



A Consultative Document

**Proposed Price Regulation Framework
for Telecommunications Services in
Trinidad & Tobago**

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1 Introduction

1.1 Requirements for a Pricing Policy

Section 29 of The Telecommunications Act ("The Act") grants the Telecommunications Authority of Trinidad and Tobago ("the Authority") the power to regulate the prices of telecommunications services under certain market conditions. In particular, as outlined in Section 29 (2) of the Act, the Authority may "...establish price regulation regimes, which may include setting, reviewing and approving prices, in any case where-

- (a) there is only one concessionaire operating a public telecommunications network or providing a public telecommunications service, or where one concessionaire has a dominant position in the relevant market;
- (b) a concessionaire operating a public telecommunications network or providing a public telecommunications service cross-subsidies another telecommunications service provided by such concessionaire; or
- (c) the Authority detects anti-competitive pricing or acts of unfair competition.”

Most markets in the telecommunications sector are either currently serviced by one telecommunication provider or in the early stages of competition. Therefore the determination of market prices through the principles of supply and demand will not hold. As a result, the Authority may be required to develop alternative means ("price regulation regimes") of influencing the markets to generate prices that will maximize society's welfare.

The purpose of this draft Policy is to seek the views of the relevant stakeholders. The approach followed in this document is based on the requirements of Sections 29 of the Act, for the Authority to define relevant product and services markets, assess whether there is dominance or exclusivity of supply within those markets, and impose price regulation only so justified. The presumption, as indicated in Section 29(1) of the Act, is that in the absence of dominance (jointly or otherwise) or proven anti-competitive behavior, prices will be determined by providers in accordance with the principles of supply and demand in the market.

1.2 Review Cycle

As the telecommunications sector grows and develops into more efficient and competitive markets the need will arise to revise and update the type of price regulation regime that is employed by the Authority. And as such, this document will be modified in consultation with concessionaires, stakeholders, interested parties and the public, as the Authority deems appropriate. The maintenance history will be modified accordingly.

1.3 Consultation Process

The Authority is seeking the views and opinions of the general public and other stakeholders regarding the proposals made in this document in accordance with the Authority's *Procedure for Consultation in the Telecommunications Sector of Trinidad and Tobago*.

The Authority's consultation procedures and comment submission form are available on the Authority's website, <http://www.tatt.org.tt>. Comments should be submitted on or before **Wednesday 10th January 2007** to policy@tatt.org.tt or mailed to:

Telecommunications Authority of Trinidad and Tobago
BEN Court, 76 Boundary Road
San Juan

2 Market Analysis

2.1 Identification of Markets

The first step in the price regulation process is to identify the relevant product and service markets in which *ex-ante* regulation may be needed in Trinidad & Tobago.

There are two main types of relevant markets in the telecommunications sector; markets for services or products provided to the end-users and markets for the inputs which are necessary for operators to provide services and products to end-users. These markets are called retail and wholesale markets respectively. However, within these two broadly defined markets, further classification may be needed to separate markets depending on the demand and supply characteristics of each market.

The first step in identifying and defining a market is to characterize the market over a given time horizon, taking into account demand-side and supply side substitutability. There are two approaches used to define a market:

- (i) the relevant products or services.
- (ii) the geographic extent of the market.

2.1.1 Relevant products and services - the EU approach

A key issue for regulators is identifying how many different markets exist within the telecommunications industry. Some regulatory authorities spend a great deal of time and money in identifying separate telecommunications markets and in assessing whether they are competitive. They use market research and economic tests to identify groups of products and services that can be used interchangeably and hence to define separate markets. They then assess the extent of competition in each market by judging whether any company has dominance in that market, which enables it to fix prices independently of consumer demand and the price levels of competitors. However the Authority does not believe that such a complex approach is appropriate in a small country such as Trinidad & Tobago and during the early stages of market liberalization.

Figure 1 indicates the list of relevant product and services markets that have been identified by the European Commission. The list runs to 18 separate markets, and the market analysis for each of them has proved to be a considerable burden for many of the National Regulatory Authorities

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in the European Union (EU). The EU regulatory framework came into existence in July 2003 but, after nearly three years, the market analysis process remains incomplete in most EU Member States. It seems obvious that Trinidad & Tobago needs a simpler approach; indeed even in the EU there are calls for simplification when the current regulatory framework is reviewed later this year.

Figure 1: List of markets as defined by the European Commission

	Retail	Wholesale
Fixed	Access market – residential	Call origination
	Access market – business	Call termination
	Local/national calls – residential	Call transit
	Local/national calls – business	Leased line termination
	International calls – residential	Trunk leased lines
	International calls – business	Unbundled local loops
	Leased lines	Broadband access
	Data services *	
Mobile	Calls*	Access and call origination
	Roaming*	Call termination
	SMS*	International roaming
		SMS*
Broadcasting		Transmission and distribution

* Markets considered as competitive and therefore not subject to ex-ante regulation

Statement on the Definition of Telecommunications Markets for Trinidad and Tobago:

In accordance with the Authority’s technology neutral approach to regulation, the Authority proposes to define the markets in the telecommunications sector as follows:

	<i>Retail</i>	<i>Wholesale</i>
<i>Fixed</i>	<i>Access network</i>	<i>Access network- ULL</i>
	<i>Domestic voice</i>	<i>Access network – Broadband access</i>
	<i>International voice</i>	<i>Interconnection services- Origination</i>
	<i>Narrowband data services</i>	<i>Interconnection services – Transit</i>
	<i>Broadband data services</i>	<i>Interconnection services - Termination</i>
	<i>Leased lines</i>	<i>Leased lines</i>
<i>Mobile</i>	<i>Calls</i>	<i>Interconnection services- Origination</i>
	<i>Roaming</i>	<i>Interconnection services - Termination</i>
	<i>SMS</i>	

a) Retail markets

- (i) ***Fixed network access:*** *Access to the public telephone network at a fixed location.*
- (ii) ***Fixed voice services***
 - a. *Domestic: Publicly available local and/or national telephone services provided at a fixed location*
 - b. *International: Publicly available international telephone services provided at a fixed location*
- (iii) ***Fixed data services***
 - a. *Narrowband: Publicly available data services of bandwidths less than 256 kbps provided at a fixed location*
 - b. *Broadband: Publicly available data services of bandwidths equal to or more than 256 kbps provided at a fixed location*
- (iv) ***Retail leased lines:*** *Point-to-point or point-to-multipoint circuits for the dedicated use of an individual retail customer.*
- (v) ***Mobile services.*** *Public mobile telecommunications services.*

b) Wholesale markets

(i) Fixed network access

a. *Unbundled local loops. Wholesale unbundled access (including shared access) to copper loops and sub-loops.*

b. *Broadband access. Wholesale 'bit-stream' access that permits the transmission of broadband data in both directions over copper loops, and other wholesale access provided over other infrastructures, if and when they offer facilities equivalent to bit-stream access.*

(ii) Fixed interconnection services

a. *Origination. Traffic origination on the public telephone network provided at a fixed location.*

b. *Transit. Transit services over the fixed public telephone network.*

c. *Termination. Traffic termination on individual public telephone networks provided at a fixed location.*

(iii) Wholesale leased lines. *Wholesale terminating segments of leased lines and wholesale trunk segments of leased lines*

(iv) Mobile interconnection services

a. *Origination. Traffic origination on public mobile telecommunications networks*

b. *Termination. Traffic termination on individual mobile networks.*

The geographical extent of markets is defined by the extent of homogeneous, or close to homogeneous, supply and demand conditions. The Authority intends to work from the presumption that all markets should be defined national markets unless there is strong evidence of non-homogeneous conditions across the country. This might, for example, arise from the fact that some concessions have been granted by territory (major territory = Trinidad; minor territory = Tobago) and niche concessions have also been granted, e.g. for under-served areas.

Statement on Geographic Markets:

The Authority proposes to define all geographic markets as national, unless there is strong evidence of non-homogeneous conditions across the country.

2.2 Classification of Markets

The Act identifies two separate cases in which price regulation may be required. Section 29(2)(a) concerns markets in which there is only one concessionaire. Section 29(2)(b) concerns markets in which there is a dominant concessionaire, with dominance being defined in terms of "a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and, ultimately, consumers".

The Authority therefore proposes to classify markets as either competitive, contested or uncontested. These categories may be defined as follows:

- (i) *competitive markets* – markets in which there is more than one concessionaire and none of the concessionaires is dominant.
- (ii) *contested markets* – markets in which there are two or more concessionaires, but where one or more concessionaires are dominant or jointly dominant.
- (iii) *uncontested markets* – markets in which there is only one concessionaire.

We have based our definitions on the number of concessionaires and the presence or absence of a dominant concessionaire as this is a simple and fair guide to the need for price regulation in the different markets.

- In an uncontested market (where there exists only one concessionaire which may be the result of a legal monopoly or of high barriers to entry) some form of price control is necessary to counteract the tendency of a monopolist towards high prices and inefficiency.
- In a contested market (where there exists more than one concessionaire), any dominant operator is still in a position where it can set high prices and maintain inefficiencies. The presence of alternative suppliers in the market may place constraints on the power of the dominant concessionaire. Hence in contested markets there may be less need for price controls.
- In competitive markets there should be no need for price controls as the market should be functioning in accordance of the principles of supply and demand except where the Authority detects anti-competitive behaviour.

Statement on Classification of Markets:

The Authority proposes to classify markets as competitive, contested or uncontested as follows:

- (i) competitive markets – markets in which there is more than one concessionaire and none of the concessionaires is dominant.*
- (ii) contested markets – markets in which there are two or more concessionaires, but where one or more concessionaires are dominant or jointly dominant.*
- (iii) uncontested markets – markets in which there is only one concessionaire.*

2.3 Assessing Dominance

The definition of dominance given in Section 29(8) of the Act is the classic definition of dominance usually used in Competition Law. Normally it is applied *ex-post* when potentially anti-competitive behavior has been identified. In the Authority's price regulation regime the principle of dominance is being applied *ex-ante*, so there is a need for a relatively simple determinant of dominance. In line with international practice, the Authority proposes that market share should be used as the best indicator of dominance, with other factors only being considered in particular circumstances.

Regulators, for example in Europe, use a range of methods to assess whether particular operators have dominance in a particular market, but principally they have used market share as the best determinant of dominance. With a market share of under 25%, the operator is unlikely to have market power; with a share of over 40%, it is presumed to be dominant. Regulators may divert from these market share guidelines using other indicators of the presence or absence of market power (for example economies of scale and scope, technological advantages, and control of infrastructure).

The Authority proposes that for Trinidad & Tobago, given the state of market development and liberalization, a simple rule based on market share is appropriate. Any operator with a market share of 40% or more should be defined as dominant. Market share would normally be measured by total gross revenues in the market, but the Authority may, at its discretion, also take account of market share measured in terms of subscriber numbers or call volumes.

One implication of this definition of dominance is that competitive markets will generally have at least three operators offering service. If there are only two concessionaires in a market then at least one of them will have 40% market share and will thus be presumed dominant.

Statement on Assessment of Dominance:

The Authority proposes that a concessionaire with 40% or more of total gross revenues of the relevant telecommunications market is dominant. Other factors may also be considered by the Authority in determining market share.

2.3.1 Essential facilities

Essential facilities (also known as *bottleneck facilities*) are found in wholesale markets, where a service provider must have access to particular facilities in an operator's network in order to provide its own (and often competing) retail services. In most countries the regulator has a role in setting the prices for access to essential facilities.

Essential facilities are typically regarded as having the following characteristics:

- They are exclusively or predominantly provided by a single or a limited number of suppliers
- They are required by competitors in order to compete in the relevant markets
- They cannot practically be duplicated or substituted by competitors for technical or economic reasons.

A telecommunications operator that controls an essential facility has both the incentive and the means to limit access to the facility by its competitors. It becomes a matter of public interest to ensure that essential facilities are available to competitors on reasonable terms. Without such access, competition will suffer and the sector will be developed less efficiently than it could.

The most common examples of a essential facility are call termination and local loops. In order to terminate calls to customers on another network, service providers have no choice but to use the call termination service of the network to which the called party is connected. In effect, each concessionaire is the monopoly supplier of call termination services to its own customers. Similarly each provider of local loops has monopoly control over access to its customers.

Statement on Essential Facilities:

The Authority proposes that a concessionaire which controls an essential facility shall be classified as dominant in any market in which other concessionaires require access to that facility. The pricing of essential facilities shall be cost-based.

2.3.2 Joint dominance

It may be that no single participant in a telecommunications market meets the criteria of market dominance, but that the actions of that participant combined with the actions of other market participants result in “a degree of market power sufficient to permit them to behave independently of competitors or consumers”. This is a situation of joint dominance.

In exceptional circumstances the jointly dominant market participants may have entered into an agreement to co-ordinate their behaviour – these instances can be dealt with using regulatory powers directed at anti-competitive agreements. However, it is also possible for market participants to co-ordinate their behaviour, resulting in joint market dominance, without any explicit agreement.

Statement on Dominance:

The Authority proposes to take, among others, the following into consideration when assessing whether concessionaires are jointly dominant in a market.

- *The extent to which the market is concentrated, i.e. the number of market players.*
- *Whether the market is stagnant or there is limited growth,*
- *The extent to which the relevant concessionaires provide homogeneous products,*
- *The extent to which the relevant concessionaires have similar market shares,*
- *There exist high barriers to entry,*
- *Lack of price competition.*

The Authority proposes to regulate the prices of jointly dominant concessionaires in the same manner as it would for dominant concessionaires.

3 Forms of Price Regulation

3.1 Notification of Price Changes

Prior to a change in the prices of telecommunications services, referred to in section 29 (2) of the Act, all concessionaires are required to give details of the proposed revision in writing to the Authority (Section C8 of the Concession Document). The required period of notice is 30 days, although the Authority may waive this period in some circumstances (e.g. for services in competitive markets, or services of non-dominant concessionaires). The written notification shall include:

- The name and address of the telecommunications provider.
- The service for which a price change is being applied for;
- The current price or price schedule for the service;
- The proposed price or price schedule for the service;
- The date at which the price change is proposed to become effective.

The concessionaire may provide an explanation or justification for its proposed price change so as to assist the Authority in assessing the reasonableness of the proposed price.

Proposed price changes may be implemented 30 days after notification has been made to the Authority of a proposed price change (or earlier should a waiver of this notice period be granted by the Authority) unless the Authority notifies the concessionaire that it has concerns about the proposed price and has determined that a Price Review Procedure is required.

Detailed procedures for Notification of Price Changes, and the Price Review Procedure are included in the telecommunications Pricing Regulations, 2006.

Statement on Price Notification:

The Authority proposes that all relevant concessionaires shall be required to submit a notification in writing to the Authority for proposed price changes at least 30 days prior to notifying the public. The Authority may waive this thirty (30)-day period as it deems necessary in particular circumstances.

3.2 Prevention of Unfair Cross-subsidy and Anti-Competitive Pricing

Cross-subsidy and most forms of anti-competitive pricing (e.g. price squeeze or price gouging) involve a concessionaire pricing one or more services below cost in order to prejudice the market position of its competitors. Such pricing practices would be considered unfair, especially when practiced by a dominant concessionaire, because only suppliers in a dominant market position can generally afford to sustain the short-term losses which such practices entail, as a means of driving smaller rivals out of business. Occasionally, anti-competitive pricing may involve prices being set excessively above cost. This might, for instance, occur with wholesale services that are essential inputs to a rival operator's retail business.

The Authority considers that the following practices constitute anti-competitive pricing or acts of unfair competition, inter alia :

- (a) bundling of communications services, so that a concessionaire is required when purchasing one service to purchase another service that it does not require;
- (b) offering a competing concessionaire more favourable prices or related terms or conditions that are not justified by cost differences, if it acquires another service that it does not require;
- (c) supplying communications services at prices below long run average incremental costs or such other cost standard as is identified by the Authority;
- (d) using revenues or the allocation of costs from one public telecommunications service to cross-subsidize another public telecommunications service, except where such cross subsidy is specifically approved by the Authority;
- (e) deliberately reducing the margin of profit available to a competing concessionaire, by increasing the prices for the wholesale communications services required by that competing concessionaire, or decreasing the prices of communications services in retail markets where they compete, or both;
- (f) entering into anti-competitive pricing agreements, including:
 - (i) price-fixing agreements, pursuant to which competing concessionaires agree on or otherwise manipulate consumer prices;

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- (ii) bid-rigging, pursuant to which competing concessionaires manipulate the prices or conditions in what should otherwise be a competitive tender process;
 - (iii) resale price maintenance, pursuant to which a concessionaire that supplies a competing service provider with products or services attempts to impose restrictions on the prices charged by that service provider to consumers; and
 - (iv) exclusive dealing agreements, pursuant to which a concessionaire enters into an agreement with another party for the supply of products or services on an exclusive basis and with related pricing incentives, and where that exclusivity has or may have the effect of substantially lessening competition in related communications markets; and
- (g) any failure by a concessionaire to comply with any decision, rule, direction or guideline issued by the Authority regarding either prohibited or required pricing practices.

If at any time the Authority has concerns about a price currently in the market, or a proposed price revision submitted by a concessionaire, it may instigate a Price Review Procedure. In particular the Authority will establish a Price Review Procedure whenever it has concerns that a particular price may result in unfair cross-subsidy or anti-competitive pricing.

An understanding of a concessionaire's costs is the key requirement for the Authority to recognize and respond to cross-subsidy and anti-competitive pricing. In some circumstances the Authority may therefore require concessionaires to develop cost models and/or separated accounts to help identify the costs of individual services. The proposed methodology for cost modeling is described in the consultative document entitled: *Proposed Costing Methodology for Interconnection and Access Services in the Telecommunications Sector*. The proposed procedures for accounting separation are outlined in more detail in a separate consultative document entitled: *Proposed Accounting Separation Guidelines for the Telecommunications Sector*.

Statement on Anti-Competitive Pricing or Acts of Unfair Competition:

The Authority proposes that it shall consider the following practices, inter alia, to be anti-competitive:

- (a) bundling of communications services, so that a concessionaire is required when purchasing one service to purchase another service that it does not require;*
- (b) offering a competing concessionaire more favourable prices or related terms or conditions that are not justified by cost differences, if it acquires another service that it does not require;*
- (c) supplying communications services at prices below long run average incremental costs or such other cost standard as is identified by the Authority;*
- (d) using revenues or the allocation of costs from one public telecommunications service to cross-subsidize another public telecommunications service, except where such cross subsidy is specifically approved by the Authority;*
- (e) deliberately reducing the margin of profit available to a competing concessionaire, by increasing the prices for the wholesale communications services required by that competing concessionaire, or decreasing the prices of communications services in retail markets where they compete, or both;*
- (f) entering into anti-competitive pricing agreements, including:*
 - (i) price-fixing agreements, pursuant to which competing concessionaires agree on or otherwise manipulate consumer prices;*
 - (ii) bid-rigging, pursuant to which competing concessionaires manipulate the prices or conditions in what should otherwise be a competitive tender process;*
 - (iii) resale price maintenance, pursuant to which a concessionaire that supplies a competing service provider with products or services attempts to impose restrictions on the prices charged by that service provider to consumers; and*
 - (iv) exclusive dealing agreements, pursuant to which a concessionaire enters into an agreement with another party for the supply of products or services on an exclusive basis and with related pricing incentives, and where that exclusivity has or may have the effect of substantially lessening competition in related communications markets; and*
- (g) any failure by a concessionaire to comply with any decision, rule, direction or guideline issued by the Authority regarding either prohibited or required pricing practices.*

3.3 Cost-based Pricing for Interconnection

As interconnection services are the most important wholesale input to rivals' retail services, the Authority is particularly concerned to ensure that these services are reasonably and efficiently priced. The Act requires that all interconnection charges are cost-based. The Authority has published its proposals for achieving this requirement through the use of long run incremental costs in the policy document entitled: *Proposed Costing Methodology for Interconnection and Access in the Telecommunications Sector*.

The Authority recognizes that the application of the proposed costing methodology by different concessionaires may produce results that do not reflect the cost of an efficient operator. In such cases, the Authority proposes to set the interconnection rates based on the concessionaire having the same interconnection costs as those of an efficient operator in the relevant market. If the concessionaire wishes the Authority to adopt any other position, it must justify such approach on the basis of cost analysis and/or international cost-based benchmarks acceptable to the Authority.

Statement on Cost-based Interconnection Pricing:

The Authority proposes that the pricing of interconnection services shall be cost-based. The Authority proposes to set interconnection rates based on the concessionaire having the same interconnection costs as those of an efficient operator in the relevant market, unless the concessionaire provides evidence acceptable to the Authority that different rates are appropriate.

3.4 Price Caps

In uncontested markets, or for dominant concessionaires in contested markets, it may be presumed that, in the absence of price regulation, prices may be set above economically efficient levels. For this reason *ex-ante* price regulation is the norm in these markets.

The Authority considers that a price cap regime (Appendix A) is superior to the alternative methods of rate of return regulation or controls on individual prices. In most countries the price cap is used as a method of setting a limit on overall price changes over a twelve month period, and the Authority proposes that it should be used in this way in Trinidad & Tobago. This would leave the regulated concessionaires free to change prices when commercially necessary, but would require them to keep within the annual price cap. Compliance would be audited by the Authority annually.

In some countries two different methods are used – price caps for retail prices, and cost based calculations for wholesale prices. However the Authority foresees a number of disadvantages to this approach:

- (i) a price squeeze may result if the price cap is forcing retail prices down faster than wholesale prices, thus reducing profits for new entrants
- (ii) the use of annual cost calculations for wholesale prices gives no rewards to operators who improve their network efficiency
- (iii) the annual process of calculating costs for wholesale services is itself a costly exercise. By setting a price cap the Authority is able to reduce the regulatory burden on the industry
- (iv) price caps allow for flexibility and innovation in pricing within groups of broadly similar services, whereas cost-based pricing constrains such market dynamics.

Statement on Price Cap:

The Authority proposes to apply price cap to wholesale as well as retail prices, but excluding interconnection services for which cost-based prices will be applied. In addition, the Authority proposes to publish a consultative document entitled “Price Cap Mechanism” within the next six (6) months, which will provide further details of the Price Cap Regime that will be implemented in Trinidad and Tobago.

3.5 Price Floors

Whereas price caps are designed to provide an upper limit to the service prices of dominant concessionaires, price floors are designed to ensure that predatory pricing does not occur in the market. Price floors are typically set on the basis of costs: any dominant concessionaire pricing under cost, would generally be deemed to be practicing anti-competitive pricing.

Statement on Price Floors:

The Authority proposes no ex-ante application of price floors. Instead, price floors may be imposed when the Authority detects anti-competitive pricing or acts of unfair competition in any market.

3.6 Rate of Return Regulation

Section 29 (5) of the Act allows the Authority to impose rate of return regulation on concessionaires in uncontested markets. Rate of return regulation restricts the amount of profits that the concessionaire is allowed to generate, but it has been criticized as a regulatory tool because it does not offer any incentives for improved efficiency. For this reason, most regulators prefer to use price caps to control prices in uncontested markets.

Statement on Rate of Return Regulation:

The Authority does not propose to use rate of return regulation unless price cap regulation proves to be inadequate for controlling prices in contested markets.

3.7 Accounting Separation

Section 24 (1) (h) of the Act requires that concessionaires "account for costs and keep such books of accounts and where the Authority prescribes by regulation the manner in which such books are to be kept, to keep such books of accounts in accordance with such regulations". In determining when and where it is appropriate to require accounting separation, the Authority may take into account the following:

- a) the range of markets in which the concessionaire operates;
- b) the range of services it provides in these markets;
- c) the extent to which it bundles services between markets
- d) whether it is dominant in one or more of the markets in which it operates
- e) any indication of cross-subsidy or anti-competitive pricing or other acts of unfair competition on its part.

Accounting separation is a process by which a concessionaire can present to the Authority a set of regulatory accounts reporting both its balance sheet and profit and loss account on a service-by-

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service basis. This will enable the Authority to make informed judgments about appropriate price controls for individual services.

The proposed procedures for accounting separation are outlined in a consultative document entitled: *Proposed Accounting Separation Guidelines for the Telecommunications Sector*.

4 Price Controls in Different Types of Market

The following provides a summary of the different types of price controls that may be applied to markets in the telecommunications sector.

4.1 Price Controls in Competitive Markets

The presumption in competitive markets is that price regulation will not generally be required. As indicated in Section 29(1) of the Act the Authority will generally leave prices to be set by the market on the basis of supply and demand. However, three forms of price controls will continue to exist:

- Price changes should be notified to the Authority in advance of becoming effective in the market. The Authority may, however, consider waiving the 30 day notice period for price changes in competitive markets.
- The Authority may at any time require that a price be altered or removed from the market, pending a full Price Review Procedure, if it is concerned that such a price results or will result in unfair cross-subsidy or anti-competitive pricing (Section 29(2)(b) and (c) of the Act). The Authority may issue such a requirement following the submission of a proposed price change, the receipt of a complaint from another concessionaire, or simply as a result of its own analysis. In reality, although the Act gives the Authority this power for all services of all concessionaires, it is unlikely to have to use it in competitive markets,
- Prices for interconnection services, in particular the bottleneck facility of call termination, shall be cost-based (Section 25(2)(b) and (m) of the Act) in accordance with the costing methodology recommended by the Authority.

4.2 Price Controls in Contested Markets

In addition to the price controls that exist in competitive markets, the Authority may apply further price controls in contested markets. These controls may include price caps and/or price floors (Section 29(6) of the Act) on dominant concessionaires

4.3 Price Controls in Uncontested Markets

In addition to the price controls that exist in competitive and contested markets, the Authority may apply further price controls to concessionaires in uncontested markets. These controls may include regulated rate of return in pursuant to section 29(5) of the Act, where the Authority may establish the maximum rate of return that a concessionaire may receive on its investment or the Authority may prescribe the use of any other measures for determining the concessionaires profitability, as it deems necessary.

Appendix A: Price Cap Proposals

A1 Constructing Price Baskets

The first step in a price cap regime is to define the price baskets. These are the bundles of products that are grouped together for price control purposes. They consist of similar products, and the focus of price control is the movement of the price level of the basket rather than the individual prices. If it is necessary to control individual prices, each individual price should form its own price basket. The main advantage of price baskets is that it gives the operator greater freedom to adjust prices of products within the basket, provided that the overall control is satisfied.

The Authority proposes that the price baskets are established on the basis of the markets identified in Section 2.1 of this document. Where a market is classified as uncontested all the services in that market would form part of a single price basket for that market. Where a market is classified as contested all the services of the dominant concessionaire in that market would form part of a single price basket for that market.

A2 Calculating the Price Cap

The Authority will carry out annual reviews of price changes in the relevant baskets of services, so that it can see whether its price cap controls are being implemented by the dominant concessionaires. The methodology needs to be transparent so as to minimize disputes and enable concessionaires to carry out their own calculations. The Authority proposes the following as the basic process:

- (i) The Authority will define the services included in the market. Initially this will include all revenue-generating services supplied to customers on an exclusive basis. The Authority may make exceptions where it considers it appropriate.
- (ii) The Authority will determine the need for sub-baskets within each market. For example, in some countries the regulator places a separate cap on monthly residential line rentals in order to ensure the affordability of basic service.
- (iii) Concessionaires will provide the Authority with annual revenue and price figures for each service in the basket; the revenue figures would be provided on a confidential basis
- (iv) The Authority will calculate the annual price change (C) according to the approach indicated in Section A3 of this document. If C is greater than the

amount allowed by the price cap formula, the Authority will require the operator to correct this immediately, along with the potential sanction or an appropriate fine. If C is less than the amount allowed by the price cap formula, the concessionaire should be able to carry forward the difference into the following year so that it is not handicapped by undershooting the price cap formula

- (v) The Authority will publish the conclusions from its calculations, and make the detailed calculations for each concessionaire available to it.

This process would be radically different from the present method, where the Authority approves each individual price of the incumbent. It would reduce the work required both for concessionaires and the Authority, and give the concessionaires much greater commercial freedom. The Authority would still have reserve powers under Section 29(2) of the Act to investigate any price changes that concerned it, but the Authority envisages that these powers would only need to be used infrequently.

A3 Calculation of Price Changes in Service Baskets

The Authority will calculate the annual price change in each basket of services according to the formula:

$$C^k = \sum_{i=1}^n \left[\frac{P_{(i,t)}}{P_{(i,t-1)}} \times \frac{r_{(i,t)}}{R_{(t)}} \right]$$

where: C^k is the overall price change for basket k

$P_{(i,t)}$ is the price of service i in year t

$r_{(i,t)}$ is the revenue from service i in year t

$R_{(t)}$ is the total revenue from all services in the price basket in year t .

n is the number of services within the basket

In order to calculate the price change, the Authority will require the operator in uncontested markets and dominant operators in contested markets to submit the following data each year:

- Revenues for each of the services within the price baskets
- The relevant output measure for each of these services (typically either traffic minutes or number of subscribers).

The Authority will need this data for both the current year and the previous year, and in the case of dominant operators it will require the auditors to confirm that this data is accurate. The average price for each service can then be calculated as the revenue divided by the unit of output.

A4 Setting the Price Cap

Regulators around the world use different methods to establish the value of X (the maximum rate at which real prices are allowed to change during the control period). The main methods are:

- (i) financial models, which calculate the price changes needed to give the operator an acceptable rate of return over the control period
- (ii) productivity models, which calculate the efficiency improvements made over recent years, and this figure is used for future price controls
- (iii) international benchmarks, where X factors in comparable countries are used to give a guide
- (iv) industry consensus, where a process of consultation produces a figure acceptable to all interests .

Many regulators use a combination of these methods. Often at the start of competition the X factor is a high figure in order to squeeze out existing inefficiencies, and this is then relaxed as efficiency improvements are made. In Trinidad & Tobago the Authority does not believe that the cost of constructing a financial model or undertaking a productivity study can be justified, and therefore suggest that the X factor should be fixed through a process that includes international benchmarks, consideration of cost levels, and a reasoned consultation with interested parties. Of course, different X factors can be used in different baskets.

A5 Price Cap Formula

The price cap formula states that the actual price index calculated for the change in prices charged by the concessionaire for a particular basket of service for period t, should be less than or equal to the difference between retail price index and the X factor. The X factor will be determined by the Authority as outlined above and may differ for each basket of service.

$$C^k \leq RPI_t - X_t^k$$

where: RPI_t is the retail price index for year t

X_t^k is the X factor for basket k in year t

A6 Duration of Price Cap Regime

Price cap controls are usually in force for periods of between three and five years. This period should be long enough to give some stability to the market, but short enough to allow reviews in the light of changing market conditions. In Trinidad & Tobago a major change in the market has recently occurred with the ending of the incumbent exclusivity for many services. This major change makes a relatively shorter period for price controls desirable. The Authority is of the view that the most suitable duration for a price cap regime at this time is three years.