**cablebahamas**

*technology ● unleashed*

# COST EFFICIENCY STUDY
# OF THE
# BAHAMAS TELECOMMUNICATIONS COMPANY LIMITED
# ECS 04/2012

**Submitted to the**
**Utilities Regulation and Competition Authority**

**March 30, 2011**

**submitted by**
## Cable Bahamas Ltd.

**SRG**

**CARIBBEAN** CROSSINGS

Cable Bahamas Ltd., Caribbean Crossings Ltd. and Systems Resources Group Limited (hereinafter, "CBL") hereby respond to the public consultation document Cost Efficiency Study  of the Bahamas Telecommunications Company Limited ECS 04/2012  issued by URCA on 16th February, 2012.

## I.  EXECUTIVE SUMMARY

CBL prefers adjusted benchmarking to a more time-consuming absolute efficiency approach. CBL considers that adjusted benchmarking can be an acceptable methodology for an efficiency study if implemented correctly. However, there are a number of significant flaws to the proposed implementation of the adjusted benchmarking approach:

CBL believes that URCA's definition of cost is inadequate because it fails to adjust for exogenous costs arising from interconnection and the calling-party-pays regime. These factors affect all operators in the benchmark sample but not BTC and would therefore over-estimate BTC's efficiency relative to the benchmark sample. CBL believes that the aforementioned factors cannot be adjusted in a more direct or suitable manner than by excluding interconnection out-payments from the cost definition. The necessary data in this regard is available in the public domain.

CBL agrees with the factors tested by URCA to explain differences in the output measures proposed by URCA across the comparator sample.  However, CBL believes that a relevant factor such as customer density, which is a multiplication of population density, mobile penetration and mobile market share, should be tested.  Again, the necessary data is available in the public domain.

CBL disagrees with URCA's proposed 'median performer' efficiency target because it is inconsistent with best international practice, which more frequently uses a top quartile or top decile performer efficiency target such as the UK regulator Ofcom.

In CBL's view, delays in the implementation of the efficiency adjustments should not reduce welfare. No third parties, be it operators or customers, should pay for BTC's inefficiently incurred costs.   Therefore, CBL prefers a one-off implementation of the efficiency adjustment instead of a phased one, which would continue to inappropriately allow BTC the recovery of inefficiently incurred costs. This, in turn, would be against the rules previously established by URCA. To reduce the incentives of delay tactics and to ensure that BTC has not recovered inefficiently incurred costs in the past, CBL proposes a retroactive application of efficiency adjustments.

Furthermore, it is unsatisfactory that the process of determining particular regulated prices should be defined on a case by case basis since this may lead to unequal or uneven treatment and unnecessary uncertainty. The process should be published and transparent.

## II.  RESPONSES TO THE QUESTIONS

**Question 1**

> **Do you agree with URCA's rationale for investigating BTC's cost efficiency? Please detail your response in full.**

CBL thinks that ensuring that the dominant fixed line operator and monopolist mobile operator is efficient is important for promoting competition in the market and affordable prices to the consumer

**Question 2**

> **Do you agree with URCA's preferred approach for the efficiency study, taking into account URCA's rationale for the study and the current data availability? Please detail your response in full.**

CBL believes that given the likely availability of data and the time required to conduct an absolute efficiency analysis for BTC, URCA's approach seems to be acceptable if implemented properly. CBL believes that an absolute efficiency analysis would be superior to URCA's preferred relative efficiency analysis. A relative efficiency measure may not directly reflect the particular situation of BTC. CBL considers that a relative efficiency analysis has to be implemented extremely carefully. One of the deficiencies inherent in using the relative efficiency approach is usually a lack of in-depth knowledge of the comparator companies and this makes sanity checks more difficult. The bottom-up model tends to avoid this deficiency. CBL is concern that using URCA's preferred approach, there may not be sufficient data to create an appropriate set of comparators and reflect the (main) most significant exogenous factors affecting efficiency. We recognize that an absolute efficiency approach may produce more robust efficiency estimates but requires very detailed costing and operational data and this would likely delay the implementation of efficiency adjustments even further. As the current situation is not compliant with URCA's Access and Interconnection Guidelines (ECS14/2010)[1], any further delays would be unacceptable. URCA is urged to complete the required analysis so that adjusted rates for previous RAIO charges can be applied retro-actively to operators. It is important that the market benefits sooner rather than later from any market corrections. CBL agrees that a cross-sectional total factor productivity (TFP) analysis would limit the set of comparators to the US carriers for which there is detailed information in the Federal Communications Commission's Statistics of Common Carriers. In CBL's view, this may be too restrictive. The partial efficiency approach (PFP) is equally well defined and does not limit comparator companies to the U.S. In CBL's view, this disadvantage outweighs that a PFP approach does not necessarily cover overall productivity of operators including any trade-offs between inputs.

CBL believes that standard benchmarking and data envelopment analysis are inappropriate methodologies to assess BTC's efficiency. Both fail to account for heterogeneity in the comparator samples. CBL believes that finding publicly available relevant financial and operational information for companies that may be suitable comparators for BTC will be quite a challenge given the rare and unusual circumstances in which BTC operates in the

---

[1] According to ECS14/2010, RAIO charges should allow the SMP operator to recover the efficiently incurred costs. In ECS01/2011 "URCA would like to remind all parties that Section 4.2 of the Final Access and Interconnection Guidelines explicitly state that BTC's RAIO charges must be cost oriented and reflective of efficiently incurred costs only."

marker[2]. CBL considers that adjusted benchmarking can be an acceptable methodology if implemented correctly.

## Question 3

| Do you agree with URCA's adopted approach for assessing: |
| --- |
| • BTC's relative efficiency; and |
| • its recent productivity trends? |
| Please detail your response in full. |

### Determination of the Benchmark Sample

The selection criteria for the benchmark sample are unclear. URCA explains that the selection of comparator operators is "partly determined by the availability of the required data" but fails to explain which other variables apart from data availability have played a role in the comparator operator selection.

### Definition of Suitable Cost Measures

URCA has defined total cost as Operating costs + Depreciation + WACC * Net Assets. CBL believes a much better definition of cost should exclude costs of sales such as interconnection out-payments which are outside the control of an operator. Adjusting for this exogenous factor in any other, necessarily more indirect way would require the same amount of information – if done properly- and be potentially much less accurate.      It would useful for operators to understand why URCA has not defined cost in a way that excludes interconnection out-payments. It is well-known that the proportion of exogenous costs like interconnects out-payments over total costs of a monopoly operator like BTC is significantly lower than for any of the comparator operators. Hence, excluding these exogenous costs would result in much lower costs for the comparator operators and only slightly lower costs for BTC. This, in turn would increase BTC's efficiency gap significantly[3]. As BTC is the only monopoly player in the sample, no statistical test[4] is designed to identify how significant the impact of exogenous interconnect payments is on efficiency levels.  CBL believes that ignoring the fact that BTC is a mobile network monopolist must be taken into account. Failing to do so is likely to result in a reduction in consumer welfare, i.e. customers would pay for this potential shortcoming in URCA's methodology. In order to achieve a consistent application of URCA's proposed methodology, it is necessary that exogenous factors (I.e. interconnection out-payments) should be excluded from the cost measure.[5]

---

[2]      Statement of Results  - ECS 08/2012 page 5 where URCA acknowledges that mobile monopolies are rare. Exceptions are the mobile operators of North Korea and Cuba, neither of which publishes sufficient information to conduct a robust efficiency analysis.

[3] CBL is happy to provide evidence on this, based on publicly available information if URCA wishes.

[4]      For instance, the so-called Omitted variable test with the Ramsey Regression Equation Specification Error Test (RESET) test would not detect any omitted variable because no other monopolists are in the comparator sample.

[5]      There is adequate data available on interconnect out-payments which can be used for a suitable set of comparators. If URCA has difficulties obtaining the necessary data, CBL can provide the

An operator operating under a calling-party-pays regime would be considered less efficient than an operator operating under a receiving-party-pays regime,. The output of both operators would be equal, but not the costs. The former would have significantly more costs under URCA's proposed definition of costs and would therefore erroneously be deemed less efficient than the same operator operating under a receiving-party-pays regime. Put differently, URCA's definition of costs leads to an (erroneous) under-estimation of a mobile operator operating in a receiving-party-pays environment and/or monopoly market. CBL insists that there is no reasonable way to adjust for this[6] other than defining total costs as follows:

Operating costs – Interconnect outpayments + Depreciation + WACC * Net Assets

**Definition of Suitable Output Measures**

CBL agrees with the following two cost and output ratios:

- the number of fixed voice connections as the main output measure for the fixed operator analysis and;

- total (annual) traffic volumes as an output measure for the mobile operator analysis.

However, CBL believes the number of fixed and mobile connections per employee to be an inadequate output measure for the lines per employee analysis. This is because the costs, – either incremental or total, given BTC's likely demand levels, of installing and operating a mobile line are much lower than those incurred for a fixed line. To start with, there is no such thing as a mobile line. Two heterogeneous outputs are being lumped together. Again, CBL believes that no matter how insignificant an econometric analysis may deem it, the mix of fixed and mobile lines makes a huge difference when it comes to "lines" per employee. This is the reason why it has never been used as an output measure as far as CBL is aware. URCA itself admits "that lines per employee analysis commonly focus on fixed networks only."

The justification URCA provides for mixing heterogeneous outputs is that "it was not possible to review total fixed lines per employee across operators as BTC is not able to provide disaggregated staff data for its fixed and mobile businesses. As such, URCA has conducted this analysis for joint fixed and mobile operators only (i.e., by using a total fixed and mobile connections per employee measure)."

It is difficult to understand BTC's inability to identify how many employees or full-time equivalent employees work in its fixed line business. The absence of this information raises questions about how BTC allocated personnel costs to its fixed line business. In the absence

---

appropriate references. Furthermore, CBL believes the impact of the adjustment for exogenous out-payments to be significant and likely to alter the outcome of URCA's efficiency study significantly. For instance, using URCA's proposed cost definition and applying it to Telecom Argentina, the interconnect out-payments would account for more than 10% of its total costs .

[6]     A heteroscedasticity test  would not reveal any anomalies, either.

of such information how does BTC respect the cost causality principle in its cost accounting exercise? CBL would like to stress that the failure to provide the most basic of operational statistics, namely the number of employees is likely to result in a significant reduction in the comparator sample to only operators that have a fixed **and** mobile network . This reduces the robustness of the efficiency study markedly.

**Identification and Derivation of Cost Adjustments**

CBL agrees with testing the factors stated in Table 5 of the consultation document. However, it is not in a position to assess whether the factors shown in Table 6 are indeed statistically significant to explain differences in the output measures proposed by URCA across the comparator sample. CBL would therefore welcome URCA could disclosing the spreadsheet with the calculations, if necessary stating dummy figures in lieu of confidential ones.

It is undisputable that mobile networks have a significant level of fixed costs. Therefore, the more customers an operator has per base station, the lower its unit costs can be expected to be. If a cellular operator doubled its market share in each cell, it may have to add additional carriers or transceivers, but not the site nor the tower, etc. BTC has a market share of 100% of the mobile market in the Bahamas, whereas all the four operators of URCA's proposed mobile sample we have found in Merrill Lynch's Global wireless matrix (Indonesia, Philippines, Czech Republic and Argentina) had market shares of between 20% and 34%, i.e. significantly lower than BTC's 100% share. We believe URCA should test a customer density driver, which would be a combination (multiplication) of population density, mobile penetration and market share. Data on all these variables is publicly available.[7] CBL would like to point out that a statistical regression of mobile penetration rates alone of the proposed sample is likely to show no statistical significance. This is because mobile penetration rates are too similar across countries of the sample operators and because they only capture the factors affecting customer density to a small and insufficient extent[8]. Likewise, overall population density is also an incomplete driver.

We agree with the formulae URCA proposes to derive the Adjusted Total Costs and Output Measure.

**Deriving Relative Efficiency of BTC**

URCA states that:

> *"some of the observed differences in the (adjusted) cost/output measures are likely to not be reflective of BTC's relative efficiency but instead be driven by external cost drivers not fully being controlled for within the analyses. Recognizing this potential limitation, URCA will endeavour to ensure that any efficiency adjustments applied to BTC represent a conservative measure of its relative inefficiency. This can be*

---

[7] As previously mentioned, Merrill Lynch's Global Wireless matrix collects market shares and mobile penetration rates for several hundreds of mobile operators. If URCA has difficulties obtaining the necessary data, CBL would be happy to assist it.

[8] The other variables being population density and market share.

*achieved by (i) deriving a conservative measure of BTC's total costs; and (ii) setting a less strict efficiency target level for it."*

CBL would like URCA to explain what it means by "deriving a conservative measure of BTC's total costs". Furthermore, for the avoidance of doubt CBL would like URCA to explain where it plans to source BTC's costs and operational statistics from.

CBL understands that "setting a less strict efficiency target" is proposed to be a median performer target. Such an unusually lenient interpretation of what the benchmark efficient operator is amounts to attempting to correct one mistake with another one without knowing if the mistakes compensate each other. Instead, it is -a priori- equally likely that the potential shortcomings of URCA's study, inherent to the methodology chosen, under-estimate BTC's inefficiency. In that case, the so-called "conservative" selection of the benchmark operator would not be an error that compensates another error but rather aggravates it. In CBL's view, if URCA feels it needs to be conservative, it should be conservative in the calculation of the values of its efficiency indicators for the benchmark sample, not in determining the efficient benchmark operator threshold. Instead of the median operator, we believe the first decile operator should be used as the efficient benchmark operator in case an indirect efficiency analysis is deemed the preferred option. This is, amongst other cases, in line with Ofcom's definition of efficiency targets as URCA itself observes.

**Review of BTC's Recent Productivity Trends**

The BTC Trend Analysis does not measure productivity trends for traffic outputs. URCA does not do this because intra-island calls are not metered on BTC's network[9]. CBL understands that this refers only to BTC's fixed network. CBL suggests that productivity trends for mobile traffic be measured and compared to other operators such as those in the comparator sample. As mentioned previously, CBL believes that any analysis treating fixed lines and mobile customers as homogeneous products is fundamentally flawed. This applies also to measuring trends for

- Total fixed and mobile connections per employee; and

- Total average cost per (fixed and mobile) connection.

CBL doubts whether productivity trend benchmarks with other sectors in The Bahamas are meaningful because the market price of a substantial part of BTC's output is distorted by its monopoly or SMP status. CBL agrees that international benchmarking of productivity trends based on the ITU database is useful in principle. However, URCA proposes this be undertaken for the total fixed and mobile connections per employee measure only, which CBL respectfully submits is a measure void of significance. Again, BTC's alleged inability to find out how many employees it has in its mobile business reduces the value or robustness of the proposed efficiency study in CBL's view.

---

[9] ECS 04/2012 – page 27 at footnote 43

**Consultation Question 4**

> **Do you agree with potential policy conclusions URCA has drawn from the preliminary efficiency study results? Please detail your response in full.**

In CBL's understanding URCA's (preliminary) policy conclusions are the following:

1. An efficiency adjustment to BTC's regulated wholesale charges may be required

2. Efficiency considerations may also become important in forward looking retail price controls

3. To be "conservative", a 'median performer' efficiency target should be used within this analysis

4. Owing to the magnitude of the potential adjustments, URCA is minded not to apply these as a one-off adjustment in a single year.

5. The process of determining particular regulated prices will be considered on a case-by-case basis and URCA will issue further information on these processes.

The remainder of this section addresses each of the aforementioned five preliminary policy conclusions.

**1. Wholesale service efficiency adjustment requirement for BTC**

URCA states that "BTC may be required to adjust its revised RAIO charges based on the outcome of this efficiency study". CBL believes that the term "may be required" is too weak and results in regulatory uncertainty. BTC is (and not "may be") required to adjust its costs for efficiency according to the Access and Interconnection Guidelines. In URCA's final decision on BTC's Draft Reference Access and Interconnection Offer (RAIO) URCA itself leaves no room for interpretation or uncertainty:

> "URCA would like to remind all parties that Section 4.2 of the Final Access and Interconnection Guidelines[10] explicitly state that BTC's RAIO charges **must be cost oriented and reflective of efficiently incurred costs only**."

CBL believes that BTC must apply efficiency adjustments to its RAIO charges and should do so retroactively as CBL has argued in the aforementioned RAIO consultation[11]

**2. Efficiency adjustments in retail markets**

According to URCA, "efficiency considerations may also become important in forward looking retail price controls". We believe that the retail market for mobile services in the Bahamas is similar in structure to the interconnection market. Therefore, the same remedies, including the efficiency adjustment should apply to mobile retail rates.

---

[10]     ECS14/2010
[11]     ECS01/2011

### 3. "Conservative" efficiency target

According to URCA, a 'median performer' efficiency target should be used within this analysis to be "conservative".

CBL contends that it is uncommon to use a median performer in this type of study and it is questionable to do it in order to obtain a conservative efficiency target. There is a significant risk of compounding the shortcomings of the adjusted benchmark analysis, i.e. of trying to correct an error with another error that goes in the same direction instead of compensating. Ofcom has repeatedly used the top decile benchmark operator as the efficiency target in its efficiency studies and is likely to have faced similar or at least equivalent uncertainties. Our recommendation would be to follow Ofcom's example or at least the top quartile benchmark operator target

### 4. One-off efficiency adjustments vs glide paths

URCA believes that the potential adjustments may be large and therefore is not minded to apply them as a one-off adjustment in a single year. CBL believes that the financial impact of an immediate implementation of the entire adjustment on BTC's P&L account is likely to be rather small and easy to digest, in particular if its mobile business is making super-normal monopoly profits. This is relevant because a significant share of the wholesale revenue affected by an efficiency adjustment is likely to come from BTC's mobile business.

### 5. Process to determine particular regulated prices

According to URCA, "the process of determining particular regulated prices will be considered on a case-by-case basis and URCA will issue further information on these processes". CBL believes that this is unsatisfactory since it lacks transparency and does not promote certainty. The process should be defined and published.

### III. Conclusion

URCA's methodology is acceptable in the current circumstances. The implementation has to be improved excluding interconnect out-payments from the cost definition, testing a customer density factor for mobile operators and selecting a more widely used efficiency target than median performer. One-off and retro-active application of efficiency adjustments using a well-defined, transparent process is necessary to comply with URCA's requirement for BTC not to recover any inefficiently incurred costs.

Respectfully submitted,

Judith Smith
Legal Counsel

/jms