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**Response to URCA's Request for Cost Data on
Number Porting Charges in relation to:**

**The Implementation of Fixed Number Portability in
The Bahamas pursuant to Section 80 of the
Communications Act, 2009 (ECS 11/2013)**

Submitted to the

Utilities Regulation and Competition Authority

submitted by

Cable Bahamas Ltd.

August 20, 2013



1. Introduction

CBL, including its affiliates Caribbean Crossings Limited and Systems Resource Group Limited (“CBL”), hereby responds to the request for cost data set out on page 41 of the Preliminary Determination issued by the Utilities Regulation and Competition Authority (“URCA”) on 30 July 2013¹.

URCA has asked both CBL and the Bahamas Telecommunications Company (“BTC”) to provide relevant information on the cost per successful porting transaction using the type of Number Portability (“NP”) system that has been approved by URCA for implementation in The Bahamas, namely, an efficient Donor Operator using an XML exchange to interface with the All Call Query (“ACQ”) routing system, supported by a centralised NP database and a clearinghouse function provided by a third party.

In its Preliminary Determination, URCA has proposed that:

- i) The Donor operator shall not charge the porting subscriber for requesting NP;*
- ii) The Donor operator may charge the Recipient operator for successful porting transactions;*
- iii) The Donor operator’s charge must reflect relevant incremental costs directly related to an efficient porting process, and must be reciprocal (i.e., each operator pays the other operator the same amount of money for the same service);*
- iv) The Donor operator’s charge will be subject to URCA’s review and final approval. In determining the level of charging, URCA will first seek to obtain relevant costing information from operators in The Bahamas to inform its decision on the matter. However, absent relevant local information, URCA will make a determination based on charges in comparable markets where NP has been successfully implemented.*
- v) Going forward, URCA may review the charge if there is substantial evidence that a Bahamas based rate would be more beneficial; and*
- vi) URCA will not permit the Recipient operator to charge customers for porting to its services.*

In response to URCA’s request, CBL has consulted an expert in the field of number portability in order to evaluate the types costs that should be considered and their expected

¹ Preliminary Determination, The implementation of Fixed Number Portability in The Bahamas pursuant to Section 80 of the Communications Act, 2009, ECS 11/2013, 30 July 2013.

magnitude. In general, CBL accepts and supports URCA's proposal and, in particular, agrees that the Donor's charge should be:

- based on incremental costs
- relate to an efficient porting process
- be reciprocal.

However, we believe that the solution adopted by URCA should reflect the circumstances in today's market and, for at least a transitional period, be calibrated to offset the overwhelming advantages the BTC enjoys in the fixed voice market.

As discussed below, CBL proposes a transitional solution that will require no payment by the Recipient Operator for porting fixed numbers when responding to a porting approval request or a porting deactivation request. This is because the relevant costs of an efficient Donor Operator using an XML exchange to interface with a centralised database should be negligible or zero, and in any event will exceed the costs of administering the charging mechanism.

URCA should not lose sight of the fact that the centralised database system it has approved for use in The Bahamas is somewhat unique for the size and demographics of the country. There are not many well developed benchmarks. This system should materially reduce the time required for Donor Operators to complete each number porting transaction by eliminating the need for most manual interactions. The benchmark fees from most other countries of comparable size are therefore not directly comparable and must be "discounted" substantially when applying them in The Bahamas context.

We present below our assessment of the competitive implications, followed by an analysis of what will be involved and what costs should reasonably be included. We also provide relevant benchmarking information where we have been able to find it.

2. Competitive Impact and Transitional Approach

In considering which categories of costs should be included in the assessment, CBL urges URCA not to lose sight of the fact that in both the fixed and mobile voice markets, BTC currently enjoys a position of extraordinary market power as a result of its historic (and in the case of mobile, still continuing) *de jure* monopoly over these services. Although it is right

that both SMP and non-SMP operators should contribute to the costs of establishing and funding the NP system, URCA should ensure that the type and level of costs imposed on non-SMP players are proportionate to their start-up position in the market at this time as against BTC's overwhelming share. This is fully consistent with the costing principles adopted by URCA, which provide, among other things, that "[t]he objective to promote competition should not be weakened by the mechanism of cost recovery. In particular, the mechanism should not be used to raise a competitors's costs nor weaken their ability to compete."

Upon the introduction of NP, it can be expected that BTC will rarely be the Recipient Operator in the vast majority of cases because BTC controls the lion's share of the fixed voice market and will most often be the Donor Operator. This situation is likely to prevail for at least two to three years. URCA should therefore adopt a transitional approach to imposing any porting transaction charges on Recipient Operators. The transitional charging arrangements for fixed number porting should take full account of this highly asymmetrical situation at this stage of market opening and explicitly recognise the negative impact on competition that too high a porting charge (and the associated administrative cost burden) can have on Recipient Operators. Over time, the transitional solution can be revisited and adjusted if market conditions change.

3. Assessing the Cost of Successful Porting Transactions

3.1 Analysis of the Incremental Cost of Porting

The principle of incremental costs means that only those costs that are incurred as a result of a number being ported should be included. This means that the Donor costs should not include the costs it would have incurred if the customer simply terminated the service, without porting. This is fully consistent with the cost principles adopted by URCA, including the principles of Relevant Costs, Cost Causation, and Cost Minimization.

Thus, the Donor costs to be included are as follows:

(Costs of a subscriber leaving)	minus	(Costs of a subscriber leaving)
(and porting their number)		(without porting their number)

The following costs should therefore be excluded:

- The cost of closing the donor account and administering any debt recovery;
- The setup costs of the porting process because they are not related to individual portings;
- Any costs associated with the ported number that are incurred after the porting transaction has been completed. For example any costs associated with the Recipient's possible subsequent closure of the account and the return of the number to the Donor. In many cases the numbers will remain in use for a long and indeterminate period.

Furthermore, the costs of updating databases for routing should be excluded. The costs of supporting All Call Query routing are a separate routing issue and apply to all operators, not only to the Recipient and the Donor operators. In any event, we understand that the updating of routing is to be automated, which means that the incremental cost would be zero.

3.2 Activities to be costed

There are three different classes of porting (see section 3.3.2 of FNP Business Rules):

- Single number personal porting;
- Multiple number porting;
- Non-personal porting;

and there are two separate activities for the Donor:

- Responding to a Porting Approval Request; and
- Responding to a Porting Deactivation Request.

Not every Porting Approval Request will lead to a Porting Deactivation Request because some portings may be refused and some may be withdrawn. Therefore we consider that in principle, there should be six separate cost-based charges.

We now consider what is involved in each of these activities separately.

3.3 Responding to a Porting Approval Request

We note that the Recipient plays a major part in the overall validation of the porting request and in the measures to prevent fraudulent or unauthorised portings. Consequently the actions for the Donor are relatively few.

According to section 6.2 of the FNP Business Rules, when it receives a Porting Approval Request, the Donor checks that the subscriber is not already subject to suspension for reasons unrelated to payment. No other check is specified in section 6.2.

Three response codes are given for the Donor to use in refusing a request:

- 31 - A/C Suspended - Request rejected because the account has been suspended at the request of the Subscriber;
- 32 - A/C problem - Request rejected because in the case of a request for multiple number portings the numbers are not held under the same account (used in multiple number portings only);
- 33 - Special - Request rejected because the Subscriber is already subject to suspension of any service for reasons unrelated to payment (used in single and multiple number portings).

Therefore the Donor will have to check that the number is active on its network and that the account is not suspended. In the case of multiple number portings, the Donor will have to check that all the numbers to be ported are held on the same account.

The Porting Approval Request will be received by the donor either manually through a person reading a form on the web interface to the portability database, or alternatively the database will interact automatically using a XML exchange with the subscriber management. Because an efficient operator would use an XML exchange platform, this should be the cost that is used in determining how much to charge for this service. For an automated process, which an efficient Donor Operator should have in place, *there would be no attendant involvement and hence no associated costs.*

Even if a message is received manually, it will be read on a screen by an attendant and then the attendant will need to perform the checks on the subscriber management system using another window on the screen. The NP consultant who is advising CBL has witnessed these

checks being made at Jersey Telecom for mobile portability and considers that the check for a single number (personal or non-personal) should take an experienced trained operator no more than a minute unless the systems are very difficult to use, in which case they would not be efficient.

In the case of multiple numbers, it may be necessary in some cases to compare a list of individual numbers on the porting web interface with a list on the subscriber management system, but in most cases it will be a block rather than a list of separate numbers. We estimate that this could add on average a further minute. We think it highly unlikely that a long list of separate numbers would be ported in a single transaction because separate numbers would tend to be used only where the subscriber has multiple premises. For the same reasons, we think that blocks of numbers are much more likely and they are easier to check.

Thus we think that the incremental cost of the transaction is the cost of the attendant's time handling a manual process and that the times would be:

- Less than one minute for a single number, whether personal or non-personal;
- Less than two minutes on average for multiple numbers.

As already noted, however, for an efficient Donor Operator with an automated process in place, *there would be no manual involvement and hence no costs.*

3.4 Responding to a Porting Deactivation Request

Later in the process after the Recipient has activated the ported number on its network, the Recipient sends a Porting Deactivation Request to the database. The database performs several checks (section 8) and if any fails the database sends a NACK to the Recipient and there is no further activity for the Donor.

If the checks are passed, then the database:

- Sends an E164Ported message to all operators to update their routing (NB: the specification says it should be sent only to the other operators but the Donor's routing system may also need to receive it), and

- Forwards the Porting Deactivation Request to the Donor

The activities required of the Donor are set out in section 9.1. According to R13, the Donor must:

- a) deactivate the ported number on its network;
- b) close any mailboxes with the loss of any messages stored in them and any other services attached to the ported number; and
- c) send a Porting Deactivation Response to the NPC.

There are no checks for the Donor to make as the porting is regarded as having taken place at this point.

The deactivation and closure of mailboxes are actions that the Donor would have to make anyway in closing an account without porting and so are not eligible costs under the principle of incremental costs.

The only activity to be costed is sending a response to the NPC. We estimate that this will take less than one minute and will be the same for all types of porting transactions as they will all involve only one account.

3.5 Summary

THIS SECTION CONTAINS CONFIDENTIAL INFORMATION THAT SHOULD NOT BE DISCLOSED TO THE PUBLIC, WITHOUT THE PRIOR WRITTEN CONSENT OF CBL.

TEXT DELETED.

TEXT DELETED

Activity	Single number personal	Single number non-personal	Multi-number
Handling the Porting Approval Request	TEXT DELETED	TEXT DELETED	TEXT DELETED

Handling the Porting Deactivation Response	TEXT DELETED	TEXT DELETED	TEXT DELETED
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Table 1: CBL's estimates of time needed for porting actions

TEXT DELETED

Activity	Single number personal	Single number non-personal	Multi-number
Handling the Porting Approval Request	TEXT DELETED	TEXT DELETED	TEXT DELETED
Handling the Porting Deactivation Response	TEXT DELETED	TEXT DELETED	TEXT DELETED

Table 2: CBL's estimates of cost of porting actions

4. Benchmarking

4.1 Bermuda

Bermuda is currently planning to implement NP strating in March 2014. Mobile portability will be mandatory but fixed portability will follow the original UK Ofel model and require exporting by the incumbent if requested by another operator. This is an opt-in model driven by demand from the new entrants and is designed to make the importing of numbers optional so that unnecessary costs can be avoided. There will be no requirement for a central database but the operators are free to choose to procure one. The overall requirements have been designed to allow costs to be minimised.

The Regulatory Authority of Bermuda has just published its rules² and they will maximum levels for porting charges as follows:

Item	Maximum Charge
Successful portings	
Individual Fixed Numbers	USD 6.00
Individual Fixed Numbers that require additional authorisation	USD 9.00
Individual post-pay Mobile Numbers	USD 4.00
Individual pre-pay Mobile Numbers	USD 3.00
Individual Mobile Numbers that require additional authorisation	USD 9.00
Blocks of 100 or more Fixed Numbers	USD 25.00
Unsuccessful portings and pre-authorisation checks	
Individual Fixed Numbers	USD 3.00
Individual Fixed Numbers that require additional authorisation	USD 6.00
Individual post-pay Mobile Numbers	USD 3.00
Individual pre-pay Mobile Numbers	USD 2.00
Individual Mobile Numbers that require additional authorisation	USD 6.00
Blocks of 100 or more Fixed Numbers	USD 6.00

Table 3: Maximum charges expected in Bermuda

It should be noted that the absence of a central database significantly increases the work that the donor needs to do compared to the solution adopted in the Bahamas. Thus, these figures cannot be compared directly to the situation in The Bahamas or that of an efficient operator.

The figures use in Bermuda were based on the cost figures developed in Malta, with some adjustments, and were not based on any new detailed analysis.

4.2 Cayman Islands

² See <http://www.rab.bm/images/PDF/FINAL-Number-Portability-Determination-v51.pdf>

The Cayman Islands started fixed and mobile number portability in June 2012 and use a central database.

The charges are not regulated in detail but the Regulator has told us that there are no payments between the Recipient and the Donor at present.

The Donor is not allowed to charge the subscriber for leaving but the Recipient may charge up to US\$12.

4.3 Gibraltar

Gibraltar follows similar principles to those in The Bahamas expect that the Recipient may charge the porting subscriber. The rules³ in Gibraltar are;

- The Donor Operator shall not charge the porting Subscriber for requesting number portability;
- The Donor Operator and the block operator may charge the Recipient Operator for the reasonable recurring costs for;
 - a) an unsuccessful porting transaction;
 - b) a successful porting transaction;
- The Recipient Operator may charge the Subscriber for requesting number portability;
- Any charges for costs between operators or by an operators should not be a disincentive to a Subscriber wishing to port his number(s); and
- Operators may waive their rights to charges or simplify/modify these arrangements by mutual agreement and with the consent in writing of the GRA.

According to the regulator, in practice there are no fixed porting charges in Gibraltar. In Gibraltar, there is no centralised database as in The Bahamas.

4.4 Isle of Man

The Isle of Man started mobile number portability in June 2009 using a central database similar to that in The Bahamas.

³ See <http://www.gra.gi/sites/communications/downloads/288/a012010.pdf>

Fixed number portability is not offered as there is no fixed network competition to the services provided by Manx Telecom.

4.5 Jamaica

The OUR has announced that number portability will be required from March 2014 and it is expected that a central database will be used. The drafting of porting rules was expected to be completed by July this year but they have not yet been published.

4.6 Malta

Malta is one of the only countries known to us where the regulator has spent some time with the operators reviewing porting charges after the porting system was fully operational. Malta is quite similar to The Bahamas in that it is also an island and the population is almost the same (452k vs 353k in Bahamas) and the GDP PPP is similar (US\$27k vs US\$31k in Bahamas)⁴. However, there is no centralised database and the costs reflect this fact. The regulator’s conclusions are published at:

<http://www.mca.org.mt/sites/default/files/pageattachments/201003%20Further%20Consultation%20on%20Porting%20Charges.pdf>

After the review, the regulator (the Malta Communications Authority (“MCA”)) set the following charges for fixed portings:

Type	Euros	US\$
Unsuccessful porting request – personal	0.75	1.00
Unsuccessful porting request – non-personal	1.65	2.20
Successful porting – personal (single line)	3.45	4.60
Successful porting – non-personal (single line)	4.35	5.80
Successful porting – primary rate access single number (30 circuits)	12.45	16.59
Successful porting – DDI number block	31.15	41.52

Table 4: Porting transaction charges in Malta after review

⁴ Figures from Wikipedia

The handling of an unsuccessful porting request is equivalent in result to the handling of a Porting Approval Request. However, there is a substantial differences in the porting system in that Malta does not have a central database whereas The Bahamas does. This means that the Donor Operator has to do significantly more work to handle a porting request in Malta. In Malta there is an electronic messaging system between the operators but in addition, the porting request form and copies of the subscribes ID have to be sent by email to the Donor.

In Malta the Donor has to do the following⁵:

- Check that the combination of the number to be ported and the account number sent match the Donor's records;
- Check that the name on the porting request form matches the account holder name, and in the case of a non-personal account check that they are the authorised representative;
- Check that the ID number on the request matches that on the account record;
- Check that the number does not have a Carelink service associated with it;
- Check that the subscriber does not have unpaid bills that are overdue;
- Check that the signature on the porting form matches that on the Donor's records.

In contrast, in The Bahamas, the Donor only has to check that the account is not suspended.

This extra work accounts for the difference between the unsuccessful porting charges in Malta and estimated costs in The Bahamas.

The charges for successful portings in Malta include both the equivalent of the responses to the Porting Approval Request and the Porting Deactivation Request. Thus to obtain the equivalent charges for the Porting Deactivation Request, the unsuccessful request charges should be subtracted from the successful porting charges. The following table shows the results in US\$.

	Malta (US\$)	CBL estimate (USD\$)
Single number - personal	4.60-1.00 = 3.60	0.30

⁵ See section 8 of <http://www.mca.org.mt/sites/default/files/pageattachments/201302-fixed-and-ddi-np-specifications-fixed-number-portability-ordering-process-specifications.pdf>

Single number - non-personal	5.80 - 2.20 = 3.60	0.30
Multi Number - (DDI in Malta)	41.52 - 2.20 = 39.32	0.30

Table 5: Comparison of Maltese charges for Porting Deactivation Request with CBL estimates

Again there are substantial differences.

- In Malta, there are two subsequent stages to the process with a possible gap of up to 20 days after the Authorisation, whereas in the Bahamas there is only one further stage;
- In Malta, the Donor may have to perform some checks a second time such as the payment state of the account as this may have changed;
- In Malta, the Donor has to make checks on the timing and non-duplication of the requests whereas in the Bahamas all these checks are carried out by the database;
- In Malta, the donor has to apply onward routing from its network management centre whereas in the Bahamas the routing is updated automatically.

Thus the costs incurred by Donor Operators in Malta are substantially higher than in The Bahamas.

In the case of DDI numbers, The MCA did not review the work needed but instead decided to retain the same percentage differences that were used in the earlier much higher charges. Thus the DDI figure of US\$39.32 is not based on an estimate of the actual costs involved (see 7.2.3 in the MCA Decision).

Thus we conclude that the estimates made by the MCA correspond to much higher real costs than occur in The Bahamas and that the multi-number DDI figure is not cost-based and should not be used as a benchmark.

In practice, the main fixed operators Melita and Go waive the charges between each other according to our sources.

4.7 United Kingdom

The following table shows the current porting order charges made by BT⁶.

Type	Charge £	Charge US\$
Single Line, Electronic Data Interchange, Real Time Router in use -	£0.49	\$0.76
Multi-line, fax based ported in real time	£7.08	\$11.06
Multi-line, Standard DDI: block portability	£13.21	\$20.64
Multi-line, Complex DDI: block portability	£22.61	\$35.32

Table 6: BT charges in UK

These charges were determined originally by OfTel in 2002⁷ using the LRIC approach, and have subsequently been reduced. Generally, the BT number portability system requires more work than in The Bahamas because, like Malta, there is no central database in the UK. Using the LRIC approach means that the costs are not purely incremental or marginal but exclude some common costs. Nevertheless the figures for single line portings are relatively low.

In the case of DDI blocks, the higher charges in the UK probably reflect more extensive validation checks and more complex updating of routing in switches since BT and the other fixed operators in UK do not use All Call Query routing.

4.7 Other countries

There is very little published data on fixed porting charges but there is much more data on mobile porting charges.

According to a paper presented by Neustar⁸, which is a large portability database operator that has run the North American system since its start, there are no inter-operator mobile porting transaction charges in the following countries:

- Australia

⁶ See

<http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=kDkYIXGkuDxhC5oS0XKJPJocCWTtNCZBtKnb0bsRD3FtZ6rNZujnCs99NbIKJZPD9hXYmijxH6wr%0ACQm97GZMyO%3D%3D>

⁷ See <http://www.ofcom.org.uk/static/archive/oftel/publications/pricing/2002/nupo0502.htm>

⁸ See http://www.itu.int/ITU-D/treg/Events/Seminars/2011/Moldova/pdf/Session3_Country_BestPractices.pdf

- Belgium
- Canada
- Ecuador
- Finland
- France
- Hungary
- Ireland
- Latvia
- Poland
- Romania
- Sweden
- Turkey
- UK

The handling of porting transactions for mobile is quite similar to that for fixed except that, once again, it should be noted that the design of the porting process in The Bahamas minimises the work that the Donor has to do and maximises the value obtained from the central database.

4.8 Summary

The following table summarises the situations in the countries where we have been able to access the relevant cost data:

Country	Fixed portability implemented	Central database	Donor workload (fixed portability)	Can donor charge recipient?	Are charges waived?
Bahamas	Due Sept 2013	Yes	Low	???	???
Bermuda	Due March 2014	No - optional	Medium	Yes	Not known yet
Cayman	June 2012	Yes Similar to Bahamas	Probably low (no details)	Yes (?)	Yes
Channel	MNP only	Yes	N/a	N/a	N/a

Islands	Dec 2008	Similar to Bahamas			
Gibraltar	June 2011	Yes Similar to Bahamas	Probably low (no details)	Yes	Yes
Isle of Man	MNP only June 2009	Yes Similar to Bahamas	N/a	N/a	N/a
Jamaica	Due March 2014	Yes probably similar to Bahamas	Probably low (no details)	Not known yet	Not known yet
Malta	March 2006	No	High	Yes	Yes
UK	Late 1990s	No	High	Yes	No

Table 7: Comparison of countries

5. Conclusion

Our analysis of the tasks involved shows that the incremental cost to the Donor of handling a porting transaction is very low. We estimate that the total time involved for all types of transactions should not exceed 3 minutes, *with a corresponding cost of under USD \$1, even in the most inefficient of systems* (centralised database with ACQ and no automated interface).

The lowest cost and activity level will result from:

- A good level of trust with the Recipient in carrying out significant validation checks; and
- A well specified and well designed central database.

In the Caymans and Gibraltar, where there is also fixed portability and a comparable database (they use the same supplier PortingXS), the operators in practice waive any charges between each other according to what we have been told.

There has been more analysis of fixed porting transaction costs in Malta and UK, but neither of these countries has a central database and so the Donor has to undertake considerably

more work than will be the case in The Bahamas. The costs assessed for single number porting in these countries are USD \$4.60-5.80 and USD \$0.76 respectively.

In the case of Malta we understand that the operators waive the charges.

On the basis of this evidence we recommend that portability should start in the Bahamas with zero charges between the operators. Over time, URCA can review the situation and determine whether any adjustments are justified on the basis of actual cost data and considering the incremental costs of an efficient Donor Operator.

If URCA does not accept this recommendation, then CBL urges URCA to adopt a one-year interim determination that would provide the following:

- The application of porting charges with levels no higher than BSD \$0.60 for successful single numbers personal and non-personal portings, and BSD \$0.90 for successful multi-number portings; and
- After the system has been in operation for a year, URCA should undertake to visit the operators to observe and evaluate their actual handling of portings and at that time make its own assessment of how much work and time is involved, consider the relative efficiency of the operators, and then adjust the charges accordingly.

Sincerely yours,

Cable Bahamas Ltd.