Digicel™

Submission:

In Response to the OUR's
Consultation Document

"Principles of Long-run Incremental Cost Model for the Jamaican Telecommunications Market"

Table of contents

Formal Statement

Digicel is pleased to participate in another OUR consultation process. Digicel believes that through consultation stakeholders can help to shape the landscape of Jamaica telecommunication industry. On this basis Digicel urges the OUR to seriously consider all responses received.

The succeeding comments are not exhaustive and Digicel's decision not to respond to any particular issue raised by the OUR or any party does not necessarily represent agreement, in whole or in part with the OUR's or that party's position on these issues, nor does any position taken by Digicel in this document mean a waiver of any sort of Digicel's rights in any way. Digicel expressly reserves all its rights.

Any questions or remarks that may arise as a result of these comments by Digicel may be addressed to:

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1. Introduction

1.1. Legal Jurisdiction

Digicel understanding of this consultation is that the OUR will be imposing LRIC costing standard on dominant operators. Digicel urges the OUR to further explain its jurisdiction for such proposed imposition. Digicel's understanding of sections 30 and 33 of the Telecommunication Act is that LRIC should be used as a guide and cost should be established somewhere between LRIC and stand alone cost. Digicel completely rejects this approach by the OUR.

The Telecommunications Act 2000 says that where the Office is required to determine the interconnection prices for any operator that is found to be dominant those prices shall fall between the total long run incremental cost and the stand alone cost of the service in question. In other words the Act has defined a set a price floor and a price ceiling and the cost approach chosen should lead to an assessment of costs which falls between the two points.

> *"*
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> *33(1) where the Office is required to determine the prices at which interconnection is provided by a dominant carrier, it shall in making that determination, be guided by the following principles -*
>
> *(e) prices for interconnection 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 he prices shall be so calculated as to avoid placing a disproportionate burden of recovery of common costs on interconnection services:*
>
> *"*

It is of great concern to Digicel that the Office has missed a key step in the process. The first step is to ask which of those costing approaches available and which fit the statutory criteria should be used in this particular instance. Only then should consideration be given to the practical application of the approach chosen.

We note however that the office has jumped to the conclusion that pricing approach used should be a cost floor LRIC approach instead of choosing a less extreme and middle of the road methodology. The use of a bare cost floor mechanism such as LRIC is inimical to investment. LRIC cannot be expected to replicate the unpredictable costs present in the real world. It will tend to underestimate total actual costs, potentially very significantly, even for the most efficient operator, since many costs are outside operators control and unpredictable external events can have large impacts on the costs in fact experienced.

1.2. LRIC standard

The LRIC standard is a theoretical approach aimed at establishing the economic costs of providing a good or service or a specific level of supply of a good or service. It remains however merely a model of what costs could be and may diverge from reality significantly based on unforeseeable events. The underlying model on which the measure is based is a highly competitive market, or more appropriately in the case of national incumbent telecommunications network operators, a contestable market – which is a more generalised concept.

Forward-looking LRIC is a concept rather than an identifiable cost measure. It is a concept that must be interpreted at each decision point. It might in theory be equal to the costs faced by a fully efficient firm in a contestable market and if

costs were predictable, earning a return on capital consecrate with the country, sector and project specific risks involved.

In practice the use of the LRIC standard has been controversial. The point of contention is not with the principle but with its application. Respected London based consultants Indepen wrote in one of their discussion documents,

> *"Long Run Incremental Cost (LRIC) models have been applied by regulators in the UK, US and elsewhere in pricing access and interconnection in telecommunications networks since the mid 1990's. Advocacy of LRIC is often based on the assumption that this is the level at which effective competition would drive prices, or more colloquially "mimic competition". In practice the application of the LRIC methodology has been based around hypothetical network models that may depart substantially from the real-world attributes of the actual network in question.*
>
> *The conditions necessary for LRIC to "mimic competition" and allow a firm to recover exactly its costs over the life of an asset are still a matter of academic research, and failure to take account of known potential sources of bias in modelling can result in large errors."* [1]

In recent years research by leading academics has shown that LRIC models that have actually been used to price network services or unbundled elements can generate substantially incorrect values i.e. the models fail to properly mimic a competitive / contestable market.

[1] See http://www.indepen.co.uk/panda.html and in particular the 2004 paper, "Access Pricing in Telecommunications – Time to Revisit LRIC?"

Perhaps the four main problem areas in LRIC modelling have been: (i) the treatment of 'Real Option' values, (ii) the insistence on forward-looking assets prices which together with depreciation systematically fail to properly compensation the regulated firm for efficient investments actually made, (iii) the over-optimisation of network topology such that no operator in practice could ever build the optimised network modelled, and (iv) WACC values are estimated without due care and appreciation of the weakness in relevant finance theory and thus under-compensate investors.

A LRIC costing exercise should be transparent, neutral, and done to the highest standards. Few jurisdictions have managed this in practice. Indeed, arguably no country has managed it on the first occasion.[2]

Digicel is concerned that its accounting system is unlikely to be able to provide the type of incremental data needed to build a top down LRIC model. Digicel would need to hire international consultants to build a top-down LRIC model and this is likely to cost at the very least several hundred thousand US dollars. Given that other licensees most likely need to do likewise the licensee costs could come to more than US$1 million costs in Jamaica.

The cost of LRIC models is very high.[3] In the case of bottom-up cost modelling it is hard to see these costs for all the parties together being any less than US$1 million and more likely over US$2 million.[4] If a top-down approach is used all the parties will need to hire experts from abroad. The cost ought to be less than a bottom-up approach but we believe cost for all parties together in Jamaica will be no less than US$1 million.

[2] In the USA, the UK and Germany for example, network operators appealed costing decisions made with the help of LRIC cost models and in some cases won.
[3] The costs include those of the regulator, the consultants and the licensees who will themselves need to wire consultants. All costs are typical met by the licensees and ultimately by subscribers.
[4] Total costs in Cayman so far are approximately US$1.2 million and with much of the project still before us. Moreover, in Cayman there has been little real transparency, C&W's consultants are building the cost model (apparently in breach of natural justice principles), and there is no adequate recourse to review.

Moreover, the knowledge required by the authorities to choose appropriate cost modelling consultants and manage them throughout the project, and to make important decisions of principle along the way, only exists in a small number of countries.[5]

In light of the above, the OUR's suggestion that LRIC cost modelling should determine prices in Jamaica is of concern to Digicel. It would involve high costs and due to the complexity involved seems likely lack a great deal of transparency and pose a high risk of error.

Question 1: Do you agree with the use of the LRIC standard in determining the cost of telecommunications operators' regulated services and that for its implementation the top-down approach be used? If you do not agree please explain in detail.

The difficulty we have with the LRIC approach to costing is with: (i) the practical application of the theory; (ii) the high costs involved in doing so, and (iii) the distinct risk that in all the circumstances the end result is very likely to under-compensate licensees.

2. LRIC Costing Based on Top-down Approach

2.1. Long-run and forward looking costs

Question 2: Do you agree with the meaning given to the terms 'long run' and 'forward looking' in the preceding discussion? If you do not agree, please explain in detail.

Digicel agrees with the meaning of the terms 'long run' and 'forward looking' but is concerned about that the practical application of these terms along with other LRIC concepts in any LRIC modelling exercise. Experience suggests that such

[5] There are many consultants who say they can build a cost model but less than a handful of them can build a model that more or less meets acceptable standards..

approaches have a high risk of imposing significantly incorrect outcomes on the sector.

2.2. Network topology

Digicel agrees that a scorched node approach is standard practice when modelling network costs.

We note that the OUR says it may require changes in the network topology used to model network costs.

Digicel maintains a network which has by far the best coverage (about 95% of Jamaica) and we believe with significantly superior congestion statistics than our rivals. This is an important element in Digicel's business success; we provide a "Bigger Better Network" backed up by superior 24/7 customer service. Given our success with this strategy we argue that if there are lower cost competitors, this does not mean that their lower costs should be accepted as being the level of "efficient costs".

Question 3: Do you agree with the application of the scorched node approach as described above? If you do not agree, please explain in detail.

Scorched node is a widely accepted assumption when modelling telecommunications networks.

2.3. Relevant increment

Question 4: Do you agree with the definitions of the increments for the fixed and the mobile networks as presented above? If you do not agree, please explain in detail.

Digicel agrees in principle, although we do not agree that LRIC costing is a practical option for Jamaica.

2.4. Assets valuation and depreciation

Modern equivalent assets (MEA) is a common requirement when estimating LRIC costs. Getting from the principle to the fact is however subject to uncertainty and dispute. Should the equipment be the most recent technology that is available on the market or technology that has been used for a significant period? If the former, equipment prices may not have settled and the equipment may in practice not function as intended – something we did see with 3G networks in Europe. This tends to lead to disputes for which resolution is most difficult.

The OUR suggests that surrogates for economic depreciation should be used. The problem with using a surrogate is that no one has any idea about the degree to which it is bias or inefficient as an estimator of economic depreciation, i.e. it will introduce errors and we do not understand anything about these errors – their scale or sign.

Given also the delay, difficulties and costs involved in proceeding down a LRIC cost path, and the risk of incorrect values coming out the process, Digicel see merit in assessing costs based on the initial assumption that existing CAPEX was efficiently incurred. This will enable interconnection costs to be determined in such a way that operators have a fair chance of cost recovery.

If such an approach was followed we would expect the wholesale prices to differ from "efficient prices" only to the extent that the companies had not invested wisely or were carrying excess opex costs. It is possible that there would be perhaps as much as 10% to 15% inefficiency involved, although we believe the practical application of LRIC can easily err by understating the true costs by at least 15%. Expert consultants could advise about the degree of likely inefficiency, and about how this could be dealt with. Digicel believes such an approach would

involve substantially lower costs and would be a more practical and workable solution for Jamaica. It would likely also involve fewer errors.

Question 5: Do you agree with how current cost accounting and economic depreciation are to be implemented in the LRIC determination? If you do not agree, please explain in detail.

Digicel has serious doubts about the adoption of a LRIC approach using CCA, MEA and economic depreciation values in Jamaica. It is highly complex and difficult to understand, time consuming, costly to implement and prone to error.

2.5. Common costs

Question 6: Do you agree with how common cost is to be accounted for as part of the LRIC determination? If you do not agree, please explain in detail.

In principle common cost should be accounted for in all LRIC calculations which seek to cost network services.

2.6. Reasonable Rate of Return

The common approach for regulators assessing what return an investor should reasonably expect to earn on capital invested is to use weighted cost of capital (WACC) calculations. However, this in an evolving and unsettled area of academic research, particularly in regard to the estimation of systematic risk; the value of 'Real Options' foregone, and the treatment of idiosyncratic risk.

In the area of systemic risk the preferred estimation approach is to use the Capital Asset Pricing Model (CAPM). However, due to known theoretical shortcomings in CAPM more recent research has come up with other approaches to estimate WACC, specifically the Arbitrage Pricing Theory (APT) and a novel combination of the theories known as the 'Fama-French Three Factor Model'. These other approaches also suffer from weaknesses but have

proved valuable to some regulators in augmenting the information from the application of less than perfect CAPM methods. There will also be a survivorship bias present unless the market risk premium is estimated using ex ante and ex post approaches; which is typically not done. In addition, there is also the failure to account for the option value foregone at the time of investing. Academics agree that this ought to be included in WACC. Regulators and some consultants have not kept up with these developments.

Especially in countries which have recently liberalised their telecommunications markets, investor risk is higher and different in nature than in countries with longer liberalisation period and more resources. However, the treatment of risk for WACC purposes in the former has in practice followed, that used in the latter without any adjustment for information gaps and has thus failed to deal with risk adequately. Microeconomic risk pays very little roll on the estimation of WACC in countries with excellent legal institutions. It involves the risk of government / administrative involvement in a way that alters the profitability of a project after costs have been sunk by investors. This type of risk is highly idiosyncratic and can be more acute in one industry compared to another or one project than another. These risk factors are very important in explaining the cost of capital in the Caribbean, even if they are generally neglected.

Finance theory also tells us that a separate WACC should be estimated for major business operations that involve a separate investment project. Failure to do so results in incorrect investment signals i.e. projects being undertaken where they should not have been or projects being rejected when they should have been undertaken. Yet we see that a single WACC is commonly used that covers numerous separate investment projects; the starkest examples of this are when a single WACC is used for an integrated incumbent fixed and mobile network operator.

Even fully efficient operators that compete to provide mobile services can, and do, have different WACCs. In theory and in fact it is incorrect to argue that there is but one efficient WACC for the mobile sector; i.e. that any firm that has a WACC higher than this is inefficient. Reasons for WACC to differ between efficient competitors are numerous and include differences in ownership structure, differences in the mix of services provided; differences in the size of the operator, and differences in the value of real options, an important aspect of which we take up further below. There may also be structural differences operators cannot avoid due to regulatory, legislative or technological restrictions.

Importantly, each firm faces a different situation at the time of entry. Certain of these differences are outside of the firm's control, such as the number of entrants there were before it. Determining the moment of entry is, however, under the control of the firm. It is now well understood that at the moment of entry an operator extinguishes a valuable option to invest. This is a legitimate component in the WACC but perhaps due to the newness of the theory regulators have yet to include this in their WACC calculations.[6]

All this suggests that even when done to the highest standard, WACC estimates are subject to a wide margin of error. In many cases WACC estimations fall short of high standards and in practice substantially understate the actual cost of capital.

Question 7: Do you agree with the approach to determining a reasonable rate of return on invested capital? If you do not agree, please explain in detail.

WACC that uses CAPM to price equity is generally the preferred means of estimating the cost of capital for a substantial market investment. However, CAPM suffers from quite severe weaknesses. As a result, WACC estimates are just that – estimates. Errors typically occur with other aspects of WACC

[6] The authority is: Dixit, A. and Pindyck, R, (1994), *Investment under uncertainty*, Princeton University Press.

estimation. It should thus be recognised that WACC figures are far from exact measures and moreover competing companies will have WACCs that differ in non-trivial ways.

2.7. Use of operators' submitted interconnection prices

The Consultation says that the OUR will decide which of the licensee's costs will be considered efficient. There is however no indication of how the OUR will do this. Digicel request that the OUR consult on the approach it would use to deciding whether a licensee's costs were not efficient.

Given the significant uncertainty about what is efficient (WACC measures are subject to unknown error; depreciation is subject to an unknown error; MEA values are subject to legitimate disagreement; network coverage and congestion statistics are competitive variables) Digicel believes that a top down LRIC approach will also be subject to significant error. As a matter of casual observation we believe that regulators that have tried to assess LRIC costs have in general priced wholesale services at less than LRIC, i.e. the errors appear to accumulate against the operators.

Question 8: What interconnection price should be accepted and used, should it be the industry average interconnection price, should it be individual interconnection prices ascertained, or should it the most economically efficient interconnection price? Please provide reasons for answer.

Choosing a single WACC to apply to network operators that provide the same basic services (e.g. mobile networks) is theoretically preferred according Gans and King (1999). [7] In our view, however, this research sit uncomfortably with the fact the different firms can legitimately have different costs of capital. Digicel

[7] Australian Economists Joshua Gans and Stephen King are responsible for this research, University of Melbourne (1999). Exact citation ????

believes in order to avoid under stating WACC that the highest estimation ought to be used.

3. Conclusion

In conclusion, the difficulty we have with the Office's consultation beyond the fact a key step in the process has been sidestepped and the Office is jumping straight to the use of a LRIC approach is with the following: (i) the practical application of the theory contained in the consultation into practice, (ii) the potential costs involved in doing so, and (iii) given the complexity and what we know about the LRIC modelling approach, there is a significant risk that result that would under-compensate Digicel and/or other licensees.