Office of Utilities Regulation

Update of the Cost Model for Fixed Termination Rates – Draft Model

Consultation Document

PUBLIC

OFFICE OF UTILITIES REGULATION

2020 December 9

Abstract

The Telecommunications Act (the "Act"), requires that all dominant public telecommunications carriers permit interconnection of their public network with the public network of other carriers for the purpose of the provision of telecommunications services, and that the charges at which this interconnection is provided shall be guided by the principles set out in Section 33 of the Act. The Act also provides that the Office of Utilities Regulation ("OUR" or "the Office") shall have regard to the principle of cost orientation when making a determination of an operator's interconnection charges.

This document has been prepared to facilitate discussion and consultation with operators and industry stakeholders in relation to the update of the Fixed Termination Cost Model, being carried out by the Office of Utilities Regulation, with the support of Axon Partners Group Consulting (Axon Consulting).

Table of Contents

Consultation Process

Persons who wish to express opinions on this Consultation Document are invited to submit their comments in writing to the Office of Utilities Regulation ("OUR") by post, delivery, facsimile or e-mail addressed to:

Office of Utilities Regulation
P.O. Box 593,
36 Trafalgar Road,
Kingston 10

Attention: Fay Samuels
Fax: (1) 876 929-3635
E-mail: FixedLRICConsultation@our.org.jm

Responses are requested by 6 January 2020.

Any confidential information should be submitted separately and clearly identified as such. The submission of confidential information should be accompanied by a detailed justification in keeping with section 7(6) of the Telecommunications Act.

Responses that are not confidential, pursuant to sections 7(6) and 7A of the Telecommunications Act, will be posted to the OUR's website (http://www.our.org.jm/). Respondents are therefore requested, where possible, to supply their responses in electronic form to facilitate such postings.

Consultative Timetable

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

Event	Date
Publish Consultation Document	2020 December 9
Response to the Consultation Document	By 2021 January 6
Comments on Responses	By 2021 January 20
Issue Determination Notice	By 2021 March

Chapter 1: Introduction

Background

1.1. On 2015 July 1, the OUR published the Determination Notice titled “Cost Model for Fixed Termination Rates - Principles and Methodology" (Document No. 2015/TEL/006/DET.002), which outlined the methodology to be followed in the development of a Fixed Cost Model. The existing Fixed Cost Model and the Determination Notice entitled "Cost Model for Fixed Termination Rates - The Decision on Rates (Document No. 2017/TEL/003/DET.001 (Confidential Version) and Document No. 2017/TEL/004/DET.002 (Public Version)), were issued on 2017 June 7.[1]

1.2. On 2020 January 8, the OUR published the Consultation Document, "Update of the Fixed Cost Model and Assessment of Fixed Infrastructure Sharing Costs - Principles and Methodology" (Document No: 2020/TEL/001/CON.001). This document outlined the potential methodology changes that may be required based on market evolutions, to update the existing Fixed Cost Model.

1.3. Having analysed the comments made by stakeholders, the OUR published the Determination Notice entitled "Update of the Fixed Cost Model – Principles and Methodology" (Document No. 2020/TEL/010/DET.003) (hereinafter “the Methodology") on 2020 June 30. The document presented the determinations regarding the changes to the methodological framework, which will be used in the update of the Cost Model used to set wholesale fixed interconnection rates. Annex B of the Methodology outlined all the principles and methodology applicable to the update of the Cost Model.

[1] The Confidential Version of the Notice and the final Model were issued to Cable & Wireless Jamaica Limited (C&WJ) as they contained proprietary information of that company.

Purpose of the Document

1.4. The existing Fixed Cost Model has been updated based on the methodological framework outlined in the Methodology. The purpose of this consultation is to present the updated Draft Fixed Cost Model (the Model) and results of this Model to operators and other stakeholders so they may provide comments.

1.5. The OUR is of the opinion that the Jamaican operators are in a good position to contribute to the update of this Model. Therefore, the OUR invites them to provide their views and comments on the updated Draft Model.

1.6. The OUR encourages stakeholders to support all comments on the submitted materials with relevant arguments and also data, analysis, benchmarking studies and information based on the national situation, or on the experience of other countries, (if relevant) to support provided comments. The OUR is likely to give greater weight to comments supported by relevant, appropriate arguments and evidence.

1.7. As determined in the Methodology, "[T]he Office will consider a reference operator with demand and network characteristics based on the combination of C&WJ [Cable & Wireless Jamaica Limited] and Columbus [Columbus Communications Jamaica Limited]" (Determination #2)". Therefore, a portion of the data required for the Model can best be provided by C&WJ and Columbus (hereafter referred together as "Flow"). Additionally, the OUR has observed that the details provided by the other market players regarding information that is common to multiple operators (such as demand trends or unit costs), have been very limited.

1.8. Consequently, the OUR will, simultaneously with the current public consultation on the Draft Model, be undertaking a private consultation with Flow, on inputs and information used in the Model that have been obtained from Flow. Note that the information of Flow which the OUR has classified as confidential in light of the provisions of the Telecommunications Act, and other information deemed confidential, has been excluded from this public consultation document and the associated attachments.

1.9. After the conclusion of this consultation process and the private consultation with Flow, the OUR will address the contributions provided by all operators and industry stakeholders and a final version of the updated Fixed Termination Cost Model will be developed.

Structure of Document

1.10. The remainder of the consultation document is structured as follows:

- **Chapter 2** outlines the Legal Framework that describes the remit of the OUR in regard to the setting of interconnection rates.
- **Chapter 3** provides a description of the consultation documentation.
- **Chapter 4** presents details on the relevant aspects of the Model.

Chapter 2: Legal and Regulatory Framework

2.1. As part of its overall functions to regulate services and facilities under section 4(1) of the Act, and in keeping with its express power to determine the rates which may be charged in respect of the provision of a prescribed utility service under section 4(4) of the Office of Utilities Regulation Act ("OUR Act"), the OUR is authorised to determine the prices charged by telecommunications operators for the provision of interconnection services.

Section 4(1)(a) of the Act states:

> "(1) The Office shall regulate telecommunications in accordance with this Act and for that purpose the Office shall -
>
> (a) regulate specified services and facilities"

Section 4(4) of the OUR Act states:

> "(4) The Office shall have power to determine, in accordance with the provisions of this Act, the rates or fares which may be charged in respect of the provisions of a prescribed utility service."

2.2. A "specified service" is defined in section 2 of the Act to mean, inter alia, a telecommunications service, while a "prescribed utility service" is defined in section 2 and the First Schedule of the OUR Act to include the provision of telecommunications services.

2.3. The legal framework governing interconnection, which is a type of telecommunications service, can be found in Part V (sections 27-37A) of the Act.

2.4. The Act at section 29 (1) states:

> *"Each carrier shall, upon request in accordance with this Part, permit interconnection of its public network with the public network of any other carrier for the provision of telecommunications services".*

2.5. The Act grants the OUR specific powers with regard to the determination of tariffs charged for interconnection services. Sections 29 (4)(a) and (5) state:

> *"(4) The Office may -*
>
> *(a) on its own initiative, in assessing an interconnection agreement, make a determination of the terms and conditions, including charges;*
>
> *…*
>
> *"(5) When making a determination of an operator's interconnection charges, the Office shall have regard to -*
>
> *(a) the principles of cost orientation or reciprocity;*
>
> *(b) local or international benchmarks; or*
>
> *(c) any other approach that is relevant to the determination of interconnection charges."*

2.6. The Act at section 30 requires that dominant public telecommunications carriers provide interconnection in accordance with various principles. In particular section 30 (1)(a)(iii) requires that charges for interconnection services "…*shall be cost oriented and guided by the principles specified in section 33".*

2.7. These principles of cost orientation are stated in section 33 as follows:

> *"(1) Where the Office is required to determine the charges for the provision of interconnection by a dominant carrier, it shall, in* making that determination, be guided by the following principles -
>
> *(a) costs shall be borne by the carrier whose activities cause those costs to be incurred;*
>
> *(b) non-recurring costs shall be recovered through non-recurring charges and recurring costs shall be recovered through recurring charges;*

(c) costs that do not vary with usage shall be recovered through flat charges and costs that vary with usage shall be recovered through charges that are based on usage;

(d) costs shall include attributable operating expenditure and depreciation and an amount estimated to achieve a reasonable rate of return;

(e) with the exception of interconnection charges for wholesale termination services, interconnection charges shall be established between the total long run incremental cost of providing the service and the stand alone cost of providing the service, so, however, that the prices shall be so calculated as to avoid placing a disproportionate burden of recovery of common costs on interconnection services;

(f) where appropriate, interconnection costs shall include provision for a supplementary charge, being a contribution towards the access deficit of the interconnection provider; and

(g) in the case of charges for wholesale termination services, charges shall be calculated on the basis of forward looking long run incremental cost, whereby the relevant increment is the wholesale termination service and which includes only avoidable costs.

(2) Where the Office has been unable to obtain cost information that it is reasonably satisfied is relevant and reliable it may take into account local and international benchmarks, reciprocity and any other approach that in the opinion of the Office is relevant."

Chapter 3: Cost Model for Fixed Networks

Description of Consultation Documentation

3.1. The attached electronic files form part of the Consultation documentation and contain the draft Model and its supporting documentation.

Included are:

- **Draft Fixed Cost Model - Additional inputs** (file: Draft Fixed Cost Model – Additional Inputs.xlsm): This file contains the non-confidential inputs of the bottom-up long run incremental cost (BULRIC) model that are not presented in this document.
- **Description Manual of the Fixed Cost Model** (file: Draft Fixed Cost Model - Descriptive Manual.pdf): This document describes how the updated Draft Fixed Cost Model works and the algorithms used for modelling the network and calculating services' costs.

Topics of Special Relevance

3.2. The OUR welcomes all comments on the Model, especially those that address the topics of highest relevance and with highest impact on the outcome of the Model. The OUR will dedicate special attention to those comments on topics of special relevance and which have greater impact on the results of the Model. The OUR appreciates comments from operators and industry stakeholders especially on the following aspects of the Model:

- Market Demand Considered in the Model
- Access Nodes Considered in the Model
- Unitary Costs and Cost Trends
- Technical Parameters and Modelled Network
- Cost Structure
- Cost Allocation to Services
- Services Results

These topics will be discussed in Chapter 4.

Chapter 4: Relevant Aspects of the Updated Draft Fixed Cost Model

Introduction

4.1. As determined in the Methodology, the reference operator is a fixed operator with demand and network characteristics based on the combination of Cable and Wireless Jamaica Limited ("C&WJ") and Columbus Communications Jamaica Limited ("Columbus"). The combined entity is hereafter referred to as Flow.

4.2. In order to account for the characteristics of the "combined" operator the following aspects have been considered in the updated Model:

- The demand should be equal to C&WJ's demand plus Columbus' demand (please see the section 'Market Demand Considered in the Model' below for further details).
- The coverage should consider the footprint covered by either C&WJ or Columbus. Any overlap of coverage (i.e. areas covered by both C&WJ and Columbus) should be considered, but potential inefficiencies associated with the overlapping networks should be removed (please see the section 'Access Nodes Considered in the Model ' below for further details).
- The cost base of the modelled operator will be reconciled with the "combined" operator's costs (C&WJ's costs including costs from Columbus), removing any identified inefficiency (please see the section 'Access Nodes Considered in the Model' below for further details).

4.3. The Draft Fixed Cost Model utilises the fixed sector WACC presented in the Consultation Document entitled "Estimate of the Weighted Average Cost of Capital for Telecommunications Carriers

(2020/TEL/011/CON.002), estimated at 14.16%[2]. For comparison purposes, the WACC employed in the existing Fixed Draft Model was 19.25%.

Market Demand Considered in the Model

4.4. The demand is one of the main inputs of the Fixed Cost Model, as it is needed to determine the number of network elements required as well as to calculate the unit costs of the services.

4.5. The demand of the Model (both in terms of historical and forecasted figures) has been updated taking into consideration the information provided by operators. There are some exceptions where different approaches have been followed. These exceptions are:

- For those services where the data received for the update of the Fixed Cost Model validated the figures in the existing Fixed Cost Model, these same figures were utilised in the updated Draft Fixed Model.

- For those services where historical data was reported only for the year 2014, but not for the 2015-2018 period, we considered the data associated to the year 2014 and then proceeded to use the same trend as the one included in the existing Fixed Cost Model for the entire modelled period.

- For the service "Non-voice Traffic.Broadband.Retail.Broadband traffic", we observed the same figures were maintained as in the existing Fixed Cost Model. In the OUR's view, this is not realistic, as there has been a significant increase in the number of broadband lines in the last few years, which justifies an increase in the demand for this service. In the updated Draft Fixed Cost Model, the input has been calculated by considering the traffic per

[2] The WACC figure in the final version of the model will be updated to the final value from the Determination Notice for the WACC, which is to be approved by the OUR

broadband line from the existing Fixed Cost Model and multiplying by the number of broadband lines from the reference operator.

- For the service "Voice Traffic.Outgoing.Retail.Off-net to mobile", we observed significant discrepancies between the figures reported and the internal data handled by OUR. Thus, the internal data from the OUR was considered for this service.

4.6. The Model includes a new service to calculate the costs associated to the provision of TV services. The demand for this service is measured as the number of TV channels provided by the operator and it has been populated based on public data from Flow (TV channels provided to end users).

Table 1 illustrates the voice traffic consumption considered in the Draft Fixed Cost Termination Model.

Voice traffic (millions of minutes)	2018	2019	2020	2021	2022	2023	2024	2025
Incoming Others	117.85	110.81	104.19	97.98	92.14	86.66	81.51	76.68
Incoming to Local	20.30	18.94	17.67	16.49	15.38	14.35	13.39	12.49
Incoming to National	130.46	121.72	113.57	105.96	98.86	92.24	86.06	80.29
Outgoing	885.46	782.55	696.66	622.26	557.55	501.05	451.55	407.49
Transit	504.37	565.49	627.75	690.28	753.07	816.10	879.33	942.77

Table 1 Total market voice traffic [Source: Updated Draft Fixed Cost Model]

Table 2 displays the evolution of the data traffic for Non-voice services considered in the Draft Fixed Cost Termination Model.

Data traffic (Gbps)	2018	2019	2020	2021	2022	2023	2024	2025
Broadband	111.14	134.47	162.71	196.88	238.23	288.26	348.79	422.04
Leased lines - Intra Parish	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Leased lines - Inter Parish	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
TV	221.00	221.00	221.00	221.00	221.00	221.00	221.00	221.00

Table 2 Total market non-voice traffic [Source: Updated Draft Fixed Cost Model]

Question 1: Do you agree that the demand presented above reasonably represents the demand of the Jamaican fixed market? Please justify your position and provide supporting information and references.

Access Nodes Considered in the Model

4.7. The number of access nodes deployed by the reference operator is an important aspect of the Model.

4.8. In the data request phase for the update of the Model, Flow did not provide updated information concerning the location of the nodes. Therefore, the nodes in the updated Model remain as they were in the existing Fixed Cost Model based on the inputs included in that Model. Table 3 below represents the number of access nodes obtained by the Model in each of the geotypes.

Access nodes	Number of nodes
URBAN_DENSE	92
URBAN	143
SUBURBAN_DENSE	15
SUBURBAN	45
RURAL	14
RURAL_SPREAD	152

Table 3: Number of nodes of the modelled operator for 2019 [Source: Updated Draft Fixed Cost Model]

4.9. In the OUR's view, considering the same network nodes inputs as included in the existing Fixed Cost Model represents the most efficient alternative given the lack of updated information. This alternative assumes that C&WJ's network will be able to absorb Colombus' nodes, given that the former has nation-wide coverage. However, the OUR is open to reconsidering this approach, provided that Flow can provide comprehensive data that details the actual strategy followed by the operator.

4.10. The Draft Fixed Cost Model considers the same NGN migration pattern as that included in the existing Fixed Cost Model. Thus, starting in the year 2020, the Model contemplates full migration to NGN.

Question 2: Do you agree that the number of access nodes is reasonable and accurately represents the realities of the Jamaican market? Please justify your position and provide supporting information and references.

Unitary Costs and Cost Trends

4.11. Unit costs and trends are also one of the key inputs of the Fixed Cost Model as the cost of the underlying network elements is a critical component of the cost of the services.

4.12. During the update process for the Model, Flow reported new information for the unit costs associated to some of the assets included in the Model. The OUR proceeded to validate these new inputs against data from international benchmarks and upon validation of the consistency of these inputs, they have now been included in the updated Draft Fixed Cost Model. For those assets where Flow did not provide further inputs, the inputs remain the same as those included in the existing Fixed Cost Model.

4.13. In addition, in the update of the Model, we have considered new figures for the costs of fuel and electricity, as extracted from official sources from Jamaica. Figures for fuel have been extracted from Petrojam Limited and figures for electricity have been extracted from data published by the Ministry of Science, Energy and Technology.

4.14. The unitary costs and trends of the resources used in the Model are listed, respectively, in the worksheets 'INP UNIT COSTS' and 'INP COST TRENDS', of the Additional Inputs file.

Question 3: Do you agree that the unitary costs and trends used for the resources are accurate for a telecommunications operator in Jamaica? Please justify your position and provide supporting information and references.

Technical Parameters and Modelled Network

4.15. The Model considers a number of technical parameters for modelling the network (for example, voice bitrate and maximum number of lines per

chassis). The technical inputs are located in the worksheet 'INP NETWORK' of the Additional Inputs file. Based on these parameters and the demand and the technical algorithms presented in the description document, the Model obtains the following main resources to satisfy the demand:

Resource	2020
Legacy nodes	
Remotes Chassis	-
DSLAM Chassis	-
Aggregation Chassis	-
Local Chassis	-
Tandem Chassis	-
Legacy ports	-
NGN nodes	
MSAN Chassis	1.617
Aggregation Chassis	461
Edge Chassis	55
Distribution Chassis	24
Core Chassis	6
Ethernet ports	4.308
Transmission	
Fibre (km)	3.586
Ethernet Chassis	558
TDM Chassis	-
DWDM Chassis	79
Lambdas	592
Legacy ports	-
Ethernet ports	4.308
MW hops	642
Towers	127
Core	
CSCF	2
AS	2
NMS	2

Table 4: Draft number of network elements modelled [Source: Updated Draft Fixed Cost Model]

Question 4: Do you agree that the resources obtained are reasonable to satisfy the demand? Please justify your position and provide supporting information and references.

Cost Structure

4.16. The Model calculates the total cost base of the reference operator based on the total number of network elements and their costs. These costs are distributed among a number of categories, namely:

- Network OpEx
- Depreciation
- Cost of capital
- Retail costs
- G&A

4.17. From the updated Draft Model, the cost structure of the reference operator is as seen in Table 5 below.

Cost category (% of costs)	2018	2019	2020	2021	2022	2023	2024	2025
OpEx	18.9%	19.4%	19.0%	19.7%	20.5%	21.6%	22.6%	23.7%
Depreciation	27.5%	27.3%	28.2%	27.9%	27.4%	26.9%	26.3%	25.3%
Cost of Capital	20.2%	19.7%	18.9%	18.3%	17.7%	16.8%	16.0%	15.8%
Retail Costs	27.4%	27.6%	27.9%	28.1%	28.3%	28.6%	28.9%	28.9%
G&A	5.9%	5.9%	6.0%	6.0%	6.1%	6.2%	6.2%	6.3%

Table 5: Draft cost structure of the modelled operator [Source: Updated Draft Fixed Cost Model]

Question 5: Do you agree that the cost structure shown above is reasonable for an operator with the demand and characteristics of the modelled operator? Please justify your position and provide supporting information and references.

Cost Allocation to Services

4.18. Costs are allocated to the services based on the routing factors. These routing factors represent the relative use that each service makes of a resource.

4.19. The routing factors have not been changed in the updated version of the Model, with the exception of additional routing factors that are included to allocate the costs of TV services. The routing factors for TV services are based on the consideration that TV traffic is of a multicast nature.

4.20. The routing factors are introduced in the worksheet 'MAP ROUTING FACTORS' of the Additional inputs file.

Question 6: Do you agree with the routing factors used? Please justify your position and provide supporting information and references.

Services Results

4.21. Based on the update of the different inputs, the Fixed Cost Model will calculate the unit costs of the services in the LRIC, LRIC+ and SAC cost standards.

4.22. The following tables below present the resulting unit costs for the relevant voice services.

Termination Services (JMD Cent/minute)	2018	2019	2020	2021	2022	2023	2024	2025
Terminating to fixed local	7.21	7.11	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to fixed national	7.24	7.13	6.93	6.89	6.87	6.90	6.94	7.09
Terminating from international direct to fixed	7.64	7.30	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to emergency services[3]	6.74	6.83	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to weather warning service	13.72	13.88	14.05	14.09	14.15	14.26	14.39	14.63
Terminating to national DQ[2]	7.13	7.00	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to international DQ[2]	7.13	7.00	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to national freephone access service	7.24	7.13	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to own freephone access service	6.74	6.83	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to international freephone access service	7.13	7.00	6.93	6.89	6.87	6.90	6.94	7.09
Terminating to home country direct collect service	5.68	5.29	4.83	4.77	4.72	4.72	4.74	4.86

Table 6: Draft unit costs obtained for voice termination services under Pure LRIC Standard [Source: Updated Draft Fixed Cost Model]

Other voice services (JMD /minute)	2018	2019	2020	2021	2022	2023	2024	2025
Domestic transit	0.39	0.43	0.46	0.38	0.29	0.27	0.26	0.27
International transit	0.46	0.46	0.46	0.38	0.29	0.27	0.26	0.27
Use of call centre for DQ and Emergency Services	12.02	12.39	12.77	13.18	13.62	14.08	14.56	15.07

Table 7: Draft unit costs obtained for wholesale voice services under LRIC+ Standard [Source: Updated Draft Fixed Cost Model]

Other voice services (JMD/minute)	2018	2019	2020	2021	2022	2023	2024	2025
Domestic transit	1.64	1.69	1.36	1.38	1.39	1.40	1.40	1.40
International transit	2.13	2.25	1.92	2.01	2.10	2.19	2.27	2.36
Use of call centre for DQ and Emergency Services	12.02	12.39	12.77	13.18	13.62	14.08	14.56	15.07

Table 8: Draft unit costs obtained for wholesale voice services under SAC Standard [Source: Updated Draft Fixed Cost Model]

[2] This service only includes the termination costs. The costs associated to the call centre are included within the service "Use of call centre for DQ and Emergency Services" inTable 7 and Table 8 .

Question 7: Do you agree that the unit costs obtained for services are a reasonable representation of the costs in the Jamaican market? Please justify your position and provide supporting information and references.

Annex A: Summary of Questions

Question 1: Do you agree that the demand presented above reasonably represents the demand of the Jamaican fixed market? Please justify your position and provide supporting information and references.

Question 2: Do you agree that the number of access nodes is reasonable and accurately represents the realities of the Jamaican market? Please justify your position and provide supporting information and references.

Question 3: Do you agree that the unitary costs and trends used for the resources are accurate for a telecommunications operator in Jamaica? Please justify your position and provide supporting information and references.

Question 4: Do you agree that the resources obtained are reasonable to satisfy the demand? Please justify your position and provide supporting information and references.

Question 5: Do you agree that the cost structure shown above is reasonable for an operator with the demand and characteristics of the modelled operator? Please justify your position and provide supporting information and references.

Question 6: Do you agree with the routing factors used? Please justify your position and provide supporting information and references.

Question 7: Do you agree that the unit costs obtained for services are a reasonable representation of the costs in the Jamaican market? Please justify your position and provide supporting information and references.