Telecommunications Authority of Trinidad and Tobago

Final Draft Document

Recommendations for an Interconnection and Access Policy

September 23, 2005 TATT 2/1/1/1/5

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Maintenance History		
Date	**Change Details**	**Version**
October 11, 2004	First Draft	0.1
March 31, 2005	Second Draft – after 1st consultation phase	0.2
June 1, 2005	McCarthy Tétrault commentary	0.3
June 14, 2005	Minor changes	0.4
September 23, 2005	Revisions based on 2nd consultation phase	0.5

1 Introduction

This is the third and final draft of the Interconnection and Access Policy, and has been amended following:

- The first round of consultation which commenced on 11th October 2004 and closed on November 6th 2004.
- A second round of consultation, which commenced on 1st July 2005 and closed on 15th July 2005.

The original and second drafts are available on the website of the Authority (http://www.tatt.org.tt). A consolidated matrix of the comments received in relation to the second draft, the recommendations made, and the Authority's decisions on those recommendations is attached at Annex II. The document has been amended to take into account the comments and recommendations made.

This revised version is intended to serve as the final draft for submission of policy recommendations to the Minister. For ease of identification, policy statements in this document have been numbered and highlighted in boxes.

2 Background

2.1 Dynamics of Global Market Structure

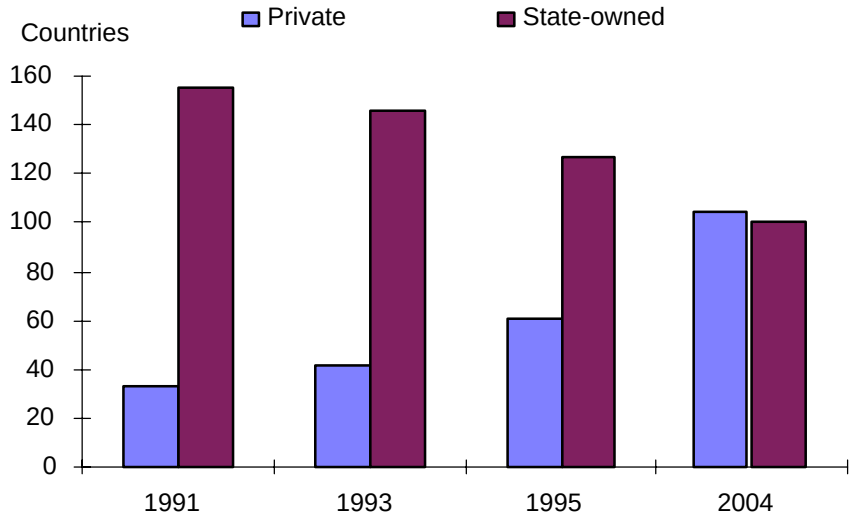
Telecommunications is a key component of the infrastructure for economic growth, supporting activities and trade in sectors ranging from manufacture to financial services. By the turn of the 21st century, telecommunications network solutions combined with broadcasting and computing platforms to reconfigure the information and communication technology (ICT) sector.

Changes in the international telecommunications market structure have been, and continue to be, driven by privatization and competition. Control of the industry, which was defined by wholly state-owned capital, is now subject to significant privatization. By the end of 2004, approximately 75% of countries in the Americas had private capital injected into incumbent telcos. The percentages for Europe, Asia, Africa and the Arab states were approximately 71%, 55%, 44% and 38% respectively. Figure 1shows that on average more than 50% of incumbent telcos have private ownership.

The tendency toward privatization has been matched by the move towards competition in the delivery of a variety of telecommunications services. Approximately, 70% of fixed line subscribers now have a choice of service provider. The approximate percentages for mobile telephony and Internet subscribers are 98% and 99% respectively (Figure 2). Competition in the provision of cable TV, VSAT terminals and wireless local loop services apply to approximately 90%, 78% and 68% respectively, of the 169 ITU member countries (ITU).

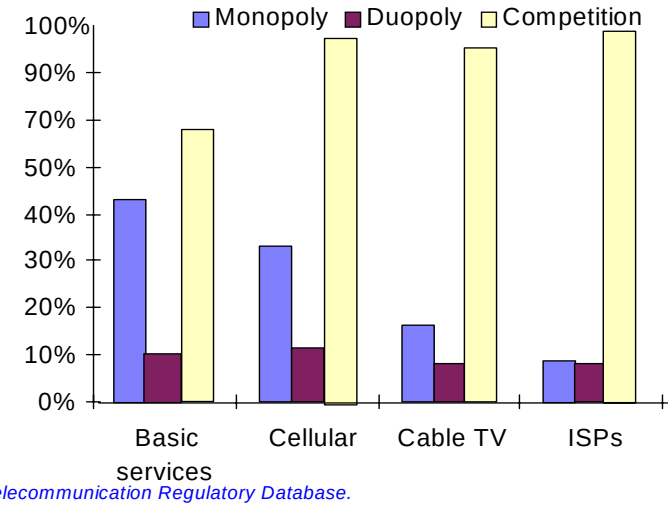
Voice telephony traffic has evolved from a monopolistic to a competitive delivery system. At the end of 1995, less than twenty (20) countries authorized competition in local, long distance and international traffic. By the end of 2004, approximately 75 countries authorized competition in all three services. It is estimated by that the end of 2005 some 90 countries will be offering competitive markets for those services.

Figure 1
Ownership Status of the Incumbent



Source: ITU Telecommunication Regulatory Database.

Figure 2
Degree of Competition by Service, (ITU Member States)



Source: ITU Telecommunication Regulatory Database.

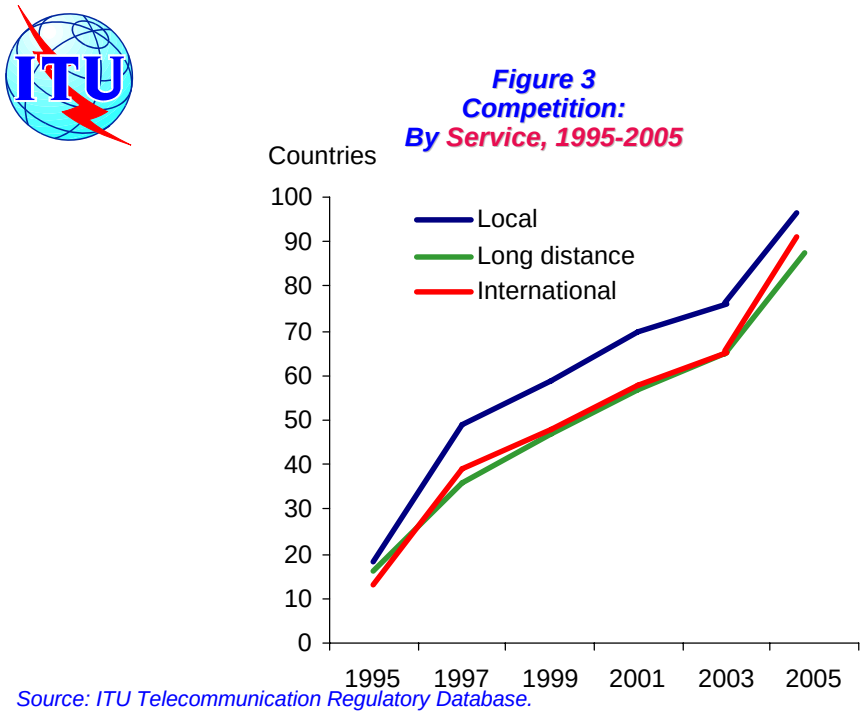


Figure 3
Competition:
By Service, 1995-2005

Source: ITU Telecommunication Regulatory Database.

2.2 Mobile Revolution

There has been a strong correlation between competition, initiated through interconnection, and the mobile revolution, particularly in emerging economies. Over the period 1999-2004, emerging economies demonstrated strong growth rates in mobile subscribers. The compound average growth rate in mobile subscribers in Eastern Europe (1999-2004) was three times higher than that for Western Europe. Over a similar period, the mobile growth rates in African and Middle Eastern countries were significantly higher than that for Asia Pacific. While the compound average growth rate in mobile subscribers for North America was significantly below the global average of 31%, above global average growth rates were recorded in Latin American and Caribbean countries. **In fact, for the period 1999-2004 the fastest growth rate in mobile subscribers in the Western Hemisphere was recorded in the Caribbean.**

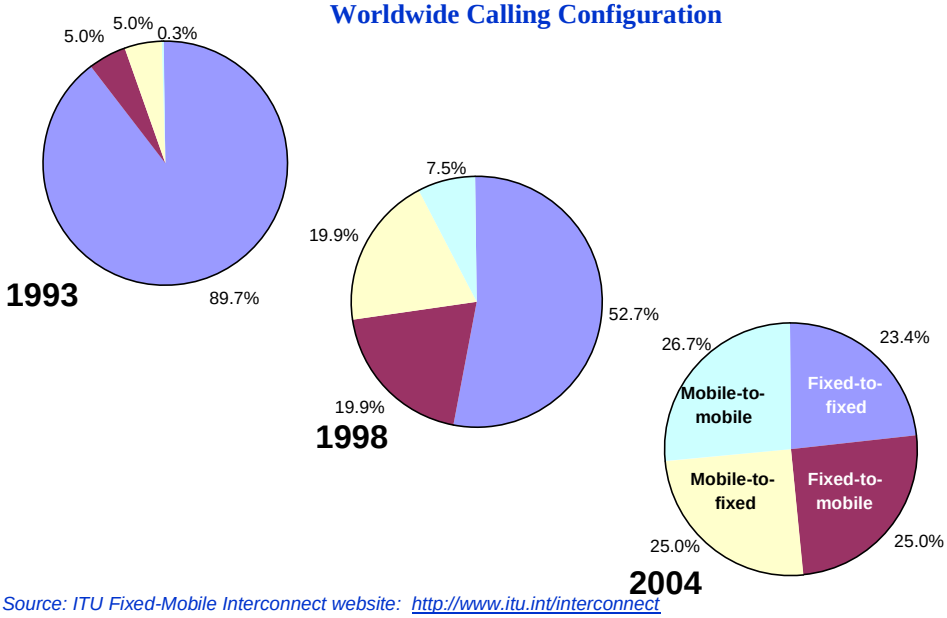
The buoyancy of the Caribbean mobile market has not escaped the focus of some of the largest mobile operators in the world including Orange, Telefonica Moviles, Verizon

Wireless and Cingular/AT&T Wireless. The small landmass combined with relatively high per capita income and preference for western life styles makes Caribbean countries an attractive market for multi-media mobile services.

The inter-networking, and hence competition, among mobile service providers has impacted worldwide call configuration substantially over the 1993-2004 period. At the end of 1993, merely 10 % of total calls involved use of mobile handsets. The estimated percentage at the end of 2004 is 77%, marking a 66 percentage-points increase over the 10 year period (Figure 4).

Figure 4

Worldwide Calling Configuration



Source: ITU Fixed-Mobile Interconnect website: http://www.itu.int/interconnect

Over the period 1991-2004, world telecommunications revenue increased substantially from approximately USD 963 billion to an estimated USD 2.5 trillion, an average annual growth rate of some 8.4%. Despite the sluggish growth rates in earnings from international services (5.29 %) and domestic voice telephony services (2.82%), growth in telecommunications revenue was sustained by the robust increases in returns from data (12.08%) and mobile services (29.9 %) - see Tables I and II.

Table I

World Telecommunications Revenue ($US billions)

Year	Service & Equipment	Fixed-line (Domestic)	International	Mobile	Data
1991	523	331	37	19	53
1992	580	350	43	26	72
1993	605	359	46	35	77
1994	675	386	47	50	81
1995	779	428	53	78	89
1996	885	444	53	114	114
1997	946	437	54	142	133
1998	1015	456	56	172	139
1999	1123	476	58	223	155
2000	1210	477	60	278	165
2001	1232	472	63	317	180
2002	1295	465	65	364	190
2003	1370	455	68	414	200

Source ITU

Table II

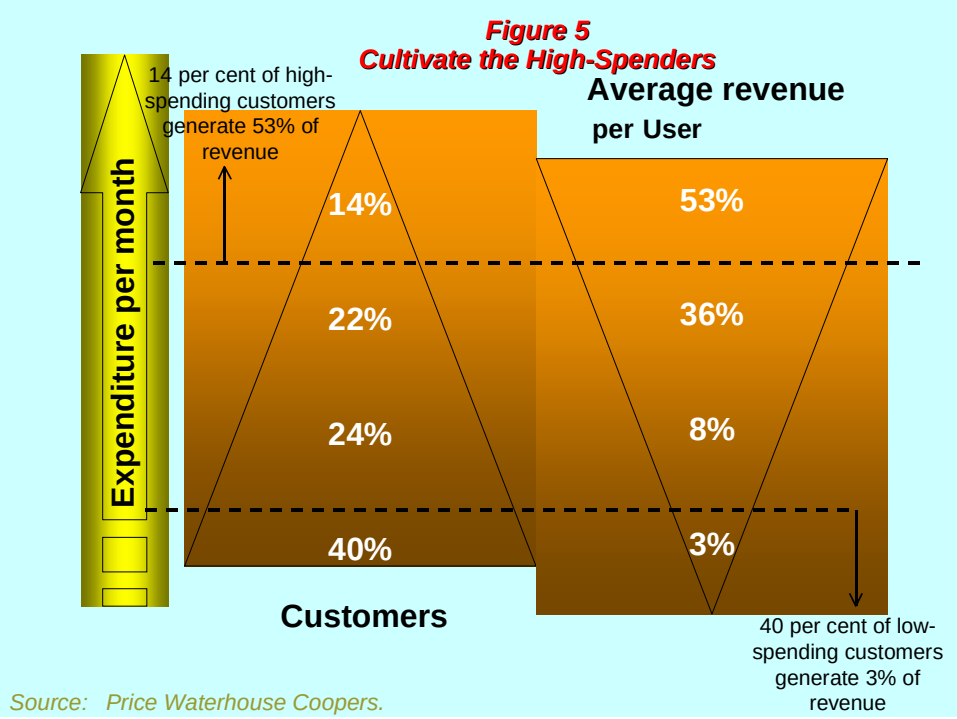
Average Annual Growth Rates, Telecommunications Industry

Year	AGR Equipment & Services	AGR Fixed-line Domestic	AGR International	AGR Mobile	AGR Data
1992	10.90	5.74	16.22	36.84	35.85
1993	4.31	2.57	6.98	34.62	6.94
1994	11.57	7.52	2.17	42.86	5.19
1995	15.41	10.88	12.77	56.00	9.88
1996	13.61	3.74	0.00	46.15	28.09
1997	6.89	-1.58	1.89	24.56	16.67
1998	7.29	4.35	3.70	21.13	4.51
1999	10.64	4.39	3.57	29.65	11.51
2000	7.75	0.21	3.45	24.66	6.45
2001	1.82	-1.05	5.00	14.03	9.09
2002	5.11	-1.48	3.17	14.83	5.56
2003	5.79	-1.48	4.62	13.74	5.26
Average	8.42	2.82	5.29	29.92	12.08

Revenue from mobile services increased from USD 19 billion in 1991 to USD 414 billion at the end of 2003, closing the gap on total earnings from fixed-line domestic telephone services, including Fax.

The popularity of mobile telephony has been buoyed by relatively fast network rollout, the introduction of roaming and calling party pay (CPP). Moreover, mobile phones are personal and have attracted a younger user population than the average fixed line subscriber population, without any loss of patronage from high spending consumers. The Canadian situation captured at Figure 5 reflects the sharp disparity in expenditure on mobile services between low-income and high-income subscribers. This indicates the importance of minutes of usage by mobile subscribers as a determinant of the revenue earning potential of mobile service providers.

Text messaging (SMS) has also contributed significantly to the expansion of the mobile industry. Estimates of the Mobile Data Association (MDA) show that more than 800 billion mobile text messages were exchanged in 2003. China was responsible for approximately 380 billion of those messages. ITU estimated that the number of text messages in China reached some 550 billion at the end of 2004.



Serious regulatory implications have attended the transformation of the voice telephony market. Policy makers and regulatory authorities have been forced to grapple with the

rapidity with which policy revisions are required to facilitate new dimensions in licensing service providers to satisfy the reality of technology and service neutrality.

2.2.1 Outlook

Indications are that in the next few years, the mobile voice telephony market will require significant new investment to support the migration towards 2.5G and maturing 3G technologies. Mobile network operators will also reap further benefits through investment in VAS, including MMS and SMS services, particularly in China, India, Latin America and the Caribbean.

The dynamics of the mobile market in the Caribbean are likely to force consolidation among network and service providers. The economic viability of four and five mobile service providers, as obtains in Jamaica, Barbados and the Dominican Republic will be challenging. The lessons of reduction to a maximum of three (3) mobile operators in larger economies such Argentina and Chile is likely to be repeated in certain countries of the Caribbean. As mobile markets become more competitive, it is not inconceivable, in the near future, to witness small operators that obtained mobile concessions and licences via beauty contests joining with, or taken over by, operators with much larger footprints. The near-term battle for market dominance in the Caribbean is likely to be contested among Verizon, Cable and Wireless, Cingular/AT&T Wireless, Digicel, Centennial and Orange Domincana. As the lucrative Trinidad and Tobago market opens up and further liberalization of the Cuban market takes effect, the larger global players including Telefonica, Cellular One, Western Wireless, Telecom Italia, Oceanic Digital, Sprint and Tricom (Motorola) are likely to emerge, either as first time or secondary licensees.

Capital expenditure on mobile services, particularly in the Caribbean region is likely to experience accelerated growth over the near term. Pyramid Research forecasts that GSM will drive 60% of operator spending in 2005 with CDMA and WTDMA accounting for 22% and 18% respectively. It is likely that GSM will continue to dominate global expenditure on mobile infrastructure for some years to come. However, the expansion of EVDO (Evolution Data Optimised) worldwide, particularly in the USA will lead to

increase in spending on WCDMA. Given the current slower-than-expected migration of subscribers to 3G WCDMA, mobile operators are likely to invest in replacement of their aging 2G GSM networks. GSM is likely to maintain its share of global subscribers at approximately 68% causing operators to continue investment in new GSM networks, especially to incorporate EDGE capabilities.

Longer term, the need for greater bandwidth to satisfy mass E-transactions for business and pleasure will encourage rollout, not only in 3G mobile networks but to facilitate the emergence of 4G and 5G networks. By necessity, interconnect policies will be altered to treat with seamless passage of traffic among these new networks.

New services and applications will emerge in the future. At present it is unclear what these will be, but examples may include services which permit parents the option of constant video contact with their children at any time of the day, even in classrooms through CCTV. Via sensors on mobile phones, doctors will be able to check certain vital signs in patients such as blood pressure, temperature, glucose levels and pulse rate, thereby reducing the length of time patients will spend during a doctor's visit.

There will also be an emergence of new mobile technologies. Long range, medium range and short range technologies such as (WiMAX –IEEE 802.16, IEEE 802.20, HiperMAN, LMDS, MMDS) (long range); (WILAN – WiFi: IEEE 802. 11b, IEEE 802. 11a, IEEE 802. 11g, IEEE 802. 11i, Free space optics, HiperLAN2, Ultra wideband (medium range) and (Bluetooth, RFID, Zigbee) short range will alter multimedia network rollout time and cost. Typical advancements envisage a capacity to use mobile phones to direct and countermand household activities while on the roads.

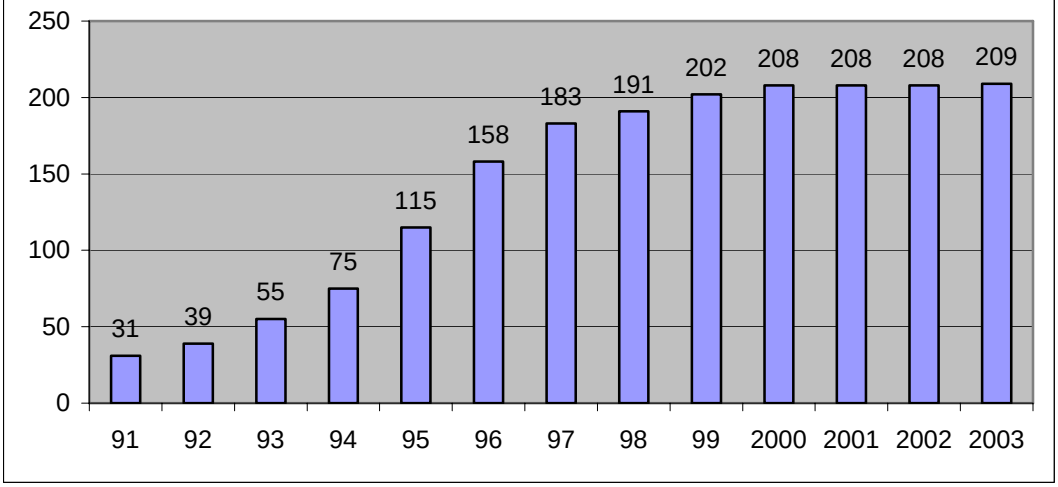
2.3 On-line Access to Information

The fixed-line network is far from spent. DSL technology has revitalized the importance of copper by facilitating dedicated quantum of bandwidth on copper pairs that do not vary with the number of subscribers, as is the case with CTV and wireless technologies that

are susceptible to congestion within certain usage-allotted bandwidth ratios in a particular area. The future of DSL in the local loop is contingent on the speed and extent at which regulators introduce interconnection in the local loop.

The number of countries connected to the Internet increased almost seven-fold over the period 1991-2003 (Figure 6). The global on-line population for year-end 2003 stood at 675,677,700 as against 387,531,400 at year-end 2000, an average annual growth rate of approximately 20% (Tables III & IV).

Figure 6
Number of Countries Connected to the Internet



Source: compiled from ITU World Telecommunication Data Base

Table III

Estimated Internet Users				
Region	**2003**	**2002**	**2001**	**2000**
Africa	12 112 600	7 942 800	6 510 200	4 558 700
Americas	219 327 400	205 658 500	182 986 000	154 643 900
Asia	243 405 900	201 079 000	150 471 500	109 256 900
Europe	188 996 800	166 386 500	143 915 200	110 824 300
Oceania	11 825 000	10 500 400	9 141 100	8 247 700
World Total	675 677 700	591 567 200	493 024 000	387 531 400

Source: ITU, http://www.int/itu-D/ict/statistics/

As illustrated at Figure 7, Asia, with approximately 36% of the global Internet population is the leading region in internet access. Africa and Oceania account for approximately 4% of the total global on-line population as against 64% for Europe and the Americas combined. It should be noted however, that while the average global growth rate in on-line population is estimated at 20%, Africa's growth is estimated at 39% (Table VI).

Figure 7
World ICT Market Share

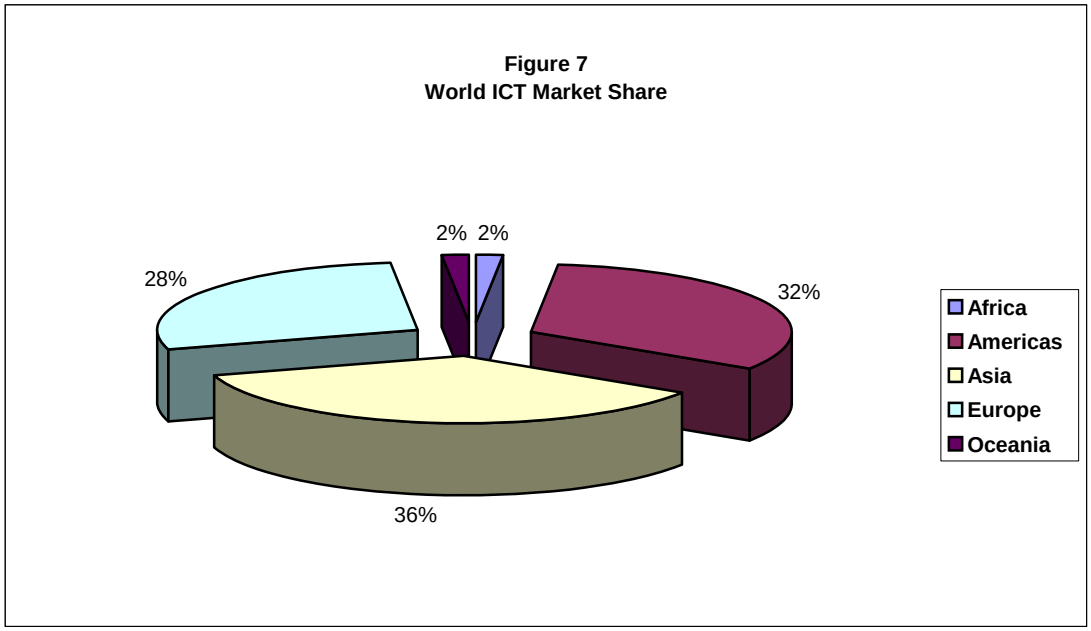


Table IV % Change in Estimated Internet Users				
Region	**2003**	**2002**	**2001**	**CAGR**
Africa	52.3	22	43	39.1
Americas	6.6	12.4	18.3	12.4
Asia	21	33.6	37.8	30.8
Europe	13.6	15.5	30	19.7
Oceania	13	15	11	13
World Total	14.2	20	27.2	20.5

These positive signs notwithstanding, the digital gap remains very expansive: thirteen (13) of the most developed countries of the world account for some 461,000,000 of the 675,677,700 (68%) global Internet users. The number of personal computers per 100 inhabitants in developing countries is still 11 times lower than the figure recorded for the developed world. The number of Internet users per 100 inhabitants in developing vis-à-vis developed countries is not yet within a ten-fold difference (ITU).

The **Millennium Declaration** signed by 189 countries seeks to promote connectivity to enable the delivery of artisan training using broadband solutions as a means of assisting in the reduction of rural migration for purposes of accessing comparable training. Similarly, the declaration seeks to use the Internet as a rapprochement of socio-economic disparities between the developed and developing worlds.

In a connected world government departments cannot escape the application of Internet solutions to satisfy public expectation in terms of efficient access to public services. The pervasive availability of Internet service in government departments will assist significantly in instituting a new social dimension based on public servants bringing on-the-job-acquired ICT skills to their respective communities.

2.3.1 Access to Broadband Technologies

One school of thought classifies broadband as technologies of capacity greater than 256 Kbit/s. Others opine that broadband capacity begins at 100 Kbit/s. Among technologies that enable broadband capacity are:

- Digital subscriber lines (copper phone lines)
- Cable Modem (copper coax)
- Fiber optical cable
- WLAN
- Fixed broadband wireless (e.g. IEEE 802.16)

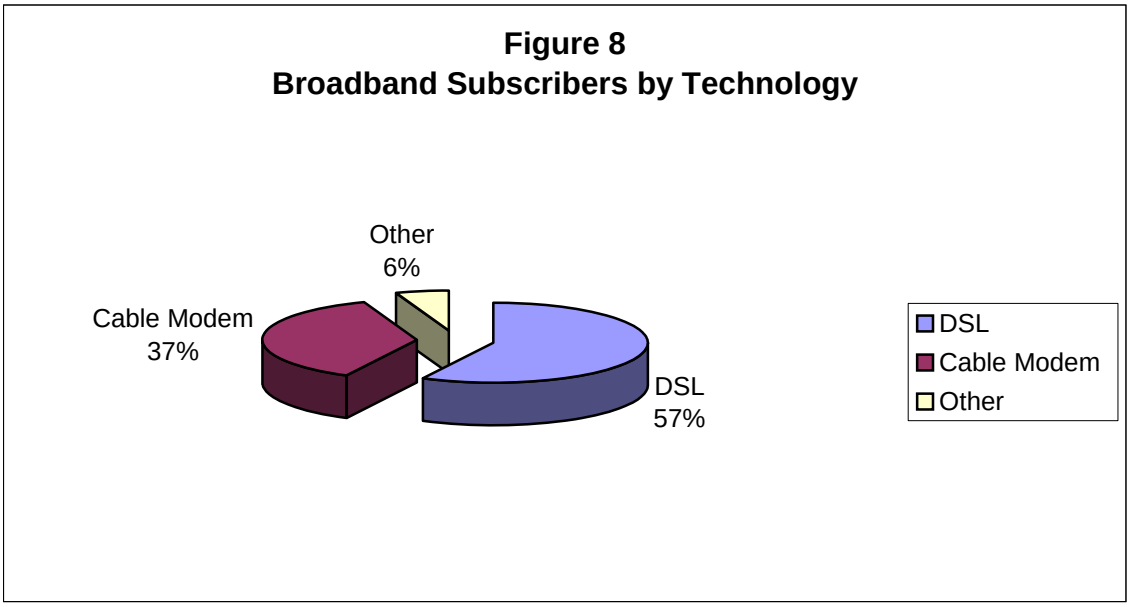
- Satellite
- Free space optics (lasers)

These technologies permit affordable, always-on-high-speed connectivity to the Internet, facilitating:

o Fast web browsing	E-Health/Telemedicine
o VOIP	Telenetworking
o Audio	E-Education
o Video	E-Government
o Online photo exchange	Video Conferencing
o Internet gaming	Faster E-Commerce , etc.

The two most widely used broadband technologies are DSL and cable modem, comprising 57% and 37 % respectively of world broadband subscribers (2004), Figure 8. DSL involves splitting of voice and data services over different frequencies enabling more efficient use of bandwidth available through compression.

Figure 8
Broadband Subscribers by Technology



Source: ITU and OECD

Cable modem is the most widely used broadband technology in the Americas, particularly North America where there is a fully developed cable television network. Cable networks that were initially designed for one-way video transmission have been re-engineered to upload and download information to households on separate blocks of 6 MHz frequencies using the same cable. This has made it possible for both internet and voice solutions to be transmitted simultaneously.

The number of global broadband subscribers increased dramatically from 2.3 million in 1998 to 102 million at the end of 2003, a compound average growth rate of approximately 118% (Table IV)

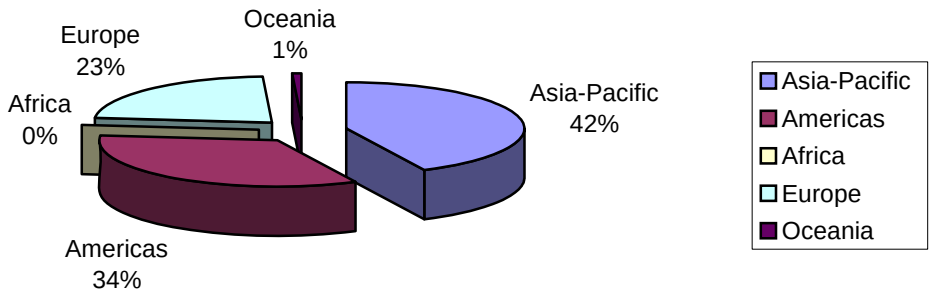
Table IV

Year	Number of subscribers (millions)	% Growth
1998	2.3	
1999	5.4	134.78
2000	12.3	127.78
2001	35.1	185.37
2002	61.4	74.93
2003	102	66.12
Average		117.80

Source: ITU

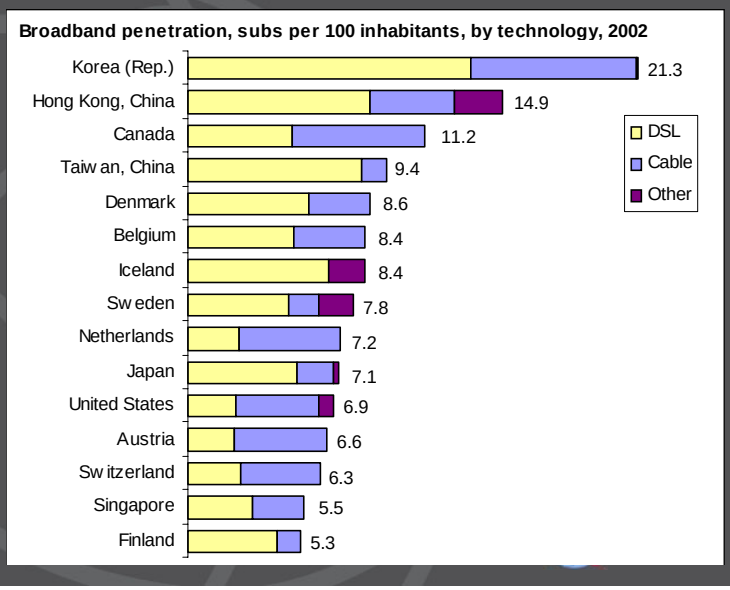
With 42.9% of the world's broadband subscriber base, Asia-Pacific leads the world in broadband users, followed by the Americas (34%) and Europe (23%). The almost negligible broadband-user population in Africa and Oceania provides a significant contrast(Figure 9).

Figure 9
World Broadband Subscribers by Region



Source : ITU & OECD

Figure 10

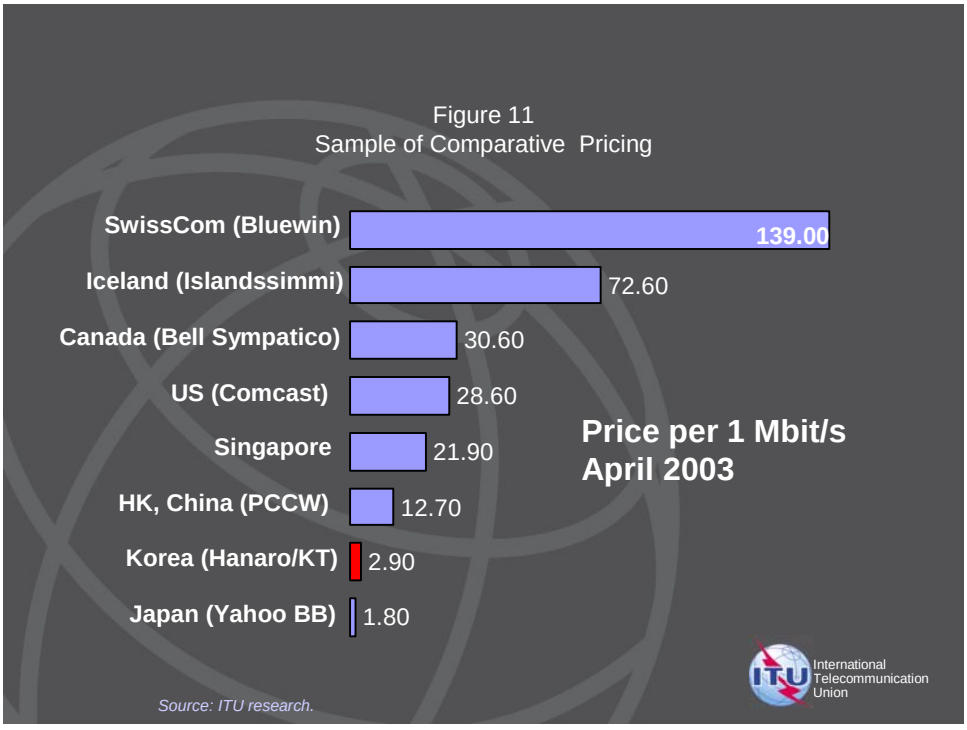


Source: ITU

In terms of broadband users per capita, the Republic of Korea is the leading country with a penetration rate of 21.3 per 100 inhabitants (Figure 10). The secret of Korea's broadband success is founded in its low prices and deliberate government policy to promote application of the technology as a socio- economic solution.

In a series of development plans between 1987 and 2002, the government of the Republic of Korea set out to create a cutting-edge all-inclusive knowledge-based society. One of the prime strategies was to make broadband services competitively priced to ensure affordability to the average citizen. As a consequence, the average price per Mbit/s in Korea is approximately 9 times less than that in the US and 10 times less than that faced by the average subscriber in Canada (Figure 11). At the end of 2003, the proportion of Korean homes with PCs was approximately 78% of which 86% had Internet connection. Broadband subscribers account for approximately 90% of the internet-access population.

Figure 11
Sample of Comparative Pricing



Source: ITU

Perhaps the lessons that should not escape Trinidad and Tobago's interconnection policy are the following:

- High level competition should be promoted through interconnection in the local loop, including line sharing, to lower the cost of telecommunications technologies to homes;
- Discontinuance of all facility-based monopolies by permitting interconnection between cable television networks and the PSTN;
- Permit flexibility in competitive interconnect charges to include flat-rate charging for bundled access resources;
- Any concessionaire having a right to interconnection should only be allowed to exercise that right if the entity can provide reciprocal obligations to other concessionaires;
- Government should consider subsidising the development of broadband under its FastForward initiative, particularly in challenged areas.

2.4 Universality

Universality incorporates universal access and universal service. The 1984 Maitland Commission contended that by the turn of the 21st century "every one should be within easy reach of telephone services". Easy reach was defined as within 1-2 walking hours distance of a telephone. Said Commission also proffered that the mintage for universal service is a telephone to every house. The WTO Reference Paper recognises the right of each country to define universality to suit their respective circumstances taking into consideration the under-listed fundamentals:

Affordability- ensuring prices of basic telecommunications services are within the financial reach of the entire population, irrespective of variation in cost of providing the services due to location, terrain, climate and urban/rural distinctions.

Availability- the level and quality of basic telecommunications services should be the same, no matter the location of ones residence in a country.

Accessibility- guaranteed access to basic telecommunications services for the physically and mentally challenged.

To forward-looking societies, universality has moved from access to single line voice to functional access to information. The extent of the latter in any country may be measured by a Digital Access Index (DAI) such as has been devised by the ITU. The DAI is constructed on five critical socio-economic and technology variables: **affordability, knowledge, infrastructure, usage and quality**.

DAIs have been estimated for 178 countries. Depending on the range of the value of the indices, the countries have been classified into four grouping: High Access, Upper Access, Middle Access and Low Access. DAIs permit each country a clear perspective on its readiness to take advantage of opportunities in a dynamic global information society where welfare advancement is becoming increasingly dependent on the combination of ICT facilities and the information exploratory skills of populations.

Trinidad and Tobago, one of the stronger economies in the Sub-Americas is ranked in the Upper Access grouping, but with a DAI of only 0.53 (Table V). This means that the capability of the population to use ICT as a productive tool is below that of the Bahamas (DAI = 0.60), St Kitts & Nevis (DAI = 0.60) Antigua and Barbuda (DAI = 0.57), Barbados (DAI = 0.57) and Dominica (DAI = 0.54). It is interesting to note that all those countries are more advanced than Trinidad and Tobago in liberalizing their telecommunications markets.

It should be noted that USO will not form part of interconnect charges and Government subsidy for ubiquitous deployment of broadband services in the country will only be applicable as a part of its fast forward initiative.

Table V

Digital Access Index value, by access level, 2002

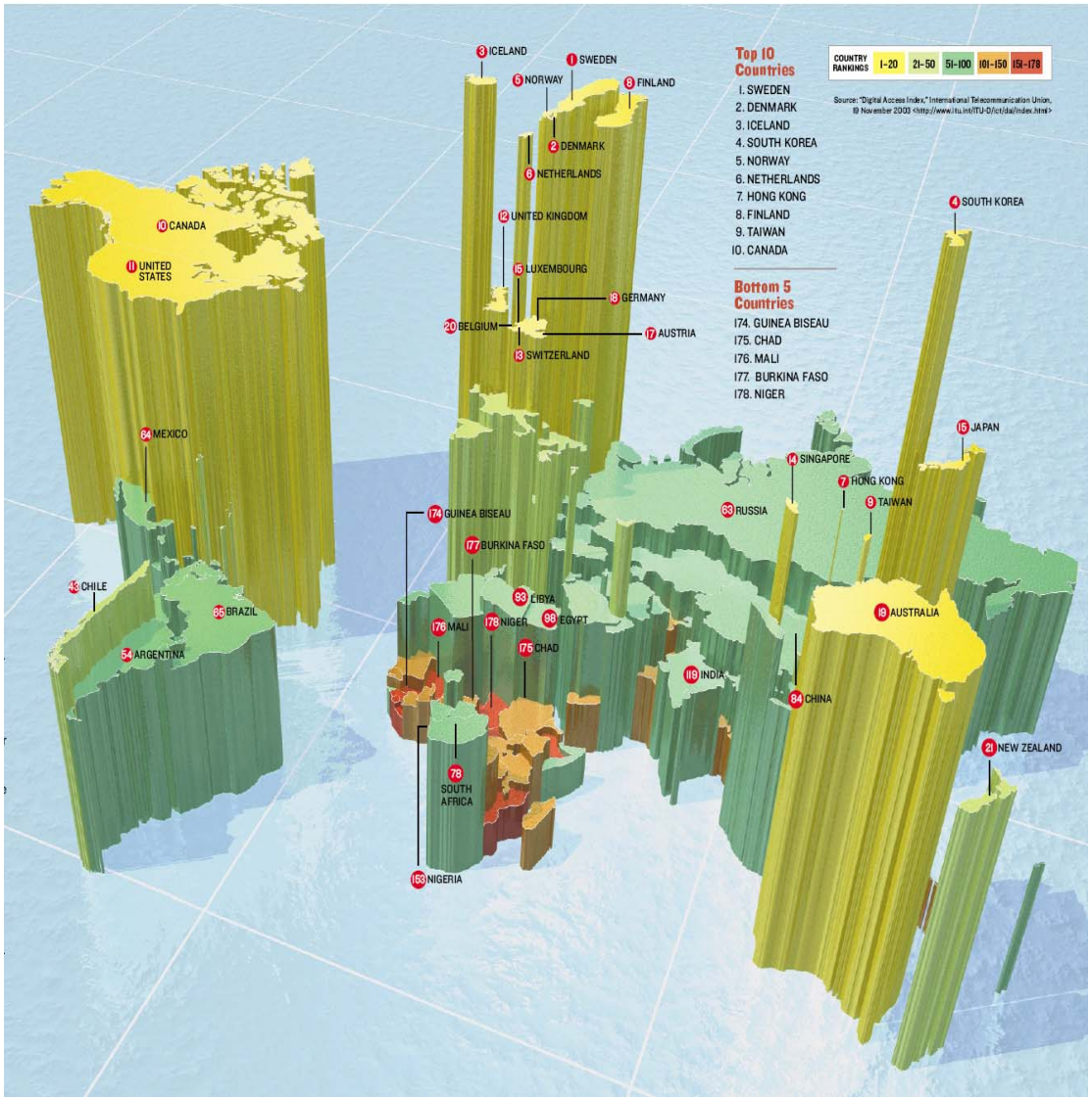
HIGH ACCESS		UPPER ACCESS		MIDDLE ACCESS		LOW ACCESS	
Sweden	0.85	Ireland	0.69	Belarus	0.49	Zimbabwe	0.29
Denmark	0.83	Cyprus	0.68	Lebanon	0.48	Honduras	0.29
Iceland	0.82	Estonia	0.67	Thailand	0.48	Syria	0.28
Korea (Rep.)	0.82	Spain	0.67	Romania	0.48	Papua New Guinea	0.26
Norway	0.79	Malta	0.67	Turkey	0.48	Vanuatu	0.24
Netherlands	0.79	Czech Republic	0.66	TFYR Macedonia	0.48	Pakistan	0.24
Hong Kong, China	0.79	Greece	0.66	Panama	0.47	Azerbaijan	0.24
Finland	0.79	Portugal	0.65	Venezuela	0.47	S. Tomé & Principe	0.23
Taiwan, China	0.79	United Arab Emirates	0.64	Belize	0.47	Tajikistan	0.21
Canada	0.78	Macao, China	0.64	St. Vincent	0.46	Equatorial Guinea	0.20
United States	0.78	Hungary	0.63	Bosnia	0.46	Kenya	0.19
United Kingdom	0.77	Bahamas	0.62	Suriname	0.46	Nicaragua	0.19
Switzerland	0.76	St. Kitts and Nevis	0.60	South Africa	0.45	Lesotho	0.19
Singapore	0.75	Poland	0.59	Colombia	0.45	Nepal	0.19
Japan	0.75	Slovak Republic	0.59	Jordan	0.45	Bangladesh	0.18
Luxembourg	0.75	Croatia	0.59	Serbia & Montenegro	0.45	Yemen	0.18
Austria	0.75	Bahrain	0.58	Saudi Arabia	0.44	Togo	0.18
Germany	0.74	Chile	0.58	Peru	0.44	Solomon Islands	0.17
Australia	0.74	Antigua & Barbuda	0.57	China	0.43	Uganda	0.17
Belgium	0.74	Barbados	0.57	Fiji	0.43	Zambia	0.17
New Zealand	0.72	Malaysia	0.57	Botswana	0.43	Myanmar	0.17
Italy	0.72	Lithuania	0.56	Iran (I.R.)	0.43	Congo	0.17
France	0.72	Qatar	0.55	Ukraine	0.43	Cameroon	0.16
Slovenia	0.72	Brunei Darussalam	0.55	Guyana	0.43	Cambodia	0.16
Israel	0.70	Latvia	0.54	Philippines	0.43	Lao P.D.R.	0.15
		Uruguay	0.54	Oman	0.43	Ghana	0.15
		Seychelles	0.54	Maldives	0.43	Malawi	0.15
		Dominica	0.54	Libya	0.42	Tanzania	0.15
		Argentina	0.53	Dominican Rep.	0.42	Haiti	0.15
		Trinidad & Tobago	0.53	Tunisia	0.41	Nigeria	0.15
		Bulgaria	0.53	Ecuador	0.41	Djibouti	0.15
		Jamaica	0.53	Kazakhstan	0.41	Rwanda	0.15
		Costa Rica	0.52	Egypt	0.40	Madagascar	0.15
		St. Lucia	0.52	Cape Verde	0.39	Mauritania	0.14
		Kuwait	0.51	Albania	0.39	Senegal	0.14
		Grenada	0.51	Paraguay	0.39	Gambia	0.13
		Mauritius	0.50	Namibia	0.39	Bhutan	0.13
		Russia	0.50	Guatemala	0.38	Sudan	0.13
		Mexico	0.50	El Salvador	0.38	Comoros	0.13
		Brazil	0.50	Palestine	0.38	Côte d'Ivoire	0.13
				Sri Lanka	0.38	Eritrea	0.13
				Bolivia	0.38	D.R. Congo	0.12
				Cuba	0.38	Benin	0.12
				Samoa	0.37	Mozambique	0.12
				Algeria	0.37	Angola	0.11
				Turkmenistan	0.37	Burundi	0.10
				Georgia	0.37	Guinea	0.10
				Swaziland	0.37	Sierra Leone	0.10
				Moldova	0.37	Central African Rep.	0.10
				Mongolia	0.35	Ethiopia	0.10
				Indonesia	0.34	Guinea-Bissau	0.10
				Gabon	0.34	Chad	0.10
				Morocco	0.33	Mali	0.09
				India	0.32	Burkina Faso	0.08
				Kyrgyzstan	0.32	Niger	0.04
				Uzbekistan	0.31		
				Viet Nam	0.31		
				Armenia	0.30		

Note: On a scale of 0 to 1 where 1 = highest access. DAI values are shown to hundreds of a decimal point. Countries with the same DAI value are ranked by thousands of a decimal point.

Source: ITU.

Source: ITU

Map 1



Source: ITU

2.5 Telecommunications Infrastructure in Trinidad & Tobago

TSTT is currently the sole provider of fixed-line and mobile services in Trinidad and Tobago. It is also the sole provider of leased line facilities. As indicated at Table VI, the telecommunications industry in Trinidad and Tobago is similar to that in a number of Latin American and Caribbean countries where the mobile subscriber base (approximately 624,859) has surpassed the fixed-line subscriber base (318,879). Notwithstanding the level of mobile penetration rate (63%), the quantity of complaints by

subscribers due to the quality of services of the incumbent bespeaks the need for improvement which seems likely only in an interconnected and keenly competitive environment.

Table VI

Trinidad and Tobago Telecommunications Network and Network Charges

Telephone Network	**2004**	**2005**	**Connection Charge and Monthly Subscription**	**2004 $**	**2005 $**
Number of Main Lines	318,879	N/A	Residential Connection Charge	295	295
Number of Residential Lines	267,659	N/A	Commercial Connection Charge	365	365
Number of Commercial Lines	51,220	N/A			
Number of Pay Phones	2,700	N/A			
Tele-density	-				
Mobile Subscribers	477,805	624,859	**Mobile Connection Charge**		
Post-paid	85,490	88,399	Pre-paid GSM	-	-
Pre-paid	392,315	536,460	Post-paid GSM	150	150
Penetration Rate					
Leased Line Circuits	N/A	3609	Monthly subscription (commercial) – single line	177	177
			(commercial) – Trunk	265	265
Local Exchange Capacity	-	450,941	Monthly subscription (residential)	31	31
Number of Internet subscribers (TSTT and other ISPs)	55,700		Monthly Internet Subscription Charge	Varies*	No change
			ADSL Monthly Charge	Varies**	
			Leased Line Monthly Charges		
			E1 Monthly charges - Domestic	N/A	N/A
			T1 Monthly charges - Inter-exchange - Intra-exchange	8382 5868	8382 5868

*Available at http://www.tstt.net.tt/personal/internet/du_rates.cfm

** Available at http://www.tstt.net.tt/personal/internet/hs_rates.cfm and at http://www.tstt.net.tt/business/internet/hs_rates.cfm

Source: TSTT

The total number of Internet subscribers (including subscribers of TSTT and other ISPs) is estimated at 55, 700. According to the MORI study (2005) Internet users in the country comprise approximately 19% of the population and only 1% of households have broadband access. It is therefore evident that under the present monopoly arrangements, the level of national use of telecommunication technologies as a tool in daily activities is less than satisfactory in a country that is seeking to effect drastic transformation of its economic structure.

3 Policy Challenges

The dynamics of the international telecommunications market vis-à-vis our restrictive domestic telecommunications market present serious challenges or indeed, opportunities for Government's policy. The country must construct and apply appropriate measures to address the issues involved in facilitating and maintaining intra-network access that permits a level of service delivery which is conducive to comprehensive enhancement in human welfare. To this end, it is becoming for such policy measures to be informed by the successes of countries that are ahead of us, and there are many. Nevertheless, the goal is to craft measures that will enable the country to become a telecommunications leader and not simply a distant follower.

The Government is fully cognizant that a fundamental requisite for fair competition is an interconnection policy which provides for non-discriminatory and economic co-existence of multiple networks. Interconnection initiates the advent of multiple networks. The rapidity of liberalization of the telecommunications markets in Trinidad and Tobago is contingent on the pace at which telecommunications policies and regulations provide for the accommodation of multiple networks and service providers. In an effort to make good the opportunities identified in its National Information & Communication Technology Strategy to create a: "connected, committed, competitive, creative and caring community", a forward looking interconnection policy which treats fairly with convergent networks is imperative.

A system of multiple networks and service providers facilitates consumer choice, encourages investment, improves the quality of services delivered, and influences price reduction. Interconnection is, *de facto*, the engine of competition, since competition requires that each bona fide carrier be given the opportunity to access all customers, including those served on the network of competitors.

A necessary condition of a multiple network system is the ability of subscribers of different network and service providers to seamlessly communicate. This should not be an option - it is a fundamental obligation on all concessionaires.

Therefore, in seeking to move Trinidad and Tobago beyond a restrictive market, the Government will introduce extensive and fair competition in the delivery of international and domestic (fixed and mobile) telecommunications services with minimal network and service technology restrictions. To this end, the Government, by this policy, establishes guidelines for the preparation of interconnection regulations. These regulations are necessary to assist the Authority in its day-to-day management of the interconnection issues that attend competition among concessionaires that meet the criteria to interconnect.

4 Policy Objectives

In order to initiate and sustain the Government's thrust to liberalize the telecommunications market in Trinidad and Tobago this policy seeks to:

- provide the civil society and the business community in Trinidad and Tobago with a matrix of choices in telecommunications network and service providers by fully liberalizing the telecommunications market in the country.
- increase the range, scope and quality of telecommunications services available to the public.
- structure the liberalization process in a manner that will realize competitive prices for end users.
- create an environment which encourages investment in the telecommunications sector as a means of improving the quality and expanding the range of services delivered to the most challenged communities in the country.
- honour the country's commitment as a signatory to the World Trade Organization (WTO) under the General Agreement of Trade in Services (GATS) for the telecommunications sector.

As part of the modalities to realize those objectives, this policy provides and establishes a set of directives designed to facilitate and maintain access to public telecommunications networks in the Republic of Trinidad and Tobago. In particular, this policy is tailored to encourage investment in new telecommunications technologies to satisfy the demands of convergence. In general, the policy forms the foundation for the construct of regulations which will provide legal certainty for:

  - Any-to-any interconnectivity among users attached to competing networks;

- Interoperability between competing networks using national and international standards that are mandated for interconnection and complying with the conventions of the national numbering plan;

- Telecommunications providers to plan, construct, dimension and operate their networks in a manner that is robust enough to enable the networks to remain operational at all times including, times of traffic volatility and natural disasters which are not exceptional;

- The protection of subscriber data in order to preserve privacy and confidentiality;

- Minimum quality standards which ensure end-user access to reasonable quality of services

- Prices that are affordable to a wide cross-section of the population, including the physically and economically challenged; and

- Encouragement of investment in new generation technologies that can serve as a catalyst for advancement of the civil society, particularly in economically and geographically disadvantaged communities.

5 Interconnection Services and Interconnection Resources

5.1 Interconnection Services

Interconnection services may be grouped as follows:

A. Basic data or voice traffic;

B. Support Services;

C. Enhanced Services.

Basic interconnection services involve the following services for both voice and data traffic:

- **Traffic origination**: traffic sent by a concessionaire from a subscriber on its network to the point of interconnection for transport on the network of another concessionaire;
- **Traffic termination**: a concessionaire delivering to its subscribers traffic delivered to a point of interconnection on its network by another concessionaire;
- **Transit traffic**: a concessionaire delivering traffic from one (originating) concessionaire to another (terminating) concessionaire via a third concessionaire.

Interconnection support services are customer related and include, but are not limited to:

- Directory enquiry
- Emergency numbers
- Operator assistance

Enhanced services include:

- Equal access pre-selection i.e. where the choice of international carrier is made available to subscribers, independent of network subscription;
- Number portability, i.e. enabling subscribers on similar networks the choice of changing service provider without changing telephone number.

5.2 Interconnection Resources

Interconnection resources are network components that are required for the provision of an interconnection service. Network components include, transmission; switching/routing and signaling elements and may also include other components such as switching/routing, transmission and control equipment and functions, software systems (e.g. operational support systems, number translation systems) and databases.

Policy Statement 1

Concessionaires that meet the eligibility criteria prescribed by the Authority shall be obliged to interconnect to facilitate the delivery of quality service/s to a wide cross section of end-users at affordable prices.

Policy Statement 2

The eligibility of any concessionaire to participate in interconnect arrangements is dependent on its capability to meet the basic obligation of reciprocity i.e. if seeking to obtain access to another concessionaire's interconnection services it must provide access in return to its own interconnection services.

6 WTO Interconnection Policy

The Trinidad and Tobago Government is a signatory to the Reference Paper appended to the WTO Fourth Protocol of the General Agreement on Trade in Services. The requisite interconnection measures in that Reference Paper are indicated hereunder.

"Interconnection with a major supplier will be ensured at any technically feasible point on the network. Such interconnection is provided:

- *Under non-discriminatory terms, conditions (including technical standards and specifications) and rates of a quality no less favourable than that provided for its own like services or for like services of non-affiliated services suppliers or for its subsidiaries or other affiliates;*
- *In a timely fashion, on terms, conditions (including technical standards and specifications) and at cost oriented rates, that are transparent, reasonable, having regard for economic feasibility and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided;*
- *Upon request, at points in addition to the network terminating points offered to the majority of users, subject to charges that reflect the cost of construction of the necessary additional facilities."*

"The procedures applicable for interconnection to a major supplier will be made publicly available."

"It is ensured that a major supplier will make publicly available either its interconnection agreement or a reference interconnection offer."

"A service supplier requesting interconnection with a major supplier will have recourse, either:

a) at any time, or

b) after a reasonable period of time which has been made publicly known

to an independent domestic body which may be a regulatory body, to resolve disputes regarding appropriate terms, conditions and rates for interconnection within reasonable period of time, to the extent that these have not been established previously."

Although the Act does not currently adopt the concept of 'major supplier' in respect of interconnection, this policy seeks to achieve to the extent possible within the current legal framework the objectives of the WTO Reference paper.

Policy Statement 3

All concessionaires must provide interconnection on request at any technically feasible network point on a cost-orientated and non-discriminatory basis. Interconnection arrangement of all concessionaires must be made available to the Authority and to the public.

Policy Statement 4

Any interconnection matter referred to the Authority as a dispute shall be resolved in the manner specified in Enforcement and Compliance Regulations issued by the Authority.

Policy Statement 5

Requirements for access to the facilities of a concessionaire, including unbundling and collocation, will be specified in Access to Facilities Regulations issued by the Authority.

7 Quality of Service

The technical standards of public telecommunications networks of competing service providers shall be at a level where interface does not compromise the integrity of the overall national network. Absolute interconnection quality standards shall be based on international benchmarks while relative standards shall be measured in terms of the comparative quality of services provided to affiliates and interconnecting competitors.

The government is aware of the dynamic changes in telecommunications networks. The advent of packet switching has altered the boundary between voice, data and image traffic. In such circumstances the Authority shall put in place measures to encourage all interconnecting networks to achieve reasonable quality levels whilst remaining technology-neutral.

Policy Statement 6

The Authority shall prescribe interconnection quality of service standards. These will be published in Quality of Service Regulations and appropriate penalties for non-compliance will be specified in Enforcement and Compliance Regulations.

8 Equal Access & Carrier Pre-selection

In the early days of market liberalization, subscribers were obliged to dial considerably more digits to route calls to new entrants' networks since incumbent operators' switches were not designed for inter-working among domestic networks. With the advent of appropriate software packages, switches/routers are now far more adaptable to multi-operator systems and are capable of facilitating dialing parity with minimum difficulty. Consequently, telecommunications end-users are now able to access the service of new service providers with the same ease as they access the services of an incumbent. This should be the case in Trinidad and Tobago.

To enable equal access may require the following features and services to be made available:

- Trunk-side interconnection to switches;
- Software features to identify customer selection as well as route and bill traffic to the selected service provider;
- Basic signaling services, including Calling Line Identification (CLI) answer and disconnect supervision;
- Billing and audit arrangements capable of permitting direct billing and a hybrid of direct and indirect billing by concessionaires;

It is also important that the Numbering Plan for the country as developed and managed by the Authority enables the allocation of equivalent numbers to new entrants and the incumbent (TSTT) in a non-discriminatory and equitable manner (similar access codes for all international service providers and equivalent blocks of numbers for mobile and domestic fixed-line providers).

Policy Statement 7

All concessionaires will be required to configure their networks to enable customers to pre-select the international service provider of their choice.

9 Non-Discrimination

Avoidance of discrimination is central to this Policy. The Government is aware that interconnection arrangements among competitors may vary from time to time, contingent on certain circumstances without being unduly or unjustly discriminatory. As an example, two competitors may request different interconnection arrangements to suit their different operating conditions.

The most difficult forms of discrimination to identify and manage are interconnection arrangements between parent firms and their affiliates. Occurrences of discriminatory practices where incumbents or dominant service providers supply insufficient network capacity to competing interconnecting operators while providing adequate capacity for their affiliates are well documented**.**

Whatever the circumstance, the standard for unjust, undue or unfair discrimination is that an interconnecting competitor should not be disadvantaged as a result of different or less favourable interconnection arrangements. In order to dissuade discriminatory practices, concessionaires will be required to construct sufficient network capacity to cater for its share of exchange of traffic.

Where feasible, concessionaires shall provide interconnection and access to facilities on their networks for interconnecting concessionaires in a manner similar to that obtained by a subsidiary. The Regulations shall mandate inclusion of specified standards of performance for the installation, maintenance, testing and repair of resources used to provide interconnection.

Experiences drawn from a number of countries suggest that a requisite for the implementation of non-discriminatory policy measures is technology neutrality and, most recently, service neutrality. Technology neutral policy prescriptions help to guarantee non-preferential treatment of all technologies that have satisfied specified standards. Where technology discrimination is allowed, markets tend to be ineffective in

determining the most efficient mode of service delivery. This is a form of misallocation of resources. Mindful of the need to level the playing field for service providers, while availing choice to affordable-high-quality telecommunication services, a system of technology neutrality should apply.

Interoperability requires networks to be technically compatible at all designated points of interconnection. A concessionaire who is eligible to interconnect shall be allowed access to the technical specifications of the network of the concessionaire from which interconnection is sought. Such information shall include, at a minimum, types of switching, routing and transmission equipment used, signaling protocols, number of circuits and projected volume of traffic.

Policy Statement 8

There shall be no discrimination among concessionaires in the terms of supply or the prices of interconnection services or access to facilities.

Policy Statement 9

An interconnection provider shall specify in its Reference Interconnection Offer standards of performance for the installation, maintenance, testing and repair of interconnection services, and these standards shall be no lower than those applied for equivalent services or resources supplied to itself, its subsidiaries or its partners.

Policy Statement 10

The Authority shall ensure that no operator selectively or otherwise withholds information which is necessary for efficient and timely interconnection implementation.

10 Transparency

Transparency is about open access to, and disclosure of, information on the regulation and operation of the telecommunication industry in a country. Ready disclosure of non-confidential information concerning operational procedures in the industry encourages confidence, particularly among new and prospective market entrants, that common treatment applies to all investors. Moreover, disclosure concerning interconnection agreements contributes significantly to reduction of disputes regarding discriminatory practices. In effect, non-discriminatory requirements are very difficult to attain without transparency.

In competitive markets regulators are seldom, if at all, directly involved in negotiations of interconnection agreements between parties. This notwithstanding, it is obligatory that regulators review and endorse all interconnection agreements to determine whether they are consistent with policies of their respective governments.

Policy Statement 11

Upon request from the Authority a concessionaire must submit its Reference Interconnection Offer to the Authority for review and authorization prior to coming into force. All concessionaires must lodge their interconnection agreements with the Authority within 28 days of coming into force.

11 Pricing Interconnect Services

Interconnection charges contribute significantly to the total operational costs of new telecommunications service providers, in particular new entrants that do not own end-to-end networks. In order to encourage competition, it is essential that interconnection rates in the country be based on costs that are reflective of efficiency so as to minimize over-charging for services, either by excessive mark-ups or transfer of network inefficiencies.

An equitable and commercially fair pricing mechanism for interconnection is required. The criteria for equity and commercial justice should be determined by the relationship between interconnection rates and actual efficient costs of interconnection services. Whenever interconnection rates are set above efficient costs, the supplier has an injudicious advantage over competitors. When the rates are set below cost, there is minimal incentive, if any, for investment in new network rollout or expansion.

In order to encourage parity between prices and costs, the Authority should mandate that the interconnection charges of any interconnection provider should reflect the efficient costs of supply. Cost-efficient pricing is a calculus of basic efficient cost and reasonable return on capital. Though proven to be an effective and efficient pricing methodology, cost-efficient pricing methodologies have been most problematic to implement.

The fundamental difficulty in applying cost-efficient pricing to interconnection resources is arriving at an effective quantitative methodology (cost model) for estimating efficiency. A standard cost model approved by the Authority for use by all concessionaires can help to achieve this. Standard cost models go a long way in meeting the principles of equity, transparency and non-discrimination. It also reduces avenues for dispute consequent upon disagreement on cost-derivation methodologies.

An appropriate cost model should have the capacity to:

- Account for initial costs for network adjustment to facilitate interconnection by a one-off charge;
- Convert recurrent non-traffic-sensitive costs such as interconnection links, collocation etc, into monthly flat rate charges; and
- Cover traffic throughput cost either by a flat rate charge for capacity or a charge per minute.

The methodology/formula for estimating the cost of interconnection resources, as prescribed by the Authority, may take into consideration the costing specifications agreed to at the ITU for the TAL region (Latin American and Caribbean countries).

Policy Statement 12

The Authority may establish costing models, methodologies or formulae to be used to establish interconnection charges, and/or to resolve interconnection disputes between concessionaires.

12 Asymmetric Interconnection Charges

Observation holds that the principle of a common price for call termination in both directions is applicable only to fixed networks, at least in the initial period of competition. There is evidence that the cost of call termination on mobile networks is generally higher than on fixed networks. It is also an accepted principle that mobile calls generate additional traffic on fixed networks. In the circumstances, most interconnection pricing models have allowed asymmetrical termination charges for fixed-line and mobile networks.

12.1 The situation in developed countries

Initially, most mobile networks were subsidiaries of fixed line operators which, invariably held positions of market dominance in the provision of voice telephony. Within these intra-company arrangements, interconnection charges for exchanging traffic between the fixed and mobile networks were not properly defined. In many instances there were no charges to terminate traffic on the different networks.

Mobile operators that were not subsidiaries of fixed-network service providers were allowed to charge considerable higher interconnection fees for terminating traffic on their network than they paid to send their traffic on fixed networks. This approach was widespread among the more developed countries in Europe and Asia-Oceania, in particular Europe, (Tables VII & VIII). Among the more developed countries of Asia-Oceania, the percentage difference ranged between 794.1% (Australia) and 220.9% (South Korea).

Regulators in developed countries opined that favorable price differential was accorded to mobile service providers as an incentive for the development of mobile networks. It should be noted that these countries already had large fixed networks and relatively high fixed-line teledensities (Map 2).

Table VII

Interconnection charges (2003) Developed European Countries				
US$/minute	**Mobile**	**Fixed**	**Difference (nominal)**	**Difference (percentage)**
Netherlands	0.159	0.0104	0.1486	1428.8
Sweden	0.13	0.009	0.121	1344.4
Belgium	0.148	0.012	0.136	1133.3
Norway	0.1292	0.0115	0.1177	1023.5
Spain	0.146	0.0135	0.1325	981.5
Italy	0.139	0.0132	0.1258	953
Germany	0.128	0.0125	0.1155	924
France	0.138	0.014	0.124	885.7
Ireland	0.1338	0.014	0.1198	855.7
Switzerland	0.1635	0.0173	0.1462	845.1
United Kingdom	0.1175	0.0125	0.105	840
Denmark	0.124	0.0136	0.1104	811.8
Austria	0.123	0.0143	0.1087	760.1
Portugal	0.162	0.0207	0.1413	682
Finland	0.124	0.02	0.104	520
Luxemburg	0.0953	0.0169	0.0784	463.9
Greece	0.1039	0.0324	0.0725	230.9
Monaco	0.095	0.44	0.0505	114.8
Average	0.1311	0.0388	0.1143	822.1389

Source: INTUG (Submission to ITU-T)

Table VIII

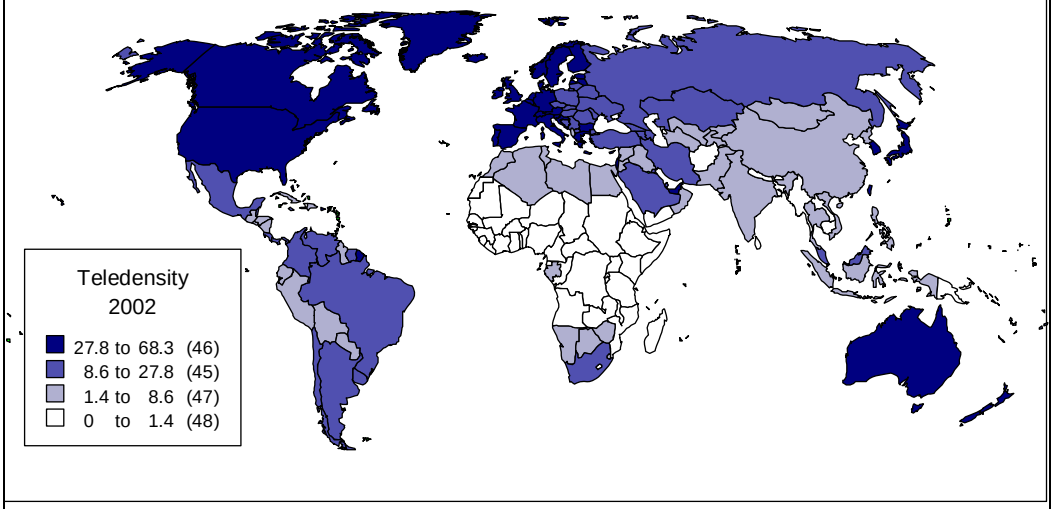
Interconnection Charges (2003) Developed Asia-Oceania Countries				
US$/minute	**Mobile**	**Fixed**	**Difference (nominal)**	**Difference (percentage)**
Australia	0.152	0.017	0.135	794.1
New Zealand	0.123	0.0188	0.142	554.3
Japan	0.13	0.0228	0.1072	470.2
Korea (South)	0.069	0.0215	0.0475	220.9
Average	0.1185	0.0200	0.1079	509.875

Source: INTUG (Submission to ITU-T)

This practice is now being challenged in most developed countries and is currently under active examination at Study Group 3, ITU.

Map 2

Uneven Distribution of Termination Charges Between Fixed & Mobile Networks in relation to Teledensity.



Source: ITU World Telecommunication Indicators Database.

12.2 Asymmetric Interconnection Charges, Emerging Economies

Except for a few countries, the difference in termination charges on mobile and fixed networks is significantly less in emerging economies in Europe and Asia-Oceania (Tables IX & X).

Table IX

Interconnection Charges (2003)
Emerging European Countries

US$/minute	Mobile	Fixed	Difference (nominal)	Difference (percentage)
Poland	0.14	0.0395	0.1075	272
Czech Republic	0.117	0.039	0.0831	245.1
Iceland	0.0755	0.035	0.0405	115.7
Hungary	0.135	0.041	0.094	229.3
Cyprus	0.14	0.065	0.075	115.4
Slovakia	0.1115	0.0564	0.0551	97.7

Bulgaria	0.115	0.06	0.055	91.7
Slovenia	0.135	0.071	0.064	90.1
Latvia	0.1485	0.0965	0.052	53.9
Yugoslavia	0.133	0.0963	0.0367	38.1
Albania	0.1025	0.095	0.0075	7.9
Faroe Islands	0.083	0.077	0.006	7.8
Romania	0.116	0.1079	0.008	7.4
Liechtenstein	0.32	0.03	0.002	6.7
Belarus	0.16	0.16	0	0
Ukraine	0.0749	0.0825	-0.0076	-9.2
Russia	0.0515	0.055	-0.0035	-6.4
Greenland	0.229	0.253	-0.024	-9.5
Average	0.1326	0.0811	0.0362	75.2056

Source: INTUG (Submission to ITU-T)

Table X

Interconnection Charges (April 2003) Emerging Economies (Asia-Oceania)				
US$/minute	**Mobile**	**Fixed**	**Difference (nominal)**	**Difference (percentage)**
Thailand	0.1010	0.0850	0.0160	18.8000
Malaysia	0.2950	0.0250	0.0045	18.0000
China	0.2500	0.2400	0.0010	4.2000
Singapore	0.0145	0.0140	0.0005	3.6000
Hong Kong SAR	0.0160	0.0160	0.0000	0.0000
Average	0.135	0.076	0.0044	8.92

Source: INTUG (Submission to ITU-T)

12.3 Asymmetric Interconnection Charges, Latin America & Caribbean & African Countries

The situation in Latin American and Caribbean and African countries (Table XI) is similar to that in Emerging Economies in Europe and Asia-Oceania. The average difference is 43%.

Table XI

Interconnection Charges (April 2003)
Latin America & Caribbean Countries

Country /US$ per minute	Mobile	Fixed	Nominal Difference	Percentage Difference
Chile	0.1200	0.0229	0.0971	424%
Peru	0.1800	0.0945	0.0855	90%
Venezuela	0.1855	0.1150	0.0705	61%
Haiti	0.2425	0.1555	0.0870	56%
Paraguay	0.1920	0.1400	0.0520	37%
Brazil	0.0850	0.0624	0.0226	36%
Jamaica	0.1525	0.1321	0.0204	15%
Ecuador	0.1200	0.1050	0.0150	14%
Barbados	0.1490	0.1340	0.0150	11%
Trinidad & Tobago	0.1150	0.1040	0.0110	11%
Bolivia	0.1849	0.1680	0.1690	10%
Cuba	0.5440	0.5295	0.0145	3%
Anguilla	0.1796	0.1750	0.0046	3%
Colombia	0.0743	0.0740	0.0003	0%
St. Vincent	0.1910	0.1910	0.0000	0%
Guatemala	0.0470	0.0470	0.0000	0%
Costa Rica	0.0170	0.0170	0.0000	0%
Uruguay	0.1630	0.1650	-0.0020	-1%
Average	0.1635	0.1351	0.0284	43%

Source: INTUG (Submission to ITU-T)

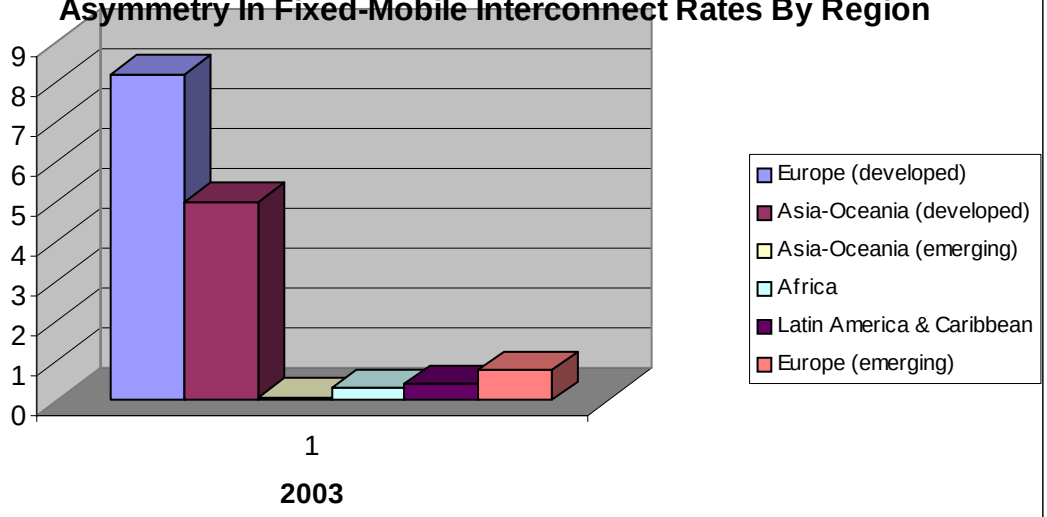
Table XII

Interconnection Charges (2003)
African Countries

Country/US$ (per minute)	Mobile	Fixed	Difference Nominal	Difference Percentage
South Africa	0.1385	0.0620	0.0765	123%
Zimbabwe	0.0545	0.0470	0.0075	16%
Morocco	0.1900	0.1820	0.0080	4%
Zambia	0.0950	0.0950	0.0000	0%
Madagascar	0.1400	0.1425	0.0025	12%
Average	0.1236	0.1057	0.0189	31%

Source: INTUG (Submission to ITU-T)

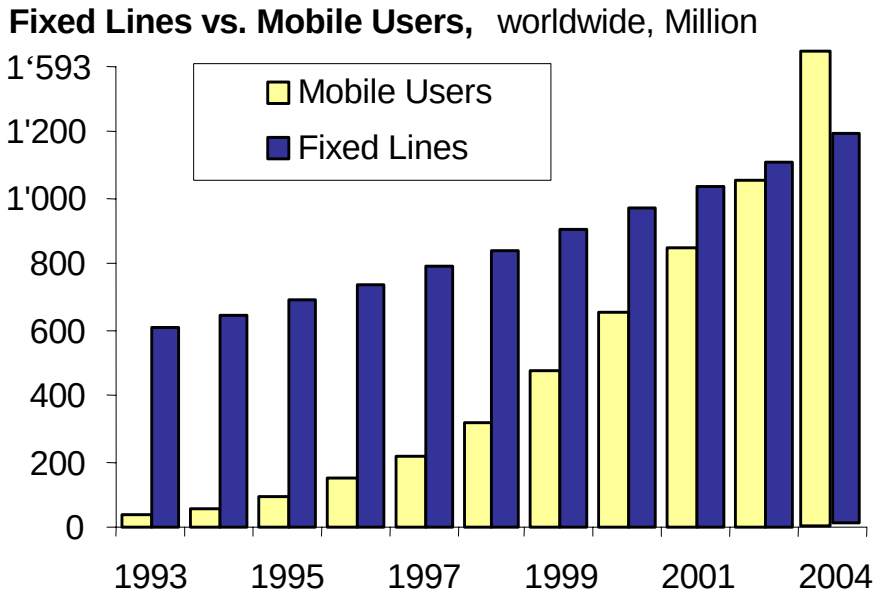
Figure 13
Asymmetry In Fixed-Mobile Interconnect Rates By Region



12.4 International Network Expansion & Pricing

The contention of favourable pricing to encourage growth in mobile networks has run its course. It is no longer applicable since the number of global mobile subscribers has now overtaken the number of global fixed-line subscribers (Figure 14).

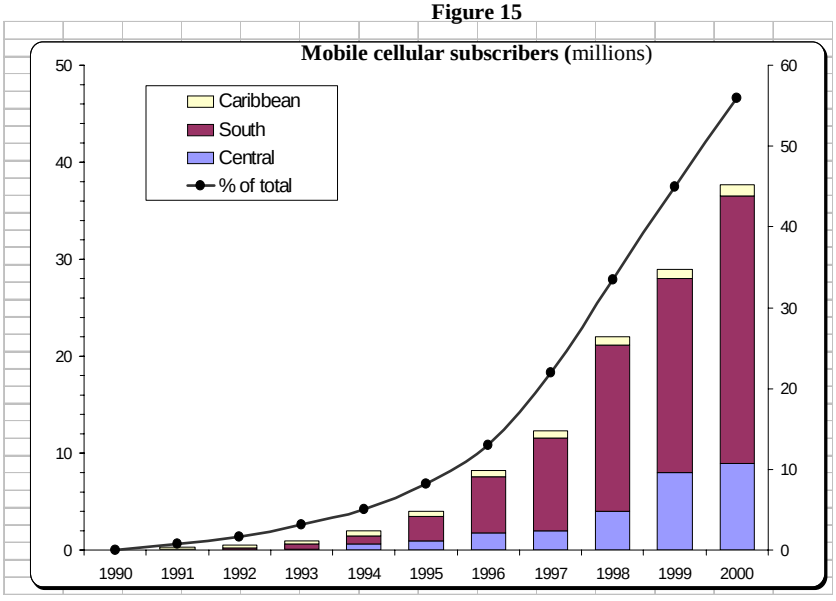
Figure 14
A Mobile Revolution



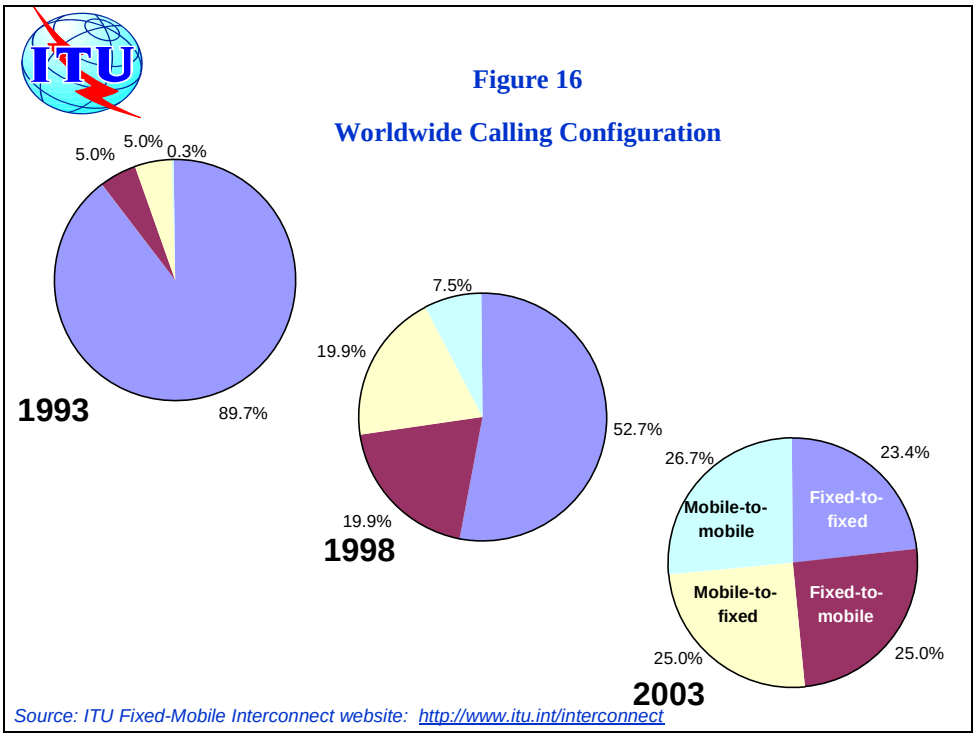
Source: ITU World Telecommunication Indicators Database.

This situation is most acute in the Latin American and Caribbean region where the fixed-line subscriber base (including ISDN lines) has been growing marginally against an exponential growth rate in the mobile subscriber base (Figure 15).

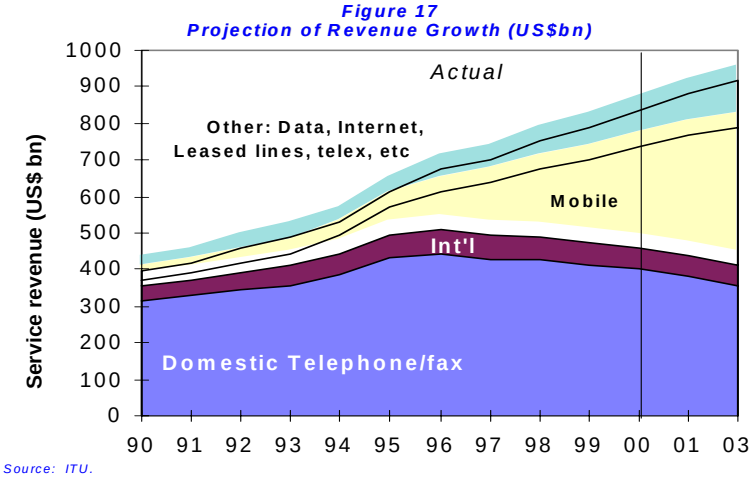
Figure 15



Source: ITU



Due to reduction in international settlement rates and a shift in calling pattern toward inclusion of mobile phones (Figure16), growth in revenue from fixed-line operations (both domestic and international) has been on a declining path while revenue from mobile operations has been experiencing a significant positive growth trend (Figure 17).



12.5 Observation

(1). Growth rates in mobile network subscribers and mobile revenue have been much higher than comparative rates for fixed-line networks, to the extent that globally, there are currently more mobile subscribers than fixed line subscribers.

(2). The reasoning for usage of price subsidies to encourage expansion of mobile networks in developed or developing countries is no longer valid since per average, the mobile subscriber base is now broader than the fixed-line subscriber base.

(3). The mobile sector in the Caribbean is mature enough to withstand cost oriented interconnection pricing.

Policy statement 13

Asymmetries between fixed and mobile interconnection charges should reflect differences in the efficient costs (as defined in the Interconnect Regulations) of supply. Where measures are not in place for determination of efficient costs on mobile and fixed networks, the Authority shall carefully benchmark similar charges in other similar markets.

13 Peak & Off-peak Charges

These charges are common features in retail pricing for telecommunications services. Peak and off-peak charges:

- encourage more efficient usage of network capacity by reducing peak hour congestion;
- reduce the need for network reconfiguration to meet additional peak load traffic; and
- improve the quality of service.

Policy statement 14

Separate peak and off-peak interconnection charges will be allowed as they are consistent with efficient cost-based pricing and enable interconnecting concessionaires to set differentiated peak and off-peak retail prices.

14 Start-up Interconnection Costs

Transition from monopoly to a competitive environment usually involves start-up costs that are incurred at the onset to modify an interconnect provider concessionaire's switching and transmission facilities and associated software to commence interconnection. For example, switches have to be programmed to recognize and route traffic to new numbers on different networks.

Some regulators require start-up costs to be underwritten exclusively by the new entrants on the basis that it is the new entrants that are seeking interconnection. On the other divide, regulators have instituted a regime of shared start-up costs among the incumbent and parties requesting interconnection on the pretext that interconnection usually benefit all the parties.

Interconnect links are one example of start-up costs. Interconnection links are physical links that connect the networks of concessionaires. They are necessary to create a competitive market to the ultimate benefit of the country**.** Interconnection links may comprise the following components:

- transmission lines or radio links that carry interconnecting circuits;
- ducts, towers, manholes and other support infrastructure; and
- modifications to cross-connect and distribution frames to facilitate interconnected circuits.

The Trinidad and Tobago Government intends to encourage a highly competitive telecommunications environment in which no advantage will be willfully accorded to any service provider.

Telecommunication infrastructure build-out is usually expansive. As indicated above, supporting infrastructure may include poles, ducts, conduits, towers, street pedestals, trenches and manholes. Construction of each of these facilities poses varying degrees of environmental stress. In order to protect the environment and optimize the economic use of network facilities**,** the Authority shall work in conjunction with the relevant Town and Country agency to ensure that there is no unnecessary proliferation of cell towers throughout the country.

Policy statement 15

The Authority will:

(a) encourage commercially negotiated infrastructure sharing arrangements where possible among concessionaires

(b) provide a system to estimate efficient start-up costs for interconnection.

15 Access Deficit

One of the most taxing challenges of costing and pricing interconnection services is determining the access deficit allocation/contribution. Most of the literature on access deficit assumes that prior to competition, fixed networks in developing countries subsidized service delivery on the local loop from above-cost settlement rates. Consequent upon steep reduction in settlement receipts, a number of providers have been campaigning for re-balancing domestic rates in congruence with cost. While there may be some merit in this contention, a number of issues that attend cost-based re-balancing must be addressed in order to determine the extent of price adjustment needed, or whether price adjustment is indeed necessary.

The issue of the regulator prescribing the methodology for estimating costs on the local loop is paramount. Where providers are allowed to use individual cost methodology, the likelihood of overstating costs is considerably high. This would most certainly distort pricing of interconnection resources. There is a strong body of opinion that because of the monopoly situation, there has been little incentive to enhance efficiency through application of state-of-the-art technology within the local loop. As a consequence, there is a high probability of a causal relationship between access deficit on the local loop and technology obsolescence. In this regard, the pertinent question to be addressed is: what is the cost of inefficiency due to capital goods being kept in use on the local loop beyond their shelf lives? In order to cogently address these issues, estimates of access deficit will be based on a transparent cost methodology approved by the Authority.

Policy statement 16

Where the Authority is satisfied that access deficit exists, it may authorize rate rebalancing. No access deficit contributions will be allowed in interconnection charges.

Annex I Definition of Terms

“Access agreement” means a document detailing arrangements as negotiated and agreed between parties for an access seeker to obtain access to facilities within an access provider's network in accordance with section 26(2) of the Act, and which is binding on the signatory parties over the period of the agreement.

“Access charge” means any charge for access to a facility on a public telecommunications network.

“Access provider” means the concessionaire which is providing access to its facilities to an access seeker.

“Access seeker” means the concessionaire which is seeking access to the facilities of another concessionaire.

“Calling line identity (CLI)” means the information generated by a telecommunications network which identifies the number of the calling party.

"Carrier pre-selection" means a form of equal access in which the customer selects a preferred service provider.

“Collocation” means provision of space at the premises of an access provider for purposes of an access seeker to install its network equipment.

“Concessionaire” means a person or an entity authorized to operate a public telecommunications network or provide a telecommunications service or broadcasting service under section 21 of the Act.

"Equal access" means a facility enabling a customer to choose in a transparent and equal manner between two or more competing service providers.

“Essential facility” means a facility in the access provider's network which an access seeker requires in order to provide its service and for which no practical or viable alternative exists.

“Essential interconnection resource” means an interconnection resource for which no practical and viable alternative exists.

“Interconnect agreement” means a document detailing arrangements as negotiated and agreed between parties to interconnect their networks in order to provide telecommunication services in accordance with section 25(2)(e) of the

Act, and which is binding on the signatory parties over the period of the agreement.

“Interconnecting concessionaire” means the concessionaire which is seeking interconnection services from another concessionaire.

“Interconnection provider" means the concessionaire which is providing interconnect services to an interconnecting concessionaire.

“Interconnection resource” means a component of a network or a combination of such components that is required for the provision of an interconnection service.

“Interconnection service” means a service provided by an interconnection provider to an interconnecting concessionaire.

"Interconnect link" means a transmission path connecting the point of interconnection with the network of an interconnecting concessionaire.

“Local loop” means the network linking termination point at the end user premises to the main distribution frame or equivalent facility in a fixed public telephone network.

"Number portability" means a facility enabling a customer to retain the same telephone number when changing telephone service provider.

“Point of interconnection” means a point on the interconnection provider's network where physical connection is allowed to any interconnecting concessionaire to act as a gateway between networks and enable the exchange of telecommunications services between or among networks so interconnected.

“Reference Interconnect Offer (RIO)” means a document setting out the terms on which interconnection provider proposes to offer interconnect services to interconnecting concessionaires.

"Traffic origination" means an interconnection service providing connectivity from a network termination point on a customer's premises to the point of interconnection.

"Traffic termination" means an interconnection service providing connectivity from a point of interconnection to a network termination point on a customer's premises.

"Transit services" means interconnection services that deliver traffic from one interconnecting concessionaire (the origination provider) to another interconnecting concessionaire (the termination provider).

Annex II: Decisions on Recommendations

Document Name: Draft Interconnection and Access Policy

The following summarises the comments and recommendations received from stakeholders on the second draft of the Interconnection Policy (dated June 14th 2005), and the decisions made by TATT as incorporated in this revised document (dated September 23rd 2005).

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
General/ Additional Comments				
	Regional regulatory or Governmental agencies (MPAI)	There is no Discussion on Recommendations		A revised second draft which includes the DOR based on the first consultation phase has been made available on the website.
	Potential service and/ or network providers and affiliates (Digicel)	Delaying Tactics: One critical issue not covered specifically in the Authority's draft policy is the issue of delay. Digicel's experience in the Caribbean and knowledge of behaviour in other telecommunication markets has established very clearly that one of the most significant "weapons" used by incumbents to deter or prevent	The Authority should therefore impose a clear timetable within which the incumbent must open up a working interconnection with any new entrant. In order to prevent the incumbent introducing a delay on the basis of a failure to agree terms and conditions, the Authority should be prepared to impose interim interconnection charges which would apply until such time as the two parties conclude their	The timeframe would be specified in the Interconnection Regulations so as to generate a legal effect.

[1] Regional regulatory or Governmental agencies, Existing service and/ or network provider and affiliates, Potential service and/ or network providers and affiliates, Service/ Network Provider Associations/ Clubs/ Groups, General Public

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		new market entry is to delay the establishment and opening of interconnection. Numerous tactics can be deployed which will cause delay from simple steps, such as not responding to requests for information or meetings, to more indirect tactics, such as offering unreasonable conditions for interconnection which the new entrant is certain to refuse. Since it is almost impossible for an operator to enter the telecommunications market without having a working interconnection agreement with the incumbent, it is clearly critical that regulators should impose stringent obligations on the incumbent to prevent deliberate or unnecessary delaying tactics being deployed.	negotiations (the results of which would then be applied from the start date for the interconnection).	
Section 2: Universality				
2.2 and 2.3	Regional regulatory or Governmental agencies (MPAI)	1) Many of these sections are very detailed and appear largely unnecessary. The Authorisation policy speaks convincingly in less lengthy terms of the need for service neutrality in the 'converged' market and regulatory environment which may be quite critical.	Can largely be omitted.	The Authority disagrees with this recommendation. The mentioned sections need to be in the Interconnection Policy.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		2) While the concepts identified on page 20 seem creditable, they can be contradictory as certain conceptualisations aren't addressed. These contradiction include, "… • Discontinuance of all facility-based monopolies by permitting interconnection between cable television networks and the PSTN;… • Any concessionaire having a right to interconnection should only be allowed to exercise that right if the entity can provide reciprocal obligations to other concessionaires…"		Section 25 of the Telecommunications Act imposes interconnection obligations on all concessionaires.
	Potential service and/ or network providers and affiliates (Digicel)	We believe that it is not possible to say that a service will be provided irrespective of cost. It is possible to say that a service will be provided provided the costs are not excessive. We think that the latter wording is more appropriate. We are also circumspect about providing guarantees about access to basic telecommunications service which are to be provided irrespective of an individual's circumstances however extreme. We think that a	Basic telecoms services should be provided as long as the costs are not excessive. Service providers should use best endeavours to provide basic services to all citizens who desire them.	The Authority disagrees with this recommendation. It is an obligation for service providers globally to provide basic telecommunication services to both core and distant sections of society. Basic telecommunication services are defined in the Consumer Rights Policy and Obligations. Where the provision of these services is not financially viable, there will be subsidies provided by a USF in accordance with the Universality Framework.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		reference to best endeavours would be more appropriate. The Authority will have the right to impose the provision of a particular service if necessary.		
2.4	Regional regulatory or Governmental agencies (MPAI)	This section would be relevant in a policy on Universality. This would only be applicable to interconnection if TATT is making it clear whether Universal Service Obligations/ Charges will (or will not) be included in the interconnection rates. As it is not stated explicitly in the section, it should be either excised, or so amended that a policy decision is made.	See policy position 16	Agree with the recommended amendment as USO will not form part of the interconnection charge. The clarified changes would be made in the revised document.
2.3	Existing service and/ or network provider and affiliates (TSTT)	TSTT opines that the statement made by the Authority that "the future of DSL in the local loop is contingent on the speed and extent at which regulators introduce interconnection in the local loop" is but one view of the Broadband roll-out as per local loop unbundling. An alternative view is that DSL technology has been deployed throughout the world, and continues to be deployed throughout the world, in numerous jurisdictions where regulators have not introduced local	TSTT therefore recommends that the contextual characteristic of the Trinidad and Tobago environment be considered when defining the future of local loop unbundling (LLU), further TSTT opines that careful analysis be performed ex ante LLU	The Authority disagrees with this recommendation. Refer to Section 25 (2) (m) which empowers the Authority to unbundle the local loops.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		loop unbundling.		
2.3.1	Existing service and/ or network provider and affiliates (TSTT)	The policy document uses Korea as an example of a jurisdiction where the average price per MB is less than the average price per MB in the United States and Canada. What the document does not note is that the government of Korea heavily subsidized a national broadband network. Unless the government in Trinidad and Tobago is prepared to similarly subsidize the development of broadband in this country, then any comparisons are entirely inappropriate.	TSTT recommends that an additional bullet point be included and suggests that it reads as follows: *Government subsidy as part of the government plan for ICT development and under its FastForward initiative*	The Authority notes this recommendation, and will make the appropriate amendments.
2.5	Service Provider associations/ clubs/ groups (AIISPs)	The supplied TSTT data in Table IV should clearly refer to 44,223 as the number of TSTT's Internet "subscribers", not "users". As such, the 2004 total number of Internet subscribers in the country would equate to approximately 55,700. This number would include the subscribers of independent ISPs. The reference to 138,000 is then only plausible if viewed as an inflation given secondary account usage (i.e. more than one user per household / business account) and cyber café	This section should clearly and accurately differentiate between Internet subscribers versus users.	The Authority agrees with this recommendation. The section can be adjusted to differentiate between Internet users and Internet subscribers. The distinction will be made in the revised policy.

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		usage. This distinction is critical in TATT's published documents which will inevitably be referenced by local, regional and international agencies for comparative research and policy formulation. The low levels of Internet subscription (both narrowband and broadband) further highlight the urgent need for both a level playing field in the Internet sector and a new paradigm for growth which might also include a framework for public/private sector partnerships to truly deliver the widespread Internet usage that is envisaged in the Vision 2020 Fast Forward Plan.		
Section 3				
	Potential service and/ or network providers and affiliates (Laqtel)	LaqTel agrees with the principles of interconnectivity and interoperability of networks as laid out in the "Policy Challenges", but believes that international carrier selection should only be imposed on the incumbent in the initial instance as it would constitute an unnecessary administrative burden on new entrants while in their formative		The Authority disagrees with this recommendation. This is against the principle of fairness and non discrimination.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		stage.		
Section 4: Policy Objectives				
	Potential service and/ or network providers and affiliates (Digicel)	We agree strongly that key to maxmising benefits to Trinidad and Tobago from telecommunications liberalisation is to encourage investment. Without investment there will be no competition and without competition there can be no liberalisation benefits.	The number one focus for telecommunications policy during the early stages of liberalisation at least should be to encourage investment.	Noted.
	Regional regulatory or Governmental agencies (MPAI)	This policy does not in fact provide legal certainty to… "…Prices that ought to be affordable to a wide cross-section of the population, including the physically and economically challenged..." In fact, save for the development of a dispute between negotiating concessionaires, despite policy statement 12 in Chapter 11, this policy does not enable the Authority to ensure that agreed interconnection prices are fair, cost based and affordable to the population. This is because despite accepting the right to define costing methodologies which should be used, TATT has expressed the position that the Act	Further, this position ignores evidence coming from the experiences of our Caribbean neighbours. For example, in Jamaica where management of interconnection negotiations were decidedly hands off, the result was interconnection rates so high that the citizenry prefers to have multiple handsets to avoid paying the charge. If this is not the expectation of a successful interconnection regime, this policy, which also suggests an entirely hands off approach to negotiation management, provides no comfort that the situation may be repeated here. There is limited power, according to this policy, to call for a review of interconnection prices if it deems fit.	The Authority disagrees with this recommendation. When Jamaica opened the market, there were no regulations or policies to guide interconnection. In the Indicative RIO (refer Section 17 of the Interconnection Regulations) there will be a range of price limitations. Parties can negotiate within this range. With respect to collusion, this will be dealt with in the Competition Policy.

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		limits their ability to impress those, or similar, prices on agreements where the parties mutually agree to terms and rates negotiated. This position seems to be echoed by a hesitance in the policy for TATT to define, among the general guidelines which it may enact according to section 25 (2) (a) of the Act, some form of safeguard to ensure that even negotiated rates are not overly high. Recall that currently, despite TATT authorising the dominant provider's RIO (policy statement 11), the dominant provider is free to negotiate its actual rates up or down, depending on the terms of the negotiated agreement.		
	Regional regulatory or Governmental agencies (MPAI)	How does any proposal in this policy act as… "…Encouragement of investment in new generation technologies that can serve as a catalyst for advancement of the civil society, particularly in economically and geographically disadvantaged communities." ..as there are no indications of	Incentives could include an interconnection regime which recognises the nature of the value added service provider, so prescribes a form of interconnection which encourages rates, while not as low as peer to peer facilities interconnection, are at least wholesale (and regulated?).	The Authority cannot include an interconnection regime for value-added service providers, since this group does not require a concession under the Act..

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		incentives to small and medium enterprises to enter the telecommunications sector?		
	Existing service and/ or network providers and affiliates (TSTT)	TSTT recognizes that the goals expressed herein are goals which are beyond interconnection and resides more so within the ambit of an overarching telecommunications policy.	There appears to be a conceptual difficulty given that the majority of policy objectives mentioned herein transcends interconnection. TSTT recommends that these policy objectives should be removed and dealt with in alternative relevant policies.	The Authority disagrees with this recommendation. The objectives are all related to interconnection.
	Potential service and/ or network providers and affiliates (Laqtel)	LaqTel does not believe it appropriate for any one carrier to define the "national and international standards that are mandated for interconnection" since there is generally too much 'flexibility' within established 'standards', and difference among standards within different regions of the world; e.g., CDMA and GSM 'standards' for mobile wireless.		Standards are necessary and obligatory for interconnection. However, there is no implication in this section that providers will define the standards that are required for interconnection.
Section 5: Interconnection Services and Interconnection Resources				
	Regional regulatory or Governmental agencies (MPAI)	It is unclear how TATT intends to segment the group of DFTN/ DFTS's and DMTN/ DMTS's into these groups of eligible and ineligible interconnection concessionaires, recalling that section 25 of the Act reads;		The language in Policy Statement 2 will be revised to be consistent with Section 25 of the Act.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		"…a concession for a public telecommunications network or a public telecommunications service shall include conditions obliging the concessionaire to provide for – a) direct interconnection with the public telecommunications network or public telecommunications service of another concessionaire; b) indirect interconnection with the public telecommunications network or public telecommunications service of another concessionaire…" This suggests that all concessionaires have the right to request and receive some form of interconnection service, while TATT proposes to define some as ineligible for interconnection. How TATT addresses this misalignment between their policy and concessionaire rights as enshrined in the Act is to yet to be better understood.		
	Potential service and/ or network providers and affiliates (Laqtel)	In the longer term, the technical terms and conditions permitting the interconnection and interoperability		The Authority disagrees with this recommendation. Regulations of standards and how they operate is the

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		of networks are best resolved within an industry forum. This forum should not be permitted to address policy issues, like "should there be the interconnection of networks". It should only address technical issues of the implementation of policy decisions from the regulator; such as, "There will be network interconnection and interoperability (policy), determine how it is to be done most efficiently (technical)." The regulator should refer issues to this forum and actively monitor the activities and progress of various industry-wide working groups. We recommend that the TATT establish an industry forum for this purpose. Not withstanding this position, there is an immediate need for interconnection to occur in a timely manner so as not to delay the introduction of competition. Therefore, the TATT should facilitate the rapid establishment of an initial interconnection arrangement between the concessionaires and create this forum to address the longer term needs of the industry.		work of the regulator, however the Authority will consult with the industry in setting these standards. Service providers are also free to hold forums.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
5.1	Potential service and/ or network providers and affiliates (Laqtel)	The description of **Transit traffic, "**a concessionaire delivering traffic from one (originating) concessionaire to another (terminating) concessionaire via a third concessionaire", is rather confusing and does not completely cover the full gamut of transiting. A carrier may transit traffic between two carriers, neither of which neither has originated the traffic nor will terminate the traffic, as those terms are defined in the Document.		This is a standard ITU definition of transit traffic. See ITU-T Recommendation D600R.
5.2	Existing service and/ or network providers and affiliates (TSTT)	The policy lists network components that are required for the provision of interconnection service (defined as an interconnection resource), but the list does not differentiate between components necessary for interconnection and components that are associated with access to network elements. As TATT is aware, Section26 (5) clearly states that "access to facilities does not include interconnection".	*TSTT recommends that the Authority adhere to the substantive provisions of the Act which distinguishes access to facilities (Section 26 (5)) from Interconnection facilities (Section 25(2)).*	Noted.
5.2 (Policy Statement 1)	Existing service and/ or network providers and affiliates (TSTT)	The statement indicates that the interconnection regulations will set out quality services which are to be provided to a wide cross section of end users at affordable prices. The	TSTT recommends that the policy statement be redrafted to be interconnection specific and should read: *"Concessionaires that meet the eligibility criteria prescribed by the Authority shall be*	The statement does not need re-wording. It simply implies that interconnection should **facilitate** the delivery of quality service/s to end users.

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		interconnection regulations should not address these issues. TSTT therefore is of the opinion that the issues of affordability and quality of service will find its place in the relevant policy documents.	*obliged to interconnect."*	
Policy Statement 1	Potential service and/ or network providers and affiliates (Laqtel)	LaqTel does not understand what the "*Interconnection Regulations*" will address. Since they are to be administered by the Authority, they should be limited to "interconnection policies" not technical matters.		The regulations give effect to the policy.
Section 6: WTO Interconnection Policy				
	Potential service and/ or network providers and affiliates (Digicel)	Digicel applauds the Authority's adherence to the principles established in the WTO Reference Paper but would thinks that the Authority has not given as much weight as the WTO intended to a critical distinction which underpins many of the most important provisions in the WTO Reference paper, namely the distinction between a "major supplier" and ordinary or non-major suppliers. A "major supplier" is defined in the WTO Reference	The Authority should ensure that its approach to regulating all aspects of interconnection (and other areas of telecommunications regulation) is asymmetric, focusing attention and prioritising resources on preventing and deterring anti-competitive behaviour by the incumbent and by other "major suppliers", if any.	The Authority does not agree with this view. While the obligations on a major supplier are specific, there is nothing in the WTO reference paper which prevents obligations on a non major supplier.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		Paper: "A major supplier is a supplier which has the ability to materially affect the terms of participation (having regard to price and supply) in the relevant market for basic telecommunications services as a result of: (a) control over essential facilities; or (b) use of its position in the market." This definition is clearly intended to capture the essence of what in many jurisdictions is referred to as competition law "dominance". The WTO Reference Paper clearly seeks to establish onerous obligations only on "major suppliers" and not on all suppliers. This is clear in particular from the wording of sections 1 (competitive safeguards) and 2 (interconnection), where the obligations arising from both sections clearly apply only to		

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		major suppliers. Indeed, the Authority's own draft document, in quoting from the WTO Reference Paper, repeats the wording of the Paper with its focus only on "major suppliers". Thus, the unambiguous intention of the WTO Reference Paper provisions on competitive safeguards and interconnection is to distinguish between dominant players ("major suppliers" and non-dominant players ("suppliers") and to help to establish a level playing field by imposing onerous obligation only on the dominant players / "major suppliers". By contrast, the Authority's current proposed interconnection policy and regulations imposes many requirements equally on both dominant and non-dominant players. Such a symmetric approach to regulation is not in accordance with the principles of the WTO Reference Paper and is out of line with the social benefit maximisation basis for the asymmetric treatment of market players under competition law. The		

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		imposition of onerous regulations on new non-dominant market players will hinder their entry and ongoing operations unduly compared with an incumbent operator, which has far greater resources to cope with the requirements of the regulations.		
Policy Statement 3	Existing service and/ or network providers and affiliates (TSTT)	The statement is contrary to Policy statement No. 2 and Section 25 of the Telecom Act which state that all concessionaires must provide interconnection on request.	TSTT recommends that the word dominant be removed throughout the policy statement.	Noted.
Policy Statement 5	Existing service and/ or network providers and affiliates (TSTT)	Access to facilities is applicable to all concessionaires (Section 26); further access to facilities does not include unbundling as stated in this policy.	TSTT recommends that access to facilities be in accordance with the substantive provisions of the Act (Section 26).	The Authority agrees with this recommendation.
Section 7: Quality of Service				
	Potential service and/ or network providers and affiliates (Digicel)	Digicel agrees that the quality of service of interconnection is an important factor in ensuring the establishment of effective interconnection and end-user services. However, in line with the comments made above, Digicel believes that any need for specific quality of service standards and monitoring requirements should be focused clearly on the incumbent operator. This is especially	Focus requirements for quality of service and monitoring mainly or wholly on the incumbent.	The Authority disagrees with this recommendation. Quality of Service applies to all service providers and concessionaires.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		important because only the interconnection services provided by the incumbent operator will be relied upon by all market players in order to ensure any-to-any connectivity.		
Policy Statement 6	Existing service and/ or network providers and affiliates (TSTT)	There is a bit of ambiguity in this policy statement. It appears that the quality of service (QoS) regulations proposed herein assumes a wider framework inclusive of interconnection QoS regulations. An alternatively view is that QoS standards transcend QoS and can be perceived as technical standards for interconnection interface which constitute part of the interconnection that requires regulatory approval. Further, TSTT suggests that QOS for interconnection should be included in the reference Interconnection offer published by each concessionaire.	TSTT enquires of the Authority as to whether these QoS regulations are specific to interconnection or encompasses QoS to end users. Further, TSTT suggest that QoS for interconnection be included in the RIO which is to be approved by the Authority.	End user Quality of Service will be dealt with in the Consumer Rights and Obligations Regulations, while interconnection related QOS will be dealt with in the QOS regulations and the RIO.
Section 8: Equal Access and Carrier Pre-Selection				
	Potential service and/ or network providers and affiliates (Digicel)	Extending the requirement to offer equal access beyond the incumbent to new entrants would compel a new entrant seeking to provide international services to establish a	Equal access requirements should not be imposed during the market-opening phase on any operators. If equal access is adopted subsequently it should be imposed only on dominant players in any markets for	Equal Access requirements should be the responsibility of all service providers to ensure equality.

Document Sub-Section	Submission Made By - Stakeholder Category[1]	Comments Received	Recommendations Made	TATT's Decisions
		procedure and dedicate resources to establishing interconnection links with every operator wishing to offer international call services, potentially from the first day of commercial launch. This would be impractical and highly costly. New entrants normally have considerable practical difficulties even in establishing one interconnection (with the incumbent) by the desired date of commercial launch. Furthermore, the wholesale billing capabilities needing to be established to provide equal access services are very significant and should not be under-estimated. There will also be consequences for alternative network provision and competition. If equal access is mandated on all operators fewer if any other network operators may offer competing international services and competition will be restricted to provision mainly over the incumbent's network at wholesale rates which will have to be regulated for the forseeable future. In effect therefore the policy would amount to a barrier to entry	international call origination.	

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		and could be used tactically by the incumbent to delay any network competition: the incumbent could request equal access over new entrants' networks for international calls thus tying up their limited resources at a critical juncture. In contrast, if multiple international network operators are given a chance to become established it should be possible to cease most if not all regulatory controls on international services. While it may be appropriate to impose equal access requirements on the fixed line incumbent because it may be felt that the fixed local loop is a "natural monopoly" or because such regulation is seen as the only way to provide some short term choice to fixed line customers, the situation in the mobile market is normally very different. In the case of Trinidad and Tobago, two new mobile operators will enter in to operation so there will be in the near future three mobile operators investing in the mobile infrastructure which will provide direct access to end-user customers. In these		

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		circumstances, there is not the same need to provide additional choice to mobile customers: they will already have a choice of three mobile "access" providers. Even mandating equal access solely over the incumbent's network does not seem the best course of action in our view at this phase of liberalisation. We anticipate that this will chill investment in alternative network provision for international calls as competitors will instead seek to provide services over the incumbent's network alone. Excessive numbers of equal access providers might therefore seek to enter the market many of which would then go out of business in the relatively near future having reduced prices to the point where international service provision has become a much less attractive proposition for network investment. Again this would mean that the TATT would have to regulate international wholesesale prices over the incumbent's network for the forseeable future, instead of being able to rely on a market made		

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		competitive through multiple network access.		
Policy Statement 7	Existing service and/ or network providers and affiliates (TSTT)	TSTT's position on pre-selection is that it should be introduced at a mature stage of competition, otherwise pre-selection gives rise to a contestable market propagated by margin gathers. This does not auger well for competition as it lead to cream skimming and rentier behaviour. In addition, pre-selection does not encourage network build out by such providers. The issues therefore arise: 1. As to margin gathers contribution to Universal Service and long-term economic development of the sector. 2. Recovery of cost for equipping TSTT's network with equal access hardware and software for pre-selection. In addition, TSTT is concerned that international operators may not be mandated to have any local build out of networks which impinges upon the network roll-out and the development of a competitive market; 3. Who bears the cost associated with maintaining translation tables for pre-selection; 4. Implementation of the principles	TSTT recommends that: 1. The Authority engage in an appropriate cost-benefit study of the implementation of Equal Access 2. Pre-selection be introduced at a mature stage of competition in the T&T telecommunications market if it is deduced that the benefits do indeed outweigh the costs. 3. Pre-selection providers, when introduced, contribute to the Universal Service Fund and that their contribution equates their enhanced utilization of domestic network infrastructure. 4. TSTT be allowed to recover costs associated with implementation of equal access capabilities in its switches and maintenance of translation tables 5. All new providers switches (wire and wireless) have included within them equal access capability when equal access is indeed introduced. 6. Dialling parity be maintained across the	Although the Authority notes the concerns and recommendations expressed, with the advent of five new international service providers, it is the work of the regulator to encourage competitive fair play by introducing pre-selection.

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		of non-discrimination, reciprocity and 'neutrality' which mandates all networks/service providers to provision equal access capability. 5. Dialling parity across all providers. 6. The rate to be charged for the local leg of the call needs to recover the cost in carrying that call accordingly. Hence, domestic rates need to be structured accordingly to ensure that the substantial costs incurred be recovered accordingly to ensure a sustainable and efficient liberalized market. 7. TSTT has already advised the Authority as to the additional considerations necessary for the implementation of equal access. The Authority needs to ensure the benefits will outweigh the costs as the costs can be substantial. Additional considerable issues include the occurrence of slamming, qualification criteria and billing practices.	T&T telecoms market. Appendix I includes a detailed discourse on the issues related to Equal Access, to assist the Authority in fully appreciating the issues necessary to be addressed before the introduction of Equal Access.	
Section 9: Non-Discrimination				
	Potential service and/ or network providers and affiliates (Digicel)	Digicel believes that the enforcement of non-discrimination obligations should be focused on the	Accounting separation, particularly between the fixed and mobile businesses of the incumbent, is a critical regulatory tool for	Recommendation is noted in relation to all concessionaires.

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		incumbent operator, especially during the earlier stages of liberalisation. Again this is in line with the thrust of the welfare maximizing basis for competition law. It is during the critical lieralisation stage that the incumbent stands to gain most from delay, denial of service and the imposition of unreasonable charges and other conditions of access. Accounting separation is the primary means to monitor and prevent unfair discrimination by the incumbent operator. However, it would not be enough for the Authority to require the incumbent to produce separated accounts as this could still allow ample scope for the incumbent to manipulate its costs and revenues in order to present a skewed picture of its separated operations. The Authority therefore must take on the difficult but vital responsibility to investigate and test the separated accounts produced by the incumbent to ensure that costs and revenues have been allocated accurately and reasonably. It would be too easy, for example, in an industry dominated	the Authority. The Authority should devote resources to ensure that the separated accounts produced by the incumbent are fair and accurate.	

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		by network common costs for an integrated fixed/mobile incumbent to load costs into its monopoly fixed network business, thus artificially increasing its fixed interconnection charges (which all its competitors rely on but on which it faces no competition) and decreasing mobile interconnection charges (which it receives but also has to pay to new entrant operators).		
Policy Statement 9	Existing service and/ or network providers and affiliates (TSTT)	Interconnection is applicable to all concessionaires not specific to the incumbent telecommunications provider. As a corollary, Policy statement 9 conflicts with Policy statement 8 which stipulates non-discrimination amongst concessionaires.	TSTT recommends that the word "dominant" be omitted from Policy statement 9.	The Authority will make the necessary amendments in accordance with the Act.
	Potential service and/ or network providers and affiliates (Laqtel)	LaqTel disagrees that, "Interoperability requires networks to be technically compatible". Interoperability requires that the *points at which networks interconnect* be technically compatible, or that an interface be established that permits the transmission of traffic between		The Authority agrees with this recommendation. The specifics are noted and will be adjusted accordingly.

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		networks. One example of this is the ability to interconnect IP/packet switched networks to TDM/digital stream networks. The Authority should not be able to establish the technology of the core (transport) network. Moreover, the interconnecting carrier does not need to know, "types of switching, routing and transmission equipment used, signaling protocols" utilized on the other carriers transport network for successful interconnection of networks, it only needs to know the details at the point of interconnection.		
Section 10: Transparency				
	Potential service and/ or network providers and affiliates (Digicel)	In general, Digicel agrees with the Authority's proposals on transparency, particularly with respect to the need for transparent conditions as regards the basis for interconnection with the incumbent, with whom all new entrants must establish a working agreement. However, there is a risk that the requirements set out by the Authority could impose a significant	The Authority should be careful to ask only for information that is vital to the performance of its functions, and should adopt of more light handed approach with respect to interconnection agreements between non-dominant market players.	This recommendation is contrary to Section 25 (2) (f) of the Act.

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		burden on new entrants in terms of the level of detail of information that must be provided, the commercial sensitivity of some information and the degree of involvement sought by the Authority. While the provision of information does not seem to be an onerous requirement, one has to assess this in the context of the scarce resources available to any commercial company to provide management and operational information. If there is not a clear benefit to the provision of the information, the cost and resource involved in providing the information is essentially wasted. Therefore, it is important that the Authority should make a clear statement of the exact level of detail of the interconnection information which it requires and assesses whether this level of detail is really required for the purpose of ensuring that interconnection agreements are fair and reasonable. One might argue, for example, that an interconnection commercially agreed between two non-dominant market players does not require any,		

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		or at best only minimal, regulatory supervision. Such an agreement would certainly require less supervision than an agreement between two dominant market players. However, at present, under the Authority's draft policy, the same requirements would apply to both which seems unduly burdensome, costly and wasteful of resources. Digicel also questions whether it is necessary or helpful for the Authority to seek to approve every interconnection agreement before it can be implemented. If the parties are agreed on the terms of the agreement, it could be unhelpful and potentially damaging if there was a delay caused by the need for the Authority to review the agreement in advance. A more pragmatic approach might be for the Authority to retain powers to order the suspension of an agreement in the event that the Authority's review of the interconnection arrangements found anything that was inconsistent with Government policy.		

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Policy Statement 11	Existing service and/ or network providers and affiliates (TSTT)	Transparency as identified under the World Trade Organization (WTO) is applicable to all concessionaires and not the incumbent (*See page 32 of this Policy)*. Further, the issue of dominance is not applicable under Section 25 which addresses interconnection.	TSTT recommends that the word "dominant" be omitted from Policy statement 11.	Transparency is applicable to all concessionaires including the incumbent. The statement will be revised accordingly.
Section 11: Pricing Interconnect Services				
	Potential service and/ or network providers and affiliates (Digicel)	Digicel welcomes the acknowledgement by the Authority of the importance of interconnection costs as a matter for regulatory scrutiny. However, for the reasons set out above, Digicel believes that the Authority's initial focus in estimating interconnection costs should be targeted at the costs of the incumbent. The interconnection charges made by new entrant operators are something that needs review only if those operators manage to establish themselves in the. The risks to the development of competition if the costs of a new entrant's interconnect costs were miscalculated are very significant. In particular, Digicel notes the Authority's recognition that setting	The Authority should focus interconnection cost controls on the incumbent and avoiding frightening away future network investment by intervention in the interconnection pricing of infant market players. Digicel requests that the Authority should not consider using the COSITU (TAL) model as the basis for setting interconnection charges without first consulting on the issue after a clear understanding of the practical implications this will have for potential new entrants in the telecommunications market in Trinidad and Tobago.	TATT has a responsibility to consult on the costing methodology to be used for Interconnection, however the Authority notes Digicel's admission of unfamiliarity with the TAL and COSITU cost methodologies.

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		interconnection rates below costs is highly damaging in terms of future network investment. It is also particularly important that the Authority should consider very cautiously applying the concept of "efficient" costs. While it is important that inefficient operators are not sustained artificially through excessive interconnection costs (noting that this is much more likely to be the case for older fixed technologies and/or through the tactic of "gold-plating" by incumbents), the concept of "efficiency' should not be stretched into imposing interconnection rates which are based on purely theoretical network topologies or which disregard the evolving nature of network rollout. In its discussion of the appropriate interconnection cost modeling approach to use, the Authority does not appear to acknowledge the need to include consideration of other important aspects affecting the setting of optimal interconnection charges, such as investment risk,		

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		externalities and distributional factors. Digicel presumes that these aspects, which can critically affect the determination of optimal interconnection charges, will be fully considered by the Authority in any future decision it may make on the level of interconnection charges. Digicel believes that in terms of the use of cost models the Authority may favour the COSITU (TAL) cost model as a means of assessing interconnection costs. Digicel is not familiar with the detail of the COSITU (TAL) model and, to its knowledge, this model has not yet been relied upon by any regulatory authority in the Caribbean region. We do not believe that the model has been subjected to the level of industry scrutiny and debate and lengthy consultations that were necessarily required for other models prior to their adoption for regulatory purposes. Digicel is also circumspect about the use of a single model that purports to calculate rates for both fixed and mobile networks. Digicel agrees that interconnection		

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		set-up and link costs should be shared. However, the Authority should be careful to examine the set-up costs proposed by the incumbent in order to prevent the inclusion of any costs which are not truly justified, ie. to prevent "gold-plating".		
Section 12: Asymmetric Interconnection Charges				
	Regional regulatory or Governmental agencies (MPAI)	The first paragraph of this section makes as a statement of irrefutable fact, that; "…the principle of a common price for call termination in both directions is applicable only to fixed networks, at least in the initial period of competition. There is evidence that the cost of call termination on mobile networks is generally higher than on fixed networks."… Actually, it illustrates later in the document that this is indeed a construct; the outcome of deliberate policy positions made years ago by developed countries with vastly more advanced telecommunications infrastructure than ours, even today.	The rest of the section goes on to debate the ramifications of that policy position, and the Calling Party Pays (CPP) pricing regime that accompanies it. It fails to discuss MPP While there are advantages and disadvantages to either methodology, there is of course an impact on the interconnection management regime, there should be adequate identification of the strategic advantage to do so in our specific context, instead of allowing the flexibility to the operators to decide the methodology associated with their marketing strategy. Policy statement 13 acknowledges this by stating that there is no reason to impose a significant imbalance in rates. There is no indication of how TATT	Tromboning is facilitated through differences between settlement rates and domestic mobile interconnection rates. The Authority has no jurisdiction over international settlement rates offered by a carrier that is not registered in Trinidad and Tobago. This is not applicable to Trinidad and Tobago.

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			proposes to define the 'access' segment of mobile networks, whether they follow the model where the access does not exist (As the air interface is shared) or whether the BSS network constitutes the access portion of the network If there is a difference between fixed and mobile termination rates, TATT has not identified how it intends to deal with abuse of arbitrage, called tromboning.	
	Potential service and/ or network providers and affiliates (Digicel)	Digicel has read with considerable interest the analysis in the Authority's draft policy on mobile termination charges and disagrees with some of the statements made in the analysis and with the conclusions drawn from that analysis. In particular, Digicel challenges the following points: • Digicel knows of no regulator which has justified the existence of a price differential for mobile termination on the basis that this provides an incentive for the development of mobile networks. The Authority's draft policy seems here to have misconstrued the fact that many	It is not relevant or appropriate to base the regulatory policy on mobile termination charges on a desire to reduce the differential between fixed and mobile termination charges. Nor is it correct to assume that mobile termination charges have been allowed to be maintained at high levels in order to subsidise the development of mobile networks. Digicel believes that the task for the Authority, if it were to seek to review mobile termination charges, is preferably to conduct a benchmarking exercise or, if the Authority feels that it has sufficient resources, to assess the appropriate cost basis for mobile termination (and to assess	The Authority disagrees with this recommendation. The issue of disparity of the two rates is currently engaging the attention of Study Group 3 at the ITU. The argument of externality is faulty since the mobile subscribers exceed the fixed line subscribers in Trinidad and Tobago. In essence, externalities are now more likely on fixed lines with higher diseconomies of scale. Further, the INTUG findings have been presented at Study Group 3 of the ITU and have not been challenged by any operator.

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		regulators have accepted an externality allowance as a justified element of the mobile termination cost in order to set an optimal welfare-maximising price for mobile termination. This is not the same as implying that mobile operators have been allowed to recover "excessive" termination costs as a reward for network development. The externality allowance is a calculated economic element of a cost analysis to derive the optimal price for mobile termination, not a politically or socially motivated incentive payment. • Digicel knows of no regulator which has made it an objective to reduce the differential between fixed and mobile termination charges. While it is true that many regulators, including Ofcom in the UK, have sought to reduce the level of mobile termination charges, this has not been done with the goal to reduce the fixed-mobile differential but as part of a	this quite independently of the cost basis for fixed termination). In either case, the Authority must be clear that the benefits from possible regulation of call termination charges outweigh the risks of any miscalculation, particularly the risks to future network investment if mobile operators are unable to recover their costs even if they are entirely efficient.	

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		general exercise to optimise interconnection charges, and has generally included continuing regulations to reduce fixed termination charges. • Digicel believes that it is inappropriate and misleading for the Authority to choose to include in its draft policy document purported information about interconnection prices from a body which has very subjective and self-serving views on the matter of mobile termination. INTUG ostensibly claims to represent consumers but in fact represents mainly major corporations and is known for lobbying via the ITU for reducing mobile call termination charges. As well as being data which is presented subjectively to illustrate the points which INTUG is seeking to make (and therefore needs to be qualified), the figures supplied in the tables contain a number of factual errors and miscalculations. Such figures are not suitable material for inclusion in a		

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		regulatory document in our view. It is possible for the Authority to obtain independent information from leading telecommunications consultancies should it wish to do so. If the figures provided by INTUG remain then at the very least figures from bodies with opposite view points need to be included to provide a fair balance. • The Authority's analysis of the differential between fixed and mobile termination charges is interesting but, in Digicel's view, ultimately not relevant to the debate about the appropriate level of charges for mobile termination. These are two entirely different services and so one would expect a differential. What is most apparent is that, in the countries with a low level of differential between fixed and mobile termination charges, the reason for the low differential is not because the mobile termination charge is lower than average but because the fixed		

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		termination charge is higher than average. • The Authority's observations in section 12.5 of the draft policy are misdirected. There has been no incentive payment through high mobile termination charges to encourage or allow enhanced mobile network development so the fact that fixed growth is by comparison stifled is irrelevant. Furthermore, the idea that differential termination charges is the only or main cause of mobile network development being rapid and fixed development being slow in Caribbean countries and developing regions is incorrect. The reasons for such different rates of growth of mobile and fixed networks are numerous but include factors of far greater significance than termination charges, such as: the relative speed to provide mobile network coverage; the development of the prepaid mobile charging model which does not limit the subscriber base to credit-worthy		

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		individuals; and the personalisation and mobility benefits of using a mobile phone.		
Policy Statement 12	Existing service and/ or network providers and affiliates (TSTT)	It is more appropriate for this statement to omit the reference to dominant since the Authority will use the costing methodology in the interconnection regulations to establish *all* interconnection charges (see Section 23(1) of the interconnection regulations). Interconnection charges should be reciprocal for the same services. – - reciprocal charges facilitate interconnection as they simplify the negotiation between the interconnecting parties to resolution of one set of charges rather than two. - reciprocity reduces the burden on the regulator in resolving of any dispute over charges as, under reciprocity, the regulatory has to determine reasonableness of one set of rates, not a multiple. - it seems reasonable that one price exists for the same service on the market, i.e., Why should	The word "dominant" should be deleted from the statement.	'Dominant' will be removed from the statement.

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		one operator pay another more for the same service it provides? - from the consumer's perspective, there is a strong case for applying the same mobile termination rate to all operators. It facilitates the structure of retail tariffs for fixed calls to mobiles that are based on the MTRs being as simple as possible and minimizing consumer confusion.		
Policy Statement 13	Existing service and/ or network providers and affiliates (TSTT)	The use of the term "efficient" is appropriate to the extent that the costing methodology adopted in the interconnection regulations results in any efficient measurement of costs. However, TSTT notes that the term "efficient costs" is the only term in the definitions yet to be defined under this Policy. It would be inconsistent with the Act to use benchmarking given that Section 25(2)(m) explicitly states that prices must be cost-oriented.	TSTT recommends that "efficient costs" be defined as the costing methodology established in the interconnection regulations. The last sentence of the policy statement should be deleted as it is at variance with the Act.	The Authority agrees with this recommendation. Cost –orientation includes benchmarks which are based on costs which are indicative of the market situation. Cost-oriented refers to indicative costs. The Authority disagrees with this recommendation. Benchmarking is the best alternative where the variables are not available to determine cost-based pricing.

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Section 14: Start-Up Interconnection Costs				
Policy Statement 15	Existing service and/ or network providers and affiliates (TSTT)	There are two issues addressed in this statement: start-up costs for interconnection (i.e. joining services) and infrastructure sharing which relates to access to facilities. It is not clear, though, how they are related. We comment on both issues separately. The economic principle of cost causation leads to the conclusion that start-up costs should be borne by the party causing the costs. In the case of interconnection links, for example, the requesting carrier should be responsible for all costs of interconnect links. Similarly, the costs for any systems required for interconnection should be borne by the requesting carrier. TSTT welcomes the Authority managing the impact of new network build-out on the environment and the need for infrastructural sharing. However,	TSTT recommends that start-up interconnection cost for joining service be premised on cost causality as per an appropriate cost-based methodology. As a redraft TSTT recommends two policy statements as follows: *15 (a) The Authority will encourage commercially negotiated infrastructure sharing arrangements where possible.* *15 (b) The Authority will provide a system to derive start up costs among concessionaires based on estimates of efficient cost.*	The Authority agrees with this recommendation. The following changes will be made: *15 (a) The Authority will encourage commercially negotiated infrastructure sharing arrangements where possible* ***among concessionaires.*** *15 (b) The Authority will provide a system to derive start up costs among* ***interconnect*** *concessionaires based on estimates of efficient cost.*

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		the reality of the continuing network build out of towers by another licensed provider begs the question as to whether this policy can take effect.		
	Potential service and/ or network providers and affiliates (Laqtel)	In Set-Up Interconnection Costs, "the Authority shall work in conjunction with the relevant Town and Country agency to ensure that there is no *unnecessary proliferation* of cell towers throughout the country". While this is in theory a laudable objective, it can only be accomplished by the Authority specifying the terms and conditions of tower sharing in the initial instance as the incumbent will have no motivation to negotiate a timely agreement. The incumbent currently owns all existing towers and can delay the onset of competition by slow negotiations. Tower facilities (and possibly interconnect itself) are the most critical factor in the swift building and turning up of a new network and in the absence of a ready agreement with the incumbent, new entrants will be forced to construct their own tower facilities.		Noted.

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	Potential service and/ or network providers and affiliates (Laqtel)	Start-up costs typically are those assumed by the incumbent to adapt its network and systems to a competitive environment. LaqTel believes that as all parties require interconnect to operate, each party should bear its own costs.		The Authority agrees with this recommendation.
Section 15: Access Deficit				
	Potential service and/ or network providers and affiliates (Digicel)	Digicel agrees with the analysis set out in the Authority's draft policy regarding the need to assess whether any access deficit is actually incurred and to examine the cost basis on which any such alleged access deficit has been calculated. One clear indicator that there is no access deficit would be if the incumbent operator, while still a monopoly, has been able to introduce significant reductions to its calling charges (because, if there was an access deficit, the price of calls would need to be maintained to cover the access line subsidy). On a similar basis, if the incumbent has the regulatory freedom to increase access line charges and thus could voluntarily rebalance, there	Mobile operators should not be required to contribute to access deficit charges.	Agreed as it pertains to other networks.

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		would be no justification to impose access deficit charges on competing operators, even if the incumbent actually chose not to increase line charges. If an access deficit charge were permitted in such circumstances, the incumbent would have no incentive to reduce inefficiencies in its access network as the cost of such inefficiencies are neither incurred by the company itself or by its customers but by the customers of other operators. As regards the question of which providers should contribute to access deficit, Digicel believes that the whole underlying rationale of access deficit should make it clear that only those providers whose operations rely on the use of the incumbent's local loop network, should be required to contribute. It is these providers who compete directly with the incumbent's fixed line business but who would not (without access deficit charges) have to contribute to the cost of the expensive access line network. On the other hand, mobile network operators have to invest in their own expensive "access		

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		network" and do not compete with fixed line services. On the contrary, mobile services are incremental to (not substitutional for) fixed line services and thus supplement (rather than reduce) the revenue available to the incumbent to cross-subsidise the costs of access line provision.		
Policy Statement 16	Existing service and/ or network providers and affiliates (TSTT)	There are two separate issues addressed in this policy prescription: rebalancing and access deficit. TSTT therefore draws to the Authority's attention that there exists other consideration for rebalancing other than for "satisfying" the existing of access deficit. Critically and more importantly, the issue of achieving a balance rate structure is the primary rationale for rebalancing. This is extremely important if cross subsidization and claims of predatory pricing are to be negated, especially where the Act mandates that both be eliminated (Section 29). Specifically in the sphere of access deficit, once it is determined to exist, recovery of such deficit should be recovered through the	TSTT recommends that the statement read: *"Where the Authority is satisfied that an access deficit exists, it may authorize recovery of that access deficit through any one of, or a combination of an implicit interconnection charge, re-balancing, retail access and usage rates, or through Universal Service Funding"* In addition, a follow policy statement is suggested: "The Authority would seek to achieve a balance rate structure that removes cross-subsidization as required under Sections 24(1)(c) and 29.	Access Deficit shall not form part of the interconnect charges. This is an arrangement between the customer and the service provider.

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		interconnection charge rather than through the imposition of higher access charge. The rationale for this pivot upon the need to minimize the impact upon the consumer. The fact is that a usage charge is more socially acceptable as it impose the access deficit upon providers and users who are heavy end users rather than on low income users and individuals in rural areas and on fixed incomes.		
Policy Statement 16	Potential service and/ or network providers and affiliates (Laqtel)	Laqtel agrees with this policy statement.		Noted.