



Annual Market Report
Telecommunications and Broadcasting
Sectors

January – December 2007

The Telecommunications Authority of Trinidad and Tobago, TATT
#5 Eight Avenue Extension,
Off Twelfth Street,
Barataria,
Trinidad and Tobago

Tel: 1-868-675-8288

Fax: 1-868-674-1055

Email: policy@tatt.org.tt

© September 2008

Legal Disclaimer

The information and statistics contained in this document were obtained from various sources available to the Telecommunications Authority of Trinidad and Tobago at the time of publication. The Authority does not give any warranty as to the accuracy or reliability of the information and shall not be liable for any loss or damage howsoever caused arising out of any use or reliance upon any statements made or information contained in this document.

Table of Contents

1.	Overall Market Data	6
1.1.	Total Authorization	6
1.2.	Overview of the Telecommunications and Broadcasting Markets.....	7
2.	Fixed Telephony Market Data.....	14
2.1.	Fixed Voice Subscribers	14
2.2.	Fixed Voice Revenues	17
2.3.	Fixed Voice Traffic Data	19
3.	Mobile Market Data	21
3.1.	Mobile Subscribers	21
3.2.	Mobile Revenues.....	23
3.3.	Mobile Market Concentration	25
4.	International Voice Traffic Data	28
5.	Internet Market Data	30
5.1.	Internet Subscribers.....	31
5.2.	Internet Revenues.....	32
5.3.	Internet Penetration	32
6.	Broadcasting Market Data.....	35
6.1.	Free-to-Air TV Broadcasting Market.....	35
6.2.	Free-to-Air Radio Broadcasting Market	36
6.3.	Subscription Television Broadcasting (Cable TV) Market.....	37
7.	Summary and Outlook.....	42
8.	Appendix I.....	44
9.	Appendix II	46
10.	Appendix III	47
11.	Appendix IV	48

List of Tables

Table 1: Number of Authorizations as at December 2007	6
Table 2: Selected Economic Indicators	12
Table 3: Indicators of Selected Countries 2007	26
Table 4: Broadcasting Market Concessions as at December 2007	35
Table 5: Domestic Telecom Statistics	44
Table 6: List of Concessions as at December 31, 2007	46
Table 7: Internet Monthly Charges (for the period January to December 2007).....	47
Table 8: Digicel Mobile Tariffs (for the period January to December 2007).....	48
Table 9: TSTT Mobile Tariffs (for the period January to December 2007).....	49

List of Figures

Figure 1: Telecommunications and Broadcasting Sectors Market Share by Revenues 2007.....	8
Figure 2: Gross Revenues Telecommunications and Broadcasting Sectors 2005 - 2007.....	9
Figure 3: Market Share of Subscribership by Service as at December 2007.....	9
Figure 4: Total Subscribers 2002 - 2007	10
Figure 5: Penetration Rate of Subscribers 2002- 2007	11
Figure 6: Sectoral Contribution to GDP Growth (%).....	13
Figure 7: Fixed Voice Subscribers & Penetration per 100 Inhabitants 2001 – 2007.....	14
Figure 8: Fixed Voice Subscribers 2007.....	15
Figure 9: Fixed Voice Subscribers FY2001/02-FY2006/07	16
Figure 10: Fixed Line Penetration per 100 Inhabitants for Selected Caribbean Countries & Singapore 2007	17
Figure 11: Fixed Voice Subscriber Revenues 2007.....	18
Figure 12: Fixed Voice Revenues FY 2001/02 – FY 2006/07	19
Figure 13: Domestic Fixed Voice Traffic Volume 2007.....	20
Figure 14: Number of Domestic Fixed Voice Calls	20
Figure 15: Mobile Subscribers 2005-2007	21
Figure 16: Mobile Subscribers per 100 Inhabitants for Selected Caribbean Countries & Singapore 2007	22
Figure 17: Mobile Market Revenues 2004 - 2007.....	23
Figure 18: Mobile Market Revenues 2003-2007.....	24

Figure 19: Mobile Market Share by Revenues as at December 2007.....	24
Figure 20: Hirschman-Herfindahl Index of Mobile Market January 2006 –December 2007.....	25
Figure 21: Total Mobile and Fixed line Subscribers.....	
Figure 22: Mobile Subscribers by Region	27
Figure 23: Total Mobile and Fixed line Subscribers for Trinidad and Tobago	27
Figure 24: International Voice Traffic Volume 2002-2007.....	29
Figure 25: Revenues from International Voice Traffic Volume 2002 - 2007	29
Figure 26: Internet Subscribers 2003-2007	31
Figure 27: Internet Revenues 2007.....	32
Figure 28: Internet Penetration per 100 Inhabitants for Selected Caribbean Countries and Singapore 2007	33
Figure 29: Number of Internet Users per 100 Inhabitants for Selected Caribbean Countries 2007 .	33
Figure 30: Gross Revenues for Free-to-Air TV Broadcasting Service Providers 2002-2007	36
Figure 31: Gross Revenues for Free-to-Air Radio Broadcasting Service Providers 2007	37
Figure 32: Subscription Television Subscribers as at December 2007.....	38
Figure 33: Subscription Television Subscribers by Platform 2007	38
Figure 34: Subscription TV Revenues by Platform for 2007	39
Figure 35: Subscription TV Revenues by Platform 2007	40
Figure 36: Subscription Television Subscribers and Penetration 2004 - 2007	40
Figure 37: Subscription TV Average Revenue per User (ARPU) 2003 - 2007.....	41
Figure 38: Domestic Telecom Statistics	45

1. Overall Market Data

This report presents information on the markets within the telecommunications and broadcasting sectors which includes data on subscriptions, gross revenues and tariffs of the relevant markets. The data is also used by the Authority to determine the market share of the relevant service providers and to monitor and inform policy decisions that will facilitate the orderly development of markets within these sectors.

The data presented are primarily based on the results of a survey of concessionaires conducted within the telecommunications and broadcasting sectors for the period 1st January to 31st December 2007, historical data series and other information made available to the Telecommunications Authority of Trinidad and Tobago (TATT) at the time of publication of the report.

TATT will seek to publish regular market updates on the telecommunications and broadcasting sectors provided that stakeholders within the sector continue to cooperate by responding to the Authority's surveys in a timely manner.

1.1. Total Authorization

Table 1: Number of Authorizations as at December 2007

Table 1a: Number of Licences¹

Licences		
Spectrum	Cellular Mobile	3
	Land Mobile	130
	Point-to-Point	3
	Point-to-Multipoint	4
General	Point-to-Point	35
	Satellite Earth	13
	Amateur Stations	210
	Maritime Stations	43
	Stations	0
Broadcasting		37
Special Events		13
Total		491

Table 1b: Number of Concessions

Concessions	
Fixed	7
Mobile	3
International	10
Broadcasting	47
Total	67

Source: TATT

¹ Aeronautical Station licences were not granted in 2007, as the framework for coordinating with the Civil Aviation Authority was being finalized.

Under the Telecommunications Act 2001, TATT is responsible for making recommendations to the Minister of Public Administration for the granting of concessions to telecommunications operators (Section 21(5)). In addition, TATT is authorized under Section 36 of the Telecommunications Act, 2001 and responsible for the granting of licences. In accordance with these legislative powers, TATT has granted a total of 491 licences while 66 concessions were granted by the Minister based on TATT's recommendations as at December 2007 (Table 1). A detailed list of concessions granted as at December 31, 2007 is present in Table 6 in Appendix II.

1.2. Overview of the Telecommunications and Broadcasting Markets

As at December 2007, the estimated gross revenues obtained by the telecommunications and broadcasting sectors totaled TT\$ 4 billion or US\$ 639 million which represented approximately 3 per cent of GDP for 2007. Of this amount, mobile services obtained the most revenues with approximately 44.4 per cent of the earnings for the year. The fixed² market accounted for 20.3 per cent, while International³ represented 9.6 per cent, subscription television accounted for 8.2 per cent, while Internet and free-to-air radio obtained shares of 7.5 and 3.6 per cent respectively. The smallest market within the telecommunications and broadcasting sectors was the leased circuit market which accounted for approximately 2.1 per cent of the total earnings for the year ending December 2007. The free-to-air TV market was the second smallest market with a 2.5 per cent market share. Gross revenues obtained within the sectors that were not allocated to a specific market, classified as 'other'⁴, represented 1.8 per cent of the total gross revenues for 2007. Figure 1 below provides a breakdown of the share of the total gross revenues obtained during 2007 by market segments.

The total estimated gross revenues of TT\$4 billion represents an increase of TT\$407 million or 11.2 per cent over the previous period. Of this amount, the telecommunications sector accounted for TT\$3.5 billion or 85.7 per cent while the broadcasting sector contributed TT\$576 million or 14.3 per cent. The growth in the gross revenues for 2007 stemmed primarily from the increases in revenues from all market segments with the exception of the leased circuits market which recorded a decline of TT\$24.8 million or 22.7 per cent over 2006. The growth in the fixed, mobile and Internet markets of 5.1, 10.6 and 51.4 per cents respectively led to an overall growth of 10.1 per cent in the telecommunications sector. Similar increases in the subscription television, free-to-air

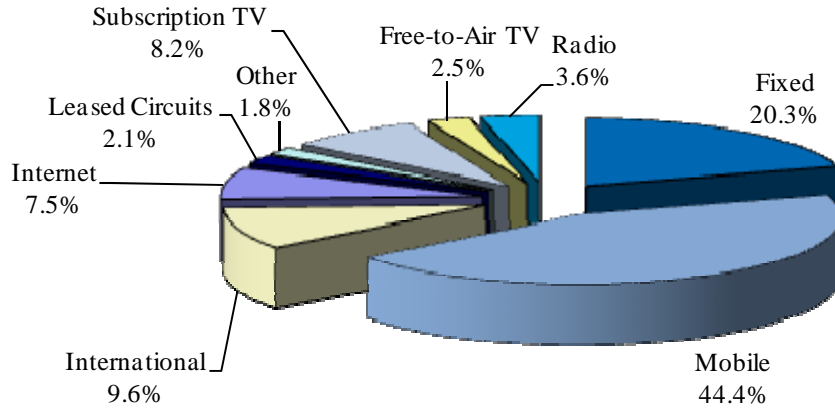
² Fixed market revenues include revenues earned from fixed voice (excluding international) and fixed access

³ International market revenues are equal to the sum of gross revenues obtained from outgoing and incoming int'l traffic.

⁴ The other category represents gross revenues obtained from services that were not readily classified in the markets segments listed above. These services included interconnection and enhanced services.

television and radio markets of 16.9, 34.3 and 13.8 per cents respectively resulted in an overall increase of 18.8 per cent in the broadcasting sector.

Figure 1: Telecommunications and Broadcasting Sectors Market Share by Revenues 2007



Source: TATT Annual Telecom & Broadcasting Survey

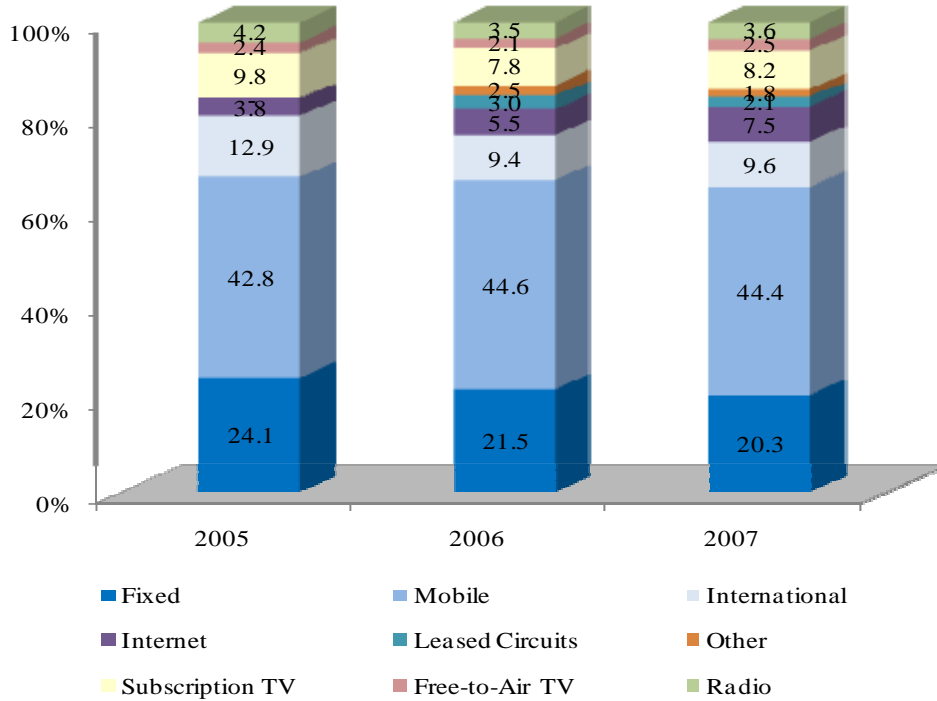
Figure 2 below reveals the trend in the share of gross revenues amongst the identified market segments since 2005. The mobile market revenue has dominated the market share with a 44.4 per cent share of the total revenues in 2007, increasing from a 42.8 per cent share in 2005. The fixed line market segment is next with a market share of 20.3 per cent in 2007, declining from the 24.1 recorded in 2005. The subscription TV market follows with a market share of 8.2 in 2007 decreasing from the 9.8 share experience in 2005. The other market segments were generally stable with the exception of the Internet market which increased significantly from 3.8 per cent market share in 2005 to 7.5 in 2007.

One factor that contributes significantly to the growth in revenues of the telecommunications and broadcasting sectors is the growth in subscribership⁵. During 2007, the mobile, fixed, Internet and subscription TV markets recorded a total of 2 million subscribers. This total however, represents a decline of 12,386 subscribers or 0.6 per cent over the previous period. This decline in subscribership resulted from decreases in subscribers for mobile and fixed voice services of 0.6 and

⁵ Subscribership refers to the number of persons/entities that subscribe to a particular service offering within the relevant market.

5.6 per cent respectively, despite the increase in subscribers for Internet and subscription TV services of 4.7 and 8.1 per cents respectively.

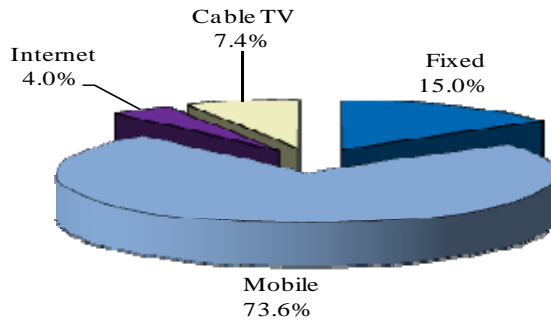
Figure 2: Gross Revenues Telecommunications and Broadcasting Sectors 2005 - 2007



Source: TATT Annual Telecom & Broadcasting Survey

Figure 3 below provides a breakdown of the share of total subscribers for 2007 by market segments. The mobile market continues to account for the majority of subscribers with a 73.6 per cent share. The fixed line voice market is next with a 15 per cent market share while subscription TV and Internet represented 7.4 and 4.0 per cent respectively.

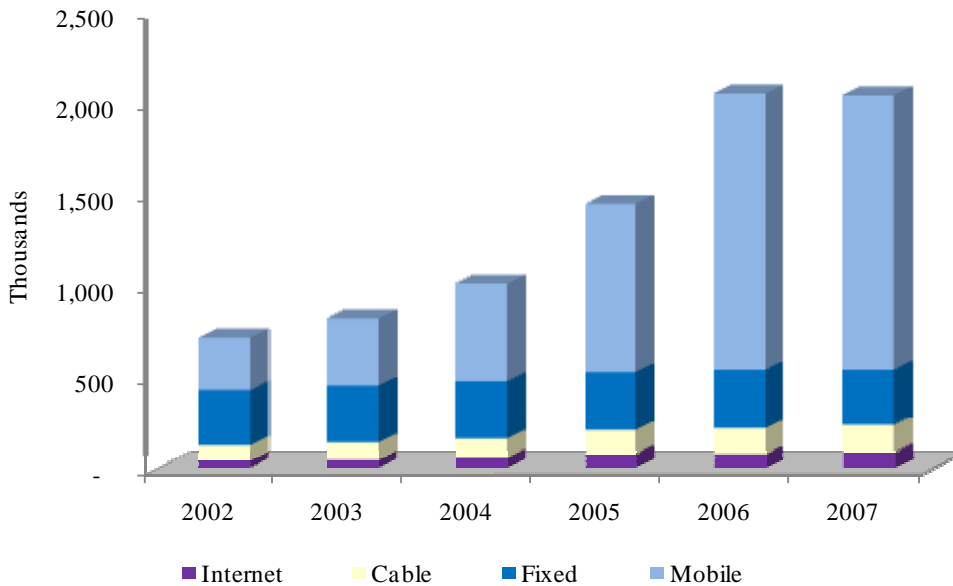
Figure 3: Market Share of Subscribership by Service as at December 2007



Source: TATT Annual Telecom & Broadcasting Survey

A six year time series of the total number of subscribers for fixed line, mobile, subscription broadcasting and Internet markets revealed that the subscriber base increased from 714,546 to 2,047,455, a phenomenal increase of 1,634,911 or 186.5 per cent since 2002. This significant increase in total subscribers is highlighted by an annual average growth rate of 24.9 per cent between 2002 and 2007. Figure 4 below shows this exceptional increase over the six year period with a peak in subscribers in 2006.

Figure 4: Total Subscribers 2002 - 2007

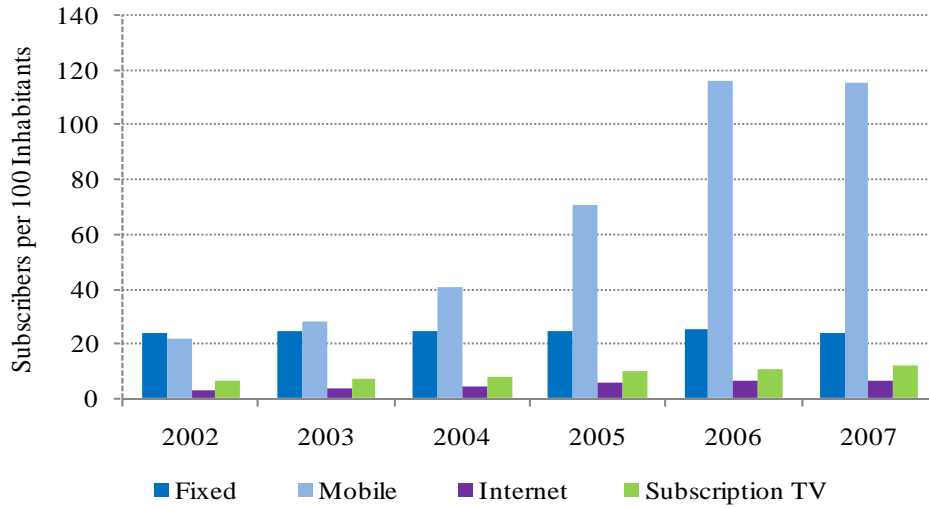


Source: TATT Annual Telecom & Broadcasting Survey

As the number of subscribers decreased in 2007, so did the penetration levels within each market segment. Figure 5 below presents a breakdown of the number of subscribers per 100 inhabitants. This indicator provides an estimation of the number of persons that subscribes to telecom and broadcasting services. During 2007, mobile telephony recorded the highest penetration level with approximately 116 subscribers to every 100 inhabitants. Fixed voice service is next in line with an estimated 24 subscribers per 100 inhabitants. This is followed by subscription television and Internet with penetration rates of 12 and 6 subscribers per 100 inhabitants, respectively. Figure 5 also presents a time series of the penetration rates of these subscriber based services since 2002. The penetration rate for mobile grew exponentially over the period while fixed line remained

relatively constant. Both Internet and subscription television services have shown slight increases in penetration since 2002.

Figure 5: Penetration Rate of Subscribers 2002- 2007



Source: TATT Annual Telecom & Broadcasting Survey

Box 1: Overview of the Domestic Economy

The economy of Trinidad & Tobago has continued on its robust growth path in 2007 (albeit at a decreasing rate) with an estimated increase in real GDP of 5.5 per cent. This increase reflects a significant reduction from the 12.2 per cent growth achieved in 2006. This reduction in the growth of the economy was driven by lower output in oil production in the energy sector. The non-energy sector grew by 6.7 per cent, a marginal increase over the 6.5 per cent recorded in 2006.

During 2007, the external current account recorded a total of US\$5.4 billion, an increase of 11.9 per cent over the previous year. This increase in the current account led to a surplus of US\$1.5 billion, the largest surplus recorded since 2001.

Table 2: Selected Economic Indicators

	2001	2002	2003	2004	2005	2006	2007 ^P
Population (millions)	1.30	1.30	1.30	1.31	1.31	1.31	1.31
GDP (US\$ millions)	8,959	9,327	11,297	13,149	15,143	19,136	20,971
GDP per capita (US\$)	6,892	7,166	8,246	8,470	11,560	14,576	16,008
Real GDP (US\$ millions)	8,492	8,951	10,968	12,452	13,211	14,823	15,638
Real GDP Growth (%)	4.3	6.8	14.4	7.8	6.1	12.2	5.5
Inflation rate (%) (end of period)	5.5	4.2	3.0	5.6	7.2	9.1	7.6
Exchange rate (TT\$ per US\$)	6.2	6.2	6.3	6.3	6.3	6.3	6.3
Unemployment rate (%)	10.8	10.4	10.5	8.4	8.0	6.2	5.5
External Current Account Surplus (US\$ millions)	446	76	248	532	1,476	1,119	1,541

Sources: Annual Economic Survey 2007 - Central Bank of Trinidad & Tobago

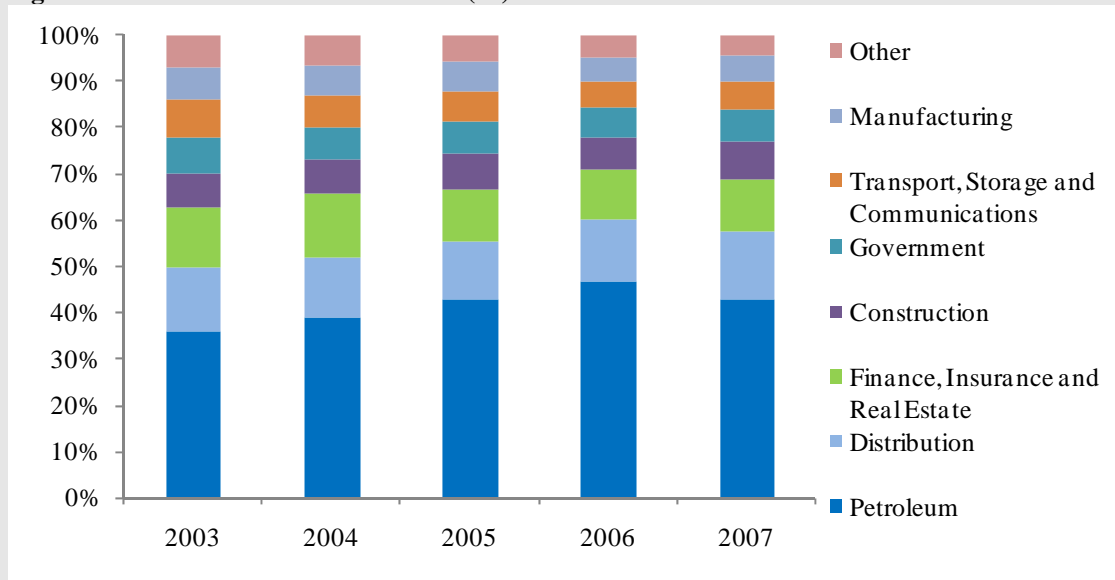
^P 2007 data are provisional

Other economic highlights for 2007 include the stable exchange rate, the reduced inflation rate and a low unemployment rate. The US\$ exchange rate remained relatively stable at an average rate of TT\$6.3 to US\$1 during 2007. The inflation rate on the other hand fluctuated significantly during the last three years increasing from 7.2 per cent at the end of 2005 to 9.1 per cent at the end of 2006 having peaked at 10 per cent in October 2006 (due to higher food prices). However, at the close of 2007 the inflation rate stabilized to end the year at 7.6 per cent. The unemployment rate continued on its declining trend and was reduced from 6.2 per cent in 2006 to 5.5 per cent as at the end of December 2007.

In the real sector, the petroleum industry grew by approximately 14.4 per cent, a decline over the 41 per cent recorded in 2006. The growth recorded in 2006 was exceptional due to the operation of the LNG Train IV which came on stream during the last quarter of 2005. The petroleum sector has dominated production in

Trinidad and Tobago since 2000. Despite this dominance the petroleum sector’s output as a percentage of GDP has been declining in recent years. Figure 6 below highlights the decline in the contribution of the petroleum sector to GDP in 2007. This chart shows that the petroleum sector had increased contribution to GDP since 2003. However, during 2007 there was an estimated decline in the contribution of the petroleum sector to GDP as highlighted in Figure 6. However, Finance, Insurance and Retail reflected increased contributions in 2007. Similarly, there were estimated increases in the contribution of Distribution and Construction sectors during the year.

Figure 6: Sectoral Contribution to GDP (%)



Source: Annual Economic Survey 2007 – Central Bank of Trinidad and Tobago

Despite the decline in the percentage contribution of the petroleum sector to GDP, the increase in contribution of the non-petroleum sector was very much welcomed. Contributions from the non-petroleum sector augur well for the continued development of this sector, especially within the services sector. Telecommunications falls within the services sector and significant development has been seen in recent years. The liberalization process of this sector started with the entry of Digicel in the mobile market. There were similar entrants in the international market with the authorization of nine providers of international network/services since 2005, including the installation of two additional off-island cables that has enhanced the international gateway to Trinidad and Tobago in 2007. In addition, there has been significant investment in the Internet market, as new entrants roll-out network infrastructure to compete with the incumbent for clients. These types of investments are expected to increase within the services sector which will provide new impetus in the telecommunications sector and provide advanced product and services to consumers.

2. Fixed Telephony Market Data

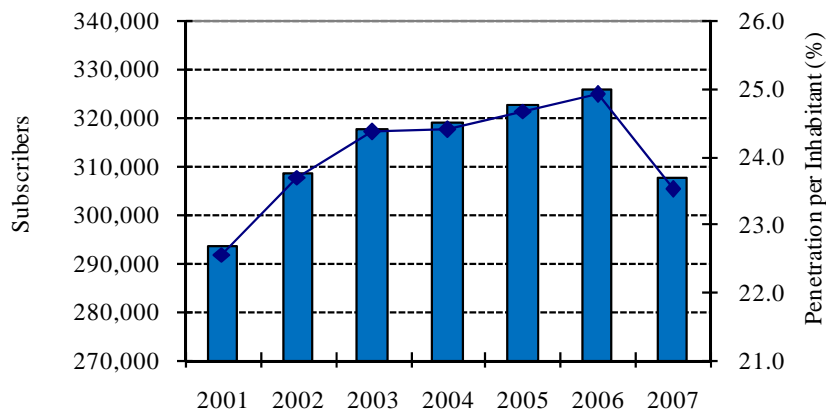
This section provides information on domestic fixed telephony services. That is, voice services provided over a public domestic fixed (wired or wireless) telecommunications network. As at December 2007, there were seven operators authorized to provide fixed domestic telecommunications services to the public over wired or wireless facilities. They were

- Telecommunications Services of Trinidad and Tobago (TSTT) (National),
- Columbus Communications Trinidad Limited (Flow) (National),
- Computer Technologies Services Limited (CTSL) (Mayaro/Guayagauare only),
- RVR International Limited (RIO Claro/Princess Town/New Grant only),
- TRICO Industries Limited (Tobago),
- Independent Cable Network of Trinidad and Tobago Limited (ICNTT) (National) and
- Green Dot Limited (National).

With the exception of TSTT and Green Dot Limited, all companies above provide subscription television services over a public fixed telecommunications network. Even though they all have authorizations to also provide any fixed telecommunications service (including voice and Internet), TSTT was the only provider that offered domestic fixed voice services during the review period.

2.1. Fixed Voice Subscribers

Figure 7: Fixed Voice Subscribers & Penetration per 100 Inhabitants 2001 – 2007

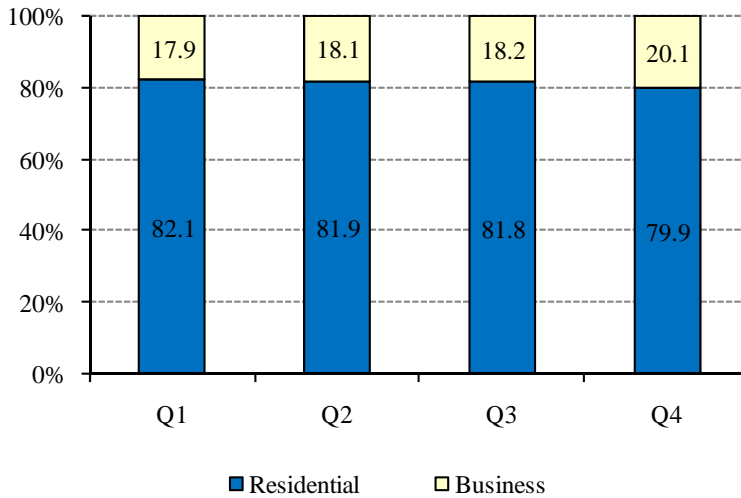


Source: TATT Annual Telecom & Broadcasting Survey

During 2007 the number of subscribers of fixed telephone service decreased by 18,248 or 5.6 per cent to end the year with a total of 307,301 subscribers. This marks a significant reduction in the 325,549 subscribers recorded in 2006. Figure 7 above shows the seven year growth trend of fixed voice subscribers since 2001. There was an increasing trend in the number of subscribers between 2001 and 2006; however in 2007 the fixed voice market recorded a decline for the first time since 2001.

The fixed voice market is composed of two types of subscribers, residential and business. As at December 2007, there were 245,412 residential subscribers and 61,889 business subscribers. The residential subscribers accounted for the majority of the fixed voice market with a 79.9 per cent market share while business customers accounted for 20.1 per cent. This represents a slight decline from the 81.1 per cent market share for residential customers recorded in 2006. Business customers, on the other hand, represented an increase in the market share from the 19.9 per cent in 2006 to 20.1 in 2007. Figure 8 below presents the breakdown of the market share for residential and business fixed voice customers during 2007. It should be noted that the market share for residential customers declined from 82.1 per cent in the first quarter of 2007 to 79.9 in the last quarter.

Figure 8: Fixed Voice Subscribers 2007

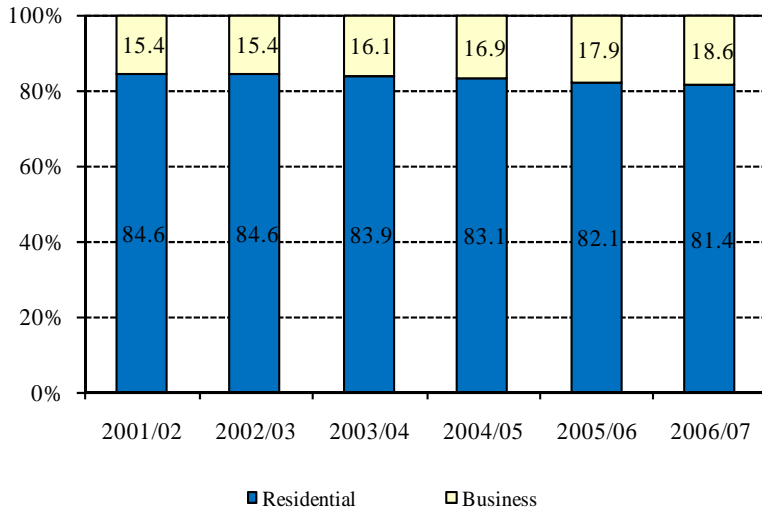


Source: TATT Annual Telecom & Broadcasting Survey

The mainstay of most fixed telephony service normally lies with residential customers. In other words, residential customers normally account for the majority share of fixed voice subscribers.

This dominating trend is consistent over the six year period (Figure 9), albeit at a reducing rate, with residential customers accounting for approximately 83.3 per cent on average of the fixed voice subscribers. The chart below also shows a gradual decline in the market share of residential subscribers and the equivalent increasing gain in market share by business subscribers.

Figure 9: Fixed Voice Subscribers FY2001/02-FY2006/07⁶



Source: TATT Annual Telecom & Broadcasting Survey

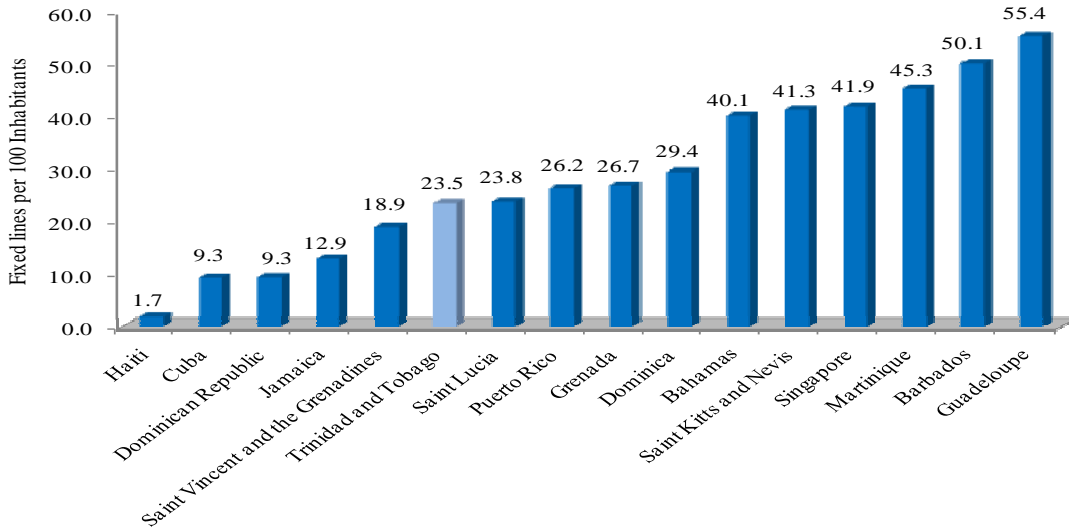
A useful indicator of the level of access to fixed telephony within a country is the number of mainlines per 100 inhabitants. As at December 2007, the number of mainlines per 100 inhabitants stood at 23.7, a slight reduction from the 25.1 recorded in 2006. Therefore within Trinidad and Tobago, approximately 24 in every 100 persons have access to fixed telephone service. This penetration level ranks Trinidad and Tobago sixth among fifteen Caribbean countries and Singapore identified in Figure 10 below. Guadeloupe boast the highest penetration level for fixed telephony with an estimated 55 per 100 inhabitants while Haiti had the lowest penetration level with approximately 2 per 100 inhabitants having access to a fixed telephone.

While the number of mainlines per 100 inhabitants presents a useful indication of the level of access of fixed telephone within a country, it may not present the best indication of fixed network

⁶ FY2001/02-FY2006/07 represents the six year financial period of TSTT starting April to March 2001/02 to April to March 2006/07

coverage among households⁷. An indicator that presents a better estimate of fixed network coverage within a country is the penetration level per household. As at December 2007, the number of fixed voice subscribers⁸ per 100 households stood at approximately 70.7, a slight decline over the 76.6 recorded in 2006. This means that on average 71 in every 100 households had access to a fixed telephone in Trinidad and Tobago during 2007. This indicator differs significantly from the 24 in every 100 inhabitants presented earlier.

Figure 10: Fixed Line Penetration per 100 Inhabitants for Selected Caribbean Countries & Singapore 2007⁹



Sources: BMI *Americas Telecommunications Report Q2 2008*, ECTEL *Annual Telecommunications Sector Review 2007*, ITU ICT Statistics Database 2007 <http://www.itu.int/ITU-D/ict/eye/Indicators/Indicators.aspx#> and TATT Annual Telecom & Broadcasting Survey

2.2. Fixed Voice Revenues

For the year ending December 31, 2007, the total gross revenues earned from fixed voice subscribers amounted to TT\$819 million, an increase of TT\$39.5 million or 5.1 per cent over 2006. Of this amount, residential customers¹⁰ accounted for TT\$409 million or 50 per cent of the total earnings. Revenues from business customers on the other hand, accounted for TT\$ 408 million, or

⁷ Access to fixed lines is normally provided to households or business establishment and not necessarily to each person within a household or business establishment.

⁸ Only residential subscribers were used in this instance.

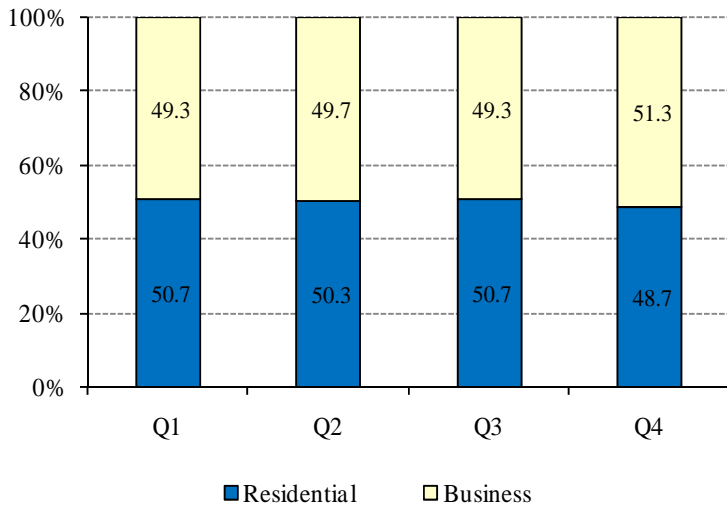
⁹ Penetration rates obtained from ECTEL were for the year ending March 2007. BMI rates were for the year ending September 2007 while ITU and TATT rates were for the year ending December 2007.

¹⁰ Residential and business customers are persons/entities who subscribe to fixed line telephony services and are billed directly for these services.

49.8 per cent of the total earnings for the year. The remaining 0.2 per cent or TT\$1.7 million was obtained from domestic calling cards sales and calls from public telephones.

The revenues obtained from residential customers increased marginally by TT\$3.8 million or 0.9 per cent over 2006, while revenue obtained from business customers increased significantly by TT\$34 million or 9.1 per cent. The increase in revenues from residential customers is surprising giving the marked reduction in subscribers noted in section 2.1 above. That is, despite the significant reduction in the number of residential subscribers by 18,246, the revenues obtained for the subscriber base grew during 2007. This may be indicative of an increase in the volume of domestic voice traffic on the fixed network during the review period.

Figure 11: Fixed Voice Subscriber Revenues 2007



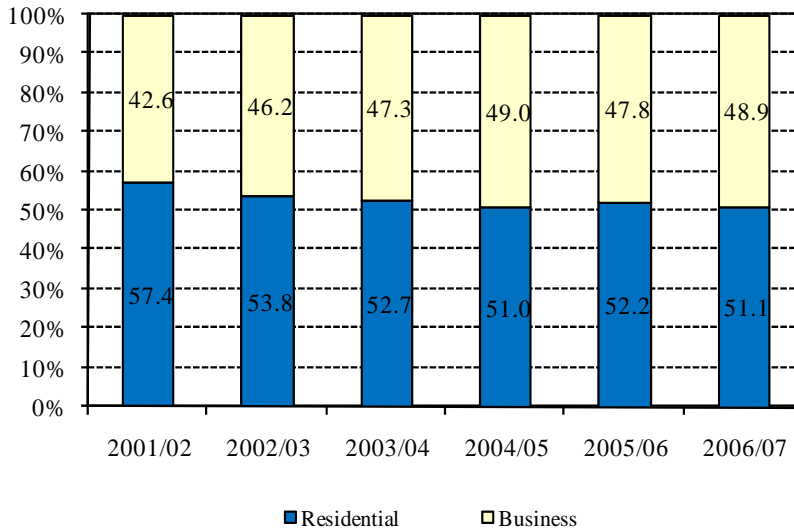
Source: TATT Annual Telecom & Broadcasting Survey

At a disaggregated level, business customers' share of the total earning increased from a 49.3 per cent of total revenues in the first quarter of the year to a marginal increase during the fourth quarter with a share of 51.3 per cent of total subscriber revenues for the last quarter. Figure 11 above highlights this gradual increase in the market share of business customers during the four quarters of 2007. The gradual increase in the market share of business customers during 2007 was consistent with the six year trend seen in Figure 12 below.

For the six year period April to March 2001/02 to April to March 2006/07, the percentage of subscriber revenues earned from residential customers declined steadily from 57.4 per cent in 2001/02 to 51.1 per cent in the 2006/07 year. This steady decline in the percentage share of the

subscriber revenues of residential customers was a direct result of consistent increases in the gross revenues collected from business customers over the six year period. Figure 12 below reveals that residential subscribers dominated the market with higher percentage share of subscriber revenues since the 2001/02. However this majority share by residential customers has been decreasing steadily over the six year period, falling from 57.4 per cent in 2001/02 to 51.1 per cent in 2006/07.

Figure 12: Fixed Voice Revenues FY 2001/02 – FY 2006/07



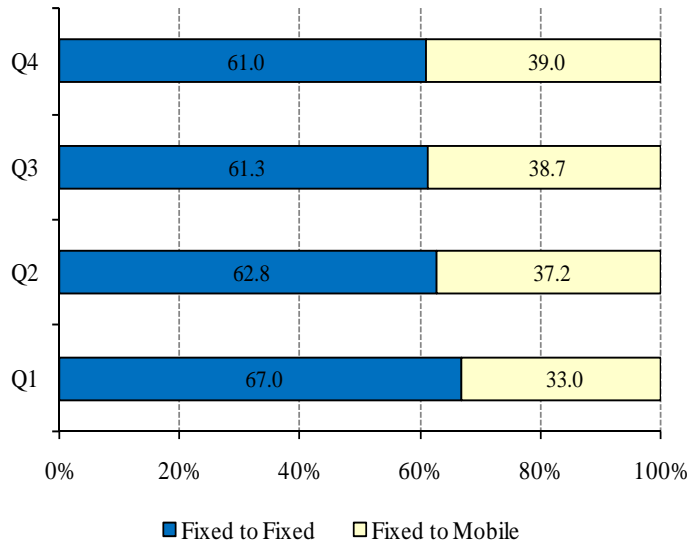
Source: TATT Annual Telecom & Broadcasting Survey

2.3. Fixed Voice Traffic Data

The domestic fixed voice traffic volume totaled 2 billion minutes for the period January to December 2007. Of this amount, domestic calls made on the fixed network (fixed-to-fixed) totaled 1.2 million minutes or 63.2 per cent while call volume to mobile networks (fixed-to-mobile) totaled 0.73 million minutes or 36.8 per cent. Figure 13 below presents a breakdown of the domestic call volume by traffic type. For the first quarter of 2007, fixed-to-fixed call volume totaled 376 million minutes or 67 per cent. This share gradually decreased to 272 million minutes or 61 per cent of the total volume of domestic traffic in the fourth quarter, Q4. Synonymous with this decrease in the share of fixed-to-fixed call volume was the increase in the share of call volumes to mobile networks. The share of traffic from the fixed network to mobile networks increased from 33 per cent in Q1 to 39 in Q4 of 2007.

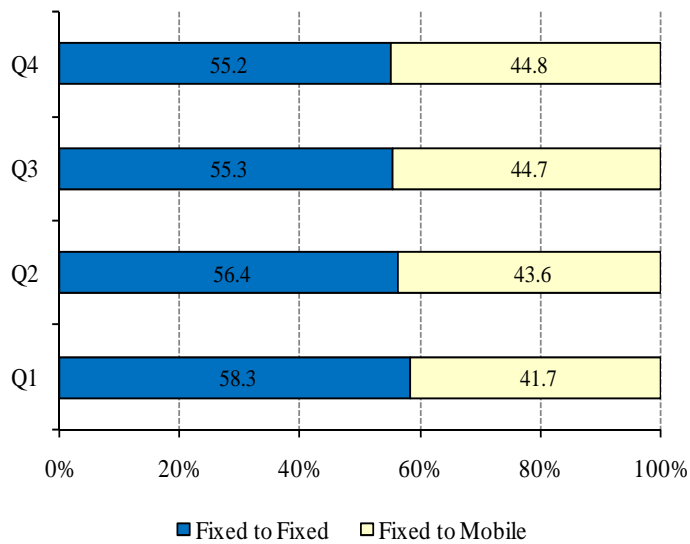
Figure 14 below presents the breakdown of the number of domestic fixed voice calls in 2007.

Figure 13: Domestic Fixed Voice Traffic Volume 2007



Source: TATT Annual Telecom & Broadcasting Survey

Figure 14: Number of Domestic Fixed Voice Calls



Source: TATT Annual Telecom & Broadcasting Survey

3. Mobile Market Data

During 2007, there were three mobile service providers authorized to provide public mobile domestic telecommunications services in Trinidad and Tobago. They were:

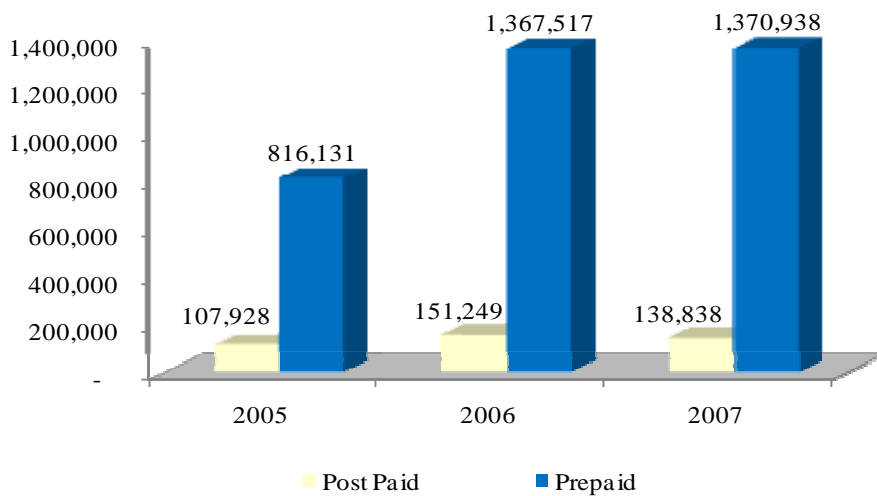
- Telecommunication Services of Trinidad and Tobago, TSTT
- Digicel Trinidad Limited and
- Laqtel Trinidad Limited.

Of the three mobile service providers, Laqtel Limited was the only one that was not operational during 2007. Therefore, this section present aggregate information on the two mobile providers, TSTT and Digicel for mobile services provided during the review period.

3.1. Mobile Subscribers

As at December 2007, the mobile market recorded a total of 1,509,776 subscribers of which 1,370,938 or 90.8 per cent were prepaid customers and 138,838 or 9.2 per cent were post paid. This total represents a decrease of 8,990 or 0.6 per cent over the 1,518,766 subscribers recorded in the previous year. The decline in subscribers during 2007 was the first decrease recorded in the mobile market since 2001 and stems primarily from an 8.2 per cent fall-off in postpaid subscribers. Figure 15 below highlights the decrease in the postpaid subscribers from 151, 249 in 2006 to the 138,838 in 2007.

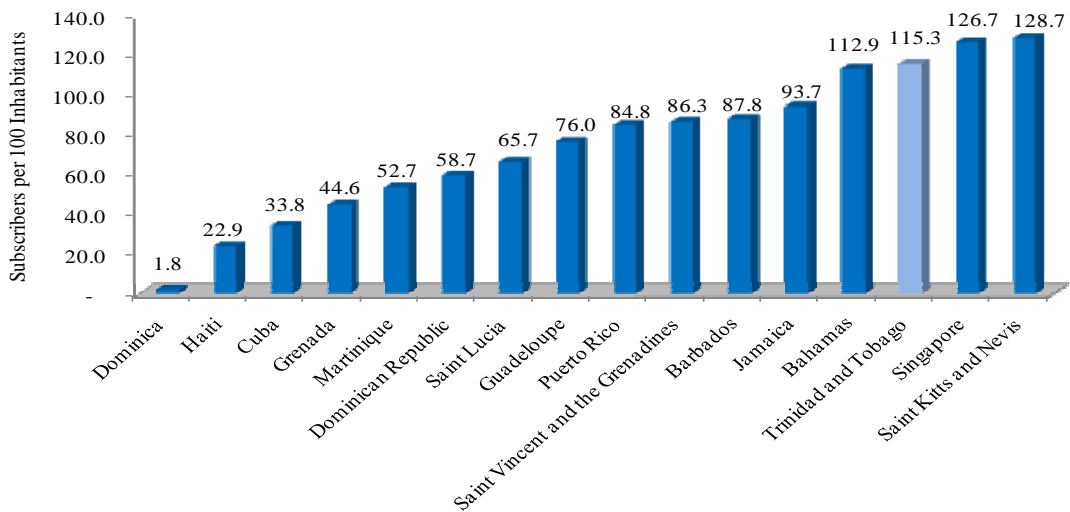
Figure 15: Mobile Subscribers 2005-2007



Source: TATT Annual Telecom & Broadcasting Survey

The slight decline recorded in mobile subscribers in 2007 may have been misrepresented by the unexpected high level of take-up of mobile subscribers during 2006. Prior to the entry of Digicel into the mobile market, there was a significant burst in the number of subscribers as TSTT offered customers attractive mobile handsets at reduced costs. This was also coupled with Digicel’s launch in April 2006 with competitive packages and reduced cost of handsets in enticing customers to join their network. This bubble in the number of mobile subscribers was evident from the 594,707 increase in subscribers during 2006.

Figure 16: Mobile Subscribers per 100 Inhabitants for Selected Caribbean Countries & Singapore 2007¹¹



Sources: BMI Americas Telecommunications Report Q2 2008, ECTEL Annual Telecommunications Sector Review 2007, ITU ICT Statistics Database 2007 <http://www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx#> and TATT Annual Telecom & Broadcasting Survey

A direct result of the decline in the number of mobile subscribers is the reduction of the number of mobile subscribers per 100 inhabitants (mobile penetration level). As at December 2007, the number of mobile subscribers decreased from 115.9 per 100 inhabitants to 115.3 per 100 inhabitants in 2007. This marks a decline in the penetration level for mobile subscribers in Trinidad and Tobago. However, this penetration level still ranks amongst the highest within the Caribbean region as highlighted in Figure 16 above. Trinidad and Tobago ranks third among the top countries (with Singapore) of this comparison with Saint Kitts and Nevis recorded at the top and Bahamas fourth with 112.9 mobile subscribers per 100 inhabitants. Cuba ranks the lowest with 1.8

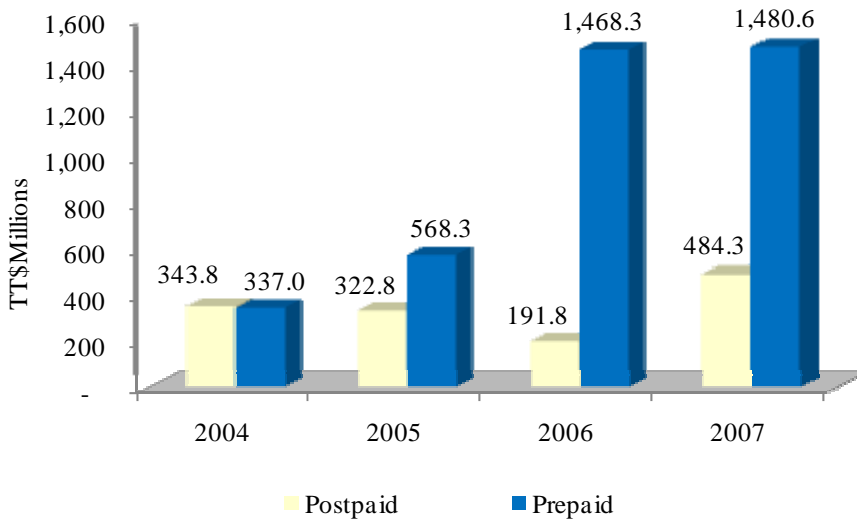
¹¹ Penetration rates obtained from ECTEL were for the year ending March 2007 while rates for all other countries, except Trinidad and Tobago, were figures as at September 2007.

subscribers per 100 inhabitants during 2007. It should be noted that the penetration level represented may not be indicative of every person owning a mobile handset due to individuals owning multiple handsets.

3.2. Mobile Revenues

The total revenues earned by mobile service operators amounted to TT\$1.96 billion during 2007, of which prepaid customers accounted for TT\$1.48 billion or 75.4 per cent while postpaid customers contributed TT\$484 million or 24.6 per cent of the total earnings (see Figure 19). Prepaid customers continue to generate the majority of revenues earned for mobile services during 2007 as depicted in Figure 17 below. In fact, prepaid customers contributed an average of TT\$811 million per annum since 2003 while postpaid accounted for an average of TT\$326 million per annum.

Figure 17: Mobile Market Revenues 2004 - 2007

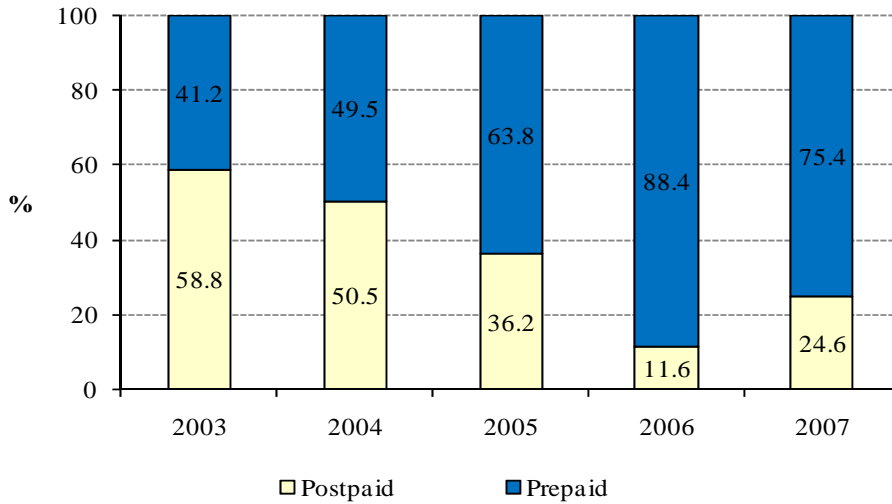


Source: TATT Annual Telecom & Broadcasting Survey

The growth in mobile revenues continued on its increasing trend in 2007, with an increase of TT\$308.4 million or 18.4 per cent over the previous year. This increasing trend is primarily fueled by the exponential increase in revenues from prepaid subscribers. Interestingly, the increase in revenues from prepaid mobile customers has been a characteristic feature of the mobile market since 2001 recording an average increase of 64.1 per cent per year. Figure 17 above shows the increasing trend in prepaid revenues which surpassed postpaid revenues in 2005. This reverse in trend is consistent with the continued growth in the number of prepaid customers. As at December 2007 there were 1,370,938 prepaid customers an increase of 0.3 per cent over the 1,367,517

customers recorded in December 2006. The upward trend in mobile revenues is highlighted by the TT\$1.28 billion or 189 per cent increase recorded since 2004

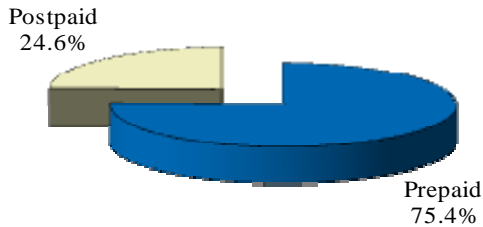
Figure 18: Mobile Market Revenues 2003-2007



Source: TATT Annual Telecom & Broadcasting Survey

Figure 18 above provides a graphical representation of the breakdown in market share of mobile revenues between prepaid and postpaid customers. Since 2003, the share of revenues obtained from postpaid customers has been declining, falling from 58.8 per cent of the market in 2003 to 24.6 per cent in 2007. This decreasing trend also reveals the reversal of market share from postpaid to prepaid over the last five years.

Figure 19: Mobile Market Share by Revenues as at December 2007

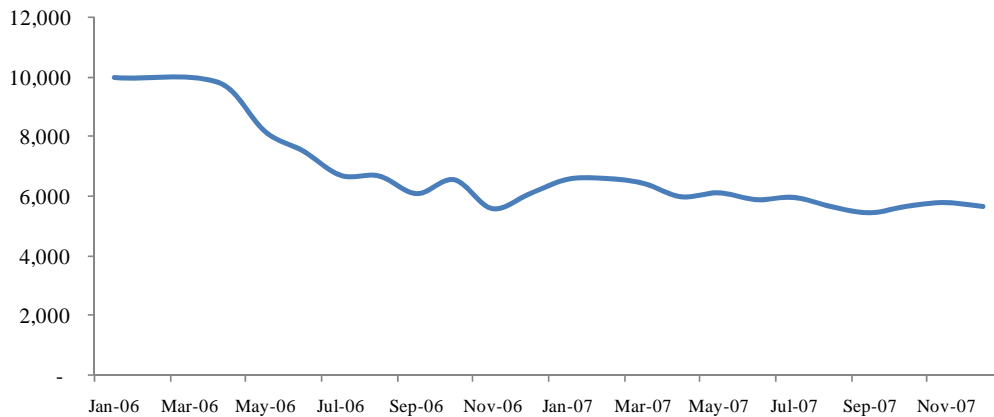


Source: TATT Annual Telecom & Broadcasting Survey

3.3. Mobile Market Concentration

The Authority monitors the mobile market by examining the level of concentration of firms. A useful measure that is used to indicate market concentration is the Hirschman-Herfindahl Index, HHI¹². This index gives an overall measure of the concentration of firms within a particular market and can also be used as an indicator of potential market power. The HHI was calculated for the mobile market of Trinidad and Tobago for the year ending December 2007. The result reveals that there was a HHI of 5,687 a decline of 427 or 7 per cent from the figure reported in December 2006.

Figure 20: Hirschman-Herfindahl Index of Mobile Market January 2006 –December 2007



Source: TATT Annual Telecom & Broadcasting Survey

Figure 20 above highlights the transition of the mobile market from one of monopoly to one of competition with the introduction of Digicel in April 2006. Although there is a steady decline in market concentration, the mobile market for Trinidad and Tobago was found to be concentrated. This result is expected for a market with a small number of firms, although it is important to note that the HHI declined steadily from 10,000 in January 2006 to 5,687 in December 2007. This result shows that the new entrant has made some in-roads into the mobile market.

The mobile market in Trinidad and Tobago is relatively concentrated in comparison to markets of developed countries. Table 3 below depicts the HHI for the US, Canada and UK. The mobile markets of US, UK and Canada have HHI of 2,301, 2,574 and 3,243 respectively. These indices

¹² 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 in the market. The guidelines used for market concentration are: HHI < 1000 – **Unconcentrated**, 1000 < HHI < 1800 – **Moderately Concentrated** and HHI > 1,800 **Concentrated**.

show that the mobile markets in the US, UK and Canada are less concentrated as the HHI are closer to the 1,000 lower end of the range.

Table 3: Indicators of Selected Countries 2007

Countries	Subscribers (mn)	Revenues (US\$mn)	ARPU	HHI
Canada	19.4	4,138.77	213.67	3,242.7
US	248.5	39,153.00	157.55	2,301.3
UK	66.2	6,941.29	104.78	2,574.3
T&T	1.5	311.89	206.58	5,686.54

Sources: BMI Americas Telecommunications Report Q2 2008, TATT Annual Telecom & Broadcasting Survey

Box 2: Growth of Mobile Telephony Market

The world has been fortunate to witness the transformation of telephony markets to become mobile and highly competitive. In 2002 the number of mobile phones first surpassed that of fixed lines worldwide and has been on the increase since (see Figure 21). At the end of 2006 mobile phones outnumbered fixed lines by more than two to one worldwide. The same trend can be seen here in the mobile market in Trinidad and Tobago (see sections 2 and 3).

Figure 21: Total Mobile and Fixed line Subscribers

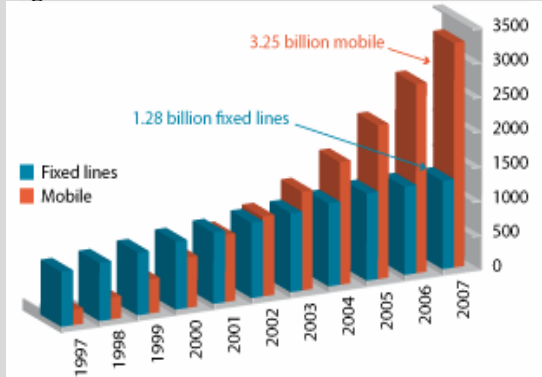
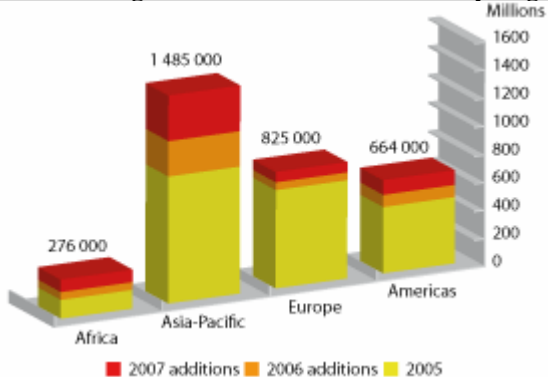


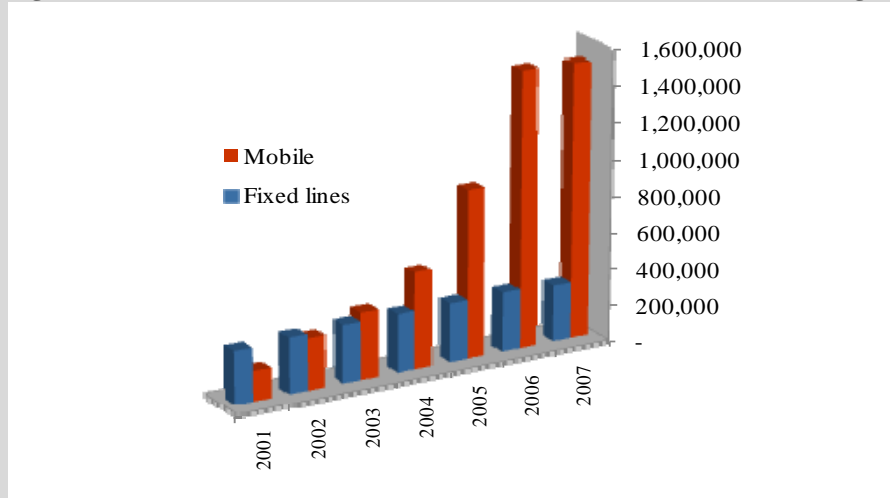
Figure 22: Mobile Subscribers by Region



Source: Adopted from ITU News (No. 03/08)

The new growth in mobile telephony is concentrated in emerging markets. The Asia-Pacific mobile market has grown drastically over the last two years. This new growth helps explain why the Asia-Pacific region was estimated to be have 1.5 billion of total global mobile subscribers by the end of 2007 (see Figure 22). The Americas region showed the second largest growth in 2007 followed by Africa and Europe.

Figure 23: Total Mobile and Fixed line Subscribers for Trinidad and Tobago



Source: TATT Annual Telecom & Broadcasting Survey

In Trinidad and Tobago the number of mobile subscribers also recorded significant growth over the last five years to achieve 1.5 million subscribers while fixed line recorded 0.3 million subscribers. It can also be said that while the number of mobile subscribers continue to increase the number of fixed line subscribers has been relatively consistent (see Figure 23)

4. International Voice Traffic Data

During 2007, nine (9) concessionaires were authorized to provide public international telecommunications services, which included the provision of international voice services. The operators authorized to provide these service were:

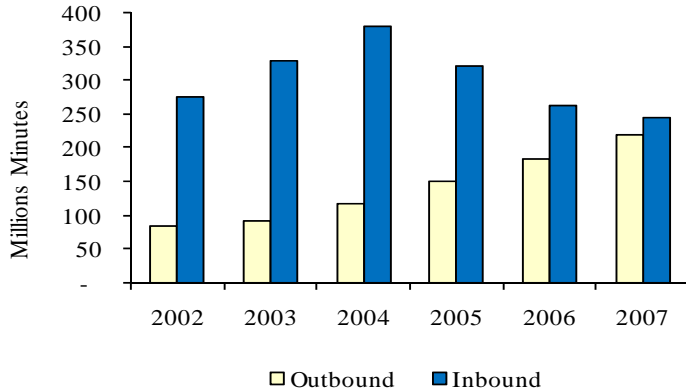
- Telecommunications Services of Trinidad and Tobago, TSTT
- Digicel Trinidad Limited
- Laqtel Limited
- Open Telecom
- 360 Degrees Communications
- Columbus Communications Trinidad Limited
- Lisa Communications Limited
- Columbus Networks International Limited and
- Windward Telecom Limited

International telecommunication services involves the origination, termination or transiting of international voice and data services. However, within this section, the data presented refers specifically to information on the origination and termination¹³ of international voice calls over a public domestic network. Therefore, of the nine (9) concessionaires listed above, only two (2) originated or terminated international voice calls over a public domestic network during the review period. Therefore, the data presented below represents information submitted by TSTT and Digicel.

The traffic volumes for both incoming and outgoing international calls recorded significant increases during 2007. The total outgoing traffic was estimated to be 265.9 million minutes, an increase of 62.7 million minutes or 30.9 per cent over the previous year. Similarly, the incoming traffic recorded an increase of 26.5 million minutes or an 8.9 per cent growth during 2007. The continuing trend of incoming traffic being greater than outgoing traffic means that Trinidad and Tobago receives net gain on international traffic. Figure 24 below reveals that incoming traffic has been consistently greater than outgoing.

¹³ The Authority has not started capturing data for international voice calls being transited by international telecommunications service providers or being originated or terminated on a private domestic network, but will establish the appropriate mechanism to capture this data in the near future.

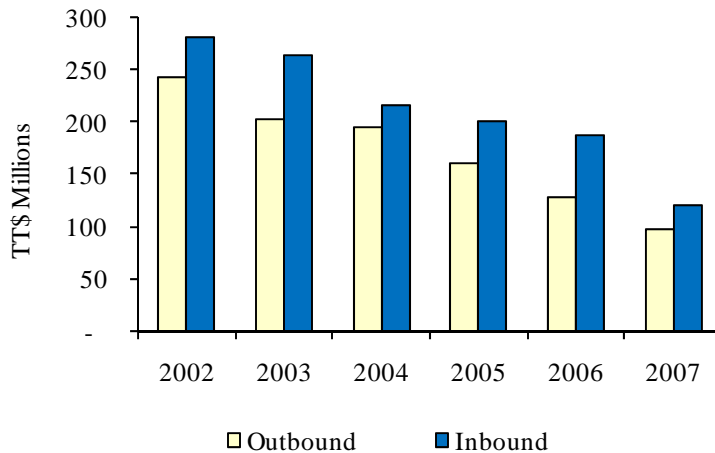
Figure 24: International Voice Traffic Volume 2002-2007



Source: TATT Annual Telecom & Broadcasting Survey

Gross revenue¹⁴ for outgoing international traffic for the year ending December 2007, was estimated at TT\$251.7 million, an increase of TT\$106.6 million or 73.5¹⁵ per cent over the previous year. However, the revenues obtained from incoming calls were TT\$134 million, a decline of TT\$62.7 or 31.9 per cent over 2006. The revenue derived from international calls has been declining since 2001 when the industry saw the development of alternative means of communicating at cheaper rates via the Internet and declining settlement rates.

Figure 25: Revenues from International Voice Traffic Volume (via fixed network) 2002 - 2007



Source: TATT Annual Telecom & Broadcasting Survey

¹⁴ Gross revenue refers 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 to terminate calls locally.

¹⁵ The gross revenues for outgoing international traffic for 2007 include revenues obtained from mobile phone subscribers. Revenues obtained from mobile phone subscribers were not included in previous years.

5. Internet Market Data

This section provides information on the provision of Internet services in Trinidad and Tobago for 2007, that is, Internet services provided over a public domestic fixed (wired or wireless) and mobile telecommunications network. In 2007, there were seven operators authorized to provide fixed domestic telecommunications services which includes the provision of Internet services to the public over wired or wireless facilities. They were

- Telecommunications Services of Trinidad and Tobago (TSTT),
- Columbus Communications Trinidad Limited (CCTL),
- Computer Technologies Services Limited (CTSL),
- RVR International Limited,
- TRICO Industries Limited,
- Independent Cable Network of Trinidad and Tobago Limited (ICNTT) and
- Green Dot Limited.

During 2007, there also existed three mobile operators that were authorized to provide domestic telecommunications services, including the provision of Internet services to the public. They were:

- Telecommunications Services of Trinidad and Tobago (TSTT),
- Digicel Trinidad Limited and
- Laqtel Limited

Despite having an authorization to provide Internet services, only four (4) of the nine (9) concessionaires listed above provided Internet services to the public in 2007. These were TSTT, CCTL, Green Dot and Digicel. Additionally, there were a number of other companies that provided Internet services to the public in 2007, that do not yet have a concession¹⁶. Some of these companies were:

- CableNett Limited,
- Carib-Link Limited,
- Cari Direc,
- Caribbean Interactive Limited,

¹⁶ These ISPs existed before the promulgation of the Act in 2004, prior to which Internet services were unregulated. The Authority has now established a framework that requires all ISPs to apply for a concession in accordance to the Act.

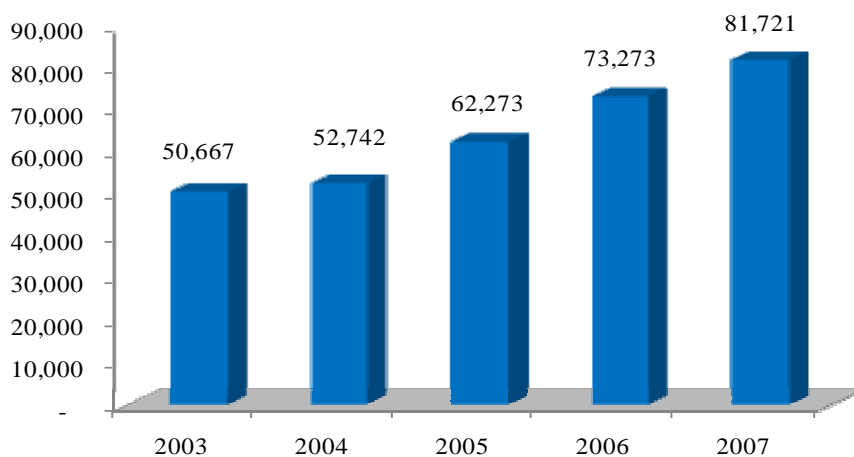
- InterServ Limited,
- Caribel
- Lisa Communications Limited,
- Opus Network Limited and
- WOW Net (2001) Limited.

In addition, the Authority has started a process to authorize operators to provide Internet services over fixed wireless networks. This process started in 2007 with an auction for spectrum bands that can be used to provide Internet service using broadband wireless technology. This will enable operators to utilize wireless technologies like WiFi and WiMax to provide Internet services to the public.

Although not all ISPs currently have a concession, the Authority surveyed all thirteen (13) ISPs listed above. However, only nine (9) of the thirteen (13) ISPs surveyed submit data to the Authority. The nine respondents were TSTT, CCTL, Digicel, CableNett Limited, Carib-Link Limited, InterServe Limited, Lisa Communications Limited, Greendot and WOW Net (2001) Limited. Although the number of mobile phone Internet subscribers was provided, it was not included in the total Internet subscribers.

5.1. Internet Subscribers

Figure 26: Internet Subscribers 2003-2007



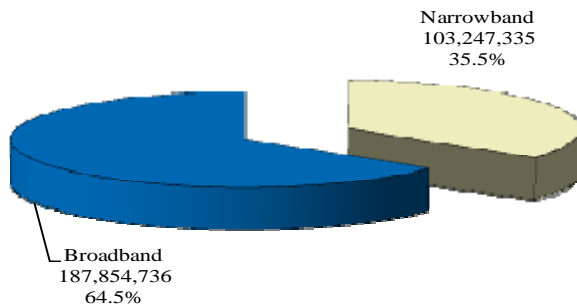
Source: TATT Annual Telecom & Broadcasting Survey

As at December 2007, the total estimated number of Internet subscribers was 81,721, an increase of 8,448 subscribers or 11.5 per cent over the previous year. Fixed wireless accounted for 5,984 or 7.3 per cent of the total internet subscribers. Of the total Internet subscribers, broadband Internet subscribers accounted for 35,491 or 43.4 per cent while narrowband Internet subscribers accounted for 46,230 or 56.7 per cent of the total Internet subscribers. Figure 26 above provides a graphical representation of the growth in Internet subscribers since 2003¹⁷.

5.2. Internet Revenues

As at December 2007, the total estimated gross revenues for the Internet market stood at TT\$291.1¹⁸ million, an increase of TT\$92.8 million or 43.6 per cent over the figures reported in 2006. Of this amount, narrowband Internet accounted for TT\$103.2 million or 35.5 per cent while broadband Internet accounted for TT\$187.9 or 64.5 per cent.

Figure 27: Internet Revenues 2007



Source: TATT Annual Telecom & Broadcasting Survey

5.3. Internet Penetration

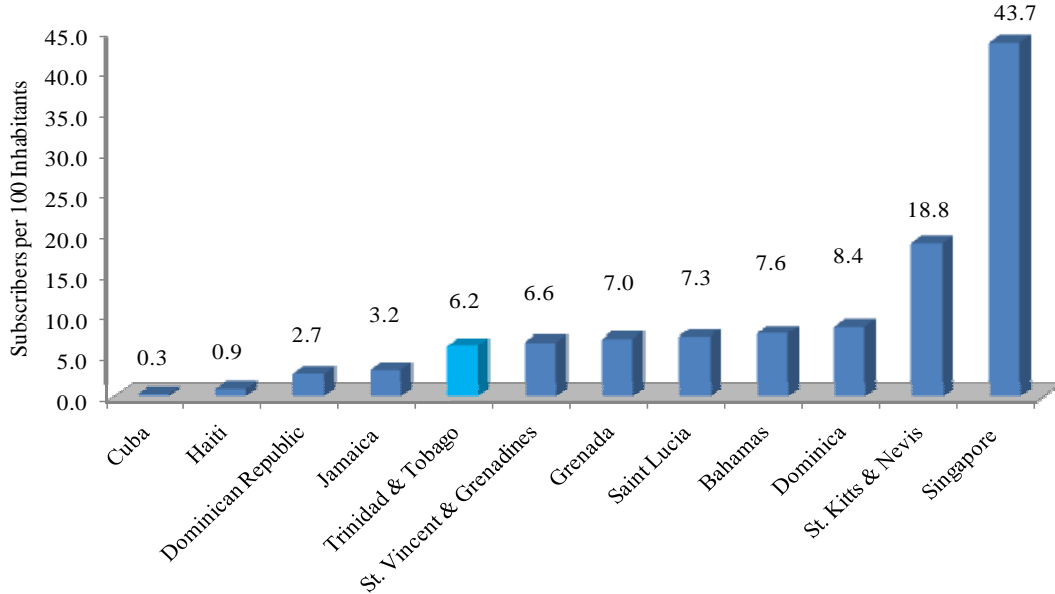
Although the number of Internet subscribers has been increasing steadily in Trinidad and Tobago over the last six years, it is still below that of other Caribbean countries. Figure 28 below provides a synopsis of the penetration of Internet within a few Caribbean countries and Singapore. Trinidad and Tobago ranked fifth among the countries listed with a penetration rate of 6.2 Internet subscribers per 100 inhabitants. Singapore topped the list with a penetration of 43.7

¹⁷ Please note that the annual figures for Internet subscribers were revised historically due to revisions made by ISPs to figures previously submitted to the Authority and the replacement of estimated figures with actual data received from ISPs that did not submit data to the Authority previously.

¹⁸ Please note that the total estimated gross revenues represented data submitted from five (5) ISPs of the thirteen (13) that were surveyed.

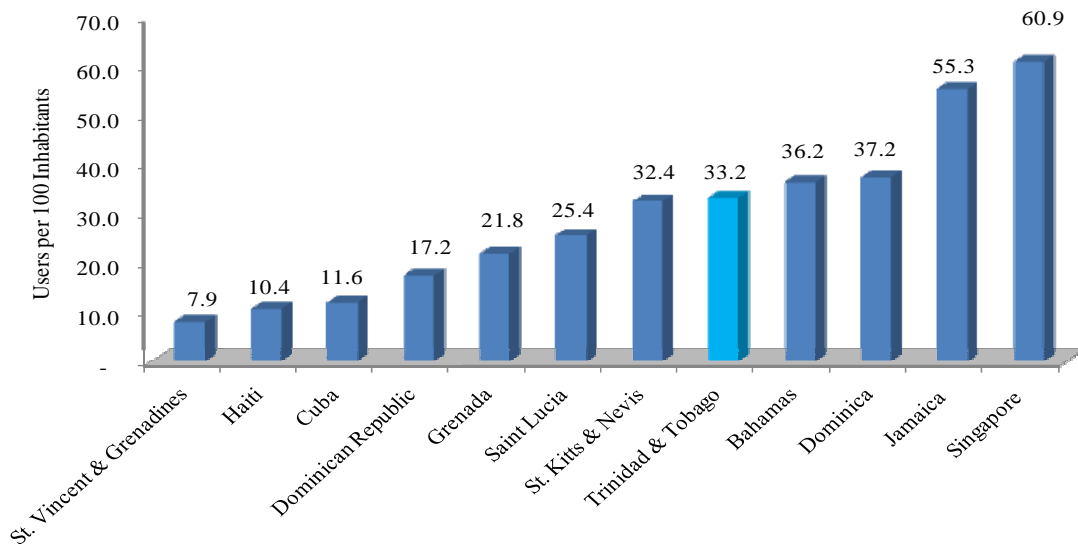
internet subscribers per 100 inhabitants while Saint Kitts and Nevis followed with an 18.8 per cent penetration rate.

Figure 28: Internet Penetration per 100 Inhabitants for Selected Caribbean Countries and Singapore 2007



Sources: ECTEL *Annual Telecommunications Sector Review 2007*, ITU ICT Statistics Database 2007 <http://www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx#> and TATT Annual Telecom & Broadcasting Survey

Figure 29: Number of Internet Users per 100 Inhabitants for Selected Caribbean Countries 2007



Sources: ECTEL *Annual Telecommunications Sector Review 2007*, ITU ICT Statistics Database 2007 <http://www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx#> and TATT *The Digital Divide in Trinidad and Tobago 2007*

Box 3: Measuring the Digital Divide in Trinidad and Tobago

In August 2007, the Authority conducted a Digital Divide survey for the purpose of developing achievable objectives for its Universality Implementation Plan. The survey was two-tiered:

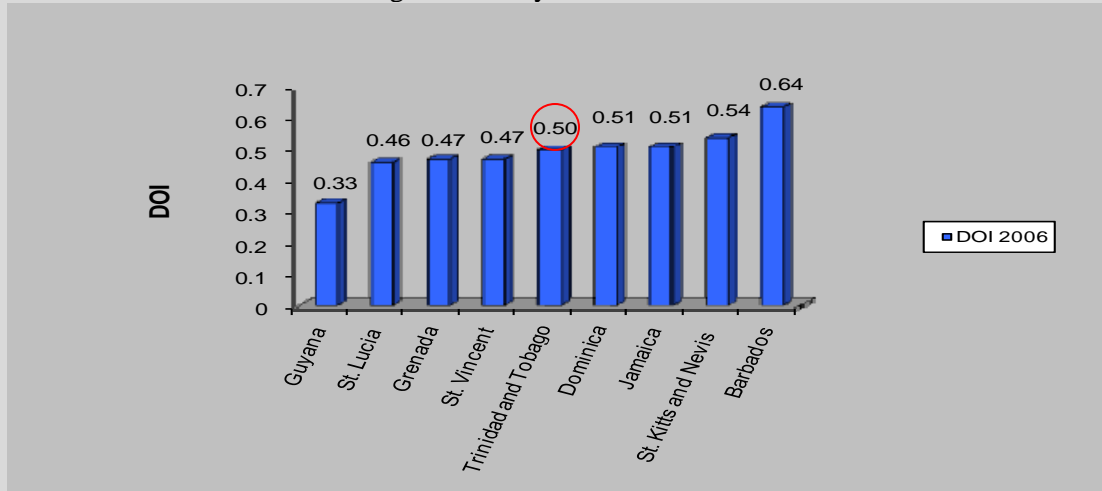
- A Service Provider survey which involved questionnaires distributed to the major operators
- A Household survey which involved interviews with 6,000 randomly sampled households, representative of 585 communities throughout the country.

In assessing the Digital Divide, two ITU (International Telecommunications Union) recognized indices were utilized to measure and compare the capacity for individuals to access and use ICT services on both a country level and community level:

- The Digital Opportunity Index (DOI)
- The Digital Access Index (DAI)

In recent times the ITU has replaced the DAI with the DOI as the primary measure as it reflects the adoption of newer technologies consistent with the ever-evolving information age.

The following figure shows the DOI ranking of Trinidad and Tobago as compared to other countries within the Caribbean region for the year 2006:



Source: ITU

The survey results for 2007 however, indicate that Trinidad and Tobago has improved with the national readings currently standing at:

DOI = 0.6315

DAI = 0.6668

In addition, the survey also provided results with respect to level of access to individual telecommunications services:

- Fixed telephone subscribers per 100 inhabitants = 39.17
- Mobile subscribers per 100 inhabitants = 92.6
- Internet users per 100 inhabitants = 33.2

It must be noted that the results from the survey do vary somewhat with the information presented in this market report due to the difference in the data collection methods. The survey relied heavily on the data collected from the households interviewed due to the lack of cooperation from the service providers in providing data for the exercise. Therefore the above results represent the sample averages of the 6,000 households surveyed and not the actual measures for the country.

6. Broadcasting Market Data

The broadcasting market in Trinidad and Tobago has grown considerably over the last ten years. In 2007, the market comprised six (6) operators of free-to-air TV broadcasting services, seven (7) providers of subscription-broadcasting services, four (4) cable based broadcasters who broadcast via leased channels of the subscription broadcasting service providers, and thirty operators of free-to-air FM radio broadcasting services. Table 6 below gives a breakdown of the concessions granted within the broadcasting market as it relates to coverage.

Table 4: Broadcasting Market Concessions as at December 2007

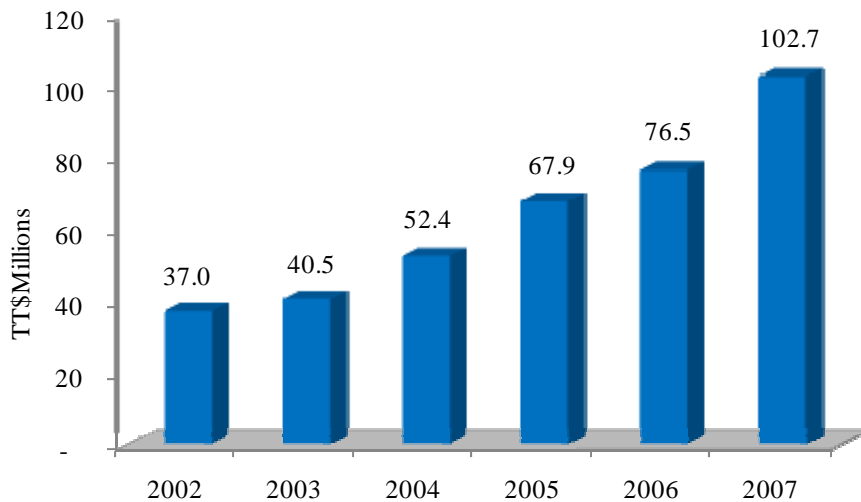
Free-to-Air Radio	
National	22
Major Territorial	6
Minor Territorial	1
Niche	1
	30
Free-to-Air TV	
National	3
Major Territorial	3
	6
Subscription TV	
National	2
Major Territorial	1
Niche	8
	11
Total	47

Source: TATT

6.1. Free-to-Air TV Broadcasting Market

In 2007, the market for free-to-air TV broadcasting service comprised six (6) operators. They were:

- Advance Community Television Network Limited (ACTN),
- Caribbean Communications Network Limited (TV6),
- Gayelle Limited,
- Caribbean New Media Group (CNMG),
- World Indian Network Television Limited (WINTV), and
- Government of the Republic of Trinidad and Tobago (GRoTT).

Figure 30: Gross Revenues for Free-to-Air TV Broadcasting Service Providers 2002-2007

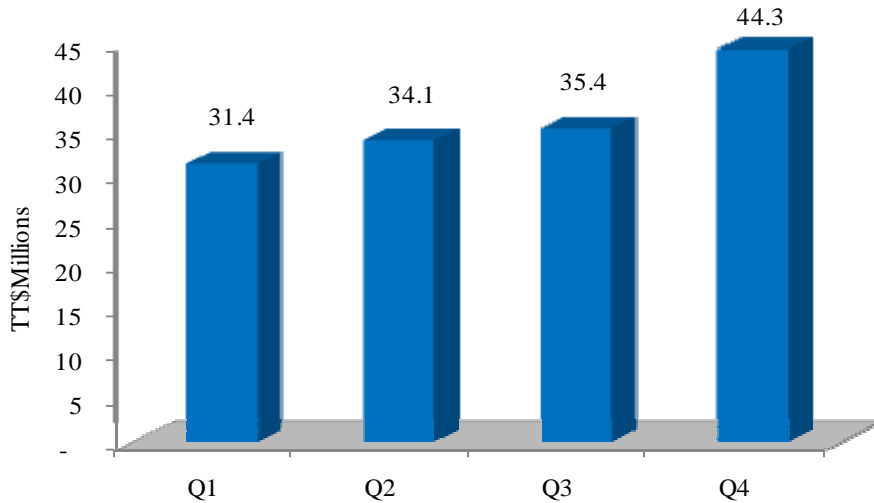
Source: TATT Annual Telecom & Broadcasting Survey

Gross revenues for the free-to-air TV broadcasting market have increased steadily over the last six years. In 2007, total estimated gross revenues for this market stood at TT\$102.7 million, an increase of 34.3 per cent over the previous year. This increase may have resulted from increase spending by political parties for advertisements during the 2007 general elections. Figure 30 above shows the increasing trend in revenues for the free-to-air TV broadcasting market since 2002.

6.2. Free-to-Air Radio Broadcasting Market

The free-to-air radio broadcasting market was comprised of thirty seven (37) radio stations in 2007. Although this number is relatively large, it must be noted that some concessionaires within this market operate more than one FM radio station. That is, Trinidad Publishing Limited has six radio stations and Caribbean New Media Group owns three radio stations.

During 2007, the free-to-air radio broadcasting market earned an estimated TT\$145.3 million in gross revenues. This represents a 13.8 per cent increase over the previous year. Figure 31 below provides a breakout of the gross revenues obtained by the market per quarter. This figure also highlights a gradual increase in gross revenues per quarter during 2007.

Figure 31: Gross Revenues for Free-to-Air Radio Broadcasting Service Providers 2007

Source: TATT Annual Telecom & Broadcasting Survey

6.3. Subscription Television Broadcasting (Cable TV) Market

In 2007, the subscription broadcasting sector comprised of six (6) concessionaires. Although a concession was granted to TSTT for the provision of subscription television services in 2005, TSTT has delayed the launch of this service and has requested more time from the Authority to start its operations.

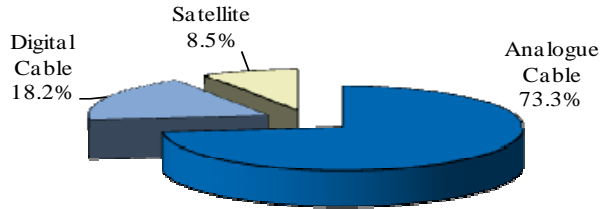
The six (6) subscription television broadcasting services providers that were in operation in 2007 were:

- Columbus Communications Trinidad Limited (CCTL) (National),
- DirecTV Trinidad Limited (National),
- TRICO Industries Limited (Tobago only),
- RVR International Limited (RIO Claro/ Princess Town/New Grant only),
- Computer Technologies and Services Limited (Mayaro/Guayagauare only), and
- Independent Cable Network of Trinidad and Tobago ICNTT (National).

As at December 2007, the total number of subscription television subscribers stood at 151,158, an 8.1 per cent increase since December 2006. Of this total, analogue subscription television

subscribers represented 73.3 per cent, digital subscription television subscribers accounted for 18.2 per cent while 8.5 per cent of subscribers had satellite subscription services.

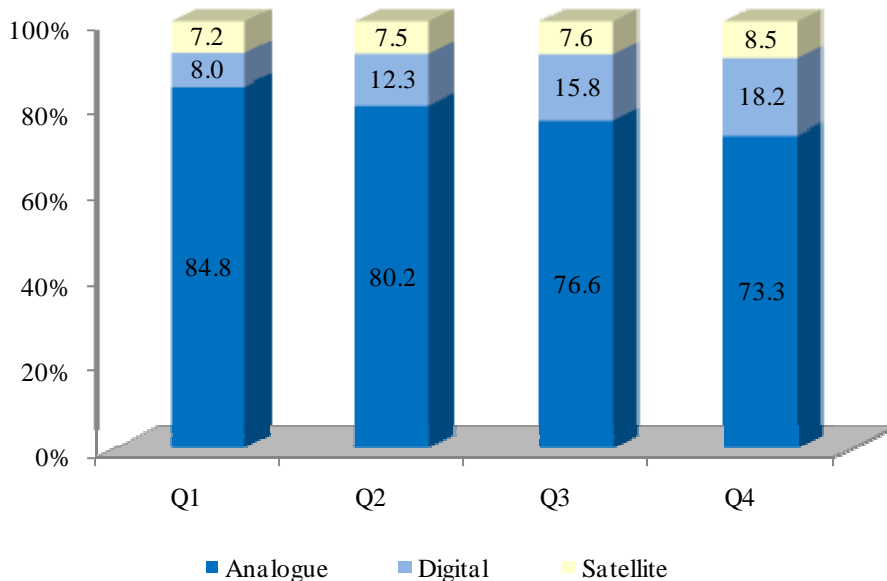
Figure 32: Subscription Television Subscribers as at December 2007



Source: TATT Annual Telecom & Broadcasting Survey

Figure 33 below presents a breakdown of the number of subscribers per platform for 2007. The number of analogue subscription television subscribers was the largest category for all four quarters, albeit with a decreasing share. There was also a noticeable increase in digital subscribers as the main subscription television provider Columbus Communications Trinidad Limited has embarked on a drive to upgrade its analogue network to a digital platform throughout the country.

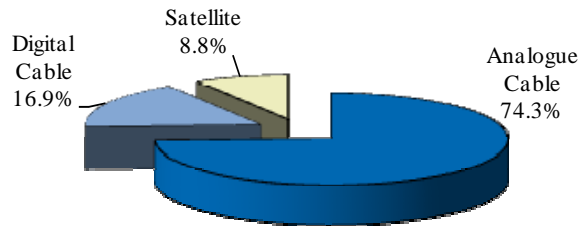
Figure 33: Subscription Television Subscribers by Platform 2007



Source: TATT Annual Telecom & Broadcasting Survey

A similar analysis reveals that the total estimated gross revenues for the subscription television broadcasting market was TT\$328.5 million. Of this amount, analogue subscription television account for TT\$244.2 million or 74.3 per cent, digital subscription television obtained TT\$55.4 million or 16.9 per cent while satellite subscription television had TT\$28.8 million or 8.8 per cent.

Figure 34: Subscription TV Revenues by Platform for 2007

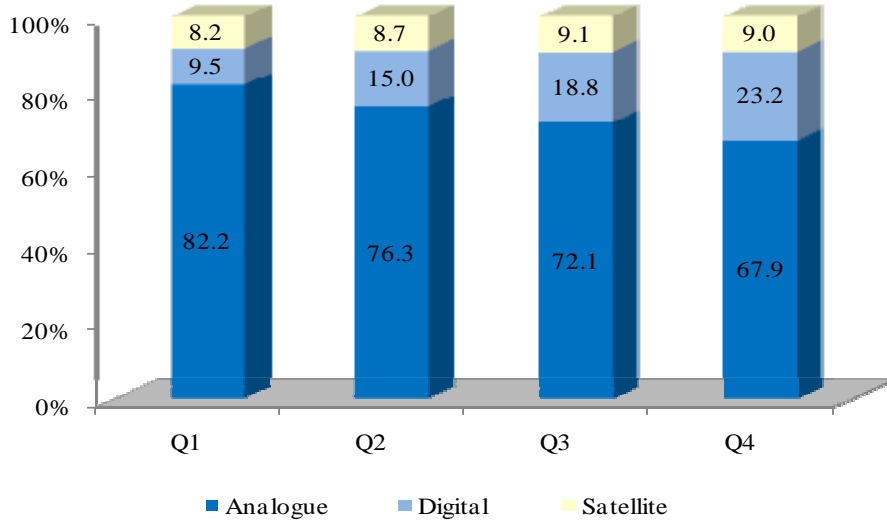


Source: TATT Annual Telecom & Broadcasting Survey

During 2007, the subscription broadcasting services market obtained the largest estimated gross revenues from its analogue subscription television subscribers. This trend was consistent across all four quarters for the year. However, there was a significant decline in the gross revenues of analogue subscription television subscribers during 2007. The total share of revenues obtained from analogue subscription subscribers fell from 82.2 per cent in Q1 to 67.9 per cent in Q4. This decrease resulted from the transition of analogue subscribers to digital subscription. As can be seen from Figure 35, the percentage share of digital subscribers in 2007 increased from 9.5 per cent in Q1 to 23.2 per cent in Q4.

In addition, to the six (6) subscription television broadcasting service providers listed above, there were four cable-based broadcasters that broadcast via leased CCTL cable channels in 2007. They were Trinidad Publishing (CNC3), IETV, Synergy Entertainment Limited and the Parliament of the Republic of Trinidad and Tobago.

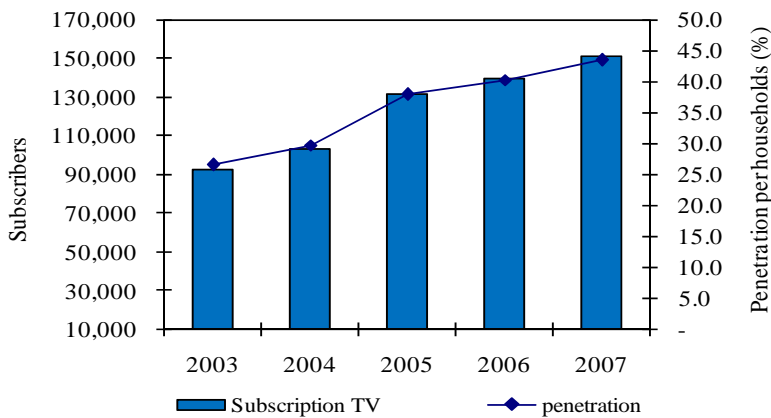
Figure 35: Subscription TV Revenues by Platform 2007



Source: TATT Annual Telecom & Broadcasting Survey

The number of subscribers in the subscription broadcasting TV market has been growing consistently over the past five years. This consistent growth is presented in Figure 36 below. Synonymous with this growth was the increase penetration of subscription broadcasting services in Trinidad and Tobago. Figure 36 also highlights the trend in the penetration of subscription broadcasting services since 2003. As at December 2007 the number of subscription television subscribers per 100 households was 43.6. This represents a marginal increase from the penetration level of 40.3 per 100 households recorded as at December 2006.

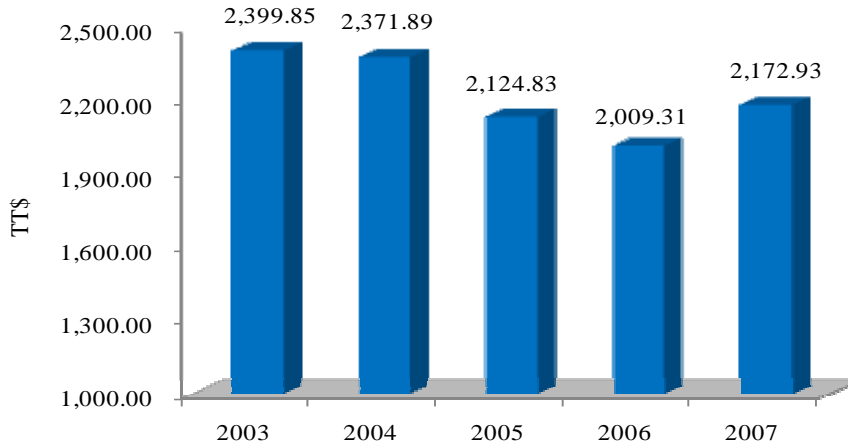
Figure 36: Subscription Television Subscribers and Penetration 2004 - 2007



Source: TATT Annual Telecom & Broadcasting Survey

The HHI index reveals that the market concentration for the subscription broadcasting services market has been declining steadily since 2002. As at December 2007, the subscription television market had a HHI of 7,010. This measure shows that the subscription television market is concentrated. That is, the HHI index is heavily biased towards the 10,000 (monopoly) end of the scale.

Figure 37: Subscription TV Average Revenue per User (ARPU) 2003 - 2007



Source: TATT Annual Telecom & Broadcasting Survey

During 2007, subscribers spent an average of TT\$2,172.93 for subscription television services. This represents an increase of TT\$163.62 or 8.1 per cent in the average revenue per user (ARPU) over the amount recorded for 2006. This unusual increase was caused by increased monthly subscription fees by CCTL for basic and premium packages as well as the introduction of pay-per view channels. CCTL increased its monthly subscription fees for basic subscription services by TT\$12.60 or 6.4 per cent. It was also during 2007 that CCTL introduced the new programming packages for movie channels that had previously been provided in the analogue basic package.

7. Summary and Outlook

The telecommunications and broadcasting sectors continue to expand during 2007 recording significant growth of 16 per cent in revenues. This is typical of sectors that are opened to competition. The voice telephony market is still dominated by the cellular service market and may receive an impetus as the Authority considers licensing a new mobile operator, through a competitive process, to replace Laqtel Limited¹⁹. The increasing trend in mobile density experienced over the last five years stabilized, recording a slight decline of 0.6 per cent in subscribers during 2007.

During 2007, the fixed voice subscriber base fell by 5.6 per cent, the first decline in subscribers since 2001. The take-up of fixed voice services will depend on the packaging of this service with other high-demand services like the Internet or subscription television. This offering of triple play²⁰ packages by service providers will influence customers to subscribe to triple play packages from a single provider rather than having subscriptions to different telecommunications service providers for different services. The growth in the business subscriber base during 2007 is expected to continue over the medium term.

The information collected on the Internet market for 2007 increased significantly in comparison to that reported in 2006 as most ISPs responded positively to the survey conducted. This increased in response accounted for more detailed information available in 2007 and may have biased the year-on-year growth comparison with 2006 figures. It is expected that the Internet market will continue on its upward growth path in 2008. The number of broadband subscribers is expected to grow rapidly within the short-term as CCTL continues its expansion of its IP network and TSTT transitions its High Speed Internet Access (HSIA) customers to their Blink broadband service. In addition, the Authority is expected to complete the authorization process that was started in October 2007 for the grant of a concession and associated licence to a new service provider, Telstar Cable Systems Limited, to provide wireless subscription broadcasting and broadband Internet services. Telstar was successful in its bid to obtain the spectrum that can be used to facilitate both wireless broadband and subscription broadcasting services. Further to this, the Authority anticipates to authorize new service providers for broadband Internet services using WiFi technologies.

¹⁹ The licences and concession previously awarded to Laqtel Trinidad Limited that relates to the provision of public domestic mobile network and services were terminated by the Minister of Public Administration on March 14, 2008.

²⁰ The offering of Internet, telephony and subscription television TV services on the same medium.

The growth trend experienced in the free-to-air radio broadcasting market over the last five years is expected to stabilize as the Authority no longer has spectrum available to offer to new radio broadcasters. Radio and television stations will now compete for clients and audience market share given the large number of stations in operation. The number of subscription television subscribers is expected to grow, especially with the introduction of triple play packages that will be offered by new telecommunications service providers.

8. Appendix I

Table 5: Domestic Telecom Statistics

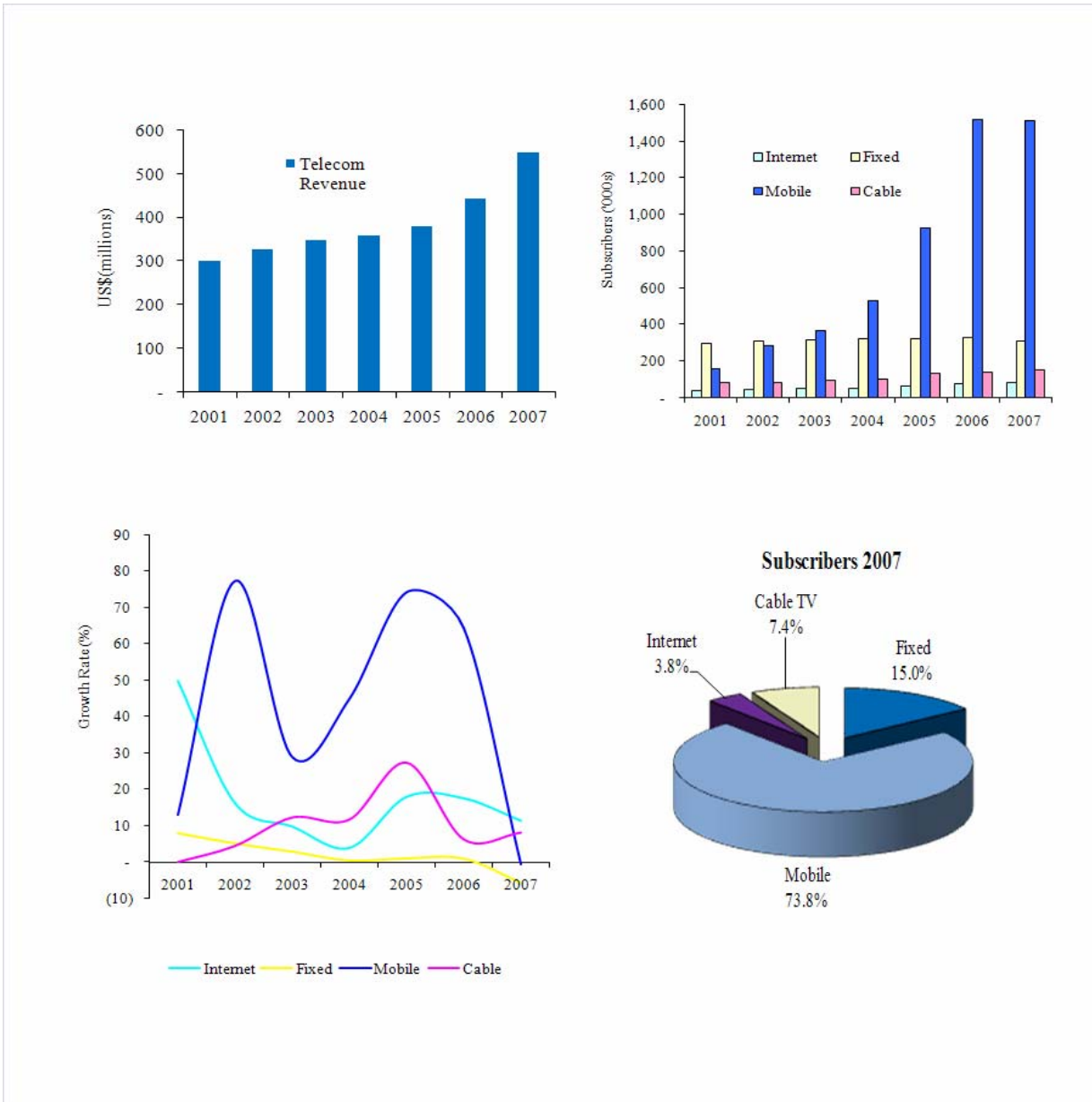
<i>Domestic Telecom Statistics</i>								<i>CAGR*</i>	
		<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007 (2000-2007)</i>	<i>%</i>
General	Population (millions)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	0.1
	GDP per capita (US\$)	6,891.6	7,166.3	8,246.2	8,470.3	11,560.2	14,576.4	16,008.1	15.2
	Telecom revenue (US\$ million)	298.9	326.0	346.3	357.0	379.3	441.7	521.3	11.5
	Total telephone subscribers ('000s)	453.3	592.2	683.3	849.3	1,246.4	1,844.3	1,817.1	23.6
	Total telephone subs. per 100 inhabitants	34.9	45.5	52.4	65.0	95.2	151.2	138.7	23.4
	Average revenue per user (ARPU) US\$	659.4	550.4	506.8	420.3	304.3	239.5	286.9	(9.8)
Fixed	Main telephone lines ('000s)	293.2	308.3	317.3	318.9	322.3	325.5	307.3	1.8
	Main lines penetration (%)	22.6	23.7	24.4	24.4	24.6	24.9	23.5	1.6
	Average revenue per user (ARPU) US\$	349.1	362.1	267.9	254.8	272.1	277.9	422.4	3.2
	Main lines growth (%)	8.0	5.2	2.9	0.5	1.1	1.0	(5.6)	
Mobile	Mobile subscribers ('000s)	160.1	283.9	366.0	530.4	924.1	1,518.8	1,509.8	40.2
	Mobile penetration (%)	12.3	21.8	28.1	40.6	70.5	115.9	115.3	40.0
	Average revenue per user (ARPU) US\$	225.8	212.4	213.5	203.8	153.1	159.1	206.6	(1.5)
	Mobile growth (%)	13.0	77.3	28.9	44.9	74.2	64.4	(0.6)	
Internet	Internet subscribers ('000s)	39.6	46.1	50.7	52.7	62.3	73.3	81.7	17.5
	Broadband subscribers ('000s)	...	...	...	...	14.0	21.1	35.5	14.3
	Internet users ('000s)	120.0	138.0	153.0	160.0	184.5	198.4	212.8	11.4
	Internet penetration (%)	2.7	3.1	3.4	4.2	5.5	5.7	6.2	17.3
	Average revenue per user (ARPU) US\$	...	...	...	...	...	389.2	584.5	
	Internet growth (%)	49.8	16.3	9.9	4.1	18.1	17.7	11.5	
	Internet host	6,872.0	7,209.0	8,003.0	12,207.0	16,132.3	17,812.2	19,940.1	17.1
Personal computers ('000s)	90.0	103.5	119.0	137.0	146.5	159.8	175.5	11.9	
Traffic	International -Outgoing (min. million)	15.2	81.0	91.9	108.4	141.0	203.2	265.9	49.6
	International -Incoming (min. million)	147.0	233.0	328.4	354.7	414.5	296.5	323.0	10.2
	Inbound/Outbound int'l traffic ratio	9.7	2.9	3.6	3.3	2.9	2.6	1.2	
Cable	Cable subscribers ('000s)	78.9	82.4	92.5	103.4	131.6	139.8	151.2	11.4
	Cable penetration(%)	6.0	6.3	7.1	7.9	10.1	10.7	11.6	11.4
	Average revenue per user (ARPU) US\$	376.7	395.3	380.9	376.5	337.3	318.9	344.9	(1.5)
	Cable growth (%)	...	4.5	12.3	11.7	27.3	6.2	8.1	
ICT Index	Digital Access Index (DAI)	...	...	...	...	0.53	0.62	0.62	
	Digital Opportunity Index (DOI)	...	...	...	...	0.45	0.53	0.53	

*CAGR - Compound Annual Growth Rate

Data in bold are estimates

Source: TATT Annual Telecom & Broadcasting Survey

Figure 38: Domestic Telecom Statistics



Source: TATT Annual Telecom & Broadcasting Survey

9. Appendix II

Table 6: List of Concessions as at December 31, 2007

Service	Number of Concessions Granted	Concessionaires	Concession Type†	Offered Service During the Review Period
Domestic Fixed (Voice/Internet) Telecommunications Service	6	Columbus Communications Trinidad Limited	2	yes
		Computer Technologies Services Limited	2	no
		Independent Cable Network of Trinidad and Tobago	2	no
		RVR International Limited	2	no
		Telecommunications Services of Trinidad and Tobago Limited	2	yes
		Green Dot Limited	2	yes
Mobile Domestic Telecommunications Service	3	TRICO Industries Limited	2	no
		Digicel Trinidad Limited	2	yes
		Laqtel Limited	2	no
International Telecommunications Services	10	Telecommunications Services of Trinidad and Tobago Limited	2	yes
		360 Degrees Communications	2	yes
		Columbus Communications Trinidad Limited	4	yes
		Columbus Networks International Limited	2	yes
		Digicel Trinidad Limited	2	yes
		Laqtel Limited	2	yes
		Lisa Communications Limited	2	yes
		Open Telecom	2	yes
		Southern Caribbean Fibre Limited	1	yes
		Telecommunications Services of Trinidad and Tobago Limited	2	yes
Windward Telecom Limited	2	no		
Free-to-Air Television Broadcasting Service	6	Advance Community Television Network Limited (ACTN)	5	yes
		Caribbean Communications Network Limited (TV6)	5	yes
		Caribbean New Media Group (CNMG)	5	yes
		Gayelle Limited	5	yes
		Government of Trinidad and Tobago (NCC)	5	yes
		World Indian Network Television Limited (WINTV)	5	yes
Free-to-Air Radio Broadcasting Service	31	21st Century Arts and Entertainment Limited	5	yes
		British Broadcasting Corporation	5	yes
		Caribbean New Media Group Limited	5	yes
		Central Broadcasting Services Limited	5	yes
		Central Radio FM90 Limited	5	yes
		Citadel Limited	5	yes
		Family Focus Limited	5	yes
		Heritage Communications Limited	5	yes
		Inner City Broadcasting Company Ltd.	5	yes
		Kaisoca Productions Limited	5	yes
		Kenny Phillips	5	yes
		Marcel Mahabir	5	yes
		Mohan Jaikaran	5	yes
		Neil "Iwer" George	5	yes
		Parliament of the Republic of Trinidad and Tobago	5	yes
		PBCT Limited	5	yes
		Radio Five Limited	5	yes
		Radio News Network	5	yes
		Radio Vision Limited	5	yes
		Sidewalk Radio Limited	5	no
		Superior Infinite Productions Limited	5	yes
		Telemidia Limited	5	yes
		The Q Corporation Limited	5	yes
		Trinidad and Tobago Citizen's Agenda Network	5	yes
		Trinidad and Tobago Network Limited	5	yes
		Trinidad Publishing Company Limited	5	yes
United Cinemas Limited	5	yes		
Upward Trend Entertainment Limited	5	yes		
VL Communications Limited	5	yes		
Winfred Aleong Broadcasting Company Limited	5	yes		
Wonderland Entertainment Limited	5	yes		
Subscription Television Broadcasting Service	11	Columbus Communications Trinidad Limited	2	yes
		Computer Technologies and Services Limited	2	yes
		DirecTV Trinidad Limited	5	yes
		IETV Limited	5	yes
		Independent Cable Network of Trinidad & Tobago Limited	2	yes
		Parliament of the Republic of Trinidad and Tobago	5	yes
		RVR International Limited	2	yes
		Trinidad Publishing Company (CNC3)	5	yes
		Synergy TV Limited	5	yes
		Telecommunications Services of Trinidad and Tobago Limited	5	yes
		TRICO Industries Limited	2	yes
Total	67			

Source: TATT Annual Telecom & Broadcasting Survey

† The classification of concession type is explained in the Authorization Framework document on TATT website <http://www.tatt.org.tt/ddocs/AuthorisationFramework.pdf>

10. Appendix III

Table 7: Internet Monthly Charges (for the period January to December 2007)

Service Provider	Internet Package Services	Downstream Speed kbps	Installation Cost TT\$	Monthly Charges TT\$
CableNett www.cablenett.net	Dial-Up #1	56	115.00	100.00
	Dial-Up #2	56	115.00	138.00
	Dial-Up #3	56	115.00	207.00
	Turbo Dial-Up	56	-	179.95
	High Speed-Resident	128	575.00	690.00
	High Speed #1	128	1,500.00	1,000.00
	High Speed #2	256	1,500.00	1,550.00
	High Speed #3	384	1,500.00	2,100.00
	High Speed #4	512	1,500.00	2,565.00
CaribLink www.carib-link.net	Dial-Up #1	56	115.00	115.00
	Dial-Up #2	56	115.00	161.00
	Dial-Up #3	56	115.00	230.00
	Dial-Up #4	56	-	345.00
	Turbo Dial-Up	56	-	179.95
	High Speed-Resident	128	575.00	690.00
	High Speed #1	128	1,500.00	1,000.00
	High Speed #2	256	1,500.00	1,550.00
	High Speed #3	384	1,500.00	2,100.00
greendot www.mail.tt	Residential #1	128	1,725.00	316.25
	Residential #2	256	1,725.00	431.25
iNTERSERVE www.trinidad.net	Dial-Up #1	56	115.00	138.00
	Turbo Dial-Up	56	-	179.95
	High Speed-Resident	128	575.00	690.00
	High Speed #1	128	1,500.00	1,000.00
	High Speed #2	256	1,500.00	1,550.00
	High Speed #3	384	1,500.00	2,100.00
Lisa Communications www.rave-tt.net	Dial-Up #1	56	115.00	79.35
	Dial-Up #2	56	115.00	184.00
	Dial-Up #3	56	115.00	230.00
TSTT www.tstt.co.tt	Dial-Up #1	56	115.00	79.35
	Dial-Up #2	56	115.00	143.75
	Dial-Up #3	56	115.00	230.00
	Dial-Up #4	56	115.00	799.25
	Dial-Up #5	56	115.00	345.00
	Blink Broadband Residential 1	256	Free Installation	79.00
	Blink Broadband Residential 2	512	Free Installation	149.00
	Blink Broadband Residential 3	1mb	Free Installation	229.00
	Blink Broadband Residential 4	2Mb	Free Installation	349.00
	Blink Broadband Residential 5	10Mb	Free Installation	699.00
	Blink Broadband Business 1	512	Free Installation	799.00
	Blink Broadband Business 2	1Mb	Free Installation	1,249.00
	Blink Broadband Business 3	2Mb	Free Installation	2,399.00
	Blink Broadband Business 4	3Mb	Free Installation	2,949.00
	Blink Broadband Business 5	4Mb	Free Installation	5,249.00
WOWnet www.wow.net	WOW@Home	56	100.00	125.00
	WOW@Work	56	100.00	200.00
	WOW@Work Ultra	56	100.00	375.00
	WOW@Work Premium	56	100.00	750.00
	Wireless Broadband 1	128	650.00	250.00
	Wireless Broadband 2	512	650.00	460.00
	Wireless Broadband 3	1Mb	650.00	1,150.00

Source: TATT Annual Telecom & Broadcasting Survey

11. Appendix IV

Table 8: Digicel Mobile Tariffs (for the period January to December 2007)

Prepaid Charges

	Digicel Day Vat Inclusive		
	Day	Evening	Weekend
Mobile to Mobile	1.15	0.85	0.55
Mobile to Fixed	1.25	0.95	0.65
Mobile to bmobile	1.60	1.50	1.40

Postpaid Charges

	Monthly Fee	Digicel Vat Inclusive			
		Bundled Minutes	Effective Rate	Charges for Additional Minutes	
Postpaid 120	\$95.00	120	0.79	Mobile to Mobile	0.75
Postpaid 240	\$185.00	240	0.77	Mobile to Fixed	0.85
Postpaid 360	\$255.00	360	0.71	Mobile to bmobile	1.00

	Monthly Fee	Digicel Vat Inclusive			
		Bundled Minutes	Effective Rate	Charges for Additional Minutes	
World Plan 150	\$150.00	150	1.00	Mobile to Mobile	0.75
World Plan 300	\$300.00	300	1.00	Mobile to Fixed	0.85
World Plan 600	\$600.00	600	1.00	Mobile to bmobile	1.00

International Charges

	Digicel Vat Inclusive		
	Day	Evening	Weekend
USA, Canada, UK	1.50	1.10	0.55
Caribbean, Venezuela, India	1.50	1.10	0.85
ROW	3.00	2.10	2.00
Other countries*	6.85	6.85	6.85

Other countries* includes Antartica, Ascension, Cook Islands, Cuba, Falkland Islands, Guinea Bissau, Honduras, Saint Helena Sao Tome & Principe, Solomon Islands, Vanuatu, Thuraya, Iridium, Inmarsat

Source: www.digiceltt.com

Table 9: TSTT Mobile Tariffs (for the period January to December 2007)**Prepaid Charges**

	bmobile - Standard Prepaid Plan Vat Inclusive		
	Day	Evening	Weekend
Mobile to Mobile	1.50	0.75	0.58
Mobile to Fixed	1.50	0.75	0.58
Fixed to Mobile	1.50	0.75	0.58

	bmobile - Optional \$1 anytime Prepaid Plan Vat Inclusive		
	Day	Evening	Weekend
Mobile to Mobile	1.15	1.15	1.15
Mobile to Fixed	1.15	1.15	1.15
Fixed to Mobile	1.15	1.15	1.15

Postpaid Charges

	bmobile Vat Inclusive			
	Monthly Fee	Bundled Minutes	Effective Rate	Charges for Additional Minutes
Basic	86.25	100	0.86	0.86
Bonus	161.00	200	0.81	0.81
Beyond	299.00	400	0.75	0.75

Fixed to Mobile

	Day	Evening	Weekend
Fixed to Mobile	0.92	0.92	0.92

International rates

	bmobile Vat Exclusive		
	Day	Evening	Weekend
US, Canada, UK & Ireland	1.25	1.00	0.50
Caribbean, Venezuela & India	1.50	1.00	0.75
Rest of the World	2.50	2.00	1.50

Source: www.bmobile.co.tt