Fair Trading Commission

C O N S U L T A T I O N   P A P E R

Interconnection Guidelines - Accounting, Costing and Pricing Principles

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PART A - THE CONSULTATION PROCESS

1. INTRODUCTION

1. The Fair Trading Commission (the Commission) established by the Fair Trading Commission Act 2000-31, is the independent regulator of international and domestic telecommunications services and electricity services.

2. In carrying out its duties as an independent regulator, the Commission must operate in a transparent, accountable and non-discriminatory manner. Consultative documents and the public consultation process are the main ways in which the Commission discharges its responsibilities relating to transparency and accountability.

3. In addition, the Commission is specifically charged under the Fair Trading Commission Act to consult with interested persons when it is discharging certain functions.

4. Section 4(4) of the *Fair Trading Commission Act 2002-31* states:

> *"The Commission shall, in performing its functions under subsection (3)(a), (b), (d) and (f)*[1]*, consult with the service providers, representatives of consumer interest groups and other parties that have an interest in the matter before it."*

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[1] Section 4(3) of the Act states:

> *The Commission shall, in the performance of its functions and in pursuance of the objectives set out in subsections (1) and (2):*
>
> *(a) establish principles for arriving at the rates to be charged by service providers;*
> *(b) set the maximum rates to be charged by service providers;. . .*
> *(d) determine the standards of service applicable to service providers;. . .*
> *(f) carry out periodic review of the rates and principles for setting rates and standards of service of service providers.*

Consultative Documents

5. On important issues that arise in the regulation of the utility industries, the Commission may issue a consultative document, a public discussion paper, in which the Commission:

(a) brings to public attention important issues relating to utility regulation to promote public understanding and debate;
(b) puts forward options and/or proposals as to the approach to adopt in dealing with these issues, to seek to resolve them in the best interests of the consumer, the service provider and the society at large; and
(c) invites comments from interested parties, such as consumers, service providers, businesses, professionals and academics.

6. The issues at hand will influence the nature of the document and its content. On some issues, the Commission may simply set out what it regards as the available options and, although there would be some analysis of the pros and cons of the options, it might be that no one option emerges as the favoured or proposed approach. On other issues, the Commission might set out a clear preference for a particular approach and invite comments on this basis.

7. The views and analysis set out by the Commission in a consultative document are intended to invite comments which may cause the Commission to revise its views.

8. The consultative document generally includes a series of specific questions on which the Commission is particularly seeking comments. To ease the task of analysing comments, respondents should reference the relevant question numbers in the document. If they consider it appropriate, respondents may wish to address other aspects of the document for which the Commission has prepared no specific question. Failure to provide answers to all questions will in no way reduce the consideration given to the entire response. Commercially sensitive material should

be clearly marked as such and included in an annex to the response. The Commission is under no obligation to consider comments received after 25 April, 2003.

Analysis of Responses

9. The Commission expects, in most consultations, to receive a range of conflicting views. In such circumstances, it would be impossible for the Commission to agree with all respondents. Through its documents the Commission will seek to explain the basis for its judgments and where it deems appropriate give the reasons why it agrees with certain opinions and disagrees with others. Sometimes analysis of new evidence presented to the Commission will cause it to modify its view. In the interests of transparency and accountability, the reasons for such modifications will be set out and, where the Commission disagrees with major responses or points that were commonly made, it will in most circumstances, explain why.

PART B - INTERCONNECTION GUIDELINES – ACCOUNTING, COSTING AND PRICING PRINCIPLES

2. STRUCTURE OF PAPER

This Consultation Paper is not a legal document and does not constitute legal, commercial or technical advice. The Commission is not bound by this document. The consultation is without prejudice to the legal position of the Commission or its rights and duties to regulate the telecommunications market or generally.

1. The Consultation Paper is structured as follows:

- Section 3 provides the background and legislative basis for the development of these guidelines ;
- Section 4 sets out the details of the proposed interconnection guidelines;
- Section 5 outlines the consultation timetable.

The Appendices to the paper contains proforma costing, activity and profit and loss reports which are for illustrative purposes only.

3. BACKGROUND

2. Interconnection means the linking of public telecommunications networks to facilitate communications between the users of licensed carriers. It is critical to the Government's objective of introducing competition in the telecommunications sector and will be undertaken on the basis of the Interconnection Policy[2] and principles enunciated in the Telecommunications Act 2001-36.

3. The Commission is responsible for interconnection and is charged under the Telecommunications Act with responsibility for approving Reference Interconnection Offers (RIO), interconnection agreements and for resolving interconnection disputes referred to it by the parties.[3]

4. The statutory provisions governing interconnection are set out in Part VI of the Telecommunications Act 2001-36. Section 25(1) requires that *"a carrier shall provide, on request from any other carrier, interconnection services to its public telecommunications network for the purpose of supplying telecommunications services in accordance with the provision of subsection (2)".*

Subsection (2) specifies that interconnection services referred to in subsection (1) shall:

(a) *be offered at points, in addition to network termination points offered to the end users, subject to the payment of charges that reflect the cost of construction of any additional facilities necessary for interconnection;*

(b) *be on terms that are transparent and non-discriminatory;*

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[2] As specified by the Minister responsible for telecommunications in accordance with section 4 (2)(i) of the Telecommunications Act 2001-36

[3] The Commission has also published a Consultation Paper on Interconnection Dispute Resolution Procedures, Document No. FTC 03/01

(c) *in respect of the interconnection charges and service quality of the interconnection services, be no less favorable than similar services provided by the interconnection provider for:*

(i) *its own purposes,*

(ii) *any non-affiliate service supplier of the carrier,*

(iii) *a subsidiary of the carrier, or*

(iv) *for similar facilities so provided;*

(d) *be made available in a timely fashion;*

(e) *be offered at charges that are cost-oriented;*

(f) *be offered in such a way as to allow the requesting carrier to select the services required and not require the carrier to stand the cost of network components, facilities or services that are not required or have not been requested by that carrier; or*

(g) *allow for end-users of public telecommunications services to exchange telecommunications with other users of similar services regardless of the carrier to which the end-user is connected.*

5. The Commission proposes to issue Guidelines in order to set out a framework to ensure that interconnection among carriers is achieved in the most efficient manner.

6. This Consultation Paper sets out Guidelines with respect to the accounting framework and costing and pricing methodology required to facilitate proper consideration of the interconnection charges.

7. The Guidelines have taken into consideration, inter alia, the need to promote competition within the telecommunications sector, the importance of the telecommunications sector to the development of Barbados, and the long-term interests of consumers of telecommunications services.

4 INTERCONNECTION GUIDELINES

4.1 General Interconnection Principles - Dominant Carrier

8. The Commission proposes to establish guidelines to be adhered to by the dominant carrier[4] in a particular telecommunications market in respect of its accounting framework and its costing and pricing procedures.

9. The dominant carrier should ensure that:

(a) Interconnection charges are cost-oriented;
(b) Interconnection charges are unbundled according to market demand;
(c) Details of the cost-accounting systems used in determining these charges are submitted to the Commission;
(d) The manner and methods of calculating interconnection costs, revenues and charges are transparent;
(e) Interconnection charges are non-discriminatory and non-preferential.

10. If interconnection services are not provided through a separate subsidiary of the dominant carrier, it is required that the dominant carrier keep separate, clearly distinguishable accounts for interconnection services, as though they were kept by a separate company. This will allow the Commission to identify all elements of cost and revenue, the basis of their calculation, and the details of the attribution methods used to arrive at interconnection costs and charges.

11. The dominant carrier will be required to maintain and provide separate accounts for interconnection services and its core telecommunications services[5].

[4] Telecommunications Act, 2001-36 section 26(3) '*In this Part "dominant carrier" means a carrier that the Minister determines to be dominant based on that carrier not being effectively constrained by competitive forces in a particular telecommunications market and such other criteria as the Minister prescribes.*'

[5] Core telecommunications services in this context means services other than interconnection services such as fixed telephony services and data transmission services.

These accounts will be subject to review and independent audit. The dominant carrier will be required to maintain separate accounts that detail the "net avoidable costs"[6] that result from providing services in the course of fulfilling the universal service obligation imposed as a result of being designated the universal service carrier in Barbados as provided for under section 34 (1) of the Telecommunications Act 2001-36.

12. Any Access Deficit and Universal Service Obligations related costs and charges, as referred to in Part VII of the Telecommunications Act are to be kept separate from any interconnection costs and charges.

13. The charges for interconnecting at each feasible point of the network, as contained in a RIO or interconnection agreement must be published in a charging schedule. This schedule should be updated to reflect changes and be accessible and available to the Commission and interconnecting parties.

14. The dominant carrier delivering interconnection services to another carrier seeking interconnection must charge individual prices for each network component or facility so provided. As such, the billing structure of the dominant carrier must allow the carrier seeking interconnection to receive an itemised billing of the charges for each component, facility or service provided by the dominant carrier.

[6] Telecommunications Act, 2001-36 section 33(5) states *'In this section "net avoidable cost" means all costs incurred by the universal service provider in connection with the fulfillment of the service obligation less any revenues derived from the provision of universal service.'*

4.2 Basis for Interconnection Charges

Costing Methodologies

15. The choice of the costing methodology used to determine interconnection charges is critical to both the dominant carrier and the new carriers that are seeking interconnection. It is critical that the charges be set at a level that facilitates entry of new competitors into the market whilst allowing the incumbent to achieve a return on investment.

16. There are several methods that regulators use to measure the costs associated with the use of a network for interconnection. The choice of method takes into account the differences in data availability, accounting methods, regulatory or governmental policy objectives and evolving economic principles. Generally, the methods used to measure the aforementioned costs fall into categories of fully distributed cost (FDC) or forward looking costing methodologies. In addition, there are hybrid methods that combine characteristics or contain elements of more than one methodology.

1. Fully Distributed Cost (FDC)

17. The fully distributed cost (FDC) approach[7] uses historical accounting information (based on costs that have been incurred in the past) to allocate costs incurred in the provisioning of existing services. After allocating direct costs, a portion of the shared and common costs are then allocated to each service based on factors that reflect relative usage such as number of calls, minutes of use or number of circuits. These costs are usually recorded in the company's accounting reports (in some form) for its own accounting purposes.

18. The FDC approach is practical and relies on generally available data. However, joint and common costs are allocated to the various categories of service

[7] Also known as Fully Allocated Cost (FAC)

using formulae that do not necessarily reflect relative usage or other cost causative factors. Additionally the operational and technical inefficiencies of the dominant carrier are passed onto the interconnecting operators through the interconnection charge and the impact of newly deployed technology is not taken into consideration.

19. A common cost is incurred when a production process yields two or more services. This is also referred to as shared cost if it applies to all of the operations of the operator. A joint cost is a specific kind of common cost incurred when a production process yields two or more outputs in fixed proportion. Joint costs vary in proportion to the total output of the joint production process, not to the output of the individual joint products.[8]

2. Forward Looking Costing Methodologies

20. Forward Looking costing approaches seek to identify costs that will be incurred during some future period and the incremental cost (or extra cost) is that which is required to provide a defined additional increment of a given service. In order to take into consideration any economies of scale that might exist in the telecommunications industry, these incremental costs are considered over a long term period of at least 10 years.

21. Most regulators and regulatory experts agree that the ideal approach for calculating the level of interconnection charges would be one based on a forward looking cost of supplying the services for interconnection.[9] As in a fully competitive market, prices would be driven down to incremental costs[10]. This recommended approach is implemented by means of variants of the **long run incremental cost (LRIC)** approach.

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[8] & [10] Hank Intven, McCarthy Tétrault, "*Telecommunications Regulation Handbook*" The World Bank (2000), Appendix C

[10] International Telecommunication Union "*Trends In Telecommunication Reform 2000-2001, Interconnection And Regulation*" 3rd Edition, page 40

22. In a competitive market, the value of the investment is not dependent on the original historical cost but on the potential revenues which can be accrued on this investment. Costs incurred in maintaining production capacity are therefore relevant in the future. In order to achieve the strongest competitive position possible, an operator will have to use the most economically efficient technology and network topology. The replacement cost of this efficient, essential equipment is the basis for the calculation of the forwardlooking long run incremental costs.

23. These approaches seek to estimate a price for the network elements/services that would result if there were a competitive market for these elements/services. A forward-looking incremental cost approach creates the right investment incentives for facilities-based entry into the telecommunication market. Accordingly, this approach would facilitate both service-based and facilities-based competition[11] in the telecommunications sector in Barbados.

24. The more "efficient" prices based on LRIC, reduces the ability of the incumbent carrier to exploit its market power at the expense of the interconnecting carriers who are dependent on the incumbent's facilities. Further, the LRIC approaches, with their reliance on cost-causation principles, reduce the incumbent's ability to engage in anti-competitive cross-subsidisation. Prices based on LRIC methodologies are more likely to lead to lower prices for consumers.

25. It should be noted that there are several disadvantages in employing a forward looking approach. Setting the price of each network element/service according to the last unit as prescribed in LRIC will mean that total revenues may very well fall short of total costs. Also, forward looking costs methodologies suffer from the fallacy of "perfect competition", because the multi-product firm will price some of its products above incremental cost to recover its total cost and recover a profit.

[11] See Draft Policies in Green Paper on Telecommunications Sector Policy Government of Barbados, 20 December 2000, pages 54-55

26. The LRIC approach may require significant practical and administrative resources because these studies are expensive to conduct and very difficult to audit. LRIC studies do not allow for the recovery of historical costs; costs incurred at the time the asset was purchased. This may prevent the interconnection network provider from recouping some of the costs of its embedded plant and equipment in service, which competitors will use and benefit from. Setting prices for the unbundled element at costs based on basic LRIC, which are about equivalent to the most efficient provider, will provide no incentive for the new entrant to invest in its own facilities.

27. Applying the narrow and basic LRIC approach, the entrant would pay the incumbent operator the incremental costs resulting from the new entrant terminating and originating traffic on the latter's network. There is no inclusion of common or joint costs and thus LRIC studies will often result in costs that are substantially less than the actual or total costs incurred.

28. Regulators have not generally set the interconnection charges solely on a LRIC basis. Prices based solely on LRIC are generally considered to be too low, and do not adequately compensate the incumbent operator for the use of its network. Such rates will generally not provide sufficient compensation for the incumbent operator to properly maintain its network and to attract capital needed in order to build additional infrastructure.

29. The major variations of the LRIC approach that have been widely accepted are discussed below.

Total Service Long Run Incremental Cost (TSLRIC)

30. This costing method measures the difference in cost between producing a service and not producing it. A mark-up is also added to recoup a portion of joint and common costs. TSLRIC is LRIC in which the increment is the total service.

31. The term "total service" in the context of TSLRIC, indicates that the relevant increment is the entire service that a firm produces, rather than just a marginal discrete element or facility, such as the local loop and switching.

32. Depending on what services are subject to a study, TSLRIC may be for a single service or for a class of services. It comprises the incremental costs of dedicated facilities and operations that are used only by the service in question.

33. TSLRIC also includes the incremental costs of shared facilities and operations that are used by that service. Mark-ups are therefore required to recoup a portion of joint and common costs, which are not included in TSLRIC.

34. The TSLRIC approach is consistent with the principle of cost causation such that the service-specific fixed costs of each service are often included in the calculation of the respective incremental costs. It is therefore useful in highlighting the absence or presence of subsidies for a service.

Long Run Average Incremental Cost (LRAIC)

35. The European Commission has adopted a TSLRIC-type approach, called Long Run Average Incremental Cost (LRAIC) as its preferred costing methodology. The term "average" is intended to capture the policy decision that defines the increment as the total service. LRAIC hence includes the fixed costs specific to the service concerned: "service-specific fixed cost."

36. The TSLRIC/LRAIC approach does not include any of the joint and shared costs of the incumbent operator and therefore, these are usually added after.

Total Element Long Run Incremental Cost (TELRIC)

37. This is a term coined by the Federal Communications Commission to describe a specific LRIC approach to costing. TELRIC[12] includes the incremental cost resulting from adding or subtracting a specific network element in the long run, as distinct from the "total telecommunications service" as in TSLRIC.

38. TELRIC pricing identifies the discrete network elements, such as the local loop and switching plus an allocated portion of part of the joint and common costs. Hence, mark-ups may also be necessary with this method to recoup a portion of the "residual" joint and common costs not already included in TELRIC.

39. TELRIC is regarded as being reliable because the network elements as defined under this approach largely correspond to distinct network elements, therefore the amount of joint and common costs that must be allocated are likely to be small. This approach reduces the inherent difficulty in determining the economically-optimal allocation of these costs.

3. Fully Distributed Cost, Current Cost

40. The distinguishing feature of the Fully Distributed Cost, Current Cost (FDC Current Cost) approach is that assets in place are valued at the current cost or replacement cost. This approach incorporates the most relevant existing technology.

41. In the United Kingdom, British Telecom was required to publish cost information on interconnection on three bases: FDC using historical cost, FDC using current cost and TSLRIC plus equal proportionate mark-up. It was noted that using a FDC Current Cost approach can actually be used as a proxy for TSLRIC plus equal

[12] Hank Intven, McCarthy Tétrault, "*Telecommunications Regulation Handbook*" The World Bank (2000), Appendix B-15

proportionate mark-up[13]. The FDC Current Cost can only be a proxy for TSLRIC plus the proportionate mark-up if the asset valuation methods are based on sound economic principles and include only relevant costs.

42. The FDC Current Cost approach is therefore relatively practical and also relies on generally existing and available data. The approach also incorporates a measure of economic efficiency as it incorporates existing technology. The main disadvantage of this approach is that it requires the development and application of current cost valuation methods.

4. Benchmarking

43. The previously discussed costing approaches are all cost based models which require some level of cost study or cost modeling. When there are no models, inadequate information or where resources or time is limited, efficient international comparisons or benchmarks are a mechanism that may be applied to determine regulated interconnection prices.

44. It is recognised that benchmarking is not a simple exercise and must be carried out in a careful and objective manner. It may be necessary to standardise the different international benchmarks and make adjustments based on the factors existing in a given country. Also, in anticipation of the fact that the methodology for determining the interconnection charges may be based on a model using a forward looking approach, benchmarking has been seen by some regulators as the only viable option in the determination of interconnection charges to facilitate interconnection.

45. The advantages of benchmarking are that:

- Detailed information associated with costs and allocations of those cost are not necessarily required from carriers;
- Extensive and costly research is not required; and

[13] Oftel - *Proposals for Network Charge and Retail Price Controls from 2001*, February 2001, paragraph 4.11

- The efficiency factors observed in other countries are incorporated through the use of international best practices.

46. The weakness is that the mechanism does not take into account the dominant carriers' real costs and therefore does not incorporate real cost factors. This weakness may however be negated if the benchmark is examined and noted to have made allowance for inclusion of relevant common and joint costs. The other argument against benchmarking is the fact that the benchmarks may not be totally relevant to the particular situation being examined. This argument will be satisfied by adjustments made to the benchmark.

47. In addition it is noted that benchmarking is limited in transparency. This factor again may be negated through the use of the international best practices which have been well documented and are publicly available[14].

Preferred Methodology

48. The Commission considers that the FDC Current Cost approach would be its preferred choice as the most applicable in the short term. After this, the Commission considers that the interconnection charges should be based on a TSLRIC approach. The bases for these preferences are discussed below.

Stage 1

49. The Commission's choice of costing method for interconnection charges has to be guided not only by economic considerations, but also by the particular phase of the Barbados telecommunications sector liberalisation process.

50. The Government has indicated that it will be awarding mobile licences to three new carriers[15] and consumers are anticipating the benefits that competition can bring.

[14] For example the European Commission study on Interconnection tariffs in Member States 1999
[15] Barbados Advocate , Saturday, March 8, 2003, page 1 *'Top Three Chosen'*

51. The Commission being cognisant of this has determined that its choice of costing methodology has to be primarily based on the ability to promote competition in the quickest possible timeframe. The Commission is also cognisant of the interconnection principles which include cost-orientation, economic efficiency and non-discrimination.

52. The FDC Current Cost approach incorporates a measure of economic efficiency as it allows for the incorporation of replacement assets using relevant and currently existing technology. As data to be utilised in this approach is generally available from the dominant carrier's accounting and engineering records and from other sources such as telecommunication equipment manufacturers, it should be possible for the dominant carrier to apply this methodology without significant delay.

53. **The Commission considers that the FDC Current Cost approach would be its preferred choice as the most applicable in the short term.**

Stage 2

54. The Commission is cognisant that in order to promote a truly competitive environment its priorities must be focused on:

- Achieving maximum economic efficiency by establishing charges that are as close to cost as possible;
- Ensuring that costs that are based on cost causation principles. This means that costs that stem from the activity of a particular carrier would be recovered through charges levied on that operator;
- Recognising the dominant carrier's investment in its telecommunications network.

55. In view of the above, the Commission does not favour the extended or permanent use of the FDC Current Cost basis of establishing interconnection charges for the following reasons:

(a) FDC Current Cost does not reflect the competitive environment which the Commission is seeking to facilitate in Barbados. The FDC Current Cost only provides limited economic efficiency, whereas a forward looking approach delivers on maximum economic efficiency.

(b) A FDC Current Cost basis is unlikely to stimulate the investment activity in all areas of the telecommunications market to be liberalised, because of concerns over anti-competitive pricing, cross-subsidies, and inbuilt inefficiencies of incorrect valuations and irrelevant costs being reflected in the interconnection price.

56. With the above criteria and arguments in mind the Commission considers that the FDC Current Cost approach should only be used for a limited time. The time frame of six months is proposed.

57. **The Commission considers that after the initial six months referred to above, the interconnection charges should be based on a TSLRIC approach**.

58. The TSLRIC is preferred over the TELRIC model since TELRIC has the disadvantage of inclusion of certain joint and common costs although these may be unrelated to the particular element. This is not consistent with our cost causative requirement.

59. The Commission has also given consideration of allowing the dominant carrier a mark up to TSLRIC. This would represent an allocation of joint and common costs of the dominant carrier. Although not directly caused by

interconnection, these joint and common costs are incurred by the dominant operator in connection with its interconnection facilities and services.

4.3 Negotiation Failure

60. The Commission expects that the dominant carrier and each operator seeking interconnection should be able to negotiate an interconnection agreement on interconnection charges within six (6) months of the issue of licenses. Should there be a breakdown in the negotiation process such that the parties have not reached an agreement, a party may refer the matter to the Commission for resolution by means of mediation or written hearing process[16].

61. In the interim, while the dispute is being resolved, the Commission may consider setting an interconnection charge using an alternative methodology such as benchmarking. The charges so determined, shall apply for a period to be specified by the Commission.

62. Benchmarking when correctly applied, can be an effective procedure for implementing an interconnection charging regime to facilitate competition, especially in circumstances where there are time considerations and limited costing information.

63. The Commission would reserve the right to maintain or alter the interconnection charge until such time as the parties are able to agree on the interconnection charge.

64. Once the dominant carrier and the operator seeking interconnection are able to arrive at an interconnection charge, as part of an interconnection agreement that is

[16] Please see Fair Trading Commission Consultation Paper Interconnection Dispute Resolution Procedures: Document No. FTC 03/01

acceptable to the Commission, the benchmark interconnection charges prescribed by the Commission will cease to apply.

65. The Commission considers that although benchmarking does not provide the ideal methodology given the principles enunciated in the Telecommunications Act, 2001-36, it may be effectively applied for a limited period in order to facilitate competition.

Q1 *Do you agree with the two stage approach that the Commission has proposed for the costing methodology? If no, what alternative approach would you suggest that the Commission adopt? Please give reasons.*

4.4 Interconnection Accounting Framework - Dominant Carrier

Basic Framework

66. Accounting separation is an important requirement for the Commission to ensure that there is transparency and non-discrimination in the costing and pricing mechanisms of the dominant carrier. Additionally the Commission is interested in identifying cross subsidies with a view to removing these where appropriate.

67. The Guidelines will seek to effect accounting separation by the dominant carrier to facilitate the derivation of interconnection costs, rates and revenues. The Commission will issue guidelines with respect to other accounting separation exercises as required.

68. The dominant carrier's interconnection accounting reports should be separated into two parts:

- The essential facilities management department(s)[17]
- The provision of other services to end users via essential facilities[18]

69. The essential facilities management department(s) should provide essential facilities to other carriers on conditions and at charges that are no less favourable than similar services provided for its own purposes. These charges described above should be based on revenues and costs of interconnection only.

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[17] "Facility" as defined in the Telecommunications Act 2001– 36 means "*any physical component of a telecommunications network including wires, lines, poles, ducts, towers, satellite earth stations or any other apparatus using the radio spectrum, submarine cables, and other tangible resources used for the provision of a telecommunications service, but does not include customer equipment;*"

[18] "Essential Facility" as defined in the *Telecommunications Handbook*, McCarthy Tétrault, refers to facilities associated with a telecommunications network or service that are exclusively or predominantly provided by a monopolist or small number of suppliers, and that cannot feasibly be substituted by competitors for economic or technical reasons.

Standard for Calculating Interconnection Revenues and Costs

70. In the accounts established for the provision of interconnection services, revenue accounts should be established to record revenues attributable to the use of the dominant carrier's network in the provisioning of the interconnection services[19].

71. The costs of managing and operating essential facilities attributable to the provision of interconnection services are to be recorded as the costs of interconnection[20].

Classification of Essential Facilities for Interconnection Accounting

72. The Accounts of the dominant carrier must be designed to capture the cost of the major activities involved in providing interconnection over its network. The classifications used will form the basis of unbundling interconnection charges.

73. Examples of the types of activities that a dominant carrier may engage in, to provide interconnection over its network, are as follows:

(a) connecting
(b) switching
(c) transmission
(d) signaling
(e) providing administrative support
(f) providing management support

[19] See Appendix 3 for a broad classification of interconnection revenues in the Proforma Profit & loss Account i.e. network, internal interconnection and external interconnection revenues. Interconnection costs are also classified and shown in Appendix 3.

[20] See Appendix 1 for an example of an allowable cost structure for arriving at interconnection charges.

Establishing an Attribution Base

74. Before arriving at charges for unbundled interconnection activities and a consolidated interconnection charge, it will be necessary to establish a system for cost attribution to the unbundled activities. It is recommended that attribution be on a basis such as activity based costing that reflects the causal effects of activity on costs. Costs should be allocated to each product and/or service on the basis of the underlying cost drivers and activities of an efficient operator.

75. The dominant carrier must therefore establish a system that allows current and historical activity of network usage activity to be recorded for direct, common and indirect activities.

76. Activity reports and accounts used to record costs and revenues should clearly identify the relative portion of activities, costs and revenues generated by each interconnected service provider and by the dominant carrier's own internal interconnection activity[21].

Establishing a Basis of Costs At Each Feasible Point of Interconnection

77. The cost of interconnecting at each feasible point of the network should reflect the activity and cost attribution recorded for each unbundled element and function of the network usage. For example, the network usage costs associated with interconnecting at the tandem level[22] may be calculated as:

> Cost of local switching + Cost of interoffice transmission + Costs for tandem switching

[21] See Appendix 2 for an example of the type of report that is needed to show the relationship between each service provider and the amount of interconnection activity provided by the dominant carrier.

[22] Tandem switching establishes a communications path between two switching offices through a third switching office (tandem switch).

78. The Commission has identified the following minimum technical points at which the dominant carrier should offer interconnection.

(a) the line side of the local exchange (for example, the main distribution frame);
(b) the trunk side of the local exchange;
(c) the trunk interconnect points of a tandem switch;
(d) the local cross-connect points; and
(e) out-of-band signaling facilities, such as signal transfer points.

79. The onus is on the dominant carrier to identify the feasible points of interconnection to the network.

80. The dominant carrier should, on being declared dominant, notify the Commission of its progress in establishing its interconnection accounting system and the activities associated with providing interconnection at each feasible point at which interconnection is envisaged.

81. The Commission will use the information provided to guide it in assessing interconnection costs and charges at each feasible point of the network.

Accounting for Interconnection Capital and Other Costs

82. **Costs of Modifying a Network** - Costs of modifying a network to provide basic interconnection functions that other carriers can use commonly at the dividing points of unbundled elements of a network should be separately accounted.

83. Such costs are generally regarded as necessary in order to provide what any interconnecting carrier may require that the network should provide. These costs are usually considered to be general to the network as a whole and therefore recovery

should be sought from all interconnecting parties rather than any one single interconnecting party.

84. **Cost of Providing Interconnection Equipment** - For the purposes of this consultative document, interconnection equipment is considered to be equipment which is required to provide common interconnection services. These costs are usually considered to be general to the network as a whole and therefore recovery should be sought from all interconnecting parties rather than any single interconnecting party.

85. **Cost of Providing Transmission Lines -** In principle, non-designated carriers should pay the costs of transmission lines. However, if those carriers themselves own subscriber lines, the costs should be shared according to stipulated criteria.

Q2 *What are your views on the possible feasible points of interconnection at which charges are likely to apply?*

Q3 *Do you agree that interconnection activity should be costed and accounted for through account separation*?

Q4 *Do you agree that attribution of costs should be on the basis of activity based costing?*

Q5 *What activities would you suggest should be measured at the points of connection?*

Q6 *Do you agree that the dominant carrier should be required to show the cost of each element that comprises interconnection activity?*

4.5 Records

86. The Commission will require the dominant carrier to keep books, proper accounts and adequate financial and other records in relation to the conduct of its business.

87. This requirement is an important part of the process of allowing the Commission to evaluate the charges that are part of a reference interconnection offer or interconnection agreement. It would provide supplementary information in assessing whether the interconnection charges are cost–based, transparent and made in the long-term interest of consumers.

88. The Commission will require that the following minimum statements and records be submitted to the Commission on an annual basis (unless otherwise specified). The records underlying these statements should be maintained by the dominant carrier for periodic appraisal and inspection by the Commission.

(a) Profit & Loss Accounts separately identifying[23]
   i. Consolidated operation
   ii. Interconnection Accounts of the Fixed Network
   iii. Interconnection Accounts of the Mobile Network[24]

(b) Capital Employed and Return on Capital Employed Statements
   i. Consolidated operation
   ii. Fixed Network
   iii. Mobile Network

(c) Audited Regulatory Statements reconciling Regulatory & Statutory

(d) Tariff of Interconnection Prices at each feasible point of the network

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[23] See Appendix 3 for an example of a Profit & Loss structure to separately identify interconnection costs and revenues.

[24] Interconnection Accounts should show the relative contributions from :
residential – prepaid
residential – post-paid
business - post-paid

(e) Data on the amount of interconnection traffic switched (quarterly)

(f) A list of Essential Facilities used for interconnection, together with the quantities of such facilities utilised and the amount invested in such facilities.

(g) List of activity based cost drivers and other attribution bases used specifically to attribute joint and common costs during the financial year. The cost drivers should be provided to the Commission prior to the financial year to which they are applicable. Quarterly reports on the amount of activity recorded should be provided with respect to each basis during the period under review.

5. THE CONSULTATION TIMETABLE

89. The consultation period will run from April 4, 2003 to April 25, 2003. During this period the Consultation Paper will be available free of charge from the Commission's Office, 9 a.m. to 4 p.m. Mondays to Fridays. Comments should be submitted in writing before 4:00 p.m. on April 25, 2003 to:

Commission Secretary
Fair Trading Commission
Manor Lodge, Lodge Hill
St. Michael
Barbados.

QUESTIONS TO CONSIDER

***Q1**. Do you agree with the two stage approach that the Commission has proposed for the costing methodology? If no, what alternative approach would you suggest that the Commission adopt? Please give reasons.*

***Q2** What are your views on the possible feasible points of interconnection at which charges are likely to apply?*

***Q3** Do you agree that interconnection activity should be costed and accounted for through account separation?*

***Q4** Do you agree that attribution of costs should be on the basis of activity based costing?*

***Q5** With respect to interconnecting at the points of interconnect, what activities would you suggest should be measured?*

***Q6** Do you agree that the dominant carrier should be required to show the cost of each element that comprises interconnection activity?*

APPENDICES

Appendix 1

Example of how the Cost Pool for Interconnection Charges can be derived using LRAIC or TSLRIC with a Uniform Mark Up

For illustrative purposes only

Costs		Total Cost
Allowable Start–up Costs	$xxxxxxx	
Cost of Providing Interconnection Links	$xxxxxxx	
Cost of Switching– Local and Tandem	$xxxxxxx	
Allowable Cost of Capital	$xxxxxxx	
Total Cost Before Mark-up	$xxxxxxx	
Mark–up based on allowable Joint & Common Costs	$xxxxxxx	
Cost Pool for determining Interconnection Charge		$xxxxxxxx

Appendix 2

Proforma Interconnection Activity Report

For illustrative purposes only

	Service Provider 1	Service Provider 2	Service Provider 3	Own Department	Total Company
Inter. Access:					
- Sales [25]					
- Sales Rev.					
- Cost of Sales					
Local Switching					
- Sales-Mins.					
- Sales Rev./Min.					
- Sales Rev.					
- Cost of Sales					
Transmission					
- Sales-Mins.					
- Sales Rev/Min.					
- Sales Rev.					
- Cost of Sales					

[25] Details of the interconnection access facilities provided to each interconnecting operator should be provided in a separate statement.

Appendix 3

Proforma Profit & Loss Account of Interconnection Activity

The following table provides an example of how the Dominant Carrier may separate out its interconnection revenues and expenses in the Interconnection Profit & Loss Account. The Table separates Interconnection Revenues and Costs from Core Business Revenues & Costs.

For illustrative purposes only

	Fixed Interconnection	**Mobile Interconnection**	**Total Interconnection**
Revenues			
Network Revenues[26]			
Internal Interconnection[27]			
External Interconnection[28]			
Retail			
Total Interconnection Revenue			
Expenses			
Interconnection Services Sold[29]			
- Access			
- Local Switching			
- Transmission			
Total Cost of Interconnection Services Sold			
Cost of Interconnection Services Purchased from other Operators			
Interconnection Depreciation			
Total Operating Costs			
Return			

[26] Network revenues include revenues derived from providing essential facilities.

[27] Internal interconnection reflects the cost of providing interconnection services internally. This is recognized in the Telecommunications Act in section 25 (1) (c) which requires that such charges should be no less or no more favourable than those charged to outside interconnection parties.

[28] External interconnection revenues reflects the revenues earned from providing interconnection services to external operators.

[29] A separate statement should be provided indicating the customers for each type of interconnection service, together with the fixed and variable elements of the costs associated with each customer. The variable element of the costs should show the number of units sold, the price per unit and the total cost. This statement could be expanded or a separate statement provided, showing the revenue per customer, including the rate charged per unit of sales.

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