Fair Trading Commission

PRICE CAP MECHANISM

DECISION

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SUMMARY OF DECISION

*The Fair Trading Commission (the Commission) has made a decision to use the Price Cap Mechanism to regulate Cable & Wireless (Barbados) Ltd. (herein after referred to as the Company) from April 1st 2005. The Price Cap Plan will be used to facilitate the achievement of the objectives of the mechanism. The Price Cap Plan will commence on **April 1st, 2005** and conclude on **July 31st, 2008.***

The general principle of price cap regulation is to allow flexibility in pricing, provided that the average change in prices charged by the Company and measured by the Actual Price Index (API), does not exceed the Price Cap Index (PCI). The PCI is expressed as Inflation (I) minus Productivity (X).

The main price cap formula is given therefore by the equation:

$$API \leq PCI$$

The PCI will be reset by the Commission on August 1st of each year of the Price Cap Plan.

Following are the main elements of the plan.

Initial Rates

The initial rates are the prices charged by the Company at the start of the Price Cap Plan. The Commission has determined that the existing rates for services regulated under the Price Cap Plan will be the initial rates. These rates will continue until notification by the Company of its intention to make changes thereto.

Baskets

The services regulated under the Price Cap Plan will be divided into four baskets. The baskets have been established as follows:

Basket 1- Domestic Residential Access

This basket is confined to basic residential access line rental. A price control allowing a maximum of 7% increase annually will be applied from August 1st 2005. This increase is fixed and will not be influenced by the rate of inflation.

Basket 2- Domestic Voice Telecommunication Services

This basket will include domestic retail services not included in basket 1 or basket 4. These services include business access, business installation, payphone access, and value added services. The Productivity Factor (X) set for this basket is 4.19%.The inflation factor will be the inflation rate measured by the Retail Price Index (RPI) for Barbados.

Basket 3- International Telecommunication Services

This basket will consist of all international retail services. These services include fixed international outgoing, payphone international, international operator assistance and international leased circuits. The Productivity Factor (X) for this basket is set at 11.57%. The inflation factor will be the inflation rate measured by the Retail Price Index (RPI) for Barbados.

Basket 4- Other Retail Telecommunication Services

This basket includes all other retail services not accounted for in the other three baskets. These services include Domestic Leased Circuits and Voicemail. No constraints on average price change will be placed on this basket. The Commission will only require notification of adjustment in the prices of these services, consistent with the principles outlined at section 4 of the Decision.

Carry Over Headroom

Should the Company choose not to raise its prices to the maximum allowable level, the PCI will exceed the API and headroom will be created. The Commission will allow the Company carry over of this headroom to the subsequent periods in Basket 2 and Basket 3. The Company therefore has the opportunity to implement price increases that exceed the relevant difference between inflation and the X-factor for the subsequent years in these baskets.

Compliance Filing

For each proposed rate increase the Company is required to make a rate increase compliance filing that demonstrates that the API will not exceed the PCI.

The Company is required to file by July 1st of each year of the Price Cap Plan, information showing that they have complied with the rules of the Plan by maintaining API at or below the PCI.

Notification

Rate Increases

During the Price Cap Plan, the Company is required to inform the Commission in writing and the general public through the printed media at least 20 business days before the effective date of any proposed rate increase of a regulated service.

Rate Reductions

The Company is required to advise the Commission and the public at least 2 business days before the effective date of decrease in a manner similar to that required for price increases.

Exogenous Factors

An event outside the control of the Company that negatively affects their net income is known as an exogenous factor. If such an event occurs the Company may apply to the Commission for an exogenous (Z) factor to be included within the Price Cap formula. The Commission may allow this but only after conducting a public consultation on the matter.

Quality of Service

The Commission will set a series of standards that the Company will be required to meet. This will however not be included as a factor or variable within the price cap formula.

Price Cap Model

In the development of the Price Cap Plan, the Commission utilised a price cap model which was designed with the assistance of the Commission's consultants. The Company was given the opportunity to provide input into and comment on the design of the model.

The Price Cap Model generated the escalator for Basket 1 and the X factors that are applied to Basket 2 and Basket 3, based on actual company data, forecasts of the telecommunications market development, and the earnings capacity of the Company.

Consultation Process

The Commission utilised the public consultative process as the means of ensuring full participation in the development of the Price Cap Plan. This involved written and oral consultations with interested parties as well as extensive discussion of the various issues with the Company. The rationale for this Decision is set out below.

PRICE CAP MECHANISM

This price cap mechanism is established by the Fair Trading Commission in accordance with and under and by virtue of the provisions of section 39 of the Telecommunications Act CAP. 282B.

SECTION 1 BACKGROUND

INTRODUCTION

1. Effective April 01, 2005, the Fair Trading Commission (the Commission) will implement the price cap mechanism to regulate the supply of telecommunications services provided by Cable & Wireless (Barbados) Ltd. (herein after referred to as the Company). The price cap mechanism replaces the rate of return system of regulation previously used.

2. Under the rate of return system, the regulated entity was allowed to recover its costs and earn a reasonable return on capital employed. The regulatory focus was on costs and returns, therefore there was no incentive for the Company to increase efficiency or to reduce costs. However under price cap the focus is on prices and productivity which provides greater incentive for the Company to maximise efficiency.

3. The legislative framework under which the Commission was established paved the way for the introduction of competition in the telecommunications market and the introduction of price cap which is an incentive based form of regulation.

LEGISLATIVE FRAMEWORK

4. The telecommunications sector in Barbados is regulated by the Commission and the Ministry of Energy and Public Utilities.

5. The Commission is responsible for establishing rate-setting principles, approving and monitoring rates and conducting periodic reviews of the rates charged by service providers by virtue of the Fair Trading Commission Act CAP. 326B, the Utilities Regulation Act CAP. 282 and the Telecommunications Act CAP. 282B.

6. Section 3(1) of the Utilities Regulation Act states:

"The functions of the Commission under this Act are, in relation to service providers, to:

(a) establish principles for arriving at the rates to be charged;

(b) set the maximum rates to be charged;

(c) monitor the rates charged to ensure compliance;

(d) determine the standards of service applicable;

(e) monitor the standards of service supplied to ensure compliance; and

(f) carry out periodic reviews of the rates and principles for setting rates and standards of service."

7. When establishing the principles to regulate a service, the Commission must in accordance with section 3(2) have regard to:

> (a) *"the promotion of efficiency on the part of service providers;*
>
> (b) *ensuring that an efficient service provider will be able to finance its functions by earning a reasonable return on capital; and*
>
> (c) *such other matters as the Commission may consider appropriate."*

PROTECTION OF CONSUMER INTEREST

8. Under section 3(3) of the Utilities Regulation Act, the Commission is specifically charged with the protection of the interest of consumers. Section 3(3) (a) states:

> *"The Commission shall protect the interests of consumers by ensuring that service providers supply to the public, service that is safe, adequate, efficient and reasonable."*

9. Furthermore, under section 10(1) the Commission is charged with inter alia,

> *"ensuring that consumers are provided with universal access to the utility services supplied by the service providers; and*
>
> *such other matters as the Commission may consider appropriate."*

10. Additional responsibility is conferred upon the Commission through the Telecommunications Act CAP. 282B. In particular, Section 6 (1) states that:

> *6 (1) "The Commission shall*
>
> *(c) be responsible for the regulation of competition between all carriers and service providers in accordance with this Act to ensure that the interests of consumers are protected; and*
>
> *(d) establish and administer mechanisms for the regulation of prices in accordance with this Act, the Fair Trading Commission Act and the Utilities Regulation Act."*

11. The duty of the Commission to establish an incentive based rate setting mechanism and to facilitate market liberalisation and competitive pricing is described in section 39 of the Telecommunications Act.

12. Section 39 (3) of the Act states "*Subject to this Act, the Minister shall at such time as is specified under this Act, and after consultation with the Commission, require that the Commission use an incentive based rate setting mechanism to establish the rates to be charged by a provider.*" In pursuance of this, the Minister instructed the Commission to adopt the price cap form of incentive based rate setting mechanism.

13. Section 39 (4) states "*The incentive based rate setting mechanism referred to under subsection (3) shall be established by the Commission*

in the manner prescribed; and the Commission shall monitor and ensure compliance with the mechanism."

14. On November 30, 2001, the Commission having conducted a review of alternative methods of incentive regulation publicly announced that price cap regulation would be used in the liberalised telecommunications environment in Barbados. As regulator, the Commission has responsibility for establishing the rate setting principles that form the Price Cap Plan.

CONSULTATION PROCESS

15. When introducing price cap incentive based regulation, the regulator must be mindful of the need to embrace the principles of transparency, accountability, and non-discrimination. In this regard, the Commission utilised the public consultative process as the means of ensuring a comprehensive discourse.

16. On September 6, 2004, the Commission opened the subject for public comment by issuing a public consultation paper on price cap regulation. That paper sought to obtain the views of the public on the principles and methodologies that would form the basic framework of the Price Cap Plan.

17. This was followed by consultation on February 02, 2005 which invited further comment on the principles and methodologies and allowed comments on assumptions and values that would be used in the proposed price cap model. Comments were also invited on the administrative compliance rules.

18. Several interested parties within the telecommunications industry and other representative associations submitted written responses to the consultation documents.

19. Additionally oral consultations were held with the parties to facilitate further discussion on the relevant issues.

20. Given the confidential nature of most of the information provided by the Company, the Commission carried out analyses and examinations with the assistance of the Commission's consultants, in accordance with its confidentiality rules.

21. The Commission reviewed the information received and where appropriate these were taken into consideration in the formulation of this Decision.

22. The Commission will further issue a formal set of rules which will complement this Decision.

23. The Commission wishes to thank all those persons who responded to its consultations.

OBJECTIVES OF PRICE CAP REGULATION

24. Price cap regulation in general, allows for more efficient and effective regulation than rate of return regulation which was previously used to regulate the Company.

25. The objectives and principles of price cap regulation are to:

(a) provide the Company with the economic incentive to reduce its operating costs;

(b) provide the Company with the incentive to be innovative and replace plant in an efficient and prudent manner;

(c) provide the Company with reasonable opportunity to earn a fair return;

(d) allow efficiency gains to be passed onto customers through reduced prices of telecommunications services;

(e) foster competition in the Barbados' telecommunications market;

(f) streamline regulatory procedures relating to rates; and

(h) facilitate pricing flexibility and responsiveness to evolving technological, legal and market conditions.

26. In developing the Price Cap Plan the Commission took into consideration the following critical factors:

(a) the nature and characteristics of all services provided by the Company;

(b) relevant legislative provisions;

(c) Government policy with respect to which services are to be regulated;

(d) the current and projected status of the market;

(e) the degree of access to basic telephone service;

(f) the costs, benefits and other impacts of regulation;

(g) the amount of information available on the performance of the Company and the industry in general;

(h) the need to ensure fair competition between market participants; and

(i) the resources and capacity of the Commission to implement, monitor and control the regulatory regime.

SECTION 2 PRINCIPLES OF THE PRICE CAP PLAN

27. Each price cap plan is defined by a specific set of principles that are designed to fit the particular market and regulatory environment. These principles include the number of service baskets, productivity factors, inflation measures, exogenous factors and carry over capability.

28. This section sets out a description of each of the principles that will define the Barbados Price Cap Plan.

INITIAL PRICES

29. The initial prices or going-in rates are the prices charged by the Company at the start of the Price Cap Plan. The Commission, while formulating the overall structure of the Price Cap Plan, reviewed the existing rates and considered whether there was need for an adjustment to these rates.

30. An adjustment to rates prior to the start of price cap regulation must be administered under the Rate of Return regulation which is in existence up to the start of the price cap. Under the Rate of Return process an adjustment to the rates may be initiated either by the Company through the filing of a rate application, or by the Commission through a review of the existing rates where the Commission has reason to believe that an adjustment is warranted.

31. The Commission sought to ensure that the Company's going in prices allowed it to make a reasonable rate of return. In circumstances where

current prices are inadequate it may be prudent to adjust the existing rates prior to the implementation of the Price Cap Plan to ensure that at the outset the Company is permitted to make a reasonable return on its capital. An alternative option would be to attempt to achieve this objective during the period of the plan.

32. Most respondents were of the view that the going in rates should be the existing prices charged by the Company with no adjustment accommodated prior to the plan's implementation. There was also a suggestion that the going-in rates for international services be established at the outset with the appropriate cost filings, to prevent future predatory pricing.

33. The Commission reviewed the existing rates of the Company in view of the need to ensure that the Company was allowed to make a reasonable return on its invested capital.

34. The Commission had regard to:

    (a) The Commission's Decision dated July 20, 2004 on the Company's application for a change in rates;
    (b) The Enhanced Allocation Model and support cost data provided by the Company; and
    (c) The Company's latest audited financial data.

35. The Commission found that the initial rates allowed the Company to earn a fair rate of return on regulated services.

36. The Commission has decided that the existing rates will therefore continue until notification by the Company of its intention to make changes thereto within the parameters of the Price Cap Plan.

SERVICE BASKETS

37. Related services may be grouped into baskets based on homogeneity or similarities in demand price elasticity. However, other considerations in designing the baskets may be the types of customers served by the company and the need to provide pricing flexibility whilst protecting certain customer groups from price increases.

38. The Commission took a number of specific factors into consideration in determining how to group services. These included:

- The overall degree of price control warranted;
- Additional restrictions/sub-caps necessary for specific control of certain services;
- The competitiveness of particular services;
- The degree of pricing flexibility to be accommodated;
- The need to discourage anti-competitive pricing opportunities;
- Operational functionality;
- Minimisation of the burden of future compliance;
- Expected regulatory and governmental policy directives; and
- The need to maintain simplicity of design.

39. Respondents did not support conclusively either the single basket or two-basket approach. Those who opposed the single basket suggested that it was inappropriate especially where it included non-retail services (e.g. interconnection charges) and retail services (e.g. domestic residential access). It was thought that this would promote anti-competitive pricing practices. In addition they considered that the single service basket approach was too broad by definition and did not encourage specific productivity improvement. It would thus permit

the Company to target price reductions in a specific competitive product line while permitting significant increases in product categories where competition is less intensive and where particular customers may be unduly prejudiced by large increases.

40. Respondents who supported a single basket approach said that it would provide maximum pricing flexibility and would ensure that each service whether domestic or international bears its fair share in terms of revenue generation.

41. Those who supported a multiple basket option were of the view that this approach was preferable because it reduced the service provider's ability to compensate for the loss of revenue from the international services by increasing the rates on the domestic services.

42. The Commission noted that in the Barbados telecommunications market the Company is both a carrier and service provider. As the regulated entity it supplies the market with regulated as well as unregulated services, with competitive as well as non-competitive services. The Commission therefore took into consideration the need to ensure that the Price Cap Plan does not facilitate anti-competitive cross-subsidies. Such a practice can occur where the Company makes selective price reductions in the price of services in the competitive and unregulated markets, and finances these out of increases in regulated non-competitive markets.

43. The Commission therefore determined that it would place regulated services which are moving towards competition in the foreseeable future in separate baskets from the non-competitive services.

44. The Commission after careful analysis of all the concerns raised, determined that the Price Cap Plan would ultimately comprise four baskets. This approach best accommodated the key objectives of the Commission as it will not significantly reduce the pricing flexibility of the Company and will provide ample opportunity for it to earn a reasonable return on its capital investment.

45. In general, the baskets will include only those retail services specified as being subject to regulation in the Statutory Instrument (S.I.) No. 108 Telecommunications (Regulated Services) Order 2003[1] namely:

- International telecommunications services;
- Domestic voice telecommunications services; and
- Leased circuits.

46. The baskets will not include wholesale type services such as:

- Services in respect of interconnection charges; and
- International simple resale.

47. These will be excluded in order to reduce anti-competitive practices. These services will continue to be regulated in accordance with the Telecommunications Act. The price of these services will generally be determined through negotiation between parties. With regard to interconnection charges, these would be based on the charges included in the relevant reference interconnection offers.

[1] Appendix 1 sets out the services to be regulated

48. The four baskets will be:

Basket 1 **Residential Access**
Residential Access Line Rental

Basket 2 **Domestic Voice Telecommunications Services**
Business Access and Other exchange line
Business Installation and other one off services
Payphone Access
Value Added Services (VAS)
Payphone Local
Residential Installation and other related one off services
Trunk/Local/Tandem Fixed Calling
Domestic Operator Assistance

Basket 3 **International Telecommunications Services**
Fixed International Outgoing
Payphone International
International Operator Assistance
International Leased Circuits

Basket 4 **Other Retail Telecommunication Services** **(Not subject to PCI)**
Domestic Leased Circuits
Voicemail
Centrex

49. *Basket 1 - Domestic Residential Access* - Domestic residential access rental service has been assigned to a separate basket because of the nature of this service. The Commission believes that it would be irresponsible to allow full flexibility to the Company in the determination of the price

of this service. Basic telephone service is an essential service that should be, as far as possible, affordable to all households. Substantial increases in the price of this service will significantly affect those who can least afford to pay.

50. The Commission accepts that the Company must be allowed to earn a reasonable return on capital employed and must be motivated to maintain optimum levels of investment in access plant.

51. A separate price control for this service removes some flexibility from the Company in setting the price for this service and provides the Commission with a degree of certainty in the timing and quantum of any price increases that can be applied.

52. A predefined price control or escalator is set for the residential access service basket. The escalator will allow the Company a maximum 7% annual increase in the price of residential access service from the second period of the plan. This percentage increase is fixed and therefore will not vary according to the annual rate of inflation.

53. *Basket 2 – Domestic Voice Telecommunications Services* - The Domestic services basket will include all domestic retail services excluding those services allocated to basket 4 and the domestic residential access service in basket 1. These services are all placed in a single basket with an overall X-factor to encourage pricing flexibility, consistent with the move towards a competitive market. A single broad based basket of this nature will provide the Company with an opportunity to adjust rates to the extent that the overall change in these prices does not exceed the price cap index.

54. The average change in prices in this basket will be constrained by the standard price cap index (i.e. inflation (I) less productivity (X) factor). The X-factor for this basket is set at 4.19 percent. The prices of the services in this basket can therefore be adjusted on average each period by the net of the percentage increase in inflation, and the percentage X-factor decrease.

55. *<u>Basket 3 – International Telecommunications Services</u>* - This basket will include all international retail services. The Commission in establishing a separate basket that includes only International services is mindful of the fact that in Barbados with the liberalisation of the market this service has become quite competitive. By the end of the Price Cap Plan, international services may no longer need to be regulated. If this occurs this basket will be dropped from the plan without any effect on the regulation of the remaining baskets.

56. The average change in prices in this basket will be constrained by the standard price cap index (i.e. inflation (I) less productivity (X) factor). The X-factor for this basket is set at 11.57 percent. The prices of the services in this basket can therefore be adjusted on average each period by the net of the percentage inflation increase and the percentage X-factor decrease.

57. *<u>Basket 4 – Other Retail Telecommunications Services</u>* - This basket includes all regulated retail services not allocated to any of the previous three baskets. The services in this basket are generally those for which there is already substantive competitive pressure, or where there is decreasing demand due to advances in technology (e.g. telegraph).

58. The average price changes in this basket will not be constrained by a price cap index. These services will be lightly regulated, to the extent

that the Commission will need only the required notification of adjustment in the prices of these services consistent with the periods set in the price cap administrative rules.

DURATION OF PRICE CAP

59. In determining the duration of the Price Cap Plan, the Commission took into consideration the uncertainties associated with forecasting inflationary trends and future productivity growth. In addition if the X-factor was set too high the operator would earn insufficient profits and if it were set too low, unacceptably high profits.

60. The Commission is also of the view that the price cap duration should represent a minimum period during which the X-factor will not be revised. The periods considered ranged from three to five years. It was determined that the Price Cap Plan would be set sufficiently long to allow for the implementation of efficiency incentives but not so long that any deficiencies in the plan cannot be corrected in a timely manner.

61. The Commission considered the following:

- the rate of change in the market due to competition;
- the rate of change in the market due to innovation in technology;
- the degree of uncertainty in the economic parameters used to determine the level of X;
- the degree of risk associated with longer periods;
- the experiences of other jurisdictions; and

- the length of time afforded by section 15 of the Utilities Regulation Act which is a maximum of five years.

62. Respondents to the public consultation generally suggested a four-year duration for the initial regulatory price cap period.

63. The Commission considered the views of respondents, but also noted that full liberalisation of international and domestic telecommunications markets was in its infancy and that several new firms had entered the market, some of which have yet to indicate what their primary focus or target products will be. In addition, it was felt that a number of existing services were likely to be deregulated once competition developed sufficiently to determine the price and quality of the products.

64. The Commission therefore revised its initial position on this principle and determined that the duration for the Price Cap Plan should be three years and four months. The Commission is setting this shorter period given the rapid changes in the telecommunications market at this time.

65. The first price cap period will run from April 1st to July 31 2005. In this period the price cap will operate with unaudited data. Subsequent periods of the plan will be of one year duration. In summary the periods are:

Period 1: April 1, 2005 through July 31, 2005 - (4 months)
Period 2: August 1, 2005 through July 31, 2006
Period 3: August 1, 2006 through July 31, 2007
Period 4: August 1, 2007 through July 31, 2008

PRICE CAP FORMULA

66. The price cap formula specifies that an actual price index (API), calculated for the change in prices charged by the operator for a basket (k) of services, for a period (T), must be less than or equal to, the price index called the price cap Index (PCI). The PCI is determined by the regulator for that basket of services over the period.

67. The basic form of the formula is presented in equation (1).

(1) $$API_t^k \leq PCI_t^k \quad \text{for all } t = 1,\ldots T$$

API_t^k - *the Actual Price Index for basket k at time t*

PCI_t^k - *the Price Cap Index for basket k at time t.*

T - *the number of years duration of the Price Cap Plan*

68. The API (equation 2) is an index that reflects the change in the actual prices charged by the Company during the year. It is derived from a standard Laspeyres type index[2], where the ratio of the price charged by the Company in year (t) to last year's (t-1) price, is weighted by that service's relative proportion of the total revenue for the corresponding basket of services[3].

69. The API utilises chain-based or preceding year (t-1) weights recommended where there are systematic trends in the relative prices and quantities. A fixed base-weighted index in this context might place too much or too little weight on services whose relative revenues in

[2] Derivation is presented in Appendix 2
[3] See Appendix 1

subsequent years are much different to what they were in the base year.

70. The API for the year prior to the start of the price cap is normalised or equated to 100 and the subsequent year's index is expressed as a multiple of the index for the preceding year. The API is therefore expressed as;

(2) $$API_t^k = API_{t-1}^k \ \alpha$$

α : *the ratio of the price charged by the Company in the current year to last year's price, weighted by that service's relative proportion of the total revenue for the corresponding basket of services*

71. The PCI (equation 3) is also derived from a Laspeyres price index. It reflects the average maximum allowable prices of the operator during the price cap period. The PCI like the API, prior to the start of the price cap is normalised or equated to 100. In subsequent years it is expressed as a multiple of the price cap index for the preceding year. The relevant multiple being one plus the inflation factor less the productivity or X-factor for the current year. An inflation index for the preceding year will be used, because the index for the current year is not likely to be available at the start of the period.

(3) $$PCI_t^k = PCI_{t-1}^k\left(1 + I_t - X_t^k\right)$$

PCI $_{\mathbf{k, t-1}}$ *Price cap Index for basket k in year t-1*

I_t *Computed Inflation rate for year t (expressed in decimal form)*

X_t^k *X-factor for basket k, in year t (expressed in decimal form)*

72. The main price cap formula therefore, that will govern the Price Cap Plan is expressed in equation 4. The formula through the API accommodates a degree of pricing flexibility. The Company is permitted to increase and decrease its prices over the year, without regulatory intervention. These price increases and decreases by the Company are measured as the API. That pricing flexibility represented by the API is however constrained or limited to the PCI.

(4) $$API_t^k = API_{t-1}^k \, \alpha \quad \leq \quad PCI_{t-1}^k \left(1 + I_t - X_t^k\right) = PCI_t^k$$

73. The actual prices charged by the Company will be plugged into the main price cap formula to ensure compliance in that, as specified, the API is less than or equal to the PCI.

INFLATION FACTOR

74. The inflation factor as included in the price cap formula accounts for changes in the input costs of the operator during the price cap period. The Commission in choosing or constructing the relevant inflation indicator, sought to identify a price index that accurately measures the changes in the input prices experienced by the Company over the period.

75. In Barbados the most accurate and readily available measure of inflation is the national Retail Price Index (RPI). This index is computed on a monthly basis by the National Statistical Office. It is calculated for the changes in the prices of the goods and services most

commonly purchased by Barbadian consumers and is generally used in national wage/salary negotiations.

76. Public consultation on the choice of an inflation index provided a variety of responses, with a number of respondents suggesting that the RPI was not the most appropriate indicator for predicting cost inflation in the telecommunications sector. Such respondents felt that the national RPI reflected price changes of various consumer items and services not connected to inputs used in the production of telecommunications services.

77. Some respondents suggested that a hybrid index combining the RPI and a telecommunications producer-price index would be the more appropriate choice. They felt that such an index would more closely reflect the total input costs of the Company.

78. The Company supported the use of the RPI, suggesting that local inflationary pressures have a major impact on the Company's operating expenses. They suggested that a significant proportion of its costs are Barbados specific input costs which are driven by changes in the domestic RPI, such as staff costs. It argued that regulators worldwide accept the RPI as an appropriate inflation standard for price cap purposes, and that it is an index with which the public is familiar. The Company further stated that this factor was completely out of the control of the regulated firm and so could not be manipulated.

79. The Commission notes that the RPI has been adopted in several developed countries as the appropriate standard for price cap purposes and accepts that the RPI influences a sizeable proportion of the Company's operating cost in any one period.

80. To adopt an index from another jurisdiction that measures the Company's equipment costs requires that the index be weighted by the proportion of the Company's costs that are not locally driven. The Commission is of the view that there is a difficulty in adopting such an index as the Company sources its inputs from different countries and a decision would have to be made on which country's index is most applicable. Secondly, each index has its own peculiar weighting system not necessarily consistent with the cost structure of the Company's input costs. In addition the Commission has little guarantee over when such an index would be published or revised.

81. The Commission has therefore determined that the rate of inflation as derived from the national RPI will be used as a measure of the input costs of the Company. The RPI is the preferred measure of input costs because it is

(a) generated by a reliable source in Barbados;
(b) readily available;
(c) reflective of the changes of a significant proportion of the Company's annual input costs; and
(d) easily understood.

DETERMINATION OF X-FACTOR

82. The productivity or efficiency factor (X) within the price cap index, is intended to replicate the extent to which the regulated industry is deemed capable of achieving more rapid productivity growth, and faces a lower input price growth than the wider economy. It is a measure of the operator's expected productivity increases over a relevant period. The productivity factor specifies what productivity

gains should be achievable by the Company. If the Company is able to achieve a greater level of productivity, the Company can retain the benefits of the efficiency within the term of the Price Cap Plan.

83. Respondents to the public consultation generally recommended that the pure historic total factor productivity (TFP) approach be avoided. It was thought that there might be a lack of available data on historical productivity. They recommended that consideration be given to the use of benchmarks from jurisdictions where markets were more diversified and the advent of competition had resulted in measurable productivity improvements over a sustained timeframe.

84. Respondents also felt that the Company's historical productivity estimates were susceptible to manipulation by the Company, who had reason to portray estimates of productivity lower than what was achievable. This would in effect lead to the generation of a much lower and less challenging X-factor.

85. The Company did not support the use of the historical productivity method. It suggested that, with the onset of competition the expected loss in market share would reduce the Company's economies of scale and cause its unit costs to rise despite any hard earned productivity gains. In effect, its historical productivity measure would overstate the Company's potential to generate future productivity savings.

86. The Company was also of the view that a benchmarking exercise was unlikely to reflect Barbados-specific market conditions, and was therefore unjustified. The Company stated that sufficient information on its costs and revenues was available to allow for a more rigorous computation of the X-factor.

87. The Company also further suggested its preference for a forward looking zero-profit model, incorporating a measure of total factor productivity. It was of the view that this would allow the Company to earn a rate of return on capital employed equal to its cost of capital during the price cap period.

88. The Commission decided to adopt a forward-looking approach to the determination of the efficiency X-factor. The Commission is of the view that this approach provides the more comprehensive assessment of all the factors impacting on the Company's ability to earn a reasonable rate of return in the future.

89. The forward-looking approach is applied by means of a financial spreadsheet model. The model incorporates a series of pricing constraints, which are designed to ensure that throughout the price cap period, the firm earns a level of return on its regulated services, equal to the average cost of its capital.

90. This is similar to rate of return regulation, the difference being under rate of return the firm is reimbursed ex post whilst under price cap regulation if the firm beats or falls short of the target its revenue is affected accordingly.

EXOGENOUS Z-FACTOR

91. In modelling a price cap plan, the regulator has to decide whether to include an exogenous Z-factor. The Z-factor is a specified, cost pass-through variable, intended to address instances where the regulated company faces extreme variations in input prices outside of the inflation factor, which are not accounted for in the X-factor, and which

are expressly beyond the control of the Company. The Z-factor will increase or decrease the PCI thereby restricting or increasing the Company's ability to vary its prices in response to the exogenous shock.

92. The inclusion of a Z-factor does not affect the calculated X-factor. The X-factor is solved independently of, or without regard to the Z-factor. That is, the X-factor is calculated assuming a Z-factor of zero. Further, the Z-factor is zero, until the point that a specified 'exogenous' event requires a correction. The inclusion of an exogenous factor within the Price Cap Plan would mean that the price cap formula would have to be rewritten as:

$$PCI_t^k = PCI_{t-1}^k\left(1 + I_t - X_t^k \pm Z_t^k\right)$$

93. Response to public consultation suggested that such a Z-factor should be maintained in the price cap formula to take account of unforeseen developments in the market place, thereby giving the Company an opportunity for relief. The type of events suggested for representation by the Z-factor included, the impact of hurricanes and the rapidly evolving nature of telecommunications technology.

94. Respondents however urged the Commission to ensure that before it allowed a Z-factor within the Price Cap Plan, it facilitated a public consultation to avoid one sided lobbying on the part of the Company.

95. The Company was of the view that the inclusion of a Z-factor was merited within the price cap, to mitigate the risk associated with unexpected exogenous events. The Company cited a number of specific circumstances which it felt were examples of exogenous factors. These included changes in the tax regime, significant exchange-rate

movement, introduction of calling party pays (CPP), alteration of trade union rules and *force majeure* events.

96. Given the imprecise nature of forecasts within the price cap model, and the period for which it will be in place, the Commission is of the view that there may be occasions when exogenous circumstances may result in particular hardship to a service provider that would warrant the inclusion of a Z-factor.

97. The Commission is minded to allow a Z-factor as a precautionary measure (to be applied when necessary) to permit the Company to manage extreme variations in its profitability.

98. The Commission has determined that a Z-factor adjustment will be considered for inclusion in the PCI for events which satisfy the following:

- The event is a legislative, judicial or administrative action which is beyond the control of the Company;
- The event relates specifically to the telecommunications industry; and
- The event has a material impact on the regulated segment of the Company which is subject to the price cap mechanism.

99. The Commission will consider filings during the period only for wholly exogenous factors, such as regulatory actions by the Commission or the Government of Barbados, or other unforeseen circumstances which materially affect the Company's profitability.

CARRY-OVER HEADROOM

100. When the regulated company chooses not to raise its prices to the maximum allowable level (i.e. API < PCI), the PCI will exceed the API. In effect headroom (PCI/API > 1) is created. In the subsequent year the regulator has the option of permitting the Company to retain this headroom and therefore have the opportunity to implement price increases that exceed the relevant difference between inflation and the X-factor (i.e. I-X) for that year. This option is known as carry-over headroom.

101. The option of carrying unused cap or headroom from one period to another allows the Company greater flexibility in terms of the timing of its rate changes. This option allows the Company to delay legitimate rate increases if it so desires.

102. In most other circumstances, it will be in the interest of the Company to reach zero headroom within each period, since in doing so the Company can capitalise on the profits that are afforded to it. The factors which would affect the Company's decision would be its discount rate and the supply and demand factors that affect a potential monopolist, including the growth in demand expected over the next period and the change in sensitivity to prices.

103. In order for a service provider to carry over headroom profitably, it must believe that the foregone profits in the current period due to pricing below the allowable level will be more than offset by the discounted value of the extra profits gained in the next period due to the ability to price above the zero headroom levels of that period.

104. Respondents to the public consultation suggested that the Company may manipulate the opportunity to carry over unused head room, by deliberately pricing below the cap in one year to either deter efficient operators from introducing particular services, or to increase prices substantially in latter years of the plan to generate extra normal profits on services with a very low elasticity of demand. The Commission notes that even with carry over headroom the Company can only increase prices up to the legitimate level allowed and that the real advantage is the timing or pace of introduction of such prices.

105. The Commission made a specific determination with respect to each of the service baskets as follows:

Basket 1 - Domestic Residential Access - No carry over of unused headroom will be allowed.

Basket 2 – Domestic Voice Telecommunications Services - Carry over of unused headroom will be allowed.

Basket 3 – International Telecommunications Services - Carry over of unused headroom will be allowed.

Basket 4 – Other Retail Telecommunications Services – Not applicable as these service are not subject to PCI constraints

QUALITY OF SERVICE (QOS) FACTOR

106. A major concern with the introduction of the Price Cap Plan is that after the mechanism is agreed to and pricing parameters are set, the firm's attempt to increase efficiencies may be at the expense of the

quality of service offered to customers. The establishment and monitoring of service standards is therefore critical following the introduction of price cap regulation.

107. In establishing and monitoring quality of service standards, the Commission will seek to ensure that business and residential customers receive a consistently high standard of service and that there is no unduly preferential or discriminatory provision of such services.

108. The Commission is of the view that there is a correlation between quality of service and the prices charged for such services.

109. The Commission considered the inclusion of a quality of service factor to ensure that the cost of service is commensurate with the quality of service offered to consumers and that quality is not compromised in the Company's quest for efficiency gains. However, the Commission is of the view that it would be overly burdensome at the start of the price cap regulatory mechanism to seek to include a quality of service measure in the price cap formula. This view was generally shared by the respondents to the consultation.

110. The Company suggested that should it be required to meet and maintain particular standards, provision should be made for a price correction in the price cap formula, if such standards required substantial new investment.

111. The Commission does not perceive that the requirement to meet and maintain the standards will require the Company to undertake substantial new investment.

112. The Commission has determined that standards of service will not be monitored through the price cap and no price correction factor for quality of service will be added to the price cap.

113. The Commission will regulate quality of service outside of the price cap mechanism and will set a series of overall and guaranteed quality of service standards that the Company must meet or exceed.

SECTION 3 PRICE CAP MODEL

DESIGN OF PRICE CAP MODEL

114. In designing the Price Cap Plan, the Commission chose to employ an incremental profit model, which focuses on the maintenance of marginal profit throughout the price cap period. This marginal profit is consistent with the Commission-determined reasonable return on regulated services in the base period. The model equates base year profit, adjusted to be consistent with the reasonable return, with profit earned during the term. It then seeks to ensure that the adjusted base year return is earned throughout the period.

115. Apart from the Commission's determined reasonable return on regulated services, the model incorporates an estimate of the return on regulated services earned by the Company in the base year. This estimate is compared to the reasonable return as determined by the Commission. The Commission through this process is able to determine from the outset, the extent to which the Company is actually earning greater than or less than a reasonable return on its regulated services.

116. The model also seeks to capture all the factors that will impact on the Company's earning capacity during the price cap period. This includes the Company's potential productivity achievements, its cost of capital, the expected rate of inflation, international price and volume decreases driven by competition, expected price elasticity of demand for its services, expected exogenous growth in demand and expected regulatory policy developments.

117. Based on the impact of these factors, the Commission has developed a financial spreadsheet model as its means of calculating a reliable value for the X-factor. The spreadsheet model generates a value for the X-factor while taking into consideration, expected market developments, the potential productivity achievable by the Company and its overall earning capacity.

118. The X-factor is set to ensure that throughout the duration of the Price Cap Plan the Company earns a rate of return on its regulated services equal to its average cost of capital.

BASE YEAR DATA

119. The financial model requires a realistic and complete set of base year or going in data on which to forecast developments in the industry over the duration of the Price Cap Plan.

120. The base period estimates include prices, quantities, cost and profitability for each regulated service, as well as the overall profitability for all regulated services combined.

121. It was agreed that the period December 1, 2003 through November 30, 2004 would be used as the base year, the most recent period for which data was available. Before adopting data for a specific base period it was necessary for the Commission to examine the Company's most recent audited financial year's data, which was April 2003 through March 2004. It was therefore necessary to identify this "test" year so that the Commission could ascertain what would be a "normal" year's financial performance.

122. The Commission examined the Company's regulatory, and financial reports and the Enhanced Allocation Model for the year ended March 31, 2004. In doing so the Commission investigated the prudence of the Company's outlays for the test year. The Commission examined the financials to determine which of the Company's costs were legitimately and prudently incurred and were therefore recoverable during the price cap period.

123. Following this examination the base period estimates were similarly adjusted to reflect the costs disallowed by the Commission.

124. Since that the base year used was not a standard financial period of the Company, it was determined that as soon as the current year's audited financial statements were available, they should be incorporated into the Price Cap Plan. The Company stated that the audited financial statements for the current year would be available to enable a price-cap compliance filing by the end of June 2005. It was therefore determined that the first financial period of the price cap, which relied on the unaudited financials should run until the audited statements became available. The periods of the Price Cap Plan were therefore set as:

Period 1: April 1, 2005 through July 31, 2005 - (4 months)
Period 2: August 1, 2005 through July 31, 2006
Period 3: August 1, 2006 through July 31, 2007
Period 4: August 1, 2007 through July 31, 2008

RETURN ON CAPITAL

125. The principal aim of the financial modelling is to estimate pricing constraints such that by the end of the plan the Company is forecasted to earn a return on capital equal to its cost of capital. In arriving at an estimate for the return on capital to be allowed, the Commission analysed the Weighted Average Cost of Capital (WACC) study prepared by PriceWaterhouseCoopers on behalf of the Company.

126. The study weighted the costs of equity and debt capital according to the debt-equity ratio of the Company, to calculate the average expected return that investors require to facilitate the provision of required funds. The study determined that a reasonable return on capital given the Company's debt to equity ratio was 17% before tax.

127. The Commission considered the quality and accuracy of the study and its result in relation to the previous estimate allowed by the Public Utilities Board (PUB) the predecessor of the Commission. The PUB had in its 1992/93 decision established an after tax rate of return of 11.82% and this rate was not changed in the Commission's 2004 decision. Based on the existing tax rates this equates to a pre tax return of 16.85%.

128. In consideration of these factors the Commission accepted the estimate of seventeen (17%) percent pre tax as a 'reasonable' return on the Company's regulated services.

129. The examination of the Company's test year data revealed that the Company was currently earning a return of *xxx (redacted for commercial confidentiality)* percent on all of its regulated services. This represented an amount of *xxx (redacted for commercial confidentiality)* (i.e. *xxx -17%*

(redacted for commercial confidentiality) over and above a normal return on capital *xxx (redacted for commercial confidentiality)* earned. To the extent that the Company is allowed to earn only a reasonable return on its regulated services, the amount of *xxx (redacted for commercial confidentiality)* profit had to be taken into consideration in setting the overall X-factor. The X-factor was modelled to allow the Company to use the extra normal profits previously earned, to offset any losses due to liberalisation before considering price increases.

PRODUCTIVITY ADJUSTMENTS

130. One of the more critical adjustments incorporated into the model is a measure of the Company's productivity. This historical productivity estimate is used as a guide to indicate the level of productivity cost savings that can be achieved by the Company during the price cap period. The higher the productivity estimate, the greater the potential for achieving cost savings by the Company.

131. Measures of productivity seek to capture the impact of technological change, economies of scale and scope, as well as managerial efficiencies in one number. The model requires that a productivity estimate be determined for each set of regulated services included in the model.

132. The Company submitted an estimate of its total factor productivity (TFP), calculated on the basis of actual data, which they suggested made this measure superior to any estimate derived from the use of benchmarks. The Company indicated that its estimate was a function of its cost saving initiatives, including its substantive reduction of staff members in recent years. The Company also indicated that its TFP growth would be slower in the future given its anticipated loss of

market share, combined with the fact that a substantial percentage of its costs are fixed.

133. In providing an estimate of productivity for the individual services included in the model, the Company suggested that the overall TFP estimate represented a reliable estimate of the likely productivity achievements for each of its individual regulated services.

134. The Commission questioned the methodology with respect to its potential to underestimate TFP estimates by overestimating the Company's capital stock. The Commission however accepted the Company's TFP estimate as a fair representation of its potential productivity achievement specifically with regard to domestic fixed line services. It was felt that the Company's estimate represented a reasonable measure of the scale economies expected with respect to these services.

135. The Commission however rejected the Company's estimate of TFP with regard to international services. The Commission took the view that there was significant potential for productivity growth in international services with respect to technological progress in the use of fiber optic systems. The Commission therefore looked to obtain appropriate benchmarks and determined a rate of 5 percent productivity as being a more reasonable estimate for international services productivity growth.

PRICE ELASTICITY ADJUSTMENTS

136. In order to build a truly representative model, the Commission sought to predict for each category of regulated service offered, the likely

change in quantity that would be demanded given the predicted changes in prices during the period.

137. Changes in pricing generally produce a change in the opposite direction in the volume of minutes consumed. Thus, an increase in price will normally result in a corresponding reduction in volume of minutes consumed and vice versa. For each service a measure of price elasticity was incorporated into the model to measure the relationship between price and quantity of minutes.

138. International Outgoing - With regard to international outgoing calling services the Company suggested an estimate of elasticity for Barbados of between *xxx (redacted for commercial confidentiality)* and *xxx (redacted for commercial confidentiality)*. They arrived at this estimate based primarily on international benchmarks of price elasticities obtained from several jurisdictions including Jamaica, the UK and other OECD countries. The Company indicated that the benchmark data it reviewed showed estimates ranging from *xxx (redacted for commercial confidentiality)* to *xxx (redacted for commercial confidentiality)*. The estimate of *xxx (redacted for commercial confidentiality)* from this range was for Jamaica, but this was considered by the Company as unrealistic. They suggested that the true range of values was between – *xxx (redacted for commercial confidentiality)* to *xxx (redacted for commercial confidentiality)*, with an average elasticity for international outgoing service being in the range of *xxx (redacted for commercial confidentiality)* to *xxx (redacted for commercial confidentiality)*.

139. The Commission also reviewed the elasticity estimates for several countries[4]. The research indicated that over a short-run period,

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[4] "Econometric Modelling of Spanish very long distance international calling" in Information Economic and Policy 10 (1998) 237-252 by Teresa Garin-Munoz, and Teodosio Perez-Amaral

demand for international outgoing services tended to be price inelastic (–0.3), but approached unitary (-1.0) over the long run. The Commission however paid particular attention to the Jamaican experience, which appeared to exhibit circumstances more like Barbados than the other countries analysed. Estimates adopted in Jamaica showed a demand elasticity for international outgoing in the short run of approximately -0.6 and –1.8 in the long run.

140. The Commission also noted that in a developing country like Barbados where wealth and income are lower than in more developed countries one would expect demand to be more sensitive to price changes for international outgoing. Additionally, one would expect this sensitivity to price changes to increase at higher prices than those shown for the long run estimates of the countries observed.

141. The Commission as a further guide towards determining a reasonable elasticity estimate calculated a point elasticity of demand using price and quantity data provided by the Company under the assumption that the Company was profit maximising, and arrived at an estimate of -1.18.

142. In light of these considerations, the Commission took the view that given the duration of the price cap period, the elasticity estimate for Barbados should fall somewhere between the long run and short run estimates observed, but more realistically at the high end of the short run estimates. An elasticity estimate of –0.8 was therefore forecasted for international outgoing services.

"Demand Elasticities for International Message Telephone Service"
by George S. Ford and John D. Jackson

OUR Jamaica Determination Notice 2001

143. _International Incoming_ - With regard to international incoming, the Commission also used the estimates calculated for Jamaica as a benchmark. The elasticity estimate used in the Jamaican case -0.6[5].

144. It was noted however that in Jamaica the carrier took a commercial decision to follow the market by lowering its settlement rate and in doing so was able to mitigate the threat of by-pass. If demand had been inelastic, then the proportional increase in volume would not have been sufficient to compensate for the revenue loss from the price reduction. This one circumstance demonstrated a significant degree of sensitivity of demand to changes in price for international incoming service. The Commission therefore in considering these factors forecasted an elasticity estimate of –0.8 for this service.

145. _Domestic Residential and Business Access_ - The estimate for domestic elasticity was also determined through benchmarks. These estimates suggested a figure of approximately *xxx (redacted for commercial confidentiality)*. The rates observed for Jamaica for intra parish elasticity were *xxx (redacted for commercial confidentiality)* in the short term and *xxx (redacted for commercial confidentiality)* in the long term. The Company suggested a rate of *xxx (redacted for commercial confidentiality)* to *xxx (redacted for commercial confidentiality)*. Given the level of saturation in this fixed residential service the Commission agreed to an estimate of -0.05.

146. The domestic business access service was thought to exhibit similar characteristics to the residential service, but given the proportionately higher prices and without the level of saturation a greater sensitivity was forecasted. A slightly higher estimate was forecasted.

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[5] Office of Utilities Regulation - Determination Notice, 2001 August

MARKET ADJUSTMENTS

147. In seeking to forecast the annual demand for regulated services during the price cap period, the Commission sought to predict the percentage change in demand associated with expected price reductions, and also the extent to which other exogenous factors such as competition, policy directives and technological advancements will affect the demand for the Company's services.

148. *Lesser Competitive Effects during the First Five Quarters* - The model contains two parameters to reflect the likelihood that competitive effects will be smaller in the first five quarters of the plan than in subsequent periods. One parameter applies to actions taken by mobile carriers and is set at 90%, since mobile carriers are likely to act quickly (but not always instantaneously) to take advantage of competitive opportunities. The other parameter applies to decisions made by end users and is set at 50% to reflect a more gradual migration to competitive alternatives.

149. *International Incoming and Outgoing Transit* - The Commission again considered the experiences of other jurisdictions in forecasting the likely developments in the local market. The Commission in reviewing benchmark data from several countries including Jamaica accepted the Company's claim that upon liberalisation the Company will very quickly lose a substantial volume of its international transit traffic.

150. Before the liberalisation of the market for international service, the Company was responsible for the conveyance of outbound and inbound international traffic for all mobile providers in the market.

After liberalisation the Company is likely to very quickly lose the majority of the traffic conveyed on behalf of the other carriers, as mobile providers establish their own relationships with international operators and transfer international outgoing and incoming traffic on their own networks via cable infrastructure, satellite, or leased bandwidth.

151. The Company is further expected to lose some portion of the remaining transit traffic over time, as carriers are able to compete effectively for settlement of incoming traffic. Declines in transit traffic of this nature have been similarly experienced in Jamaica. It is expected that the Company will retain its current business as well as a small percentage of that of its competitors on those routes where it offers a more competitive transit rate.

152. The Commission has forecasted an initial loss of 53% for international incoming and outgoing transit service to mobile providers. This loss is expected to increase slightly each year, reaching 63% in the final year. Additionally, the fraction of fixed originated international traffic that migrates to mobile-origination is expected to increase by 8% annually.

153. The Commission has also forecasted that the Company will experience an additional 10% annual quantity loss due to competition apart from mobile carriers.

154. *Fixed International Outgoing Retail* - As far as international outgoing traffic is concerned it is expected that there will be competitive losses for the Company, since after liberalisation a portion of the fixed international outgoing traffic will be captured by mobile and fixed wireless operators. This pattern is likely to affect the Company’s share

of international leased circuit service as the availability of increased bandwidth obtainable from competitors takes effect.

155. Growth in the supply of international voice over internet protocol (VoIP) represents a major technological shift in international telecommunications and a potentially significant competitive challenge for fixed originated international traffic.

156. The Commission has forecasted an approximate 5% annual quantity loss to competition, *apart from mobile carriers*, for international outgoing retail service.

157. *Domestic Fixed* - Following liberalisation of the domestic fixed wireless market the Commission does not forecast any specific quantity or substitution shifting losses as a result of competition. It is expected that the new entrants will target the international and corporate customer markets leaving residential fixed lines to the Company.

158. Domestic leased line services are also expected to come under substantial competitive pressure following liberalisation, as more attractive offers in the form of frame relay technology are made available to corporate customers.

159. The Commission has forecasted an annual quantity loss to competition for business access service of approximately 3 percent per year over the duration of the price cap.

EXOGENOUS DEMAND GROWTH

160. Apart from all the factors expected to negatively impact on the Company's market share of regulated services, it is anticipated that there will be some offsetting exogenous demand growth for all of its services driven by population growth, projected overall economic development, and increased telecommunications activity following liberalisation.

161. As the market for fixed line access is quite saturated, the Commission expects the Company's residential fixed line service to increase only marginally over the price cap period. The rate of growth, driven largely by the pace of overall population growth in Barbados, is forecasted at *xxx (redacted for commercial confidentiality)* percent annually. The market for other domestic services including business access and value added services is also expected to increase marginally over the period. An increase in exogenous growth of *xxx (redacted for commercial confidentiality)* percent is also forecasted for these services.

162. For international incoming and outgoing traffic the Commission expects more sizeable market growth. These markets are viewed as having a much greater potential for expansion. The general feverish activity of all mobile and fixed domestic wireless entrants, rapid economic development in international business activity, including the upcoming World Cup are all expected to stimulate substantial international demand. The Commission has forecasted 5 percent annual exogenous growth for international services over the price cap period.

SECTION 4 - PRICE CAP ADMINISTRATION

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163. The efficient implementation and operation of the Price Cap Plan requires the application of a set of procedural rules that will inform and guide the overall process during the specified period. These administrative rules speak to such issues as notification, compliance filings, new services, treatment of promotional offers and end of term review of the plan. This section sets out the Commission's determination with regard to these rules.

NOTIFICATION

164. A service provider subject to price cap regulation must provide the regulator and the general public with adequate notice of proposed rate changes.

165. *Rate Increases* - The Commission considered the views expressed by respondents including the Company and noted that the key considerations with respect to the notification period for a rate increase compliance filing should:

   (a) allow the Commission adequate time to consider the compliance filing and assess the Company's adherence to the price cap rule of maintaining the API within the limits of the PCI; and

   (b) allow consumers to prepare their personal budgets for the increase

166. The Company had proposed that a notice period of twenty (20) business days should be given prior to price increases going into effect, while other respondents suggested that for certain services the notice period should be as long as ninety (90) days.

167. The Commission was of the view that a one month lead period (twenty (20) business days) was satisfactory.

168. The Commission therefore requires that for every rate increase for regulated services during the price cap period, the Company advise;

(i) the Commission in writing; and

(ii) the public by way of newspaper advertisements published in at least two editions of both daily newspapers;

at least twenty (20) business days in advance of the effective date of the price increase.

169. *Rate Reductions* - The key factors taken into consideration with regard to rate decreases were the introduction of anti-competitive rates and a reasonable response time for the Company.

170. Respondents generally suggested that the notice period for reductions be approximately one month. They were concerned that some rate reductions may raise issues of anti-competitive pricing and if there was a likelihood of such, the relevant price decreases should be delayed whilst they were being addressed.

171. The Company proposed that price decreases go into effect with two (2) business days notice.

172. The Commission agrees that where issues of anti-competitive rates are present, they should be addressed. The Commission however is of the view that rate reductions should not be held up during the period of investigation. If a rate reduction is presumed to be anti-competitive the appropriate action would be taken under the Fair Competition Act.

173. The Commission considers that the option of delaying rate reductions may place the Company at a disadvantage when responding to price decreases introduced by its competitors.

174. The Commission therefore requires that the Company advise the Commission and the public at least two business days in advance of the effective date of any price decrease.

COMPLIANCE FILING

175. Compliance filing refers to the process whereby the Company is asked to provide statistical proof that its price adjustments have not caused its actual price index (calculated consistent with the formulae provided) to exceed the price cap index.

176. Respondents considered two approaches to ensuring that price changes comply with price cap index. The approaches were that the regulator either:

(a) checks each proposed rate change to ensure it complies with the price cap; or

(b) allows the carrier the option of charging rates which could drive the API above the price cap during the year, as long as there was a corresponding pricing below the price cap that brings the API on average into compliance with the PCI. This would be confirmed through a periodic filing.

177. Respondents generally agreed that the Company should be asked to file each price increase with the Commission. The Company however, suggested that periodic compliance filing was a more practical approach.

178. The Commission was of the view that periodic filing did not allow it to sufficiently monitor potential increases that could be introduced by the Company.

179. The Commission has therefore determined that a compliance filing must be made for every proposed rate increase for a service included in baskets 1 through 3 of the Price Cap Plan.

180. *Rate Increase Compliance Filing (RICF)* - Subject to price cap rules the Company may increase or decrease its rates for regulated services at any time during of the Price Cap Plan.

181. For any price increase of services in baskets 2 and 3, the Company must file a Rate Increase Compliance Filing ("RICF") with the Commission. A RICF must contain details of the proposed rate changes, a recalculation of each basket's API reflecting any proposed rate changes, and a demonstration that each new API is less than its respective PCI. For a price increase in basket 1 the Company must demonstrate that the increase is less than or equal to 7%.

182. Supporting documentation for API calculations in an RICF must include all service price elements by Basket, and the associated revenues established in the most recent Annual Compliance Filing. The Company must also provide documentation in a RICF for pricing changes involving special treatment, including, but not limited to, the introduction of volume or contract term discounts.

183. *Annual Compliance Filing (ACF)* - The Company shall file with the Commission the API for the relevant service baskets on July 1st each year, that is, one month before the start of the each new price cap year. This filing will be considered as the Annual Compliance Filing (ACF).

184. Annual compliance filing allows the Commission to determine the level of compliance adhered to by the Company during the past year. The Commission will reset the price cap index at the start of each year (August 1st), and will use the annual filing to determine the extent to which the Company has accumulated a measure of head room. The Commission is therefore able from the annual filing to determine the extent to which the Company could adjust its prices in the next year.

APPLICATION FOR EXOGENOUS FACTOR

185. Where the Company is of the opinion that an event has occurred which would have a material effect on its net income, the Company may file for the exogenous Z-factor to be included in the price cap formula. This filing will be subject to public consultation to allow other stakeholders to comment on the request.

186. Where the Commission accepts the Company's filing that a proposed Z-Factor be included in the determination of the PCI, it shall be applied in the following price cap period. Such filing should be made at least three months before the end of a price cap period.

DISCOUNTS AND PROMOTIONAL OFFERS

187. The Commission recognises the need for the Company to retain some degree of flexibility in respect of the use of discounts and promotional offers. The Commission however does not consider that discounts which apply only to a specific set of consumers be counted towards compliance. Allowing such discounts to count towards compliance could motivate the Company to introduce subjective patterns of price discrimination.

188. The Commission will allow only discounts, temporary reductions and promotional offers to count towards compliance on the condition that such discounts or promotions for an individual service are offered to all customers.

BUNDLED OFFERINGS

189. Telecommunications customers have a strong preference for bundled offerings and one-stop shopping. Bundled offerings may either include a combination of all regulated services or include a combination of regulated and unregulated services. Where bundled offers include a regulated service, it would be difficult for the Commission to determine the implicit price for that service that ought to be accounted for in the price control. Accordingly, the Commission considers that discounts inherent in bundled offerings shall not count towards compliance.

190. Wherever the Company introduces bundled offerings the individual rate elements of the bundled offering should continue to be offered separately and will continue to count towards compliance of the API.

191. The Commission will require that the Company provide at least 2 business days notice for the introduction of any bundled offerings that include a regulated service.

NEW SERVICES

192. A new service is defined for the purposes of this Price Cap Plan as a service or combination of services not provided or offered at the start of the Price Cap Plan.

193. The Ministry will determine if such a service is to be classified as a regulated service.

194. Where a new service is classified as a regulated service, the Commission has determined that it shall not in the period of introduction be subject to price control regulation. These services will be placed in Basket 4 (i.e. Other Retail Telecommunications Services), and be subject to the associated with this basket. In a subsequent period they may be made subject to price control.

END OF TERM PRICE CAP REVIEW

195. In order to assess the Company's performance under the Price Cap Plan it is appropriate that the Commission establish a process to fully review the initial experience of price cap regulation.

196. This review will include:

(a) an assessment of the Company's regulatory and financial performance, its productivity achievements, and the overall market developments that have impacted and would continue to impact on its performance; and

(b) public consultation inviting interested parties to comment on the Price Cap Plan.

Nine months prior to the scheduled end of the Price Cap Plan the Company shall file the following information:

(1) A report outlining:

- the extent to which specific competition related, general economic factors and social developments in the industry have materially impacted the Company's performance throughout the plan, and the likelihood of them continuing to do so;
- quantifiable data, disaggregated into separate services; and
- where applicable comparisons of the above factors under price

cap regulation to the data before price cap regulation.

(2) Financial results in summary form, showing:

- revenues;
- expenses;
- net investment rate base;
- capital structure; and
- rate of return on utility common equity.

197. Additionally, the Commission will issue a public consultation document inviting persons to submit their comments on the Price Cap Plan and its associated principles.

198. The Commission in its review will take into consideration the perceived level of competition and the liberalisation of the industry and will determine:

(i) whether there is a need to modify the principles, indices or rules of the Price Cap Plan; or

(ii) whether there is the need to consider an alternative form of incentive regulation.

199. The Commission will be guided by any revision of policy issued by the Ministry responsible for Telecommunications with respect to the services to be regulated.

REGULATORY MONITORING

200. Under section 35 of the Utilities Regulation Act, CAP. 282, "*the Commission may by order require every service provider to keep books, proper accounts and adequate financial and other records in relation to the conduct of its business*."

201. One of the objectives of price cap regulation is to limit the level of regulatory burden. A streamlined regulatory framework benefits both the regulated entity and the regulator.

202. The Commission does not believe that it should collect vast amounts of information from the Company on past performance. However, in order to establish benchmarks for performance and to ascertain whether the objectives of telecommunications liberalisation and the Price Cap Plan are being realised, the Commission will require historical and projected data to allow it to calculate point estimates and observe trends.

203. Since the Commission is introducing price cap regulations for the first time it may collect more information in the initial stages of the plan. As the Commission's knowledge of the impacts of the Price Cap Plan increases and price cap objectives are realised, the Commission may reduce the amount of information required for regulatory monitoring.

204. The focus of the Commission's monitoring and review will be on prices, Company performance and the overall impact of the Company's performance on the sector. In this regard, the Commission will require that the Company implement a system of accounting separation to provide the Commission with accounting, economic and

statistical data, relating to services regulated under the Price Cap Plan. This separation is specifically required since the Company offers regulated and unregulated telecommunications services, in addition to non-telecommunications services.

205. The accounting separation must allow the Commission to verify the costs, revenues, profits, and return on capital for the following categories of service.

i) The services regulated under price cap;
ii) The services regulated outside of price cap; and
iii) The unregulated services

The total of these categories must reconcile to the Company's regulatory and statutory accounts.

206. *Regulatory Financial Statements* - For the duration of the Plan the Commission considers it necessary to effectively monitor the Company's overall regulatory financial performance. In view of this, the Company will be required to provide the following:

- Semi-annual regulatory financial statements;
- Annual regulatory financial statements; and
- Annual updated versions of the Enhanced Allocation Model (EAM) or any other costing model approved by the Commission.

207. *Statutory Financial Statements* - The Commission notes that the Company uses its half yearly (six month) results for reporting to shareholders, and as the basis on which interim dividends are paid. These statements are to be submitted to the Commission.

208. The Commission also requires that audited financial statements be submitted to the Commission for the period April 01 to March 31 of each year. These should be accompanied by statements that perform the accounting separation mentioned above.

209. *Filing of Financial Statements* - The Commission will require that the Company file regulatory and statutory financial statements as follows:

Period April 01, to September 30	- by November 15 of each year
Period April 01, to March 31	- by July 01 of each year

210. The EAM should be submitted by July 01 of each year.

211. The formats of these statements are specified in the Compliance Rules and Procedures which form a part of this decision.

APPENDIX 1

List of Price Cap Regulated Service and Assigned Baskets

Date April 1, 2005

Basket	Price Cap Service Name	Service Description
	Residential Access	
1	Residential fixed-line access	Residence Exchange Line

Domestic Voice Telecommunications

Basket	Price Cap Service Name	Service Description
2	Non-residential fixed-line access	Business Exch. Line
2	Non-residential fixed-line access	Business Automatic Universal Line
2	Non-residential fixed-line access	112 Emergency Lines
2	Non-residential fixed-line access	Smart Ring Line Only
2	Non-residential fixed-line access	800 Service Line
2	Non-residential fixed-line access	Charity Exchange Line
2	Non-residential fixed-line access	Directory Number Hunt Exchange Line
2	Non-residential fixed-line access	Direct Inward Dialling Channel via T1
2	Non-residential fixed-line access	Special Translation Line
2	Non-residential fixed-line access	Pay Station Exchange Line
2	Non-residential fixed-line access	Public Pay Station (Sub-Owned)
2	Non-residential fixed-line access	Card Phone Exchange Line
2	Non-residential fixed-line access	Business Extension
2	Residential fixed-line access	Residence Extension
2	Non-residential fixed-line access	Direct Exchange Line Company
2	Non-residential fixed-line access	Facsimile Line
2	Non-residential fixed-line access	Facsimile Line Stepping
2	Non-residential fixed-line access	Change Number Advisory
2	Non-residential fixed-line access	Additional Directory Listing
2	Non-residential fixed-line access	Intercept to Operator
2	Non-residential fixed-line access	Change of Address
2	Non-residential fixed-line access	Change of Billing Address
2	Non-residential fixed-line access	Unlisted Number
2	Non-residential fixed-line access	Change Unlisted to Listed
2	Non-residential fixed-line access	Callback Service Overseas per Line
2	Non-residential fixed-line access	Debar Overseas Calls per Line
2	Non-residential fixed-line access	Remove Debar on Overseas calls
2	Non-residential fixed-line access	Tracing Nuisance Calls
2	Non-residential fixed-line access	Install Authorisation Code
2	Non-residential and residential fixed line installation	Business Line Installation
2	Non-residential and residential fixed line installation	Residential Line Installation
2	Non-residential and residential fixed line installation	PBX/Key Systems Line Installation

2	Non-residential and residential fixed line installation	Fax Line Installation
2	Non-residential and residential fixed line installation	Government Line Installation
2	Non-residential and residential fixed line installation	Other Telecoms -Reconnection
2	Non-residential and residential fixed line installation	Temporary Disconnection
2	Domestic payphone	Coin Phone Call Revenue
2	Domestic payphone	Pay and Card Phones Other Domestic Revenue
2	Value Added Services	Micro Telemax
2	Value Added Services	Call Name, Number, M9316
2	Value Added Services	Call Name, Number, Interlude
2	Value Added Services	Magic Touch Platinum Interlude
2	Value Added Services	Magic Touch Platinum Max(M9316)
2	Value Added Services	Platinum Interlude
2	Value Added Services	Magic Touch Gold Interlude
2	Value Added Services	Magic Touch Gold Max (M9316)
2	Value Added Services	GoldMax(M9316)
2	Value Added Services	Magic Touch Silver Max (M9316)
2	Value Added Services	Silver Interlude
2	Value Added Services	Silver Max (M9316)
2	Value Added Services	Platinum Max (M9316)
2	Value Added Services	Distinctive Ring Call Waiting
2	Value Added Services	Selective Call Acceptance
2	Value Added Services	Selective Call Rejection
2	Value Added Services	Auto Busy Call Back
2	Value Added Services	Auto Recall
2	Value Added Services	Selective Call Forwarding
2	Value Added Services	Interlude Display
2	Value Added Services	Call Number, Interlude
2	Value Added Services	Call Number Block
2	Value Added Services	Vanity Name
2	Value Added Services	Magic Touch Silver Prevue
2	Value Added Services	Call Name, Number, Cobra
2	Value Added Services	Call Number, Fanstel
2	Value Added Services	Call Name, Number, Teledex
2	Value Added Services	Caller Name & Number M9316CW
2	Value Added Services	Call Wait, Forward, 3way, Speed,3Smart Ring
2	Value Added Services	Call Wait, Forward, 3way ,Speed,2Smart Ring
2	Value Added Services	Call Wait, Forward, 3way, Speed,1Smart Ring
2	Value Added Services	Call Wait, Forward, 3-Way, 3 Smart Ring
2	Value Added Services	Call Wait, Forward, 3-Way, 2 smart Ring
2	Value Added Services	Call Wait, Speed Call, 1 Smart Ring
2	Value Added Services	Call Wait, Forward, 3 Smart Ring
2	Value Added Services	Call Wait, Forward, 2 Smart Ring
2	Value Added Services	Call Wait, Forward 1 smart Ring
2	Value Added Services	Call Wait, 3-Way, 3 Smart Ring
2	Value Added Services	Call Wait, 3-Way, 2 Smart Ring
2	Value Added Services	Call Wait, 3-Way, 1 Smart Ring
2	Value Added Services	Call Forward, 1 Smart Ring

2	Value Added Services	3-Way Calling, 1 Smart Ring
2	Value Added Services	Call Wait, 3 Smart Ring
2	Value Added Services	Call Wait, 2 Smart Ring
2	Value Added Services	Call Wait, 1 Smart Ring
2	Value Added Services	Smart Ring 3
2	Value Added Services	Smart Ring 2
2	Value Added Services	Smart Ring
2	Value Added Services	Call Wait, Forward, 3-Way, Speed Call
2	Value Added Services	Call Wait, Call Forwarding
2	Value Added Services	Call Wait, Speed Calling
2	Value Added Services	Speed Call, 2 Smart Ring
2	Value Added Services	Speed Call
2	Value Added Services	3-Way Calling
2	Value Added Services	Call Forward
2	Value Added Services	SR SDN 2
2	Value Added Services	SR SDN 3
2	Value Added Services	Call Waiting
2	Value Added Services	Speed Call, 2 Smart Ring
2	Value Added Services	Call Wait, 3-Way Calling
2	Value Added Services	Debar
2	Value Added Services	Cancel Call Waiting
2	Value Added Services	SmartChoice Plan A
2	Value Added Services	SmartChoice Plan B
2	Value Added Services	SmartChoice Plan C

International Telecommunications Services

Basket	Price Cap Service Name	Service Description
3	Fixed outgoing international	USA Fixed Line Internat'nl Call Rev.
3	Fixed outgoing international	EUROPE Fixed Line Int'nl Call Rev.
3	Fixed outgoing international	CW Caribbean Fxd Line Intnl Call Rev
3	Payphone international	Payp'ne Intl
3	Fixed outgoing international	Enhanced Fax
3	Fixed outgoing international	Inmarsat
3	Fixed outgoing international	1800 International Call
3	Fixed outgoing international	Smart Choice Resident Discount Given
3	Fixed outgoing international	Talk Away Discounts Given
3	Fixed outgoing international	1010335 Discounts Given
3	Fixed outgoing international	1010269 Discounts Given
3	Fixed outgoing international	Business Volume Discounts Given
3	International private leased circuits	Int'l Leased Circuits
3	International private leased circuits	VSAT
3	Cards International	Cards Intl Call Rev.
3	Call Centre PSTN International Call	Operator Person-Person
3	Call Centre PSTN International Call	Operator Station-Station

Other Services (Not subject to PCI compliance)

Basket	Price Cap Service Name	Service Description
4	Operator Assistance-Domestic Voice Calling	Operator Service
4	Emergency-Domestic Voice Calling	Emergency Service
4	Domestic private leased circuits	National Leased Circuit
4	Domestic private leased circuits	All Private Wire
4	Telegraph	Other Telecoms -Telegraph
4	Telex	Telex
4	Voicemail	Customer Mail Box
4	Voicemail	Voice Mail, Call Forward Don't Answer (CFDA), With Number
4	Voicemail	Voicemail Express Message (Residence)
4	Voicemail	Voicemail Access Directory Number
4	Voicemail	Voice Call Forward Busy
4	Voicemail	Voice Menu
4	Voicemail	Voice Announcement
4	Voicemail	Voice Call Forwarding Don't Answer
4	Business internal voice network service	Comnet Band 1
4	Business internal voice network service	Comnet Band 2
4	Business internal voice network service	Comnet Band 3
4	Business internal voice network service	Comnet Band 4
4	Business internal voice network service	Line - Comnet Band 1 Stepping
4	Business internal voice network service	Line - Comnet Band 2 Stepping
4	Business internal voice network service	Line - Comnet Band 3 Stepping
4	Business internal voice network service	Line - Comnet Band 4 Stepping
4	Business internal voice network service	Centrex
4	Business internal voice network service	Pabx Trunk Line via T1
4	Business internal voice network service	Pabx Ext - Via T1
4	Business internal voice network service	DID PABX Ext
4	Business internal voice network service	Line - Key System Stepping via T1
4	Business internal voice network service	Sub-Owned Trunk Lines
4	Business internal voice network service	Pabx Trunk Line
4	Business internal voice network service	Direct Inward Dialling Trunk (PBX)
4	Business internal voice network service	Business Exchange Line Conn to Pabx

APPENDIX 2

API Formula

Equation (2) = $API_t^k = API_{t-1}^k \ \alpha$

α *the ratio of the price charged by the Company for service (i) in year (t), to last year's (t-1) price, weighted by that service's relative proportion of the total revenue for the related basket of services*

Therefore:

$$\alpha = \left[\sum_{i=1}^{n} \left(\frac{p_t^i}{p_{t-1}^i} \right) \frac{r_{t-1}^i}{R_{t-1}^k} \right]$$

Therefore:

$$API_t^k = API_{t-1}^k \left[\sum_{i=1}^{n} \left(\frac{p_t^i}{p_{t-1}^i} \right) \frac{r_{t-1}^i}{R_{t-1}^k} \right]$$

API_{t-1}^k	*the Actual Price Index for basket k at time t-1*
$\left[\sum_{i=1}^{n} \right]$	*Sum over all (n) services in basket k*
p_t^i	*Unit price of service i during time t*
p_{t-1}^i	*Unit price of service i during time t-1*
r_{t-1}^i	*revenue for service i (i.e. price of i times quantity of i) during time t-1*
R_{t-1}^k	*revenue for basket k (sum of prices times quantities for all (n) services in basket k) during time t-1*

212. The price cap mechanism shall take effect from the first day of April 2005.

Dated this 15th day of April 2005

Original signed by Neville V. Nicholls

Neville V. Nicholls
Chairman

Original signed by Floyd H. Phillips

Floyd H. Phillips
Commissioner

Original signed by Trevor T. Welch

Trevor T. Welch
Commissioner