
Office of Utilities Regulation

Price Cap Plan for Cable and Wireless Jamaica

Consultative Document



OFFICE OF UTILITIES REGULATION

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Comments from Interested Parties

Persons who wish to express opinions on this Document are invited to submit their comments in writing to the OUR. Responses to this document should be sent by post, fax or e-mail to:-

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Responses are requested by September 29, 2008. Any confidential information should be submitted separately and clearly identified as such. In the interest of promoting transparent debate, respondents are requested to limit as far as possible the use of confidentiality markings. Respondents are encouraged to supply their responses in electronic form, so that they can be posted on the OUR's Website (www.our.org.jm).

Comments on responses

The OUR's intention in issuing this Consultative Document is to stimulate public debate. The responses to this Document are a vital part of that public debate, and so as far as possible, should also be publicly available. The OUR considers that respondents should have an opportunity both to examine the evidence and views put forward in other responses, with which they may disagree, and also wish to comment on them. The comments may take the form of either, correcting a factual error or putting forward counterarguments and/or providing data relating to cost, traffic, revenues, etc.

Comments on responses are requested by October 21, 2008.

Arrangements for viewing responses

To allow responses to be publicly available, the OUR will keep the responses that it receives on files in the Information Centre, which can be viewed and copied for visitors to the OUR's Offices. Individuals who wish to view the responses should make an appointment by contacting **Gillian Henderson** (Senior Information Officer) by one of the following means:-

Telephone: (876) 968 6053 (or 6057)
Fax: (876) 929 3635
E-mail: ghenderson@our.org.jm

The appointment will be confirmed by a member of the OUR's staff. At the pre-arranged time the individual should visit the OUR's offices at:

3rd Floor, PCJ Resource Centre, 36 Trafalgar Road, Kingston 10

The individual will be able to request photocopies of selected responses as well as comments on responses at a price, which reflects the cost to the OUR.

Timetable

The timetable for the consultation is summarized in the table below:-

Summary of the timetable for public consultation

<i>Event</i>	<i>Date</i>
Publish Consultative Document	August 04, 2008
Response to this document	By September 29, 2008
Comments on Response	By October 21, 2008
Determination Notice	By December 15, 2008

Abstract

This consultative document considers whether to establish a new Price Cap Plan for Cable and Wireless Jamaica (CW&J) Limited or remove the restrictions altogether. The Office of Utilities Regulation (OUR) proposes to continue to regulate C&WJ's uncompetitive retail services using a similar regime to the existing price cap plan. Although competition has increased in some telecommunications markets since liberalization, the OUR is of the view that most markets are not yet effectively competitive and as a result, proposes to maintain price cap regulation to allow for sufficient control of prices. Further, it is proposed that, for any service to be removed from the regulated services basket, it must be determined that the service is subject to effective competition as defined in the Price Cap Rules.

It is proposed that the new Price Cap Plan last for four years. The OUR is aware of the likely developments of competition in the wholesale markets and subsequently, retail service markets given an increase in the number of licensees in major segments of the telecommunications industry, namely, international voice and data, and submarine cable facilities. Accordingly, the OUR has designed the new Price Cap Plan to reflect the changes in the industry that are likely to positively affect competition in the various telecommunications markets.

The initial Price Cap Plan was scheduled to last for four years (2001 – 2005). However, this initial Plan remains in effect. A number of factors contributed to the delay in the consultation on this matter. These include a request from C&WJ for an extension of the existing Plan and the absence of timely data to facilitate the review.

The Office is now in a position to commence consultation on this matter and the publication of this Consultative Document marks the beginning of this consultation. The Office is however mindful that the results of its consultation on C&WJ's application to be declared non-dominant in the relevant markets could have an impact on this process.

Chapter 1: Legal and Regulatory Framework

- 1.0 Under Section 46 of the Telecommunications Act (The Act), "prescribed price caps" means such restrictions on the price of prescribed services as are prescribed in rules made under this section; "prescribed services" means services to which prescribed price caps apply; "price cap" means a restriction whereby the weighted aggregate price, calculated in the prescribed manner, for prescribed services shall not be greater than a specified price.
- 1.1 Sections 46 and 81 of the Act provide for Cable & Wireless Jamaica (C&WJ), to be regulated under a Price Cap regime as of March 2001. The Office is mandated under Section 81 of the Act to "...make rules providing for the imposition, monitoring and enforcements of price caps."
- 1.2 Two set of rules were prepared to enforce the Price Cap Regime. These are the General and Specific Rules. The General Rules address the Obligations of Carriers to Provide Information, penalties for failure to comply with Price Control Rules and review and renewal of Price Cap controls. The Specific Rules address the classification of services, veracity of information submitted to the Office, treatment of "Unused" Cap", approach to ensuring compliance throughout the year, treatment of discounts and promotional offerings, service quality standards, exogenous factors, rate rebalancing, the Price Cap Index Formula and the classification of services.

Purpose of Document

- 1.3 After establishing an initial Price Cap Plan (for a four year period from September 2001 to August 31, 2005)¹ the OUR now consults on whether to establish a new Plan or remove the restrictions altogether. In fact, C&WJ's proposal before the Office, suggest "...that competition is sufficiently established to even warrant the removal of C&WJ's price controls." Alternatively, C&WJ suggests that should the OUR have sufficient concerns with a full removal of the regime and decide to continue with a revised price cap mechanism then C&WJ recommends specific adjustments to the current structure. These include:
- Removal of services from the CPI-X basket;
 - Inclusion of discounts and promotions in defining price cap compliance;
 - A reduction in the notice period for price reduction;

¹ The Plan has actually been in effect for six years since its replacement is only now being discussed.

- Adjustments in the computation of the Z-factor; and
 - Increased transparency in setting factors.
- 1.4 It should be noted that, if the Office determines that it is necessary to make adjustments to the Price Cap Plan, there may also be need for some changes to the Price Cap Rules.
- 1.5 This Consultation Document seeks to address the following matters:
- The Justification for maintaining price cap regulation;
 - Comments on C&WJ's proposed modification of the existing Price Cap Plan
 - The duration of the proposed Price Cap Plan;
 - Classification of Services
 - The formulae for the Actual Price Index ("API") , the Price Cap Index ("PCI") and Headroom;
 - Method and model for estimating the value of the "X" Factor in the PCI;
 - The Cost of Capital and C&WJ's opportunity to earn a normal return on its investment;
 - Imputation tests and the time table for application of such test to C&WJ.

Chapter 2: Basis for Maintaining Price Cap Regulation for C&WJ and the OUR's Comments on C&WJ's Proposed Plan Modifications

Previous Price Cap Plan

- 2.0 The decision to maintain or remove the Price Cap Plan must be informed by a review of the existing regime in terms of its main objectives:
- a) Promote universal service of high quality and affordable prices
 - b) Foster competition in the Jamaican market for the telecommunication services; and
 - c) Provide incentives for the incumbent telecommunications carrier and service provider to improve efficiency and innovativeness while allowing the opportunity to earn reasonable return on investment.

Universal Service

- 2.1 Based on information available to the OUR, the objective of promoting universal service via the price cap was not met. In terms of fixed line telephony, penetration reduced from 19.5% in 2001 to 12.8% in 2006 (OUR estimates), i.e., a reduction in the number of fixed line subscribers from about 507,107 in 2000 to 342,235 in 2006. This may be partly attributed to the increasing cost of these services as a consequence of the rebalancing process as well as the relatively high bad debts partly due to high fixed to mobile calling rates. Since the commencement of operations by Flow, penetration has increased to an estimated 13.8% as at September 2007.
- 2.2 In relation to Internet access, penetration (particular high speed access) remains relatively low (3.5% as at September 2007). It was alleged that this is partly due to C&WJ's pricing policy for the retail service and network elements required to retail Internet access service. The concerns have been centered on the lack of effective competition in terms of access to the Internet backbone and the wholesale provision of key network elements. Although access to the Internet backbone has become more competitive, the retail market for internet access is still controlled by C&WJ with an estimated market share of about 92% as at September 2007. This is symptomatic of the limited competition at the wholesale level and the relatively slow role out of competitor services.

- 2.3 In relation to the provision of wholesale services sold to Internet Service Providers (ISPs) and other service providers, the Office proposes to regulate the charges for:
- Leased circuits, and
 - D-Slam port
- in a cost oriented manner and under a sub-cap in the new regime.
- 2.4 Additionally, the Office proposes that there must be transparency in relation to xDSL line order processing. It is desirable to have a transparent ordering process in which C&WJ's Carrier Services Division does not communicate or appear to communicate orders from service seekers to its retail division to the disadvantage of the service seekers.

Question 2.1: Is the wholesale ordering process for xDSL transparent and free from intervention by C&WJ's Carrier Services Division or its retail Division? Please provide a detailed response.

Competition and Anti-competitive Behaviour

- 2.5 The Specific Rules for the price cap identified the necessary conditions for effective competition as:
- At least one competitor is actually operating in the relevant market using its own switching and transmission facilities;
 - in aggregate, other competitors have capacity in place to meet a large portion of the total output of the relevant market; or
 - The Office determines that the market for the service is not characterized by anticompetitive practices.
- 2.6 In relation to the first condition, there is at least one entrant with their own switching and transmission facilities that offers fixed line services. At present, this entrant only offers service in some areas of Kingston, St. Andrew, St. Catherine, and St. James. Based on the limited role out of service of the entrant it is difficult to conclude that effective competition is likely to develop in the medium term (in the markets for fixed telephone access and associated call markets). However, these markets will be the subject of a more extensive market review in the consultation on C&WJ's application for a declaration of non-dominance in those markets.

- 2.7 The Specific Rules for the Price Cap make provision at paragraphs 1.2 and 1.5, that allows the Office to exclude a service from Price Cap regulation if it determines that that service faces effective competition or alternately that effective competition is deemed to be imminent or if the Office deems that there are substantial public benefits to be derived from such exclusion.
- 2.8 C&WJ noted in its Submission that consumers have benefited from low prices for services under the price cap regime. Over the price cap period, competition in some segments of the telecommunications markets have improved with new entrants offering additional service options. Further, there has been a reduction in prices of some services such as international outgoing calls. However, there are still concerns related to allegations of anti-competitive behaviour in this market. Nonetheless, without a more detailed analysis it is difficult to conclude whether or not the markets for international outgoing calls are effectively competitive.
- 2.9 C&WJ noted in its Submission that currently it is unable to utilize the headroom that is available. One reason given for this inability is that C&WJ is constrained by the market. C&WJ also noted that the current price regime does not promote competition in the fixed line market as is evident by the lack of new entrants. The Office concurs with the fact that competition in fixed line service markets is limited and is of the view that given technological advances and innovative product offerings, the fixed network service markets may become far more attractive to investors in the medium term, notwithstanding the existence of barriers to entry including significant start-up costs.
- 2.10 The Office is aware that increased competition may be possible in the markets for some regulated telecommunication services and as a result understands the basis on which C&WJ's requested the complete removal of price regulation. Nonetheless, the Office must proceed in a prudent manner as it still believes that some services are not subject to effective competition. The Office is also cognizant of the fact that it is very difficult to properly assess the development of competition in some of these markets especially given the scarcity of data.
- 2.11 Against this background, the Office prefers to take a more cautious approach to price regulation and as such, impose pricing regulations that are conducive to the growth of competition without constraining C&WJ's ability to innovate and earn a reasonable return on its investment.

2.12 The Office is of the opinion that price control must remain where competition is not effective in constraining the pricing behavior of C&WJ.

Modifications for New Price Cap Plan

2.13 In its submission, C&WJ requested that the Office completely removes the price controls, or remove some services from the basic (regulated) services basket that the Price Cap regulation applies to.

2.14 It was requested that the following services be removed from the Basic Services Basket of the Price Cap Plan:

- International outgoing calls,
- Worldtalk,
- International data services and Leased lines.
- Services provided to business customers

2.15 C&WJ made the above requests based on its opinion that these services are and have been subjected to increasing levels of competition. The Company believes the level of competition in the market warrant their removal from the Basic Services basket since its pricing behavior is constrained by the relevant markets. However, the Office is of the view that, before any such conclusion is drawn, it must be determined that these services are subject to effective competition.

International Outgoing Calls and Worldtalk²

2.16 C&WJ have suggested that its International outgoing calling service is subject to effective competition. The company maintains that the terms and conditions related to the use of direct exchange lines (DEL) prohibit such lines from being used in the furtherance of activities facilitating the resale of telecommunications services, including two-stage dialing services. C&WJ stated that this action is in breach of Section 8 of the said terms and conditions of service. It is further suggested that such actions will circumvent C&WJ's legitimate International outbound routes.

OUR's observations/position:

2.17 The OUR remains unclear as to what actions a licensee could take in this regard to defraud C&WJ or to circumvent C&WJ's legitimate International outbound routes by using such lines to facilitate outbound international

² The OUR is aware that this service is no longer offered by C&WJ and has been replaced by a similar service.

- calls using the competitive operator's own or leased facilities. The question of bypass does not arise in cases where such operators possess the relevant licenses.
- 2.18 According to Section 45 of the Telecommunications Act 2000, service providers may:
- a) refuse to provide retail services to consumers; or
 - b) discontinue or interrupt the provision of such services to a customer... whether or not that customer is a consumer, pursuant to an agreement with ... that customer, only on grounds which are reasonable and non-discriminatory and where any such action is taken, the service provider shall state the reasons therefor.
- 2.19 Based on C&WJ's submission and the rest of the information before the Office, C&WJ's position is as follows:
- "[C&WJ] ...entered into a legal valid and enforceable agreement for regular telephone service, which did not include the resale of telecommunications services. Having agreed to particular terms and conditions both parties are obliged to adhere to the contractual provisions. Furthermore, C&WJ is entitled to protect the integrity of its contracts and to exercise its rights for breach of contract."
- 2.20 However, the Office has reviewed the Terms and Conditions of Service and found no basis on which direct exchange lines (or business lines) cannot be used for the purpose of completing outgoing international calls. The Office is of the view that, even if the Terms and Conditions of Service did have such a prohibition of use, this provision would be viewed as anti-competitive. The Office is also of the view that a carrier should be paid for the service it provides and should not include clauses about the use of the services that would prevent or make it more difficult for other operators/service providers to compete with it. It is the Office's view that, Terms and Conditions of Services which serve to limit competition are contrary to the provisions of the Fair Competition Act.
- 2.21 The Office has dealt with this matter in a recent consultation that led to a determination notice on Two-Stage dialing³.
- 2.22 The Office will carry out a more detailed analysis of the markets for international outgoing calls in its consultation on C&WJ's application for a declaration of non-dominance.

³ This Determination Notice is entitled: **Indirect Access; Two-Stage Dialing.**

Question 2.2: Do respondents believe that international outgoing calls and other similar services should be removed from the regulated services basket? State the reasons (along with available traffic and other data) for your response.

Leased Lines and International Data Services

2.23 Domestic or International leased lines are services that are of tremendous importance to a number of telecommunications operations, especially those reselling minutes and providing other forms of telecommunications services using C&WJ facilities. Leased line services are a critical input for these operations. The viability of such businesses depends on their ability to access such services at competitive prices in order to minimize input costs. Additionally, the Office, charged with a mandate to foster and promote competition is of the view that the prices of services using leased lines as an input ought to satisfy the relevant imputation test. The Office realizes that leased line prices have serious implications for prices of the competitive operators' services and thus can negatively impact the level of competition in the relevant retail markets.

2.24 Two entities, Fibralink Jamaica Limited and Trans-Caribbean Cable Company Limited (TCCC Ltd) as noted in C&WJ's 2005 Price Cap Submission, have been granted licenses to operate submarine cable facilities. C&WJ rightly uses this fact to assert that increased competition in these markets is possible. Fibralink's capacity is currently operational and may provide sufficient constraint in the market for international leased lines. However, even with these facilities in place, it is important to note that there is also need for adequate back-haul facilities. A more detailed explanation on national leased lines is provided below

Question 2.3: Should international leased lines be removed from the regulated services basket? Where possible, provide data to support your response.

Services Provided to Business Customers

2.25 C&WJ has requested that services provided to business customers should be removed from price regulation (that is, it proposes that these services be removed from the Basic Services basket). C&WJ noted that business

customers are inherently more profitable than residential customers, and this has resulted in a number of operators offering services to business customers. C&WJ further contends that services to business customers are very competitive and that C&WJ no longer maintains any significant market power in the provision of business services.

- 2.26 The Office wishes to note that it would be a breach of the Price Cap Rules to remove the entire block of business services from price cap control without sufficient information to justify this change. Further, without an assessment of the individual service markets, it is likely that services that are not subject to competition may be removed from price regulation.

Channelized T1

2.27 National Leased Circuit Service

“Cable & Wireless Jamaica's National Leased Circuit Service N-Link is a private, dedicated service that provides on-line, round-the-clock connectivity via high and low speed leased circuits within Jamaica. This service is for companies operating within Jamaica, requiring connectivity within our national boundaries.

- National leased Circuits provide transmission speeds of up to 1.544 Mbps on a T1 circuit
- Fractional T1 speeds of 64kbps to 768 kbps are also available
- Low speed service with transmission speeds of up to 19.2 Kbps is also offered “

Source: http://home.cwjamaica.com/content/products_services/data_ip/national.asp?ID=318

- 2.28 This group of services is only available on an island-wide basis from C&WJ and is sold to ISPs, other service providers and business customers. In relation to the removal of these and any other services from price cap regulation, the Office proposes that C&WJ identify the specific services and file supporting information that demonstrates that these services are subject to effective competition. The Office will also conduct its own investigations.

Question 2.4: Should any service provided to business customers be removed from the regulated services basket? If yes, provide data to support your response, defining the relevant markets and the conditions of market entry and exit.

Promotional Discounts, Notice Period for Price Decreases and Adjustments Relating to the Z-Factor

2.29 C&WJ also requested that the following changes be made to the existing Price Cap Plan:

- Inclusion of Discounts and Promotions in defining Price Cap Compliance
- an amendment to the rules relating to the Notice period for price change
- adjustments relating to the Z-factor

Inclusion of Discounts and Promotions in Defining Price Cap Compliance

2.30 According to paragraphs 2.15 to 2.17 of the General Price Cap Rules, *“Promotional offerings of services within the “basic” classification, including discounted rates, shall be exempted from non-discrimination rules. A service offering shall qualify as “promotional” if it is characterized as such by the carrier or service provider, is available for no more than ninety (90) days, and there are not successive promotional offerings to the same customer groups.*

2.31 *If a promotional offering of a competitive service is made, the carrier or service provider must demonstrate, at the time that the offering is made, that the offering satisfies the relevant imputation test. This demonstration shall apply to the particular rate elements subject to the promotional offering.*

2.32 *Promotional offerings shall be excluded from the price cap plan and as such any price decreases embodied in a promotional offering shall not generate any “unused” cap that can be used to increase prices of other basic services.”*

2.33 The Office maintains the view that promotional offerings should not be used when calculating price control compliance. Such allowance would give C&WJ the opportunity to recoup this initial saving given to consumers. This is as C&WJ can carry over the unused cap or simply raise the price of products with a relatively inelastic demand.

Question 2.5: Do respondents believe that promotional discounts should be included in determining price cap compliance? Provide reasons for response.

Notice for Price Changes

- 2.34 Section B(3) of the General Price Rules states that “notice of any decrease in any rate or rate element, along with the necessary support (including a showing that the rate decrease complies with the Price Cap rules and applicable imputation rules and other competitive safeguards) be given at least seven (7) working days prior to the effective date.”
- 2.35 C&WJ proposes that since “...the price cap plan is operating in a competitive environment, C&WJ needs sufficient flexibility in implementing rate decreases to permit the Company to compete effectively. Therefore C&WJ submits that one (1) working day’s notice of price decreases be given to its customers. Such a notice period would create no hardship for consumers given that any such price decreases will be beneficial. Further, the Office’s ability to review such price changes will in no way be impaired.”
- 2.36 The Office is not aware of any adverse impact that this adjustment could have on consumers or any telecommunications market assuming that the rate decrease complies with the Price Cap rules, applicable imputation rules, other competitive safeguards and the general regulatory framework.

Question 2.6: Do respondents agree with the proposed change in the notice period given for a rate decrease? If not, why?

Z-factor

- 2.37 C&WJ contends that the Z-factor⁴ was not properly modeled and has to be adjusted to “...ensure that C&WJ is given the opportunity to recover its costs, including the cost of capital. Specifically, C&WJ noted that the lag in the adjustment in the Z-factor does not allow for timely adjustments and as such needs to be reduced.
- 2.38 Since the commencement of liberalization, there are now three additional major carriers terminating international incoming traffic in Jamaica. Additionally, the precipitous fall in settlement rates initiated by the Federal Communications Commission’s (FCC) benchmarking and exacerbated by increased competition for incoming international traffic among international

⁴ Z-factor is modeled to allow C&WJ to make adjustment for reduction in International Settlement rates.

carriers could imply that this service should not be included in price cap regulation.

Question 2.7: Should international incoming service revenue be removed from price cap regulation? Please justify your response using relevant data.

Chapter 3: Proposed Price Cap Plan Duration and Model Selection

- 3.0 In deciding on the appropriate duration for the initial Price Cap regime, the Office will weigh the risk of mis-specification of parameter values in the regime versus the efficiency gains associated with a longer initial period especially given the continued scarcity of data. It is also important to note that the more frequently the Price Cap plan is renegotiated, the less the incentive for efficiency since the regulated entity is likely to be mandated to return productivity gains to consumers under subsequent Price Cap Regimes.
- 3.1 Additionally, there is increasing uncertainty within the international telecommunications segment of the industry fuelled by the advent of convergence of technologies rapidly growing popularity of Voice over Internet Protocol (VoIP). Further, Next Generation Networks (NGN's) will certainly bring increased uncertainty and new regulatory challenges and could potentially revolutionize the telecommunications industry and how services are provided and regulated. Against this background, the Office must take a conservative approach to price regulation if the risk of over regulation is to be avoided. Given the evolving competitive environment, there is an increased risk of establishing a model that yields sub-optimal results. Under these circumstances, a relatively short Price Cap Period is preferred and indeed, more appropriate.
- 3.2 In relation to the selection of an appropriate model (a pure versus a hybrid Price Cap model), the Office has opted to retain the former. The Pure Price Cap Model increases the incentives for efficiency, since the regulated entity is allowed to keep productivity gains over and beyond those anticipated in the model.
- 3.3 Based on the above, the Office proposes a four-year price cap. In the Office's opinion, this strikes an appropriate balance in respect of encouraging efficiency gains and minimizing the risk of mis-specification of parameter values in an increasingly uncertain market environment. The commencement date for this Plan would be April 1, 2009.

Question 3.1: Is a four-year Plan (commencing April 1, 2009) appropriate for the next Price Cap Regime? If no, provide reasons to justify your response.

Chapter 4: Price Cap Formula and Methodology for Computing the Component Factors

4.0 The Office proposes to maintain the form of the Price Cap formula adopted in the first Plan. That is, for every year after the initial year, the Price Cap Index (PCI) shall be calculated according to the following formula:

$$PCI_t = PCI_{t-1} \left(\frac{PI_t}{PI_{t-1}} - X - Q_t \pm Z_t \right) \dots \dots \dots t = 1, 2, \dots \dots \dots (1)$$

- Where,
- PI_t = the Jamaican Consumer Price Index (“CPI”) in year t. PI_t is calculated as the simple average of the monthly CPIs for 12 consecutive months;
 - X = the productivity factor, a constant to be determined by the OUR;
 - Q_t = the quality-of-service adjustment factor in year t;
 - Z_t = the exogenous adjustment factor for international settlement rates in year t.

Inflation

4.1 A. The Consumer Price Index (CPI) represented by PI, is published by the Statistical Institute of Jamaica (STATIN). The annual percentage change in the CPI will determine the inflation rate to be used in the price cap adjustment in a given year.

Productivity Factor, X

4.2 B. The productivity factor measures the amount by which the change in C&WJ’s productivity differs from the change in productivity for the Jamaican economy as a whole plus the amount by which the change in input prices for the Jamaican economy as a whole differs from the change in C&WJ’s input prices.

The formula for calculating X-factor, is as follows:

$$X = (\%Change TFP_{C\&WJ} - \%Change TFP_{JA}) + (\%Change IP_{JA} - \%Change IP_{C\&WJ}) \dots (2)$$

Where,

TFP_{CWJ} equals the historical total factor productivity of C&WJ. That is, it is a measure of the economic efficiency of CWJ. TFP is defined as the ratio of outputs to inputs.

TFP_{JA} equals the historical total factor productivity of the entire Jamaican economy.

IP_{CWJ} equals the historical input prices of goods and services used to produce output of C&WJ.

IP_{JA} equals the historical input prices of goods and services used to produce output of the entire Jamaican economy.

Exogenous Factor (Z)

4.3 This is the exogenous adjustment factor for international settlement rates in year t. However, based on the proposal at paragraph 2.37-2.38, the Office proposes to remove this service (international incoming calls) from the price cap basket. If this is done, the Z factor would be zero.

Quality of Service Factor (Q)⁵

4.4 The service quality factor, Q shall be set at a value to reflect C&WJ's service quality relative to the applicable standards.

1. The service quality measure shall be based on the standards below. Performance relative to these standards shall be measured monthly based on data submissions from C&WJ. To verify these data, the OUR proposes to conduct random audits and also compare these data to complaints received during the relevant period.

2. The three categories of standards are as follows:

a. On a nation-wide basis, meet at least 95 percent of all installation appointments, within five business days of the initial installation request for voice or data services and 90 percent of all installation appointments on a central office basis within five business days of the initial installation request for voice or data services.

b. Repair at least 85 percent of all out-of-service troubles/faults on voice lines within one business day on a central office basis.

⁵ These service standards are somewhat similar to those adopted under the Utah Price Cap Regime. See <http://www.rules.utah.gov/publicat/code/r746/r746-352.htm#E4>.

c. Meet at least 80 percent of all data service repair commitments within eight hours on a central office basis, at least 95 percent of all data service repair commitments within 24 hours on a central office basis.

3. The service quality factor, Q, for each year shall be calculated as follows:

a. The service quality measure for a year shall be determined by summing the service failure values occurring during the year. Missing a standard for any two consecutive months constitutes a service failure.

b. Each service failure of a central office standard shall be given a value of 0.0002.

c. Each service failure of a nation-wide standard shall be given a value of 0.002.

4. Limitations on service quality factor adjustments.

a. The service quality factor, Q, shall become applicable in the second year of the price cap adjustment, based on the first year's quality of service data.

b. Failure to supply the relevant service quality data will result in a minimum penalty of three service failures on a nationwide basis and a maximum penalty of five service failures on a nationwide basis.

5. Exemptions from Service Quality Standards.

a. Exemptions to service quality standards shall be granted for events that C&WJ substantiates were beyond its control. It shall be C&WJ's responsibility to separately document the cause, the duration and the effect of those occurrences.

b. Exemptions are defined as events wherein C&WJ demonstrates it was unable to meet service standards because of:

(1) A customer's act;

(2) A customer's failure to act;

(3) A government agency's delay in granting a right of way or other required permit;

(4) A disaster or an act of nature that would not normally have been anticipated and prepared for by C&WJ.

6. Other Service Quality Standards and Penalties

It is important to note that these quality of service standards are a subset of those that may be established by the Office through its consultation on this matter. Further, it should be noted that additional penalties, over and above those implemented under the price cap may be applied for breaches of any other standards that may be established outside of those specified in this price cap.

Question 4.1: Do you agree with the proposed set of quality of service standards and associated conditions? If not, state why.

Actual Price Cap Index (API) and Headroom

4.5 The API and the Headroom formulae will remain the same as per the existing Price Cap Plan

Headroom is calculated as follows:

$$H_t = \frac{PCI - API}{PCI}$$

Where,

H_t = headroom at any particular time during price-cap year t .

Economy Productivity

4.6 In contrast to most developed economies, data remain relatively scarce in developing economies like Jamaica. In Jamaica's case, data sets such as economy-wide total factor productivity (TFP) are not widely available. In fact, the only recent study on this matter was conducted by Pacific Economics Group⁶ in support of the Jamaica Public Service Company's submission to the Office in its initial price cap data filing. The Office

⁶ Jamaica Public Service Company Limited Rate Submission for 2004-2008 Rate Period, Volume III, March 1, 2004.

proposes to use the same model to estimate Jamaica’s economy-wide TFP.

- 4.7 The model uses the standard growth accounting framework in its estimation of the economy-wide TFP. The model is based on the Cobb Douglas production function and is as follows:

$$TFP = \dot{Y} - \alpha \dot{K} - \beta \dot{L} \dots\dots\dots(3)$$

Where, \dot{Y} refers to the change in output for the economy,

\dot{K} is the change in the economy’s capital input, and

\dot{L} is the change in the economy’s labour input.

The coefficients α and β are the elasticities of output in relation to capital and labour respectively.

Telecom Productivity Calculation

- 4.8 Total Factor Productivity Calculation Method

Total factor productivity measures have in common a general calculation formula that relates the rate of change of TFP to the rate of change of the ratio of aggregate output to aggregate input. A general expression of this formula is the following:

$$TFP = \ln (F) - \ln (Q) \dots\dots\dots (4)$$

where,

Q is a weighted aggregate index of all relevant company input variables (from i=1 to i=n);

F is a weighted aggregate index of all relevant company output variables (from j=1 to j=m);

ln is the natural logarithm.

Index Formula

The aggregate input and output formulae are defined as follows according to the Tornqvist index⁷ Methodology:

⁷ For seminal discussions of this index form see Törnqvist (1936) and Theil (1965).

(a) Weighted aggregate input index:

The annual growth rate of each index was determined by the formula:

$$\ln(Q) = \sum_j 1/2(S_{j,t} + S_{j,t-1}) \ln \left[\frac{X_{j,t}}{X_{j,t-1}} \right] \dots\dots\dots (5)$$

Here in each year t,

Q = Input quantity index

X_{j,t} = Quantity sub-index for input category j

S_{j,t} = Share of input category j in applicable total cost.

(b) Weighted aggregate output index:

$$\ln(F_t) = \sum_i 1/2(R_{i,t} + R_{i,t-1}) \ln \left[\frac{X_{i,t}}{X_{i,t-1}} \right] \dots\dots\dots (6)$$

Here in each year t,

F_t = Output quantity index

X_{i,t} = Quantity sub-index for output category i

R_{i,t} = Share of output category i in applicable total output revenue.

Cost of Capital Calculation and Opportunity to Earn a Normal Return

4.9 The Office proposes to use a similar methodology in determining the cost of capital (CoC) to that which was used in the first Price Cap Plan to calculate the weighted average cost of capital (WACC). The WACC is a calculation of a company's CoC that applies weights to each category of capital (debt and equity) proportionately. All capital sources are included in the CoC calculation. This includes common stock, preferred stock, bonds, and any other long-term debt as outlined in the recent consultation document on C&WJ's WACC⁸. WACC is calculated by multiplying the cost of each capital component by its proportional weighting and then summing:

$$WACC = \frac{E}{V} * Re + \frac{D}{V} * Rd * (1 - Tc) \dots\dots\dots (7)$$

⁸ The document is entitled: Estimate of the Weighted Average Cost of Capital for Cable and Wireless Jamaica.

Where:

- Re = cost of equity
- Rd = cost of debt
- E = the market value of the firm's equity
- D = the market value of the firm's debt
- V = E + D
- E/V = percentage of financing that is equity
- D/V = percentage of financing that is debt
- T_c = the corporate tax rate

4.10 It is also proposed to continue to estimate the cost of equity using the capital asset pricing model (CAPM). The equation for the cost of equity using CAPM is:

$$C = R + \beta * M \dots\dots\dots (9)$$

Where:

- C = cost of equity
- R = risk-free rate,
- β = the levered systematic risk of equity,
- M = market risk premium,

4.11 In relation to the cost of debt, it is proposed that the company's actual cost of debt be used in this calculation.

4.12 As in the current price cap regime, in determining the Price Cap parameters, the Office is obligated under the Act to provide C&WJ with the *opportunity* to recover its cost of capital. Firms regulated by a Price Cap Regime, are not guaranteed a minimum return on their investment or necessarily limited to any particular maximum rate of return. "The opportunities for a firm under Price Cap regulation to obtain its cost of capital, or better, do not lie in the determinations of the regulator so much as in the firm's ability to adapt to the ... market [*conditions*] and take advantage of new technological innovations from which to obtain new revenue sources."⁹ The model is constructed to provide C&WJ with the incentive to minimize cost and increase its returns. Thus, the proposed Price Cap regulation provides C&WJ with the opportunity to recover its cost of capital on its investments.

⁹ See C&WJ Price Cap Determination 2001.

Chapter 5: Imputation Tests and the Time Table for Application of Such Test to C&WJ

- 5.0 Based on the Price Cap Determination Notice of 2001, “Imputation tests are employed by regulators to serve as a price floor guarding against cross-subsidy and price squeezes, two forms of anti-competitive pricing which an incumbent operator is in a position to employ to the detriment of the competitive market.” However, the continued non-existence of imputation rules remains one of the shortcomings of the existing Plan.
- 5.1 In Annex 2 of this document, a set of rules for the imputation tests is proposed. It is proposed that these rules should cover the required calculations, the frequency and content of filings, and the services that shall be subject to imputation tests. The requirement for compliance with an imputation test shall apply as at the effective date of the new Plan.

ANNEX 1: PROPOSED CLASSIFICATION OF SERVICES

- A.I.1 The following classification in Table 1 reflects the classification of services under the initial Price Cap Plan. The Office proposes to maintain this general classification. However, in relation to the specific classification in Table 2, a few adjustments to reflect changes in market conditions are proposed.
- A.I.2 In relation to toll free services, the classifications “toll free services for telecommunications licensees”, and D-Slam ports are proposed to be added in response to concerns related to the pricing of these services. In relation to the rental of cellular units, it is proposed that this service category be removed from the classification and replaced by “sale of cellular units”. Also, Intra and Inter parish traffic should be changed to reflect one category, “National Traffic”. Additionally, Worldtalk, Telex and Telegraphy services should be removed from the basic services basket since these services are no longer offered.

Question A1.1: Given regulatory intervention and changes in market conditions, should toll free services and D-Slam ports be included in the basic services basket? If yes, justify any proposed adjustments.

Table 1: General Service Classification

Service Category	Basket	Regulatory Treatment
Fixed to Mobile Retail Usage	Fixed-to-Mobile	Office-Specified Cap
Retail Mobile	Unregulated	Unregulated
Mobile Sales to Resellers	Unregulated	Unregulated
Terminal Equipment	Unregulated	Unregulated
Internet Service Provision	Unregulated	Unregulated
International Incoming Calls	Unregulated	Unregulated
Interconnection Services	Interconnection Services	Reference Interconnect Order
All other C&WJ Services	Basic Services	API and PCI mechanisms

Table 2: Specific Service Classification

Service Classification	No Price Regulation	Retail Mobile Services Basket	Retail Prices of Fixed-to-Mobile Call Basket	“Basic” Retail Offering Basket
Charge free services:				
Directory assistance				X
Repair services				X
Billing queries				X
General queries				X
Emergency calls				X
Other				X
Intra-parish traffic				X
Inter parish traffic				X
Access (B&R)	Centrex			Non-Centrex
Extension access point	Centrex			Non-Centrex
Instrumental rental	X			
Line installation (B&R)	Centrex			Non-Centrex
Operator assisted calls:				
Person calls				X
Station calls				X
Conference Calls				X
Collect call				X
Access cellular		X		
Rental of unit cellular:				
Mobile	X			
Portable	X			
Fixed	X			
Transportable	X			
Tel-cel	X			
Traffic cell. to cell.		X		
Traffic cell. to fixed		X		
Traffic fixed to cellular			X	
Satellite based mobile communication				X
Card phone usage				X
Cardphone international				X
Worldtalk card				X

Service Classification	No Price Regulation	Retail Mobile Services Basket	Retail Prices of Fixed-to-Mobile Call Basket	“Basic” Retail Offering Basket
International outgoing				X
Operator assisted int. calls				X
Collect calls incoming				X
Collect calls outgoing				X
Advertisement on card				X
Business systems	X			
Internet access	X			
Voicemail	X			
Voicemail cellular		X		
Teleclass features				X
Magic touch				X
Terminal equipment	X			
Toll free services (business)				X
Toll free services (telecommunications licensee)				X
Toll free services (mobile)		X		
Data communication				X
Leased circuits				X
DSLAM port				X
International data services				X
Interactive billing information				X
Telex				X
Telegraphy				X

Question A1.2: Are there any additional adjustments to the service classification that are necessary? If yes, justify any proposed adjustments.

ANNEX II: IMPUTATION TEST GUIDELINES

Vertical Price Squeezing:

- A.II.1 What is commonly referred to as a vertical price squeeze or margin squeezing is a specific form of anti-competitive conduct that is sometimes engaged in by carriers or service providers with market power. This conduct is possible when such an operator (usually the incumbent), supplies services in two or more *vertical* markets. That is, if the operator with market power operates in upstream or wholesale markets as well as downstream or retail markets.
- A.II.2 This conduct usually occurs when a carrier or service provider with market power controls certain services that are key inputs or essential inputs for competitors in retail markets, and these inputs are also used by the operator with market power to compete in the same retail markets.
- A.II.3 In most telecommunications markets, the incumbent operator usually controls local access and switching services. "Consider one such service - the provision of dedicated local circuits from customer premises to local exchanges. Dedicated local circuits can be viewed as "Upstream" services. These services are used as inputs by the incumbents in providing "downstream" services, such as dedicated internet access services. Dedicated local circuits are also key inputs for competitors who provide dedicated internet access services. In other words, both the incumbent and other suppliers compete in the downstream market for dedicated internet access services.
- A.II.4 If the incumbent decided to engage in vertical price squeezing, it could increase the price to competitors for the upstream input (i.e. dedicated local circuit rates) - while leaving its downstream prices the same (i.e. prices for its dedicated internet access services). The effect would be to reduce or eliminate the profits (or *margins*) of competitors. Their margins would be *squeezed*. To increase the squeezing effect, the incumbent could also reduce its downstream prices for internet access. This would be a *two-way* or margin squeeze."¹⁰
- A.II.5 Another example is that of toll free access lines. These services are provided from the local exchange to, for example, a competitor's calling card platform. Toll free line is a key input for service providers that

¹⁰ See <http://cbdd.wsu.edu/kewlcontent/cdoutput/TR503/page14.htm>

provide telephone calling card that may allow international and/or domestic calls. In fact, toll free lines may be used by both the incumbent and competitors to provide these retail services. As in the case of dedicated local circuits, the incumbent may decided to engage in vertical price squeezing. That is, the incumbent could raise the price (for the toll free access line or usage cost) to competitors, while leaving its retail calling prices the same. Thus, reducing or eliminate the *margins* of competitors. To amplify this effect, the incumbent may also reduce its own retail prices for calls.

A.II.6 A simplified numerical example of a vertical price squeeze is included in Table 3.

Table 3.	
Example of Vertical Price Squeeze by Incumbent Operator	
Cost to incumbent of upstream facility (e.g. dedicated loop)	\$90
Price charged by incumbent to competitor for loop	\$120
Cost of providing retail services to end users (e.g. dedicated Internet access service) include marketing, billing, etc.	\$20
Price charged by incumbent to end users for dedicated Internet access services	\$130

The price for the local loop plus the cost of providing the retail service is greater than the retail price of the service (an imputed margin of -\$10). This suggests that the test was failed and the incumbent is engaging in price squeezing.

Imputation Application and Rules

A.II.7 To guard against vertical price squeezing, the following wholesale cost imputation requirements are applicable:

1.0 Conditions for Application

- a. Applies to an essential, monopoly or service provider or carrier with market power supplying “wholesale telecommunications services”
- b. Where the essential, monopoly or service provider or carrier with market power or affiliate also competes in the markets for “retail services” that require the wholesale services or elements as inputs.
- c. If a promotional offering or a reduction in price is made, the carrier or service provider with market power must demonstrate at the time of the offer, or proposed price reduction, that the relevant imputation test is satisfied.

Imputation Test Rules

1.1 Basic Rules

Essential, monopoly or dominant service provider or carrier must provide evidence to the regulator that its retail prices are no lower than the sum of the following:

1. The price it is charging competitors for the wholesale services that form part of the retail services (this price is said to be “imputed” in the cost of the provider with market power whether it actually incurs this cost or not.
2. The actual incremental costs (above the imputed wholesale costs) that are incurred by the supplier with market power in providing the retail services. For example, marketing and billing costs.
3. Each filing must be verified and signed by a senior officer of the company.

1.2 Content of filing

- a) Cost to incumbent of upstream service/network element
- b) Price charged by incumbent to competitor for upstream service/element (that is, wholesale price)
- c) Itemized cost of providing retail services to end users, including marketing billing etc.
- d) Price charged by incumbent to end users for retail services
- e) Any shared costs or common cost allocation must be justified

1.3 Frequency Report Submission and Testing

- a) Each time the retail price of a competitive service or wholesale price of a competitive service input changes
- b) If there is a substantiated allegation that requires an imputation test

1.4 Services requiring imputation test, include but are not limited to:

- a) International outgoing calling services
- b) Internet access services
- c) Any other service specified from time to time by the Office.

1.5 Initiation of Imputation Test

- a. The test may be required based on a substantiated complaint by a telecommunications licensee or any person adversely affected by the alleged anti-competitive conduct;
or
- b. By the Office on its own initiative.

Question All.1: Do you agree with the proposed set of imputation test rules? If no, explain.

List of Questions

- Question 2.1:** Is the wholesale ordering process for xDSL transparent and free from intervention by C&WJ's Carrier Services Division or its retail Division? Please provide a detailed response.
- Question 2.2:** Do respondents believe that international outgoing calls and other similar services should be removed from the regulated services basket? State the reasons (along with available traffic and other data) for your response.
- Question 2.3:** Should international leased lines be removed from the regulated services basket? Where possible, provide data to support your response.
- Question 2.4:** Should any service provided to business customers be removed from the regulated services basket? If yes, provide data to support your response, defining the relevant markets and the conditions of market entry and exit.
- Question 2.5:** Do respondents believe that promotional discounts should be included in determining price cap compliance? Provide reasons for response.
- Question 2.6:** Do respondents agree with the proposed change in the notice period given for a rate decrease? If not, why?
- Question 2.7:** Should international incoming service revenue be removed from price cap regulation? Please justify your response using relevant data.
- Question 3.1:** Is a four-year Plan (commencing April 1, 2009) appropriate for the next Price Cap Regime? If no, provide reasons to justify your response.
- Question 4.1:** Do you agree with the proposed set of quality of service standards and associated conditions? If not, state why.
- Question AI.1:** Given regulatory intervention and changes in market conditions, should toll free services and D-Slam ports be

included in the basic services basket? If yes, justify any proposed adjustments.

Question AI.2: Are there any additional adjustments to the service classification that are necessary? If yes, justify any proposed adjustment.

Question All.1: Do you agree with the proposed set of imputation test rules? If no, explain.