Universal Service Framework for Telecommunications Services in Trinidad and Tobago

Maintenance History		
Date	**Change Details**	**Version**
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1 Introduction

1.1 The Importance of Universal Service

In today's world there has been widespread growth in the use of telecommunications and broadcasting services within most societies. The main reason driving this explosive growth is people's need for information. Telecommunications is one mean of accessing information in an efficient and timely manner. Individuals use telecommunications and broadcasting services in their daily routines – keeping in contact with loved ones, keeping up-to-date with the latest developments in the news, calling emergency services etc. These services are usually in the form of fixed line and mobile telephone services or, Internet services.

While some people take the ability to access these services for granted, not everyone has the opportunity to share the experience due to the existing digital divide. This Universal Service Framework seeks to institute regulatory mechanisms that would facilitate bridging the gap between those who have access to telecommunications services and those who do not in Trinidad and Tobago.

1.2 WSIS Plan

As part of a global initiative, the United Nations General Assembly in September 2000, created the UN Millennium Development Goals with the main objective of upholding the principles of human dignity, equality and equity at a global level. These eight goals are as follows:

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality

- Improve maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

In order to help achieve these Millennium Development Goals, the World Summit on the Information Society (WSIS), a sub-committee of the UN, is playing its part by seeking to use Information and Communication Technology (ICT) based products, networks, services and applications, as a tool for reducing poverty and in the process, to aid countries in bridging their digital divide. WSIS has developed specific action lines[1], under the purview of the International Telecommunications Union (ITU), that will feed into the overall objectives of:

- Building an inclusive Information Society;
- Putting the potential of knowledge and ICTs at the service of development;
- Promoting the use of information and knowledge for the achievement of internationally agreed development goals; and
- Addressing new challenges of the Information Society, at the national, regional and international levels.

As a member of ITU, the Government of the Republic of Trinidad and Tobago (GoRTT), building on these actions lines, has initiated the National ICT Plan which seeks to transform the country into a knowledge-based society. The connectivity objectives arising out of the NICT Plan[2] includes:

- Providing all citizens with affordable Internet access;
- Focusing on the development of children, and adult skills to ensure a sustainable solution and a vibrant future;

[1] From WSIS Plan of Action, www.itu.int/wsis/docs/geneva/official/poa.html

[2] From "NICT Plan," by the Ministry of Public Administration, www.fastforward.tt
As of May 2012, the NICT Plan is being consulted upon and revised by the Ministry of Science, Technology and Tertiary Education, http://igovtt.tt/content/national-ict-plan-consultations

- Promoting citizen trust, access, and interaction through good governance; and
- Maximising the potential within all citizens, and accelerating innovation, to develop a knowledge-based society.

Some of the projects government has recently launched to achieve these connectivity objectives include:

- *ttconnect* – this is Trinidad and Tobago's national e-Government portal which seeks to provide access to all appropriate Government information and services online. It represents a new channel of service delivery, consistent with the Government's overall efforts to become more service-oriented, while at the same time increasing its transparency, accessibility and availability.
- *Community Connection Programme* – this project seeks to establish hundreds of Community Access Centres throughout Trinidad and Tobago so as to provide rural and urban residents with affordable access to computers and high speed Internet services.

1.3 National Universal Service Policy

As an initiative to facilitate, encourage and incentivise an ICT enabled society, the GoRTT has developed a National Universal Service Policy which promotes the initiative where all citizens of the country can have access to information and knowledge through ICTs. These ICTs should reach all locations, be affordable and offer a full range of basic services, taking into account the different needs of the user population.

By facilitating easy and affordable access to ICTs, some of the benefits citizens can be exposed to include improvements in their lives through an increase in access to education and health services, and even government services. More importantly the use of ICTs can enhance the overall competitiveness of a country in the global market, which in turn can stimulate economic growth and reduce the level of poverty.

1.4 Role of the Telecommunications Authority of Trinidad and Tobago

Established in 2004 as the agency responsible for managing the telecommunications and broadcasting sectors, the Telecommunications Authority of Trinidad and Tobago (the Authority) has been charged with the mandate of promoting Universal Service in Trinidad and Tobago to the extent that it is reasonably practicable. This mandate is prescribed in Section 28 of the Telecommunications Act (2001) ('the Act') which states:

> *28. (1) In accordance with the policy established by the Minister, the Authority shall determine the public telecommunications services in respect of which the requirement of Universal Service shall apply.*

In order to fulfil the objective of the Act and the GoRTT's National Universal Service Policy, the Authority has established this draft Universal Service Framework for consultation to inform the regulations, the purpose of which, once finalised and laid in Parliament, would be to:

> *'To put in place robust regulatory initiatives to improve the ICT development of the country by facilitating the construct of a knowledge-based economy predicated on widespread access to basic telecommunication services through low-cost, high-quality connections, high computer literacy, comfort in using the Internet, its useful content and innovative Internet applications to create value.'*[3]

1.5 Modification to Document

As the country's telecommunications industry matures, the framework for achieving Universal Service will evolve. Subsequent to the consultation process, and after this document has been finalised, the Universal Service Framework will be reviewed and

[3] From "The Draft Framework for Development of a Universal Service Policy for Trinidad and Tobago", TATT document

modified as necessary and in consultation with stakeholders (including the public), to ensure that regulatory practices and processes continue to be guided by appropriate policy guidelines and objectives.

1.6 The Consultation Process

On June 27th 2008, the Authority published the first draft of this document and invited comments and recommendations from all interested parties. The first consultation period ended on July 31st, 2008. The Authority received several comments from the following parties:

- Telecommunications Services of Trinidad and Tobago (TSTT)
- Digicel (Trinidad) Limited
- The Ministry of Public Administration
- The Ministry of Social Development
- Columbus Communications (Trinidad) Limited
- Independent Cable Network of Trinidad and Tobago

On March 27th 2009, the Authority published a revised draft Universal Service Framework which took into consideration the comments and recommendations received in the first consultation round. A Decisions on Recommendations (DOR) Matrix was included at Annex B of that document and provides all the comments and recommendations received in the first consultation round and the Authority's decisions in respect of those. The Authority received several comments from the following stakeholders in the second consultation round:

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

Both rounds of consultation were conducted in accordance with the Authority's *Procedures for Consultation in the Telecommunications Sector of Trinidad and Tobago.* This document represents the final version of the Universal Service Framework. A DOR

Matrix has been included at Annex B of this document, which provides all comments and recommendations received in the second consultation round and the Authority's decisions in respect of those.

2 The Concept of Universal Service

2.1 Universal Service Policy of Trinidad and Tobago

The GoRTT's National Universal Service Policy provides general guidelines for the development of a regulatory framework for Universal Service by the Authority.

The national policy specifies its aim as:

> *'to promote Universal Service to telecommunications services for all persons in Trinidad and Tobago by facilitating the orderly, systematic, dispersed development and provision of telecommunications services at affordable rates in Trinidad and Tobago in a manner that facilitates access by all citizens while encouraging innovation and incentive for investment in the ICT sector.*[4]*'*

The Universal Service Policy can be obtained from the National Information and Communication Technology Centre of the Ministry of Public Administration.

2.2 Defining Universal Service

Universal access is achieved when 100% of the country's population can access affordable basic telecommunications services either on an individual or shared (public access) basis as far as reasonably practical. Examples of publicly accessing these basic services can be through community access centres, Internet kiosks and public payphones.

Universal Service on the other hand builds on the concept of universal access. This is achieved when basic telecommunications services are both accessible and affordable and are delivered on either a household basis or an individual basis. Therefore Universal Service speaks to 100% of the population being able to subscribe and use these basic services on a household or individual basis as far as reasonably practical.

[4] From "Universal Service Policy of Trinidad and Tobago," by Ministry of Public Administration

Universal Service builds on three main concepts:

- Availability – the service is available to inhabited parts of the country
- Accessibility – all citizens can use the service, regardless of their location, gender, disabilities and other personal characteristics
- Affordability – the service is affordable to all citizens[5]

Within recent times, the term Universality is being widely used and incorporates the combination of both universal access and Universal Service. However within Section 2 of the Telecommunications Act, the term Universal Service is used. It is defined in the Act as follows:

Universal Service means the provision of telecommunications services throughout Trinidad and Tobago taking into account the needs of the public, affordability of the service and advances in technologies.

This definition has adopted a broader scope to incorporate the term 'universality' mentioned above, and as such includes both universal Access and Universal Service for the provision of basic telecommunications services both on a public and individual basis.

2.3 Definition of Basic Telecommunications Services

The Government's Universal Service Policy specifically states that:

> *"The Authority shall determine the public telecommunications services to which Universal Service shall apply to provide the requisite benefits to society. Such services shall include at a minimum:*
>
> - *affordable and easily accessible domestic and international call origination and termination;*
> - *affordable public data services*

[5] From "ICT Regulation Toolkit", by ITU-infoDev

- *directory assistance; and*
- *free 24-hour access to emergency call service*
- *free itemised billing, upon request."*

Using these parameters as the public services to which Universal Service should apply, the Authority is proposing to specifically define basic telecommunications services as follows:

- affordable fixed and mobile voice services for the purpose of domestic and international call origination and termination;
- affordable broadband Internet services.[6] (Target throughput of no less than five mega bits per second (5 Mbps) to be achieved by 2015. This target will be revised on an on-going basis to reflect developments in the sector);
- access to directory assistance from both fixed and mobile phones;
- free 24-hour access to emergency call service from both fixed and mobile phones.
- free itemised billing for all telecommunications services, upon request

In accordance with the definition of telecommunications services outlined in the Act, the Authority is proposing to adopt a technology neutral approach, where no restrictions will be placed on service providers in respect of the technology to be used for the provision of the basic telecommunications services listed above.

Statement on Basic Telecommunications Services:

The Authority shall define basic telecommunications services as follows:

- *affordable fixed and mobile voice services for the purpose of domestic and international call origination and termination;*
- *affordable broadband Internet services[6];*
- *access to directory assistance from both fixed and mobile phones;*
- *free 24-hour access to emergency call service from both fixed and mobile*

[6] Target throughput of no less than five mega bits per second (5 Mbps) to be achieved by 2015. This target will be revised on an on-going basis to reflect developments in the sector.

phones;

- *free itemised billing for all telecommunications services, upon request.*

The Authority shall adopt a technology neutral approach for facilitating the provision of these basic telecommunications services.

2.4 Broadcasting Services

In accordance with Section 2 (1) of the Telecommunications Act, Universal Service is limited to:

'the provision of ***telecommunications services*** *throughout Trinidad and Tobago, taking into account the needs of the public, affordability of the service and advances in technologies'.*

Notwithstanding the above, the Authority has recognised the contributing role the broadcasting sector has played towards the development of an ICT enabled society. As such, the Authority has recommended to the GoRTT legislative revisions to the Act that includes broadcasting services as part of the definition of Universal Service. On approval of the recommendation, the necessary updates will be made to this framework for the inclusion of certain broadcasting services as basic services that may also fall under the ambit of Universal Service.

2.5 Achieving Universal Service

In the short term, the focus of most countries is primarily on the universal access aspect of Universal Service since public access should be achieved before emphasis is given to private access. However taking into consideration the population density of Trinidad and Tobago and the current teledensity penetration and coverage resulting

from the maturity of the mobile market, the Authority is proposing that the Universal Service Framework establish mechanisms that would promote Universal Service for both telephony and data (including Internet) services on a household basis and on an individual basis, as far as reasonably practical. The Authority however, recognizes that on a case by case basis, there may be the need to promote 'universal access' type initiatives at community access centres, schools, libraries and other public institutions.

Statement on the Promotion of Universal Service:

The Universal Service Framework and supporting regulations shall establish mechanisms that would promote Universal Service for both telephony and data (including Internet) services on a household basis and an individual basis, as far as reasonably practical. The Authority however, recognizes that on a case by case basis, there may be the need to promote 'universal access' type initiatives. In doing so, the framework shall place emphasis on:

- *the expansion of infrastructure for the provision of affordable basic telecommunications services in communities that fall within the access gap[7] (e.g. remote or high-cost areas);*
- *the implementation of mechanisms that would promote accessibility to affordable basic telecommunications services by population groups that fall within the access gap;*
- *public access telephony and Internet services on a case by case basis; and*
- *the implementation of a Funding mechanism to provide subsidies and incentives to the consumers and providers of basic telecommunications services where applicable.*

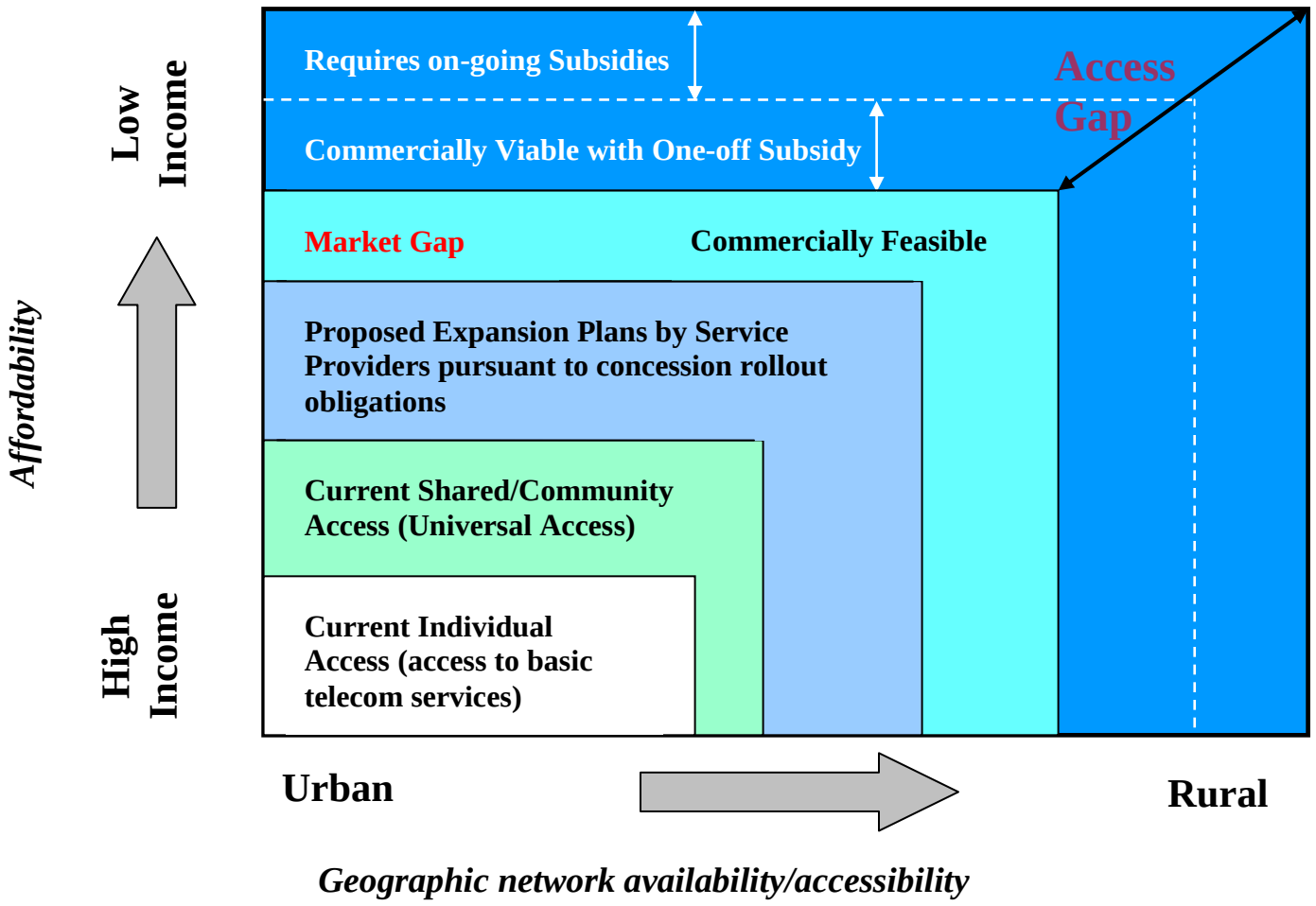
[7] Access gap is defined under Section 3 of the Framework

3 The Market Gap and Access Gap

In determining those communities in Trinidad and Tobago for which it may not be economically feasible to provide basic telecommunications services, it is necessary to measure the level of telecommunications development in the market. This can be done using the concept that there exists a market gap and an access gap.

Figure 1 below gives an illustrative description of the difference between the market gap and the access gap.

Figure 1: The Market Gap and the Access Gap



Source: *Adapted from "Best Practices and Evolution of Universal Access Programs," by World Bank*

Explanation of the categories in Figure 1:

- Current Individual Access – these are the number of individual households/ individuals that currently subscribe to basic telecommunications services.
- Current Shared/Community Access – this represents households/individuals that can access basic telecommunication services on a public or shared basis but are not subscribers of the services.
- Proposed Expansion Plans by Service Providers pursuant to concession rollout obligations – these represent households that will be in a position to acquire access to basic telecommunications pending the rollout of telecommunication services by operators within the timeframes mandated by their concession obligations. It must be noted that as operators put measures in place to facilitate the universal accessibility of these basic telecommunications services, the affordability factor decreases for the consumer in view of increasing economies of scale.
- Market Gap – this represents communities or individuals that still do not have access to basic telecommunication services due to regulatory barriers, insufficient competitive market forces, or other factors not providing sufficient incentives for service providers to provide services to these communities or individuals. This does not necessarily mean that it is not commercially viable for the service provider, however some regulatory intervention may be required.

  Within the market gap, service providers may be afforded the opportunity to encourage new customers to subscribe to their services through the use of competitive market forces. For instance, with increased competition, service providers may expand their network coverage or even promote packages to capture low-income users of telecommunication services.

Evidence of the success of such marketing strategies are present in Trinidad and Tobago.

- The Access Gap (commercially viable with one-off subsidy) – the areas/individuals beyond the Market Gap for which it is not economically feasible for operators to rollout services. However service providers may be able to survive on their own if provided with their initial start-up costs as a subsidy.
- The Access Gap (requires on-going subsidy) – the areas/individuals beyond the Market Gap for which it is not economically feasible for operators to rollout services therefore requiring a permanent subsidy for the provision of basic telecommunications services.

With the effective liberalization of the telecommunications market, regulatory agencies can differentiate between the market gap and the access gap. In a more simplified explanation, the market gap is the difference between what markets are actually achieving under current competitive conditions and what they could achieve if regulatory barriers were removed and regulation was used to provide incentives. The access gap, on the other hand, recognises that intervention is still required to reach some areas and population groups that will not be served even within the most optimal, efficient and liberalised market[8]. One reason for this may be that the provision of services to these areas and population groups may not be feasible economically or because of geographical challenges with providing the necessary infrastructure.

3.1 Initiatives to Minimise the Market Gap

On analysing Figure 1 it must be noted that the nature of the market gap makes it possible to be minimised or even eliminated without the use of any subsidy programme. Two such initiatives that can be implemented to close this gap include:

[8] Referred from "Trends in Telecommunications Reform 2003, " by International Telecommunications Union, 2003

3.1.1 Market-based Reforms

A first step in moving towards Universal Service, while eliminating the market gap, is possible through the use of market-based reforms. Such reforms, accomplished through the liberalization of the sector, places the responsibility of providing telecommunications services squarely on the service providers.

Types of market-based reform techniques include:

a. Privatization

This occurs where a fully state-run service provider is sold partly or wholly by the government to a private operator with the intention of providing more efficient service to consumers.

Partly-privatised in 1989, the Government of Trinidad and Tobago and Cable and Wireless (C&W) Ltd signed a shareholders agreement which related to the joint ownership of TSTT between Cable and Wireless Limited (49% shareholder) and the Government of the Republic of Trinidad and Tobago (51% shareholder). TSTT was formed by the TEXTEL Vesting Order of 1990 which vested the assets of TEXTEL in TELCO, combining both domestic and international telecommunications into the single monopoly provider.

b. Competition[9]

The most important step of reform is the introduction of competition, which coupled with fair and independent regulation, creates a level-playing field among service providers.

Competition promotes Universal Service in the following ways:

1. Competition drives expansion including coverage and availability
   - Due to the increased number of operators in the market, competition encourages the expansion of networks and services as a result of a general increase in the available investment capital necessary for providing services.

[9] Referred from "ICT Regulation Toolkit," by InfoDev, 2009

With the liberalization of the Trinidad and Tobago mobile market in 2006, the population now enjoys almost 100% mobile coverage available nationwide. Remote communities that were without service before the introduction of competition now have access to mobile telecommunications services.

- Another benefit of a competitive environment is that current marginal or uneconomic areas may be offered services based on expectations of demand growth and competitive pressure for operators to position themselves as first in and establish their brand.

  In an attempt to further the availability of telecommunications services especially to areas that are classified as underserved, the Authority has auctioned the 700 MHz band and the 2.3 and 2.5 MHz bands allowing the provision of Broadband Wireless Access services by interested service providers. Bidders successful in the auction process will be required to roll out services using broadband wireless access technologies in areas that were previously considered not to be economically feasible using wired technologies.

2. Competition provides an incentive for greater efficiency, lower prices, new pricing models and promotes better quality of services

- An increased level of competition generally has the effect of lowering prices which can expand the market through price elasticity of demand. Competition also lowers the access barrier for new subscribers through new and innovative pricing options, as well as shared or public access. Therefore, the consumer stands to gain from the price effects of competition. Operators are generally driven to increase their efficiency and reduce costs by a need to be more competitive in the market and increase the subscriber base. A lowering of prices, which is operationally feasible for the operator helps to close the market gap.

In December 2007, Trinidad and Tobago's international Internet bandwidth capacity increased due to the launch of an additional off-island fibre facility. Competition in both the broadband Internet market and the voice telephony market was realized with the introduction of broadband Internet and fixed-line voice services by the major cable provider resulting in reduced rates for these services.

- Competition generally improves the quality of services, though periods of rapid growth may temporarily lead to lower quality of service provision. However, similar to the rationale behind a lowering of prices, improvements to service quality is driven by each operator's desire to differentiate itself from competitors, and thus to further its brand.

3. Competition encourages market segmentation and stimulates the introduction of innovative new services (i.e. more choices and new services); and promotes service provision to the less affluent.

- Competition causes greater segmentation of a communications market. This results in a stronger differentiation of customer groups and a variety of services that are more tailored for each segment.
  Since the liberalization of the mobile market in Trinidad and Tobago, service providers now offer customized value-added services (examples include customers' options to download music, wallpapers etc) in an attempt to differentiate their product to particular market segments.

- Competition also strikes at the core of the Universal Service mandate, which is to reach the population that is currently underserved and has limited telecommunications service at their disposal. As operators compete for more business, with the intention of gaining higher revenues, they look to capture the greatest share of subscribers and/or users. While this race to subscribe tends to take place first in urban areas, due to higher

income and easier network roll-out, the trend is to continue seeking new consumers where there is still profit to be made and then, where there is a future potential for profit.

3.1.2 Mandatory Service Obligations

Regulators may also impose mandatory service obligations to licensed operators when making an effort to eliminate the market gap. Such obligations can extend to community service initiatives, network roll-out targets, teledensity targets, the installation of public pay phones, requirements to reduce waiting lists, quality-of-service targets and geographic/population coverage targets.

Advantages	**Disadvantages**
Funding for Universal Service initiatives is generally provided by the private sector	If the cost of providing the obligations is excessively high, the operator may fail to meet its requirements

Such mandatory service obligations are realised in the Authority's concessions and licences agreements which specify the requirements to be followed by all authorised service providers.

As an example, Section A15 a.(iii) of the concession agreement states:

> *"where the concessionaire is authorised to operate public domestic fixed telecommunications networks and provide public domestic fixed telecommunications services, provide at a minimum provide no less than fifty public nodes, for example pay phones or Internet kiosks, per national county and parish."*

Each concessionaire operating a public telecommunications network is also given specific roll-out obligations in terms of geographical or population coverage and customer service standards over the period of the concession.

The Authority is responsible for the implementation of regulatory monitoring and enforcement measures to ensure that all authorised service providers meet their concession and licence obligations as this can significantly affect the extent of the industry's market gap.

Statement on Focus of Universal Service Initiatives:

The Authority shall focus regulatory initiatives for Universal Service on only those communities and population groups that are found to be within the access gap as opposed to those falling within the market gap.

It must be noted that in order for the Authority to develop further mechanisms to reduce both the market and the access gap, there must be some understanding of the current size of these gaps. As a result the Authority undertook the initiative of conducting a Digital Divide survey.

4 Assessing the Digital Divide in Trinidad and Tobago

4.1 Definition of Digital Divide

The digital divide relates to the gap that exists between those who have access to ICTs and those who do not. When such a gap exists, it creates a division between different sections of the population – the information rich vs. the information poor. When examining the digital divide of a country, there are two issues that arise:

- The instruments to be used to measure the digital divide
- The size/magnitude of the digital divide

4.2 Digital Divide Survey

In order to devise the achievable objectives for a Universal Service Framework, and to identify the population groups and areas that fall within the access gap, an assessment of Trinidad and Tobago's current situation was conducted. The Authority, with the assistance of the Sir Arthur Lewis Institute of Social and Economic Studies (SALISES), undertook a national survey in July and August of 2007 that measured not only the country's digital access standing at a national level, but also the digital divide that exists among pre-defined communities in Trinidad and Tobago.

The survey encompassed two parts: the service provider survey and the household survey. The service provider survey targeted fixed line, mobile, Internet and cable operators as well as national libraries and community centres. The household survey targeted 6,000 households that spanned over the 3,000+ enumeration districts of the country.

4.2.1 Instruments used to measure the Digital Divide

In the past, the International Telecommunications Union (ITU) has utilized two indices (Table 1) to measure and compare the capacity for individuals to access and use ICT services at a country level:

- The Digital Access Index (DAI). This index is built around eight (8) indicators grouped into four (4) Fundamental vectors that reflect a country's ability to access ICTs: infrastructure, affordability, knowledge and quality and actual usage of ICTs.
- The Digital Opportunity Index (DOI). This index is based on eleven (11) ICT indicators, grouped into three (3) vectors: opportunity, infrastructure and utilization.

Table 1: DAI and DOI Indicators

DAI Indicators	DOI Indicators
Infrastructure	***Opportunity***
Fixed telephone subscribers per 100 inhabitants	Percentage of population covered by mobile cellular telephony
Mobile cellular subscribers per 100 inhabitants	Mobile cellular tariffs as a percentage of per capita income
Affordability	Internet access tariffs as a percentage of per capita income
Internet access price as percentage of Gross National Income per capita	***Infrastructure***
Knowledge	Proportion of households with a fixed line telephone
Adult Literacy	Mobile cellular subscribers per 100 inhabitants
Combined primary, secondary and tertiary school enrolment level	Proportion of households with Internet access at home
Quality	Mobile Internet subscribers per 100 inhabitants
International Internet bandwidth (bits) per capita	Proportion of households with a computer
Broadband subscribers per 100 inhabitants	***Utilization***

DAI Indicators	DOI Indicators
Usage	Internet users per 100 inhabitants
Internet users per 100 inhabitants	Ratio of Fixed Broadband Internet subscribers to total Internet subscribers
	Ratio of Mobile Broadband Internet subscribers to mobile Internet subscribers

4.2.2 Size of the Digital Divide: Results of the Survey – National Index Readings

The Digital Divide survey measured Trinidad and Tobago's digital standing on a national and community level using the above two ITU-recognised indices and a third altered index.

The national results obtained were as follows:

- National Digital Access Index (DAI): **0.6668**
- National Digital Opportunity Index (DOI): **0.6315**
- National Digital Opportunity Index - Alternate (DOI_ALT): **0.5595**

The DOI_ALT is an altered index developed by the Authority to eliminate skewing of the DOI as a result of the high *mobile broadband Internet subscribers: mobile Internet subscribers* ratio in Trinidad and Tobago. The Authority was of the view that the high ratio would not accurately represent the level of mobile broadband Internet penetration since there were a very small number of mobile Internet subscribers, most of whom subscribed to mobile broadband Internet.

4.2.3 Size of the Digital Divide: Results of the Survey – National Indicator Category Readings

Table 2 shows the results of the Digital Divide survey broken down by indicator category.

Table 2: DOI_ALT and DAI Category Average

DOI_ALT Category	Average	DAI Category	Average
Opportunity	0.87	Infrastructure	0.64
Infrastructure	0.39	Affordability	0.93
Utilization	0.23	Knowledge	0.89
		Quality	0.47

The Opportunity category of the DOI_ALT measures the ability of persons to afford ICT services, which is also measured by the Affordability category of the DAI. The survey results showed an average Opportunity indicator and Affordability indicator of 0.87 and 0.93 respectively. These results imply that most persons can afford telecommunications services in Trinidad and Tobago. The Knowledge indicator of the DAI also implies that on average many persons in Trinidad and Tobago are capable of utilizing ICT services. The Infrastructure indicator of both the DOI_ALT and the DAI measures the availability of the network and user devices to persons. As noted in Table 2 the average country Infrastructure indicators are 0.39 and 0.64 for the DOI_ALT and the DAI respectively.

4.2.4 Size of the Digital Divide: Results of the Survey – National Service Readings

The survey also provided information with respect to the level of access to individual basic telecommunications services in Trinidad and Tobago. Table 3 shows the country's rating in respect of indicators for each of these services.

Table 3: National Average by Service[10]

Service	National Average
Fixed Line Telephony	
Proportion of households with fixed lines	72.6%
Fixed telephone subscribers per 100 inhabitants	39.17
Mobile Telephony	
Mobile subscribers per 100 inhabitants	92.6
Internet	
Internet users per 100 inhabitants	33.2
Proportion of households with Internet access at home	27.3%
Broadband subscribers per 100 inhabitants	13

4.2.5 Size of the Digital Divide: Results of the Survey – Community Readings

The results of the survey also provided DAI, DOI and DOI_ALT readings for the individual communities within Trinidad and Tobago. In terms of the three main basic telecommunications services, the following outcomes were evident:

- 353 communities scored below the national average of 72.6% for proportion of households with fixed lines
- 235 communities scored below the national average of 92.6 for mobile subscribers per 100 inhabitants
- 335 communities scored below the national average of 33.2 for Internet users per 100 inhabitants
- 325 communities scored below the national average of 27.3% for percentage of households with Internet access at home.

[10] It must be noted that the results shown in Table 3 represent the national average of the 585 communities surveyed. These figures may vary somewhat with the *actual* national country average as this survey instrument sampled only a portion of the national population.

A complete listing of the underserved communities in Trinidad and Tobago is attached at Annex A. Areas that are below the current country average have been identified as underserved in accessing affordable basic telecommunications services. It must be noted that no community in Trinidad and Tobago has been identified as unserved, that is, does not have access to any basic telecommunication service, since the results of the survey showed that no community obtained a score of zero in relation to any basic telecommunications service.

The complete survey report is available on the Authority's website (http://www.tatt.org.tt). However, an idea of the digital access standing for various communities is provided in the following illustrations (Figures 2 to 7).

The Authority has recognized that a considerable amount of time has elapsed since the conducting of the last 2007 Digital Divide survey and as such the status of the communities listed in Annex A may have changed. For this reason, the Authority will be conducting another Digital Divide survey in 2012 to provide updated results on the DAI, DOI and IDI[11] readings as well as the list of current underserved communities throughout Trinidad and Tobago.

[11] IDI is discussed in Section 4.3 of this framework

Figure 2: Trinidad DAI

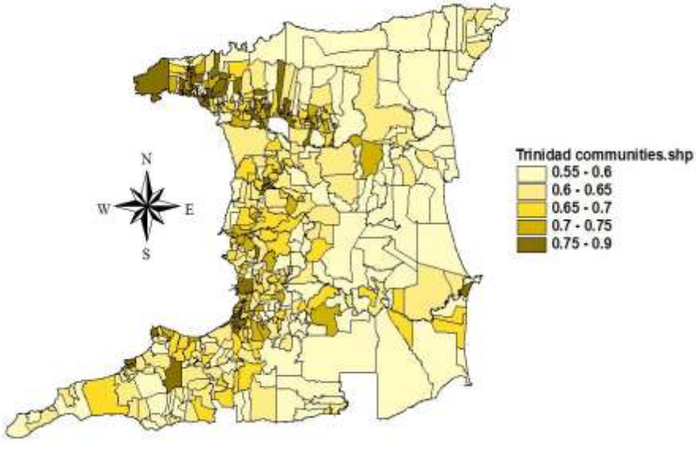


Figure 3: Trinidad DOI

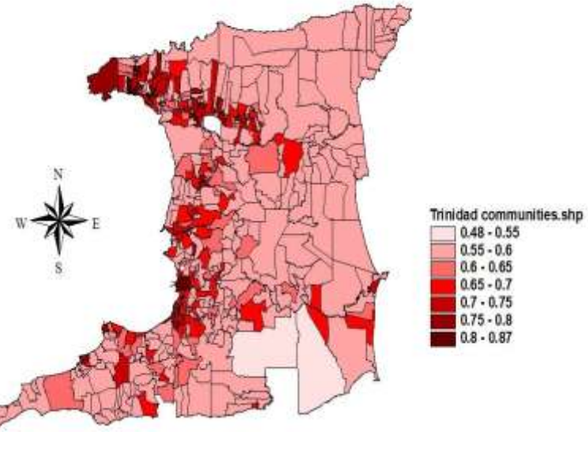


Figure 4 : Trinidad DOI_ALT

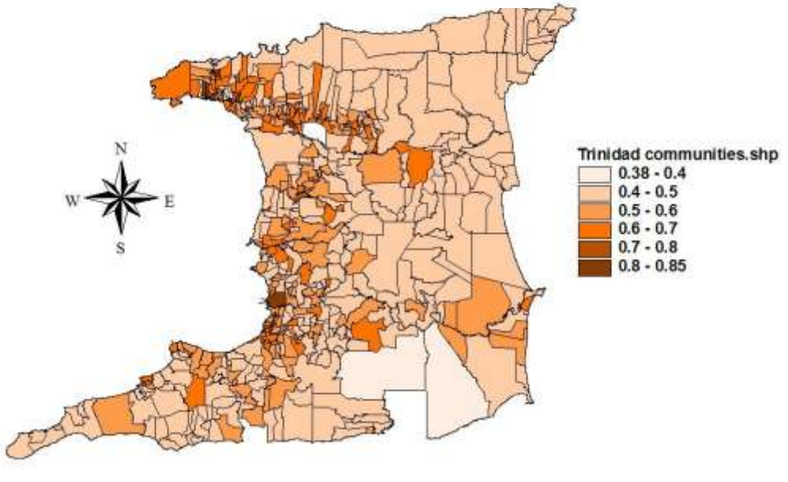


Figure 5 : Tobago DAI

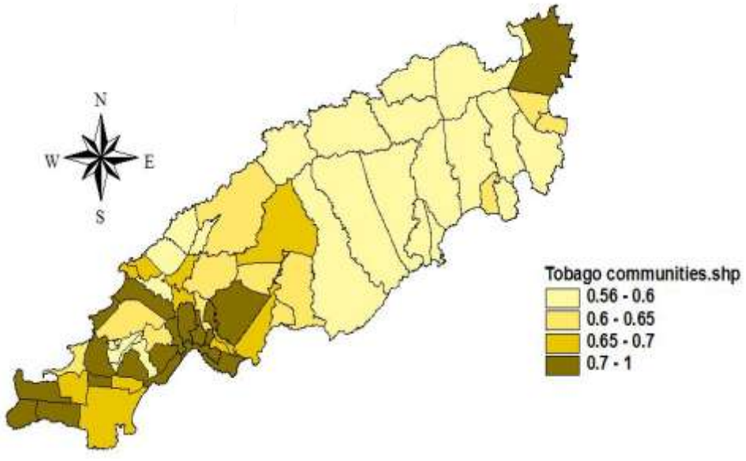


Figure 6 : Tobago DOI

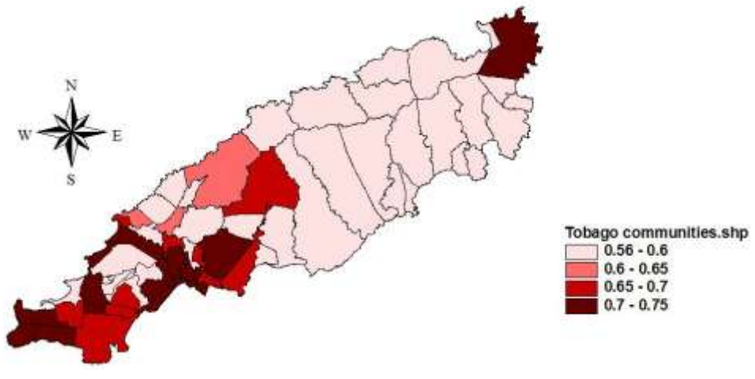
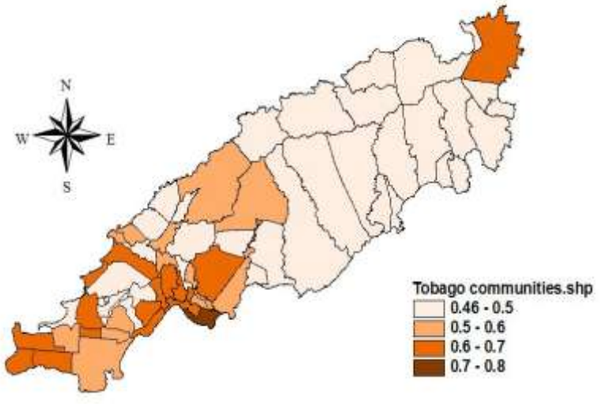


Figure 7 : Tobago DOI_ALT



4.3 New Digital Divide Measurements Developed by ITU

In 2009, the International Telecommunications Union (ITU) recognised the need to develop 'a single index' in response to requests made by ITU Member countries. Accordingly, a new index referred to the ICT Development Index (IDI) was developed with the intention to replace both the ITU's DAI and DOI indices.

This IDI index is a composite index combining 11 indicators into one benchmark measure that serves to monitor and compare developments in ICTs across countries. The objectives of the IDI seek to measure:

- *The level and evolution over time of ICT developments in countries and relative to other countries*
- *Progress in ICT development in both developed and developing countries. The index should be global and reflect changes taking place in countries at different levels of ICT developments*
- *The digital divide. The difference between countries with different levels of ICT developments.*
- *The development potential of ICTs or the extent to which countries can make use of ICTs to enhance growth and development, based on available capabilities and skills.*[12]

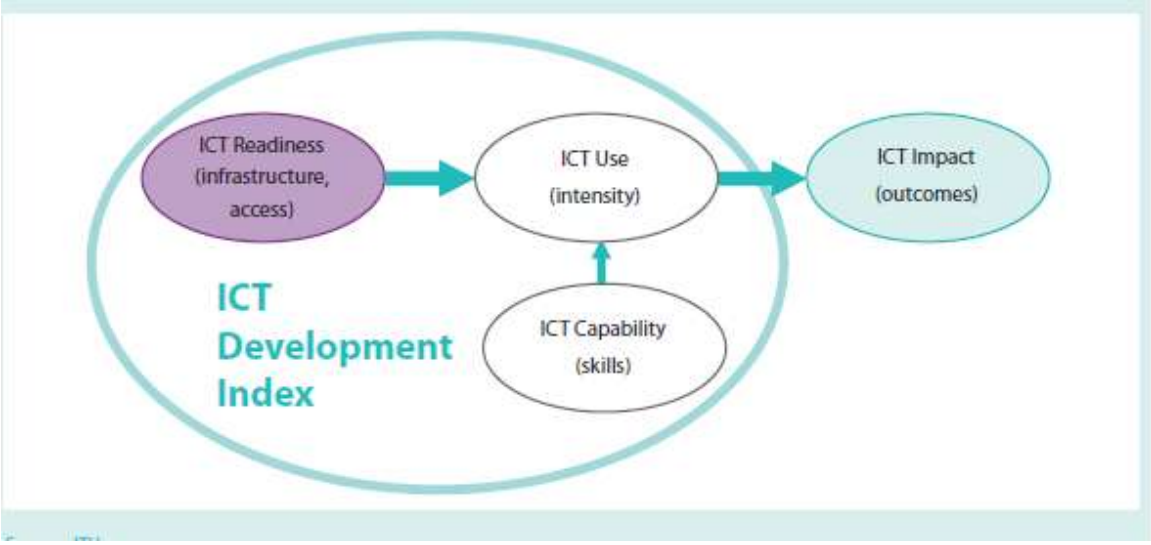
The IDI measures a country's transformation and evolution to becoming an information society by examining its progress through 3 stages:

- Stage 1 – ICT Readiness (measuring ICT infrastructure and access)
- Stage 2 – ICT Intensity (measuring the use of ICTs)
- Stage 3 – ICT Impact (measuring the results of using ICTs)

A diagram outlining the various stages of ICT evolution is shown below in Figure 8 below.

[12] Extracted from *'Measuring the Information Society 2011'* - ITU

Figure 8: Three Stages in the Evolution towards an Information Society[13]



Source: ITU

Similar to the indicators identified for the DAI and DOI indices, the IDI is divided into the following sub-indices to measure progress through each stage of evolution:

- Access Sub Index – captures ICT readiness indicators:
  - Fixed telephony
  - Mobile telephony
  - International Internet Bandwidth
  - Households with computers
  - Households with Internet

- Use Sub Index – captures ICT intensity and usage indicators:
  - Internet Users
  - Fixed (wired) Broadband
  - Mobile Broadband

- Skills Sub Index – captures ICT capability or skills indicators:
  - Adult Literacy
  - Gross Secondary Enrolment

[13] Extracted from *'Measuring the Information Society 2011'* - ITU

- Gross Tertiary Enrolment

The details of the indicators and the methodology for the calculation of the IDI are shown in Figure 9.

Figure 9: ICT Development Index – Indicators and Weightings[14]

ICT access	Ref. value	(%)
1. Fixed-telephone lines per 100 inhabitants	60	20
2. Mobile-cellular telephone subscriptions per 100 inhabitants	180	20
3. International Internet bandwidth (bit/s) per Internet user	280'377*	20
4. Percentage of households with a computer	100	20
5. Percentage of households with Internet access	100	20

40

ICT use	Ref. value	(%)
6. Percentage of individuals using the Internet	100	33
7. Fixed (wired)-broadband Internet subscriptions per 100 inhab.	60	33
8. Active mobile-broadband subscriptions per 100 inhab.	100	33

40

ICT skills	Ref. value	(%)
9. Adult literacy rate	100	33
10. Secondary gross enrolment ratio	100	33
11. Tertiary gross enrolment ratio	100	33

20

ICT Development Index

Note: * This corresponds to a log value of 5.45, which was used in the normalization step.
Source: ITU.

Source: ITU

In complying with the standards established by the ITU, the Authority has sought to adopt the IDI as the primary measure of the digital divide in Trinidad and Tobago. While the DAI and DOI tools may no longer be used by the ITU, the Authority may continue to use these measures only as a secondary tool to compare the size of the digital divide since the last survey conducted in 2007, and only as a supporting mechanism to the IDI.

[14] Extracted from *'Measuring the Information Society 2011'* - ITU

4.3.1 Trinidad and Tobago National IDI Readings

The IDI is represented on a scale from 1 to 10 which allows for the comparison of values and to benchmark progress against other countries.

According to information collected by the ITU, Trinidad and Tobago recorded IDI readings of 3.99 and 4.36 in the year 2008 and 2010 respectively. This is illustrated in the Figure 10.

Using more recent data collected from Trinidad and Tobago's national service providers and relevant international statistical bodies, the Authority has estimated an updated IDI reading of **4.91** (see Figure 11) which reflected the progress that took place within the telecommunications industry during the 2011 period. This present reading places Trinidad and Tobago within the upper second quadrant[15] of the 152 countries measured.

However with a goal of being counted amongst the countries within the 1st quadrant of the international IDI rankings, Trinidad and Tobago must improve its international standings by attaining a IDI score ranging between 6.16 and 8.40.

As a suitable average, the Authority therefore is prescribing a national IDI goal of **7.30** to be attained by **2015**.

[15] 1st quadrant represents the top 30 countries scoring the highest IDI readings
2nd quadrant represents countries placing between 31st and 60th in IDI rankings

Figure 10: IDI, 2008 and 2010

Economy	Rank 2010	IDI 2010	Rank 2008	IDI 2008
Korea (Rep.)	1	8.40	1	7.80
Sweden	2	8.23	2	7.53
Iceland	3	8.06	7	7.12
Denmark	4	7.97	3	7.46
Finland	5	7.87	12	6.92
Hong Kong, China	6	7.79	6	7.14
Luxembourg	7	7.78	4	7.34
Switzerland	8	7.67	9	7.06
Netherlands	9	7.61	5	7.30
United Kingdom	10	7.60	10	7.03
Norway	11	7.60	8	7.12
New Zealand	12	7.43	16	6.65
Japan	13	7.42	11	7.01
Australia	14	7.36	14	6.78
Germany	15	7.27	13	6.87
Austria	16	7.17	21	6.41
United States	17	7.09	17	6.55
France	18	7.09	18	6.48
Singapore	19	7.08	15	6.71
Israel	20	6.87	23	6.20
Macao, China	21	6.84	27	5.84
Belgium	22	6.83	22	6.31
Ireland	23	6.78	19	6.43
Slovenia	24	6.75	24	6.19
Spain	25	6.73	25	6.18
Canada	26	6.69	20	6.42
Portugal	27	6.64	29	5.70
Italy	28	6.57	26	6.10
Malta	29	6.43	31	5.68
Greece	30	6.28	30	5.70
Croatia	31	6.21	36	5.43
United Arab Emirates	32	6.19	32	5.63
Estonia	33	6.16	28	5.81
Hungary	34	6.04	34	5.47
Lithuania	35	6.04	35	5.44
Cyprus	36	5.98	43	5.02
Czech Republic	37	5.97	37	5.42
Poland	38	5.95	41	5.29
Slovak Republic	39	5.94	40	5.30
Latvia	40	5.90	39	5.31
Barbados	41	5.83	33	5.47
Antigua & Barbuda	42	5.63	38	5.32
Brunei Darussalam	43	5.61	44	4.97
Qatar	44	5.60	48	4.50
Bahrain	45	5.57	42	5.16
Saudi Arabia	46	5.42	55	4.13
Russia	47	5.38	49	4.42
Romania	48	5.20	46	4.67
Bulgaria	49	5.19	45	4.75
Serbia	50	5.11	47	4.51
Montenegro	51	5.03	50	4.29
Belarus	52	5.01	58	3.93
TFYR Macedonia	53	4.98	52	4.20
Uruguay	54	4.93	51	4.21
Chile	55	4.65	54	4.14
Argentina	56	4.64	53	4.16
Moldova	57	4.47	64	3.57
Malaysia	58	4.45	57	3.96
Turkey	59	4.42	60	3.81
Oman	60	4.38	68	3.45
Trinidad & Tobago	61	4.36	56	3.99
Ukraine	62	4.34	59	3.83
Bosnia and Herzegovina	63	4.31	63	3.58
Brazil	64	4.22	62	3.72

Source: ITU

Figure 11: T&T IDI Reading 2011

IDI			2011
ICT Access	Ref. Value		
Fixed Telephone lines per 100 inhabitants	60		22.20
Mobile Cellular subs per 100 inhabitants	180		137.20
International Internet Bandwidth per Internet User	280377		15089.00
Proportion of Households with a computer	100		45.10
Proportion of Households with Internet access at home	100		56.00
ICT Use			
Internet Users per 100 inhabitants	100		58.40
Fixed broadband Internet subscribers per 100 inhabitants	60		14.20
Mobile broadband subscribers per 100 inhabitants	100		0.00
ICT Skills			
Adult literacy Rate	100		99.00
Secondary gross enrolment ratio	100		90.00
Tertiary gross enrolment ratio	100		12.00
Normalised Values			
ICT Access		Weight	
Fixed Telephone lines per 100 inhabitants		0.2	0.37
Mobile Cellular subs per 100 inhabitants		0.2	0.91
International Internet Bandwidth per Internet User		0.2	0.84
Proportion of Households with a computer		0.2	0.45
Proportion of Households with Internet access at home		0.2	0.56
ICT Use		Weight	
Internet Users per 100 inhabitants		0.33	0.58
Fixed broadband Internet subs per 100 inhabitants		0.33	0.24
Mobile broadband subs per 100 inhabitants		0.33	0.00
ICT Skills		Weight	
Adult literacy Rate		0.33	0.99
Secondary gross enrolment ratio		0.33	0.90
Tertiary gross enrolment ratio		0.33	0.12
Sub-indices			
ICT Access Sub-Index		0.4	0.63
Fixed Telephone lines per 100 inhabitants			0.07
Mobile Cellular subs per 100 inhabitants			0.18
International Internet Bandwidth per Internet User			0.17
Proportion of Households with a computer			0.09
Proportion of Households with Internet access at home			0.11
ICT Use Sub-Index		0.4	0.27
Internet Users per 100 inhabitants			0.19

IDI			2011
Fixed broadband Internet subs per 100 inhabitants			0.08
Mobile broadband subs per 100 inhabitants			0.00
ICT Skills Sub-Index		0.2	0.66
Adult literacy Rate			0.33
Secondary gross enrolment ratio			0.30
Tertiary gross enrolment ratio			0.04
IDI ICT Development Index			**4.91**

4.3.2 Setting Service Level Targets

One of the major aims of the Universal Service Framework is to propose solutions that can facilitate reducing the size of the digital divide among communities in Trinidad and Tobago. Accordingly, using the results of the Digital Divide survey, the Authority is proposing to set service-level targets on a national and community basis in an attempt to achieve a national **IDI of 7.30 by 2015**.

By setting uniform service level targets throughout Trinidad and Tobago, the Authority can measure the progress of each community towards achieving its IDI goal and its contribution towards reducing the digital divide.

In deriving the service level targets, the Authority used the following criteria:

1. Comparison of the fixed, mobile and Internet penetration rates among the top 30 countries with IDI readings ranging between 6.16 and 8.40;
2. Setting uniform community service level targets which when averaged will produce an overall national IDI of 7.30.

4.3.2.1 Comparison of Service Penetration Rates among top IDI Countries

Table 4 : 2010 Service Penetration for the Top 30 IDI Ranking Countries

Country	Fixed telephone lines per 100 inhabitants	Mobile cellular telephone subscriptions per 100 inhabitants	Fixed (wired) Internet subscriptions per 100 inhabitants	Fixed (wired) broadband Internet subscriptions per 100 inhabitants
Korea (Rep. of)	59	105	34	37
Sweden	53	114	35	32
Iceland	64	109	36	35
Denmark	47	124	39	37
Finland	23	156	..	29
Hong Kong, China	62	190	44	30
Luxembourg	54	143	34	33
Netherlands	43	116	37	38
United Kingdom	54	130	31	31
Norway	35	113	33	35
New Zealand	43	115	..	25
Japan	32	95	33	27
Australia	39	101	..	23
Germany	55	127	28	32
France	56	100	..	34
United States	49	90	27	26
Singapore	39	144	25	25
Israel	44	133	..	25
Macao, China	31	206	24	24
Belgium	43	113	30	31
Ireland	46	105	25	23
Slovenia	45	105	24	24
Spain	43	112	22	23
Canada	50	71	33	30
Portugal	42	142	19	19
Italy	36	135	..	22
Malta	59	109	27	28
Greece	46	108	17	20
Switzerland	59	124	37	38
Austria	39	146	26	24

Country	Fixed telephone lines per 100 inhabitants	Mobile cellular telephone subscriptions per 100 inhabitants	Fixed (wired) Internet subscriptions per 100 inhabitants	Fixed (wired) broadband Internet subscriptions per 100 inhabitants
Trinidad and Tobago[16]	22.0	138.6	14.6	14.3
Average Measure	**46.3**	**122.7**	**30.0**	**28.7**

Source: ITU and TATT

Table 4 highlights the penetration rates for three basic telecommunications services measured within various countries when surveyed in 2010 by the last IDI study implemented by the ITU. As mentioned above, the countries chosen for this comparison included those within the 1st quadrant of the top IDI rankings.

Using the average readings for the countries identified in Table 4, the Trinidad and Tobago national average for mobile voice telephony showed an acceptable level of penetration for Universal Service when compared to the other benchmarked countries. However for both fixed telephony and Internet services, Trinidad and Tobago measured considerably lower when compared to the benchmarked average (46.3 and 28.7 respectively).

It should be noted global trends indicate that traditional fixed voice subscriptions have been declining due to the availability and adoption of alternative voice technologies by individuals. Consistent with such global trends, the Authority expects the Trinidad and Tobago fixed voice market to follow a similar fashion, thus resulting in limited future growth. As a result, the Authority is proposing a conservative fixed line community target of 25 fixed line subscribers per 100 inhabitants to be achieved by 2015.

In contrast, global trends have indicated that there are significant growth trends taking place in the Internet, and particularly the broadband market. The Authority therefore believes that Trinidad and Tobago should aim to achieve the service level targets for Internet and broadband as shown in Table 5, in order to accomplish the GoRTT plans of fulfilling its ICT objective to become a knowledge-based society.

[16] Trinidad and Tobago readings as at December 2011.

Table 5 : Community Usage Target by Service

Service	Current Readings	Minimum Community Target by 2015
Fixed line subscribers per 100 inhabitants	22	25
Fixed line subscribers per 100 households	67.1	73
Mobile subscribers per 100 inhabitants	138.6	100 (acceptable level of mobile voice penetration for Universal Service already achieved)
Broadband subscribers per 100 inhabitants	14.2	28
Broadband subscribers per 100 households	52.0	80

Statement on Community Targets for achieving Universal Service:

The Authority shall set the following minimum community service targets in an attempt to meet the 7.30 IDI objective:

Service	*Community Target*
Fixed line subscribers per 100 inhabitants	*25*
Fixed line subscribers per 100 households	*73*
Mobile subscribers per 100 inhabitants	*100*
Broadband subscribers per 100 inhabitants	*28*
Broadband subscribers per 100 households	*80*

4.4 Identifying Basic Telecommunications Services requiring Regulatory Intervention for Achieving Universal Service

In determining which basic telecommunications services would likely require regulatory intervention in order that they are available, affordable and accessible universally, the Authority took into consideration two factors:

1. Has the ability to use the service become essential for social inclusion based on Government ICT policy objectives and social, economic and technological developments? , and
2. Are normal commercial and market forces insufficient to make the service available for all to use?

The Authority considers that all of the basic telecommunications services defined at Section 2.3 above satisfy the first test. However, based on the results of the Digital Divide Survey, the Authority considers that public mobile telephony[17] services does not satisfy the second. Therefore while mobile voice remains a basic telecommunications service, the Authority, in its analysis, believes that normal commercial and market forces, as well as the ability of current technologies available, can make this service available for use by all persons of Trinidad and Tobago through 100% national coverage.

As a result, the Authority believes that mobile service providers should, at this time, be excluded from acquiring assistance from any Universal Service Funding mechanism in order to rollout and make available affordable mobile voice telephony services to the public of Trinidad and Tobago. It must be noted however, at this time the Authority does not believe the same inference can be applied to mobile data

[17] Public telephone service (commonly referred to as telephony) as defined by the Telecommunications Act: '*the commercial provision to the public of interactive voice communication in real time from and to points at which users are connected to a network such that a user can use terminal equipment to communicate with another user'.*

services in communities or to population groups that fall within the access gap, as such Funding may be possible.

Statement on Basic Telecommunications Services requiring regulatory intervention for achieving Universal Service:

The Authority shall exclude mobile voice telephony services from those basic telecommunications services requiring regulatory intervention to facilitate it being affordable and accessible universally throughout Trinidad and Tobago. As a result, the Authority is not considering the provision of assistance from any Universal Service Funding mechanism to providers of public mobile services for the provision of mobile voice telephony services. However the Authority may give consideration to possible Funding for the provision of mobile data services.

4.5 Identifying Communities that fall within the Access Gap

Tables 2 and 3 show that although there is a high penetration of mobile voice services, other services including Internet penetration, Internet usage and fixed telephony penetration are very low in Trinidad and Tobago. Based on the results of the survey, the Authority concluded that in general, inadequate infrastructure and utilization of fixed telephony and Internet services were the main reasons for communities having low digital divide indicators.

Additionally, the low readings in respect of Internet services could have also been as a result of not many persons on average owning computers to use or to subscribe to Internet services. The low Quality indicator of the DAI index might also explain the low percentage of broadband Internet subscribers in Trinidad and Tobago.

4.5.1 Current Status of Service Provision in the Underserved Areas

The Authority, in accordance with its mandate to liberalise the telecommunications market has thus far granted the following concessions:

Table 6 : Telecommunications and Broadcasting Providers

Network Category	Service Provided	Concessions Granted	Operators providing Service
International[18]	Facilities only	1	1
	Facilities and/ or Services	10	8
Domestic Fixed[19] **(Wired or Wireless)**[20]	Telephony	7	3
	Internet		7
	Subscription TV	9	9
Domestic Mobile[21]	All mobile services	2	2

The Authority has recognised that there may still exist a market gap in the provision of particular services as full competition may yet be in effect. Evidence of this is provided in Table 6 which shows, for example, even though seven (7) concessions have been granted for the provision of fixed telephony services, there are three operators currently providing the service. It is expected that, as time goes by, operators may further extend their Internet services to provide fixed telephony services if the market is viable.

Furthermore, consideration should be given to the fact that after the Digital Divide survey was completed in 2007 the country's international Internet bandwidth capacity increased due to the launch of two additional off-island fibre facilities. Consequently, competition in both the broadband Internet market and fixed telephony was realized with the

[18] An international telecommunications network is any network that enables the provision of an international telecommunications service.

[19] In total there are nine authorised fixed telecommunications networks, however some concessionaires provide triple-play options. Additionally, the Authority has not yet completed granting of concessions to ISPs who existed prior to the Act's promulgation, hence the reason for more there being more providers of Internet than concessions granted.

[20] A Domestic Fixed Telecommunications Networks can have either wired or wireless components, or a combination of both. In a fixed wired telecommunications network, there is no use of spectrum for the transmission of information to the end user. By contrast, fixed wireless telecommunications networks transmit information to end users using spectrum.

[21] A Domestic Mobile Telecommunications Network is any network in which the physical location of the end user's equipment is not limited to a stationary position at any point of time while using the network.

introduction of national broadband Internet services and fixed voice services by the major cable provider, and broadband Internet services by wireless providers. The country has therefore seen a significant increase in broadband speeds to the public as well as a reduction in broadband Internet prices since 2007.

Since the publication of the Digital Divide Survey results, the Authority has engaged in dialogue with existing concessionaires to evaluate the current status of service provision in the underserved areas. The information gathered may aid the Authority in:

1. Determining the reasons why certain communities are underserved (See Annex A), that is, below the national average results of the Digital Divide survey;
2. Identifying the underserved communities where there are already plans in place to facilitate service provision;
3. Enforcing the roll-out obligations of concessionaires where necessary; and
4. Assessing the access gap – as mentioned above, the telecommunications sector has been further liberalised since the 2007 Digital Divide Survey. Subsequently, communities that were labelled as underserved based on the 2007 survey may now have increased access to basic telecommunication services.

In addition to dialogue with concessionaires, the Authority has recognised the need to continuously assess the progress of the current market so as to identify those communities and population groups that fall within the access gap, and for which subsidies may be required. As a result, the Authority intends to conduct digital divide surveys every three (3) years and other relevant independent studies to:

1. Continuously measure the status of the underserved communities and population groups so as to develop specific Universal Service implementation plans; and
2. Gauge the effectiveness of its Universal Service plans in reducing the access gap among these communities and population groups.

The Authority recognises that circumstances may arise when communities that were previously considered underserved may become sustainable due to the availability of new technologies or to the one-off infrastructure cost which is incurred during the build out of

the project. As such, through frequent monitoring using Digital Divide or other surveys, the Authority will identify and discontinue Funding for those communities whose status has changed to one of economic sustainability.

Statement on Eligibility of Communities requiring Regulatory Intervention for achieving Universal Service:

The Authority shall only provide Funding for the provision of affordable basic telecommunications services in underserved areas where it has been proven to be economically challenging to do so. These areas shall be referred to as Universal Service Areas (USAs).The Authority shall assess the extent to which it is not economically feasible to provide basic telecommunications services in consultation with the industry before declaring those communities for which Universal Service Funding will be made available.

As mentioned earlier in the document, the Authority will be conducting another Digital Divide survey in 2012 to update its country rankings and to identify the current underserved communities in Trinidad and Tobago.

4.6 Identifying Population Groups that fall within the Access Gap

The Digital Divide Survey provided information that enabled the Authority to assess the extent to which service provision is inadequate in communities within Trinidad and Tobago. It does not provide information to assess the extent to which particular population groups have challenges in accessing basic telecommunications services.

A comprehensive Universal Service Framework should also ensure that there are subsidies or other mechanisms that make basic telecommunications services accessible by, and affordable for, particular groups of the society that may have low incomes or may be differently-abled. Some population groups that may require assistance through regulatory intervention include[22]:

[22] Adopted from "ICT Regulation Toolkit," InfoDev

- Persons who typically experience low incomes *and/or* social obstacles that prevent them from having access to telecommunications, for example, women and elderly persons;
- Unemployed persons, for whom Internet access may provide new skills, networking capabilities, or knowledge leading to employment;
- Young people, who usually have low or no income, who are often early adaptors of new technologies and can easily learn to make the most of them for the wider benefit of their families and eventually society; and
- Persons who are differently-abled (physically or otherwise).

In May 2008, the Authority hosted a public seminar in order to commemorate World Information Society Day under the theme 'Connecting the Disabled'. The majority of the participants were members of the differently-abled society of Trinidad and Tobago and as a result, the Authority received feedback on specific telecommunications issues adversely affecting them.

Some of the issues raised at the seminar were as follows:

- Affordability and availability of assistive technology devices for accessing basic telecommunications services
- Assistive technology devices for persons with cognitive and mental disabilities
- Special tariffs schemes for differently-abled persons
- Format of Braille directories electronically
- Free directory assistance for the visually-impaired
- Availability of Braille billing for the visually impaired
- Accessibility to the Internet for the hearing impaired

In consideration of the above, the Authority has been liaising with the relevant social development agencies (Ministries, Non-Governmental Organisations, etc.) to assess the

extent to which regulatory intervention is required to enable the differently-abled community and some of the population groups identified above to access basic telecommunications services.

Arising from these discussions, the Authority is proposing to put mechanisms in place to facilitate the access of affordable basic telecommunication services by members of the differently-abled community.

Statement on Eligibility of Population Groups requiring Regulatory Intervention for achieving Universal Service:

The Authority shall only provide assistance for the provision of basic telecommunications services to population groups, to whom it has been proven to be economically challenging to provide affordable basic telecommunications services. Such population groups may include:

- *Persons who typically experience low incomes and/or social obstacles that prevent them from having access to telecommunications, including women and elderly persons;*
- *Unemployed persons, for whom Internet access may provide new skills, networking capabilities, or knowledge leading to employment;*
- *Young people, who usually have low or no income, who are often early adaptors of new technologies and can easily learn to make the most of them for the wider benefit of their families and eventually society; and*
- *Persons who are differently-abled (physically or otherwise).*

The Authority shall assess the extent to which it is not economically feasible to provide basic telecommunications services to particular population groups by conducting independent studies, and by consulting with concessionaires and the relevant agencies before instituting mechanisms and providing Universal Service Funding to facilitate affordable service provision to these groups.

In deciding which (if any) population group requires regulatory intervention in order to access affordable basic telecommunications services, and the extent to which such intervention is required, the Authority shall take into consideration the following factors:

- *current penetration of the basic telecommunications service within the particular*

population group;

- *the extent to which the remedy for facilitating access to the population group requires a subsidy, and if so, the level of subsidy required; and*
- *the extent to which the subsidy required is financially sustainable.*

4.7 Objectives of the Universal Service Framework

Based on the guidelines of the GoRTT National Universal Service Policy and an analysis of the digital divide existing in Trinidad and Tobago, the Authority shall adopt the following 3-year objectives for the Universal Service Framework:

1) To achieve a national ICT Development Index of 7.30 by 2015. This objective will put Trinidad and Tobago into the high access range (1st quadrant), according to ITU standards;
2) To facilitate the provision of affordable and accessible basic telecommunications services to everyone especially population groups within the access gap and persons living in underserved areas such that 100% of the population would have access to affordable basic telecommunications services;
3) To ensure the deployment of essential ICT infrastructure in key geographic areas such that there is universal geographic coverage of basic telecommunications services throughout Trinidad and Tobago;
4) To implement a Universal Service Funding mechanism that would require that concessionaires, and other entities as may be required, to contribute a percentage of their gross annual revenues to the cost of providing basic telecommunications services (except public mobile telephony services) to communities and population groups that fall within the access gap.

5 Universal Service Funding Mechanism

5.1 Objectives of a Funding Mechanism

The Authority recognises that in choosing any Universal Service Funding Mechanism the following objectives should be met. The Universal Service Funding Mechanism should be able:

- to facilitate the achievement of the policy objectives in both the Authority's Universal Service Framework and the GoRTT's Universal Service Policy;
- to ensure that unfair financial burden is not placed on any concessionaire; and
- to promote the use of competitive market forces in Funding communities and population groups in the market gap

5.2 Examples of Funding Mechanisms

The following methods have been used by various regulators to meet their Universal Service requirements.

5.2.1 Cross Subsidies

One method used by regulators in the past is to allow service providers to Fund Universal Service through internal cross-subsidisation. This method involves the use of surplus revenues earned in profitable market segments to cover losses on non-profitable services. This mechanism is intended to subsidize unserved or high cost customers from revenues earned from other subscribers or services.

Advantages	**Disadvantages**
Assists in financing higher cost services to those who may otherwise be unable to afford it.	It may be impractical and anti-competitive since the introduction of competition in profitable markets has resulted in reduced rates and therefore insUSFficient revenues in those markets to make cross-

	subsidisation feasible.
	It can promote inefficiency and depress demand for services. For instance, if local rates are subsidized by international rates, the demand for international services may be reduced due to higher prices.

Section 24 (1) (c) of the Telecommunications Act states:

> *"…a concession for a public telecommunications network or a public telecommunications service shall require the concessionaire to adhere, where applicable, to conditions requiring the concessionaire to—*
>
> *(c) refrain from using revenues or resources, from a telecommunications network or service, to cross subsidise any other telecommunications network or service, without the prior written approval of the Authority;…."*

The Authority does not propose to encourage the use of internal cross subsidisation as a means of Funding Universal Service at this time.

5.2.2 Access Deficit Charges (ADCs)

This scheme has been used in some countries to compensate operators who bear the obligation to provide access services to certain customers at a price below cost. These operators raise the Funds to finance the access deficit by imposing a charge on other operators who require access to the access network. They are generally charged similar to interconnection charges i.e. on a per minute basis or on a per trunk basis, or even as a levy on the operator's revenue.

Advantages[23]	Disadvantages
Maintains loss-making basic telecommunications services at a low cost to customers while wholesale services are priced above cost to finance these basic services.	This system gave few incentives to the operator to allocate costs accurately and to price services efficiently.
	Price averaging increases the difficulties associated with distinguishing the costs of intermediate and final services. This in turn complicates the task of setting interconnection fees and distributing the costs of Universal Service provision fairly.

While the issue of access deficit is being considered outside of this Universal Service Framework, the Authority does not propose to use ADCs as a means of Funding Universal Service in Trinidad and Tobago.

5.2.3 Universal Service Funds

Universal Service Funds (USFs) are special Funds created to subsidise the delivery of telecommunication services for communities and population groups that fall within the access gap. Universal Service Funds collect revenues from a variety of sources including government and telecommunications service operators. The amounts contributed are determined in a transparent manner and are used to finance specific and targeted high cost areas and/or low income subscribers. It must be noted though that no USF should be used to support investments that would otherwise be made by private operators on a purely commercial basis (market gap), nor should these Funds give a competitive advantage or disadvantage to any service provider.

[23] From "Chapter 31 Future Directions in Telecom Regulation: The Case of the United Kingdom, " by Richard Collins and Cristina Murroni

Advantages	Disadvantages
Most transparent, effective and efficient means of providing targeted subsidies to expand or support the provision of service where it is uneconomically feasible to do so.	There may be some administrative complexity and transaction expenses in establishing the Fund. Additionally, there may also be some potential for bad governance.
Works best in expansion of service to uneconomically feasible areas if combined with competitive bids from existing operators	Difficult to forecast costs and revenues associated with the Universal Service projects.

The Act also contains the following provisions in respect of Funding for Universal Service:

- Section 28 (4) " *The Authority may, with the approval of the Minister, require that closed user group services, private telecommunications services and value added services as well as the users of such services and all telecommunications services generally, contribute to the Funding of Universal Service."*
- Section 53 (1) (d) *"The Funds of the Authority shall consist of sums collected in respect of Universal Service obligations."*
- Section 53 (3) *"Funds arising in respect of paragraph (1) (d) shall only be applied to facilitate the provision of Universal Service in accordance with the provisions of section 28."*
- Section 53(6) *"The Authority shall keep and maintain a separate account opened with the approval of the Minister of Finance for the purpose of depositing Funds collected in respect of the Funding of the services referred to in section 28 and such Funds shall not be used for any other purpose.*

In addition Section A15 (b) of the service providers' concessions states:

> *"A concessionaire shall where the concessionaire is authorised to operate public domestic mobile, public domestic fixed, and/ or public international telecommunications networks, and/or provide public domestic fixed, public domestic mobile, public international telecommunications, and/or broadcasting services, remit such amount no greater than three per cent (3%) of gross annual revenues from such networks and services as may be specified by the Authority regarding Universal Service, into an account or Fund to be specified by the Authority for the development of a Universal Service and access programme."*

Guided by the requirements of the Act and the Concession agreement, the Authority considers the establishment of a Universal Service Fund as the most appropriate mechanism for Funding Universal Service in Trinidad and Tobago.

Policy Statement on Funding Universal Service:

The Authority shall establish and implement a Universal Service Fund to subsidise the provision of basic telecommunications services (except public mobile telephony services) to communities and population groups where it has been determined that the provision of those services is not economically feasible.

6 Establishment of Universal Service Fund

The following are the main principles that the Authority shall adopt in the establishment and implementation of a Universal Service Fund (USF) in Trinidad and Tobago:

- That the USF be administered by the Authority and be separately identified under the Authority's operating budget;
- That the Authority establishes a Committee to recommend the most effective use of the USF;
- That the USF budget be made public and be subject to independent audit in accordance with Section 57 (2) of the Telecommunications Act;
- That the Authority establishes specific criteria, consistent with Section 4.4 and 4.5 of this framework, for:
  - (i) identifying communities and population groups that would be eligible for USF Funding; and
  - (ii) the selection of service providers to be eligible to access the USF in order to provide services.
- That the administration cost of operating the USF be determined annually and paid from the USF, subject to audit and review in accordance with Section 57 (2) of the Telecommunications Act.

6.1 Administration and Structure of the Fund

6.1.1 Administration of the Fund

Selecting the agency to be responsible for administration and management of any USF is a significant decision. However any agency chosen for this task should respect the following criteria:

- Fund must be administered by an independent body;
- The body should be responsible for collecting contributions and overseeing the transfer of amounts due and disbursements to Universal Service Providers[24].

Table 7 provides examples of agencies required to administer Universal Service Funds around the world.

Table 7: Examples of Fund Administrations

Country	**Fund Administrator**
Argentina	Administered by a council made up of 10 people selected by various levels of government, operators and consumers
Brazil	Anatel - regulatory agency
Chile	Subtel – regulatory agency
Colombia	Ministry of Communications
Dominican Republic	Indotel - regulatory agency
Ecuador	CONATEL - regulatory agency
Guatemala	Ministry of Communications
India	Department of Telecommunications
Jamaica	The Universal Fund Company
Malaysia	Malaysian Communications and Multimedia Commission (CMC) – regulatory agency

[24] SADC Toolkit on Universal Access Funding

Country	Fund Administrator
Mauritius	Information and Communication Technology Authority – regulatory agency
Pakistan	The Universal Service Fund Company Limited
Peru	OSIPTEL – regulatory agency
South Africa	Universal Service and Access Agency of South Africa
Venezuela	A Board consisting of the head of the telecom regulator, representatives from three ministries and a representative from the contributing operators

Based on the information presented in Table 7, it must be noted that the majority of countries have allocated the responsibility of administering and managing the USF to the regulatory agency. Reasons for this include:

1) The regulator has a degree of independence from government and the industry; and
2) The regulator has technical and regulatory expertise[25]

It is considered best practice that the regulator be responsible for providing the secretarial expertise and day-to-day support, under the guidance of a decision-making committee and/or advisory Board. This Committee or Board should provide high-level decisions on the projects to be undertaken, approve Fund disbursements, monitor for the proper execution of Universal Service projects, and maintain the financial integrity of the USF.

Additionally, Section 28 (3) of the Act states:

> *"In accordance with the policy established by the Minister, the Authority shall periodically determine the manner in which a public telecommunications service or value added service shall be provided and funded in order to meet the requirements of Universal Service for that service, including the obligations, if any, of the providers and users of the service."*

[25] Referred from "ICT regulation Toolkit," by InfoDev, 2009

Therefore it is clear that the Act mandates the Authority to be responsible for the management and administration of the USF.

Policy Statement on USF Management and Administration:
In accordance with Section 28 (3) of the Telecommunications Act, the Authority will be responsible for the management and administration of the USF.

6.1.2 Review of Universal Service Fund Activities

The Authority considers that in order for there to be confidence by concessionaires and key stakeholders in the administration of the USF, the process for the periodic review of USF activities must be a transparent one. In order to facilitate this, the Authority shall publish a biennial Universal Service Implementation Report and an annual Universal Service Fund Accounting Report.

The Universal Service Implementation Report shall be published by June of the Authority's financial year biennially and contain information on:

- the description and details of a two (2) year implementation plan of Universal Service projects to be undertaken and the proposed budget for these initiatives;
- A report on the progress of Universal Service projects currently being funded by the USF; and
- Any revisions of the USF objectives that may be necessary for the period following the current financial year.

The Fund Accounting report should be published annually three (3) months after the end of the Authority's financial year and should contain:

- A report on the collection and disbursement of funds from the USF for the financial year just ended;

The accounts published in the Fund Accounting Report will be audited by the Auditor General of Trinidad and Tobago pursuant to section 57 of the Act.

6.2 Contributing to the Fund

6.2.1 Who should contribute to the Fund?

Section 24 (1) (g) of the Telecommunications Act states that:

> *"A concession for a public telecommunications network or a public telecommunications service shall require the concessionaire to adhere, where applicable, to conditions requiring the concessionaire to provide and contribute to Universal Service in accordance with section 28."*

In addition, Section 28 (4) of the Act further states that:

> *"The Authority may, with the approval of the Minister, require that closed user group services, private telecommunications services and value added services as well as the users of such services and all telecommunications services generally, contribute to the funding of Universal Service."*

Therefore in accordance with the above sections of the Act, all concessionaires operating a public telecommunications network or providing a public telecommunications service are required to contribute to the Universal Service Fund. The Authority also proposes to seek the approval of the Minister to require all providers of closed user group and private telecommunications services to contribute to the USF.

Furthermore, in accordance with section 53 (4) of the Telecommunications Act which states:

"A percentage of the funds collected in respect of concessions and licences may be transferred to the account opened in accordance with subsection (6), at the discretion of the Authority"

The Authority may allocate a percentage of the funds collected in respect of concessions and licences fees from service providers towards the Universal Service Fund.

Statement on USF Contributors:

All concessionaires operating a public telecommunications network or providing a public telecommunications service are required to contribute to the USF in a manner to be prescribed by the Authority. The Authority shall seek the approval of the Minister at this time to require all providers of closed-user group and private telecommunications services to contribute to the USF. The Authority also shall monitor the extent to which other groups identified in Section 28(4) of the Act should be required to contribute to the USF in the future and to seek the approval of the Minister accordingly. It must be noted that any contributions towards the USF required by service providers, cannot be passed on/imposed on customers unless authorised by the Authority.

The Authority may allocate a percentage of the funds collected from concession and licences fees, after all the Authority's expenses have been covered, towards the Universal Service Fund.

6.3 Accounting and Budgeting Separation for the Fund

Section 53 (6) of the Telecommunications Act states:

'The Authority shall keep and maintain a separate account opened with the approval of the Minister of Finance for the purpose of depositing funds

collected in respect of the funding of the services referred to in section 28 and such funds shall not be used for any other purpose.'

Consistent with the above, the Authority has established a stand-alone account for the USF. The budget for the USF will also be shown separately within the Authority's annual budget[26] in order to ensure transparency and proper recording of the collection and disbursement of Universal Service Funds.

Accounting procedures, established in accordance with the Authority's Financial Rules and the Telecommunications Act, shall be followed for collecting, tabulating and distributing monies from the USF.

6.3.1 Contributions

The following general guidelines shall be established for collecting USF contributions:

1. Service providers should submit their audited financial statements to the Authority within six (6) months after the end of their financial year;
2. Within twenty-eight (28) days of receiving the audited financial statements, the Authority should then issue invoices to all relevant service providers outlining the amount of contribution to be paid to the USF;
3. On submission of the invoices, service providers should be required to make the necessary payment within twenty-eight (28) days.

6.3.2 Fund Accounts and Budgets

Access to the bank accounts of the USF shall be limited as per the Authority's financial rules, and the total USF amounts shall be divided into three primary budget categories, which can be accomplished through accounting allocations. The three primary budget categories are[27]:

[26] The Authority's annual budget is published in the GoRTT Draft Estimates of Expenditure
[27] From "Trends in Telecommunications Reform 2003," by International Telecommunications Union

(i) Project Fund – the bulk of the Fund, to be allocated to Universal Service initiatives in accordance with the Fund's mandate and criteria;

(ii) Administration Budget – Funds required to cover the cost of USF administration and which should be no greater than 15% of the total Fund budget in any given year;

(iii) Reserve Fund – a contingency Fund that may be required to cover cost over-runs and unanticipated needs and which should be no greater than 10% of the total Fund budget. This may also include a special projects allocation, where the Authority considers it appropriate.

6.3.3 Individual Project Budgets

The Authority considers that service providers should be required to maintain separate records and accounts in relation to Universal Service initiatives for which they are responsible that is financed by the USF. The Authority considers that such accounts must be submitted annually to the Universal Service Committee one (1) month after the end of the Authority's financial year. Such records and accounts shall contain the following, at a minimum:

- Project budget estimates
- Detailed expenditure records
- Revenue earned from the project
- Forecasts of future needs and anticipated resources

In addition to the above, these records and accounts should be audited and submitted six months after the end of the service provider's financial year in order to be reconciled with the previously submitted statements.

7 Governance Framework for the Implementation of Universal Service Projects

This section of the document presents the Governance Framework for the decision-making process for the selection and implementation of Universal Service projects, and for the operations of the Universal Service Fund. In particular, this section focuses on the selection process of choosing initiatives as Universal Service projects and the standards and procedures to be implemented for proper management and provision of such.

7.1 Act Requirements for the Implementation of Universal Service Projects

As governed by the Telecommunications Act, the Authority is seeking to implement Universal Service projects which are to be financed through the Universal Service Fund. The following sections highlight the areas of the Act to fulfil such requirements:

Section 28 (1*) "In accordance with the policy established by the Minister, the Authority shall determine the public telecommunications services in respect of which the requirement of Universal Service shall apply."*

Section 28 (5) *"The Authority shall forward its recommendations to the Minister pursuant to this section and the Minister shall indicate his approval, modification or disapproval of the recommendation within sixty days of receipt of the Authority's recommendation."*

Section 28 (8) *"The obligations to provide and contribute to the funding of the services referred to in subsection (1) shall be applied on a non-discriminatory basis as between all similarly situated telecommunications service providers and users."*

Section 53 (3) *"Funds arising in respect of paragraph (1) (d) shall only be applied to facilitate the provision of Universal Service in accordance with the provisions of section 28."*

7.2 Objectives of the Universal Service Projects

As described within this framework, the Universal Service Fund will consist of contributions made by service providers through the 'mandatory Universal Service paying obligations'. In addition to this, a percentage of excess funds collected from the Authority's Operating Budget may be allocated towards the Universal Service Fund. Monies of the USF will be used for the implementation of the Universal Service projects. These projects will focus on:

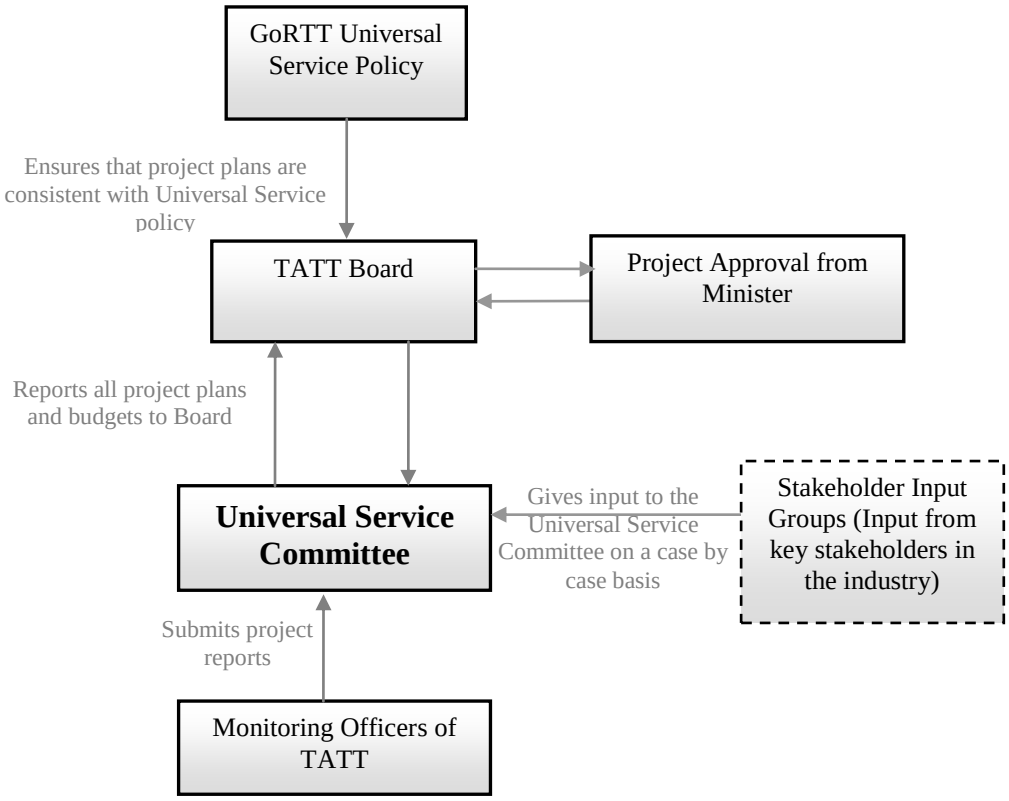
a) Ensuring that underserved communities in Trinidad and Tobago, as identified by the conducting of Digital Divide surveys and other research methodologies, are facilitated by having access to the basic telecommunications services listed in section 2 of the Universal Service Framework.
b) Ensuring that underserved population groups are facilitated by having access to affordable basic telecommunications services.

7.3 Universal Service Project Management Structure and Administration

The establishment of a management structure to ensure that there is governance in the decision-making process and the process by which projects implemented is necessary for its successful operations.

The Authority is prescribing to use the organisational structure prescribed in Figure 12 to manage and administer the decision-making process:

Figure 12: Structure for the Administration of the Universal Service Projects



The above diagram depicts the reporting relationships among participants in the selection and implementation process for the Universal Service projects.

At the start of the decision-making process, the Universal Service Committee will receive inputs from the stakeholder input group, in addition to considering the projects devised from research conducted into bridging the digital divide. After evaluation and deliberation of all the proposed Universal Service initiatives received, the Universal Service Committee will submit its recommended Universal Service projects to the Authority's Board for approval.

Upon receipt, the Board will review and submit its recommendations of the Universal Service projects to the Minister for approval in accordance with Section 28 (5) of the Act. On approval by the Minister, authorisation will then be given by the Board to the Universal Service Committee for the implementation of the selected Universal Service projects. Throughout project implementation, the monitoring officers must provide reporting/feedback on the status of the projects to the Universal Service Committee.

7.4 Operations of Project Administration

7.4.1 Role of the Minister

According to Section 28(5) of the Telecommunications Act:

"The Authority shall forward its recommendations to the Minister pursuant to this section and the Minister shall indicate his approval, modification or disapproval of the recommendation within sixty days of receipt of the Authority's recommendation."

This section gives the **Minister** responsible for Telecommunications the authority to give final approval to the Universal Service projects recommended by the Board. The Minister is required to ensure that the Universal Service initiatives suggested by the Board are consistent with the Universal Service Policy and the government's overall National Policy for the development of Trinidad and Tobago.

7.4.2 Role of the Board

According to Sections 28 and 53 of the Telecommunications Act, the Authority shall determine the Universal Service initiatives to be implemented. As a result, the **Board** is a significant party in the decision-making process and shall comprise appointed members serving the Authority. They will have oversight over the USF operations and the projects to be implemented.

The Board will be responsible for:

a) setting the overall policy for the administration of all the Universal Service projects and the Funds collected and distributed from the USF;
b) approving annual plans and budgets for the implementation of Universal Service projects and making any suggestions to the Universal Service Committee regarding projects and USF matters;
c) approving project and Fund annual reports and audits; and
d) seeking authorization from the Minister responsible for Telecommunications and other relevant government bodies to ensure Universal Service projects are in line with national government policies.

7.4.3 Role of the Universal Service Committee

The **Universal Service Committee** shall be responsible for the selection and implementation of the Universal Service projects authorised by the Board as well as responsible for the management and administration of the USF. It should comprise the Chief Executive Officer and divisional members of the departments of the Authority which should include at minimum persons with experience and qualifications in the areas of law, accounting, economics and engineering. The Authority is proposing that the Universal Service Committee have responsibility for:

a) identifying the underserved communities and population groups in Trinidad and Tobago in need of access to affordable basic telecommunications services;

b) organising and coordinating stakeholder input group meetings to provide ideas and feedback when there is deliberation on Universal Service projects to be implemented;
c) providing cost estimates for the proposed Universal Service projects;
d) providing recommendations to the Board with respect to the selection of Universal Service projects and the priority to be given to Universal Service initiatives to be undertaken annually;
e) seeking approval from the Board for the implementation of USF projects;
f) developing objectives, budgets and operational plans for the management of the USF;
g) ensuring the authorisation process for the award of concessions/ and or Universal Service obligation contracts to service providers;
h) ensuring the Fund remains financially sound such that monies are available for the implementation of projects;
i) collecting the contributions from telecommunications providers in accordance with the percentages stated in the Universal Service Regulations;
j) reviewing the adequacy of Fund contributions received every three (3) years and submitting any recommended changes, if any, to the Board for approval;
k) recommending the amounts that should be disbursed from the Fund within a timely manner and to whom the Funds should be disbursed in accordance with the Authority's tendering rules and the Universal Service contracts signed with the service providers;
l) ensuring that financial accounts, reports and records are prepared and published;
m) managing the competitive tendering process for the allocation of projects; and
n) monitoring and overseeing the implementation of all Universal Service projects to ensure that all obligations are fulfilled within the required timeframes.

The Authority shall set up ***Stakeholder Input Groups*** from time to time to seek advice from stakeholders in the industry when the need arises. The Stakeholder Input groups may comprise stakeholders relevant to the Universal Service projects under consideration by the Universal Service Committee. Such stakeholders may include representatives from

various service providers, community and social development, residents of underserved communities, representatives of the relevant Non-governmental agencies, representatives of population groups that fall within the access gap (e.g. differently-abled persons), or any other group determined by the Universal Service Committee to have a key interest.
It must be noted that members of the Stakeholder Input Group will be selected based on the nature of the proposed projects under consideration at that point in time.

The ***Monitoring Officers*** shall be employees of the Authority identified by the Universal Service Committee. The Monitoring Officers shall have responsibility for:

a) monitoring Universal Service projects being implemented by the service providers on an on-going basis to ensure compliance with contracts awarded by the Authority; and
b) preparing reports on the progress and the status of Universal Service projects to the Universal Service Committee; and
c) advising on any proposed changes to the costs, deliverables or to the output of the Universal Service projects under implementation;
d) identifying Universal Service projects that have become sustainable and no longer require financing from the USF; and
e) measuring the uptake of basic telecommunications services in areas when Universal Service projects are rolled out.

Statement on Universal Service Project Administration:

The selection and implementation of the Universal Service projects will be administered by the Universal Service Committee. The Minister responsible for Telecommunications will be required to provide approval for projects before implementation.

7.5 Operating Principles for Determining the Universal Service Projects

A key determinant of the success of any Universal Service project will depend on the creation of sound decision-making principles. All stakeholders involved, inclusive of contributors and beneficiaries of the USF, must perceive the process for the award of projects as being fair and transparent. Therefore the principles that would be upheld by the Authority during the process for choosing and implementing Universal Service projects include:

7.5.1 Accountability

Important drivers associated with determining and funding projects are proper financial management and accountability to all stakeholders involved. As a result, provisions must be put in place to uphold the financial integrity of the USF. Such provisions include:

7.5.1.1 Separate Universal Service Account

Section 53 (6) of the Telecommunications Act states:

'The Authority shall keep and maintain a separate account opened with the approval of the Minister of Finance for the purpose of depositing funds collected in respect of the funding of the services referred to in section 28 and such funds shall not be used for any other purpose.'

Consistent with the above, the Authority has established a stand-alone account for the USF where monies are designated for the purpose of promoting Universal Service. The budget for the USF will also be shown separately within the Authority's annual budget[28] in order to ensure transparency and proper recording of the collection and disbursement of Universal Service Funds.

For the operations of the USF, accounting procedures established in accordance with the Authority's Financial Rules and the Telecommunications Act, shall be followed for collecting, tabulating and distributing monies.

[28] The Authority's annual budget is published in the GoRTT Draft Estimates of Expenditure

7.5.1.2 Establishment of Process for Selection of Projects

There should be guidelines in place to govern the operations of the fund and the decision-making process of the Universal Service Committee who will be responsible for the selection of Universal Service projects and the collection and distribution of monies from the USF to Fund these projects. Such guidelines as listed in Section 7.4, will promote accountability and transparency as stakeholders will be aware of the process followed for the determination of the projects and for the operations of the USF.

7.5.1.3 Public Reports

The Authority considers that in order for there to be confidence by concessionaires and key stakeholders in the determination of Universal Service projects, the process for the periodic review of the projects selected by the Committee and the allocation of Universal Service Funds must be a transparent one. In order to facilitate this, the Authority shall publish a biennial Universal Service Implementation Report and an annual Universal Service Fund Accounting Report.

As referred to in Section 6.1.3, the Universal Service Implementation Report shall be published biennially in June and shall contain information on:

- the description and details of a two (2) year implementation plan of Universal Service projects to be undertaken and the proposed budget for these initiatives;
- A report on the progress of Universal Service projects currently being funded by the USF; and
- Any revisions of the USF objectives that may be necessary for the period following the current financial year.

Also previously mentioned, a Fund Accounting report should be published annually three (3) months after the end of the Authority's financial year and shall contain information on the collection and disbursement of Funds from the USF.

7.5.1.4 Independent Auditing

The accounts published in the Fund Accounting Report are public accounts and will be audited by the Auditor General of Trinidad and Tobago pursuant to section 57 (2) of the Act, which states:

"On completion of an audit of the Authority, the Auditor General or an auditor authorised by him to undertake the audit, as the case may be, shall immediately draw to the attention of the Minister and the Board any irregularity disclosed by the audit which in the opinion of the Auditor General or the auditor is of sufficient importance to justify so doing."

7.5.2 Impartiality and Transparency

Another significant characteristic of the selection and implementation of projects is that of transparency and impartiality among service providers and other stakeholders in the industry. In particular, the integrity of the project decision-making process should not be compromised by the impression of favouritism or bias being displayed towards any one operator or stakeholder in the industry. Impartiality and transparency however can be supported through the establishment of proper operating processes and procedures. Therefore, in accordance with Section 28 of the Telecommunications Act, the Board will forward recommendations on the Universal Service projects to be undertaken to the Minister responsible for Telecommunications for approval.

While the Universal Service Committee will be responsible for the management and project implementation of the Universal Service initiatives, the Board will provide oversight and generally an advisory and monitoring role.

7.5.3 Efficiency

Another key operating principle in the selection and implementation of Universal Service projects is that of efficiency. The Universal Service Committee must ensure that monies in the USF are efficiently used for the implementation of Universal Service initiatives to reduce the digital divide. Efficiency may be promoted through:

- The establishment and monitoring of targets for the implementation of the Universal Service projects; and
- Allocation of the required human resources to carry out the tasks required by the Universal Service Committee and other members of the decision-making and implementation process is important so as to not cause any unjust delays in the carrying out of projects.

7.6 Selection of Universal Service Projects

7.6.1 Submission of Universal Service Projects

At the beginning of each operating period the Universal Service Committee shall initiate the process of identifying projects to be considered for funding. This process will include:

- Consideration of GoRTT's national and medium term development policy and plans;
- solicitation of proposals from telecommunications service providers;
- solicitation of proposals from relevant Ministries and other stakeholder groups;
- identification of projects through conducting digital divide surveys and other data gathering exercises.

This process does not preclude the Universal Service Committee from identifying and soliciting projects at any other time during the operating period. However any implementation of identified projects must be approved by the Board and ultimately the Minister responsible for Telecommunications.

The process of soliciting project proposals from telecommunications service providers and other interested parties may include the following:

a) public meetings and consultations;
b) face to face meetings with specific stakeholder groups;
c) online advertisement/solicitation through the Authority's website;

d) public announcements/advertisements on the newspapers or the broadcasting media for the invitation of proposed projects; or
e) any other information-gathering exercises to inform the identification of projects.

7.7 Project Appraisal and Selection

The Universal Service Committee shall review the project proposals and shall make recommendations to the Board of the Authority for approval and to be financed by the USF according to the procedures established.
The Universal Service Committee should not comprise any individuals involved in the Universal Service projects who may have foreseeable economic interests in the outcome of a decision to be taken on any fund-related matter.

7.7.1 Complete Assessment of Projects

The Universal Service Committee shall conduct complete assessments for all project proposals submitted for consideration within the given operating period. On completion of the assessments, selected project proposals will be used to determine which projects will be recommended to the Board for funding from the USF.
In conducting these project assessments, the Universal Service Committee may rely upon input and assistance from technical and other staff from the Authority, and any other external sources that can assist in the decision-making process. The Universal Service Committee may also conduct any necessary public inquiries to obtain further information about the scope, nature, benefits and costs of any proposed project, in particular through requests for information or public consultations with relevant stakeholders.
In assessing the proposed projects, the Universal Service Committee should consider the following criteria in its evaluations:

a) Policy Priorities – Determines whether the objectives of the project are in keeping with the objectives and priorities of national policy.
b) Technical Feasibility and Requirements - Evaluate and identify the technical and all other essential components of the project to define the potential scope of work that would be required for a telecommunications service provider to implement the project as defined. While various technologies may be proposed by different providers, a baseline set of assumptions as to the basic approaches likely to be used should be determined, to serve as a basis for assessing the economic and financial structure of the project.
c) Financial Analysis - Estimate the initial capital investment and other, start-up expenditures necessary to launch the project. Provide a breakdown of these costs in as much detail as possible. Estimate annual recurring expenses for operations, maintenance, and support needed to maintain the ongoing delivery of the services over a 5 year period. Prepare estimated forecasts of the annual service revenues that will be generated by the project, and will offset some of its costs. Forecasts should attempt to take into account expected revenue growth for a period of at least 5 years.
d) Economic and Social Cost-Benefit Analysis - Prepare an assessment of the economic and social benefits to the communities or population group, and to the country as a whole, that would be likely to result from implementing the proposed project.
e) Risk Analysis - Identify the most likely threats to the project and analyze the impact of such scenarios on the project.

7.7.2 Final Project Selection

Based on the results of the above project assessment, the Universal Service Committee shall prepare recommendations to the Board as to the priority projects to be financed during the operating period. The recommendations shall be subject to the constraint that the total cost of the combined recommended projects shall not exceed the available USF Project Budget amount for the relevant time period.

The final set of project proposals and recommendations will be presented to the Board for review and consideration in the selection of projects to be financed under the current Operating Plan.

The projects approved by the Board shall then be submitted to the Minister responsible for Telecommunications for approval. The Universal Service Committee shall publicly announce the projects approved.

8 Universal Service Obligations

Section 18 (1) (c) of the Telecommunications Act reads:

> *'Subject to the provisions of this Act, the Authority may exercise such functions and powers as are imposed on it by this Act and in particular determine Universal Service obligations throughout Trinidad and Tobago, pursuant to Section 28, and ensure that such obligations are realised.'*

Section 28 (3) continues:

'In accordance with the policy established by the Minister, the Authority shall periodically determine the manner in which a public telecommunications services or value added services shall be provided and funded in order to meet the requirements of Universal Service for that service, including the obligations, if any, of the providers and users of the service'

Additionally, A15 b. of the concession awarded to all concessionaires states:

> *'…where the concessionaire is authorised to operate public domestic mobile, public domestic fixed, and/ or public international telecommunications networks, and/or provide public domestic fixed, public domestic mobile, public international telecommunications, and/or broadcasting services, remit such amount no greater than three per cent (3%) of gross annual revenues from such networks and services as may be specified by the Authority regarding Universal Service, into an account or fund to be specified by the Authority for the development of a Universal Service and access programme.'*

This section highlights a few approaches the Authority is considering for implementation to facilitate the provision of basic telecommunications services to all persons in Trinidad and Tobago.

The Authority shall use:

- Mandatory Universal Service Obligations – these are obligations to be imposed on all relevant concessionaires through the Authority's Universal Service Regulations.
- Contractual Universal Service Obligations – these are projects to be implemented by concessionaires selected through the reverse auction process.

The Authority recognises that some concessionaires may be responsible for implementing Universal Service obligations ('playing' aspect), in addition to the general requirement for all concessionaires to contribute to the Universal Service Fund ('paying' aspect). However those concessionaires who may be responsible for implementing certain obligations may be reimbursed from the Fund as determined by the Authority.

The following sub-sections describe the approach proposed by the Authority to be taken in respect of imposing Universal Service obligations that it considers would be fair and non-discriminatory for all.

8.1 Mandatory 'Paying' Universal Service Obligations

The following table gives an example of 'paying' Universal Service obligations imposed by regulators in other jurisdictions:

Table 8: Examples of USF Contributions

Country	**Amount Contributed by Service Providers to USF**
Argentina	1% of all operators' gross revenues – Argentine operators can contribute either by paying 1% of revenues to the Fund or by proving that they are installing service in under-served areas.
Brazil	1% of service providers' gross operational revenues earned from the provision of telecom services
Chile	Government's Budget
Colombia	5% of national and long distance operators' revenues plus

Country	Amount Contributed by Service Providers to USF
	Funds from license fees
Dominican Republic	2% levy on users' telephone and cable TV bills
Ecuador	1% operator levy on fixed line operators
Guatemala	Transfers from government and 70% of the amount collected through spectrum auctions until 2003
India	5% of all operators' revenues
Jamaica	-US$0.03 per minute on all incoming international calls terminating on the fixed wired network -US$0.02 per minute on all incoming international calls terminating on the mobile network
Malaysia	Fixed and mobile network operators contribute 6% of their weighted revenue from designated services to the Fund (approximately 2% of total revenue)
Pakistan	1.5% levy on the revenues of all operators
Peru	1% of all telecom and CATV operators' gross revenues
South Africa	0.2% of all operators' revenues
Venezuela	1% levy on all operators' revenues

Source: *From "Universal Access & Service Fund Update 2007," ,by Intelecon, December 2007, -* ***http://www.inteleconresearch.com/pages/reports.html***

To determine the paying obligations that would be the least burdensome, the Authority conducted a reasonableness test taking into consideration the above benchmarks and the current fee expenses of the service providers. Given the level of concession and licence fees charged by the Authority and the ability of the Authority to allocate a percentage of its income to Universal Service (Section 53 (3) of the Act), the Authority shall impose Universal Service obligations of a contribution to the USF that is:

- 0.5% of gross revenues[29] arising from telecommunications services[30] and/or network facilities from domestic concessionaires
- 1% of gross revenues arising from telecommunications services and/or network facilities of international concessionaires
- 2% of gross revenues arising from telecommunications services[31] and/or network facilities of all providers of closed user group and private telecommunications services (when directed by the Authority subject to the approval of the Minister).

This approach allows a fixed percentage of contributions to be collected from service providers which grants a level of certainty with respect to the amount of contributions they are required to pay for the year. The Authority considers that the monies collected will be used towards the cost of funding Universal Service initiatives identified by the Universal Service Committee in the biennial Implementation Report.

It must be noted that predictability, timing and frequency of funding is necessary to allow proper planning and constancy for the projects to be implemented.

***Statement on Contributions to the USF as the 'Paying' Aspect of Universal Service Obligations**:*

The Authority shall impose Universal Service obligations of a contribution to the USF that is:

- *0.5% of gross revenues arising from telecommunications services[30] and/or network facilities from domestic concessionaires*
- *1% of gross revenues arising from telecommunications services and/or network facilities of international concessionaires*
- *2% of gross revenues arising from telecommunications services[31] and/or*

[29] Gross revenues refer to total revenues earned by the concessionaire
[30] Telecommunications services include the provision of both wholesale and retail services authorised by the Authority
[31] Telecommunications services include closer user group and private telecom services as defined by the Act

network facilities of all providers of closed user group and private telecommunications services (when directed by the Authority subject to the approval of the Minister)

All concessionaires will be required to pay into the USF according to the guidelines above. However concessionaires who are authorised to implement Universal Service 'playing' obligations may be allowed to claim a reimbursement from the Fund.

8.1.1 Provision for Deficits and Surpluses within the USF

The fixed percentage approach described in 8.1. has been adopted for the following reasons:

- To give service providers the opportunity to budget for their contributions towards the USF;
- To allow the Authority to estimate the amounts of available Funds so as to plan for Universal Service initiatives to be implemented for the period

If a circumstance arises where there is a deficit or shortfall of funds in the USF to implement the planned Universal Service obligations, the Authority shall reschedule the projects to be carried out for the period. These adjustments will be reflected in the Universal Service Implementation Report.

In cases where contributions to the USF exceed the approved expenditure for the given period, including on-going commitments, the Authority shall roll-over the surplus amounts collected to the next year. The Authority may also consider the expansion of the budget for the next year's Universal Service projects to be implemented. Similarly, such adjustments will be reflected in the Universal Service Implementation Report.

Furthermore, where there is a reasonable surplus in the Fund, the Authority may consider the granting of payment holidays or other types of incentives programmes.

In addition to the above, the Authority may review the level of contributions to the USF every three (3) years, in order to ensure that adequate funding will be available for Universal Service projects.

Statement on Deficits and Surpluses within the USF:

In instances where there is a deficit in the fund, the Authority shall reschedule the projects to be implemented for a given period. Alternatively, where there are surpluses in the fund, the Authority shall roll-over the surplus amounts collected to the next year or to consider the expansion of the budget for the next year's Universal Service projects to be implemented.

The above adjustments will be reflected in the Universal Service Implementation Report.

In instances where there are reasonable surpluses in the USF, the Authority may consider the granting of payment holidays or other types of incentives programmes to the service providers.

T*he Authority may review the level of contributions to the USF every three (3) years.*

8.1.2 Implementation of the Universal Service Fund

The Authority shall begin issuing invoices to concessionaires for their contributions in accordance with the Universal Service Regulations, once it has been laid in Parliament and published.

Even though Universal Service contributions have not yet been collected from concessionaires, the Authority has been allocating a percentage of revenues collected from concession and licence fees every year towards the account established for the purpose of Universal Service in accordance with Section 53 of the Act. The existing monies in this account may be used by the Authority to fund the implementation of Universal Service obligations that may be necessary prior to the collection of contributions from concessionaires.

8.2 Mandatory 'Playing' Universal Service Obligations

All concessionaires offering public telecommunications services shall have the obligation of providing the following:

- Access to Emergency Services
- Directory Assistance Services
- Free Itemised billing upon request
- Assistive Technologies for the differently-abled
- Assistive Services for the differently-abled
- Special packages for low income subscribers

It must be noted some of these obligations, to the extent that they are considered consumer rights[32], may not be eligible for Universal Service funding.

8.2.1 SERVICE DEVELOPMENT OBLIGATIONS

Access to Emergency services

Emergency services form an integral part of Universal Service provision. All telephone services whether fixed line, fixed wireless, mobile or payphone should have the capability of providing a connection to emergency services for access to any individual free of charge. These include the police (999), fire (990), ambulance (811) and other government emergency numbers. As a result the Authority will require all concessionaires to meet this obligation of providing emergency services to the public, including persons who are differently-abled, without access to subsidies from the USF.

Statement on Emergency Services :

All concessionaires shall provide emergency services to the public, including persons who are differently-abled, without access to subsidies from the USF.

[32] Reference is made to the Authority's Consumer Rights and Obligations Regulations http://www.tatt.org.tt/

Directory Assistance services

All concessionaires who provide telephone services will be required to provide directory assistance services (directly or indirectly[33]) to all users. For persons who are visually impaired, it must be noted those who are currently registered with the Blind Welfare Association of Trinidad and Tobago should have access to free directory assistance services. The provision of this service to the visually-impaired shall be considered eligible for Universal Service funding. The level of funding will be determined by the Authority.

The Authority may also direct a fixed concessionaire to provide an integrated electronic Braille directory to persons who are visually impaired, free of charge which should be updated at least once a year. This obligation is in accordance with Section C30 of the Concession agreement which states:

> *'The concessionaire shall, if directed to do so by the Authority, provide free of charge printed annual (or at such other reasonable interval agreed with the Authority) integrated directories to all subscribers of telephone services.'*

The provision of this service to the differently-abled will qualify for Universal Service funding, the level of which to be determined by the Authority.

Statement on Directory Assistance Services :

All concessionaires shall be required to provide directory assistance services (directly or indirectly) to all users. In addition, the Authority intends to direct a fixed concessionaire to provide an integrated electronic Braille directory to persons who are visually impaired, free of charge.

The following obligations may be eligible for Universal Service funding:

1. *Directory Assistance for persons who are visually impaired*
2. *Electronic Braille directories for the visually impaired*

The level of funding will be determined by the Authority.

[33] Indirect provision of directory assistance is where the concessionaire does not provide the directory assistance services themselves but provides access to such services provided by another concessionaire through an interconnection arrangement.

Free Itemised Billing

Itemized billing provides specific details of all charges levied against the account of a consumer by a concessionaire. This facility allows consumers to detect and report billing errors or inconsistencies to ensure that they only pay for the services they have used or requested. All concessionaires should ensure that access to free itemized billing electronically or otherwise, is provided to all consumers inclusive of persons who are differently-abled. If this service is not currently available, the service should be provided upon request. This can either be done on the consumer's bill or on a separate statement of account provided by the concessionaire. Itemised billing should be provided at no additional charge to consumers. This obligation would not qualify for funding from the USF.

Statement on Free Itemised Billing:

All concessionaires shall be required to provide free itemized billing electronically or otherwise, to all consumers inclusive of persons who are differently-abled, upon request. This obligation would not qualify for funding from the USF.

8.2.2 ASSISTIVE TECHNOLOGIES AND SERVICES

Ensuring Access by Persons with Disabilities: Assistive Technologies

It is of importance that the needs of the differently-abled members of society are considered in the provision of Universal Service. Most regulators have imposed obligations on service providers to offer a range of affordable essential facilities to facilitate the differently-abled having access to basic telecommunications services. For this reason, the Authority shall place obligations on all telecommunications concessionaires, who provide telephone services, to supply subsidised basic assistive technology devices to ensure that individuals with disabilities can afford to access and

use basic telecommunications services. Obligations to be met by these concessionaires may include, but may not be limited to:

1. The provision of phones suitable for persons who are blind or visually impaired. Features should include:
    - Talking caller id
    - Large print, easy-to-read character display
    - Braille keypads
    - Speed dialling capabilities / one-touch dial memory

2. The provision of phones for persons who are deaf or hearing impaired. Features should include, but may not be limited to:
    - Text telephone (TTY) capabilities – this allows persons who are hearing impaired to type messages back and forth to others without talking and listening
    - Voice and tone control for incoming and outgoing amplification of calls
    - Bright ring flasher alert for incoming calls
    - Amplified ringer for incoming calls
    - Hearing aid compatible handset

3. The provision of phones for persons with limited mobility. Features should include, but may not be limited to:
    - Light weight handset
    - Hands-free handset or speakerphone capabilities
    - One-touch dial memory

It must be noted that while service providers will have the option to choose the types of equipment provided to the differently-abled, such equipment must be approved and certified by the Authority.

Statement on Assistive Technologies:

The Authority shall place obligations on concessionaires to provide subsidised basic assistive technology devices to ensure that individuals with disabilities can afford to access and use basic telecommunications services. Such devices must be certified by the Authority in accordance with the 'Procedures for Equipment Certification for the Telecommunications and Broadcasting Sectors'.

This obligation shall be eligible for Universal Service funding, the level of which to be determined by the Authority.

Ensuring Access by Persons with Disabilities: Customer Support Services

While it is important for differently-abled persons to have available assistive technology devices, it is equally important for these persons to access customer support services and value added services when using these devices. As a result, concessionaires shall be required to ensure that persons who are differently-abled have access to the customer support services normally provided to customers in general. Such services may include:

- Mobile balance information via text and/or voice
- Access to billing information online
- Caller identification display services
- Telephone Relay Service (TRS) for the deaf/hearing impaired– this provides for the receipt and translation of voice messages into text and the conveyance of that text to the text phone of customers through the assistance of an operator. The operator also assists with the translation of text messages to voice messages for recipients without a text telephone.

Statement on Assistive Services:

The Authority shall place obligations on concessionaires that would enable the differently-abled having access to customer support services. The implementation of these obligations will not normally be eligible for funding from the USF. However, the Authority may give consideration to providing some level of subsidy for the provision of Text Relay Services.

8.2.3 SPECIAL PACKAGES FOR LOW INCOME SUBSCRIBERS

Special tariff packages are sometimes imposed on service providers to facilitate access to basic telecommunications services by persons who are unable to afford those services in the manner in which they would normally be provided. These types of packages are developed to target customers who may be on or below the low-income threshold. There are two popular packages that can be implemented to address this:

1. The first scheme offers a lower tariff scheme to individuals who limit their usage, however this does not only target low income customers.
2. An alternative scheme may include some or all of the following features:
    - A lower installation charge or the normal installation charge to be paid in instalments over a specified period;
    - A discounted monthly line/phone rental charge;
    - A call allowance to be given every quarter, or other specific timeframe;
    - A special rate for local calls;
    - A 'Pay-as-you-go' option.

In some instances, the implementation of such schemes may require that the provider be given a subsidy for providing the service below cost (e.g. discounted monthly line rentals). In other instances, no subsidy may be required since the scheme would merely

enable the consumer to have more control over their monthly expenditure (e.g. limited usage packages and pay–as-you-go).

All concessionaires providing Internet and fixed voice services shall be required to offer special packages that would enable consumers to have more control over their spending. Such packages may include, but may not be limited to:

- A Prepaid Scheme, similar to the one currently offered by mobile service providers, for Internet and fixed voice services;
- A Limited Usage Package where a number of bundled minutes can be allocated to a customer for usage within a specified time period. Similarly this package can apply to both fixed voice and Internet users;

These special packages will not be eligible for subsidy from the USF. However, concessionaires will have the flexibility of designing these packages as they consider appropriate prior to seeking the approval of the Authority.

Additionally where the Authority deems it necessary, it may also consider the imposition of an obligation on concessionaires to provide a Discounted Package which may include discounted rates on installation, line rental and/or local calls. Such an obligation, if imposed, will be eligible for Universal Service funding. However, before imposing such an obligation, the Authority will give consideration to the following:

- The extent to which cost-based prices are unaffordable for persons that fall on or below the low-income threshold (based on future digital divide surveys); and
- The extent to which it would be feasible and sustainable for such an obligation to be imposed on all concessionaires.

Statement on Special Packages for Low Income Customers:

The Authority shall require providers of retail Internet and fixed voice services to offer special packages for low income subscribers. Such packages may include, but may not be

limited to:

- *Prepaid schemes*
- *Low Usage Package with Limited Minutes*

These packages must be approved by the Authority and will not be eligible for subsidies from the USF.

The Authority may also consider requiring concessionaires to provide a Discounted Package that will be eligible for Universal Service funding. However, before imposing such an obligation, the Authority will give consideration to the following:

- *The extent to which cost-based prices are unaffordable for persons that fall on or below the low-income threshold (based on future digital divide surveys); and*
- *The extent to which it would be feasible and sustainable for such an obligation to be imposed on all concessionaires.*

8.3 Contractual 'Playing' Universal Service Obligations

As mentioned previously, contractual Universal Service obligations are those to be implemented in communities and to population groups determined to fall within the access gap. These obligations will be imposed by the Authority via a reverse auction process where existing concessionaires will have the option of participating. The successful concessionaire will be contracted to carry out the Universal Service obligations with funding made available through the USF.

8.3.1 Identifying Communities and Population Groups within the Access Gap

From the results of surveys and data collected from the existing service providers, the Authority will identify the communities or population groups within the access gap.

In the case of obligations specific to the communities, these will be used as the demarcation areas for the reverse auction process. The segregation of these areas is important because if the tender areas are too large, it may discourage participation by non-dominant concessionaires but if the tender areas are too small, the cost of administering the selection process and monitoring the performance of all the Universal Service providers by the Authority may be too high. Therefore it is important that the segregated areas be economically feasible to both the Authority and the industry.

Additionally, the Authority considers that only concessionaires authorised to provide the relevant services would be allowed to participate in a reverse auction for this purpose.

The following process for a reverse auction shall be conducted by the Authority in respect of selecting Universal Service providers:

1. The Authority will conduct a market and cost analysis so as to identify the priority areas for Universal Service and to estimate how much it would cost to implement these. The market and cost analysis should involve the following:

   - A *Needs Assessment*, which would involve a thorough analysis of the unmet demand for basic telecommunication services by using secondary data provided by the service providers and by using data collected in digital divide surveys. The analysis would identify locations, population groups and areas with the greatest need, the type of services that the market is not providing, and the initiatives that would have to be implemented to meet the unmet demand.

   - A *Cost Analysis*, which will estimate the level of financing required to subsidise the investment and/or the operating costs involved in implementing the Universal Service initiatives

identified above. It is proposed that this estimate be for a five year timeframe taking into account changing technologies, demand for service and other evolving factors.

This estimate would act as the maximum amount to be allocated in the competitive bidding process.

2. The Authority will prepare a Request for Proposal (RFP) outlining the technical and social requirements the bidders will be required to meet. These requirements may include minimum levels of quality of service, timeframe for rollout, minimum level of basic telecommunications required, etc.

3. Concessionaires will then be invited to submit bids for the RFP. In addition to the above, the proposals should be evaluated based on criteria identified by the Authority that it considers appropriate to assess the extent to which the initiative would be successful. The concessionaire that requires the least Universal Service funding and meets the criteria outlined by the Authority would be granted the right to implement the Universal Service obligation and to access the USF to do so. The evaluation criteria may include, but may not be limited to the following:

    - The location of the proposed service –areas of the community to which priority will be attached;
    - Quality of Service –the nature of the technology to be deployed and the extent of service features and functions;
    - Cost requirements –an estimate of the amount of USF needed to rollout and/or support the implementation and maintenance of the Universal Service project;
    - Timeframe –the length of time Funding from the USF will be required;

- Bidder qualifications – evaluation of communities where the concessionaire has existing services and the quality of these services; and
- Implementation Plan – the implementation plan submitted by concessionaires should describe the short-term process for installing facilities and services and the long-term plan for operating and maintaining the services. This will set the foundation to ensure that the networks and services will be sustainable after the USF subsidy has been exhausted. Therefore the implementation plan should include, where applicable:
    - Business plans - three to five year budget projections, break-even analysis and market demand analysis should be provided.
    - Tariff and other pricing proposals – these should include interconnection agreements with other carriers
    - Management plan – these should detail the organization of the project, the responsibility of personnel etc.
    - Implementation schedule – specific dates and sequence of events, the timing of equipment installation and operation start-up dates should be included.
    - Monitoring and reporting plans – there should be provisions for informing the USF administrator about progress in implementation, the public response to the services, lessons learnt, identified obstacles and possible improvements.[34]

[34] Adopted from Information and Communication Technologies Authority "Consultation Document: Ref. 2004/1 – Implementation of the Universal Service for ICTs in Mauritius"

4. For concessionaires selected through the reverse auction process, the Authority will prepare a contract outlining the terms and conditions required to be met by the concessionaire in respect of the Universal Service obligations as defined in the RFP.

5. If a concessionaire is unsuccessful in the reverse auction process, the Authority will formally respond giving reasons for its decision not to impose the Universal Service obligation on that concessionaire.

6. If no concessionaire enters the reverse auction for any particular Universal Service obligation, the respective obligation will be imposed on the concessionaire with the highest available network capacity and the least infrastructural build out required to provide services to that region/ population group.

8.3.2 Examples of Contractual Universal Service Obligations

It must be noted that only the provision of basic telecommunications services for areas and population groups proven to be within the access gap will be eligible for some level of funding from the USF.

Some of the contractual Universal Service obligations that may be imposed by the Authority through the reverse auction process may include, but may not be limited to:

- fixed telephony services – to be made available to all households within the Universal Service areas and population groups within the access gap;
- public access nodes (including payphones) – to be made available in all communities within Universal Service areas and in preferred locations as specified by the Authority;

- broadband Internet services of throughput no less than 5Mbps - to be made available to all households within Universal Service Areas and population groups within the access gap.

INFRASTRUCTURE DEVELOPMENT INITIATIVES

The provision of fixed telephony services in Universal Service Areas (UAs)

A fundamental requirement of this obligation would be for the concessionaire to satisfy requests for connection at a fixed location to the public telephone network, and for access to publicly available telephone services at a fixed location within Universal Service Areas. This initiative should support:

- Local calls
- International calls

Concessionaires will be required to use the most cost-effective solution for the provision of infrastructure which may include the use of wireless technologies. In recent times, many jurisdictions have turned to the alternative of using wireless technologies to provide basic telecommunications services including both wireless fixed telephony and Internet services. Reasons for the preferred use of wireless technologies include:

- It is more feasible where geographical terrain prevents or limits the build-out of wired infrastructure; and
- It is less costly than building out wired infrastructure, thereby making it cheaper for the service provider to provide services to customers.

Therefore, for those communities where it may not be economically feasible to provide the required wired infrastructure, concessionaires have the option to use wireless infrastructure for the provision of basic services to promote cost effectiveness.

The provision of broadband Internet services in Universal Service Areas (USAs)

This contractual obligation will require the provision of, at minimum, a 5 Mbps[35] connection/access to Internet services in the respective USAs no matter the geographic location. This obligation will also apply to the provision of Internet services to public institutions including all schools, libraries, and community access centres.

Concessionaires should use the most cost effective solution in fulfilling this obligation. The Authority will therefore encourage the use of mobile or fixed wireless technologies by service providers to ensure all communities, including those where it may not be economically feasible to install wired infrastructure, have access to broadband Internet services.

Public Access Nodes

Another contractual Universal Service obligation may be the provision of public payphone service and broadband Internet services using public access nodes. This can be a critical component of any Universal Service programme especially in sparsely populated rural areas where household income is low and both availability and affordability is a concern. Public access nodes are also of importance to the urban poor as network coverage might make service readily available but access to the network may be limited due to income constraints. The provision of public access nodes can be used as the starting point for ensuring that access to telecommunication services are universally available with access to individual household service made available overtime.

At present, all domestic fixed telecommunication network and service providers have a concession obligation to provide no less than fifty public nodes, inclusive of pay phones or Internet kiosks, per national county and parish. As a result, the incumbent fixed telecommunication service provider has installed 1,311 payphones throughout the

[35] Target throughput of no less than five mega bits per second (5 Mbps) to be achieved by 2015. This target will be revised on an on-going basis to reflect developments in the sector.

country. The Authority is currently assessing some of the issues and challenges associated with the provision of public payphones as required by the existing concession.

However, in order to complement the above-mentioned concession obligation, there may be need for an obligation to install public access nodes at strategic locations as the Authority deems appropriate, in order to ensure all population groups have access to both telephony and broadband Internet services. Taking this into consideration, the Authority shall determine which concessionaire(s) this obligation would apply to through a reverse auction process. The Authority is in the process of gathering information to determine the feasibility of this obligation.

The Authority recognises that the cost of maintaining these public access nodes could be over run as a result of vandalism. In this regard, the Authority will consider that where this additional Universal Service obligation is imposed, that public access nodes should be installed at facilities or locations that are likely to be secured in order to minimise the risk for vandalism and to allow wider access to the public. In determining which locations would be appropriate for the installation of public access nodes, the Authority shall give consideration to the following minimum criteria:

- Locations that are easily accessible by the public and in particular in underserved communities that fall within the access gap;
- Preferred locations for the installations of public access centres include outside or close proximity to schools, libraries, hospitals, clinics, public transportation terminals, police stations, post offices, community centres and other public buildings as specified by the Authority;

The Authority also considers that a minimum of 5% of public access nodes in each community should have facilities to accommodate persons who are differently-abled.

Statement on Contractual Universal Service Obligations:

The provision of basic telecommunications services for areas and population groups proven to be within the access gap will be eligible for some level of funding from the

USF.

Some of the contractual Universal Service obligations that may be imposed by the Authority through the reverse auction process may include, but may not be limited to:

- *fixed telephony services – to be made available to all households within Universal Service Areas and population groups within the access gap;*
- *public access nodes (including payphones) – to be made available in all communities within the Universal Service areas and in preferred locations as specified by the Authority;*
- *broadband Internet services of throughput no less than 5 Mbps[36] - to be made available to all households within Universal Service Areas and population groups within the access gap.*

Contractual Universal Service obligations will be imposed by the Authority via a reverse auction process. If no concessionaire participates in any particular reverse auction, the respective obligation will be imposed on the concessionaire with the highest available network capacity and the least infrastructural build out required to fulfil the obligation. That concessionaire will be allowed to access the USF to subsidise the implementation of the obligation, under similar terms and conditions that would have been granted to the successful bidder in the reverse auction.

In respect of public access nodes, the Authority shall take into consideration the following minimum criteria when specifying suitable locations for installation:

- *Locations that are easily accessible by the public and in particular in underserved communities that fall within the access gap;*
- *Locations outside or in close proximity to schools, libraries, hospitals, clinics, public transportation terminals, police stations, post offices, community centres and other public buildings as specified by the Authority.*

[36] Target throughput of no less than five mega bits per second (5 Mbps) to be achieved by 2015. This target will be revised on an on-going basis to reflect developments in the sector.

The Authority shall require that a minimum of 5 % of public access nodes in each community have facilities to accommodate persons who are differently abled.

8.4 Community Access Centres

Community Access Centres (CACs) are useful tools for providing members of any community with a point of access to both basic telecommunication services and other ICT services. There are three main advantages associated with such centres. They:

- Offer universal access to basic telephone and Internet services at a reasonable distance from the household;
- Provide the hardware and software required to access the above telecommunication services; and
- Facilitate other services including computer training classes etc.

These centres are strategically placed within the underserved communities of a country and each established CAC can shape their services to suit the needs of the specific community. The process for defining the right mix of services to offer often involves undertaking a community 'needs analysis' so as to not only measure the demand for particular services but also to identify the specific types of applications that persons in those communities need.

These CACs are somewhat different from public access nodes as they not only provide telephony and Internet services but may also provide:

- Facsimile services
- Printing and Photocopying services
- Computer services

The services available at CACs are normally provided at a subsidized price to ensure that they are affordable and accessible to customers.

Current Community Initiatives

Previously mentioned in Section 1.2 is the GoRTT's initiative to set up community access centres throughout Trinidad and Tobago, where the need has been identified. The Authority views this project as a Universal Service initiative and such may allocate 5% of the Universal Service Budget on an annual basis towards CACs in Universal Service Areas. Accountability for the 5% Funding received by the GoRTT from the Universal Service Fund would be captured in mandatory audits conducted by the Auditor General on the funds of all government agencies.

In addition to the Government's initiative highlighted above, service providers have also embarked on private projects to promote Universal Service in Trinidad and Tobago. One such project is that of the Telecommunications Services of Trinidad and Tobago (TSTT). TSTT has established seven Community Communication Centres (CCCs) across the country in an effort to lessen the disparity of ICT accessibility. These CCCs are located in Navet, Blanchieusseuse, Cumana, Morvant, Plymouth and Speyside.

Statement on Universal Service Initiatives undertaken by Government and Private Agencies:

The Authority shall allocate a maximum of 5% of the Universal Service Budget annually towards government initiated projects.

Annex A: List of Underserved Communities in Trinidad and Tobago

1. Communities below the country average: Proportion of households with a fixed line telephone

Geographical Region	Communities
Arima Borough	TUMPUNA ROAD, CALVARY HILL, MOUNT PLEASANT
Arima Tunapuna	MATURITA
Chaguanas	LENDORE VILLAGE, CHARLIEVILLE, CUNUPIA, MUNROE SETTLEMENT, ENTERPRISE, ST. CHARLES VILLAGE
Couva Chaguanas	LONGDENVILLE
Couva Mayaro	SAN PEDRO
Couva Princes town	PIPARO
Couva Tabaquite	BRASSO TAMANA, BRASSO VENADO, INDIAN TRAIL, LAS LOMAS (NOS. 1 & 2), MAMORAL NO.2, ARENA, BONNE AVENTURE, BRASSO MANUEL JUNCTION, CALCUTTA ROAD NO.2, CHANDERNAGORE, CHASE VILLAGE, DOW VILLAGE, ESPERANZA, MACAULAY, MADRAS SETTLEMENT, NANCOO VILLAGE, PHOENIX PARK, RAVINE SABLE, WATERLOO, CALCUTTA SETTLEMENT NO.2, CHICKLAND, PALMISTE, CAPARO, CLAXTON BAY, OUPLAY VILLAGE, PARFORCE, BUTLER VILLAGE, CARAPICHAIMA, COALMINE, COROSAL, MOUNT PLEASANT, SUM SUM HILL, TABAQUITE, WARREN VILLAGE, SPRING VILLAGE, TALPARO, SAN RAPHAEL/BRAZIL, AGOSTINI VILLAGE, BRASSO CAPARO VILLAGE, BRICKFIELD, BRICKFIELD/NAVET, BROTHERS ROAD, CARLSEN FIELD, CEDAR HILL, FARNUM VILLAGE, FELICITY HALL, FLANAGIN TOWN, FORRES PARK, GUARACARA, HERMITAGE, MAYO, MUNDO NUEVO, ORANGE VALLEY, PEPPER VILLAGE, ST. MARYS VILLAGE, TAMANA ROAD, TODDS STATION, WELCOME
Diego Martin	BLUE BASIN, INDUSTRIAL ESTATE, SIMEON ROAD, COVIGNE, GREEN HILL VILLAGE, RICH PLAIN, BAGATELLE, BIG YARD, DIBE/BELLE VUE, LANSE MITAN', LE PLATTE, NORTH POST,

Geographical Region	Communities
	PARAMIN, PATNA VILLAGE, SAUT DEAU, UPPER ST. JAMES, WATER HOLE
Mayaro Rio Claro	MAFEKING, GUAYAGUAYARE,FONROSE VILLAGE,RIO CLARO,BICHE, CANQUE, CHARUMA VILLAGE, COCAL ESTATE/MAYARO, CUSHE/NAVET, DEEP RAVINE/CLEAR WATER, ECCLESVILLE, LA SAVANNE,MAINFIELD, MAYARO, MORA SETTLEMENT, NAVET VILLAGE, ORTOIRE, PLAISANCE, POOLE, UNION VILLAGE
Penal Debe	PENAL ROCK ROAD, CHARLO VILLAGE, HERMITAGE VILLAGE, MONKEY TOWN, PENAL, DEBE PROPER, LENGUA VILLAGE, LA FORTUNE, LA ROMAIN, WELLINGTON, BATCHYIA VILLAGE, MORNE DIABLO, PICTON ROCHARD ROAD, SCOTT ROAD VILLAGE
Penal Princes Town	BORDE NARVE,BARACKPORE, ST.CROIX VILLAGE
Penal Siparia	SYNE VILLAGE,SAN FRANCIQUE, TULSA VILLAGE
Point Fortin	POINT LIGOURE, EGYPT VILLAGE, FANNY VILLAGE, NEW VILLAGE HOLLYWOOD
Point Fortin Siparia	CAP DE VILLE, COCHRANE
Port of Spain	BELMONT, EAST PORT OF SPAIN, SEALOTS
Princes Town	HARMONY HALL, KUMAR VILLAGE, LENGUA VILLAGE/BARRACKPORE, ST. JULIEN, BROOMAGE, LA RUFFIN, PALMYRA, PRINCES TOWN PROPER, STE. MADELEINE, BEN LOMOND, JORDAN VILLAGE, BASSE TERRE, BON JEAN, BROTHERS SETTLEMENT, BUEN INTENTO, CLEGHORN AND MT. PLEASANT, DYERS VILLAGE, FIFTH COMPANY, HINDUSTAN, IERE VILLAGE, INDIAN WALK, LA LUNE, LA SAVANNE, MALGRETOUTE, MARAC, MATILDA, PETIT CAFE', PETIT MORNE, ROBERT VILLAGE, SISTERS VILLAGE, SIXTH COMPANY, ST. CLEMENTS, ST. MARYS VILLAGE, TABLELAND

Geographical Region	Communities
San Fernando	NAVET, EMBACADERE, UNION VILLAGE, TAROUBA, BROADWAY, VICTORIA VILLAGE
San Juan Tunapuna	BEJUCAL, BAMBOO GROVE
Sangre Grande	VALENCIA, CAIGUAL, GUAICO, MAHOE, SANGRE GRANDE, ANGLAIS SETTLEMENT, BALANDRA, BICHE, BROOKLYN SETTLEMENT, CARMICHAEL, COAL MINE, CORYAL, CUMACA, CUMANA, CUNARIPO, FISHING POND, FOUR ROADS – TAMANA, GRAND RIVIERE, GUATOPAJARO, HOWSEN VILLAGE, LANSE NOIR', MANZANILLA, MARAJ HILL, MATELOT, MATURA, MELAJO, MONTE VIDEO, MORIN BAY, NORTH MANZANILLA, OROPOUCHE, PLUM MITAN, RAMPANALGAS, SALYBIA VILLAGE, SAN SOUCI, SANGRE CHIQUITO, TAMANA, TOCO, TOMPIRE, TURURE
Siparia	DELHI SETTLEMENT, ERIN PROPER, LA FORTUNE/PLUCK, SANTA FLORA, SUDAMA VILLAGE, BENNET VILLAGE, FYZABAD, GUAPO, HARRIS VILLAGE, PEPPER VILLAGE, MON DESIR/SILVER STREAM, ROUSILLAC, GRANVILLE, WADDLE VILLAGE, APEX OIL FIELD, BEACH CAMP, BOIS BOUGH, SIPARIA, ST. JOHN, VESSIGNY, CEDROS, PARRY LANDS SOUTH, QUARRY VILLAGE, THICK VILLAGE, BAMBOO VILLAGE, CARAPAL, COROMANDEL, ERIN/BUENOS AYRES, FULLERTON, GHEERAHOO, ICACOS, JACOB VILLAGE, LORENSOTTE, LOS BAJOS, LOS CHAROS, LOS IROS/ERIN, OROPOUCHE, PALO SECO, RANCHO QUEMADO, ROBERT HILL/SIPARIA, SALAZAR VILLAGE, SOBO VILLAGE, VANCE RIVER
Siparia Point Fortin	GONZALES
Tobago	CONCORDIA, MOUNT ST GEORGE, SHERWOOD PARK, BUCCOO CORAL GARDENS, MASON HALL, MOUNT GRACE, BETSY HOPE, HOPE FARM JOHN DIAL, CHARLOTTEVILLE, PATIENCE HILL, BETHLEHEM, TOP HILL, MORIAH, ARGYLE KENDAL, ARNOS VALE, BELLE GARDENS, BETHEL, BETHEL MT GOMERY, BLOODY BAY, CAMBLETON CHARLOTTEVILLE, CARNBEE, PATIENCE HILL, CASTARA, ORANGE HILL, CULLODEN, DELAFORD, DELAFORD LOUIS DOR LAND SETT, GLAMORGAN, GOLDEN LANE, GOODWOOD, KINGS BAY,

Geographical Region	Communities
	LANSE FORMI, LUCY VALE, MARYS HILL ZION HILL, PEMBROKE, ROXBOROUGH, SIGNAL HILL PATIENCE HILL, PARLATUVIER
Tunapuna Piarco	ARIMA HEIGHTS/TEMPLE VILLAGE, MARACAS ST JOSEPH, CAURA, FIVE RIVERS, LA PAILLE VILLAGE, LA SEIVA VILLAGE, KANDAHAR, MALONEY, OROPUNA VILLAGE/PIARCO, ST. AUGUSTINE SOUTH, SAMAROO VILLAGE, ST. HELENA VILLAGE, WARREN VILLAGE, RED HILL, ERIC WILLIAMS MEDICAL SCIENCES COMPLEX, ACONO VILLAGE, BLANCHISSEUSE VILLAGE, BRASSO SECO VILLAGE, CARAPO, FREDERICK SETTLEMENT, SURREY VILLAGE, KELLY VILLAGE, LA LAJA, LOPINOT VILLAGE, MOUNT ST. BENEDICT, PEYTONVILLE, PINTO ROAD, ST. JOHNS VILLAGE, HEIGHTS OF GUANAPO, WALLERFIELD

2. Communities below the country average: Mobile Cellular Subscribers per 100 inhabitants

Geographical Region	**Community**
Arima Borough	CALVARY HILL, MOUNT PLEASANT
Chaguanas	ST. CHARLES VILLAGE, CUNUPIA, MUNROE SETTLEMENT
Couva Chaguanas	LONGDENVILLE
Couva Mayaro	SAN PEDRO
Couva Princes town	PIPARO
Couva Tabaquite	AGOSTINI VILLAGE, BRASSO CAPARO VILLAGE, BRICKFIELD, BRICKFIELD/NAVET, BROTHERS ROAD, CARLSEN FIELD, CEDAR HILL, FARNUM VILLAGE, FELICITY HALL, FLANAGIN TOWN, FORRES PARK, GUARACARA, HERMITAGE, MAYO, MUNDO NUEVO, ORANGE VALLEY, PEPPER VILLAGE, ST. MARYS VILLAGE, TAMANA ROAD, TODDS STATION, UNION VILLAGE, WELCOME, BUTLER VILLAGE, CARAPICHAIMA, COALMINE, COROSAL MOUNT PLEASANT SUM SUM HILL SAN RAPHAEL/BRAZIL
Diego Martin	BAGATELLE, BIG YARD, DIBE/BELLE VUE, LANSE MITAN', LE PLATTE, NORTH POST, PARAMIN, PATNA VILLAGE, SAUT DEAU, UPPER ST. JAMES, WATER HOLE, SIMEON ROAD, GREEN HILL VILLAGE, RICH PLAIN
Mayaro Rio Claro	BICHE, CANQUE, CHARUMA VILLAGE, COCAL ESTATE/MAYARO, CUSHE/NAVET, DEEP RAVINE/CLEAR WATER, ECCLESVILLE, LA SAVANNE, MAINFIELD, MAYARO, MORA SETTLEMENT, NAVET VILLAGE, ORTOIRE, PLAISANCE, POOLE
Penal Debe	MORNE DIABLO, PICTON, ROCHARD ROAD, SCOTT ROAD VILLAGE, LA FORTUNE, LA ROMAIN, WELLINGTON, BATCHYIA VILLAGE
Penal Princes Town	BARACKPORE, ST.CROIX VILLAGE, BORDE NARVE

Geographical Region	Community
Penal Siparia	SAN FRANCIQUE, TULSA VILLAGE
Point Fortin	HOLLYWOOD
Point Fortin Siparia	CAP DE VILLE
Point Fortin Siparia	COCHRANE
Port of Spain	EAST PORT OF SPAIN, SEALOTS, BELMONT
Princes Town	BASSE TERRE, BON JEAN, BROTHERS SETTLEMENT, BUEN INTENTO, CLEGHORN AND MT. PLEASANT, DYERS VILLAGE, FIFTH COMPANY, HINDUSTAN, IERE VILLAGE, INDIAN WALK, LA LUNE, LA SAVANNE, MALGRETOUTE, MARAC, MATILDA, PETIT CAFE', PETIT MORNE, ROBERT VILLAGE, SISTERS VILLAGE, SIXTH COMPANY, ST. CLEMENTS, ST. MARYS VILLAGE, TABLELAND, JORDAN VILLAGE
San Fernando	BROADWAY, VICTORIA VILLAGE, NAVET, TAROUBA
San Juan Lavantille	BEETHAM ESTATE, EASTERN QUARRY, FEBEAU VILLAGE, LAS CUEVAS, MALICK, MARACAS, MON REPOS, NEVER DIRTY, ROMAIN LANDS, LA CANOA, SOCONUSCO
San Juan Tunapuna	BAMBOO GROVE
Sangre Grande	ANGLAIS SETTLEMENT, BALANDRA, BICHE, BROOKLYN SETTLEMENT, CARMICHAEL, COAL MINE, CORYAL, CUMACA, CUMANA, CUNARIPO, FISHING POND, FOUR ROADS – TAMANA, GRAND RIVIERE, GUATOPAJARO, HOWSEN VILLAGE, LANSE NOIR', MANZANILLA, MARAJ HILL, MATELOT, MATURA, MELAJO, MONTE VIDEO, MORIN BAY, NORTH MANZANILLA, OROPOUCHE, PLUM MITAN, RAMPANALGAS, SALYBIA VILLAGE, SAN SOUCI, SANGRE CHIQUITO, TAMANA, TOCO, TOMPIRE, TURURE
Siparia	BAMBOO VILLAGE, CARAPAL, COROMANDEL, ERIN/BUENOS AYRES, FULLERTON, GHEERAHOO, ICACOS, JACOB VILLAGE, LORENSOTTE, LOS BAJOS, LOS CHAROS, LOS IROS/ERIN, OROPOUCHE, PALO SECO, RANCHO QUEMADO, ROBERT HILL/SIPARIA, SALAZAR VILLAGE, SOBO VILLAGE, VANCE RIVER, APEX OIL FIELD, BEACH CAMP, BOIS BOUGH, SIPARIA, ST. JOHN, VESSIGNY, THICK VILLAGE
Siparia Point Fortin	GONZALES

Geographical Region	Community
Tobago	ARGYLE KENDAL, ARNOS VALE, BELLE GARDENS, BETHEL, BETHEL MT GOMERY, BLOODY BAY, CAMBLETON CHARLOTTEVILLE, CARNBEE PATIENCE HILL, CASTARA, CHARLOTTEVILLE, CULLODEN DELAFORD, DELAFORD LOUIS DOR LAND SETT, GLAMORGAN GOLDEN LANE, GOODWOOD, KINGS BAY, LANSE FORMI, LUCY VALE MARYS HILL, PARLATUVIER, PEMBROKE, ROXBOROUGH, SIGNAL HILL PATIENCE HILL, ZION HILL, BETSY HOPE, HOPE FARM JOHN DIAL, ORANGE HILL, PATIENCE HILL, MORIAH
Tunapuna Piarco	ACONO VILLAGE, BLANCHISSEUSE VILLAGE, BRASSO SECO VILLAGE, CARAPO, FREDERICK SETTLEMENT, HEIGHTS OF GUANAPO, KELLY VILLAGE, LA LAJA, LOPINOT VILLAGE, MOUNT ST. BENEDICT, PEYTONVILLE, PINTO ROAD, ST. JOHNS VILLAGE, SURREY VILLAGE, WALLERFIELD, KANDAHAR, ST. HELENA VILLAGE, WARREN VILLAGE, ERIC WILLIAMS MEDICAL SCIENCES COMPLEX

3. Communities below the country average: Proportion of households with Internet access at home

Geographical Region	Community
Arima Borough	CALVARY HILL, MOUNT PLEASANT, TUMPUNA ROAD
Chaguanas	ST. CHARLES VILLAGE, CUNUPIA, MUNROE SETTLEMENT, CHARLIEVILLE, LENDORE VILLAGE
Couva Mayaro	SAN PEDRO
Couva Princes Town	PIPARO
Couva Tabaquite	SPRING VILLAGE, TALPARO, AGOSTINI VILLAGE, BRASSO CAPARO VILLAGE, BRICKFIELD, BRICKFIELD/NAVET, BROTHERS ROAD, CARLSEN FIELD, CEDAR HILL, FARNUM VILLAGE, FELICITY HALL, FLANAGIN TOWN, FORRES PARK, GUARACARA, HERMITAGE, MAYO MUNDO NUEVO, ORANGE VALLEY, PEPPER VILLAGE, ST. MARYS VILLAGE, TAMANA ROAD, TODDS STATION, UNION VILLAGE, WELCOME, BUTLER VILLAGE, CARAPICHAIMA, COALMINE, COROSAL, MOUNT PLEASANT, SUM SUM HILL, ARENA, BONNE AVENTURE, BRASSO MANUEL JUNCTION, CALCUTTA ROAD NO.2, CHANDERNAGORE, CHASE VILLAGE, DIAMOND, DOW VILLAGE, ESPERANZA, MACAULAY, MADRAS SETTLEMENT, NANCOO VILLAGE, PHOENIX PARK, RAVINE SABLE, WATERLOO, CAPARO, CLAXTON BAY, OUPLAY VILLAGE, PARFORCE, BRASSO TAMANA, BRASSO VENADO, INDIAN TRAIL, LAS LOMAS (NOS. 1 & 2), MAMORAL NO.2
Diego Martin	BAGATELLE, BIG YARD, DIBE/BELLE VUE, LANSE MITAN', LE PLATTE, NORTH POST, PARAMIN, PATNA VILLAGE, SAUT DEAU, UPPER ST. JAMES, WATER HOLE, SIMEON ROAD, BLUE BASIN, INDUSTRIAL ESTATE
Mayaro Rio Claro	BICHE, CANQUE, CHARUMA VILLAGE, COCAL ESTATE/MAYARO, CUSHE/NAVET, DEEP RAVINE/CLEAR WATER, ECCLESVILLE, LA SAVANNE, MAINFIELD, MAYARO, MORA SETTLEMENT, NAVET VILLAGE, ORTOIRE, PLAISANCE, POOLE, GUAYAGUAYARE, FONROSE VILLAGE, RIO CLARO, UNION VILLAGE, MAFEKING
Penal Debe	MORNE DIABLO, PICTON, ROCHARD ROAD, SCOTT ROAD VILLAGE,

Geographical Region	Community
	LA FORTUNE, LA ROMAIN, WELLINGTON, DEBE PROPER, LENGUA VILLAGE, PENAL ROCK ROAD
Penal Princes Town	BARACKPORE, ST.CROIX VILLAGE, BORDE NARVE
Penal Siparia	SAN FRANCIQUE, TULSA VILLAGE, SYNE VILLAGE
Point Fortin	HOLLYWOOD, EGYPT VILLAGE, FANNY VILLAGE, NEW VILLAGE, POINT LIGOURE
Point Fortin Siparia	CAP DE VILLE, COCHRANE
Port of Spain	EAST PORT OF SPAIN, SEALOTS, BELMONT
Princes Town	BASSE TERRE, BON JEAN, BROTHERS SETTLEMENT, BUEN INTENTO, CLEGHORN AND MT. PLEASANT, DYERS VILLAGE, FIFTH COMPANY, HINDUSTAN, IERE VILLAGE, INDIAN WALK, LA LUNE, LA SAVANNE, MALGRETOUTE, MARAC, MATILDA, PETIT CAFE', PETIT MORNE, ROBERT VILLAGE, SISTERS VILLAGE, SIXTH COMPANY, ST. CLEMENTS, ST. MARYS VILLAGE, TABLELAND, BROOMAGE, LA RUFFIN, PALMYRA, BEN LOMOND, HARMONY HALL, KUMAR VILLAGE, LENGUA VILLAGE/BARRACKPORE, ST. JULIEN
San Fernando	BROADWAY, VICTORIA VILLAGE, NAVET, EMBACADERE
San Juan Lavantille	BEETHAM ESTATE, EASTERN QUARRY, FEBEAU VILLAGE, LAS CUEVAS, MALICK, MARACAS, MON REPOS, NEVER DIRTY, ROMAIN LANDS, LA CANOA, SOCONUSCO, MOUNT DOR, MARACAS BAY, PICTON, MARIE ROAD, PETIT CURUCAYE, ST. BARBS, UPPER BELMONT
San Juan Tunapuna	BAMBOO GROVE, BEJUCAL
Sangre Grande	MISSION, ANGLAIS SETTLEMENT, BALANDRA, BICHE, BROOKLYN SETTLEMENT, CARMICHAEL, COAL MINE, CORYAL, CUMACA, CUMANA, CUNARIPO, FISHING POND, FOUR ROADS – TAMANA, GRAND RIVIERE, GUATOPAJARO, HOWSEN VILLAGE, LANSE NOIR', MANZANILLA, MARAJ HILL, MATELOT, MATURA, MELAJO, MONTE VIDEO, MORIN BAY, NORTH MANZANILLA, OROPOUCHE, PLUM

Geographical Region	Community
	MITAN, RAMPANALGAS, SALYBIA VILLAGE, SAN SOUCI, SANGRE CHIQUITO, TAMANA, TOCO, TOMPIRE, TURURE, CAIGUAL, GUAICO, MAHOE, SANGRE GRANDE, VALENCIA
Siparia	CEDROS, PARRY LANDS SOUTH, QUARRY VILLAGE, BAMBOO VILLAGE, CARAPAL, COROMANDEL, ERIN/BUENOS AYRES, FULLERTON, GHEERAHOO, ICACOS, JACOB VILLAGE, LORENSOTTE, LOS BAJOS, LOS CHAROS, LOS IROS/ERIN, OROPOUCHE, PALO SECO, RANCHO QUEMADO, ROBERT HILL/SIPARIA, SALAZAR VILLAGE, SOBO VILLAGE, VANCE RIVER, APEX OIL FIELD, BEACH CAMP, BOIS BOUGH, SIPARIA, ST. JOHN, VESSIGNY, BENNET VILLAGE, FYZABAD, GUAPO, HARRIS VILLAGE, PEPPER VILLAGE, GRANVILLE, WADDLE VILLAGE, DELHI SETTLEMENT, ERIN PROPER, LA FORTUNE/PLUCK, SANTA FLORA, SUDAMA VILLAGE
Siparia Point Fortin	GONZALES
Tobago	BETHLEHEM, TOP HILL, ARGYLE KENDAL, ARNOS VALE, BELLE GARDENS, BETHEL, BETHEL MT GOMERY, BLOODY BAY, CAMBLETON CHARLOTTEVILLE, CARNBEE PATIENCE HILL, CASTARA, CHARLOTTEVILLE, CULLODEN, DELAFORD, DELAFORD LOUIS DOR LAND SETT, GLAMORGAN, GOLDEN LANE, GOODWOOD, KINGS BAY, LANSE FORMI, LUCY VALE, MARYS HILL, PARLATUVIER, PEMBROKE, ROXBOROUGH, SIGNAL HILL PATIENCE HILL, ZION HILL, BETSY HOPE, HOPE FARM JOHN DIAL, ORANGE HILL, PATIENCE HILL, BUCCOO CORAL GARDENS, MASON HALL, MOUNT GRACE, CONCORDIA, MOUNT ST GEORGE, SHERWOOD PARK
Tunapuna Piarco	RED HILL, ACONO VILLAGE, BLANCHISSEUSE VILLAGE, BRASSO SECO VILLAGE, CARAPO, FREDERICK SETTLEMENT, HEIGHTS OF GUANAPO, KELLY VILLAGE, LA LAJA, LOPINOT VILLAGE, MOUNT ST. BENEDICT, PEYTONVILLE, PINTO ROAD, ST. JOHNS VILLAGE, SURREY VILLAGE, WALLERFIELD, KANDAHAR, ST. HELENA VILLAGE, WARREN VILLAGE, CAURA, FIVE RIVERS, LA PAILLE VILLAGE, LA SEIVA VILLAGE, SAMAROO VILLAGE, OROPUNA VILLAGE/PIARCO, ST. AUGUSTINE SOUTH, ARIMA HEIGHTS/TEMPLE VILLAGE, MARACAS ST JOSEPH

4. Communities below the country average: Internet users per 100 inhabitants

Geographical Region	Community
Arima Borough	CALVARY HILL, MOUNT PLEASANT, TUMPUNA ROAD
Chaguanas	ST. CHARLES VILLAGE, CHARLIEVILLE, CUNUPIA, MUNROE SETTLEMENT, LENDORE VILLAGE
Couva Chaguanas	LONGDENVILLE
Couva Mayaro	SAN PEDRO
Couva Princes town	PIPARO
Couva Tabaquite	AGOSTINI VILLAGE, BRASSO CAPARO VILLAGE, BRICKFIELD, BRICKFIELD/NAVET, BROTHERS ROAD, CARLSEN FIELD, CEDAR HILL, FARNUM VILLAGE, FELICITY HALL, FLANAGIN TOWN, FORRES PARK, GUARACARA, HERMITAGE, MAYO, MUNDO NUEVO, ORANGE VALLEY, PEPPER VILLAGE, ST. MARYS VILLAGE, TAMANA ROAD, TODDS STATION, UNION VILLAGE, WELCOME, ARENA, BONNE AVENTURE, BRASSO MANUEL JUNCTION, CALCUTTA ROAD NO.2, CHANDERNAGORE, CHASE VILLAGE, DIAMOND, DOW VILLAGE, ESPERANZA, MACAULAY, MADRAS SETTLEMENT, NANCOO VILLAGE, PHOENIX PARK, RAVINE SABLE, WATERLOO, BUTLER VILLAGE, CARAPICHAIMA, COALMINE, COROSAL, MOUNT PLEASANT, SUM SUM HILL, BRASSO TAMANA, BRASSO VENADO, INDIAN TRAIL, LAS LOMAS (NOS. 1 & 2), MAMORAL NO.2, CAPARO, CLAXTON BAY, OUPLAY VILLAGE, PARFORCE, SAN RAPHAEL/BRAZIL, SPRING VILLAGE, TALPARO
Diego Martin	BAGATELLE, BIG YARD, DIBE/BELLE VUE, LANSE MITAN', LE PLATTE, NORTH POST, PARAMIN, PATNA VILLAGE, SAUT DEAU, UPPER ST. JAMES, WATER HOLE, SIMEON ROAD, BLUE BASIN, INDUSTRIAL ESTATE, GREEN HILL VILLAGE, RICH PLAIN
Mayaro Rio Claro	BICHE, CANQUE, CHARUMA VILLAGE, COCAL ESTATE/MAYARO, CUSHE/NAVET, DEEP RAVINE/CLEAR WATER, ECCLESVILLE, LA SAVANNE, MAINFIELD, MAYARO, MORA SETTLEMENT, NAVET VILLAGE, ORTOIRE, PLAISANCE, POOLE, GUAYAGUAYARE, MAFEKING, FONROSE VILLAGE, RIO CLARO, UNION VILLAGE

Geographical Region	Community
Penal Debe	MORNE DIABLO, PICTON, ROCHARD ROAD, SCOTT ROAD VILLAGE, LA FORTUNE, LA ROMAIN, WELLINGTON, PENAL ROCK ROAD, DEBE PROPER, LENGUA VILLAGE, BATCHYIA VILLAGE
Penal Princes Town	BARACKPORE, ST.CROIX VILLAGE, BORDE NARVE
Penal Siparia	SAN FRANCIQUE, TULSA VILLAGE, SYNE VILLAGE
Point Fortin	HOLLYWOOD, EGYPT VILLAGE, FANNY VILLAGE, POINT LIGOURE, NEW VILLAGE
Point Fortin Siparia	CAP DE VILLE, COCHRANE
Port of Spain	EAST PORT OF SPAIN, SEALOTS, BELMONT
Princes Town	BASSE TERRE, BON JEAN, BROTHERS SETTLEMENT, BUEN INTENTO, CLEGHORN AND MT. PLEASANT, DYERS VILLAGE, FIFTH COMPANY, HINDUSTAN, IERE VILLAGE, INDIAN WALK, LA LUNE, LA SAVANNE, MALGRETOUTE, MARAC, MATILDA, PETIT CAFE', PETIT MORNE, ROBERT VILLAGE, SISTERS VILLAGE, SIXTH COMPANY, ST. CLEMENTS, ST. MARYS VILLAGE, TABLELAND, BROOMAGE, LA RUFFIN, PALMYRA, HARMONY HALL, KUMAR VILLAGE, LENGUA VILLAGE/BARRACKPORE, ST. JULIEN, BEN LOMOND, JORDAN VILLAGE
San Fernando	BROADWAY, VICTORIA VILLAGE, EMBACADERE, NAVET, TAROUBA
San Juan Lavantille	BEETHAM ESTATE, EASTERN QUARRY, FEBEAU VILLAGE, LAS CUEVAS, MALICK, MARACAS, MON REPOS, NEVER DIRTY, ROMAIN LANDS, MOUNT DOR, LA CANOA, SOCONUSCO, MARIE ROAD, PETIT CURUCAYE, ST. BARBS, UPPER BELMONT, MARACAS BAY, PICTON
San Juan Tunapuna	BAMBOO GROVE, BEJUCAL
Sangre Grande	ANGLAIS SETTLEMENT, BALANDRA, BICHE, BROOKLYN , ETTLEMENT, CARMICHAEL, COAL MINE, CORYAL, CUMACA, CUMANA, CUNARIPO, FISHING POND, FOUR ROADS – TAMANA, GRAND RIVIERE, GUATOPAJARO, HOWSEN VILLAGE, LANSE NOIR',

Geographical Region	Community
	MANZANILLA, MARAJ HILL, MATELOT, MATURA, MELAJO, MONTEVIDEO, MORIN BAY, NORTH MANZANILLA, OROPOUCHE, PLUM MITAN, RAMPANALGAS, SALYBIA VILLAGE, SAN SOUCI, SANGRE CHIQUITO, TAMANA, TOCO, TOMPIRE, TURURE, CAIGUAL, GUAICO, VALENCIA, MAHOE, SANGRE GRANDE, MISSION
Siparia	BAMBOO VILLAGE, CARAPAL, COROMANDEL, ERIN/BUENOS , YRES, FULLERTON, GHEERAHOO, ICACOS, JACOB VILLAGE, LORENSOTTE, LOS BAJOS, LOS CHAROS, LOS IROS/ERIN, OROPOUCHE, PALO SECO, RANCHO QUEMADO, ROBERT HILL/SIPARIA, SALAZAR VILLAGE, SOBO VILLAGE, VANCE RIVER, BENNET VILLAGE, FYZABAD, GUAPO, HARRIS VILLAGE, PEPPER VILLAGE, APEX OIL FIELD, BEACH CAMP, BOIS BOUGH, SIPARIA ST. JOHN, VESSIGNY, DELHI SETTLEMENT, ERIN PROPER, LA FORTUNE/PLUCK, SANTA FLORA, SUDAMA VILLAGE, GRANVILLE, WADDLE VILLAGE, THICK VILLAGE, CEDROS, PARRY LANDS SOUTH, QUARRY VILLAGE
Siparia Point Fortin	GONZALES
Tobago	ARGYLE KENDAL, ARNOS VALE, BELLE GARDENS, BETHEL, BETHEL MT GOMERY, BLOODY BAY, CAMBLETON , HARLOTTEVILLE, CARNBEE PATIENCE HILL, CASTARA, CHARLOTTEVILLE, CULLODEN, DELAFORD, DELAFORD LOUIS DOR LAND SETT, GLAMORGAN, GOLDEN LANE, GOODWOOD, KINGS BAY, LANSE FORMI, LUCY VALE, MARYS HILL, PARLATUVIER, PEMBROKE, ROXBOROUGH, SIGNAL HILL PATIENCE HILL, ZION HILL, BUCCOO CORAL GARDENS, MASON HALL, MOUNT GRACE, BETSY HOPE, HOPE FARM JOHN DIAL, ORANGE HILL, PATIENCE HILL, CONCORDIA, MOUNT ST GEORGE, SHERWOOD PARK, MORIAH, BETHLEHEM, TOP HILL
Tunapuna Piarco	ACONO VILLAGE, BLANCHISSEUSE VILLAGE, BRASSO SECO VILLAGE, CARAPO, FREDERICK SETTLEMENT, HEIGHTS OF GUANAPO, KELLY VILLAGE, LA LAJA, LOPINOT VILLAGE, MOUNT ST. BENEDICT, PEYTONVILLE, PINTO ROAD, ST. JOHNS VILLAGE, SURREY VILLAGE, WALLERFIELD, CAURA, FIVE RIVERS, LA PAILLE VILLAGE, LA SEIVA VILLAGE, SAMAROO VILLAGE, KANDAHAR, ST. HELENA VILLAGE, WARREN VILLAGE, ARIMA HEIGHTS/TEMPLE VILLAGE, MARACAS ST JOSEPH, OROPUNA VILLAGE/PIARCO, ST. AUGUSTINE SOUTH, ERIC WILLIAMS MEDICAL SCIENCES COMPLEX, RED HILL

Annex B: Decisions on Recommendations

The following summarizes the comments and recommendations received from stakeholders on the second draft of this document (dated 27th March, 2009), and the decisions made by TATT as incorporated in this revised document dated September, 2009.

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General Comments				
General Comments	TSTT	In principle, TSTT supports a policy for the implementation of Universal Service. However TSTT has noted a number of issues within the body of the within the DORs that give cause for concern. • In the course of this and previous consultations, TSTT has observed the frequent use, by TATT, of the term "noted" as a form of response to the views expressed by stakeholders. This type of response does not, we respectfully submit, allow for a full and proper airing of the issues arising, and only serves to thwart the objectives of a consultation process, which TSTT understands is to find the most efficient, fair and transparent means to execute a particular mandate. Where a consultation process is initiated by, and ultimately informs the actions of, a public authority, TSTT holds to the view that it is incumbent upon that Authority to be as transparent as possible in the mechanism for consultation; as such an authority is therefore duty bound firstly, to come to a decision and	Clarify the working relationship between the policy maker – GORTT and the policy implementer – TATT. Confirm to stakeholders the existence of the Financial Rules of the Authority, and publish	The Authority recognises the concerns raised by TSTT with respect to the government's Universal Service Policy and the Authority's Universal Service Framework. As highlighted in the last DOR, the Authority has met with the GORTT to ensure there is consistency between the policy and the framework. As such the GORTT has revised its policy to include Universal Service and as a result is consistent with the Authority's framework. The Authority will publish its Financial Rules on its website.

[37] 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

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		subsequently give reasons therefore. Merely to "note" something does not satisfy these requirements. • TSTT notes also the continued unavailability of the Financial Rules of the Authority for public scrutiny. This is critical to this consultation particularly as the Authority has made repeated reference to these Rules as the basis upon which the management of the Universal Service Fund will reside. As of the date of submission of these comments, there is no certainty that these Rules even exist. Furthermore, the consultation cannot be considered fair or transparent if one party to the consultation claims reliance upon a procedure that the other party has no opportunity to examine. • Finally, the development of the Universal Service Implementation Plan has given cause for concern, in particular the roles played by the Government and the Authority respectively. TSTT understands that a policy for Universal Service shall be developed by the Government and implemented by the Authority in accordance with the provisions of section 28 of the Telecommunications Act. TSTT further understands that in accordance with the Government's "Draft Policy on the Universal Service of Telecommunications Service Provision in Trinidad and Tobago" the implementation model chosen by Government was that of Universal Access. The Authority, while not completely abandoning the Universal Access model, has (possibly with good reason) opted for the implementation of the Universal Service model.	with immediate effect. Signal all decisions and give full and proper reasons for such. Consider a review by the policy maker of the policy for this sector, with an implementation plan that reflects said policy. Consultation to be based upon such approved revised policy and plan	The Authority recognizes the use of the word 'noted' in previous consultations. However it should be pointed out that this statement reflects the agreement of the Authority with the recommendation by the service provider and in the majority of cases the use of the word is usually followed by a thorough explanation of the issue being discussed. As mentioned above, the Authority has met with the GoRTT to ensure consistency between both documents. The GoRTT has included the amendments to the revised document which has been submitted to Cabinet for review. The National Information Communication Technology Centre (NICTC) of the Ministry of Public Administration can be contacted for a copy of the GoRTT's Universal Service Policy.

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		However given the discourse between the Government and TATT within the framework of this consultation, it is clear that TATT has challenged Government's policy by expanding upon it. While such action may be justified from a regulatory/sector perspective, TSTT is constrained to point out that such action may actually be ultra vires the governing legislation. It is our respectful view that to seek to change the policy of the policy-maker in the course of devising strategies for the implementation of the approved policy is clearly wrong, as the implementing agency has given unto itself the role of policy-maker. TSTT is of the view, therefore that this consultation may actually be null and void in law. TATT has sought to justify the shift in emphasis from universal access to Universal Service based upon population density and current tele-density levels. However what has not been explained is how those factors have actually influenced its decision to rewrite the Government's policy. This notwithstanding, TSTT is constrained to continue its participation in this second round consultation in anticipation that the issues are not addressed.		
General	Illuminat	On review of the Framework, there seems to be provisions that may have substantial impact on participants in the wider Infocomm sector which traditionally do not fall under the regulatory purview of the Telecommunications Authority. Notably, on review of the Discussion on Recommendations (DoRs) provided, many of the offending provisions were identified by contributors ranging from the incumbent TSTT,	Illuminat hopes that going forward, TATT adheres more closely to the principles of consultative policy development by addressing all concerns raised before proceeding forward.	The Authority recognizes the use of the word 'noted' in previous consultations. However it should be pointed out that this statement reflects the agreement of the Authority with the recommendation by the service provider and in the majority of cases the use of the word is usually followed by a thorough

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		to new entrants such as Digicel, CCTL and ICNTT. That the contributors come from such disparate perspectives, it seemed reasonable to presume that these interventions would materially impact the provisions herein. However, these seem not the case as, in many instances TATT provided either no response to, or simply "noted", the concerns raised by contributors. This approach, of apparently ignoring critical concerns does not seem to reflect the collaborative, consultative process envisaged by operators, including Illuminat, within the current regulatory framework.	In that context, Illuminat would like to express its considerable concern of the possible detrimental effect some of the provisions herein may have on the developing Infocomm sector.	explanation of the issue being discussed.
Introduction	Digicel	Digicel wishes to restate its position that it is premature to implement such a broad Universal Service regime in Trinidad and Tobago ('T&T') relatively soon after liberalisation and when the regulation of the section is still evolving. and uncertain. This view is supported by research conducted by the prestigious German economic research institute Wissenschaftliches Institut fuer Kommunikationsdienste (WIK). In their report with Cullen International to the European Commission in 2001 on Universal Service policy issues in new liberalised and emerging economies, they wrote, "Where countries move to adopt new Universal Service programs, they can quickly 'get in over their heads'. In other words, countries can choose a level of regulatory intervention and detail which is beyond their abilities (or what has been referred to as their institutional endowment). We think that in the case of Universal Service, this is relevant for many countries, as it is extremely complex to deal with in an	Digicel recommends that TATT defer its plans not only for the implementation but even formulation of a US policy. TATT's focus should be on combating anti-competitive behaviour in developed markets such as mobile and in supporting and safeguarding entry of new concessionaires in fixed markets (such as via the rollout of WiMAX). In this way, the free market forces can address some of the very concerns raised in Universal Access areas without the need for regulatory intervention. Alternatively, Digicel submits	The Authority must point out that liberalization of the telecommunications sector began in 2005 and there still exist pockets of communities within the access gap that lack basic telecommunications services. While the Authority agrees that further liberalization of the sector is needed, focus must be placed on the development of a Universal Service framework to address the service needs of the underserved communities in Trinidad and Tobago. In addition, the Authority has finalized is Price Regulation Framework which addresses the issue of anti-competitive behaviour.

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		economically sensible way; and failure to deal with it sensibly could be a costly mistake. Where much can be accomplished with tariff reform and liberalisation, we think that few newly liberalising countries will be able to juggle at the same time the pursuit of effective competition and the pursuit of administered Universal Service, and have a resounding success with both of them. Our recommendation for most newly liberalising countries is not to adopt Universal Service programs that give rise to significant net costs before many of the benefits of tariff reform and liberalisation have played out, and the country has been able to improve its institutional endowment."[38]	that TATT should consider directing its efforts towards Universal Access as opposed to Universal Service.	As mentioned within the Universal Service Framework, taking into consideration the population density and the current teledensity penetration, it is more practical to promote Universal Service rather than focus only on universal access.
Section 1				
1.2 WSIS Plan	TSTT	TSTT notes that notwithstanding the promotion of Universal Service as the means to achieve the Government's Universal Service Implementation Plan, it also intends to promote Universal Access on a case by case basis targeting particularly, Community Centres, Schools and Libraries. TSTT is fully supportive of the Universal Access initiative in schools, libraries and Community Access Centres. However	As part of the Universal Access initiative it is recommended that entities other than telecommunications providers assume responsibility for the operation and maintenance of all Community Access Centres	The Authority will consider the recommendation put forward by TSTT to allocate responsibility of the CACs to entities other than telecommunications providers. However, the GoRTT has embarked on a Community Connection Programme that seeks to establish hundreds of Community Access Centres throughout Trinidad and Tobago so as to provide rural and urban residents with affordable

[38] Cullen International and *Wissenschaftliches Institut für Kommunikationsdienste* GmbH (WIK), (2001), "Universal Service in the Accession Countries", A study for the European Commission.p.85. http://www.cullen-international.com/documents/cullen/cipublic/studies/usomainr.pdf

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		TSTT, which has rolled out a number of such centres, has encountered many administrative difficulties in overseeing their management, given that they do not form part of a provider's core business and area of competency. Based upon experience, therefore, TSTT suggests that the operation and maintenance of Community Access Centres reside with Central Government, Local Government or a suitable NGO organization. In this regard, TSTT is will donate its seven fully outfitted CACs to the overall initiative . Additionally, TSTT notes TATT's comment at page 103 that the loss making services identified by TSTT (payphones) are under a separate investigation and are to be addressed outside of the Universal Service framework consultation. Nonetheless, TSTT asks that TATT measure the level of payphone to mobile substitution within the framework of this consultation. TSTT believes that based upon the level of payphone to mobile substitution the TATT may be required to review the extent to which payphones are to be distributed in fulfillment of Universal Service implementation.		access to computers and high speed Internet access. The Authority will be contributing 5% from the UF towards the GoRTT's CAC initiative. The Authority will consider this suggestion raised by TSTT in its assessment of the public node initiative.
1.3 National Universal Service Policy	TSTT	TSTT notes the Authority's Decisions in response to comments from Digicel, that it has – a. "put measures in place through the implementation of various policies including pricing and costing frameworks to address issues associated with anti-competitive behaviour; and b. permitted recently liberalized sectors, for instance the introduction of Columbus Communications Limited and BWA Internet services, to diminish the access	Seek to address Universal Service obligations within the framework of existing Concession obligations. This may have the effect of reducing the level of Universal Service funding, particularly in the area of administrative funding required to meet implementation objectives.	The Authority agrees with the comment submitted by TSTT. The Authority is putting compliance measures in place to ensure that all service providers fulfill their mandate of meeting their concession obligations and therefore reduce the burden on the Universal Service Fund. The Authority intends to only fund Universal Service Areas (USAs).

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		gap". With respect item a. It is incumbent upon TSTT to remind the Authority of the requirement for the Parliament to sanction proposed policies before any such measures can lawfully take effect. Therefore effective the date of this second round consultation, it must be pointed out that no such measures are lawfully in place. With respect to item b. It is respectfully submitted that the introduction of other providers and/or technologies into the sector absent conditions that would require the rollout of networks and services in underserved areas fails reduce the access gap. Instead, the gap further widens as the competition between providers is located primarily within the lucrative markets at the expense of the underserved areas. Closing the access gap is not only a matter of available technology but is also a matter of imposing rollout obligations into the affected areas.		The mentioned policies are currently before Parliament for approval. On approval these regulations will be enforced.
Section 2				
2.1 DoRs: comments of Digicel (pp.) and ICNTT (pp.)	Illuminat	Illuminat notes that both TSTT and ICNTT commented on an apparent inconsistency between the then TATT Universal Service Implementation Plan and the last published GoRTT Universal Service Policy.	Illuminat notes that despite statements otherwise, TATT has not published the final GoRTT Universal Service Policy for the	It should be noted that the Ministry of Public Administration is responsible for the development and publication of the GoRTT Universal

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		Both firms noted a fundamental shift of Policy from the apparently cost constraining "Universal Access" approach to a more fiscally intensive and expensive "Universal Service". TATT responded in the DoRs that the GoRTT policy had been amended subsequent to its last publication to be in alignment to the TATT proposed Universal Service approach. It is thus quizzical then that in Section 2.1 of the revised Universal Service Framework, where TATT quotes the GoRTT Policy there is a clear reference to the implementation of a Universal Access approach… 'to promote universal access to telecommunications services for all persons… '…in a manner that facilitates access by all citizens while encouraging innovation and incentive for investment in the ICT sector.' This situation is compounded by the impact that this shift can have on the cost of the Universal Service programme and the associated burden of covering that cost on commercial participants in the sector – a concern raised by a contributor but not reflected in TATT's redraft of the framework. As an example, in section 7.3.2 TATT provides examples of the type of initiative that shall be piloted through the Universal Service programme and included: 'fixed telephony services – to be made available to all households within Universal Service Areas and population groups within the access gap…	scrutiny of contributors during this consultative phase. TATT should be clearer on whether and how it is adhering to GoRTT policy in accordance with the Telecommunications Act, or whether this framework's proposals apparent veering from that policy to pursue Universal Service provision to the home is	Service Policy, while the Authority is responsible for the drafting and publication of the Universal Service Framework and Regulations. The National Information Communication Technology Centre (NICTC) of the Ministry of Public Administration can be contacted for a copy of the GoRTT's Universal Service Policy. The change has been made in the revised Universal Service Framework to reflect Universal Service as opposed to universal access. The Authority has met with the Ministry of Public Administration to ensure there is consistency with the terms used in the Universal Service Framework and the GoRTT's Universal Service policy. As mentioned above, a copy of the Universal Service Policy can be obtained from the The National

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		and 'broadband Internet services of throughput …- to be made available to all households within Universal Service Areas and population groups within the access gap.' Both of these proposals would be significantly more expensive to implement and maintain (through market distorting subsidies) than the provision of access to central locations (e.g. to schools, Community Centres etc.) within the community Further, as suggested by the comments of the Ministry of Public Administration, there still seems little or no consideration of the demand factors in the decision to go to Universal Service. Consider, a single access line installed at a residence with little tacit demand is less likely to be sustainable in the medium term than an access line which provides supply for the aggregate demand in the community. The former approach increases the possibility of long term dependence on the Funding mechanism, while distorting the market –based indicators of natural demand for the product.	in fact ultra vires the GoRTT policy and thus the Act. TATT must provide appropriate justification for undertaking an approach which seems to increase costs of the Programme (substantially!!) without appropriately addressing demand concerns, and how such would be mitigated.	Information Communication Technology Centre (NICTC). Mention must be made that Universal Access is a precursor for Universal Service. The Digital Divide survey conducted in 2007 revealed that the proportion of households with fixed lines were approximately 73% while mobile subscribers per 100 inhabitants measured 93%. These results prove that Trinidad and Tobago is very close to achieving universal access. The Authority therefore believes the next step that will assist the country in becoming a knowledge-based society, is achieving Universal Service. As such the focus of this framework is on Universal Service while the Authority also recognizes that on a case by case basis, there may be a need to promote universal access initiatives at community access centres, schools, libraries etc.

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		This would thus impede the suppliers from determining when the market/ community is actually maturing. Ironically, TATT cites the "maturity of the telecommunications marketplace" as a major rationale for the apparent shift to Universal Service provision but provide little evidence of that maturity. In fact, the information provided in the Framework document suggests the opposite.	TATT should provide more robust response to the question asked by many contributors as to how it intends to appropriately measure demand and ensure that the dependence on the Fund via subsidies is not excessive due to either: (a) abuse of such subsidies; or (b) competition-restricting market distortions. Illuminat strongly recommends a reversion to a policy of Universal Access provision as a means of mitigating against the market-distorting impact of the proposed Programme.	As mentioned with the Universal Service Framework, the Authority intends to carry out: 1. A Needs Assessment - which would involve a thorough analysis of the unmet demand for basic telecommunication services by using secondary data provided by the service providers and by using data collected in digital divide surveys. The analysis would identify locations, population groups and areas with the greatest need, the type of services that the market is not providing, and the initiatives that would have to be implemented to meet the unmet demand. 2. A Cost Analysis - which will estimate the level of financing required to subsidise the investment and/or the operating costs involved in implementing the Universal Service initiatives. It is proposed that this estimate be for a five year

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				timeframe taking into account changing technologies, demand for service and other evolving factors. In addition, the Authority will be publishing its Universal Service Strategic Implementation Report and its Fund Accounting Report for public consumption, which should mitigate against any abuse of subsidies.
2.2 Defining Universal Service	TSTT	The Authority correctly identified 'Universal Service' as a broad term which encompasses both Universal Service and universal access. However, mention should be made of the three (3) fundamental principles on which Universal Service is predicated: Availability, Access and Affordability. Availability – refers to the supply of services, that is, the telecommunications network, is present in the specified area. Access - occurs when customers are able to use the network on a non-discriminatory basis, that is, every customer who desires the services of the network can access and utilise it. Affordability - addresses the level of consumer spending on telecommunication services as a percentage of the individual's total consumption spending or income.	TSTT recommends that the Authority include these three (3) principles in its definition of Universal Service.	The Authority agrees with the recommendation made by TSTT. The framework has been revised accordingly.

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2.2 Defining Universal Service	TSTT	TSTT observes that the definitions of Universal Access and Universal Service preferred by TATT ignore the principle of reasonableness in seeking to achieve Universal Service. TSTT has noted the definitions utilised by Regulatel, a Latin American Regulator with a similar perspective to TATT on the establishment of Universal Service. In a publication entitled "New Models for Universal Access in Latin America 2006" Regulatel proffers a definition that promotes the reasonableness principle as a mechanism or truly achieving Universal Access. Regulatel therefore considers ""universal access" as the "reasonable" availability of network facilities and services, in terms of geographic coverage and public access points, such that citizens and institutions, can obtain and the services within their local communities, either on a private or a shared, public basis". To achieve true "universal access" therefore implies that 100% of a designated population can obtain, at a minimum, public access to a defined service, through "reasonably" available and affordable public or community facilities, and those who are willing and able to pay full cost-based prices can obtain individual or household service on demand. Regulatel also characterises Universal Service as ability to	Consider "reasonableness" as a determinant of Universal Access and Service and revise the definitions accordingly as per comments.	Reference is made to the policy statement under Section 2.5 of the framework which states: The Authority proposes that the Universal Service Framework and supporting regulations should establish mechanisms that would promote Universal Service for both telephony and data (including Internet) services as far as reasonably practical. However the Authority agrees the term 'reasonable' should be included under the definitions of Universal Access and Universal Service.

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		deliver telecommunications services ubiquitously to households or individuals throughout an area, in a manner that is both accessible and affordable, with no practical impediments to subscription and usage. To achieve true "Universal Service" thus implies that 100% of a designated population is reasonably able to subscribe to and use a defined service on an individual, household or institutional basis.		
2.3 Definition of Basic Telecommunications Services/Achieving Universal Service	TSTT	TSTT has noted the comments of the ICNTT with regard to the provision of 512kbps as the minimum speed for broadband provisioning. TSTT notes TATT's response fails to give reasons for holding to this position in the face of what appears to have been a very well reasoned discourse on the difficulties associated with maintaining this level of speed as a minimum standard. TATT has responded that this requirement is a policy requirement of the Government. However such a response does not permit further discourse, with the result that it undermines the consultation process.	TSTT requests that the pertinent information in support of this decision be shared with stakeholders.	Information on the Ministry's Universal Service Policy can be obtained from the National Information Communication Technology Centre. However the Authority believes that the government can use broadband as a growth engine in expanding its reach of e-government services to the public. It may be possible a minimum speed of 512kbps is necessary to make this e-government access a reality.
2.3 Definition of Basic Telecommunications Services	Digicel	Despite the arguments made by the concessionaires in the previous rounds, no proper justification has been given as to why broadband internet services of throughput no less than 512 kps is appropriate as part of the basic telecommunications services. It is indisputable that this is not done in other countries with even higher GDP per capita and internet user levels than in Trinidad and Tobago.	It is not feasible to focus both on Universal Service as opposed to access in all underserved areas and to set the bar as high as broadband internet services at 512kps. The definition of basic telecommunications services	Information on the Ministry's Universal Service Policy can be obtained from the National Information Communication Technology Centre. The Authority believes this speed mandated by the Ministry supports the government portal and content management such that government services can be efficiently and

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			needs to be revised. If the Authority is not in agreement, we would be grateful for a substantive explanation as to how this will be feasible and the reason for using this standard. Further if the standard is adopted from the Ministry's recommendations we would be grateful for a substantive statement of the underlying rationale and the practicality of implementing such standard.	effectively accessed by all persons online.
2.3. Definition of Basic Telecommunications Service, & 4.3 Identifying Basic Telecommunications Services requiring Regulatory Intervention for Achieving Universal Service	Digicel	In order to determine which "basic telecommunications services would likely require regulatory intervention" so as to be available, affordable and accessible universally", TATT considered the following two factors: "1. Has the ability to use the service become essential for social inclusion based on Government ICT policy objectives and social, economic and technological developments? , and 2. Are normal commercial and market forces insufficient to make the service available for all to use?" TATT states in section 4.3 that it considered inter alia that, "affordable broadband Internet services of throughput no less than five hundred and twelve kilo bits per second (512 kbps)" passes both tests.	Digicel recommends that this criteria be included in the Universal Service Regulations	The Authority believes a minimum speed of 512kbps is necessary for social inclusion as this speed may increase the availability of e-government services and other knowledge-based services to all. This may mitigate against any member of society being disadvantaged in accessing these services. In addition the 2008 Market Report conducted by the Authority showed that broadband subscribers grew by 138% proving that there is a demand for broadband services. However there are population groups and communities within Trinidad and Tobago that fall inside the access gap since normal market forces are insufficient to make the access

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		Digicel does not believe that the evidence supports TATT's conclusion that 512kbps (often referred to as broadband) access to the internet can be considered "Universal Service" or a service that is "essential for social inclusion." Only 13% of residents subscribe to this level of service in Trinidad and Tobago. Arguably, it is a pre-condition that a large majority of people subscribe to a service before it can be considered essential for social inclusion. Indeed broadband service is not legally within the scope of Universal Service in the EU. Moreover, it is not considered essential for social inclusion in EU countries where there is about 3 times the level of broadband subscription as compared to Trinidad and Tobago as well as 2 - 6 times the GDP per capita.[39] Most people in T&T do not subscribe to a home delivered internet service (be that at 512kbps or not); which also appears to be the case everywhere else in the world. Making a broadband service available in areas where there is little demand for it, as TATT seems to be contemplating (in section 7.3.2), would result in enormous net costs, i.e. revenues would be dwarfed by costs. The net cost per subscriber would more than likely make such a proposition thoroughly uneconomic and unreasonable.	With a vast majority of households still not subscribing to internet service (broadband or otherwise) Digicel suggests that "universal access" and not "Universal Service" should comprise the limit of any official "Universal Service" program involving internet access or services. This would be limited to the provision of public access points. Digicel contends that there is no legitimate basis for subsidising internet access or usage to households. It is not generally done in other countries we are aware; even those with several times the GDP per capita of T&T and several times the internet penetration rate of T&T – not least because of the enormous cost it would involve.	available to all. Therefore the need to include 512kbps Internet speed as a basic telecommunications service that would likely require regulatory intervention.

[39] Digicel wishes to point out that Universal Service taxing and funding were exhaustively covered in a report to the European Commission by German economic research institute *Wissenschaftliches Institut fuer Kommunikationsdienste* (WIK): "Study on the re-examination of the scope of Universal Service in the telecommunications sector of the European Union, in the context of the 1999 Review". http://ec.europa.eu/archives/ISPO/infosoc/telecompolicy/en/wikuso2.pdf Digicel quotes from this report at several; places in this reply as well as the study by WIK and consultants Cullen International, *Op cit*.

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		Universal voice service is very largely provided in T&T by the mobile network operators (MNOs). In terms of the provision of services to individuals or residences (what universal 'service' as opposed to universal 'access' is about), voice service makes up the vast majority of Universal Service obligations in all countries we are aware of. In achieving the existing levels of penetration mobile operators in T&T, and especially Digicel, have provided substantial Universal Service subsidies, which are tantamount to fulfilling Universal Service obligations. The explanation for this is has only recently been explored and understood by academic economists, and through them by leading regulatory agencies and consultants. In summary, ambitious mobile networks operators such as Digicel invest in subscribers by selling below cost handsets and periodically also very low promotional rates. This is a viable and indeed highly efficient strategy that is in the public interest. It is viable and efficient because the mobile network is a two-sided market platform[40], which enables MNOs in a 'calling party pays' environment to balance prices on both sides of the platform – higher termination rates and lower retail charges. This leads to high penetration as a larger percentage of the public buy the very low priced mobile phones (which they would not buy if the price fully covered the cost). The result is that enormous [externality] benefits are captured by all network users (or in economic jargon 'internalised'); i.e.		

[40] This now burgeoning area of economic research began in 2001 with a paper by Jean-Charles Rochet and Jean Tirole, "Platform Competition in Two-Sided Markets", http://www.dauphine.fr/cgemp/Publications/Articles/TirolePlatform.pdf
A more recent Survey paper is by Roberto Roson, (2005), "Two-Sides Markets: Tentative Survey". *Review of Network Economics*, Vol 4, Issue 2.

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		this approach leads to much higher subscription levels than would occur if only single sided markets were involved.[41] Thus, MNOs have been providing 'subsidised' Universal Service through the facility of the two-sided platform they operate. Without such subsidies, growth of mobile subscriptions would have occurred much more slowly and mobile voice penetration today would be substantially lower in T&T than it is today.[42,] By regulating mobile termination as if it was a single-sided market,[43] as TATT intends, the revenue to pay these existing Universal Service costs is being removed and thus a net Universal Service cost arises for Digicel (and probably for TSTT also although we suspect its net costs are much lower). In other words, the existing level of subscriptions and coverage in T&T is unsustainable without: (i) the two-sided market		

[41] For an excellent presentation on these network effects (and more besides) see the 'Frontier Economics' presentation by Mark Williams, "Network externalities in telecommunications: Theory and application", 29 June 2005, available at http://www.itu.int/ITU-D/finance/work-cost-tariffs/events/tariff-seminars/south-africa-05/presentation-mark_william-en.pdf

[42] 'Two-sided markets' is a complex and burgeoning area of economic research. Two-sided markets involve two or more distinct user groups each obtaining network benefits from the other side of the market. This means that with two-sided markets, demand, marginal cost and prices on one side, are dependent on demand, marginal cost and prices on another side of the market. The platform hosting the different user groups thus faces a complex optimisation problem. If there are significantly stronger indirect network effects on one side than another, prices on one side may be zero or negative. The research topic began in 2001 with a paper by Jean-Charles Rochet and Jean Tirole, "Platform Competition in Two-Sided Markets", http://www.dauphine.fr/cgemp/Publications/Articles/TirolePlatform.pdf
Empirical support can is provided by Jerry Hausman (MIT) and Julian Wright (NUS) (2006), "Two Sided Markets with Substitution: Mobile Termination Revisited": http://econ-www.mit.edu/files/1038
Christos Genakos and Tommaso Valletti, (2007), Testing the "Waterbed" Effect in Mobile Telephony", Mimeo, Imperial College, London. http://www.sel.cam.ac.uk/Genakos/Genakos%20Valletti-Testing%20the%20Waterbed%20Effect.pdf;
A version for non-economists was also provided; Christos Genakos and Tommaso Valletti,(2007), "Regulating the mobile phone industry: Beware the 'waterbed' effect", *CentrePiece* Autumn, http://cep.lse.ac.uk/pubs/download/cp238.pdf
A Survey paper is by Roberto Roson, (2005), "Two-Sides Markets: Tentative Survey". *Review of Network Economics*, Vol 4, Issue 2, http://www.rnejournal.com/artman2/uploads/1/roson_RNE_june05.pdf

[43] This type of policy error is discussed at length in David Evans, (2003), "The anti-trust economics of two-sided platform markets", *Yale Journal of Regulation*, Vol. 20, pp 325-381.Downloadable at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=332022

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		solution, i.e. without the tipping of retail and wholesale (the MTR) platform prices, or (ii) explicit compensatory Universal Service subsidies paid to MNOs. The corollary to this regarding fixed networks with high penetration (country-wide availability) is that incumbents rolled out service to areas / subscribers who were unprofitable to serve. Prior to liberalisation these were largely funded by cross-subsidies from highly priced international and domestic long distance services. Liberalisation and tariff rebalancing resulted in a loss of available revenues from international and domestic calls to cross-subsidise unprofitable customers and areas, as these prices collapsed due to competition. Net Universal Service cost assessment and compensation by either the State or via a line item on end-user bills or via a sector financed fund, is intended to provide the revenues needed to (i) maintain service to those already receiving it into the medium and longer term, and (ii) to prevent a "regulatory taking" or opportunistic seizure of investors' funds that would occur if the authorities refused to allow for the recovery of this subsidy. For mobile networks that have their MTR regulated as if it was a single-sided market, it results in a virtually identical situation as we described above for fixed networks. We are faced with losses as we are unable to pay existing Universal Service costs because our MTR is regulated as if it was a single-sided market. In the UK the regulator chose to allow sufficient tipping		

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		between (lower) retail and (higher) wholesale MTR pricing i.e. a two-sided market solution, rather than the alternative which is to impose a one-sided market solution, and to provide Universal Service subsidies to MNOs to compensate them. TATT states that it does not believe public mobile telephony services satisfy the second condition, namely, "2. Are normal commercial and market forces insufficient to make the service available for all to use?" In other words TATT is saying that market forces alone will suffice and that no Universal Service imitative are needed specifically in regard to MNOs. This may be correct if mobile networks were permitted to price according to the two-sided market platform which they are. In T&T, TATT has decided to regulate termination as if MNOs were single sided platforms thus preventing Digicel from recovering its subsidies to Universal Service. Digicel believes that both economic theory and evidence undermines TATT's assertion that market forces alone will suffice and that no net Universal Service cost arise specifically in regard to MNOs. Digicel also believes that TATT is incorrect to refer to the type of network or type of technology when considering Universal		

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		Service issues. If the Universal Service or access issue is concerned with "voice" then it should make no difference whether that voice service is provided by an MNO, a fixed network operator, or a satellite service provider. It should not matter whether the technology used is dedicated circuit or some sort of IP-based technology. The way TATT has discussed these issues is neither competitor nor technology neutral. Indeed, Digicel believes that excluding MNOs from acquiring assistance is contrary to the principle of fairness in the Telecommunications Act, i.e. "to establish a comprehensive and modern legal framework for an open telecommunications sector by permitting new providers of telecommunications services to enter the market and compete fairly"[44] Indeed, Digicel believes that the fixed network will become increasing redundant as 4G and 4.5G wireless based technologies are now able to provide very high speed access for voice and data services. As well as failing neutrality principles, TATT appears to have some misdirected focus on fixed wire infrastructure which is out of step with the development of modern wireless-based technologies.	Digicel urges TATT to remove the exclusion placed on MNOs, and also to change the Universal Service framework so that it is: 1) competitively neutral, 2) technologically neutral, 3) structurally neutral, and 4) neutral in terms of application and content.	The Authority disagrees with the statement that voice services provided by MNOs should be funded through the UF. The Authority believes the ability to use a mobile phone is seen as essential for social inclusion in Trinidad and Tobago, and normal commercial forces had led to widespread availability and use of mobile phones, so there is no need for regulatory intervention through Universal Service to achieve universal mobile voice service. The Authority also believes this view upholds the principles of fairness and neutrality in the Telecommunications Act.

[44] Preamble to the 2001 Act.

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			At present the Draft Universal Service Framework contradicts several if not all of these principles.	
2.4 Achieving Universal Service	TSTT	Further to our General Comment earlier, TSTT has noted the discourse between ICNTT and TATT with respect to the disparity between Government's policy and TATT's implementation plan. The differences in approach are likely to have significantly different financial impacts for the sector and therefore it is of concern to stakeholders like TSTT. It appears that roles of the GORTT and TATT have reversed somewhat, with the following comment from TATT supporting this view: "it must also be noted that the Ministry has changed the term 'Universal access" in its policy to "Universal Service" which is consistent with the Authority's framework," (DOR page 119)	TSTT would be grateful for a clarification of the roles of the public entities in defining and implementing policy for the telecommunications sector.	Section 28(1) of the Telecommunications Act reads: 'In accordance with the policy established by the Minister, the Authority shall determine the public telecommunications services in respect of which the requirement of Universal Service shall apply' Therefore in accordance with the Act, the Ministry of Public Administration has developed a general Universal Service Policy from which the Authority has drafted its framework which defines the specific basic services for which Universal Service applies. As mentioned before, the Authority has met with the Ministry of Public Administration to ensure that the Universal Service Framework is consistent with the GoRTT's Universal Service Policy.
Section 3				
3. The Market Gap and Access Gap	TSTT	TSTT appreciates the modifications made to the access gap illustration on page 15 of the second consultative document.	Given information was submitted previously under	The Authority agrees with this statement and is in the process of

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		Visually, this revised diagram fosters an understanding of market gaps and the digital divide which are foundational to achieving success in the rural arena. More importantly the basic framework of the diagram demarcates the region likely to be commercially feasible (market efficiency gap) and the region with the propensity to be politically and/or socially desirable (access gap). It can be argued however that the proposed model captures a snap shot in time and is not consistent with the dynamics of the telecoms markets (i.e. the true extent of the access gap that exist). Initially marginal revenues in rural areas will be lower than urban areas and investments required to reach these rural areas will be disproportionately high (as seen in the diagram). However with the burgeoning of advanced technology, including mobile capabilities, there has been a significant drop in the commercial feasibility gap that previously plagued developing markets and these gaps have been reduced at a pace unimaginable a few years ago. Mobile operators have competing, though not necessarily conflicting, opportunities to grow: • Expanding network coverage and increasing penetration of existing services in the areas already covered and / or • Competing with fixed networks as the bearers of advanced broadband services.	cover of the "Current Status of Underserved Communities", following the revised diagram there is need for a review of the extent of the gap that may exist in Trinidad and Tobago at a 'macro' level.	verifying the information submitted by the various service providers with respect to the 'Current Status of Underserved Communities'. This information is presently being used to revise the list of underserved communities.

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		With technology changing and convergence an ever increasing reality, there appears to be significant potential for availability (increasing penetration through fixed line and wireless capabilities including QoS); affordability (lower prices as competitive forces act 'freely') and accessibility (improvement through voluntary and suitable regulatory schemes). All three areas which are the corner stones of Universal Service. Thus, telecommunication services in the rural and more insular regions of Trinidad and Tobago stand to benefit from NGN technologies in the near future, - this of course depends on the removal of policy creating a disincentive to invest and other barriers adversely affecting roll out including minimising of price controls. Significant questions therefore arise: If availability of telecommunication access is achieved, is Universal Service still necessary? Could a policy that was framed for legacy technology (as captured by the digital divide) is this policy really applicable in the NGN world?	Rethink Universal Service with an applied focus to the competitive environment and NGN technology.	While availability is one component of Universal Service, accessibility and affordability also play a significant role. As such the achievement of Universal Service remains necessary. As stated under the section 2.3 of the Universal Service framework, the Authority is adopting a technology neutral approach towards the implementation of the basic telecommunications services. Therefore it may be incorrect to

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				imply that this framework is framed for legacy technology. As an example, Section 7.3.2 encourages service providers implementing fixed telephony services to use fixed wireless technologies if it is deemed the most cost effective and cost efficient solution.
Section 3 Access Gap	Digicel	Digicel would be grateful for some indication of the timeframe within which the Authority or the Ministry plans to embark on the implementation, if at all. There is much discussion about the access gap in this section but that can only be determined where "some areas and population groups" will "not be served even with the most optimal, efficient and liberalised market". We wish to reiterate that the Authority has not permitted adequate developmental time and guided the liberalisation of the sectors where services are deficient. So it is a foregone conclusion to assume that there will be an access gap.	Before spending time and resources on establishing a potential Universal Service policy with already over ambitious targets, the Authority should focus on achieving the optimal and efficient markets for the deficient sectors via rollout obligations in concessions and spectrum licences that can be used to coordinate the establishment of wireless networks to provide the deficient services. As most concessionaires will be rolling out or expanding their networks shortly for fixed wireless technologies, then the Authority could even have discussions with the private parties to attempt to collaborate and fill the access gap. A collaborative approach could even yield a build-out in underserved areas without resort to this ongoing and potentially bureaucratic USF regime as the	The Authority is currently engaged in a compliance exercise to ensure all concessionaires are meeting their rollout obligations. In addition, the Authority has auctioned spectrum for the provision of Broadband Wireless Access (BWA) services which may serve in lowering the market gap. However it should be pointed out that the Universal Service Areas (UAs) and certain population groups are labeled as economical unfeasible thus the reason operators are not willing to provide services. As such it is the intention of the Authority to set up the Universal Service Fund to aid in the provision of basic telecommunications services to these areas and population groups.

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			concessionaires and Authority could decide who will build out where. Of course, such an arrangement would have to include a methodology taking into account whether the concessionaire is a new one in that sector or an existing player who has been profiting from the sector and neglected certain areas, and also the extent to which those existing players complied with the roll out obligations in their concessions, if any. The latter category should carry greater obligations to roll out in currently underserved areas.	As mentioned previously, the Authority is engaging in a compliance exercise to ensure all concessionaires meet their rollout obligations.
3.1.1 Market-based Reforms b) Competition	TSTT	According to TATT (pg 19) "Competition provides an incentive for greater efficiency, lower prices, new pricing models and promotes better quality" TSTT notes all of the above could be achieved through the means of 'tariff flexibility.' Where competition is present; the need to drive penetration to ever lower income users has led to price reductions. As a result of this process, service provisions become more attractive and affordable to low-income users because of innovative price packaging. Conversely, when there is some degree of 'tariff inflexibility' imposed on some	Market efficiency is achieved with a low touch in regulation, with the regulators' main task to ensure that players who may be dominant do not abuse their power. Include measures for 'tariff flexibility' in the paragraph.	The Authority does not agree that 'tariff flexibility' should be included in the paragraph. Funding through the UF becomes necessary where tariff flexibility fails to achieve the goal of achieving Universal Service, even when competition is present in the market. There exists communities and population groups that fall within the access gap and it may not be economically feasible for operators to provide services. Thus the need

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		providers in the market restructuring of prices in response to competitive pricing in the marketplace becomes disadvantageous to the restricted provider.		for Universal Service.
3.1.1 Market-based Reforms b) Competition	TSTT	The Authority states at page 22, that the "focus for regulatory initiatives would be applied communities and population groups that are found within the access gap as opposed to those falling within the "market gap". However TSTT notes that there is a distinct absence of analysis on initiatives to minimize the said access gap.	The Authority needs to identify measures to minimize the access gap.	General solutions to minimize the access gap are presented under Section 7. However the Authority intends to draft and publish a Universal Service Strategic Implementation Report that will discuss the specific initiatives to be undertaken to reduce the access gap over a two year period. This report will be published after the Universal Service Regulations are approved.
3.1.1 Market Based Reforms	Digicel	Digicel believes that more must be done in regard to market based reforms if the market is to efficiently and effectively provide what it can to those who do not currently buy 'universal' type services.		As discussed under Section 3.1.1 of the Universal Service framework, market based reforms have been implemented and the process is currently on-going. An example includes the auction of spectrum for the provision of BWA services. It must be mentioned however, that market based reforms will only minimize the market gap as opposed to the access gap. Therefore establishment of the Universal Service Fund is still necessary.

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		Digicel believes a full privatisation is required if the various 'authorities' are to be incentive neutral in their dealings with the sector. Moreover, further regulatory reform is needed in order that the approach to regulation meets international standards. This should revolve around the concept of dominance, proper market definitions, and regulatory remedies that are in line with international best practice; or if they are not, are defended with a rigorous cost benefit analysis which is shared with all concessionaires before implementation of regulatory intervention.		The Authority believes that all its policies and regulations meet international standards as extensive research and public consultations are undertaken in the development of any reform mechanism. In addition, the concepts of dominance and market definitions are dealt with under the Authority's Pricing Framework. Please follow link: http://www.tatt.org.tt/ddocs/Pricing/Price_Reg_Framework_03_09.pdf
3.1.1 Market Based Reforms	Digicel	The Authority has stated that successful bidders for BWA auctions will be required to roll out services in areas that were previously considered not to be economically feasible using wired technologies.	Consistent with our comments above, we recommend that the rollout obligations required in this regard be inserted in the spectrum licences for winning bidders where it may not be possible to include same in an existing concession. Further the obligations should be more heavily weighted against the existing concessionaires than new entrants in these sectors. The former group would have been operating in the deficient areas and profiting from same whilst not serving the excluded areas. It would be reasonable and fair that they now provide via the roll out obligations more	The Authority has included rollout areas within the concessions of the successful BWA bidders. However it should be pointed out that the Universal Service Areas (UAs) and certain population groups are labeled as economical unfeasible thus the reason operators are not willing to provide services. As such it is the intention of the Authority to set up the Universal Service Fund to aid in the provision of basic telecommunications services to these areas and population groups.

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			infrastructure in those areas that were previously deemed unprofitable as they failed to address these areas by way of market segmentation or other means to provide subsidised services to those areas over the years. In addition, Digicel is aware of several telecommunications providers particularly ISP providers who are not concessionaires and should be taking steps to regularise their positions with the Authority. Whilst we accept the Authority's power to exercise forbearance, in the interest of achieving Universal Service, we recommend that these providers should be forced to regularise their status and to accept roll out obligations placed on them in underserved areas. After all, these unauthorised providers have been operating for some time and reaping profits and it is only fair that they now address the shortfall in internet penetration in as much as legitimate new entrants are being asked so to do. Digicel wishes to suggest that there may even be no need for a USF regime if all	These ISPs referred to by Digicel, have submitted concession applications to the Authority and are in the process of being authorised. The Authority does not agree that these operators should be forced to rollout services in the UAs, as these UAs fall with the access gap and are labeled as economically unfeasible.

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			providers, whether concessionaire or unauthorised entities, addressed the needs of underserved areas in a coordinated manner.	
3.1.2 Mandatory Service Obligations & 7.3 Contractual 'Playing' Universal Service Obligations	Digicel	The imposition of costly unfunded obligations on private firms is unacceptable. "If no concessionnaire enters the reverse auction for any particular Universal Service obligation, the respective obligation will be imposed on the concessionaire with the highest available network capacity and the least infrastructural build out required to provide services to that region/ population group."[45] On page 79, TATT notes that, "That concessionnaire will be allowed to access the UF to subsidise the implementation of the obligation, under similar terms and conditions that would have been granted to the successful bidder in the reverse auction." The problem is that there is no way of knowing what level of subsidy would have come out of a reverse or minimum subsidy auction if it never took place.	Digicel urges that the Authority reconsider imposing mandatory service obligations on operators beyond the roll out obligations contained in their concessions. Digicel also suggests that section 7.3.1 of the draft Framework be revised as it involves too much bureaucracy and is not sufficiently appreciative of the nature of competitive processes. It has been shown for example, that the performance of auctions or competitive bidding can be dramatically compromised by reducing the number of bidders by one. Thus, the number of bidders needs to be encouraged	Those mandatory service obligations that will not be funded by the Authority are keeping with international consumer standards and as such concessionaires must take some level of social responsibility in providing these obligations. The Authority believes the steps highlighted in Section 7.3.1 are necessary as they promote levels of fairness and transparency in awarding obligations to existing concessionaires. The Authority does not agree with this statement. The reverse auction process proposed by the Authority encourages all existing concessionaires to enter the bidding process.

[45] Page 75 and 79 of the Draft Universal Service Framework

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		What would be required is a net Universal Service cost assessment; which is a highly complex procedure for expert consultant economists and the results of which are accepted as being approximate only. This is the approach used where investments have already been made e.g. net cost areas serviced by incumbent operators. It is unlikely that a private operator who had previously concluded that the investment was not commercially feasible would be prepared to do so based on compensation assessed in accordance with TATT's plan. Digicel believes that TATT's proposals are too ambitious and will have the effect of 'crowding out' private investment. The WIK dealt with this issue in its report with consultants Cullen International to the European Commission: "In an apparently liberalised environment there is considerable potential for competition and investment to be 'crowded out' by poor regulation and/or inappropriate regulatory institutions. Crowding-out can be viewed either in terms of investment or private consumption. Where it occurs, potential competition and investment does not materialise because of the risk that new policies or policy changes will undermine the original business case for investing. Two warning signs are an unstable policy environment, and policies that firms consider are naïve. Such costs are generally not amenable to measurement. Even where these problems are chronic, some investments may occur, and some competition may materialise, but only in return for	and not reduced as TATT's rules would have it.[48]	

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		higher than normal rates of return on investments to compensate for the higher risks involved."[46, 47]		

[48] See for example, Bulow, Jeremy I. and Klemperer, Paul D. (1996) "Auctions vs Negotiations", *American Economic Review*, 86, 180-94. http://www.nber.org/papers/w4608.pdf

[46] Cullen International and WIK, *Op cit* , p.87

[47] Another salient quote from pages 88 to 90 of the same report:

"It seems likely that these 'crowding out' problems will on average be more acutely felt in small, middle and lower income countries than in large and higher income countries. They are also likely to be more of a problem in recently liberalised industries, and relatively new democracies where governments and the regulatory authorities have some way to go to establish their credentials for avoiding policy turnarounds, i.e. to convince investors that property rights will be protected. Without investors' belief in the regulator's ability to commit to its decisions, they will perceive higher risk, and thus require higher returns if they are to invest.

In order for the markets to believe that the regulator's rulings are not going to be fundamentally changed at a later date, in a way that strands investors assets, the regulations need to do three things:

1. *Show that the regulator has made relatively sustainable and sensible rulings.*
2. *Provide an institutional structure that protects the regulator from being manipulated by political interests, as this would raise the risk of policy reversals. We refer to these issues as the separation of powers. Regulations should be supported by laws which protect legal entities from having property confiscated by the authorities.*
3. *Provide a minimum of discretion to the regulatory authorities, such that the transparency of the regulatory process will be relatively guaranteed.*

a) Regulatory competence

In the case of (1), the market gains this confidence over time as it sees the regulatory authority operate. In this way, if state policies are not well thought out and implemented, the net impact on aggregate industry investment of a policy initiative, such as an inappropriate or badly designed Universal Service program, can be negative. Overly ambitious Universal Service schemes might also indicate a problem of regulatory competence and/or independence.

The regulatory framework, and the details of the regulations developed by the regulatory authority, will also contribute to the market's view about the risk of investing in a country. The track record of the authorities in other areas of the administration will result in the markets forming a view about this even before the regulatory authority begins its task.

USO regulations which suggest a lack of regulatory competence include:

- *rules that imply an incorrect assessment of net Universal Service costs;*
- *rules that imply particularly inefficient funding of net Universal Service costs;*
- *rules that require a particular technology to be used, e.g. Universal Service provision requires that only fixed wire access be used;*
- *rules that impose specific investment programs on firms charged with a Universal Service;*

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3.1.2 Mandatory Service Obligations	Digicel	Digicel notes that the Authority recognises a long list of obligations that should be mandatory in eliminating the market gap. However, the Authority failed to include all of these in the incumbent's concession for a fixed network and the provision of domestic fixed telecommunications services. Hence it is not correct to state that these "mandatory service obligations are realised in the Authority's concessions and licence agreements".	We wish to reiterate the need for the inclusion of these types of obligations for existing concessionaires either in a revised concession or their spectrum licences.	These mandatory service obligations referred to by Digicel, are included within the concession for the provision of domestic fixed telecommunications services. However this framework clearly states whether or not the individual obligations would be funded from the UF.
3.4 Identifying Communities that fall within the access gap	TSTT	Regarding the issue of usage subsidies raised by ICNTT, TSTT notes the Authority's response in respect thereof, such that it intends to require service providers to offer special packages for low income subscribers. While this is a commendable approach, there is need for greater detail in how TATT aims to achieve this goal.	TATT must provide details of its proposed measures for subsidising low income subscribers.	The Authority will provide details of these subsidized measures as well as other Universal Service initiatives in the development of its Universal Service Strategic Implementation Report.
Section 4				
Chapter 4	Illuminat	(a) Illuminat welcomes TATT pursuing an approach where there is the establishment of a baseline before the definition of performance targets. However, there should be more clarity	TATT should consider properly defining what factors are included (and excluded) in	Clear definitions of the factors used by the Authority to measure the digital divide can be found in the

- *a level of cost implied by the scope of the Universal Service which is too high for the country to afford, i.e. a miss-match between the scope of Universal Service and the country's ability to fund it in a way that does not impose unacceptable costs on the economy as a whole – in other words, net costs that far outweigh the value of any equity improvement;*
- *rules that require new entrants to have their equipment physically checked by the regulatory authority."*

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		in exactly what the metrics identify actually mean. For example, while the metric "fixed line subscriber per 100 inhabitants" seems a measure of fixed lines to the home, the similar cannot be said for the metric "broadband subscriber per 100 inhabitants" as the latter may also include subscriber usage at non-residential locations such as Cyber-Cafes, Telecentres etc. Such confusion is increased by, for example, TATT's response to the Ministry of Public Administration's questions about the inclusion of "mobile broadband" into what is traditionally a metric of fixed terminations like "broadband metric subs per 100 inhabitants" (b) This lack of clarity in what the metrics actually represent is compounded by the age of the data presented. As Digicel noted, the Survey pre-dates the single biggest change to the domestic residential Internet marketplace - the launch of FLOW's triple-play product in select geographic markets. This has resulted in a significant decrease in retail bandwidth costs to residential subscribers which may have significantly shifted the profile of the DAI/ DOI/ DOI_ALT maps provided. (c) Of further interest, is the fact the results of the Survey suggest that the Trinidad and Tobago market (in 2007) was not as "mature" as TATT's arguments earlier suggest – a position which seems to be its cornerstone to the pursuit of Universal Service despite the GoRTT policy. According to the Survey, in 2007, large swaths of the country (including Arima, Valencia, Sangre Grande, Chaguanas East etc.) were deemed to be significantly below the national average indices. In its final analysis, a consistent average of over 300 communities were found deficient for each of the major metrics cited. If the DOI/ DAI profile of the country is largely unchanged, provision of to-the-home infrastructure and subsidy of	determining the metrics identified.	report – "Measuring Digital Opportunity" by the International Telecommunication Union, WSIS Thematic Meeting on Multi-Stakeholder Partnerships for Bridging the Digital Divide. In reference to the term "broadband subscriber per 100 inhabitants", this measure does not include subscriber usage at non-residential locations such as Cyber-Cafes, Telecentres etc. Instead these persons are referred to as Internet/Broadband users. In addition, the Authority recognizes that the data collated from the 2007 Digital divide survey is somewhat outdated. For this reason, the Authority intends to conduct another survey in 2010. Within the Universal Service Framework, the Authority made reference to the maturity of mobile market as the results of the Digital Divide survey showed that 93 out of every 100 inhabitants was a mobile subscriber. Using this national target, any community that scored below 93% was considered underserved with respect to mobile services. While these communities were few in number, this does not negatively impact upon the maturity

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		operations thereafter in each of these 300 communities is a daunting and costly task. TATT's alternative of provision of low cost service product is asking providers to invest in the same infrastructure to be used on profitable areas, but at a reduced rate of return (if at all positive) for an undefined period of time. (d) Illuminat applauds TATT's approach of benchmarking the indices against countries with DAI's above the targeted 0.75. Illuminat further acknowledges the recognition that while Trinidad and Tobago had competitive indices for fixed and mobile penetration, the country reflected unusually low results for the Internet usage and Broadband subscriber indices. Despite this, TATT's targets for Universal Service implementation in Table 5 (pp. 32, 33) reflected no change in the projected "Broadband subs per 100 inhabitants", maintained at 13. In fact, from these indices, Illuminat would infer that the focus of the Universal Service agenda will be either: (i) increasing the utilisation of non-broadband Internet (i.e. narrowband/ dial-up access) services to the home, or (ii) encouraging increased utilization of community aggregate centres.	Further, where these metrics are to further forwarded to international agencies that would guide future investment by domestic and foreign capital, it is strongly recommended that these definitions conform with international norms to ensure continued applicability –refers.	of the mobile market. Table 5 within the framework highlights the community targets based on the national average results of the Digital Divide survey. These community targets were set with the objective of achieving a DAI of 0.75 As mentioned above, the indicators used in the survey were developed by the International Telecommunications Union and therefore conform to international norms.

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			While Illuminat TATT's intention to provide such, we must register our strong refernce for the provision of more contemporary information in this continued discourse to ensure that the scale and scope of the Universal Service Programme (be it "Service" or "Access") is valid and appreciable before the imposition of proposed funding obligations (akin to a Universal Service Tax) on service providers.	The Authority agrees that there is need for more contemporary information and such intends to conduct another Digital Divide survey and other independent surveys in 2010 that will inform the Universal Service initiatives to be implemented within communities and population groups.
			Illuminat would be greatly encouraged if TATT were to provide more realistic programme cost estimates to provide sufficient context to the size and scale of the Programme over a defined period (say five (5) years).	Project initiatives and costs will be presented in the Universal Service Strategic Implementation Report as mentioned in Section 6.1.3
			Further, unless the DAI/ DOI profile is substantially changed, Illuminat would suggest (particularly in the context of the global economic challenges and the associated challenges in	Noted. The Authority has investigated other funding mechanisms as outlined in Chapter 5 of the Framework. However in accordance with the Act and the

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			raising finances) that TATT investigate an alternative to the implementation of this Programme that is less expensive or cost intensive to ensure some level of success in implementation in the short term.	concession agreement, the Authority considers the establishment of a UF as the most appropriate method for funding Universal Service.
			TATT should review the targets outlined in the Framework to ensure that they are better aligned to the developmental needs identified in the preceding sections of the Framework document.	As mentioned above, the targets identified in Table 5 are community targets, which when achieved would achieve a DAI of 0.75.
			Alternatively, Illuminat may implore TATT to reconsider its Universal Service approach, as the cost of such would be prohibitive.	The Authority has extensively researched the mechanisms used by other countries within the telecommunications sector and Universal Service tends to be the most suited approach.

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4.2.2 Digital Divide	Digicel	Where else has this altered index developed by the Authority been used? What is the reasoning behind the Authority's conclusion that the DOI was skewed and the number of mobile internet subscribers was "very small"? And how does the DOI_ALT eliminate such alleged skew?	Please provide substantive support and explanation of this statistical figure. As presented the document suggests that the Authority has pre-set conclusions as to what the statistical results should have been (the grounds for which have never been disclosed). It then appears that when the statistics did not support these pre-determined conclusions that a metric was devised to produce the desired outcome that would 'properly' show an access gap that needed to be addressed by a USF regime. If the Authority intends to propose percentages of concessionaires' revenues be applied to a USF then its process for arriving at that conclusion	It was not the intention of the Authority to have pre-set conclusions of the survey before the results were published. However the DOI_ALT was used by the Authority to eliminate skewing of the DOI as a result of the high mobile broadband Internet subscribers: mobile Internet subscribers ration in Trinidad and Tobago. When the survey was conducted in 2007, only one mobile provider offered mobile broadband Internet services. In addition there were very few mobile Internet subscribers in Trinidad and Tobago and the majority was broadband subscribers. If the unaltered index was used, the ratio would carry a disproportionately heavy weight on the Utilization indicators and consequently on the overall DOI index. The percentage of contribution of gross revenues was based on a reasonableness test conducted by the Authority. Consideration was given

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			should be transparent and not pre-determined. The vague introduction of this randomly created statistic undermines the credibility of the survey and its results to the objective reader and should be addressed if the Authority expects to use this in future surveys to determine if there is an access gap at the time of intended implementation of the USF policies.	to the amount of concession and licence fees currently paid by service providers and the benchmarking of countries listed in Table 8.
		Putting throughput speed aside, why was access to mobile telephone ignored in this survey?	Certainly all mobile subscribers can have access to the internet via their phones. If the issue is low internet usage nationwide would it not be better to promote Universal Service for internet via mobile phones with a throughput of lower than 512 kps but universal access to broadband internet services, provided an access gap existed? The real issue underlying the low internet usage may be lack of computers which will not change with the offer of broadband services in underserved areas. However, from a practical standpoint to create interest in these areas mobile internet even GPRS would be sufficient to supplement community access	The Authority notes this point on mobile Internet made and wishes to advise Digicel that this is under consideration by the Authority. However the Authority will be embarking on a needs assessment exercise to determine the types of basic services demanded by consumers.

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			centers with broadband internet services.	
4.2.6 Setting Community Targets	Digicel	It appears to Digicel that the Community Targets are very ambitious. The ITU indices are comprised of several variables such that there is a mix of possible reasons behind different index values. This can make policy based on comparison potentially subject to error. The primary issue is people's income level and the distribution of the country's income across households. If this improves then so will ICT indications as well as a range of other even more important factors such as: the quality of health care, education, pension levels, life expectancy and child mortality. Digicel is concerned that by placing T&T in a group of countries with between two and six times that GDP per capita of T&T, the TATT has created a much larger Universal Service problem than is justified by a country with T&T's GDP per capita. Rather, much of the problem is explained by T&T lower GDP per capita. The cost of closing the ICT gap with much richer countries by focussing on improving ICT indicators is likely to be far too large for it to be in the public interest for the T&T government to attempt this. Rather, the gap in ICT performance indications compared to richer countries will tend to disappear when T&T's GDP per capita reaches those of richer countries.	Digicel urges TATT to ensure that it look at a level of intervention which: (i) provides the utmost opportunity for market forces and voluntary private initiatives to enhance Universal Service in T&T, and (ii) is benchmarked against countries which are similarly situated to T&T in terms of GDP and other key factors.	The Authority agrees with this and as such continues to pursue market-based reforms. As mentioned in the framework, the countries listed in Table 4 were chosen for benchmarking purposes because they had attained a DAI of 0.75, the same as the national DAI target proposed by the GoRTT.
4.5 Identifying Population Groups that fall within the Access Gap	Digicel	Income is the main reason some people / households purchase significantly fewer ICT services than the national average. A large number of variables can cause low income. As such, trying to explain why people have below average usage of ICT services is thus no trivial matter. As groups, unemployed	Digicel urges TATT not to rely rigidly or exclusively on the ITU indicators when looking at T&T Universal Service performance. The overwhelming evidence is	The Authority agrees that the use of ICTs by the public is influenced by income. And specifically for this reason the levels of affordability and opportunity were measured in the

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		people, single parent families, pensioners, young people and the disabled have lower than average incomes. If incomes are not low then with a few exceptions there would be no Universal Service ICT policy issue. Do single parent families have similar ICT usage to two parent families with similar incomes? Do pensioners have similar ICT usage to the population which comprises the same income statistics? Older people tend to be less keen on new ICT technologies so we would expect them to be less interested in computers and the internet than young people. In the former case we have seen no research which points toward a different level usage by single parent households because they are single parent households_and not because they have on average lower incomes. Similarly TATT has suggested that young people and the unemployed may get some sort of assistance. The overwhelming cause of their under-consumption of certain ICT services compared to the mean is that they have low incomes. What needs to be discussed is demand. Demand is heavily influenced by income. But even if we made more income available to low income earners, or alternatively reduced the price of ICT services to make them affordable to 'low income' people/households, they will on average only modestly increase their usage of certain ICT services. Voice service usage can be expected to increase significantly but the same may not be said of internet services, particularly meritorious service provided over the internet. Advanced ICT service usage is also education driven – if you learned how to use a computer and the internet as a student you are much more likely to have a higher demand for it as an adult than those who did not have that experience. This is one reason why the internet is understood to be an 'experience' good; demand for	that Universal Service is primarily driven by income. Moreover, there is little to be gained by focussing on other causes that are also largely explained by income. Indeed, this can give rise to false conclusions; it can make comparison more problematic (multi-co linearity).	Digital Divide survey. The results revealed readings of 0.93 for affordability and 0.87 for opportunity. This proves that telecommunications services are affordable to the public. However on examining the infrastructure readings of 0.64 and 0.39, it seems that the major issue contributing to the Digital Divide is the lack of infrastructure rollout. The Authority intends to measure the level of demand for telecommunications services in the upcoming Digital Divide survey and to undertake need assessments on a community basis.

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		it goes up after you have used it and thus comprehend what you can do with it. If there is only weak demand for something, policies to get people to buy more of it are likely to be ineffective. WIK pointed this out in its 1999 study for the European Commission: "It is assumed within much of the socio/political literature related to this topic that there will be strong demand for internet services by low income / low skilled individuals. We have doubts as to whether this will prove to be correct. Moreover, as the main thrust of the arguments about social exclusion appear to be based on the need for levelling current social inequality and trying to overcome social inequalities being inherited by the next generation, it may be most important to provide access to internet services as a part of education programmes. Equal access to education is widely held to be the most effective way of overcoming social inequalities." [49] Differently-abled people are one area where there is little disagreement that assistance should be provided in regard to a broader range of services than are considered 'universal' for other potential users. However, TATT is "proposing to put mechanisms in place to facilitate the access of affordable basic telecommunication services by members of the differently-abled community, without consultation with sector		The Authority has been liaising with the Disabilities Unit within Ministry of Social Development as well as the Hardship Relief Programme Unit within the Ministry of Public

[49] WIK (1999), *Op cit* p.105.

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		participants. This unilateral approach is unlikely to deliver the best results as the people who know best about service delivery are the firms who compete in the sector. This is not an approach that Digicel can support.		Utilities in proposing measures to aid those persons who are differently-abled. In addition the Authority has hosted a seminar titled 'Connecting the Disabled' where members of the differently-abled community presented their views on their requirements on telecommunications equipment and services.
Section 5				
5.1 Administrative structure of the Fund	TSTT	TSTT supports Digicel's request for the Authority's Financial Rules to be made available for public scrutiny, particularly as the Authority states that these rules are the basis upon which access to the accounts of the USF resides. The Authority's response has been to promise their publication on its website, with no commitment as to when. We note that the rules have not yet been published for public access. Given the promise of transparency in the conduct of business within this sector, we find this omission, and the failure to stipulate a date by which such failure will be rectified to be unacceptable.	Publish the Financial Rules with immediate effect, prior to the conclusion of this Consultation, in the interests of transparency and accountability.	The Authority's Financial Rules will be published on the website.
5.2.2 Access Deficit	Digicel	An ADC is concerned with addressing the price distortion problems associated with a line rental price which is regulated at less than cost. It is not necessary that an access deficit gives rise to a net cost i.e. it is not a compensation problem per se as a net Universal Service cost would be, but is primarily a price signalling problem that gives rise to competition distortions.[50]	Digicel urges TATT to review its definition of an ADC before contemplating any remedies or other regulation which it thinks is required involving ADCs.	The Authority notes the point made by Digicel however the details of Access Deficit are being addressed in a separate document.

[50] In this footnote we provide a summary written for the European Commission by WIK, of what an ADC scheme in a competitive sector must attempt to do.
"ADC schemes are meant to impose access deficit contributions on all firms that provide those services which the incumbent presently sells for high profit in order to generate the cross-subsidy revenues for access. The form in which ADC liabilities would arise would need to be the same for all firms, including the incumbent. If, for example, the incumbent was raising ADC cross-subsidies from originating international calls,

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		Note that it is only firms that do not provide their own access that would pay an ADC. Indeed, to avoid being discriminatory an ADC scheme would need to allow all firms that provide their own access to collect ADCs from those who do not pay them. Digicel believes the issue TATT is referring to is not an access deficit charge but a "net Universal Service cost"; it is not concerned with access alone but with all services that are purchased from the provider. Where these revenues are less than the LRIC costs then the amount represents a net Universal Service cost. Networks sell multiple services to end-users and losses incurred on one service can and are often more than made up with profits earned from the sale of other services that are made possible with the provision of access.		
5.3.2 Fund Accounts and Budgets	TSTT	TSTT notes the Authority's response to the concerns expressed regarding the need for rules to be enforced over the use of the administrative budget. However to note a concern gives little comfort – there is no indication of TATT's opinion or proposed course of action in this regard. We note also that TATT relies upon Financial Rules which have not been made available for public scrutiny to date. This is an unacceptable state of affairs particularly since the manner of consultation will not permit further comments from stakeholders should the Rules (when made available by TATT) fail to allay the concerns raised by stakeholders in this consultation.	Financial Rules of the Authority should be made available immediately. Full disclosure of the reasons informing decisions of the Authority is necessary to have a meaningful consultation process	The Financial Rules will be published on the Authority's website. In addition as mentioned in the framework, the Authority proposes that accounting procedures, established in accordance with the Authority's Financial Rules and the Telecommunications Act, be followed for collecting, tabulating and distributing monies from the UF.

and did so by a mark-up on the per second/minute charge for such calls, then a similar (though probably not identical) mark-up would need to be required of other firms that provided international calls. ADCs will thus approximately represent the margin per call that the incumbent would have received to cross-subsidise its access deficit, had it carried the call in lieu of the interconnecting new entrant." Cullen International and WIK, (2001), *Op cit* page 52.

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		TATT justifies 15% for its Administrative Budget on the basis that such funds are needed to cover administrative costs consisting of market assessments, needs assessments, independent surveys and reverse auction processes. We submit that such a list gives little comfort. TATT must appreciate that public telecommunications providers are being asked to delve deeper into their revenues to pay for additional resources; in the absence of any kind of data that such is indeed necessary or could be supplied for less. In addition to all the fees/charges that are currently attributed to TATT, and which are not an insignificant part of a company's budgeted expenses, we submit that in the interests of fairness and transparency, there is need for greater accountability by TATT to those who are required to financially support these initiatives.		The Authority intends to include all projects pursued, inclusive of market assessments etc, in its Universal Service Strategic Implementation Report which will be published biennially. In addition, the Authority will be publishing its Fund Accounting Report annually. This report will list the collections and disbursements of funds from the UF for the financial year ended.
Section 6				
Section 6 6.2.1	Illuminat	Illuminat acknowledges that section 28 (4) of the Act provides that TATT, with the approval of the Minister, may require Closed User Groups (CUGs) and Private Telecommunications Service Providers to contribute to the Universal Service Funding mechanism. However, Illuminat is extremely concerned by the lack of justification through which TATT is proposing to trigger this provision. TATT has made no economic, technical or social case for the inclusion of such providers into the funding scheme. Such providers support the implementation of e-business solutions throughout the country. These providers	As a provider of commercial Local Area Network (LAN) and Wide Area Network (WAN) solutions, Illuminat (T&T) Ltd. sees this recommendation as effectively imposing a hidden tax on its, and similar, operations without appropriate consideration of the impact of such a move. TATT should provide considerably more robust rationale for the inclusion of CUGs and private telecoms	As a service provider in the telecommunications sector and considering its social obligation, the Authority believes that operators inclusive of Closed User Groups be required to contribute towards the UF. Therefore the Authority does not view the contribution as a hidden tax but rather as part of the service provider's social responsibility.

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DoRs (pp. 148)		range from micro, small to medium-sized enterprises to large solution providers such as Illuminat. This imposition seems inappropriate and unwarranted. Illuminat must further question whether TATT has identified how it intends to implement this provision. In particular, it must be noted that while there will be operators (such as Illuminat, TSTT and Columbus Communications) who are providers of CUGs as well as concessionaires (e.g. DFTN), most providers of private networks and CUGs are not registered through TATT as they do not require a Concession under the Act. As TSTT noted, TATT should identify how it intends to enforce this obligation in a non-discriminatory fashion given that there is no known record of all such providers in the country. This consideration above raises three major concerns to Illuminat: First, under the proposed framework, such service providers may likely be levied twice: as a Private telecom provider of CUGs as well as a concessionaire. Second, providers such as Illuminat and TSTT that are both concessionaires and CUG providers will have to account for revenues from these different streams with a degree of granularity that is not yet defined by TATT in its Accounting Separation Framework. In any case, such a process promises to be onerous, impractical and costly to concessionaires. Thirdly, TATT will have limited (or no) powers in Law to	providers into the Funding scheme. Such should include, at a minimum, guidance of the Funding deficit anticipated without the contribution, the strategies to mitigate against the inflation of Corporate Telecoms Services in the country and clear counterbalancing systems to ensure that the contribution period is for a restricted period. Without such, this proposal should be abandoned forthwith. We suggest that private networks and CUGs be excluded from the US Funding Contribution programme.	The Authority is aware that Closed User Groups do not require a concession under the Act. However, in accordance with the Universal Service Regulations, Closed User Groups and private telecom providers will be required to submit their financial accounts to the Authority. These accounts will be used as the basis for calculation of their UF contribution. As mentioned in the Universal Service framework, mandatory paying Universal Service obligations are only charged on gross revenues arising from relevant telecommunications services and/or network facilities of the particular service provider and/or concessionaire. Therefore using Illuminat as an example, the contribution would include a percentage of revenues generated by its CUG services as well as revenues

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DoRs (pp. 160)		require such providers – who are not Concessionaires administered by the Act - to submit their financial statements to ensure appropriate contributions are made. Through the implementation of a levy on such providers, it would appear that TATT would be attempting to increase its regulatory influence beyond its mandate, i.e. the oversight of public telecommunications networks and services. Illuminat endorses the position put forward by ICNTT which argued that philosophically, as the CUG operator and private telecoms provider stands to make little or no direct or indirect benefit from this contribution, the proposal seems indefensible as it seems likely to: 'unbalance[e] to the market for these participants to contribute to something for which they gain nothing, when other contributors stand to make direct or indirect gains.' However, in response to these considerable positions, TATT has provided no response, no elaboration to these concerns but has maintained the apparently flawed policy position. Given, (i) the imposition of the Universal Service Fund, and (ii) consideration of the proposal that non-concessionaires should contribute, it is unsatisfactory that the Funds accumulated are to be managed as proposed in this section. TATT provides little justification why, in the context of its substantial revenues from Concession and Licence Fees, it should further access a	Alternatively, before recommending the imposition of Funding mandate for CUGs and Private Telecoms operators, TATT should provide some guidance on how this aspect of the programme will be realistically administered given the provisions for non-discrimination and equal treatment of parties enshrined in the Act. In the case of Concessionaires, TATT should not include the revenues from CUG and non-public telecommunications services.	generated by the services provided as a concessionaire. As rightfully mentioned by Illuminat, concessionaires and CUG providers will be required to separate their accounts such that revenues from the various income streams can be split. As mentioned above, CUGs as well as private telecom operators, will be required under the Universal Service Regulations to submit their annual financial accounts to the Authority. As mentioned above, the Authority believes it is a social responsibility of the service providers to contribute towards the Universal Service initiatives. The Administration Budget of 15% is intended to include all projects pursued, inclusive of market assessments etc, in its Universal Service Strategic Implementation Report which will be published

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6.3.2		substantial portion (15%) of the Fund as an Administrative Budget. Illuminat notes that: (i) the Fund Administrative Committee will comprise of entirely TATT staff; (ii) the Secretariat Committee, and all other aspects of the Governance Framework other than the Ad Hoc Advisory Committee, will also comprise of TATT staff (as intimated in a response to Ministry of Public Administration); and therefore takes the position that this Administrative Budget is without justification. TATT's only defense proferred to the critique of this expense is a response to ICNTT in the DoRs (pp. 165, 166) which suggested such operational concerns as the "hiring of consultants" and "execution of surveys" would warrant this substantial budget. Illuminat believes that considering the estimated value of such a Budget (estimated by ICNTT at TT$10M annually in the last round of consultation) such rationale is woefully insufficient. Illuminat must wonder what activities, other than the examples proposed, is significantly different from TATT's ongoing monitoring and evaluation function that warrants this expense?	Illuminat looks forward to TATT's response to these concerns.	biennially. This 15% is not intended to pay for the services of the Fund Administrative Committee or the Secretariat Committee. Management of the UF will form part of the duties of the Authority's staff and is not intended to be funded through the UF. In addition, the Authority will be publishing its Fund Accounting Report annually. This report will list the collections and disbursements of funds from the UF for the financial year ended. The Authority believes that before any Universal Service initiative can be implemented, it is important to conduct preliminary information gathering exercises to ensure that the UF finances worthwhile projects and meets the service demands within communities. Some of these exercises may include independent surveys, Digital Divide surveys, needs assessments, cost assessments, reverse auctions etc. In addition, to ensure a level of accountability and transparency, all monies spent from the UF, including items under the Administrative budget, will be published annually three (3) months after the end of the Authority's financial year and will

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			Illuminat strongly recommends the removal of the provision of Universal Service Funds being utilized for any Administrative purpose.	contain a report on the collection and disbursement of funds from the UF for the financial year just ended. These accounts will also be audited by the Auditor General of Trinidad and Tobago.
		Illuminat wonders: does TATT need to hire consultants every time it has to implement something as routine as surveys? If so, where is the efficiency and cost effectiveness that TATT insists of concessionaires in its own regulatory operations? This quizzical position is more troubling in the context of the provisions to expand the regulatory catchment of the Funding contributors, increasing the projected value of the Administrative Budget without any appropriate estimation of the quantum of the Fund, and thus the Budget, at this time.		The Authority does not view the implementation of national surveys as 'routine'. In fact these surveys require a level of statistical expertise for the development of the sample framework, survey mechanisms etc. In addition, raw data gathered from the surveys must be analysed and converted into information that can be used by the Authority and other stakeholders. Thus the reason experts are hired to undertake such tasks. It must also be emphasised that any surplus that may arise from the Administrative budget will be returned to the overall UF and rolled over to the next year therefore reducing the burden on UF contributors.
			Illuminat would suggest that	The administration cost of UF activities are not catered for in the Authority's budget, thus are not included in the licence and

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			TATT's budget for the administration of this function should be garnered from prudent financial management of the considerable funds already accrued through licensing and concession fees. TATT should undertake to incorporate efficiency and cost effectiveness in its own operations to eliminate the need for an Administrative Budget being	concession fees charged to service providers. While the Authority agrees that efficiency and cost effectiveness should be practised, this would not eliminate the need for an Administrative budget to manage the UF.
6 Establishment of Universal Service Fund	Digicel	Digicel believes that the effective use of any Universal Service fund will require the participation of operators whose commercial knowledge about the sector will be crucial.		The Authority agrees with this comment and has included the participation of service providers as part of the UF's adhoc group.
6.1.1 The Paying and Playing aspects of Universal Service Obligations	TSTT	TSTT notes the comments made in response to the concerns expressed by Digicel regarding the expansion of fixed telephony in areas where the residents may not have it but would be fully satisfied with access to mobile telecommunications. The thrust of the concern is that the Authority may direct investments into technologies that are either undesirable or outdated. TATT justifies its approach by stating that fixed line services have been sanctioned as a basic service in the framework document. TSTT queries whether this justification is at all sound because it suggests that even where there are alternative/more advanced technological solutions, TATT		The Authority agrees that the needs of the public and the affordability of service are key factors in Universal Service. However the Authority does not view fixed line services as an older and more costly solution to achieve Universal Service, especially in cases where fixed wireless technologies are used. The Authority intends to conduct a needs assessment that will identify the population groups and areas with the greatest need, the type of services that the market is not

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		appears to be insisting on the older more costly solutions simply because the framework requires it. It is commonly understood that legal frameworks are notoriously slow to adapt to current realities. To require activities in support of an outdated framework appears to be a retrograde step. It is to be noted, that section 2(1) of the Telecommunications Act states that Universal Service can be limited to "the provision of telecommunications services throughout Trinidad and Tobago, taking into account the needs of the public, affordability of the service and advances in technologies". It is respectfully submitted that on this basis, TATT argument that it is required to provide Universal Services utilising fixed technology cannot be sustained.		providing, and the initiatives that would have to be implemented to meet the unmet demand. Therefore consumer demands will significantly impact the services to be implemented, rather than the assumption that the technology is outdated.
6.1.1 Gross Revenue	TSTT	TSTT recognises that it may have missed the inclusion of the definition of "Gross Revenue" and would appreciate a more exact reference to its inclusion While TSTT supports the spirit and principles of Universal Service, that Universal Service is a social responsibility, for USF to operate efficiently, especially in the dimensions the Authority proposes, some provision should be made to ensure fairness and equity in sharing social responsibility are observed. The Authority fails to recognised that individuals too, owe a responsibility to those less fortunate than themselves and in that regard, the financial burden of helping those less fortunate should be shared –service provider(s) should not be left to absorb all the expenses related to the implementation of USO. It denies undeniable truth that each man is "his brother's keeper".	Identify where the term has been defined. Reconsider the sharing obligations in the funding of USO.	The term has been defined under Section 7.1 of the framework. While the Authority understands the view of TSTT, we believe that Universal Service is a corporate social responsibility. As such service providers should contribute towards the funding of the UF. In addition, the Authority believes service providers will benefit from the externalities to be derived by increasing the number of telecommunications users. Therefore, contributions to the UF

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				will indirectly benefit service providers through externalities.
6.2 Contributions to the Fund	TSTT	TSTT notes the response of the Authority with respect to the notice period and respectfully submits that such response is unreasonable. Even if the Universal Service Regulations are finalised by the Authority, it does not control the time frame for implementation into law. This is within the remit of the Government and the Parliament. As such, it cannot be sufficient to require a business entity to put aside an enormous amount of money in anticipation that regulations will be passed within a specific financial year. Such a suggestion will neither meet the approval of the Board of a company nor its auditors. TSTT also disagrees with the practicality of the Authority's approach to the collection of Fund Contributions prior to the commencement of projects. It appears that the Authority will determine the projects to be undertaken based upon the funds collected. We submit that this is not a practical approach to the provision of Universal Service or universal access. Universal Service/access provisioning should be based upon need. The authority's approach denies the developmental imperative of Universal Service and puts funding availability before need to the detriment of the underserved consumer.	Revisit the approach to funding.	The Authority understands that contributions cannot be collected from service providers until the Universal Service regulations are laid in Parliament. Therefore service providers are only required to contribute to the Fund after the passing of regulations and not on a pro-rated basis. Reference is made to Section 7.1.2 of the framework. The Authority has adopted the approach where a fixed percentage of contributions are collected from service providers so as to grant a level of certainty with respect to the amount of contributions they are required to pay for the year. This method allows the service providers to budget for their Universal Service contributions within the financial year. However as mentioned above, the Authority will soon be conducting a Digital Divide survey as well as needs assessments in 2010. As such Universal Service initiatives will target the demand for

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		The Authority's approach is also unacceptable from the opposite side of the coin. Where there is overfunding, again because of a funding before planned approach, TATT proposes to keep the money in a rollover arrangement. It is submitted that this is improper financial practice and funds not utilised should be returned to the providers. TSTT also requests the Authority's reconsideration of a payphone initiative, or at the very least considerable revision to the level of payphones required and locations, given the extent of mobile penetration.		telecommunications services within the communities. If there are instances where surplus funds are rolled over to the next year, the Authority may consider the following options: • Expand the budget for next year's Universal Service initiatives; • Grant payment holidays or other type of incentive programmes to service providers; • Review the level of contributions by service providers to the UF. The Authority does not view these approaches as improper financial practices. The Authority is currently investigating the payphone/public nodes initiatives so as to come to a solution that is feasible for consumers as well as for the service providers.

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Section 7				
Section 7	Illuminat	TATT makes the proposal to include non-concessionaires into the contributors to the Funding Mechanism (while being excluded from any benefit) becomes even more punitive with an inclusion of a required contribution of 2% of gross revenue (a term itself undefined within the document). That there is no clarity why this participant, he with least association and opportunity for gain through the provision of public telecommunications services, is most severely burdened by this obligation underscores the imbalance being proposed by TATT. Further, without any estimate cited of the economic value of the CUG and private telecoms providers sub-sector, Illuminat would like to understand the methodology used to determine that 2% of revenues was an appropriate contribution from these participants. This concern mirrors the determination of the contribution of other sector participants. Illuminat agrees in principle with the proposal of the GoRTT National ICT Strategy (2003) for the development of Community Access Centres in the provision of affordable Internet access and computer training in the community. The intersection of Universal Service with GoRTT's Community Access Centre programme seemed laudable, and was in fact a major component of GoRTT's Universal Service Policy. Such synergies seemed to belie the pursuit of a comprehensive strategy for sector development. This intersection, and the synergies thereby outlined have not been	Illuminat would lke to reiterate its suggestion that the obligation for CUGs and private telecoms operators to contribute to the Fund should be removed, as: - TATT has not defined an appropriate administrative framework to ensure all appropriate persons contribute the right amount; and - These persons are subject to no gains from the expansion of the public telecoms grid. This is unfair to the CUG provider, and seems incongruous with TATT's assertion of equity (DoRs pp. 161).	As mentioned within Section 6.3.1, service providers will be required to submit their financial statements to the Authority after which invoices would be issued to the service providers. This should ensure service providers contribute the right amount. CUGs and private telecom operators may not be subject to direct benefits but indirectly through externalities.

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7.4		emulated in this Framework This framework would have done well to emulate the approach outlined in the GoRTT's Universal Service Policy in this regard. There seems to be little consideration to the prudent management and oversight of all aspects of the Fund, unlike GoRTT"s Policy which proposed a limitation on what services within the Community Access Centre would be applicable for subsidy rebate. In this approach, in conjunction with the unwarranted grab of 15% of the Fund for Administrative Budget, the Framework further seems to write a "blank cheque" of up to 5% of the Fund for "CAC's in Universal Service areas". That means that over 20% of the Fund is already unavailable to execute the mandate of the Fund! Illuminat considers that this is a considerable percentage, especially considering the burden implementation of the levy would have on the fiscal viability of many operators. Further, there is absolutely no guidance on: (i) who is to manage this 5% of the Fund, (ii) what checks and balances are proposed to mitigate against malfeasance in the management of this sum, and (iii) (whether and) how the use of the model will be appropriately focused to ensure that the results will and do redound to the closure of the Access gap, and thus reduce the medium to long term obligation on the marketplace to contribute to a Fund. This alternative does not provide much comfort to the contributors to the Fund that this money will be used in such a	In any case, TATT should, in the context of transparency, issue the methodology of how the proportions of gross revenue to be garnished from the providers incorporated in the obligatory contribution framework was obtained. TATT should consider how to better effect the proposals of GoRTT's Universal Service policy that encouraged alignment to GoRTT's Community Access Centre programme, without the undue burdening of sector participants as is currently outlined in its Framework.	The percentage of contributions towards the UF is based on a reasonableness test. Consideration was given to the amount of concession and licence fees paid by existing service providers, and the contribution levels required by other countries. The Authority will consider this recommendation in implementing its framework.

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		way that it will reduce their Universal Service obligation over time, or not be mismanaged. This uncertainty is troubling based on the quanta of this obligation proposed, and the proposed impact on non-concessionaires and non-public telecoms service provision. In fact, on review of the discourse of the Ministry of Public Administration and TATT in this regard, there seems to be a greater focus on accessing these Funds than on the development of programmes where these funds can be appropriately invested in the aggregate national telecommunications infrastructure. This does not encourage much confidence in its appropriate administration. Further, on review of TATT's Authorisation Framework which defined Cyber Cafes and the such as Type 4 Concessionaires, it raises the question of whether GoRTT Community Access Centres and/ or telecentres must also be recognized as such – and thus require a Concession of operation? If so, as all similarly situated concessionaires are to be treated equally by TATT: (i) will these GoRTT locations be required to contribute to the Funding Mechanism as well; and (ii) can Illuminat, or any other person who provides a similar service, expect an equivalent subsidy from the Fund if it establishes commercial telecentres in a similar model?	TATT should pursue an approach that limits what the Funds can be used on, to ensure that such Funds are used only within the objectives for which the money was originally garnished. TATT should provide more information on how this sum of money is to be appropriately administered. TATT should clarify the implications of this fiscal	The Authority will consider these proposed recommendations.

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			transfer. TATT should clarify the impact of this proposal in the context of the Authorisation Framework and Section 22 (1) (b) of the Act.	
7 Universal Service Obligations	Digicel	An analysis of the contributions options shows that any contribution Digicel must pay to the fund should be as a result of a Universal Service levy on end-users bills. This is transparent and close to the least inefficient means of raising revenues in the sector. The alternative of placing the tax on firms as a percentage of the share of sector revenues is a stealth tax which is largely	The transparent and economically efficient way of recovering Universal Service taxes revenues from the sector is as a line item on customers' bills e.g. as a percentage of monthly expenditure. This would be based on forecast requirement and adjustment would be required in the following period.	While the Authority notes Digicel's recommendation on adding the 'Universal Service tax' to the end-user bill, we do not see this approach as appropriate at this time. The Authority believes that the contributions should be collected from the service providers, not the end-users, as this is part of the

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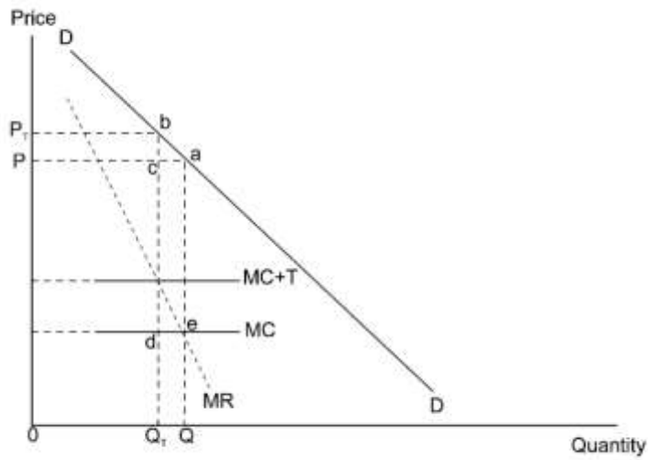
		paid by end-users. The economic theory is outlined by WIK in its review of Universal Service for the EC.[51] Moreover it is highly distortionary as was also explained in the WIK report.[52]	Where funds are recovered only	industry's social responsibility.

[51] WIK (1999), *Op cit*, p46 - 47

"Assuming a single service industry,[71] the impact of a significant USO liability levied periodically on firms providing telecommunications services according to some estimate of their market activity, is rather similar to the effects of a transactions tax. In Figure 2.2 we show this for an operator with substantial market power. DD is the demand curve, and MR the marginal revenue curve. The operator's unit costs are effectively increased by the USO tax shifting its supply curve from MC to MC +T where the 'T' indicates the USO tax. The impact on sellers and customers will depend on the price elasticity of both the demand and supply curves. The impact on buyers occurs because of the higher prices they must pay. The impact on sellers arises because of a reduction in sales due to the higher prices.[72] For the main part, telecommunications services can be fairly well approximated by a flat supply curve, indicating constant per unit costs.[73] Demand curves in telecommunications tend to be relatively steep. The area $P_T$bcP in figure 2.2 indicates the transfer of consumer surplus to producers and ultimately into the USO fund, with area bac being a dead-weight loss. Q minus Q_T represents the quantity of trade lost due to the tax."

Figure 2.2 Approximate effects of a USO tax on operator



Source: Own construction

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71 Making the analysis with multiple service adds nothing to the explanation except unnecessary complication.

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		Digicel also notes that WIK recommends a line item on customers' bill as the preferred may of raising the tax where it has to be raised within the sector. In the event that Universal Service taxes are to be levied directly on firms and not as a line item on customers' bills, pushing contributing firms' prices up, it is well established among economists that a percentage of gross revenues is an incorrect way to calculate the liability. Rather the measure should be based on each contributor's "sector share" where this involves total industry revenues of all contributors, less wholesale payments between them. Without subtracting wholesale payments between them there would be double counting which would be most disadvantageous to new entrants who, as a proportion of their retail revenues, typically pay more to the incumbent for access to interconnection and bottleneck facilities and services, than the incumbent pays to other Universal Service contributors.	indirectly from end-users by placing the Universal Service liability directly on licensees rather than as a line item on bills, revenues net of wholesale payments to other licensee must be used to avoid discrimination in favour of the incumbent. Taxation of inputs or intermediate services must not occur due to the considerable economic distortion this is known to cause.	

72 Evidence obtained by the FCC concerning AT&T is that 100% of access charges are passed through to customers (FCC 95-427, also in Prieger (1998)).
73 To the extent that the supply curve is not perfectly flat, the supply curve shifts up further to recover the same USO tax, but it makes little difference to the conclusion that the USO tax ostensibly appears as higher prices to consumers.

[52] WIK *Op cit* page 61."
"The telecommunications industry is made up of a large number of markets which are defined such that those goods / services which are close substitutes for each other are considered to be in the same market, while goods / services which are not close substitutes will be in different markets. Smaller firms have little choice of market in which they will recover their USO tax liabilities. A firm that operates in one market only will have to recover its USO tax liability in that market. A competitor to the one market firm which has a presence in many markets, such as an incumbent operator, need not recover any of its USO taxes in the market in which it competes with the one market firm. To the extent that the incumbent can recover USO tax costs elsewhere it has a cost advantage over its competitor. In general, USO taxes which are levied directly on firms create a bias in favour of incumbents as they are integrated into many more markets from which they can recover their USO taxes."

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		Moreover, in addition to the need for "net revenues" (i.e. net of wholesale payments between contributory firms) to replace "gross revenues" in the statement on "Contributions to the UF as the 'Paying Aspect of Universal Service Obligations", the inclusion of the words "and/or facilities" should be removed. There are several reasons, the most important being: (i) that it would involve taxing an input; this breaches the 1st rule of taxation economics and is highly distortionary and ineffective, and (ii) it implies an arbitrary sharing of costs among contributors, in breach of basic competitive neutrality principles. Digicel also believes there is no sound case for paying for any subsidies for internet/broadband access and usage by the ICT sector. Universal Service regulations around the world have traditionally focused on voice service. The internet provides a very much broader range of services including shopping, library / research facilities, games and entertainment, video streaming (including for example, access to broadcast television, education services, and medical services) and email. Of these things WIK wrote in its report on the reform of Universal Service in the EU: "These are not telecommunications services per se but are education, healthcare and library services provided through an alternative means – telecommunications access networks and overlay transport networks using IP. Instead of visiting an unemployment office to look at job adverts, a person can do this over the internet. A class of medical students who have full audio/visual signals of a surgical technique beamed into their lecture theatre, are quite clearly receiving an education service. Instead of attending a council or commune meeting, a person could listen in over the internet. Funding such		

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		services by a USO tax on the telecommunications industry opens up the telecommunications industry as a substitute for general tax revenue which the industry contributes to already." Digicel contends that it is neither fair nor efficient to narrow the tax base for such services to the ICT sector. WIK provides an extended analysis of the issues in its report to the European Commission.[53]	The statement about 'playing' obligations – which is similar to the 'pay or play' principle that was abandoned in the EU after the complications were outlined by WIK to the European Commission, should be reconsidered in light of the advice provided by WIK which resulted in the withdrawal of the words 'pay or play' from the new regulations.[54]	The Authority will consider this recommendation made by Digicel.

[53] WIK (1999) p132, section 8.4 "Tax efficiency – the state budget vs. a USO tax" states,

"Given the trend of shifting to 'electronic' consumption of many services, such as E-commerce, library and data searches, and even medical advice (all provided over the internet), expanding the scope of Universal Service could (were any cost burden to be financed in line with the current framework) see the source of the national tax take shifting from general taxes to special USO taxes. This implies a shift from a more to a less efficient means of taxation.

We do not wish to suggest that the provision of internet services to schools, libraries and healthcare providers etc, is not a laudable policy, but it would be better for government to find other ways of paying for it than through a special tax on the telecoms industry.

We think the answer is clear, the present scope of Universal Service in the EU should not be expanded to include internet services. Governments may still want to invest in providing internet services to selected institutions, but it should find a less costly way of accomplishing it than requiring the firms that supply internet related services to price them at less than cost, and recover those subsidies through a tax on the telecoms industry."

[54] WIK *Op cit*, from section 3.9, p.71

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7.1.2 Implementation of the Universal Service Fund	Digicel	Digicel believes that TATT should exhaust the surplus license fee revenue it cites on pages 63 before further revenues are raised for the Universal Service Fund.		As mentioned within Section 6.2 of the Universal Service framework, in accordance with Section 53 (4) of the Act the Authority may allocate a percentage of funds collected in respect of concessions and licence fees from the service providers towards the UF. However there may be times when there is little surplus or no surplus at all, therefore there is the need to collect contributions from the service providers.
INFRASTRUCTURE DEVELOPMENT INITIATIVES Public Access nodes	Digicel	Digicel agrees with TATT that policies to develop public access to ICT services (especially computers and the internet) are warranted as a means of enabling those who do have strong demand for these service but do not have the income to subscribe, to have home based access to them.	Digicel urges TATT to look into the case of 'Telecentres' in regard to public access to broadband internet and computing. If the correct funding model is used, these have been shown to be effective least-costs	The Authority is proposing, as one of its 'playing' obligations, the provision of public access nodes at strategic locations within the country. These public access nodes seem somewhat similar to the telecentres proposed by Digicel.

"It is sometimes considered that pay-or-play schemes also offer an alternative to a net costing assessment exercise. This would not be correct where the value of the provision of USO services by a new entrant (i.e. when it 'plays') were offset against its USO liability. In this case net USO costs for all those operators who decided to 'play' would need to be assessed, and set aside their USO liabilities, calculated according to market share. Failure to do so would provide acute free-rider incentives, with the result that new entrants would likely do as little as possible, although presumably enough to claim that they were fulfilling their USO responsibilities. Without actually carrying out an explicit net cost calculation, it would be impossible for the authorities to determine which operators were making a fair contribution and which were not.

A movement to a scheme whereby both the net cost of the USO is assessed in a transparent process, and a VAT-type USO tax, such as we propose above, is raised in a transparent manner, would make 'pay-or-play' rules redundant. Operators would no longer bear primary responsibility for paying USO taxes (end users have this responsibility), and operators no longer have the option of offsetting their USO tax liability against a level of actual USO services that they may decide to provide. Rather, they would simply collect the known tax which is levied on subscribers (business and residential) as an item on each of their bills. Operators would perform the role of a tax collection agency, with those undertaking the role of USO provider being eligible to receive a share of the USO taxes."

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		Perhaps the most promising way of doing this cost effectively is through the design of funding schemes for "Telecentres". Alternatives may be to set up a funding mechanism using money from donor organisations, or through intergovernmental aid. Experience suggests that in most cases running costs can then met by operating revenues. There are many different funding, ownership and operating models for setting up and running Telecentres.	means of providing that access.	The Authority is planning to liaise with organizations that have implemented similar community type initiatives to discuss the mechanics of operating such centres.
1st round DOR				
DoRs pp. 121 - 123	Illuminat	Illuminat would like echo the comments of contributors requesting further consideration on the SALISES survey – (i) there are questions associated with the statistical significance of the results based on the methodology described – consider that while a sample of 6,000 (households) would be significant in a population, where that sample is spread among 3000 regions, thus an effective average of 2 samples households per region, the significance of the survey's model of the regions can be called into question. (ii) Further, the applicability of its findings over two years after its publication can be called into question, in the context of valid evidence-based policy development. (iii) In line with comments (a) and (b) above, Illuminat endorses the comments of Digicel regarding the publication of such general market data for the	Illuminat looks forward to TATT giving consideration to such numerological concerns in future versions of surveys conducted to measure the state of the telecommunications sector in Trinidad and Tobago.	In the design of the sample framework consideration was given to developing a sample that is representative of the country's population. The Authority agrees that the data published in the 2007 Digital Divide survey is somewhat outdated and therefore is planning to conduct a similar exercise in 2010 to update the data. The Digital Divide Report is published on the Authority's website. In addition, as mentioned in the previous round of consultation, the points raised by Digicel will be

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		consideration and scrutiny of market participants.		considered in the drafting of future survey initiatives.
DoRs (pp. 115, 129)	Illuminat	Illuminat notes that TATT has not appropriately responded to the provocative position posited by ICNTT regarding the definition of broadband (in this instance throughput of 512kbps) as a "basic telecommunications service." Illuminat will continue to observe with great interest the development and progression of this argument that such a declaration would invalidate the 2G and 2.5 G mobile technologies already deployed in the market by TSTT and Digicel from being considered adequate, basic services to be offered to the citizens of Trinidad and Tobago. Further TATT has not responded to ICNTT's claim that such a demand is unprecedented in the liberalized Commonwealth. Illuminat's own research seems to concur with this assertion.	TATT should address such concerns raised by this consultation process, and where applicable, adjust the contents of the framework under review accordingly. If TATT cannot show that there is such precedence and TATT has no clear argument stating that such is either (a) cost effective, or (b) reasonable in the context of current access technologies and market demand, this proposal should be removed TATT should provide examples of (Commonwealth) jurisdictions where broadband is considered a "basic" telecommunications	The Authority has based its framework on the GoRTT's Universal Service Policy which refers to 'affordable public data services of throughput no less than 512 kbps'. The National Information Communication Technology Centre (NICTC) of the Ministry of Public Administration can be contacted for a copy of the GoRTT's Universal Service Policy.

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		Of greater interest is TATT's inconsistency with its response to this position – citing GoRTT's Policy here, a Policy which seems to have been otherwise ignored by TATT in the drafting of this Framework	service. In the absence of such, TATT should strongly recommend to the Minister an adjustment to this alleged aspect of the Policy.	
DoRs (pp. 137)	Illuminat	Illuminat notes TATT's response to the Ministry of Social Development's comments regarding provisions for websites to cater for the differently abled. While Illuminat agrees in principle with the concerns of the Ministry, and would welcome the opportunity to demonstrate such technologies, there is some concern that TATT intends to regulate the provision of such through the referenced "Consumer Rights and Obligations Policy"	Illuminat would like to remind TATT that websites, website development and other value added services remain outside of their regulatory powers of the Act, in accordance with Sections 2 and 18 of the Telecommunications Act.	The Authority notes the comment made by Illuminat.

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