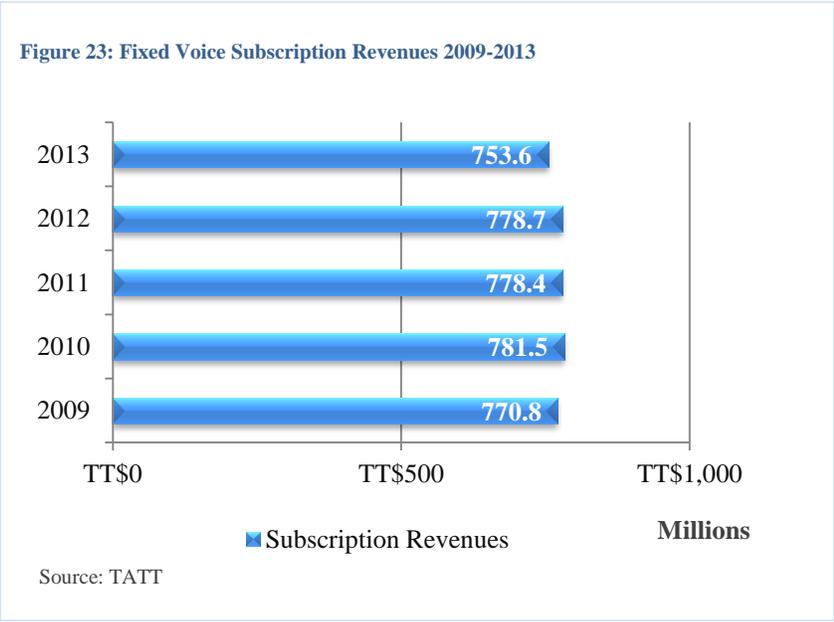
# FIXED VOICE REVIEW

## 2.4. FIXED TELEPHONY REVENUES

### 2.4.1. ANNUAL FIXED VOICE REVENUES

Gross revenues received from all fixed voice services<sup>24</sup> totalled TT\$761.2 million in 2013 as compared to TT\$786.7 million<sup>25</sup> in 2012, a 3.2 percent decrease. However, gross revenues received from fixed voice subscriptions for 2013 amounted to TT\$753.6 million when compared to TT\$778.7 million for 2012, resulting in a decrease of about TT\$25.0 million or 3.2 percent. The TT\$7.6 million difference between total fixed voice revenues and fixed voice subscription revenues represented monies generated from auxiliary fixed voice services such as calling cards, premium voice service charges and late fees charged by service providers.

The annual trend in fixed telephony subscription revenues for the period 2009 to 2013 is illustrated in Figure 23.



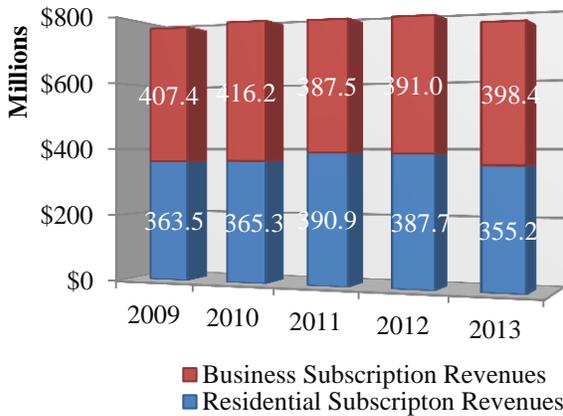
<sup>24</sup> Fixed voice services include revenues from voice subscriptions, payphones, calling cards, and miscellaneous services.

<sup>25</sup> Gross revenues from fixed voice services for 2012 has been revised in this report from \$794.0 million to \$786.7 million

# FIXED VOICE REVIEW

During 2013, residential subscription revenues decreased while business subscription revenues increased. Residential subscriptions contributed TT\$355.2 million or 47.1 percent to total fixed voice subscription revenues, an 8.4 percent decrease from 2012. Business subscriptions accounted for TT\$398.4 million or 52.9 percent of total fixed voice subscription revenues, an increase of 1.9 percent from 2012.

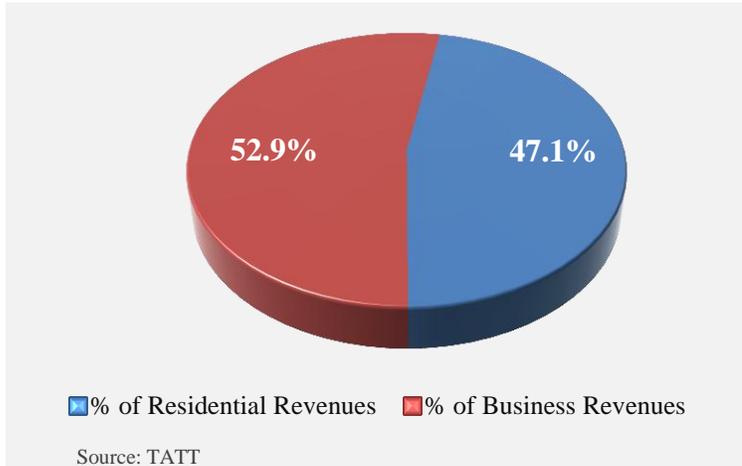
**Figure 24: Residential and Business Fixed Voice Subscription Revenues 2009-2013**



Source: TATT

Figure 24 shows the separation of annual revenues according to residential and business categories over the past 5 years while Figure 25 below illustrates the percentage of revenue contribution for the 2013 period.

**Figure 25: Percentage breakdown of Residential and Business Revenues 2013**

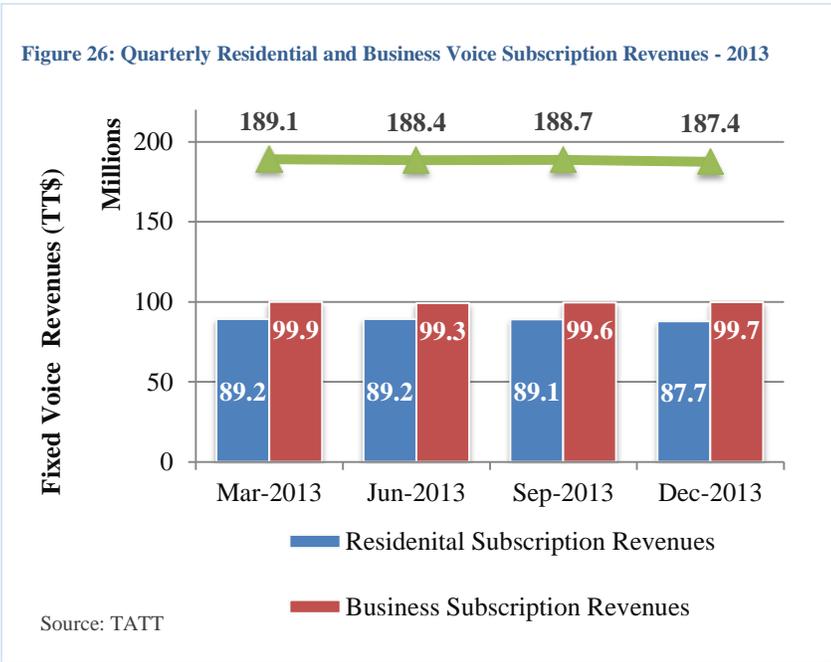


Source: TATT

# FIXED VOICE REVIEW

## 2.4.2. QUARTERLY FIXED VOICE SUBSCRIPTION REVENUES

Total fixed voice subscription revenues experienced a general downward trend during 2013, notwithstanding the minor increase observed in the third quarter. Subscription revenues decreased from TT\$189.1 million in the first quarter to TT\$187.4 million in the fourth quarter. Comparing the composition of this revenue, residential subscription revenues remained relatively unchanged from TT\$89.2 million in the first to TT\$89.1 in the third quarter. Subsequently, residential subscription revenues dropped to TT\$87.7 in the fourth quarter. Business subscription revenues decreased marginally during 2013 from TT\$99.9 million in the first quarter to TT\$99.7 million in the fourth quarter, albeit experiencing a minimal increase in the third quarter. The quarterly residential and business subscription revenues for 2013 are depicted in Figure 26 below.



# FIXED VOICE REVIEW

## 2.5. FIXED MARKET CONCENTRATION

The Hirschman-Herfindahl Index (HHI) is a useful tool that measures the concentration of firms within a particular market. It is computed as the sum of the squares of the market shares of all firms within a particular market and ranges from approximately zero to 10,000. On comparing the last five years, Figure 27 shows that the HHI for the fixed voice market has been generally declining.

As at December 2013, a slight decrease in the level of concentration in the fixed voice market was observed. The HHI calculated for the fixed voice market was 8,307<sup>26</sup> as at December 2013; a 2.5 percent reduction as compared to the same period last year. This decrease in the level of concentration implies a minor shift in the proportion of subscriptions between the players in the fixed voice market. Figure 28 shows the HHI for the period January to December 2013.

Figure 27: HHI for the Fixed Voice Market 2009-2013

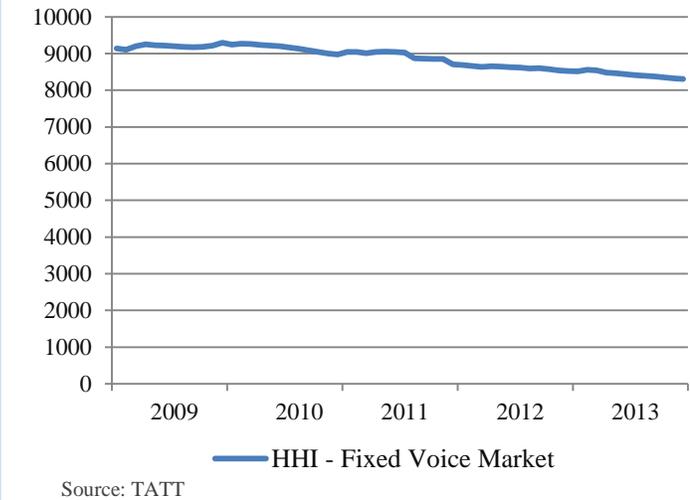
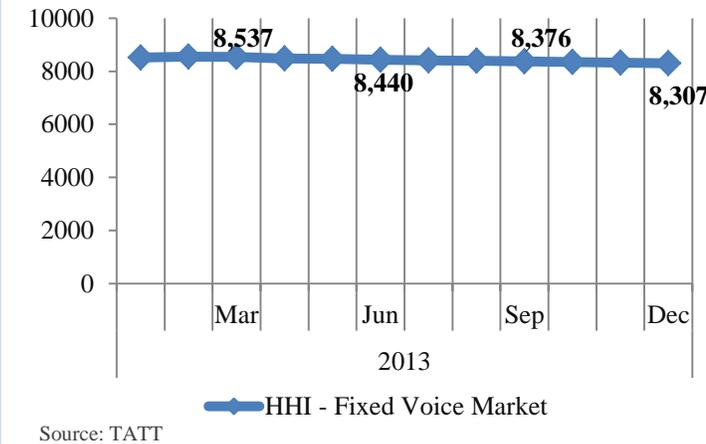


Figure 28: HHI for the Fixed Voice Market 2013



<sup>26</sup> Based on subscription market share

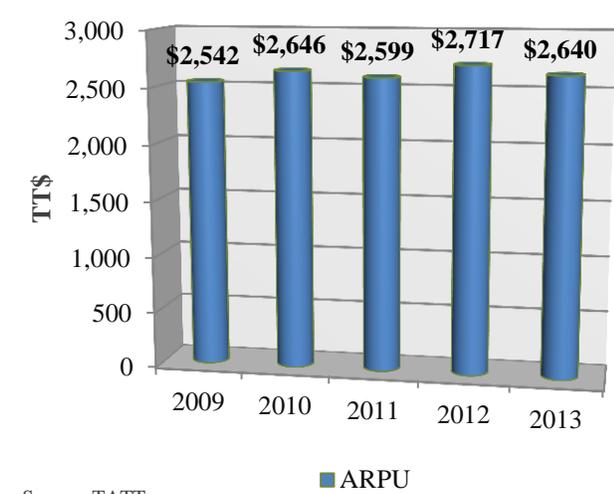
# FIXED VOICE REVIEW

## 2.5.1. FIXED VOICE AVERAGE REVENUE PER USER (ARPU)

On average, each consumer spent TT\$2,640 in 2013 for fixed voice services. This represents a decrease of TT\$77.0 or 2.8 percent in the average revenue per user (ARPU)<sup>27</sup> over the amount recorded for 2012. The overall decrease in ARPU is consistent with the observed increase in total subscriptions and the decrease in total revenues observed in 2013. The changes in ARPU for the last five years are highlighted in Figure 29.

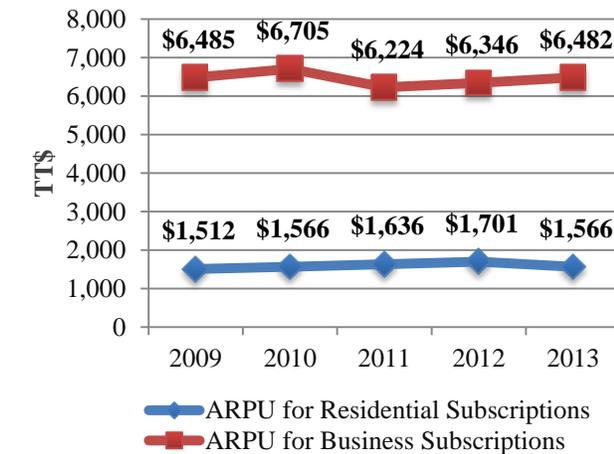
The overall decrease in fixed voice ARPU is attributed to a greater decrease in residential ARPU offsetting a minimal increase in business ARPU. Residential consumers spent an average of TT\$1,566 on fixed voice subscription services, a decrease of 7.9 percent over 2012. On the other hand, business consumers spent an average of TT\$6,482 on fixed voice subscription services, an increase of 2.1 percent. The trend in ARPU for residential and business consumers is illustrated in Figure 30.

Figure 29: ARPU Fixed Voice Services 2009-2013



Source: TATT

Figure 30: ARPU for Fixed Residential and Business Voice Services 2009-2013



Source: TATT

<sup>27</sup> ARPU measures the average revenue generated by one subscriber. It is calculated = (Total revenues for fixed voice subscriptions / Total number of fixed subscriptions)

# MOBILE VOICE MARKET REVIEW

## Key Market trends and Observations in the Mobile Voice Market

- **Mobile voice subscriptions stood at 1.94 million as at December 2013**
- **TT\$2.3 billion in gross revenues generated from Mobile voice services**
- **Mobile Consumers made 2.6 billion telephone calls in 2013**
- **2,556 customers migrated from prepaid to postpaid**

## 3. MOBILE VOICE MARKET DATA<sup>28</sup>

For the period January to December 2013, Trinidad and Tobago's public domestic mobile telecommunication services were provided by two authorised mobile service providers:-

1. Telecommunication Services of Trinidad and Tobago (bmobile);
2. Digicel (Trinidad and Tobago) Limited.

The following is an overview of the Mobile Voice Market of Trinidad and Tobago, compiled using data submitted by these mobile operators.

### 3.1. MOBILE VOICE SUBSCRIPTIONS<sup>29</sup>

#### 3.1.1. ANNUAL MOBILE SUBSCRIPTIONS

The mobile market continues to experience favourable growth in subscriptions despite the marginal decrease observed in 2011. Up by 3.2 percent or 60.2 thousand when compared to 2012, the mobile market recorded a total of 1.94 million subscriptions as at December 2013. Figure 31 below illustrates the small fluctuations in the number of mobile voice subscriptions over a five year period (2009-2013).

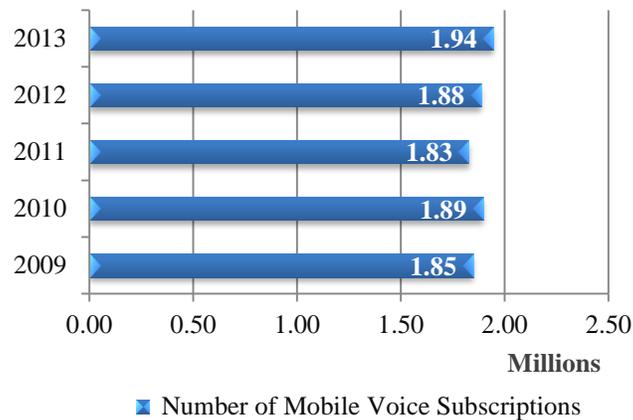
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<sup>28</sup>A mobile voice subscription includes SMS services

<sup>29</sup>A mobile voice subscription refers to an activated (prepaid or postpaid) SIM card that enables the user to make and/or receive a call or SMS/MMS.

# MOBILE VOICE MARKET REVIEW

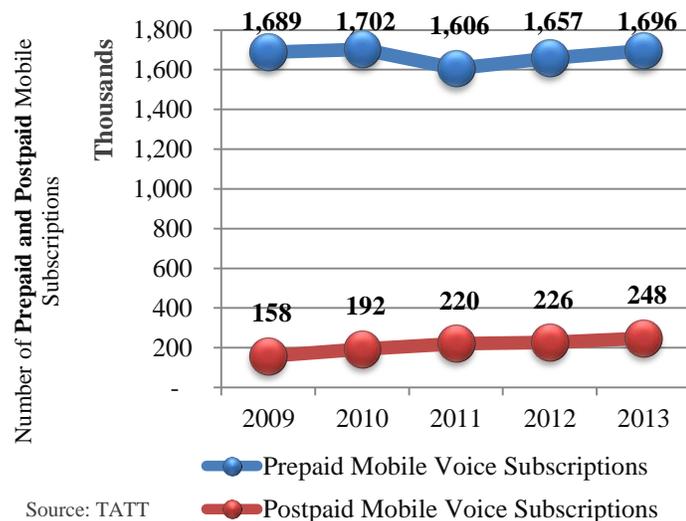
Figure 31: Mobile Subscriptions 2009 - 2013



Source: TATT

Mobile voice subscriptions can be sub-divided into prepaid, where customers purchase credit prior to service use, and postpaid, where customers enter into a contractual billing arrangement with a mobile service provider. Figure 32 highlights the number of prepaid and postpaid subscriptions in 2013 (approximately 1.70 million and 0.25 million subscriptions respectively). Both prepaid and postpaid subscriptions increased in 2013; 2.3 percent and 9.6 percent respectively. In 2013, postpaid subscriptions grew substantially higher than prepaid subscriptions as compared to 2012 where postpaid and prepaid subscriptions experienced similar growth rates. For the five year period 2009 to 2013, a steady upward trend was observed for postpaid subscriptions while prepaid subscriptions experienced fluctuations.

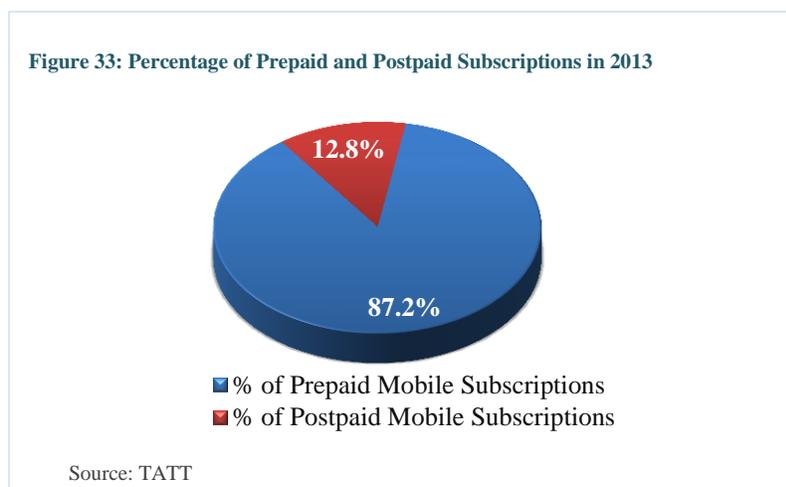
Figure 32: Mobile Prepaid and Postpaid subscriptions 2009-2013



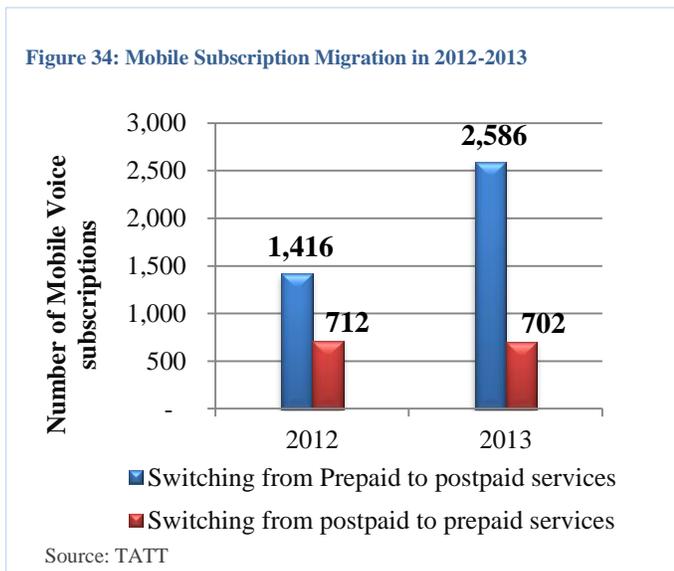
Source: TATT

# MOBILE VOICE MARKET REVIEW

Prepaid subscriptions continued to constitute the majority of the mobile market. Prepaid subscriptions accounted for 87.2 percent of total mobile voice subscriptions (down by 0.8 % when compared to 2012) while postpaid subscriptions made up the remaining 12.8 percent (up by 0.8% when compared to 2012). Figure 33 shows the percentage breakdown of mobile subscriptions in 2013.



The 0.8 percentage change in the proportion of prepaid and postpaid subscriptions, reported above, is captured in Figure 34 below and simply illustrates consumers switching between the two service options in 2012 and 2013. In 2013, a greater number of consumers switched from prepaid to postpaid services, a trend that was similarly observed in 2012. During the 2013 period, there were 2,586 subscriptions migrating from prepaid services to postpaid services in contrast to 702 subscriptions migrating from postpaid to prepaid services.



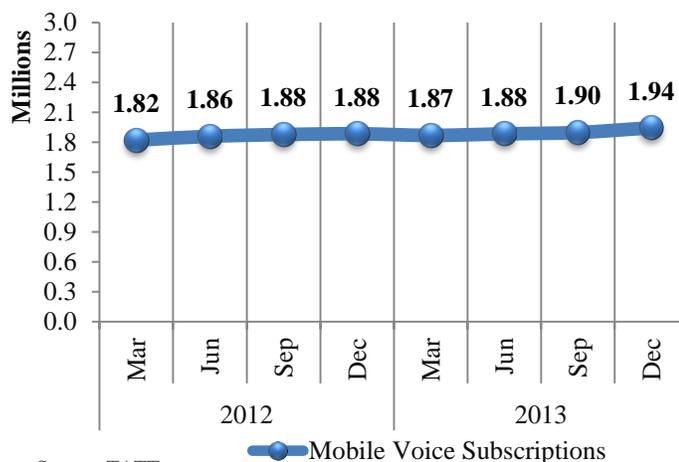
# MOBILE VOICE MARKET REVIEW

## 3.1.2. QUARTERLY MOBILE SUBSCRIPTIONS

Quarterly mobile subscriptions over the period 2012 to 2013 remained relatively constant in the mobile voice market, as Figure 35 illustrates. There was a marginal decrease in subscriptions from 1.88 million subscriptions at the end of the fourth quarter of 2012 to 1.87 million in the first quarter of 2013. Subsequently, there were minimal improvements observed during the remaining quarters of 2013 from 1.87 million to 1.94 million subscriptions by the end of the fourth quarter.

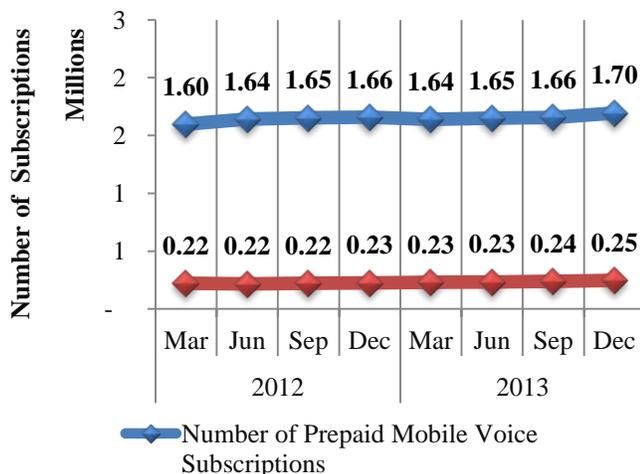
Figure 36 shows the quarterly trend for both prepaid and postpaid subscriptions over a two year period (2012-2013). In keeping with the general mobile subscriptions trend for this period, a small decrease in prepaid subscriptions in the first quarter was followed by a steady quarter on quarter growth. Subsequent to the 1.2 percent dip observed in the first quarter of 2013, prepaid subscriptions experienced its highest growth in the fourth quarter, increasing by 2.4 percent. On the other hand, postpaid subscriptions were relatively constant, with minimal increases noted in the third and fourth quarters.

Figure 35: Quarterly Number of Subscriptions 2012–2013



Source: TATT

Figure 36: Quarterly Prepaid and Postpaid Subscriptions: 2012 – 2013

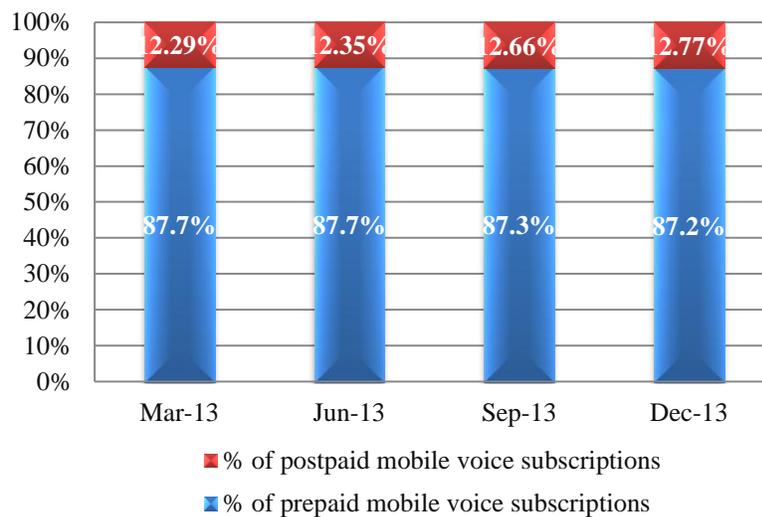


Source: TATT

# MOBILE VOICE MARKET REVIEW

In terms of the share of prepaid and postpaid mobile subscriptions on a quarterly basis, prepaid subscriptions averaged just over 87 percent during 2013, as it continued to comprise the majority of the mobile voice market subscriptions. On the other hand, prepaid subscriptions accounted for, on average, 12.5 percent of mobile subscriptions in 2013, as seen in Figure 37.

Figure 37: Percentage of prepaid and postpaid subscribers on a Quarterly Basis – 2013



Source: TATT

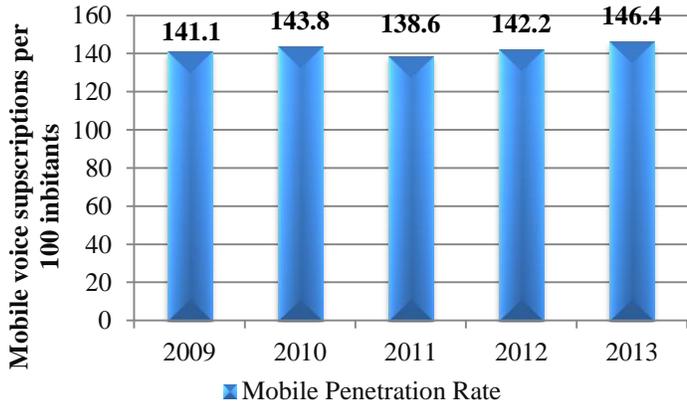
# MOBILE VOICE MARKET REVIEW

## 3.2. MOBILE PENETRATION

### 3.2.1. MOBILE PENETRATION RATE IN THE DOMESTIC MARKET

The increase in the number of mobile subscriptions is reflected in the increase of the mobile penetration<sup>30</sup> rate for 2013. As at December 2013, mobile penetration stood at 146.4, an increase of 2.9 percent from the previous year. This implies that there were approximately 146 mobile subscriptions per 100 inhabitants in Trinidad and Tobago as at the end of 2013. Figure 38 highlights the mobile penetration rate from 2009 to 2013.

Figure 38: Mobile Penetration Rate per 100 Inhabitants for Trinidad and Tobago 2009-2013



Source: TATT

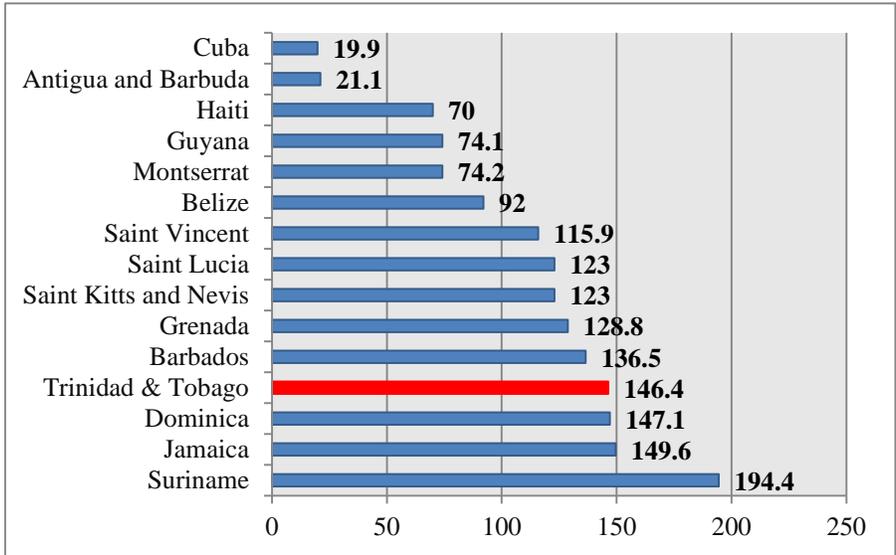
<sup>30</sup>Mobile Penetration is calculated = (number of mobile subscriptions / total population \*100). Population based on the Central Statistical Office’s 2011 Population and Housing Census Preliminary Count.

# MOBILE VOICE MARKET REVIEW

## 3.2.2. REGIONAL MOBILE PENETRATION RATES

Figure 39 compares the mobile penetration rates among Caricom Countries. Trinidad and Tobago recorded the fourth highest mobile penetration rate of 146.4 for the 2013 period. According to Business Monitor International, Suriname ranks first in mobile voice penetration with approximately 194 mobile subscriptions per 100 of its population. Second was Jamaica recording a mobile penetration rate of 149.6, and third was Dominica with 147.1.

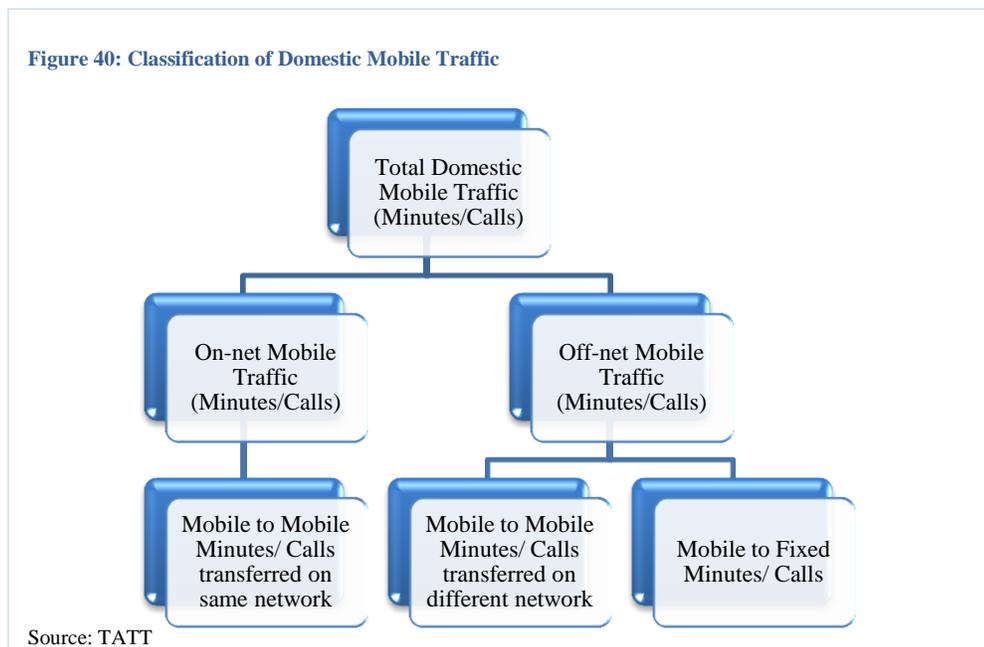
Figure 39: Mobile Penetration Rates among Caricom Countries – 2013



# MOBILE VOICE MARKET REVIEW

## 3.3. DOMESTIC MOBILE VOICE TRAFFIC

Domestic mobile voice traffic refers to the number of minutes or calls originating on domestic mobile networks. This traffic can be categorised as follows:



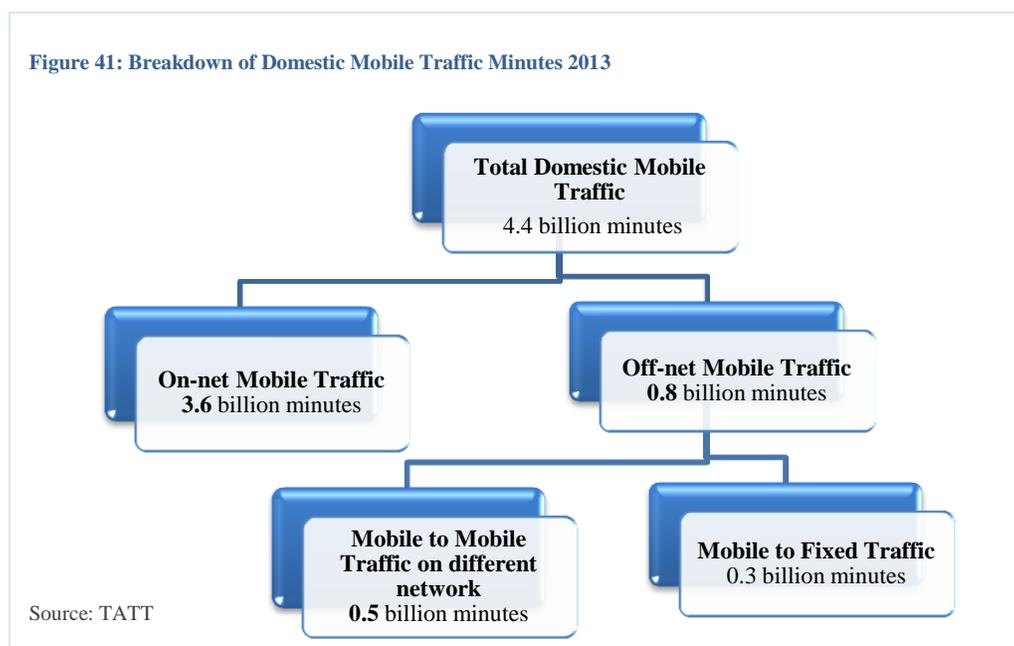
### 3.3.1. ANNUAL DOMESTIC MOBILE VOICE TRAFFIC IN MINUTES

As illustrated in Figure 41 below, domestic mobile voice traffic totalled 4.4 billion minutes for the 2013 period, a 4.3 percent decrease from 2012. Of the 4.4 billion minutes of domestic mobile traffic, on-net<sup>31</sup> traffic totalled 3.6 billion minutes while off-net<sup>32</sup> traffic recorded 0.8

<sup>31</sup> On-net mobile traffic refers to traffic originating on a service provider's mobile network and terminating on the same mobile network.

# MOBILE VOICE MARKET REVIEW

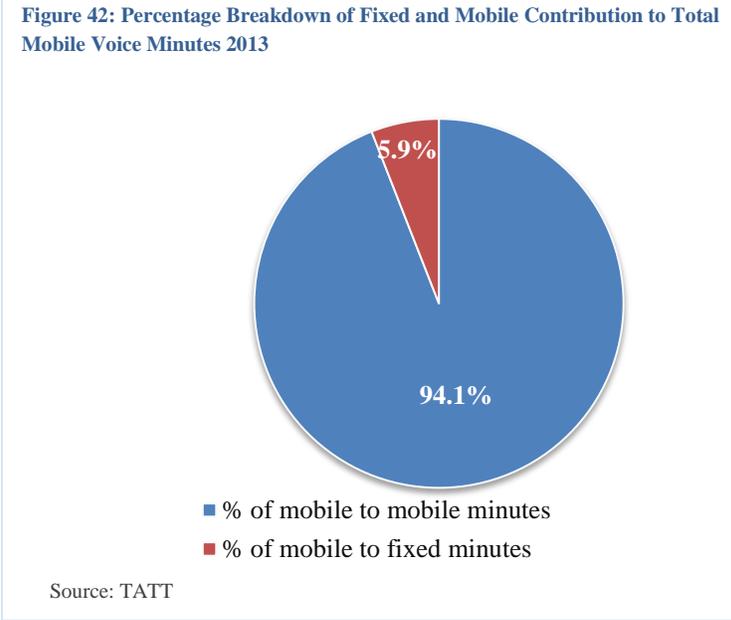
billion minutes. Off-net mobile to mobile minutes totalled 0.5 billion, while off-net mobile to fixed minutes totalled 0.3 billion minutes. It has been observed that all categories of traffic minutes decreased in 2013 with the exception of mobile to mobile calls on a different network. Mobile to fixed minutes decreased by a mere 0.1 percent while on-net minutes fell by 6.0 percent. Mobile to mobile traffic minutes on different networks grew by 5.4 percent as mobile consumers increased their time spent on off-net calls.



Furthermore, the percentage of total domestic mobile voice minutes terminating on a domestic mobile network was estimated to be 94.1 percent, while 5.9 percent represented the number of domestic mobile minutes terminating on a domestic fixed network. Figure 12 below gives a representation of this percentage contribution.

<sup>32</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.

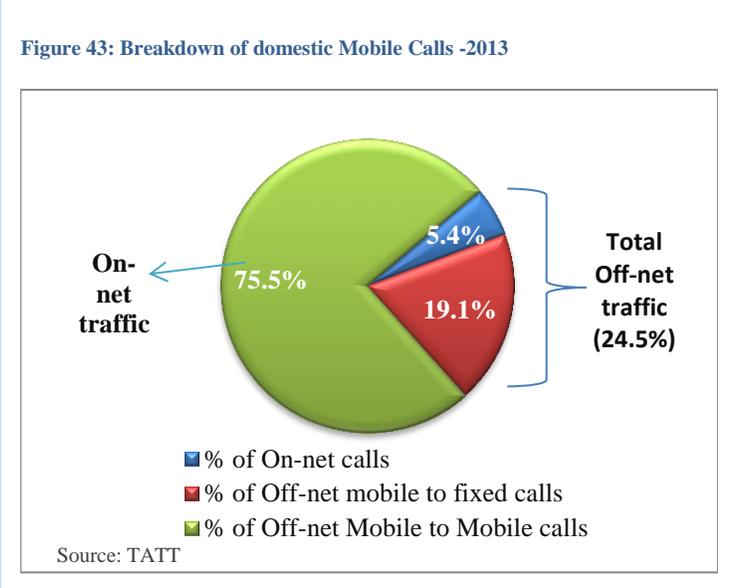
# MOBILE VOICE MARKET REVIEW



### 3.3.2. ANNUAL DOMESTIC MOBILE VOICE CALL VOLUMES

Domestic mobile voice calls totalled 3.6 billion calls for the 2013 period, a 14.2 percent increase from 2012. Of the 3.6 billion calls, on-net traffic totalled 2.7 billion calls or 75.5 percent of total mobile calls, whilst off-net traffic recorded 0.9 billion calls or 24.5 percent of total mobile calls.

Further divided, off-net traffic comprised 0.2 billion mobile to fixed calls or 5.4 percent of total mobile calls, with the remaining 0.7 billion calls representing mobile to mobile off-net traffic or 19.1 percent of total mobile calls. A breakdown of the subcategories of traffic by number of calls is shown in Figure 43.

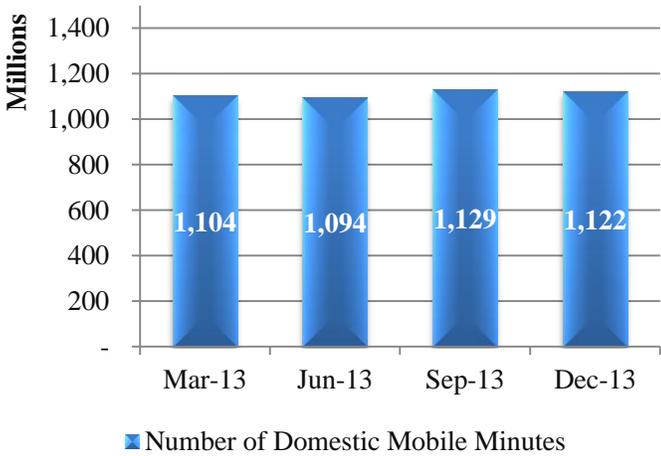


# MOBILE VOICE MARKET REVIEW

## 3.3.3. QUARTERLY DOMESTIC MOBILE VOICE MINUTES

While gradual decreases were observed in mobile voice minutes in 2012, the time spent on mobile voice calls in 2013 fluctuated for each subsequent quarter, as duration in call times tended to vary. As shown in Figure 44, total domestic mobile voice traffic decreased in the second quarter, from 1,104 million minutes to 1,094 million minutes, a 0.9 percent decrease between periods. Domestic mobile minutes in the third quarter stood at 1,129 million, a 3.2 percent increase from the previous quarter. Mobile minutes subsequently decreased in the fourth quarter, to record 1,122 million domestic mobile minutes (down by 0.6 percent). Notably, the decreases in the total mobile minutes were relatively minimal.

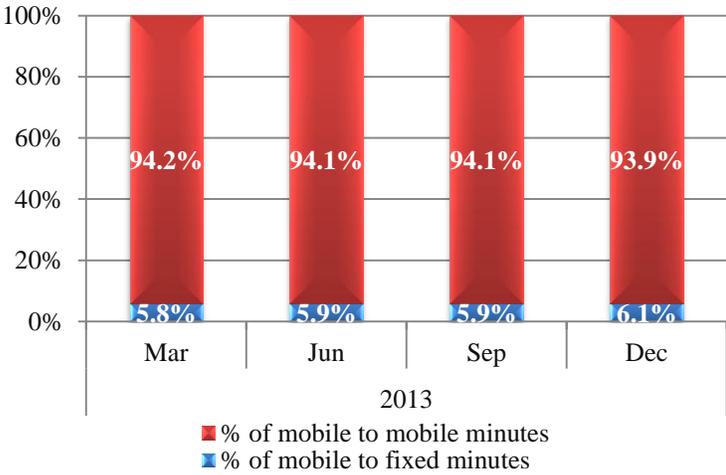
Figure 45: Quarterly Mobile Voice Minutes 2013



Source: TATT

As Figure 45 illustrates, these quarter on quarter fluctuations did not significantly change the ratio of mobile to fixed minutes and mobile to mobile minutes, as this ratio remained relatively stable over the period despite the small percentage change in the fourth quarter.

Figure 44: Quarterly Mobile Voice Minutes by Type 2013

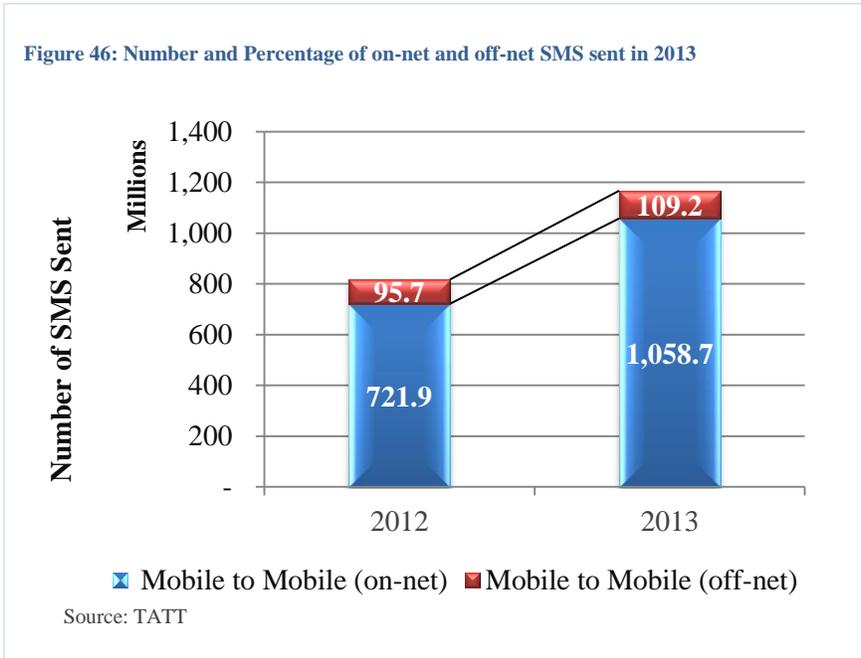


Source: TATT

# MOBILE VOICE MARKET REVIEW

## 3.3.4. DOMESTIC MOBILE SHORT MESSAGING SERVICE (SMS)

The number of domestic mobile SMS sent by mobile customers experienced a marked increase in 2013. Mobile subscribers sent a total of 1,167.8 million SMS in 2013, increasing by 42.8 percent when compared to 2012. As Figure 46 shows, 1,058.7 million SMS were sent on-net and 109.2 million off-net. A significant increase in on-net and off-net SMS was also represented by 46.7 percent and 14.1 percent respectively.

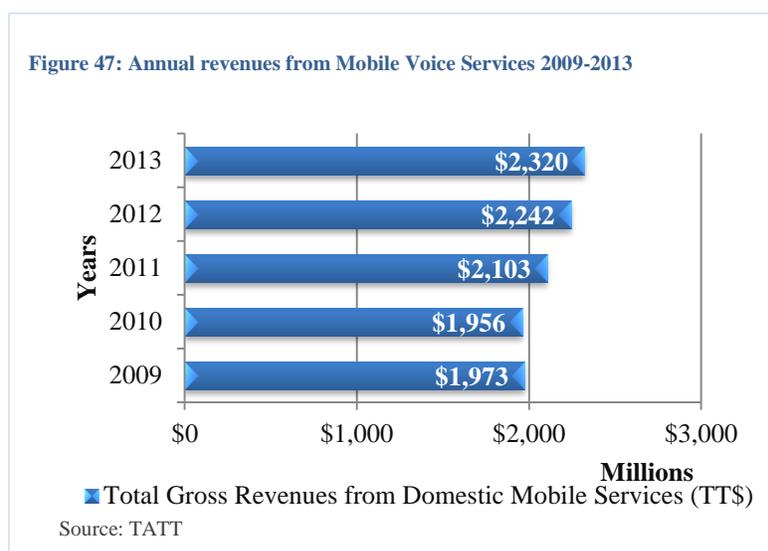


# MOBILE VOICE MARKET REVIEW

## 3.4. MOBILE VOICE<sup>33</sup> REVENUES

### 3.4.1. ANNUAL REVENUES FROM MOBILE VOICE SERVICES<sup>34</sup>

Total annual revenues from mobile voice services amounted to TT\$2,320 million in 2013, an increase of 3.5 percent over the previous period. The annual revenue trend from 2009 to 2013 is illustrated in Figure 47.



Of the TT\$2,320 million generated from the mobile voice market, prepaid revenues accounted for TT\$1,604 million representing 69.1 percent of this market. This indicates a 5.8 percentage increase in revenues generated by prepaid subscriptions compared to the previous year. Postpaid revenues contributed TT\$558.4 million representing 24.1 percent of the total mobile earnings. This meant a decrease of 6.9 percent from 2012.

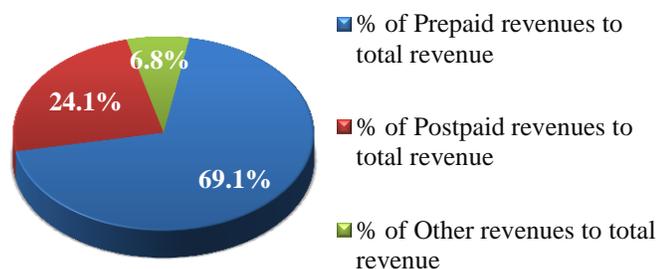
<sup>33</sup> Mobile voice revenues includes revenues from SMS services

<sup>34</sup> These revenues exclude mobile Internet revenue which is reported within the Internet section of this report.

# MOBILE VOICE MARKET REVIEW

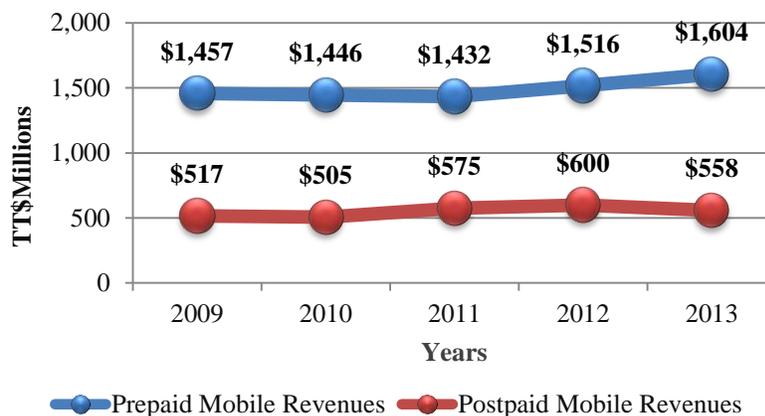
The difference of TT\$157.3 million, classified as other, was generated from equipment sales, SIM card sales and administrative charges. Figure 48 below illustrates the percentage breakdown of revenues from mobile voice services while Figure 49 shows the five (5) year trend in prepaid and postpaid revenues.

**Figure 48: Percentage of Prepaid and Postpaid Contributions to Revenues from Mobile Voice Services for 2013**



Source: TATT

**Figure 49: Revenues from Mobile Voice Services-Prepaid and Postpaid 2009-2013**



Source: TATT

# MOBILE VOICE MARKET REVIEW

## 3.4.2. QUARTERLY REVENUES FROM MOBILE VOICE SERVICES

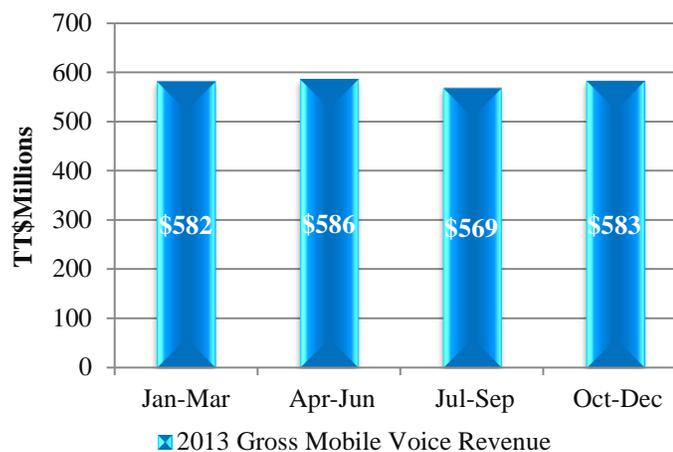
Figure 50 illustrates the quarterly increases and decreases in revenues for 2013. Revenues increased from TT\$582 million in the first quarter to TT\$586 million in the second quarter which was notably the highest earning quarterly revenue for 2013. Subsequently, revenues decreased by TT\$17 million in the third quarter. Revenues increased again in the fourth quarter where it stood at TT\$583 million.

The composition of mobile voice revenues, on the other hand, experienced varying quarterly trends. A TT\$10 million decrease

in prepaid revenues was recorded in the second quarter from TT\$390 million to TT\$380 million. Subsequent to this, revenues increased to TT\$410 million and TT\$424 million for the third and fourth quarters respectively.

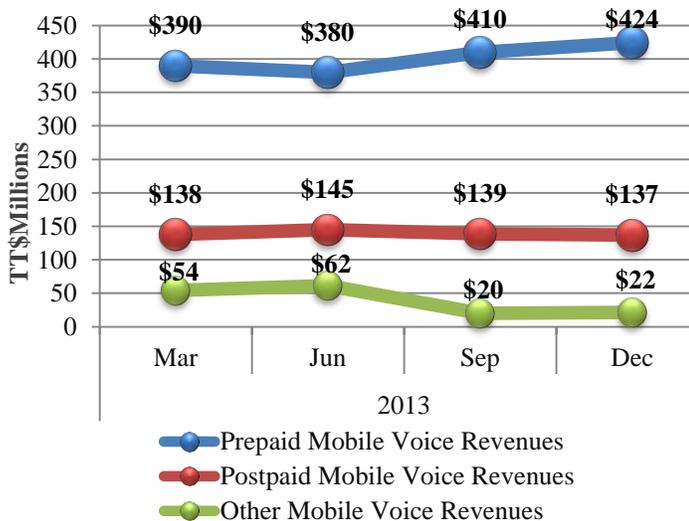
Conversely, postpaid revenues remained relatively flat, recording TT\$138 million in the first quarter and TT\$145 million in the second quarter. There was a \$6 million decrease in the third quarter and a further reduction in the fourth quarter as illustrated by Figure 51.

Figure 50: Quarterly revenues from mobile voice services 2013



Source: TATT

Figure 51: Quarterly Prepaid and Postpaid Mobile Voice Revenues – 2013

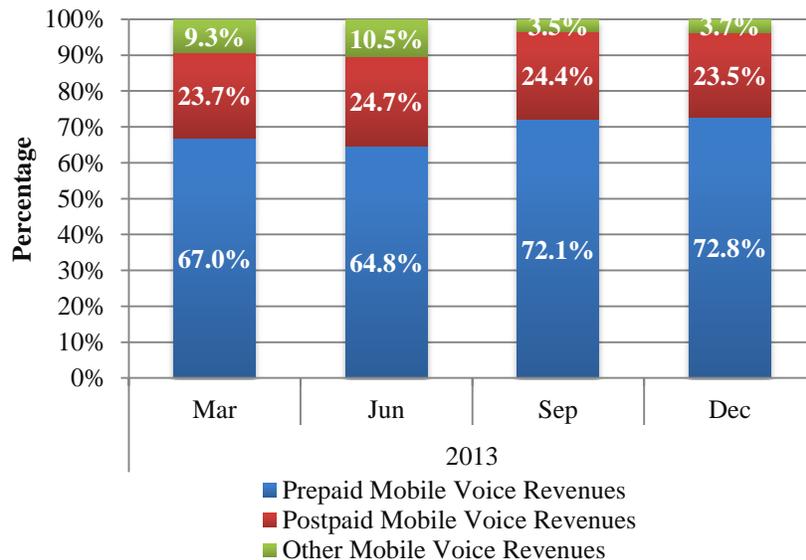


Source: TATT

# MOBILE VOICE MARKET REVIEW

From a market share position, prepaid subscriptions contributed the majority of the revenues in the mobile voice market with a quarterly average of 69.2 percent, while postpaid subscriptions contributed an average of 24.1 percent. As Figure 52 illustrates, the proportion of prepaid to postpaid revenues as well as other mobile revenues, fluctuated during each quarter of 2013. Other mobile voice revenues contributed an average of 6.8 percent of gross revenues during the 2013 period.

**Figure 52: Percentage of Revenues Contributed by Prepaid and Postpaid Mobile Voice Subscriptions - 2013**



Source: TATT

# MOBILE VOICE MARKET REVIEW

## 3.5. MOBILE MARKET CONCENTRATION

Using the Hirschman-Herfindahl Index (HHI), the Authority calculated the level of concentration in the mobile voice market of Trinidad and Tobago for the year ending December 2013.

‘Number of subscriptions’ was used to determine market share for the service providers. On comparing the last five years, Figure 53 shows that the HHI has been relatively stable with roughly 5000 points being achieved over the period.

The domestic mobile voice market showed a minimal increase in the level of concentration in 2013 as compared to 2012. In fact, the HHI in the mobile voice market increased by 19 points, from 5027 in 2012 to 5,046 as at December 2013. Figure 54 illustrates the HHI quarterly trend for 2013.

Figure 53: Hirschman-Herfindahl Index for the Mobile Voice Market 2009-2013

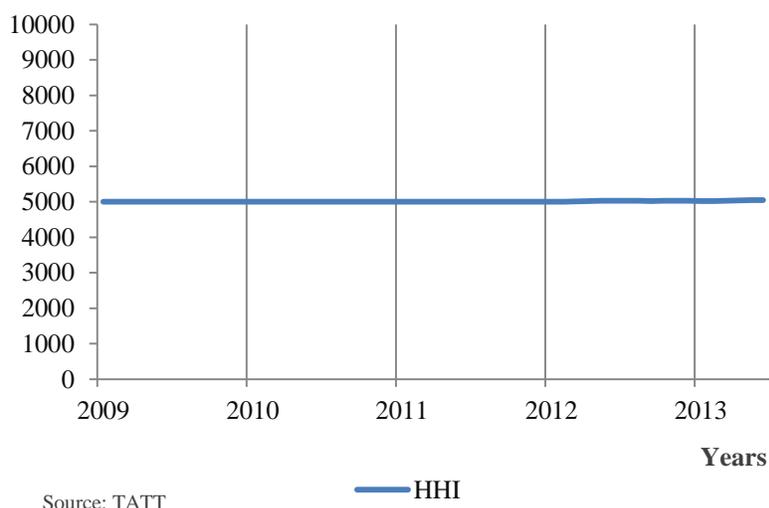
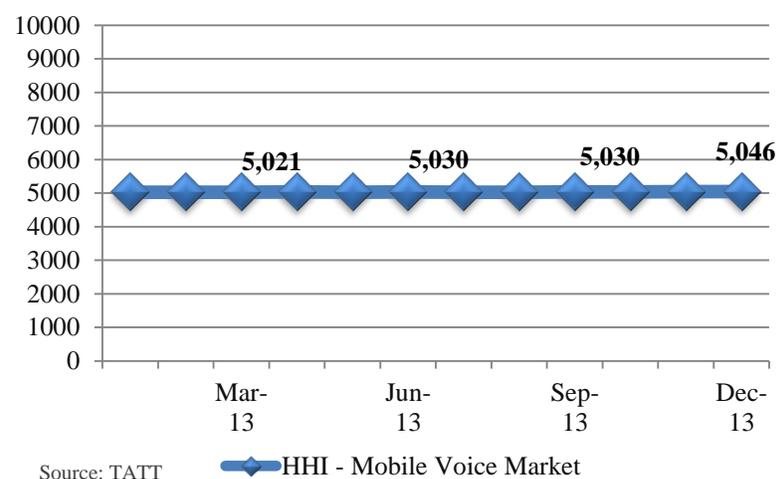


Figure 54: Hirschman-Herfindahl Index for the Mobile Voice Market – 2013

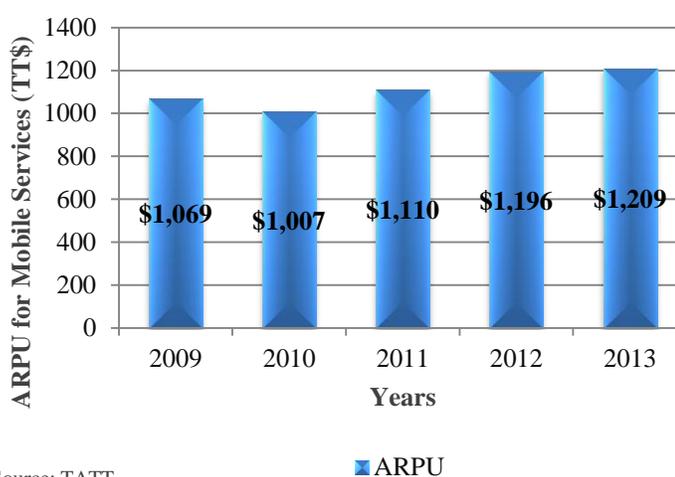


# MOBILE VOICE MARKET REVIEW

## 3.6. AVERAGE REVENUE PER USER

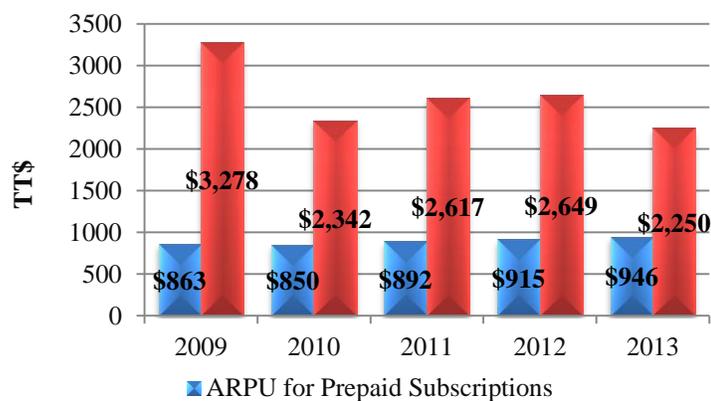
During 2013, customers of mobile subscriptions spent an average of TT\$1,209 for mobile voice services<sup>35</sup>. This represents a small increase of TT\$14 or 1.1 percent in the average revenue per user (ARPU) over the amount recorded for 2012. The ARPU generated for prepaid mobile subscriptions stood at TT\$946; an increase of TT\$13.1 or 3.4 percent when compared to 2012. On the other hand, the ARPU generated for postpaid subscriptions was TT\$2,250; a decrease of TT\$399.03 or 15.1 percent. Figure 55 highlights total ARPU for mobile voice services while Figure 56 compares the ARPU earned for prepaid and postpaid subscriptions over the past five years.

Figure 56: ARPU for Mobile Voice Services 2009-2013



Source: TATT

Figure 55: ARPU for Prepaid and Postpaid Mobile Voice Subscriptions – 2013



Source: TATT

<sup>35</sup> ARPU from mobile voice services excludes Mobile Internet services.

# INTERNET MARKET REVIEW

## Key Market trends and Observations in the Internet Market

- **Following two years of consecutive double digit growth, fixed Internet market slowed increasing by just 3.3 percent this year.**
- **The rate of business broadband Internet growth exceeds that of residential; 15% compared to 3%**
- **4G mobile Internet users now account for the majority of mobile Internet users; 52% of mobile Internet users.**
- **About half of the population had either a fixed Internet subscription and/or a mobile Internet subscription at the end of 2013**

## 4. INTERNET MARKET DATA

This section provides information on the provision of Internet services in Trinidad and Tobago, over public domestic fixed (wired or wireless) and mobile telecommunications networks. In 2013, of the fifteen (15) authorised fixed domestic telecommunications services concessionaires, the following eight (8) provided fixed Internet services:

- Telecommunications Services of Trinidad and Tobago (TSTT)
- Columbus Communications Trinidad Limited (CCTL)
- Green Dot Limited
- Three Sixty Communications Limited
- Illuminat (Trinidad & Tobago) Limited
- Lisa Communications Limited
- Open Telecom Limited
- Air Link Communications<sup>36</sup>

There were also two mobile operators that were authorised to provide domestic mobile telecommunications services, including the provision of Internet services to the public. They were:

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<sup>36</sup> Air Link Communications started offering fixed wireless Internet services in 2013 and data is not yet available at the time of publication of this report.

# INTERNET MARKET REVIEW

- Telecommunications Services of Trinidad and Tobago (bmobile)<sup>37</sup>, and
- Digicel (Trinidad and Tobago) Limited

Operators in Trinidad and Tobago 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-coax networks utilizing DOCSIS 3.0 technology, as well as a mix of Fibre to the Curb (FTTC), Fibre to the Business (FTTB) or Home (FTTH) topologies while fixed wireless Broadband Internet<sup>38</sup> operators employ WiMAX technologies to support the need for services demanding ever higher speeds on the access network. Mobile Internet operators offered customers mobile broadband Internet services utilizing Evolved High Speed Packet Access (HSPA+). Mobile Internet services via 2.5G technology (i.e. Enhanced Data Rates for GSM Evolution (EDGE)) were also offered in 2013.

The following is review of the performance of this market for the period January to December 2013.

## 4.1. FIXED INTERNET SUBSCRIPTIONS

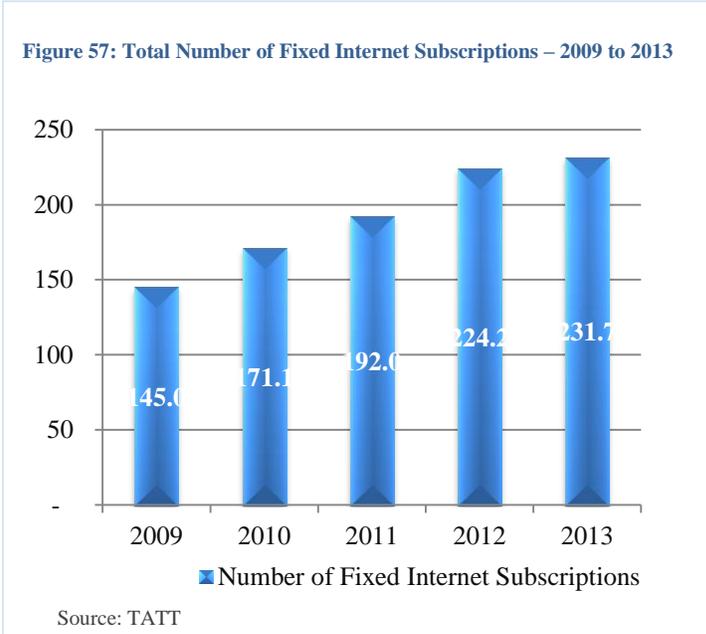
The market for Fixed Internet services continued its growth in 2013 as operators continue to expand their services offered to the public. Following two years of consecutive double digit growth, this market has decelerated, increasing by just 3.3 percent this year. There were approximately 231.7 thousand fixed Internet subscriptions in Trinidad and Tobago, as at December 2013. Figure 57 below illustrates the trend for fixed Internet subscriptions from 2009 to 2013.

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<sup>37</sup> bmobile is the mobile services division of TSTT, therefore their Internet services are recorded as one concessionaire.

<sup>38</sup> Fixed Wireless Internet Broadband subscriptions include some CDMA2000 EvDO subscriptions that cannot be separated at this time.

# INTERNET MARKET REVIEW



## 4.1.1. FIXED BROADBAND AND FIXED NARROWBAND INTERNET SUBSCRIPTIONS

Almost all fixed Internet subscriptions are now broadband subscriptions. Fixed broadband<sup>39</sup> Internet subscriptions stood at 229.6 thousand as at December 2013 which accounts for 99 percent of total fixed Internet subscriptions. Fixed narrowband<sup>40</sup> Internet subscriptions have been drastically falling in Trinidad and Tobago which now stands at about 2 thousand subscriptions. This represents a mere 1 percent of this market. In fact, it was observed that the percentage decline in fixed narrowband subscriptions was significantly higher than the growth in fixed broadband subscriptions. In comparison to 2012, broadband subscriptions increased by 4 percent (8.4 thousand subscriptions), whereas narrowband subscriptions decreased by 30 percent (almost 1 thousand subscriptions). Over the last five years fixed broadband subscriptions have significantly outnumbered fixed narrowband subscriptions as illustrated in Figure 58 and further

<sup>39</sup> Broadband can be defined as speeds > 256 kbits per second

<sup>40</sup> Narrowband can be defined as speeds ≤ 256 kbits per second

# INTERNET MARKET REVIEW

highlighted in Figure 59 below, which depicts the percentage of broadband and narrowband subscriptions to total fixed Internet subscriptions at the end of 2013.

Figure 58: Fixed Narrowband and Broadband Subscriptions – 2009 to 2013

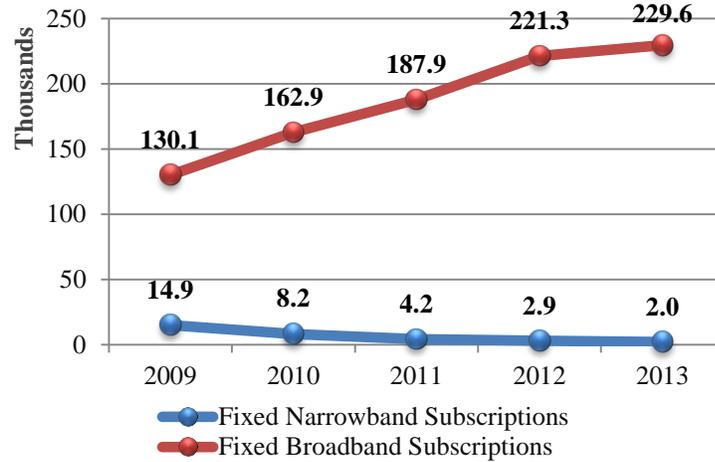
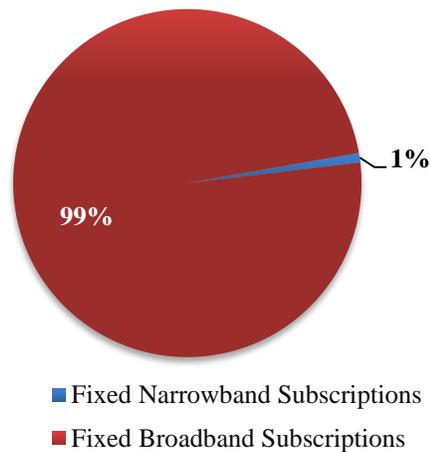


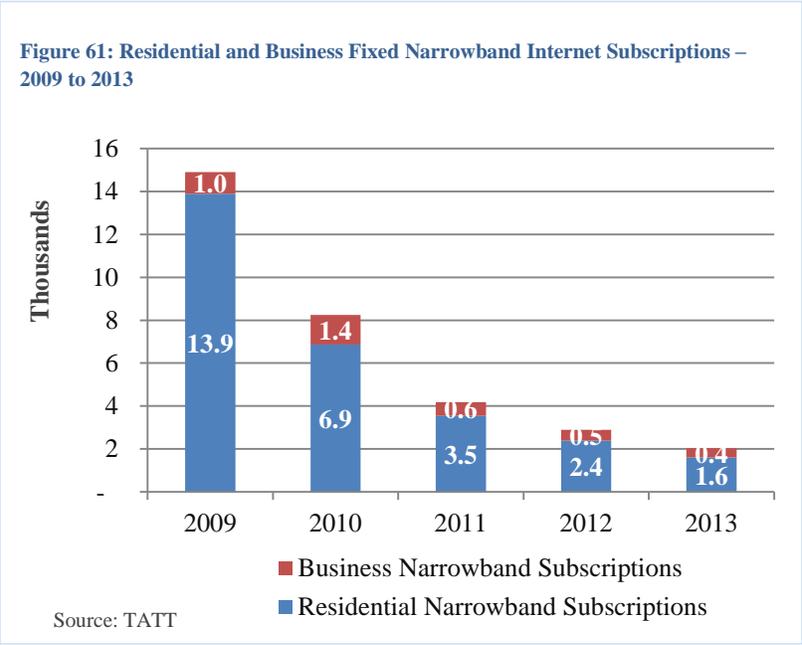
Figure 59: Percentage of Broadband and Narrowband Fixed Internet Subscriptions 2013



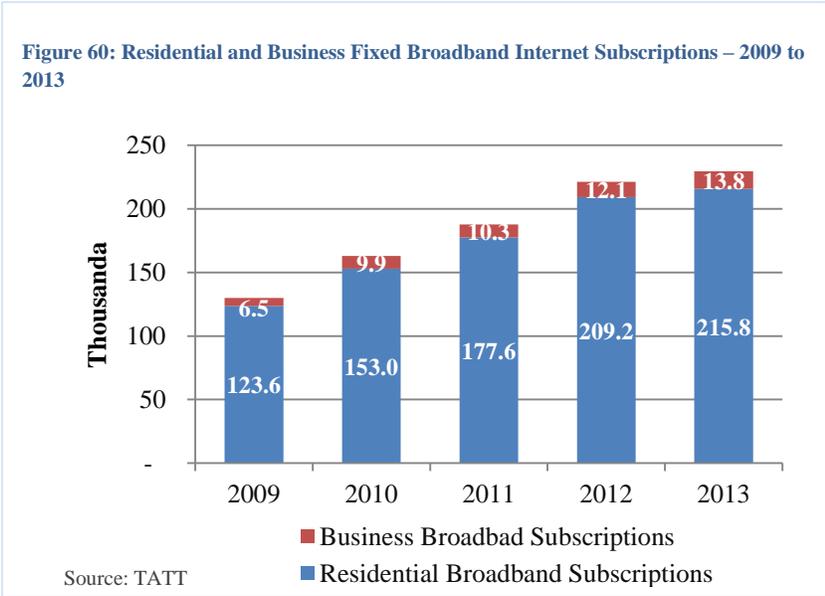
# INTERNET MARKET REVIEW

The number of fixed Internet subscriptions can be further subdivided into residential and business categories. Of the 2 thousand narrowband subscriptions, approximately 1.6 thousand were residential while 0.4

thousand were business subscriptions, as shown in Figure 60. Compared to 2012, it was observed that both residential and business narrowband subscriptions decreased by 33 percent and 14 percent respectively. Of the 229.6 thousand broadband subscriptions 215.8 thousand were residential while 13.8 thousand were business

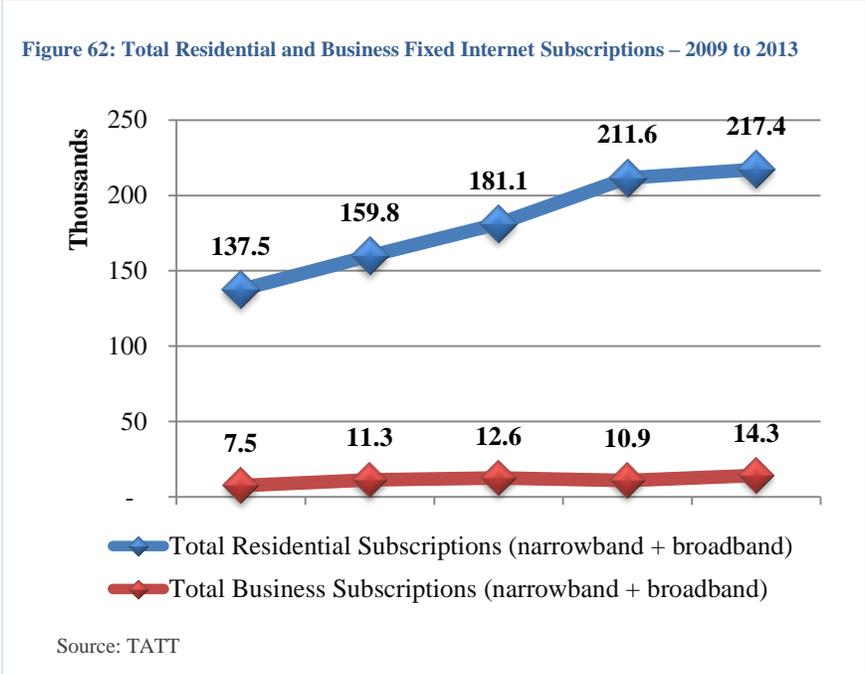


subscriptions, as Figure 61 below illustrates. It was also observed, that compared to 2012, both residential and business broadband subscriptions increased. Notably, the growth in business broadband subscriptions increased 5 times more than that of residential broadband subscriptions (15 percent and 3 percent respectively).



# INTERNET MARKET REVIEW

Total residential subscriptions, including narrowband and broadband, amounted to approximately 217.4 thousand, growing by 2.7 percent or 5.8 thousand subscriptions from 2012. Total business subscriptions measured roughly 14.3 thousand, increasing by 30.8 percent or 3.4 thousand subscriptions. Figure 62 illustrates the five year trend of residential and business fixed Internet subscriptions from 2009 to 2013.



## 4.1.2. RESIDENTIAL FIXED BROADBAND INTERNET SUBSCRIPTIONS BY SPEED

The data for the broadband market revealed that customers subscribed to Internet speeds from 256kbit/s up to 100Mbit/s. Broadband Internet speeds equal to or above 10 Mbit/s were the most popular among residential customers with 95.9 thousand subscriptions out of 215.8 thousand residential broadband customers. In this speed category, it is important to note that the number of subscriptions, although relatively flat from 2009 to 2012, increased sharply in 2013 (from 10.5 thousand in 2012 to 95.9 in 2013). On the other hand, Internet speeds between 2Mbit/s to less than 10Mbit/s were the least popular with 51.8 thousand subscriptions. Figure 63 below shows

# INTERNET MARKET REVIEW

that this Internet speed category fell drastically from 121.8 to 51.8 thousand subscriptions. It is quite clear from this data that there has been a movement of subscriptions between these two Internet speed categories. In fact, it is noted that in 2013 a number of customers enjoyed enhanced broadband services at similar prices through the upgrading of broadband speeds. This is further supported by the increasing proportion of residential broadband Internet subscriptions to speeds equal to or above 10Mbit/s which comprised 44 percent of all residential broadband subscriptions. Approximately 32 percent of residential broadband customers subscribed to speeds between

256kbit/s to less than 2Mbit/s as illustrated in Figure 64.

Figure 63: Number of Residential Broadband Subscriptions by Download Speed – 2009 to 2013

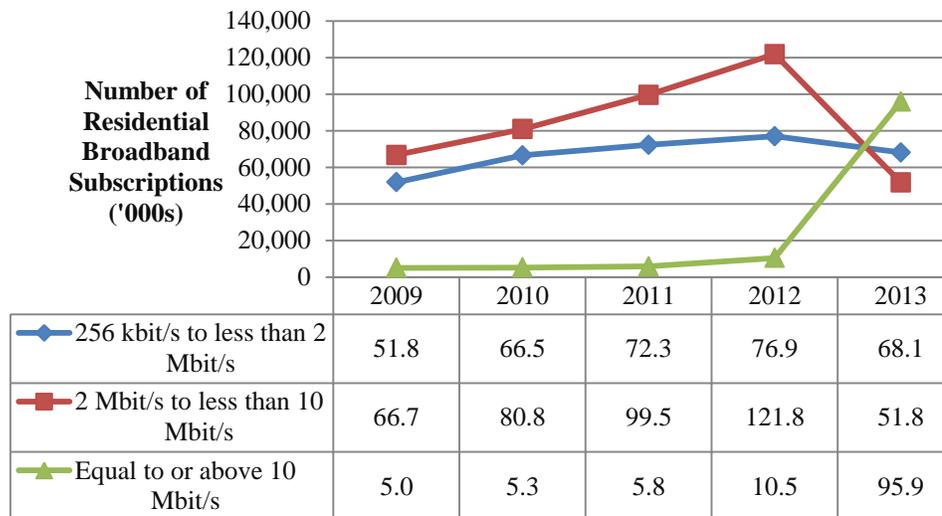
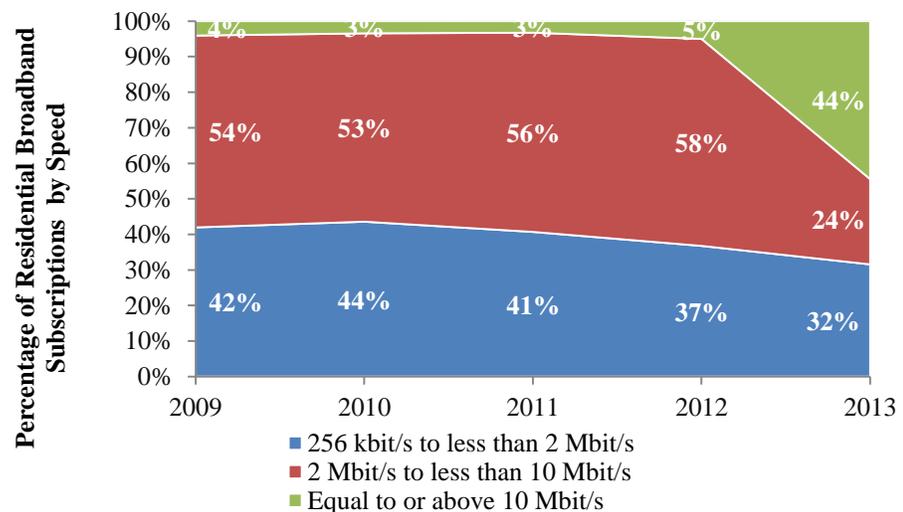


Figure 64: Proportion of Residential Broadband Subscriptions by Download Speed – 2009 to 2013

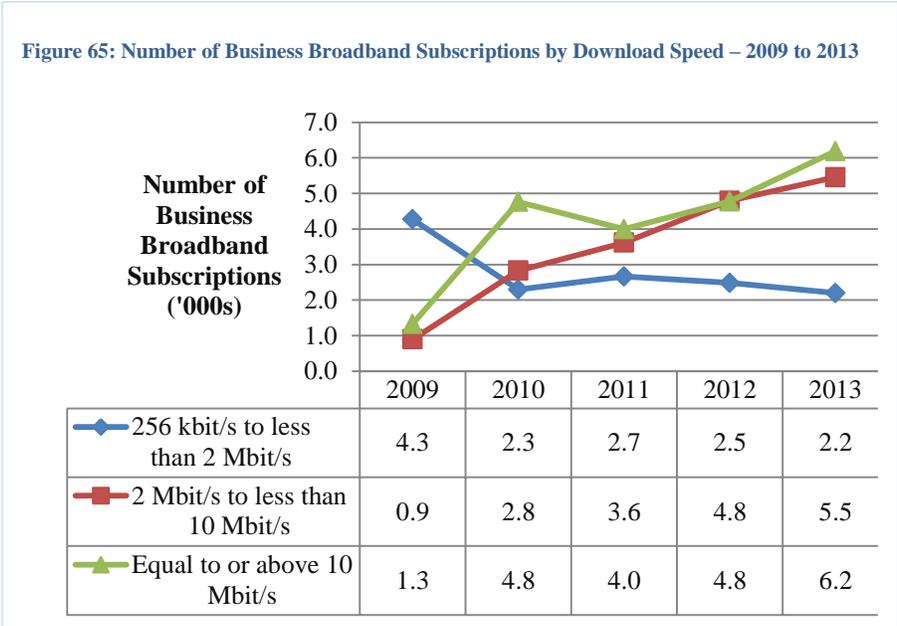


Source: TATT

# INTERNET MARKET REVIEW

## 4.1.3. BUSINESS FIXED BROADBAND INTERNET SUBSCRIPTIONS BY SPEED

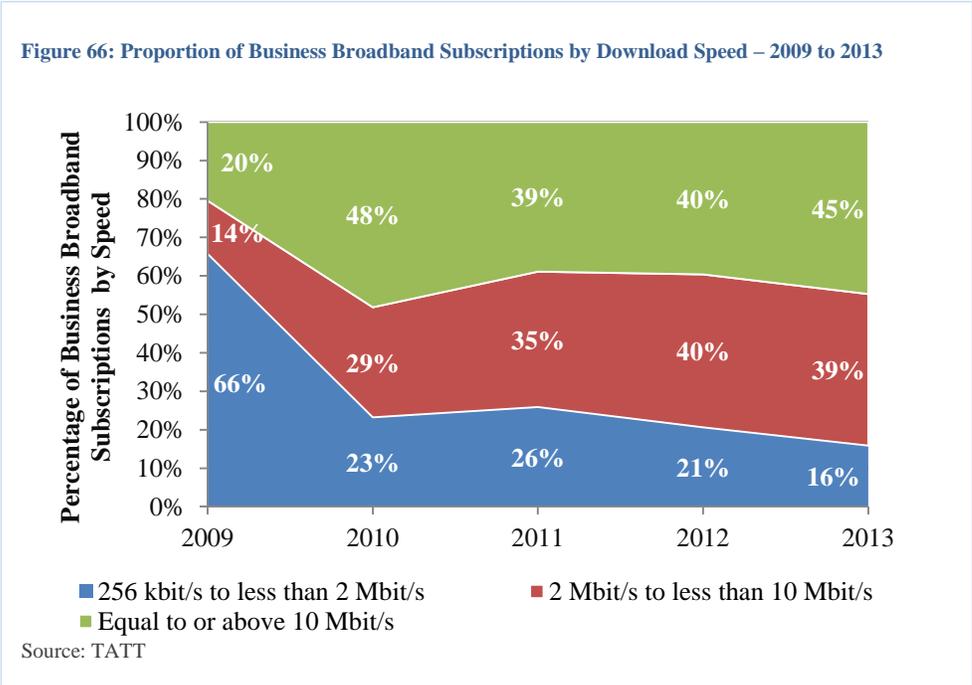
The number of business broadband customers subscribing to Internet speeds between 2 Mbit/s to less than 10Mbit/s and to Internet speeds equal to or above 10Mbit/s continued to rise gradually. The demand for these Internet speeds increased from 4.8 thousand each to 5.5 thousand and 6.2 thousand respectively. On the other hand, broadband Internet speeds of 256kbit/s to less than 2Mbit/s were the least popular among business customers, declining minimally from last year to only 2.2 thousand subscriptions. Figure 65 shows the number of business broadband subscriptions by download speed.



In 2013, business broadband customers who utilized speeds between 2Mbit/s to less than 10Mbit/s and speeds equal to or above 10Mbit/s comprised approximately 39 percent and 45 percent respectively as Figure 66 below illustrates. Cumulatively, it is noted that 84 percent of business broadband customers subscribed to speeds between 2Mbit/s to above 10Mbit/s.

# INTERNET MARKET REVIEW

Figure 66: Proportion of Business Broadband Subscriptions by Download Speed – 2009 to 2013



## 4.2. MOBILE INTERNET USERS

With 1.94 million mobile voice subscriptions in 2013, it is estimated that 23.2 percent<sup>41</sup> of the mobile population used Internet services via their cellular phones. As at December 2013, approximately 450.6 thousand mobile voice subscriptions were using mobile Internet services. Additionally, there were approximately 1.25 million mobile Internet subscriptions with the theoretical ability to use mobile data services on their handsets. Comparing this to the number of active mobile Internet users, it is estimated that 35 percent of mobile subscriptions that have the ability to access mobile Internet services actually used mobile data services as at December 2013.

<sup>41</sup> This estimate was derived using the formula: number of active mobile Internet subscriptions / number of mobile voice subscriptions.

# INTERNET MARKET REVIEW

In terms of mobile Internet users, total prepaid mobile Internet users exceeded that of postpaid users as is consistent with the proportion of prepaid mobile voice subscriptions. There were 332.2 thousand prepaid mobile Internet users compared to 118.4 thousand postpaid mobile Internet users. Figure 67 gives a breakdown of prepaid and postpaid mobile Internet users at the end of 2013.

Although there were more prepaid mobile Internet users, it was noted that a greater proportion of postpaid mobile voice subscriptions used the Internet in 2013. Out of the 1,696 thousand prepaid subscriptions (see Figure 32); only 20 percent used mobile Internet services. In contrast, out of the 248 thousand postpaid

mobile subscriptions (see Figure 32), 48 percent used mobile Internet services. This is illustrated in Figure 68, which compares prepaid and postpaid mobile subscriptions sub-divided by mobile voice only users and mobile voice and Internet users.

Figure 67: Number of Mobile Internet Subscriptions by Prepaid and Postpaid – 2013

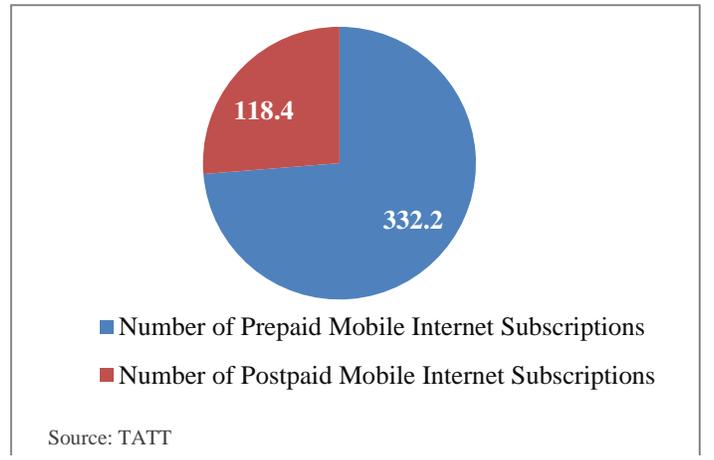
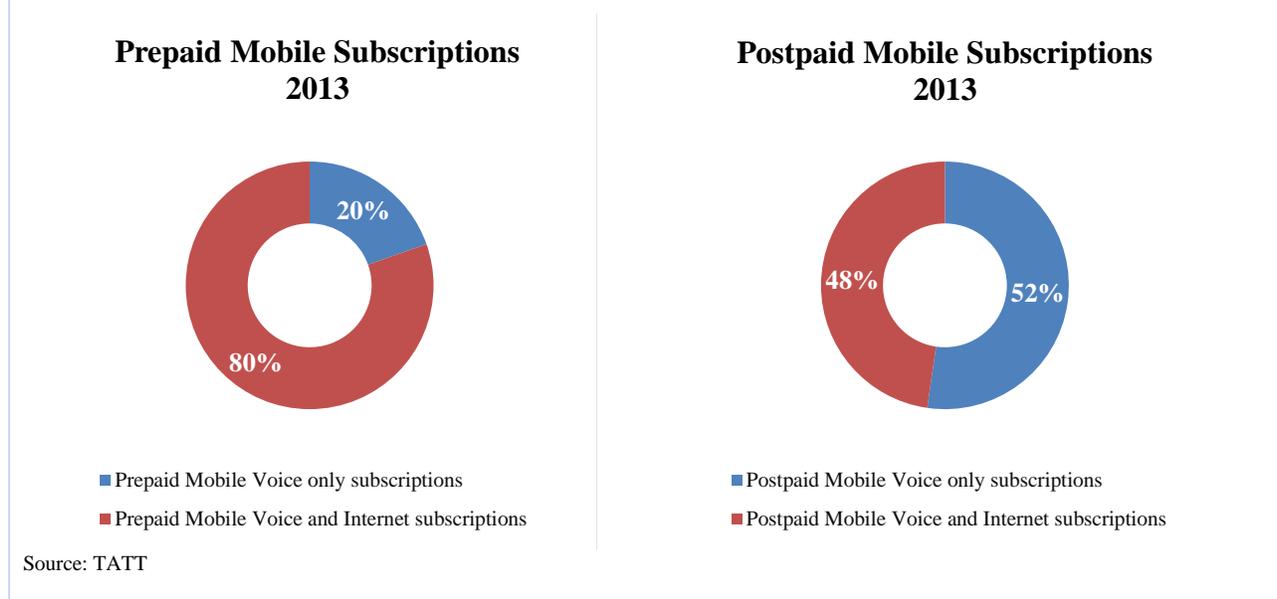
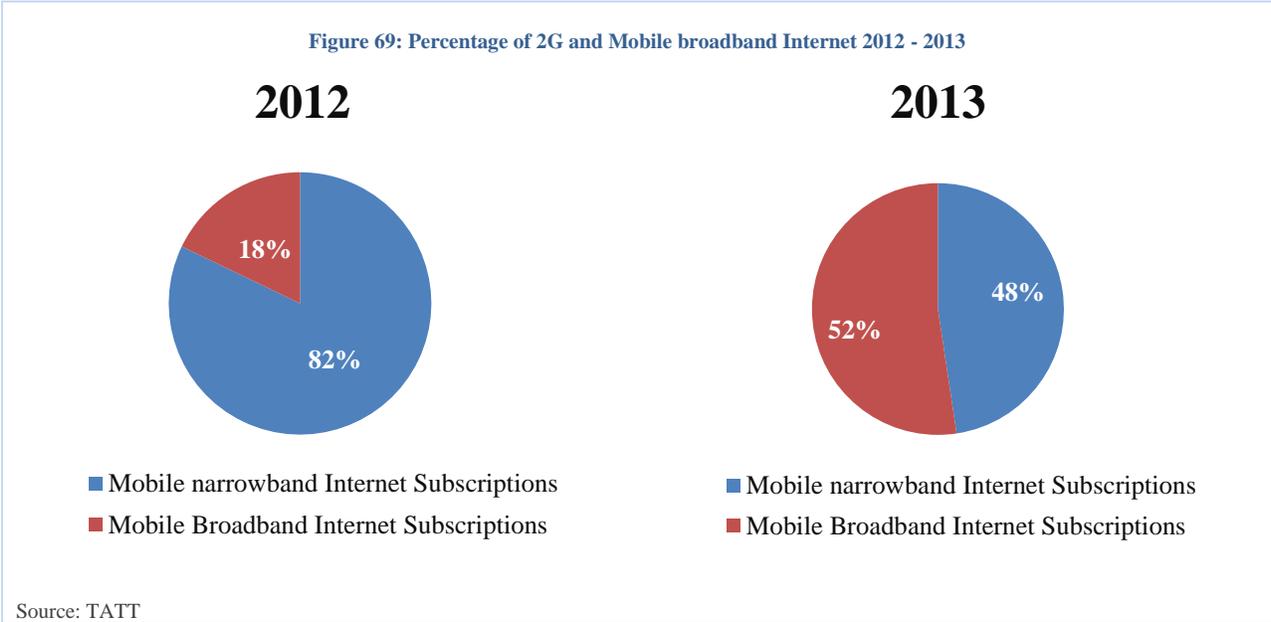


Figure 68: Comparison of Prepaid and Postpaid mobile Internet subscriptions 2012 and 2013



# INTERNET MARKET REVIEW

Since the launch of mobile broadband Internet services to the public in 2012, the demand by customers for this service has been favourable, with considerable growth being observed for both prepaid and postpaid. In 2012, when these services were initially introduced into the market, narrowband (2.5G) mobile Internet users accounted for the majority of mobile Internet users. One year later this has changed; mobile broadband Internet users now account for the majority of mobile Internet users. As Figure 69 illustrates, mobile broadband Internet users now account for 52 percent of all mobile Internet users as compared to the 18 percent recorded last year. Similar to its fixed counterpart, it is anticipated that there would be continued growth in the mobile Internet broadband market.

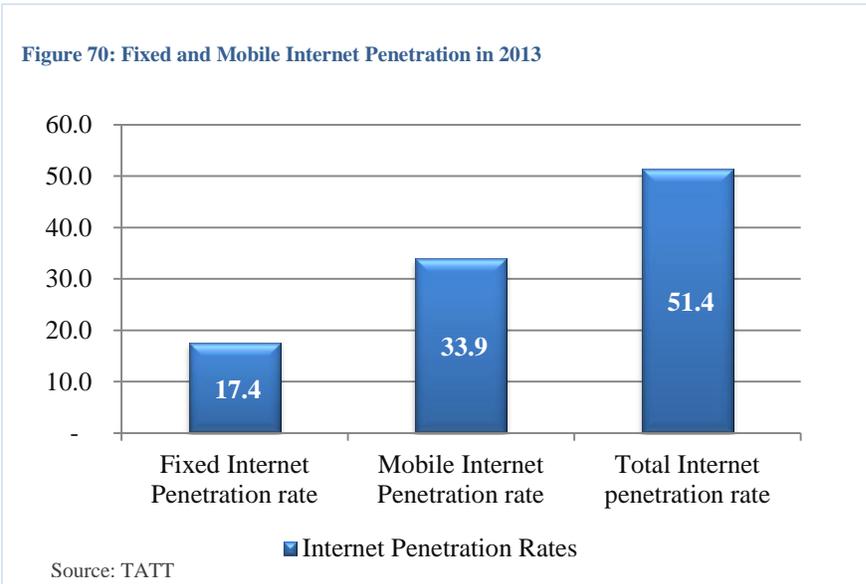


# INTERNET MARKET REVIEW

## 4.3. INTERNET PENETRATION

For 2013, Trinidad and Tobago recorded a fixed Internet penetration<sup>42</sup> of 17.4, increasing by 3.1 percent when compared to 2012. This means that approximately 17 out of every 100 persons in Trinidad and Tobago had a fixed Internet subscription at the end of 2013. On the other hand, mobile Internet penetration<sup>43</sup> measured 33.9 percent in 2013. This means that approximately 34 out of every 100 persons in Trinidad and Tobago were using mobile Internet services at the end of 2013.

The above suggests that a consolidated Internet penetration rate of 51.4 was achieved. This implies that approximately 51 out of every 100 persons in Trinidad and Tobago had either a fixed Internet subscription and/or a mobile Internet subscription at the end of 2013. Figure 70 below highlights the Internet penetration in 2013.

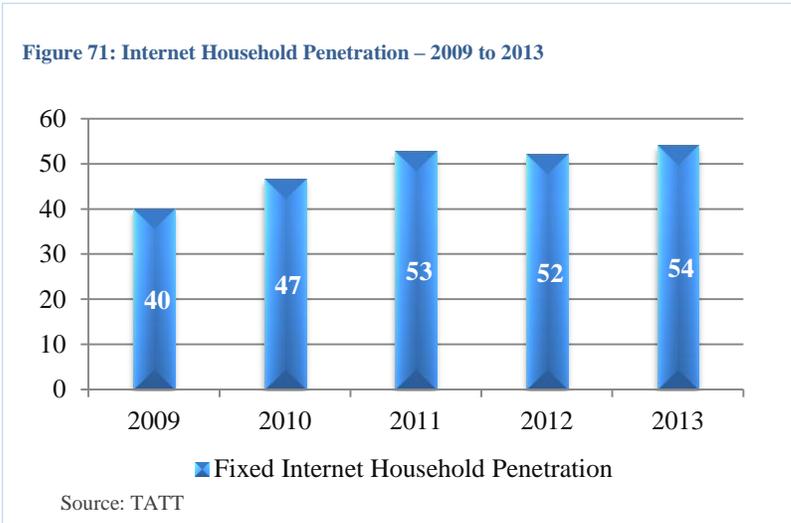


<sup>42</sup> Fixed Internet penetration is calculated:  $(\text{total number of Fixed Internet Subscriptions} / \text{Total Population}) * 100$

<sup>43</sup> Mobile Internet penetration is calculated:  $(\text{total number of Prepaid and Postpaid Mobile Internet Subscriptions} / \text{Total Population number}) * 100$ .

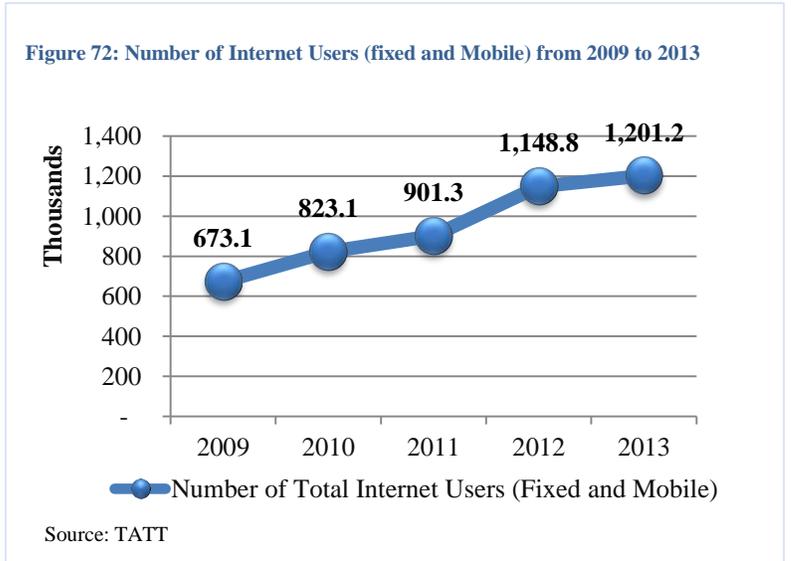
# INTERNET MARKET REVIEW

Similar to Internet penetration, Internet household penetration<sup>44</sup> is used to measure the proportion of households with Internet access at home. For 2013, Internet household penetration measured approximately 53.8. This indicated that approximately 54 out of every 100 households in Trinidad and Tobago subscribed to a fixed Internet service. Figure 71 below depicts the growth in Internet household penetration for the period 2009 to 2013.



### 4.3.1. INTERNET USERS

Another useful indicator to measure progress towards an Information society is the Internet penetration based on the number of Internet users<sup>45</sup>. The Authority estimates the number of fixed Internet users as the number of residential fixed Internet subscriptions for the year, multiplied by the average number of persons residing within a



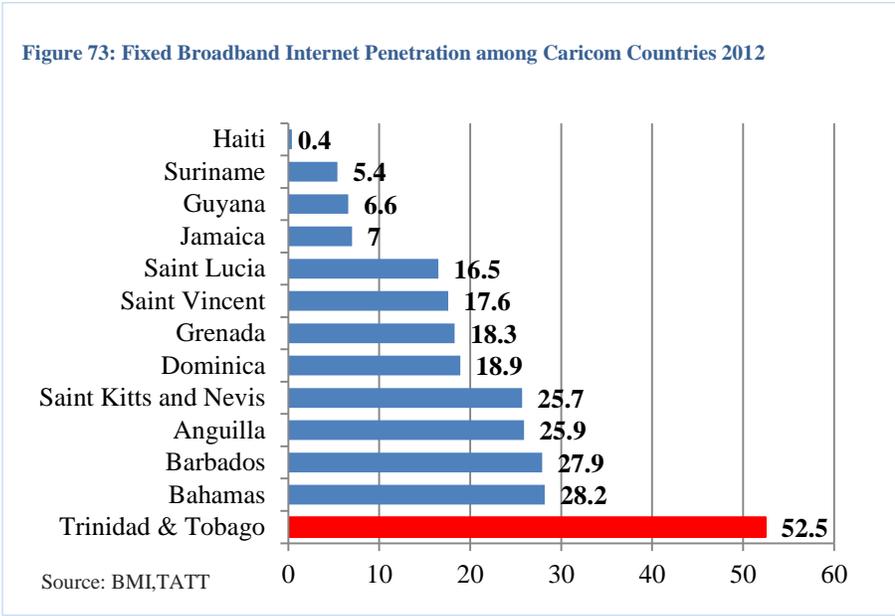
<sup>44</sup> Internet household penetration = (number of residential fixed Internet subscriptions / total number of households) \* 100. The number of households increased from 343,180 in 2000 to 406,198 in 2012

<sup>45</sup> Persons who regularly used Internet services. A person does not have to have a personal Internet subscription to be considered an Internet user.

# INTERNET MARKET REVIEW

household<sup>46</sup>. For 2013, this approximates to 750.6 thousand. Adding this to the number of mobile Internet users of 450.6, it is estimated that there are 1,201.2 thousand Internet users who either used a fixed Internet subscription and/or a mobile Internet subscription at the end of 2013. Figure 72 above shows the growth in number of the Internet users (both Fixed and mobile) over the last five years.

Additionally, the Authority also calculated the number of fixed broadband Internet users by multiplying the number of residential fixed broadband subscriptions by the household size. As at December 2013, there were approximately 700 thousand fixed broadband Internet users. This means that 53 out of every 100 persons in Trinidad and Tobago uses fixed broadband Internet services. Compared regionally, Trinidad and Tobago has more fixed Internet users than any other Caricom country, according to data from Business Monitor International. The Bahamas is second with a fixed broadband Internet Users penetration of 28.2 while Barbados ranks third with 27.9 as Figure 73 Illustrates.



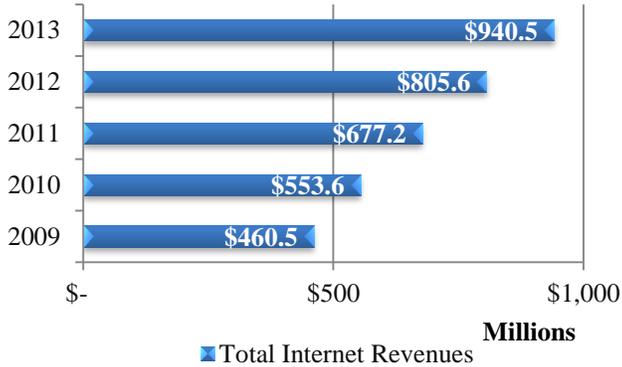
<sup>46</sup> The Central Statistical Office estimated that an average of 3.24 persons reside within a household in its 2011 Census Report.

# INTERNET MARKET REVIEW

## 4.4. TOTAL INTERNET REVENUES

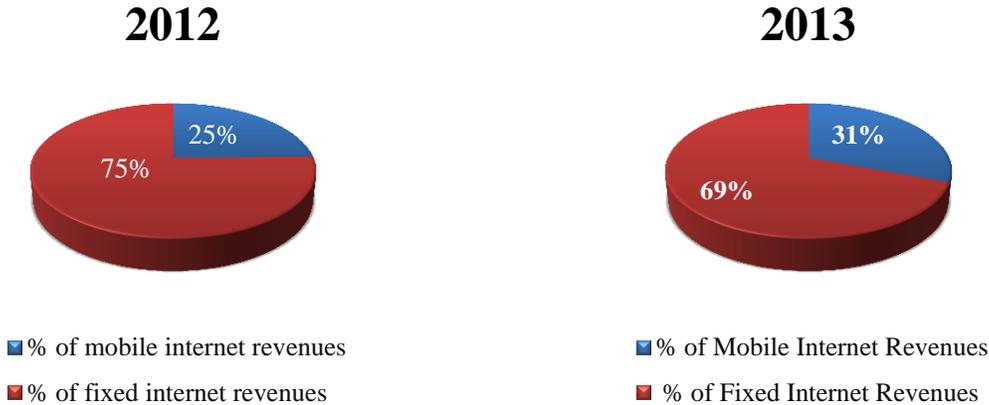
Revenues generated from fixed and mobile (prepaid and postpaid) Internet services totalled TT\$940.5 million, an increase of TT\$134.8 million or 16.7 percent when compared to 2012. The continued rise in revenues is attributed to the growth in both fixed and mobile Internet subscriptions. Figure 74 shows the Internet revenues trend from 2009 to 2013 while Figure 75 depicts the proportion of revenues by the fixed Internet and mobile Internet markets over the last two years. Of particular importance is the increased proportion of revenues generated from mobile Internet services in 2013. Mobile Internet revenues contributed 31 percent to total Internet revenues in 2013, up from 25 percent in 2012. This may be attributed to the substantial increase in the number of mobile Internet subscriptions.

Figure 74: Total Internet Revenues 2009-2013



Source: TATT

Figure 75: Percentage of Fixed and Mobile Contributions to Internet Revenues 2012 - 2013



Source: TATT

The individual categories of fixed and mobile Internet revenues are discussed below.

# INTERNET MARKET REVIEW

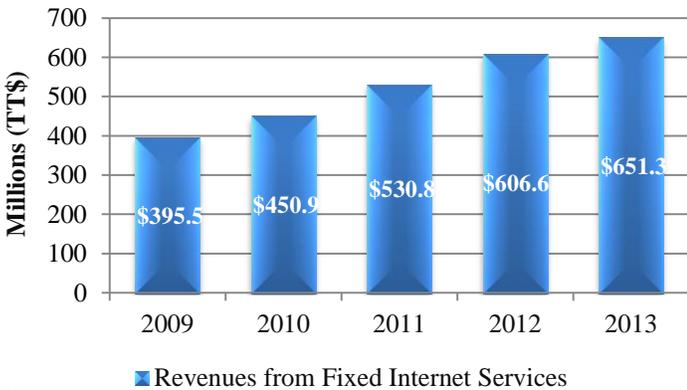
## 4.4.1. FIXED INTERNET REVENUES

For the period under review, the total estimated gross revenues for the fixed Internet market amounted to TT\$651.3 million; an increase of TT\$44.7 million or 7.4 percent over the revenues reported in 2012. Of this total, narrowband Internet accounted for TT\$5.0 million while broadband Internet contributed TT\$646.3 million.

As the migration of subscriptions from narrowband to broadband services continue, fixed narrowband revenues declined markedly by TT\$1.3 million or 21.2 percent. Fixed broadband revenues remained the main revenue generator in this market, growing steadily by TT\$46.2 million or 7.7 percent, when compared to the 2012 period. Figure 76 shows the annual revenue trend in the fixed Internet market from 2009 to 2013 while Figure 77 compares narrowband and broadband revenues for the same period.

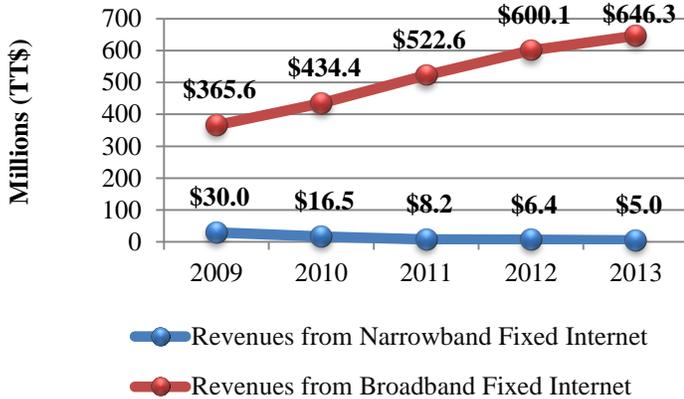
With broadband Internet being the predominant choice of service in the market, broadband Internet contributed 99.2 percent to total fixed Internet revenues while

Figure 76: Fixed Internet Revenues – 2009 to 2013



Source: TATT

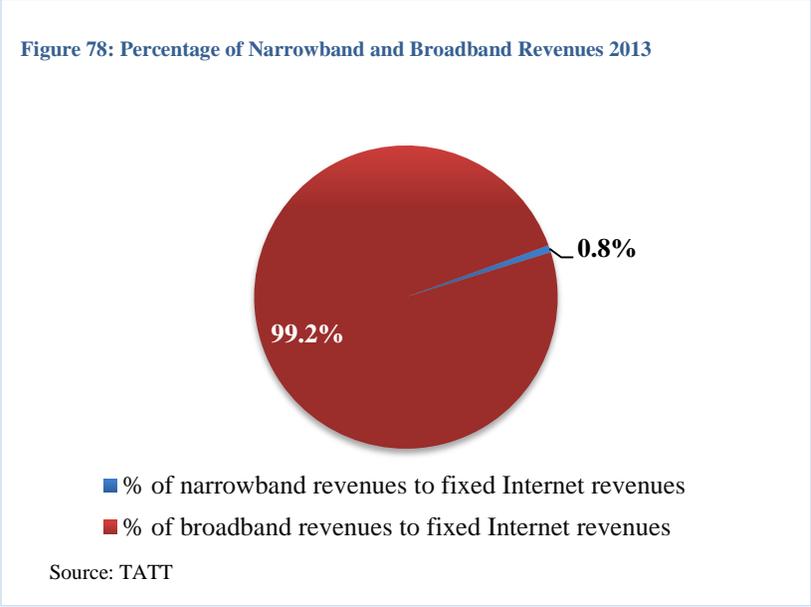
Figure 77: Revenues from Fixed Narrowband and Broadband Subscriptions – 2009 to 2013



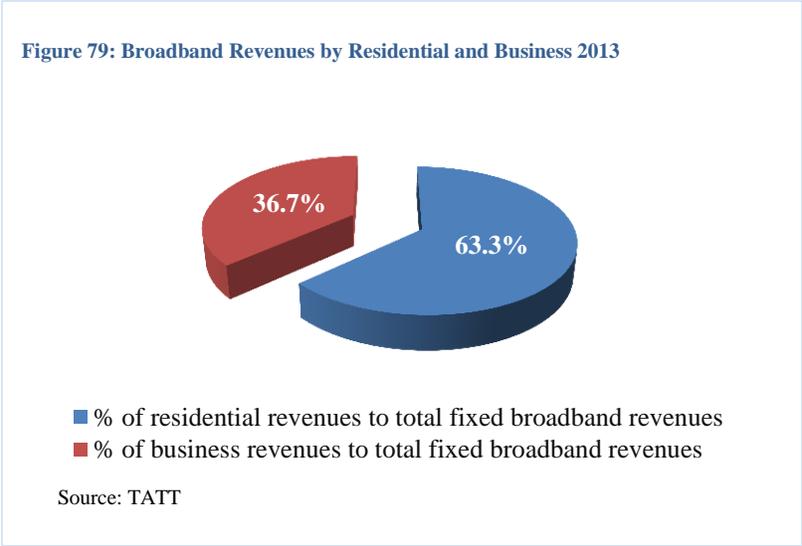
Source: TATT

# INTERNET MARKET REVIEW

narrowband Internet contributed only 0.8 percent. Figure 78 portrays the revenue percentage contributions for 2013.



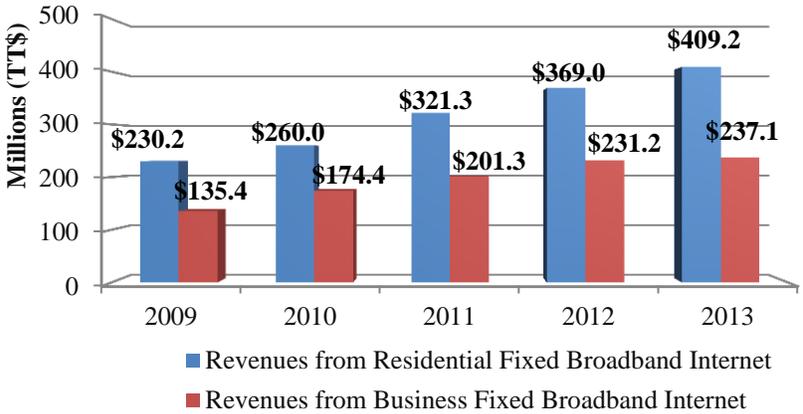
Revenues generated from residential fixed broadband Internet subscriptions accounted for the majority of fixed broadband revenues. Of total fixed broadband revenues, residential broadband subscriptions contributed 63.3 percent (TT\$409.2 million), while revenues from business broadband subscriptions totalled 36.7 percent (TT\$237.1 million) as illustrated in Figure 79.



# INTERNET MARKET REVIEW

Following a similar growth rate in 2012, residential fixed broadband revenues experienced a higher growth rate than that of business fixed broadband revenues in 2013. Residential fixed broadband Internet revenues increased by 10.9 percent from the previous year while business fixed broadband revenues recorded a smaller increase of 2.6 percent. Figure 80 shows revenues from residential and business broadband subscriptions over the last five years. It was observed that both categories of revenues increased steadily over the period.

**Figure 80: Revenues from Residential and Business Fixed Broadband Subscriptions – 2009 to 2013**

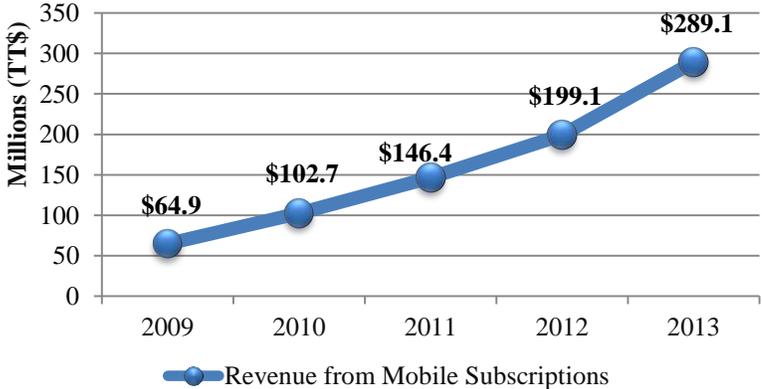


Source: TATT

## 4.4.2. MOBILE INTERNET REVENUES

Following double digit growth over the past four years, total gross revenues from mobile Internet services continued its strong growth trend in 2013. Mobile Internet revenues rose sharply from TT\$199.1 in 2012 to TT\$289.1 in 2013, a 45.2 percentage growth. Figure 81 highlights the annual trend for total revenues generated by mobile Internet users. As these users increased, the revenue generated from this service is becoming a significant contributor to revenues in the Internet market.

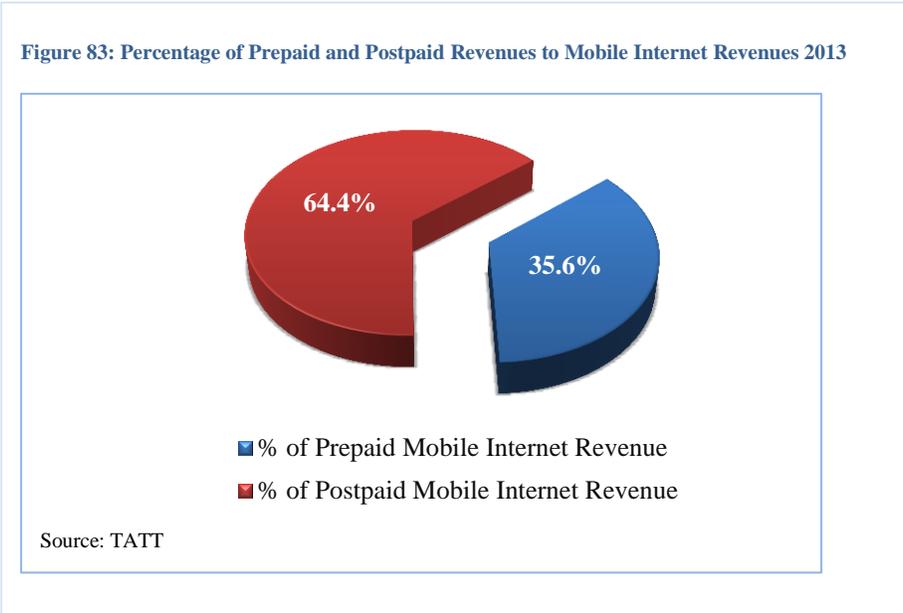
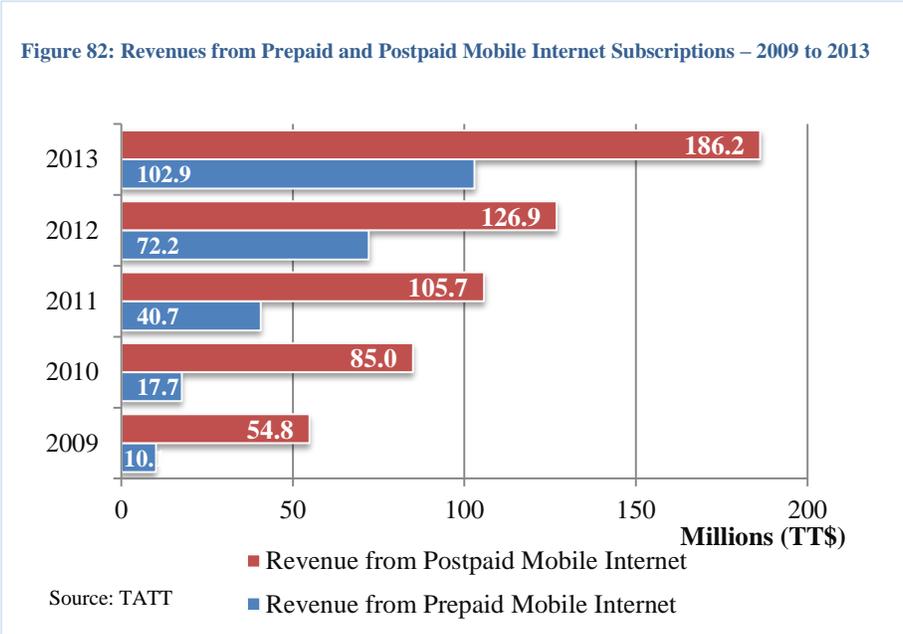
**Figure 81: Total Mobile Internet Revenues – 2009 to 2013**



Source: TATT

# INTERNET MARKET REVIEW

Prepaid mobile Internet subscriptions contributed TT\$101.9 million (35.6 percent) to total mobile Internet revenues, while postpaid subscriptions accounted for TT\$186.2 million (64.4 percent). Although there was a greater number of prepaid mobile internet users, the revenue generated from postpaid mobile internet users exceeded that of prepaid. Figure 82 shows the separation of mobile Internet revenues into prepaid and postpaid from 2009 to 2013, while Figure 83 depicts the percentage revenue contributions of the individual prepaid and postpaid categories for 2013.



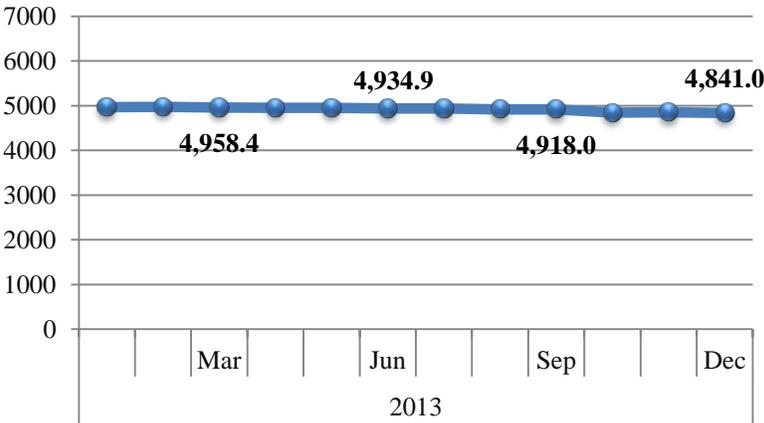
# INTERNET MARKET REVIEW

## 4.5. FIXED INTERNET MARKET CONCENTRATION

Using the Hirschman-Herfindahl Index (HHI), the Authority calculated the level of concentration for the fixed Internet market<sup>47</sup> of Trinidad and Tobago for 2013. The level of concentration at the end of the year stood at 4,841 with an average of 4,921 for the entire year. This represented a 3.2 percent decrease in the level

of concentration from December 2012 to December 2013. As reflected in Figure 85, the HHI decreased slightly during the year and subsequently peaked in the last quarter. Over the past five years, the HHI has been fairly stable with marginal movements being observed, thus, there has been little movement in the level of concentration in this market as illustrated in Figure 84.

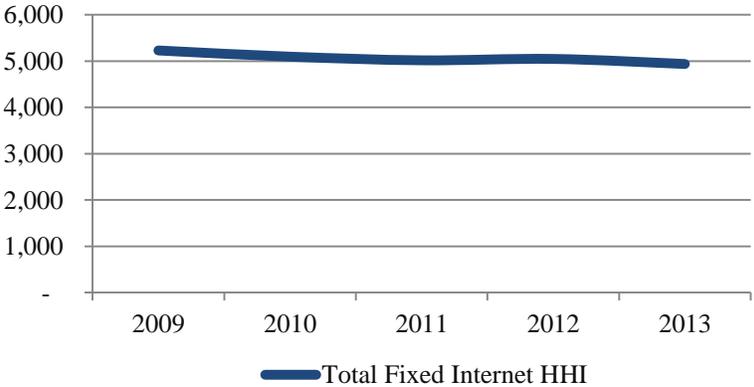
Figure 85: Hirschman-Herfindahl Index of Fixed Internet Market January–December 2013



Source: TATT

● HHI

Figure 84: HHI of Total Fixed Internet Services – 2009 to 2013



Source: TATT

— Total Fixed Internet HHI

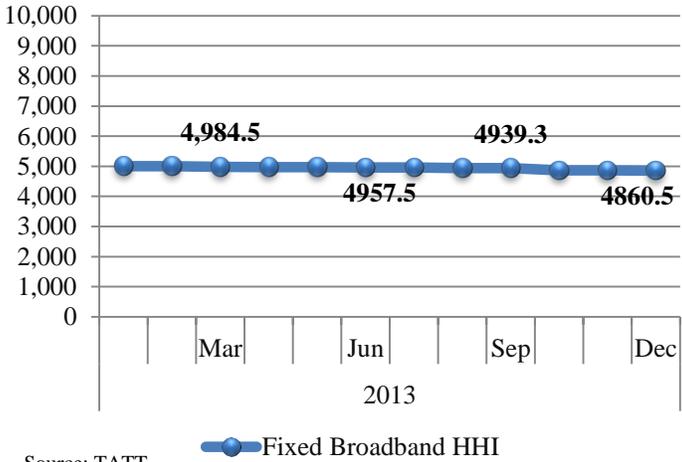
<sup>47</sup> Subscriber market share was used in the calculation of the HHI.

# INTERNET MARKET REVIEW

## 4.5.1. HHI FOR BROADBAND AND NARROWBAND SERVICES

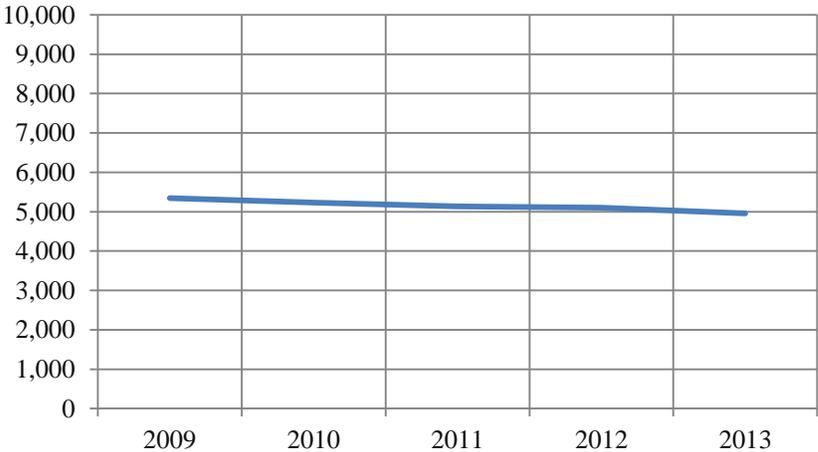
The HHI was separately examined for the fixed broadband market and the fixed narrowband market. The result showed that the fixed narrowband market is slightly more concentrated than the fixed broadband market. The calculation for fixed broadband services showed an average HHI of 4,945 during 2013; an increase of 3.0 percent. The level of concentration in this market decreased minimally during first three quarters of 2013, with a marginal increase being observed in the last quarter. The HHI reached 4,860.6 as at December 2013. The HHI in the fixed broadband Internet market has been relatively stable over the last five years, with an overall downward trend as illustrated in Figure 87 below.

Figure 86: HHI for Fixed Broadband Services 2013



Source: TATT

Figure 87: HHI of Fixed Broadband Services - 2009 to 2013



Source: TATT

# INTERNET MARKET REVIEW

The fixed narrowband Internet market recorded an average HHI of 5,557 in 2013; increasing by 8.8 percent. The level of concentration, as measured by the HHI, increased steadily during each quarter of 2013, reaching a high of 5,890 in December 2013. Figure 88 illustrates the fixed narrowband HHI throughout the year. The level of concentration in the fixed narrowband market showed an overall upward trend over the past five years as Figure 89 illustrates.

Figure 88: HHI for Fixed Narrowband Services 2013

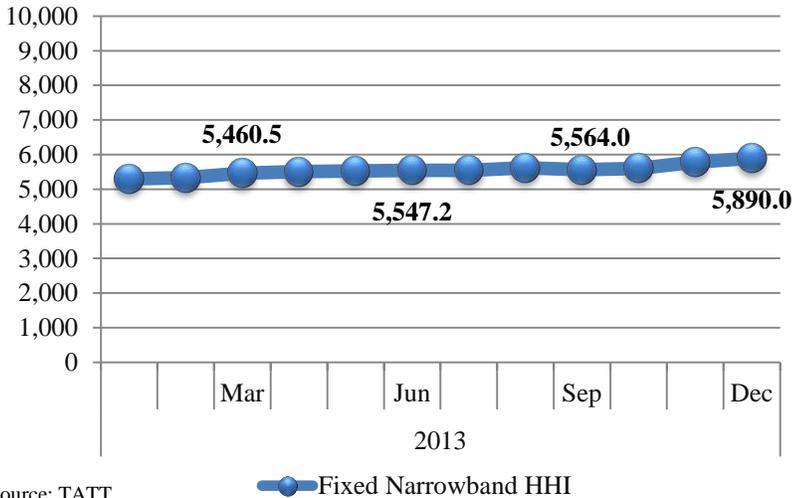
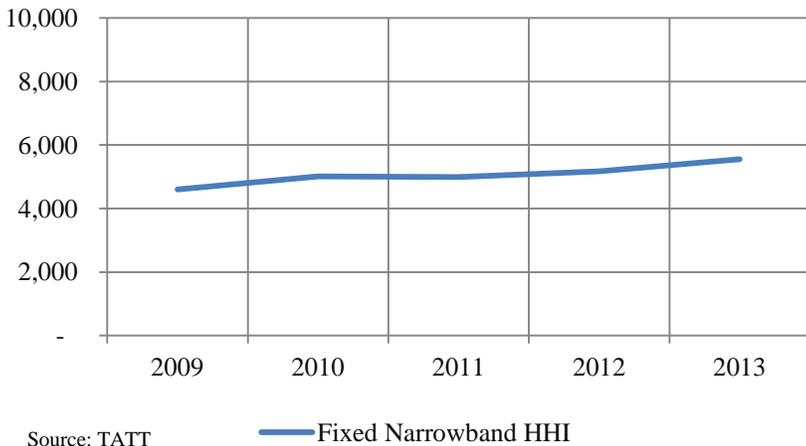


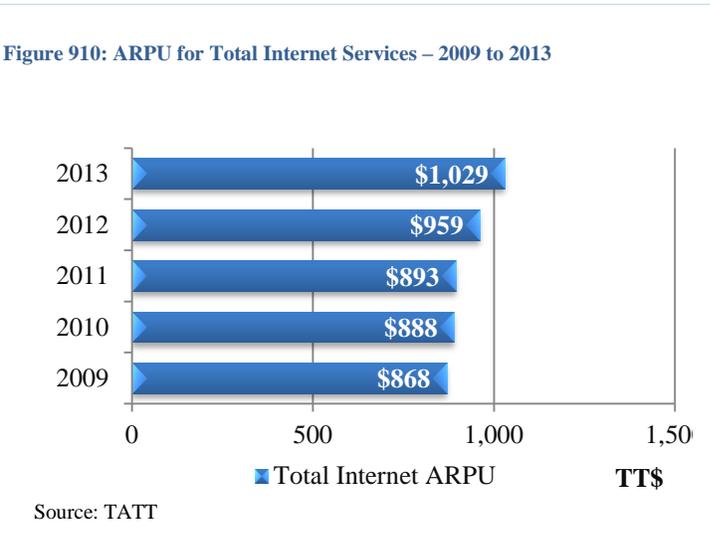
Figure 89: HHI of Fixed Narrowband Services – 2009 to 2013



# INTERNET MARKET REVIEW

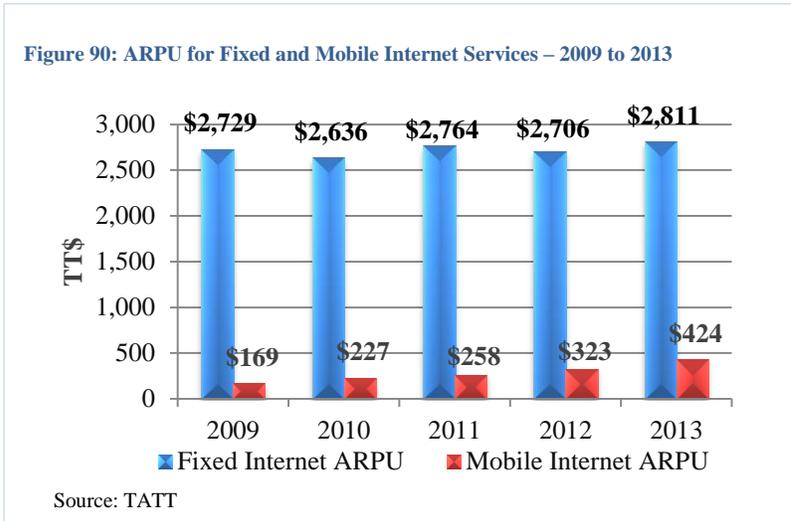
## 4.6. AVERAGE REVENUE PER USER (ARPU)

On average, the revenue generated from each Internet customer increased as the growth in total Internet revenues outweighed that of total Internet subscriptions in 2013. During the review period, customers with Internet (fixed and mobile) subscriptions spent an average of TT\$1,029<sup>48</sup>



in 2013 for Internet services; an increase of 17.7 percent. This increase was fuelled significantly by the mobile Internet ARPU. For mobile Internet services, customers spent an average of TT\$424<sup>49</sup> in 2013, a sharp increase of TT\$100 or 45 percent. This may be attributed to the marked increase in mobile Internet users observed in this period. The ARPU for fixed Internet

services also increased, with customers spending approximately TT\$2,811<sup>50</sup> during 2013. This represented an increase of TT\$106 (4 percent). Figure 90 and 91 show the ARPU trends for the individual categories over the last five years.



<sup>48</sup> ARPU for fixed and mobile Internet subscriptions combined.

<sup>49</sup> ARPU for mobile Internet services is calculated = (Total revenues from prepaid and postpaid mobile subscriptions with Internet access / Total number of mobile prepaid and postpaid subscriptions with Internet access)

<sup>50</sup> ARPU for fixed Internet services is measured by the revenue generated by one subscription. It is calculated = (Total revenues from fixed Internet subscriptions / Total number of fixed Internet subscriptions)

# INTERNATIONAL MARKET REVIEW

## Key Market trends and Observations in the International Voice Market

- **International voice minutes fell by 5.7%**
- **Outgoing international voice revenues grew by 2.8%**
- **Incoming international voice revenues decreased by 10.3%**

## 5. INTERNATIONAL VOICE TRAFFIC DATA

Ten (10) concessionaires were authorised to provide international telecommunications services to the public in 2013, which included the provision of international voice services. These operators included:

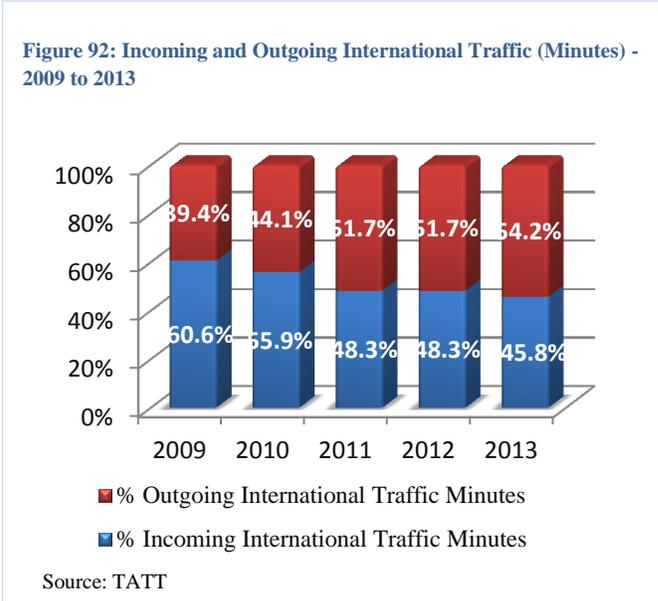
- Telecommunications Services of Trinidad and Tobago, TSTT;
- Digicel (Trinidad and Tobago) Limited;
- Open Telecom;
- 360 Communications Limited;
- Lisa Communications Limited;
- Columbus Communications Trinidad Limited;
- Windward Telecom Limited;
- Green Dot Limited;
- Laqtel Limited; and
- Illuminat (Trinidad and Tobago) Limited

However, Green Dot Limited, Illuminat, Windard and Laqtel Limited were not operational in the international voice market for this review period (2013) and the Authority has not received any information from Open Telecom.

# INTERNATIONAL MARKET REVIEW

## 5.1. INTERNATIONAL VOICE TRAFFIC (INCOMING AND OUTGOING MINUTES)

**Figure 92: Incoming and Outgoing International Traffic (Minutes) - 2009 to 2013**

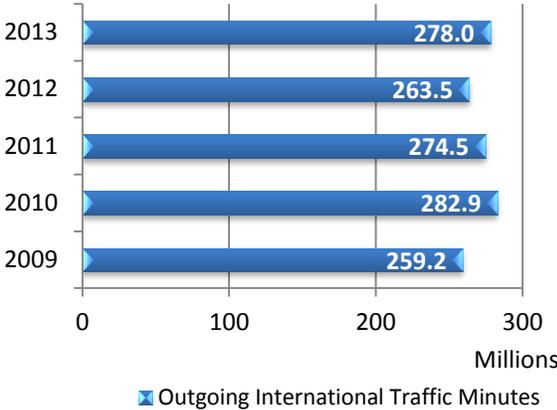


The number of outgoing international minutes generated was greater than that of incoming minutes for the past three years (2011-2013). Outgoing traffic accounted for 54.2 percent of total international minutes; while incoming comprised the other 45.8 percent for 2013. Figure 92 illustrates the proportion of incoming traffic compared to outgoing traffic over the past five years. Incoming traffic volumes continued to experience a decreasing trend over the five year

review period (2009 -2013). Down by 4.4 percent (10.9 million minutes) when compared to the previous period, incoming minutes recorded 234.8 million minutes in 2013. Outgoing international minutes were observed to be very unstable as seen in Figure 93 below, which highlights the sharp increases and decreases over the period. Subsequent to a fall in minutes from 274.5 minutes in 2011 to 263.5 in 2012, outgoing minutes increased by 5.5 percent (14.5 million minutes) to record 278 million minutes in 2013. Figure 94 below shows the downward trend for incoming international traffic. The decrease in the volume of international incoming minutes may be indicative of consumers utilising alternative technologies to conduct international communications with persons in Trinidad and Tobago.

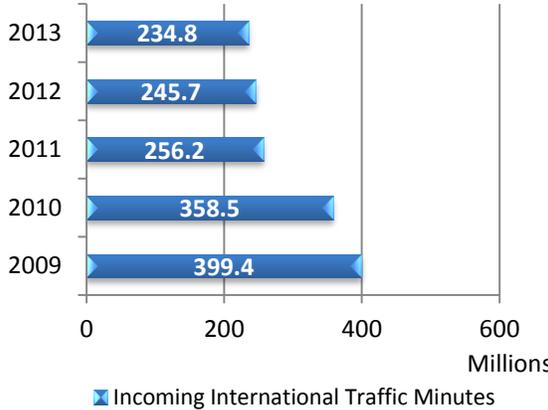
# INTERNATIONAL MARKET REVIEW

Figure 93: Outgoing International Traffic (Minutes) – 2009 to 2013



Source: TATT

Figure 94: Incoming International Traffic (Minutes) – 2009 to 2013

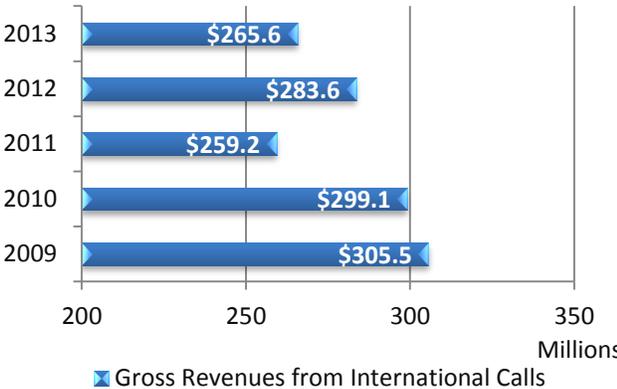


Source: TATT

## 5.2. INTERNATIONAL TRAFFIC REVENUES

Gross revenues <sup>51</sup> generated by incoming and outgoing international telecommunications voice services decreased. Revenues in this market fell by approximately TT\$18 million or 6.3 per cent when compared to the previous year; recording TT\$283.6 million in 2012 and TT\$265.6 million in 2013. Figure 95 depicts the trend in revenues generated by the international voice market from 2009 to 2013.

Figure 95: Gross Revenues from International (incoming and outgoing) voice services – 2009 to 2013



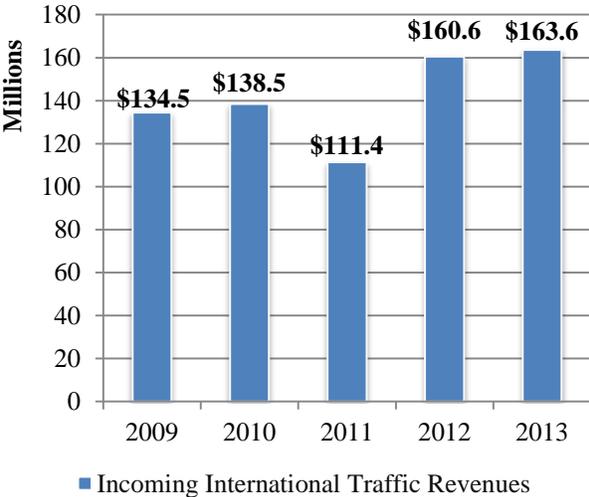
Source: TATT

<sup>51</sup> Gross revenues refer to the total amount of money earned from international calls. Outgoing international call revenue is a collection of revenue earned from residents making calls from the domestic network to persons abroad. Incoming international revenue is settlement revenue earned from foreign exchange carriers who pay service providers to terminate calls locally.

# INTERNATIONAL MARKET REVIEW

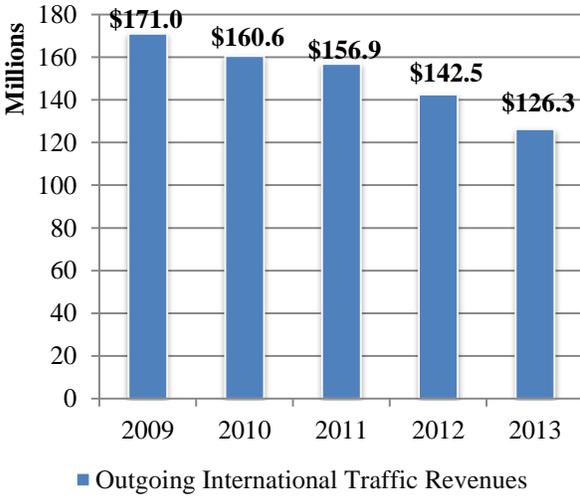
In reviewing the composition of international traffic revenues, incoming traffic revenues increased while outgoing traffic revenues decreased. Notably, the fall in outgoing international traffic revenue significantly outweighed the marginal increase in incoming traffic revenues from 2012 to 2013. While revenues earned from incoming traffic were estimated at TT\$163.6 million for 2013, an increase of 2.8 percent (TT\$3.1 million); outgoing international revenues fell by 10.3 percent (TT\$16.2 million). Incoming and Outgoing international voice revenues over the past five years are illustrated below in Figure 96 and 97 respectively.

**Figure 96: Revenues from Incoming International Traffic (Minutes) – 2009 to 2013**



Source: TATT

**Figure 97: Revenues from Outgoing International Traffic (Minutes) – 2009 to 2013**



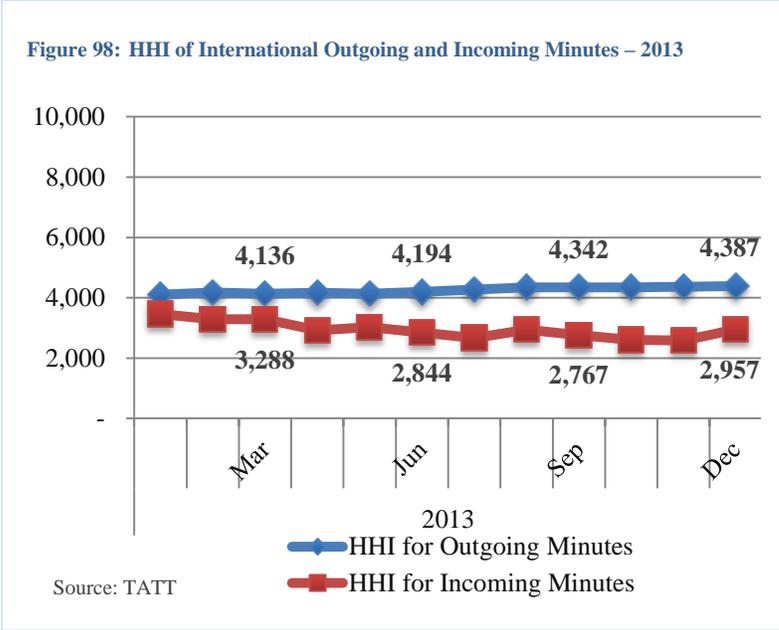
Source: TATT

## 5.3. INTERNATIONAL VOICE MARKET CONCENTRATION

The Authority calculated the level of concentration for the international voice market of Trinidad and Tobago. The market share used in the calculation of the Hirschman-Herfindahl Index (HHI) was defined in terms of number of international outgoing and incoming minutes generated by the service providers, as opposed to revenues. The HHI values for this period displayed substantial variation, as international outgoing and incoming minutes in the market fluctuated. During 2013,

# INTERNATIONAL MARKET REVIEW

the level of concentration in the outgoing international voice market remained relatively stable while the incoming market experienced a few quarter on quarter fluctuations. The HHI for the outgoing market stood at 4,387 at the end of the fourth quarter while the incoming market computed a HHI of 2,957, evidently smaller than the outgoing value. This inferred that the international outgoing minutes' market was more concentrated than the incoming market. Figure 98 below graphically shows HHI values for outgoing and incoming minutes in the year 2013.



# BROADCASTING MARKET REVIEW

## Key Market Trends and Observations in the Broadcasting Market

- **Free-to-Air Television and Radio revenues increased by 12.3 and 9.1 % respectively**
- **Pay TV Subscriptions increased by 5%**
- **There are 208.7 thousand subscribers to Pay TV services**
- **15 out of every 100 persons and 51 out of every 100 households subscribe to Pay TV.**

## 6. BROADCASTING MARKET DATA

Reviewing Trinidad and Tobago's Broadcasting Market for 2013, there were nine (9) concessions granted in the Free-to-Air television market, eleven (11) in the subscription television market, thirty-nine (39) in the Free-to-Air radio market and six (6) concessions providing television broadcasting services via cable. Table 4 below gives a breakdown of the number of concessions in the broadcasting market from 2009 to 2013.

Table 4: Number of Concessions in the Broadcasting Market – 2009 to 2013

Types of Broadcasting Concessions	Number of Concessions				
	2009	2010	2011	2012	2013
<b>Free-to-Air Television</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>
National <sup>52</sup>	6	6	6	6	6
Major Territorial <sup>53</sup>	3	3	3	3	3
<b>Subscription Television</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>10</b>	<b>11</b>
National <sup>54</sup>	4	4	4	4	5
Major Territorial	1	1	1	1	1
Niche <sup>55</sup>	2	3	3	4	4
Minor Territorial	1	1	1	1	1
<b>TV Broadcasting via Cable</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>6</b>
National	1	1	1	2	6
<b>Free-to-Air Radio</b>	<b>37</b>	<b>37</b>	<b>37</b>	<b>38</b>	<b>39</b>
National	30	30	30	30	31
Major Territorial	6	6	6	6	6
Minor/ Niche Territorial	1	1	1	2	2
<b>Total</b>	<b>55</b>	<b>56</b>	<b>56</b>	<b>59</b>	<b>65</b>

Source: TATT

<sup>52</sup> A national operator provides its network and/or service to 100% of the geographical area of both Trinidad and Tobago.

<sup>53</sup> A major territorial operator provides its network and /or service to 100% of the geographical area of the island of Trinidad.

<sup>54</sup> A minor territorial operator provides its network and/ or service to 100% of the geographical area of the island of Tobago.

<sup>55</sup> A niche operator provides its services to specific groups of subscribers identified by the Authority in either island of Trinidad or Tobago.

# BROADCASTING MARKET REVIEW

## 6.1. FREE-TO-AIR TELEVISION BROADCASTING MARKET

In 2013, the market for Free-to-Air TV broadcasting service comprised nine (9) operational concessionaires. They were:

- Advance Community Television Network Limited (ACTN),
- Caribbean Communications Network Limited (TV6),
- Gayelle Limited,
- Caribbean New Media Group (CNMG),
- Trinidad Publishing Company Limited,
- Parliament of the Republic of Trinidad and Tobago,
- Synergy Entertainment Network Limited,
- World Indian Network Television Limited (WINTV), and
- Government Information Services Limited (GISL).

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

- IETV Limited
- IBN Communications Company Limited
- Central Broadcasting Services Limited
- Living Water Community
- Darut Tarbiyah
- Sankhya Television Limited

This section provides information on the performance of both the Free-to-Air market and the television broadcasting services via cable. Thus, all references to Free-to-Air television below include Free-to-Air market and the television broadcasting services via cable<sup>56</sup>.

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<sup>56</sup> At the time of publication, data was outstanding from Synergy and WINTV for the periods November to December 2013 and April to December 2013, respectively. Data for these operators were thus estimated based on historical data for these periods.

# BROADCASTING MARKET REVIEW

## 6.1.1. FREE-TO-AIR TELEVISION REVENUES

Gross revenues in the Free-to-Air television market increased in 2013. Up by 12.3 percent when compared to 2012, total gross revenues for this market amounted to TT\$136.3 million in 2013.

**Figure 99: Gross Revenues for Free-to-Air Television Broadcasting Service Providers – 2009 to 2013**



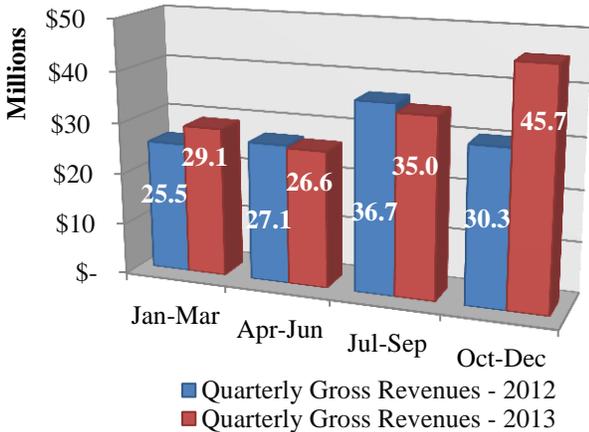
Source: TATT

As illustrated in Figure 99, revenues for the Free-to-Air television broadcasting market fluctuated over the past five years (2009-2013).

Quarterly gross revenues earned in the Free-to-Air television market for 2012 and 2013 are compared in Figure 100 below. When quarterly earnings for 2012 and 2013 are compared, it was observed that quarter on quarter increases and decreases in revenues

were relatively small with the exception of the fourth quarter. Revenues generated in the first quarter, increased by approximately TT\$4 million and decreased in the second and third quarter by approximately TT\$1 million and TT\$2 million respectively; while revenue in the fourth quarter increased markedly by TT\$15.4 million in 2013 when compared to earnings generated in 2012.

**Figure 100: Quarterly Gross Revenues Free-to-Air Television Service Providers 2012 and 2013**



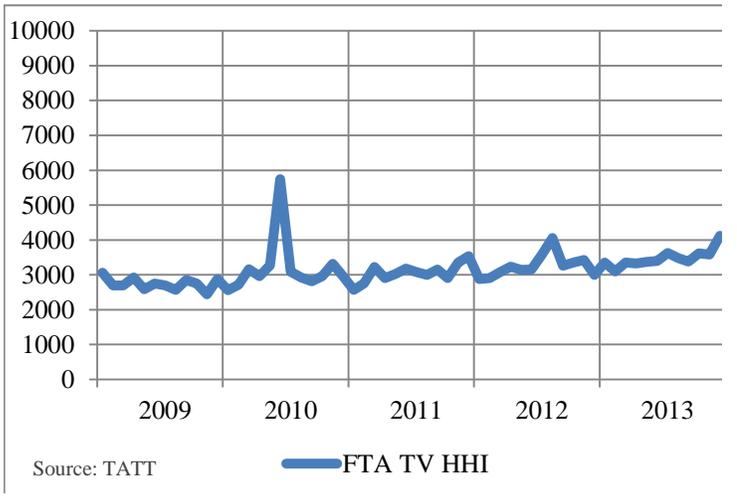
Source: TATT

# BROADCASTING MARKET REVIEW

## 6.1.2. MARKET CONCENTRATION FREE-TO-AIR TELEVISION

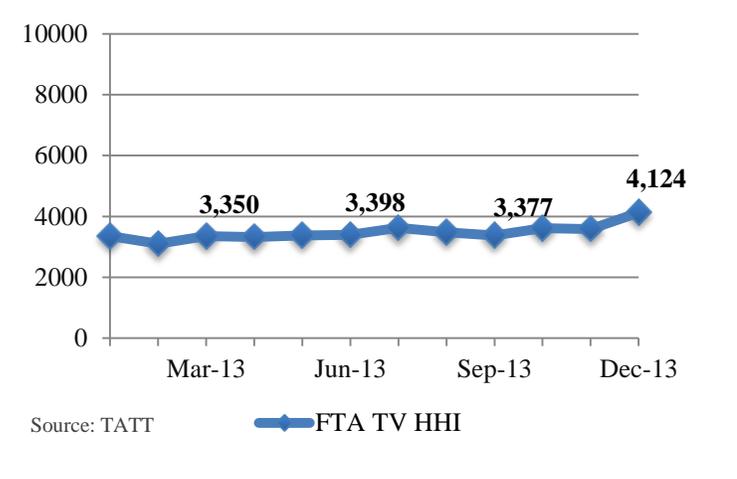
Using the Hirschman-Herfindahl Index (HHI), the Authority calculated the level of concentration for the Free-to-Air television broadcasting market<sup>57</sup> using revenues generated in this market. Subsequent to the sharp increase in the HHI for Free-to-Air television in 2010, this market continued to experience small fluctuations. Figure 101 illustrates these fluctuations for the five year period 2009 to 2013. During 2013, the Free-to-Air television market recorded an average HHI of 3,476; an increase of 219 points as compared to 2012. This suggests that the Free-to-Air television market was more concentrated in 2013 compared to 2012.

Figure 101: HHI for Free-to-Air Television Market 2009 to 2013



Reviewing the quarterly HHI computed for 2013, the HHI peaked noticeably in the fourth quarter while the level of concentration in the market was relatively stable in the previous quarters. Figure 102 illustrates the quarterly HHI for Free-to-Air Television broadcasting market for 2013.

Figure 102: HHI for Free-to-Air Television Broadcasting Market – 2013

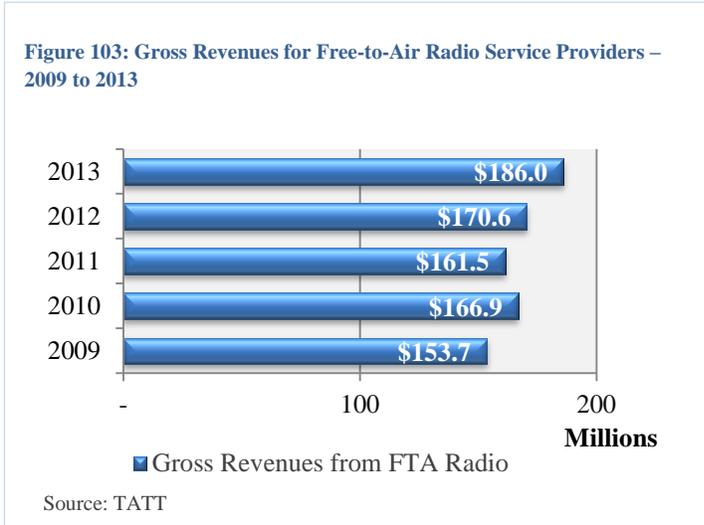


<sup>57</sup> The revenue market share was used in the calculation of the HHI

# BROADCASTING MARKET REVIEW

## 6.2. FREE-TO-AIR RADIO BROADCASTING MARKET

In 2013, the Free-to-Air radio broadcasting market consisted of one (1) AM and thirty-eight (38) FM concessions. Only one concessionaire, Trico Industries, was not operational as at December

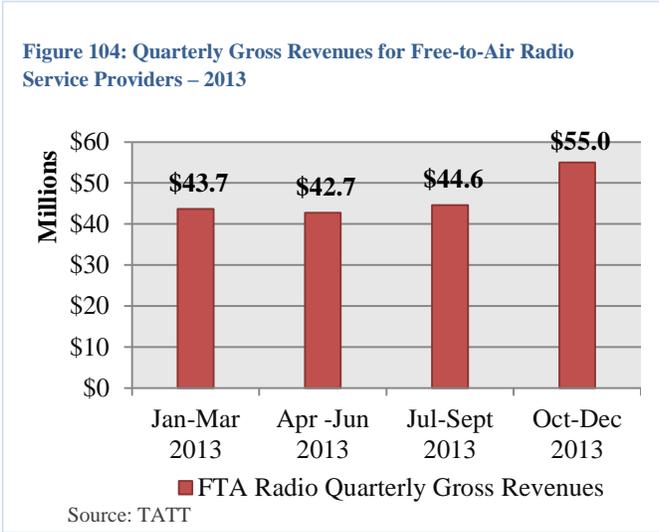


2013. It is noted that some concessionaires hold more than one concession and as a result operate more than one radio station.

During 2013, the Free-to-Air radio broadcasting market earned an estimated TT\$186 million<sup>58</sup> in gross revenues. This represented a 9.1 percent or TT\$15.4 million increase, when compared to gross revenues generated in

2012. Revenue earnings in the Free-to-Air radio market for the past five years (2009 to 2013) are

compared in Figure 103 above. Alternatively, Figure 104 highlights the quarterly gross revenues earned by concessionaires in the Free-to-Air radio market in 2013. Gross revenues generated in the first quarter totalled TT\$43.7 million. In the second quarter, gross revenues fell by TT\$1 million and subsequently increased in the third and fourth quarters, recording TT\$44.6 million and TT\$55 million



respectively. On average, the Free-to-Air radio market generated approximately TT\$47 million per quarter in 2013; up by TT\$5 million when compared to last year’s quarterly average.

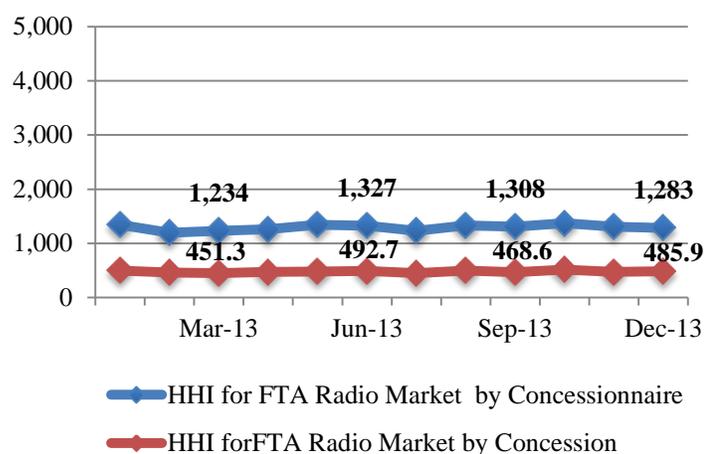
<sup>58</sup>At the data publication the following concessionaires did not submit data for several periods during 2013: Upward Trend Entertainment Limited, Neil "Iwer" George, Mohan Jaikaran, Kaisoca Productions Limited and 21st Century Arts and Entertainment Limited. Data for these operators were thus estimated based on historical data.

# BROADCASTING MARKET REVIEW

## 6.2.1. MARKET CONCENTRATION FREE-TO-AIR RADIO

Using the number of concessions and concessionaires in the market, the Authority calculated the level of concentration for the Free-to-Air radio broadcasting market<sup>59</sup>. Quarterly Hirschman-Herfindahl Index (HHI) values for 2013 are illustrated in Figure 105. The average HHI values for 2013 based on the number of concessions and concessionaires in the market were 1,265.3 and 479.4 respectively. A comparison of these two HHI values indicate that the market based on the number of concessionaires is more concentrated than the market based on the number of concessions.

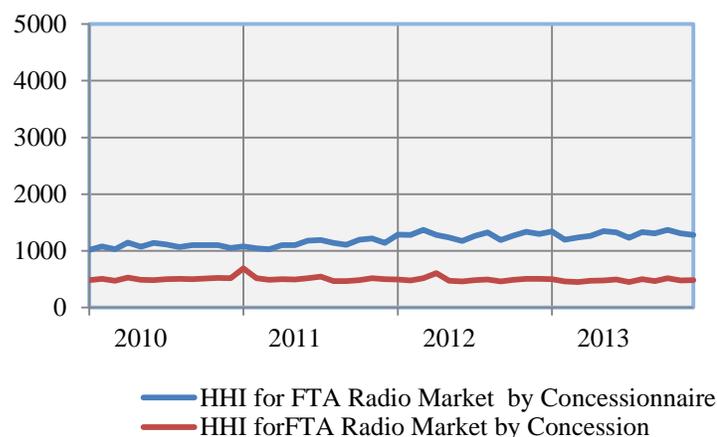
Figure 105: HHI in the Free-to-Air Radio Broadcasting Market – 2013



Source: TATT

Figure 106 depicts the HHI in the Free-to-Air Radio Broadcasting Market for concessions and concessionaires over the past four years (2010-2013). In 2013, the HHI for both concessions and concessionaires decreased when compared to the previous year. The HHI based on the number of concessions moved from 507.9 in 2012 to 485.9 in 2013, down by 4

Figure 106: HHI in the Free-to-Air Radio Broadcasting Market – 2010 to 2013



Source: TATT

<sup>59</sup> The revenue market share was used in the calculation of the HHI

# BROADCASTING MARKET REVIEW

percent; while the HHI based on the number of concessionaires moved from 1,296.9 in 2012 to 1,282.8 in 2013, a mere 1 percent decrease.

## 6.3. PAY TELEVISION ('SUBSCRIPTION TV') BROADCASTING MARKET

For the 2013 period, the Pay TV market comprised eleven (11) authorised service providers with ten (10) operational as at December 2013 provided Pay TV services to varying coverage areas within Trinidad and Tobago, as listed in Table 5 below. Of these ten (10) operators, six (6) used Analogue technology to provide their services, three (3) used digital and one (1) used both analogue and digital. Open Telecom Limited was granted a concession in October 2013 and was not operational in 2013.

Table 5: List of Pay TV Providers 2013

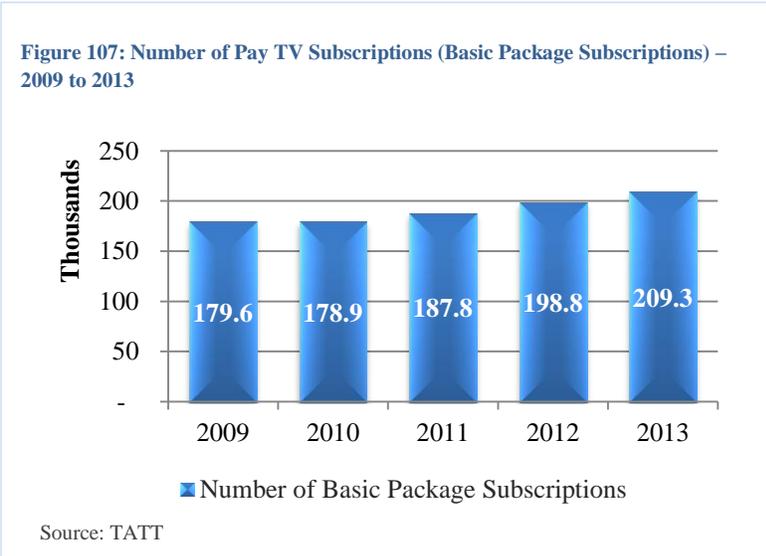
Name of Provider	Technology Used	Authorised Coverage Area
Columbus Communications Trinidad Limited (CCTL)	Analogue and Digital cable	National
DirecTV Trinidad Limited	Digital Satellite	
Telecommunication Services of Trinidad and Tobago (TSTT)	Digital cable	
Green Dot Limited	Digital cable	
Independent Cable Network of Trinidad and Tobago (ICNTT)	Analogue cable	
TRICO Industries Limited	Analogue cable	Minor Territorial
RVR International Limited	Analogue cable	Niche - Princes Town and Rio Claro
Network Technologies Limited	Analogue cable	Niche - Mayaro and Guayaguayare
Air Link Communications Limited	Analogue cable	Niche - Mayaro and Rio Claro
Diversified Technologies Limited	Analogue cable	Niche - Penal and Environs

# BROADCASTING MARKET REVIEW

## 6.3.1. TOTAL PAY TV (SUBSCRIPTION TV) SUBSCRIPTIONS

In order to distinguish their products and services, each operator in the Pay TV market offered a different bundle of channels as part of their basic package. Customers were required to first subscribe to this basic package before subscribing to any additional package, including premium packages offered by the operator.

The number of subscriptions to Pay TV services has realised steady growth over the past five

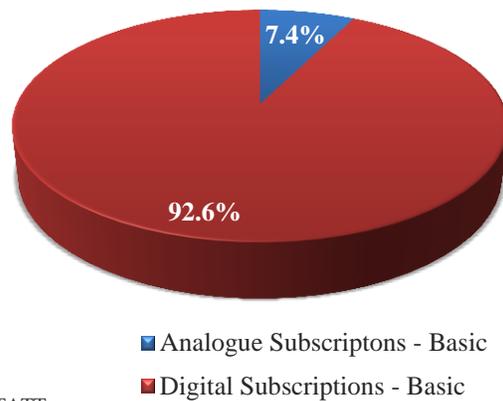


years, notwithstanding a minor decrease observed in 2010. As at December 2013, this market had grown by 5.3 percent to approximately 209.3 thousand subscriptions (a 10.5 thousand increase) over the previous year. Figure 107 depicts the trend in the number of subscriptions in the Pay TV market for the period 2009 to 2013.

Digital subscriptions continued to comprise the majority of Pay TV subscriptions in 2013, as illustrated by Figure 108 below. Of the total number of subscriptions, analogue subscriptions represented 7.4 percent (15.6 thousand) whereas digital subscriptions contributed 92.6 percent (193.7 thousand).

# BROADCASTING MARKET REVIEW

**Figure 108: Pay TV Subscriptions (Basic Package Subscriptions) by Platform for 2013**



Source: TATT

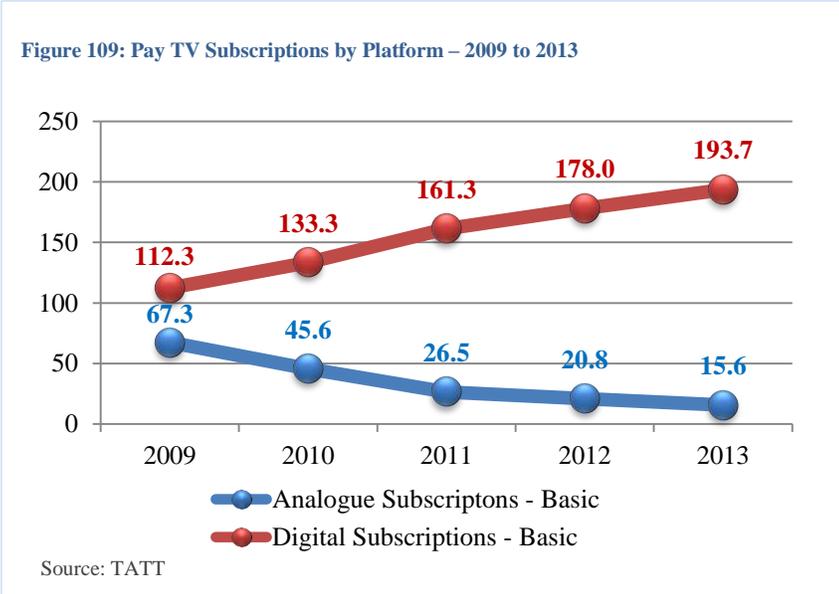
Similar to the past four (4) years, digital subscriptions continued to increase while the number of analogue subscriptions decreased in 2013. There were 193.7 and 15.6 thousand digital and analogue Pay TV subscriptions respectively as at December 2013. Digital subscriptions increased by 15.7 thousand (8.8 percent) from 2012 to 2013 as it continued to comprise the greater number of subscriptions in the market. Analogue subscriptions, however, decreased by 5.2 thousand (25.1 percent) for the same period under review. This noticeable trade-off between digital and analogue subscriptions may be attributed to digital Pay TV providers' continued expansion of their services. The annual change in subscribership via platform is shown in Table 6 and illustrated in Figure 109 below.

**Table 6: Growth Rate of Pay TV Subscriptions by Platform 2013**

Type of Platform	Change in Basic Pay TV Subscriptions -2013 ('000)	Percentage change between 2012 and 2013
Analogue	5.2	(25.1 %)
Digital	15.7	8.8 %

Source: TATT

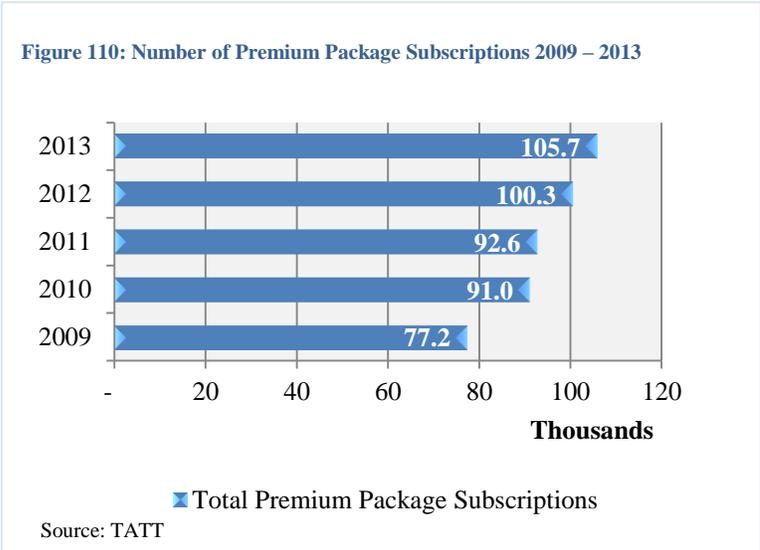
# BROADCASTING MARKET REVIEW



## 6.3.2. PREMIUM PACKAGES SUBSCRIPTIONS

As mentioned in the previous section, all Pay TV customers are currently required to first subscribe to a basic package. As a result, premium package subscriptions represent a subset of total Pay TV (or total basic package) subscriptions, where a subscriber may subscribe to more than one premium package. As at December 2013, there were approximately 105.7 thousand premium package subscriptions, an increase of 5.4 thousand subscriptions over the prior year.

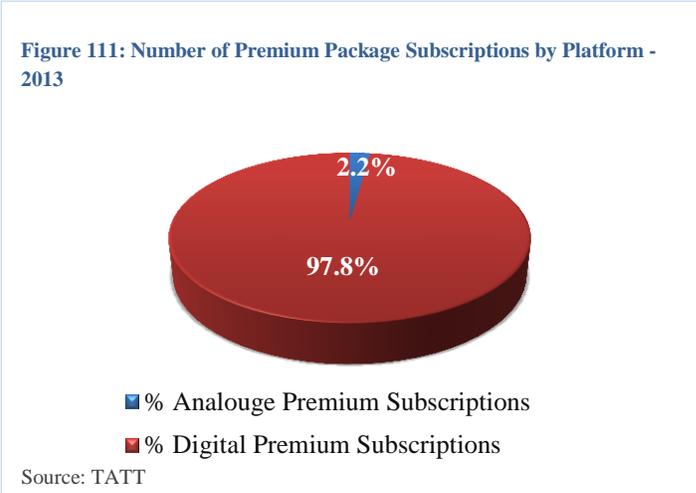
As illustrated in Figure 110, the demand for premium packages has grown steadily over the past five years.



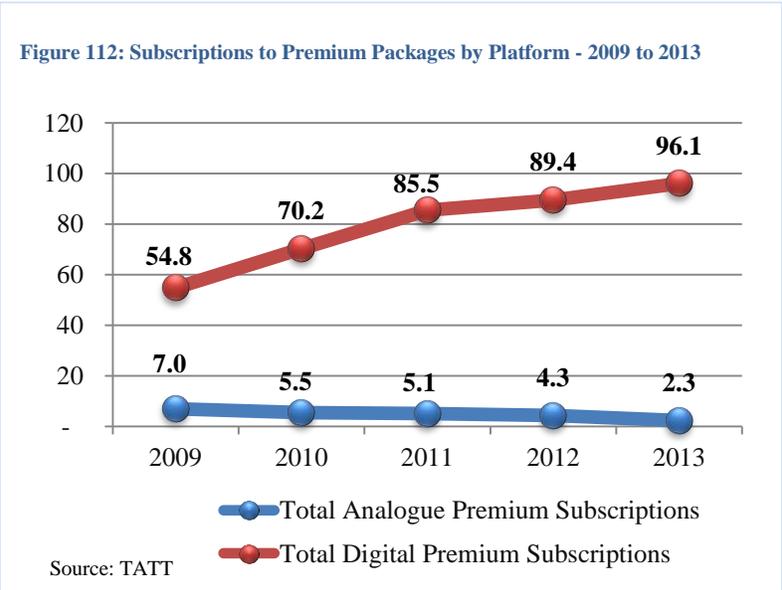
# BROADCASTING MARKET REVIEW

Consistent with the proportion of digital basic subscriptions, digital premium packages comprised the majority of all premium package subscriptions. Subscriptions to analogue

premium packages accounted for 2.2 percent (2.3 thousand) of total premium package subscriptions while digital premium packages contributed the remaining 97.8 percent (103.4 thousand). Figure 111 presents a percentage breakdown of the number of premium package subscriptions by platform for 2013.



Similar to the growth in basic subscriptions, subscriptions to premium package subscriptions followed the same trend. Digital premium package subscriptions increased along with digital basic package subscriptions in 2013. Furthermore, the number of analogue subscriptions continued to decline along with subscriptions to analogue premium packages. Compared to 2012, digital premium package subscriptions increased by approximately 7.6 percent and analogue premium package subscriptions decreased by 45.7 percent. The trend in subscriptions to premium packages over the last five years is illustrated in Figure 112 below.



# BROADCASTING MARKET REVIEW

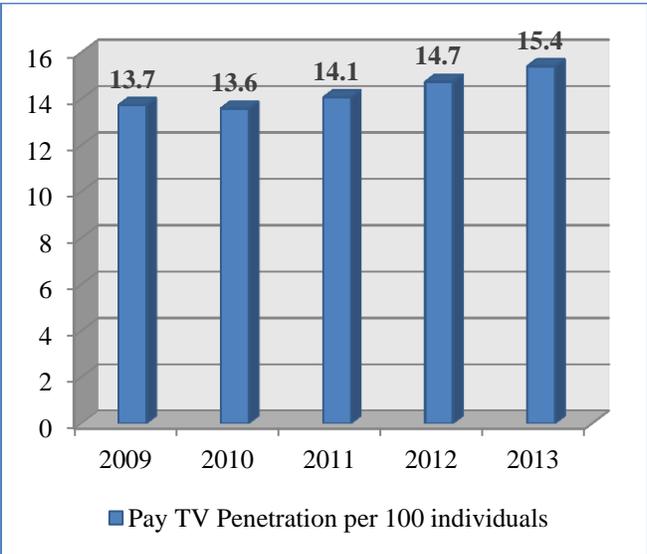
## 6.3.3. PAY TV PENETRATION

Pay TV penetration in the broadcasting market grew steadily over the past five years, despite experiencing a minor dip in 2010. As at December 2013, the penetration of Pay TV services (the number of Pay TV subscriptions per 100 inhabitants<sup>60</sup>) was 15.4, up from 14.7 in 2012. This means that approximately 15 out of every 100 persons subscribed to these services in 2013.

Following a dip in 2012, Pay TV household penetration (the number of subscriptions per 100 households<sup>61</sup>) increased marginally in 2013 to 50.9. This means that approximately 51 out of every 100 households subscribe to these services.

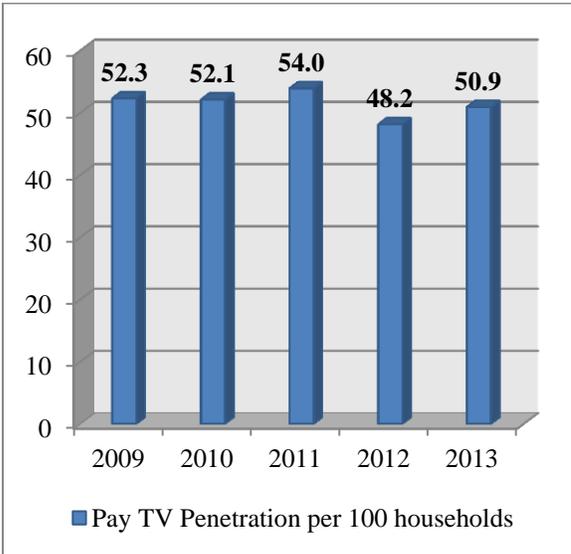
Figures 113 and 114 below highlight the trend in Pay TV penetration over the last five years.

Figure 113: Pay TV Penetration –2009 to 2013



Source: TATT

Figure 114: Pay TV Household Penetration - 2009 to 2013



Source: TATT

<sup>60</sup> Number of Pay TV subscriptions per 100 inhabitants = (number of Pay TV subscriptions / population) \* 100

<sup>61</sup> Pay TV penetration per 100 households = (number of Pay TV subscriptions / number of households) \* 100

# BROADCASTING MARKET REVIEW

## 6.3.4. PAY TV BROADCASTING REVENUES

Gross revenues in the Pay TV broadcasting market continued to experience positive growth in 2013. The total estimated gross revenues from the Pay TV broadcasting market was TT\$673.5 million, an increase of TT\$57.5 million (9.3 percent) as illustrated in Figure 115. Revenues from digital Pay TV services contributed the majority of revenues in this market. Analogue Pay TV revenues accounted for 6.9 percent (TT\$46.6 million), while digital Pay TV revenues recorded 93.1 percent (TT\$626.9 million). The percentage breakdown of Pay TV revenues by platform is shown in Figure 116 below.

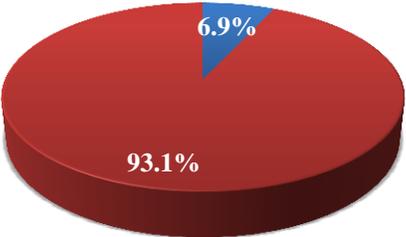
Figure 115: Pay TV Gross Revenues - 2009 to 2013



■ Gross Revenues from Pay TV

Source: TATT

Figure 116: Breakdown of Pay TV Revenues for 2013



■ Gross Analogue Pay TV Revenues  
■ Gross Digital Pay TV Revenues

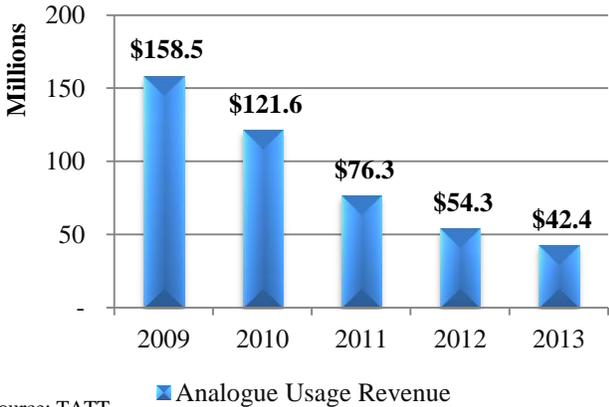
Source: TATT

# BROADCASTING MARKET REVIEW

## 6.3.5. REVENUES FROM ANALOGUE AND DIGITAL PAY TV

Of the TT\$46.6 million analogue Pay TV revenues generated in 2013, TT\$42.4 million comprised analogue usage revenues whereas miscellaneous <sup>62</sup> analogue revenues accounted for TT\$4.3 million. Consistent with decreasing subscriptions to analogue packages, Figure 117 presents the declining trend in total analogue usage revenue from 2009 to 2013.

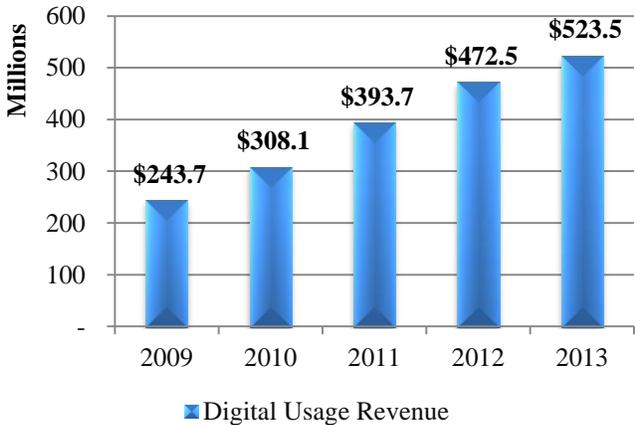
Figure 117: Gross Usage Revenues from Analogue Subscriptions - 2009 to 2013



Source: TATT

Total revenues received from digital subscriptions totalled TT\$626.9 million of which TT\$523.5 million represented digital usage revenues and miscellaneous <sup>63</sup> digital revenues accounted for TT\$103.4 million. Consistent with increasing subscriptions to digital packages, Figure 118 presents the increasing trend in total digital usage revenue from 2009 to 2013.

Figure 118: Gross Usage Revenues from Digital Subscriptions - 2009 to 2013



Source: TATT

<sup>62</sup> Miscellaneous revenues included installation revenues, additional outlets revenues, reconnection revenues, media revenues etc.

<sup>63</sup> Miscellaneous revenues included installation revenues, additional outlets revenues, reconnection revenues, media revenues etc.

# BROADCASTING MARKET REVIEW

## 6.3.6. PAY TELEVISION MARKET CONCENTRATION

Using the Hirschman-Herfindahl Index (HHI), the Authority calculated the level of concentration for the Pay TV market<sup>64</sup>. Overall, the HHI in the Pay TV market has been decreasing over the past five years with fluctuations being observed over the period, as shown in Figure 119. The average HHI for this market stood at 5,299 in 2013, decreasing by 5.4 percent from 2012. During 2013, the level of concentration in the Pay TV market remained relatively stable ending the year at 5,284 points, as illustrated by Figure 120.

Figure 119: HHI for Pay TV Market 2009-2013

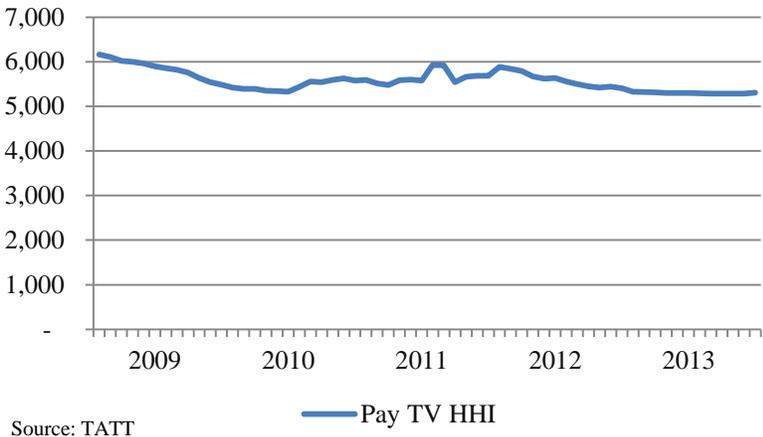
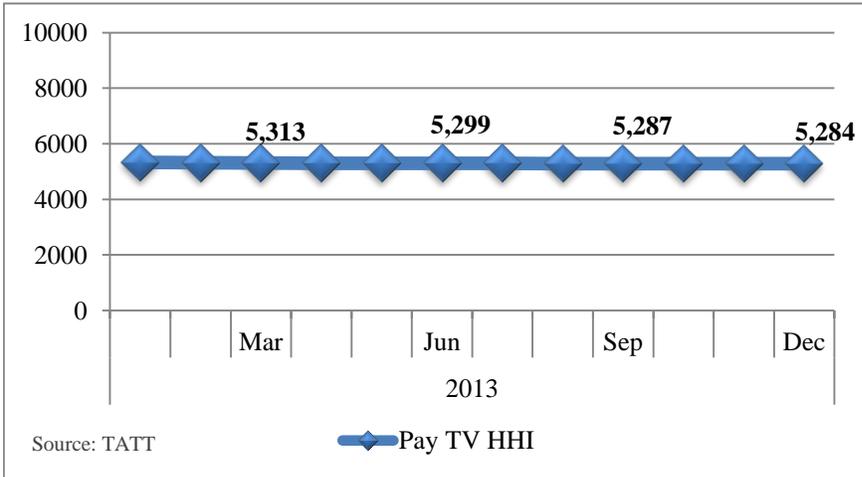


Figure 120: HHI for Pay TV Market January – December 2013

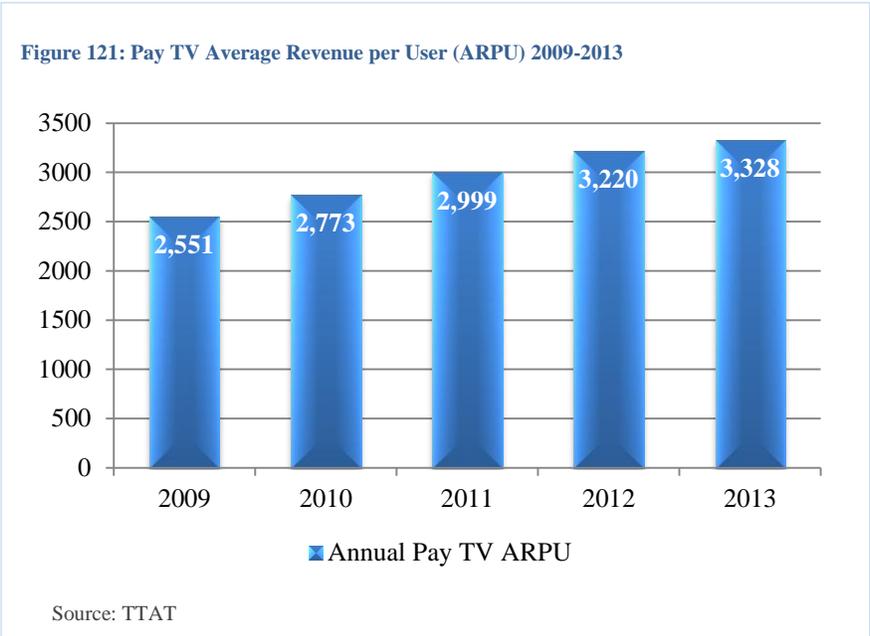


<sup>64</sup> Market share by subscriptions was used in the calculation of the HHI.

# BROADCASTING MARKET REVIEW

## 6.3.7. ANNUAL AVERAGE REVENUE PER USER (ARPU)

On average, each consumer spent TT\$3,328 in 2013 for Pay TV services. This represents an increase of TT\$108.5 (3.0 percent) in the annual average revenue per user (ARPU) over the amount recorded for 2012. This increase was supported by a 9.3 percentage growth in revenues which outweighed the 5.3 percent increase in the number of subscriptions. Figure 121 highlights the changes in ARPU over the last five years.



# APPENDIX

## APPENDIX I: DOMESTIC TELECOMMUNICATIONS STATISTICS

Table 7: Domestic Telecommunications Statistics

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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	1.3	1.3
	GDP per capita (US \$ millions) <sup>65</sup>	5,950	6,891	7,166	8,246	8,470	11,560	14,576	16,683	21,408	15,067	15,924	17,042	19,018	27,855
	Telecom revenue (US \$ million)	243.5	298.9	326.0	346.3	357.0	379.3	497.9	521.3	775.3	685.2	713.1	737.0	834	864.4
	Total telephone subscriptions ('000s)	413.2	453.3	592.2	683.3	849.3	1,246	1,844	1,817	2,121	2,150	2815	2118	2700	2,235
	Total telephone penetration	31.9	34.9	45.5	52.4	65.0	95.2	140.8	138.7	163.1	165.3	167.2	160.7	164.7	168.3
	Average revenue per user <sup>66</sup> (ARPU) US \$		659.4	550.4	506.8	420.3	304.3	239.5	286.9	365.6	318.7	322.5	348.0	384.4	386.7
Fixed Voice	Fixed Voice subscriptions('000s)	271.6	293.2	308.3	317.3	318.9	322.3	325.5	307.3	314.8	303.2	293.3	292.0	286.1	291.3
	Fixed Voice penetration	21.0	22.6	23.7	24.4	24.4	24.6	24.9	23.5	24.1	23.2	22.3	22.0	21.6	21.9
	Fixed Voice household penetration	-	-	-	-	-	-	77.4	71.5	73.3	70.1	67.5	67.1	55.3	56.2
	Average revenue per user (ARPU) US \$		349.1	362.1	267.9	254.8	272.1	277.9	422.4	486.5	403.5	411.5	417.3	430.5	413.1
	Fixed Voice Subscription growth (%)	-2.6	8.0	5.2	2.9	0.5	1.1	1.0	-5.6	2.4	-3.7	-3.3	-0.6	-1.9	1.6

<sup>65</sup> GDP per capita is recorded at current market prices

<sup>66</sup> ARPU is calculated as the total revenues generated from the service divided by the total number of subscriptions to the service

# APPENDIX

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Mobile	Mobile subscriptions ('000s)	142	160	284	366	530	924	1,519	1,510	1,806	1,846	1,894	1,826	1,880	1,944
	Mobile penetration	10.9	12.3	21.8	28.1	40.6	70.5	116	115	138	141	144	139	142	146
	Average revenue per user (ARPU) US \$		226	212	214	204	153	159	207	197	170	164	173	188	189
	Mobile subscription growth (%)	266	13	77	29	45	74	64	-0.6	20	2	2.6	-3.6	3.1	3.2
Internet	Total Internet subscriptions <sup>67</sup> ( '000s)	26.5	34.8	39.9	44.2	55.2	62.3	73.3	93.3	129.7	238.3	309.9	325.2	342.8	682.3
	Fixed Internet subscriptions <sup>68</sup> ( '000s)	26.5	34.8	39.9	44.2	55.2	62.3	73.3	82.6	114.1	145.0	171.1	192.0	224.1	231.7
	Mobile Internet subscriptions <sup>69</sup> ( '000s)	-	-	-	-	-	-	-	10.7	15.6	93.3	138.8	133.2	422.5 <sup>70</sup>	450.6
	Fixed Broadband subscriptions <sup>71</sup> ( '000s)	-	-	-	-	-	14.0	21.1	35.5	85.4	130.1	162.9	187.9	221.3	229.6
	Fixed Internet users <sup>72</sup> ('000s)	100.0	120.0	138.0	153.0	160.0	185	198.4	429	456	580	684	768	726	751
	Total Internet penetration	2.0	2.7	3.1	3.4	4.2	5.5	5.7	7.1	9.9	18.2	23.5	24.7	25.9	51.4
	Fixed Internet penetration	2.0	2.7	3.1	3.4	4.2	5.5	5.7	6.3	8.7	11.1	13.0	14.6	16.9	17.4
	Mobile Internet penetration	-	-	-	-	-	-	-	0.8	1.2	7.1	10.5	10.1	9.0	33.9
	Fixed Internet users penetration	7.6	9.2	10.5	11.7	12.2	14.1	15.2	32.8	34.9	44.3	51.9	58.3	54.8	57
	Fixed Internet household penetration	-	-	-	-	-	-	-	4.9	21.4	40.1	49.9	52.8	52.1	54
	Average revenue per user (ARPU) US \$ for fixed Internet	-	-	-	-	-	-	392.3	552.3	491.8	433.2	409.9	431.9	422.8	440
	Internet subscription growth (%)	51.0	31.4	14.7	10.8	24.8	12.9	17.7	27.4	38.9	83.8	18.0	21.7	10.7	6

<sup>67</sup> Total Internet subscriptions is the sum of fixed Internet subscriptions and mobile postpaid Internet subscriptions

<sup>68</sup> Fixed Internet subscriptions – total number of subscriptions with fixed wired or fixed wireless Internet access

<sup>69</sup> Mobile Internet subscriptions – postpaid mobile customers who subscribe to monthly Internet airtime and who are billed accordingly

<sup>70</sup> Mobile Internet Subscriptions for 2012 includes prepaid and postpaid mobile Internet users

<sup>71</sup> Fixed Broadband subscriptions –the number of Internet subscribers with access to download speeds of 256kbps or above

<sup>72</sup> Fixed Internet users – the number of persons who regularly use fixed Internet services

# APPENDIX

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Traffic	International -Outgoing (min. million)	78.5	81.7	84.1	91.9	117.2	160.2	203.2	265.9	304.3	259.2	282.9	274.5	263.5	277.9
	International -Incoming (min. million)	175.6	198.6	279.0	328.4	379.2	337.8	296.5	323.0	375.4	399.4	358.5	256.2	245.7	234.8
	Inbound/Outbound int'l traffic ratio	2.2	2.4	3.3	3.6	3.2	2.1	1.5	1.2	1.2	1.5	1.3	0.93	0.93	0.84
Pay TV	Pay TV subscriptions ('000s)		78.9	82.4	92.5	103.4	131.6	139.8	151.2	163.0	179.6	178.9	187.8	198.7	209.3
	Pay TV penetration		6.0	6.3	7.1	7.9	10.1	10.7	11.6	14.2	13.7	13.6	14.1	14.8	15.4
	Subscription TV household penetration	-	-	-	27.0	30.1	38.3	40.7	44.0	47.5	52.3	52.1	54.0	48.2	50.9
	Average revenue per user (ARPU) US \$		376.7	395.3	380.9	376.5	337.3	318.9	344.9	337.0	404.9	431.2	468.6	505.5	520.8
	Pay TV subscription growth (%)			4.5	12.3	11.7	27.3	6.2	8.1	12.5	10.2	-0.4	5.0	5.8	5.3

# APPENDIX

## APPENDIX II: LIST OF CONCESSIONAIRES AS AT DECEMBER 2013

### CONCESSIONS GRANTED (July 1, 2004 – December 31, 2013)

CONCESSIONAIRE	NETWORK AND/ OR SERVICE	TERRITORY	TYPE	TERM	DATE OF GRANT	EXPIRY DATE	FREQUENCY/ SPECTRUM
<b>INTERNATIONAL TELECOMMUNICATIONS</b>							
Columbus Communications Trinidad Limited	Public International Telecommunications Services	N/A	Type 4	DATE OF EXPIRY 04.01.2016	21 August 2009	4 January 2016	N/A
Columbus Communications Trinidad Limited formerly Columbus Networks International (Trinidad) Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	16 February 2007	15 February 2017	N/A
Columbus Communications Trinidad Limited formerly Columbus Networks International (Trinidad) Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	16 February 2007	15 February 2017	N/A
Digicel Trinidad and Tobago Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Digicel Trinidad and Tobago Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Green Dot Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	1 October 2007	30 September 2017	N/A
Green Dot Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	1 October 2007	30 September 2017	N/A
Laqtel Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Laqtel Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Lisa Communications Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	1 September 2006	31 August 2016	N/A
Lisa Communications Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	1 September 2006	31 August 2016	N/A

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Open Telecom Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	5 January 2006	4 January 2016	N/A
Open Telecom Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	5 January 2006	4 January 2016	N/A
Southern Caribbean Fibre Limited	Public International Telecommunications Network	N/A	Type 1	10 Years	17 August 2006	16 August 2016	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Three Sixty Communications Limited [Transferred from Illuminat (Trinidad and Tobago) Limited]	Public International Telecommunications Network	N/A	Type 2	10 Years	4 April 2006	3 April 2016	N/A
Three Sixty Communications Limited [Transferred from Illuminat (Trinidad and Tobago) Limited]	Public International Telecommunications Services	N/A	Type 2	10 Years	4 April 2006	3 April 2016	N/A
Windward Telecom Limited	Public International Telecommunications Network	N/A	Type 2	10 Years	16 February 2007	15 February 2017	N/A
Windward Telecom Limited	Public International Telecommunications Services	N/A	Type 2	10 Years	16 February 2007	15 February 2017	N/A
<b>FREE-TO-AIR RADIO BROADCASTING</b>							
21st Century Arts and Entertainment Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	99.5 FM
British Broadcasting Corporation	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	15 June 2007	14 June 2017	98.7FM
Caribbean Broadcasting Systems and Services Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	91.5 FM
Caribbean New Media Group Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	91.1 FM
Caribbean New Media Group Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	99.1 FM
Caribbean New Media Group Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	100.1 FM
Central Broadcasting Services Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	21 September 2006	20 September 2016	102.7 FM

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Central Radio FM90 Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2006	22 February 2016	90.5 FM
<sup>1</sup> Citadel Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	95.5 FM
Family Focus Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	98.1 FM
Guardian Media Limited (formerly Trinidad Publishing Company Limited)	Broadcasting Services (Free to Air AM)	National	Type 5	10 Years	23 February 2006	22 February 2016	730 AM
Guardian Media Limited (formerly Trinidad Publishing Company Limited)	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	95.1 FM
Guardian Media Limited (formerly Trinidad Publishing Company Limited)	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	105.1 FM
Guardian Media Limited (formerly Trinidad Publishing Company Limited)	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	106.1 FM
Guardian Media Limited (formerly Trinidad Publishing Company Limited)	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2006	22 February 2016	106.5 FM
Heritage Communications Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	101.7 FM
<sup>1</sup> Inner City Broadcasting Company Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	107.1 FM
Kaisoca Productions Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	92.7 FM
Kenny Phillips	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2006	22 February 2016	90.1 FM
Marcel Mahabir	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	107.7 FM
Mohan Jaikaran	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	101.1 FM
Neil "Iwer" George	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	91.9 FM
Parliament of the Republic of Trinidad and Tobago	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	1 March 2007	28 February 2017	105.5 FM

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PBCT Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	104.7 FM
Radio Five Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	93.5 FM
Radio News Network	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	104.1 FM
Radio Vision Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	102.1 FM
<sup>1</sup> Sidewalk Radio Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2006	22 February 2016	92.3 FM
Superior Infinite Productions Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	94.1 FM
Telemedia Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	97.1 FM
<sup>1</sup> The Q Corporation Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	96.7 FM
Trico Industries Limited	Broadcasting Services (Free to Air FM)	Minor Territorial	Type 5	10 Years	11 October 2012	10 October 2022	89.5 FM
Trinidad and Tobago Citizen's Agenda Network	Broadcasting Services (Free to Air FM)	Minor Territorial/Niche - Toco and environs	Type 5	10 Years	1 March 2006	28 February 2016	106.7 FM
Trinidad and Tobago Radio Network Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	96.1 FM
United Cinemas Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	103.5 FM
Upward Trend Entertainment Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	97.5 FM
<sup>3</sup> VL Communications Limited	Broadcasting Services (Free to Air FM)	National	Type 5	10 Years	23 February 2006	22 February 2016	94.7 FM
Winfield Aleong Broadcasting Company Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2006	22 February 2016	103.1 FM
<sup>2</sup> Wonderland Entertainment Limited	Broadcasting Services (Free to Air FM)	Major Territorial	Type 5	10 Years	23 February 2006	22 February 2016	100.5 FM

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## MOBILE TELECOMMUNICATIONS

Digicel Trinidad and Tobago Limited	Public Domestic Mobile Telecommunications Network	National	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Digicel Trinidad and Tobago Limited	Public Domestic Mobile Telecommunications Services	National	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public Domestic Mobile Telecommunications Network	National	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public Domestic Mobile Telecommunications Services	National	Type 2	10 Years	30 December 2005	29 December 2015	N/A

## FREE-TO-AIR TELEVISION BROADCASTING

Advance Community Television Network Limited	Broadcasting Services (Free to Air Television)	Major Territorial	Type 5	10 Years	1 March 2006	28 February 2016	UHF 25
C.C.N. Television Limited	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	1 March 2006	28 February 2016	VHF 6, UHF 18, 19
Caribbean New Media Group Limited	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	23 February 2006	22 February 2016	VHF 9, UHF 13, 20
Gayelle Limited	Broadcasting Services (Free to Air Television)	Major Territorial	Type 5	10 Years	1 March 2006	28 February 2016	UHF 23
Government Information Services Limited	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	12 January 2010	11 January 2020	VHF 4, UHF 16
Guardian Media Limited [formerly known as Trinidad Publishing Company Limited] (CNC3)	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	14 April 2008	13 April 2018	VHF 12, UHF 14, 22
Mohan Jaikaran	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	1 March 2006	28 February 2016	VHF 7, UHF 37, 39
Parliament of the Republic of Trinidad and Tobago	Broadcasting Services (Free to Air Television)	National	Type 5	10 Years	23 October 2008	22 October 2018	VHF 11, UHF 26, 29
Synergy Entertainment Network Limited	Broadcasting Services (Free to Air Television)	Major Territorial	Type 5	10 Years	14 April 2008	13 April 2018	UHF 31, 33

## SUBSCRIPTION TELEVISION BROADCASTING

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Air Link Communications	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Princes Town and Environs	Type 5	10 Years	1 May 2010	30 April 2020	N/A
Columbus Communications Trinidad Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	5 January 2006	4 January 2016	N/A
DirecTV Trinidad Limited	Subscription Broadcasting Service (direct from Satellite only)	National	Type 5	10 Years	28 February 2006	27 February 2016	N/A
Diversified Technologies Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Penal and Environs	Type 5	10 Years	11 October 2012	10 October 2022	N/A
Green Dot Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	11 July 2008	10 July 2018	N/A
Independent Cable Network of Trinidad & Tobago Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Major Territorial	Type 5	10 Years	1 November 2006	31 October 2016	N/A
Network Technologies Limited (Transferred from Computer Technologies and Services Limited)	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Mayaro and Guayaguayare	Type 5	10 Years	5 January 2006	4 January 2016	N/A
Open Telecom Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	30 October 2013	29 October 2023	N/A
RVR International Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Niche - Princes Town and Rio Claro	Type 5	10 Years	5 January 2006	4 January 2016	N/A
Telecommunications Services of Trinidad and Tobago Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	30 December 2005	29 December 2015	N/A
TRICO Industries Limited	Subscription Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	Minor Territorial	Type 5	10 Years	1 September 2006	31 August 2016	N/A

## TELEVISION BROADCASTING SERVICE VIA CABLE

Central Broadcasting Services Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	18 March 2013	17 March 2023	N/A
Darut Tarbiyah	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	7 May 2013	6th May 2023	N/A
IBN Communications Company Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	11 October 2012	10 October 2022	N/A
IETV Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5				N/A
Living Water Community	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	7 May 2013	6th May	N/A

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	Domestic Fixed Telecom. Network only)					2023	
Sankhya Television Limited	Broadcasting Service (over a Public Domestic Fixed Telecom. Network only)	National	Type 5	10 Years	7 May 2013	6th May 2023	N/A
<b>FIXED TELECOMMUNICATIONS</b>							
Air Link Communications	Public Domestic Fixed Telecommunications Network	Niche - Princes Town and Environs	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Air Link Communications	Public Domestic Fixed Telecommunications Services	Niche - Princes Town and Environs	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Columbus Communications Trinidad Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	5 January 2006	4 January 2016	N/A
Columbus Communications Trinidad Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	5 January 2006	4 January 2016	N/A
Digicel (Trinidad and Tobago) Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Digicel (Trinidad and Tobago) Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Diversified Technologies Limited	Public Domestic Fixed Telecommunications Network	Niche - Penal and Environs	Type 2	10 Years	11 October 2012	10 October 2022	N/A
Diversified Technologies Limited	Public Domestic Fixed Telecommunications Services	Niche - Penal and Environs	Type 2	10 Years	11 October 2012	10 October 2022	N/A
Green Dot Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	1 October 2007	30 September 2017	N/A
Green Dot Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	1 October 2007	30 September 2017	N/A
Illuminat (Trinidad & Tobago) Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Illuminat (Trinidad & Tobago) Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Independent Cable Network of Trinidad & Tobago Limited	Public Domestic Fixed Telecommunications Network	Major Territorial	Type 2	10 Years	1 November 2006	31 October 2016	N/A
Independent Cable Network of Trinidad & Tobago Limited	Public Domestic Fixed Telecommunications Services	Major Territorial	Type 2	10 Years	1 November 2006	31 October 2016	N/A
Lisa Communications Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Lisa Communications Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A

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Network Technologies Limited (Transferred from Computer Technologies and Services Limited)	Public Domestic Fixed Telecommunications Network	Niche - Mayaro and Guayaguayare	Type 2	10 Years	5 January 2006	4 January 2016	N/A
Network Technologies Limited (Transferred from Computer Technologies and Services Limited)	Public Domestic Fixed Telecommunications Services	Niche - Mayaro and Guayaguayare	Type 2	10 Years	5 January 2006	4 January 2016	N/A
Open Telecom Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Open Telecom Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	1 May 2010	30 April 2020	N/A
Prism Services (Trinidad) Limited	Public Domestic Fixed Telecommunications Services	National	Type 4	10 years	29 July 2013	28 July 2023	N/A
RVR International Limited	Public Domestic Fixed Telecommunications Network	Niche - Princes Town and Rio Claro	Type 2	10 Years	5 January 2006	4 January 2016	N/A
RVR International Limited	Public Domestic Fixed Telecommunications Services	Niche - Princes Town and Rio Claro	Type 2	10 Years	5 January 2006	4 January 2016	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Telecommunications Services of Trinidad and Tobago Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	30 December 2005	29 December 2015	N/A
Three Sixty Communications Limited	Public Domestic Fixed Telecommunications Network	National	Type 2	10 Years	1 December 2009	30 November 2019	N/A
Three Sixty Communications Limited	Public Domestic Fixed Telecommunications Services	National	Type 2	10 Years	1 December 2009	30 November 2019	N/A
TRICO Industries Limited	Public Domestic Fixed Telecommunications Network	Minor Territorial	Type 2	10 Years	1 September 2006	31 August 2016	N/A
TRICO Industries Limited	Public Domestic Fixed Telecommunications Services	Minor Territorial	Type 2	10 Years	1 September 2006	31 August 2016	N/A
Wireless Telecommunications Ltd	Public Domestic Fixed Telecommunications Network	National	Type 2	10 years	27 November 2013	26 November 2023	N/A
Wireless Telecommunications Ltd	Public Domestic Fixed Telecommunications Services	National	Type 2	10 years	27 November 2013	26 November 2023	N/A

<sup>1</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>2</sup>Concession formerly held by Wonderland Entertainment has been transferred to Guardian Media Limited as of June 9, 2012.

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<sup>3</sup>Concession obligations of VL Communications have been novated to Trinidad and Tobago Radio Network Limited as of March 18, 2014.

# APPENDIX

## APPENDIX III: TARIFFS

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

- TSTT: <http://www.tstt.co.tt/>
- bmobile: <http://www.bmobile.co.tt/>
- Digicel: <http://www.digiceltt.com/>
- Network Technologies Limited: <http://www.mayarocabletv.com/>
- Columbus Communications Trinidad Limited: <http://www.flowtrinidad.com/>
- Open Telecom: <http://www.opentelecomtt.com/>
- Greendot: <http://www.gd.tt/>
- Airlink Communications: <http://airlinktt.net/>
- 360 Communications Limited: <http://www.360communications.biz/>
- Illuminat: [http://www.illuminatnm.com/tt\\_index.aspx](http://www.illuminatnm.com/tt_index.aspx)

# APPENDIX

## APPENDIX IV: GLOSSARY OF TERMS

The following definitions are included to assist the readers of the 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 to authorise the operation of a public telecommunications network and/or the provision of any public telecommunications service or broadcasting service.
<b>Gross Domestic Product</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 shares 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.

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<b>Licence</b>	a legal instrument granted by the Authority to authorise the operation or use of any radiocommunication service or any radiotransmitting 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 (pre-paid or post-paid) 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>Penetration rate</b>	Is defined as the number of persons per 100 inhabitants that subscribe to telecommunications and/or broadcasting services.