



GOVERNMENT OF BERMUDA

Ministry of Energy, Telecommunications and E-Commerce

The Department of Telecommunications

**Number Portability
Consultation Responses**

**Ministry of Energy, Telecommunications
& E-Commerce**

7th January 2009

Introduction

This document provides a summary of the responses received following METEC's Number Portability for Bermuda consultation document which was published in August 2008. In the consultation document 13 questions were asked.

Responses Received

Initial responses were received from ten separate parties, the parties who responded were:

- BLDC
- BTC
- M3 Wireless
- North Rock Communications
- BDC
- Cable and Wireless Bermuda
- Digicel
- Transact Internet Services
- Logic
- Quantum

Four parties also submitted comments on the initial responses. The parties who responded to comments are listed below. Their comments have been included where applicable.

- BTC
- Cable and Wireless Bermuda
- Digicel
- Quantum

Consultation Questions and Responses Received

Question 1:

Does the respondent agree with the comments above that the lack of LNP in the Bermuda market can be considered to be a “barrier to switching” and thus limit the effect of competition? If the respondent does not agree then they are requested to provide their reasoning for this?

Of the ten responses received by METEC regarding the LNP Consultation document, only one respondent, wholly disagreed that the lack of LNP in the Bermuda market can be considered to be a “barrier to switching” and is limiting the effect of competition.

The remaining nine respondents all agreed that the lack of LNP in the Bermuda market is a barrier to switching and limits the effect of competition. Cable & Wireless Bermuda reasons that the lack of LNP makes it easier for telecommunications providers to retain existing customers even if the services they offer, in terms of quality, choice and price, are regarded as inferior to the services offered by a competitor. Cable & Wireless Bermuda also states that the hassle and inconvenience of having to change telephone number(s) may deter customers from switching even when they are dissatisfied with the service they receive. M3 Wireless raises the point that the impact of changing telephone numbers on corporate customers will differ from the impact on consumers as changing numbers can mean a change is required to stationary, business cards and signage.

One carrier warns that if the cost to implement LNP is sufficiently high, it may discourage new carriers from entering the market which would limit competition. As the cost and complexity to operate increases, barriers to entry increase and there will be fewer entrants into the market combined with more consolidation of existing carriers. This leads to less competition in the market and less choice for the consumer

BDC does not think that that the lack of LNP is a ‘barrier to switching’ nor that it limits the effect of competition. BDC says that within the wireless sector competition is intense as there are three carriers competing for a finite market, and managing to survive. BDC also says that churn rates have been consistent, which indicates that customers are exercising their right to choose and are changing service providers in accordance with their needs. In addition, even though BTC agrees that the lack of LNP in the Bermuda market is a barrier to switching BTC does not believe that any barriers to switching exist within the fixed local network since BTC currently provides number portability in the form of fixed call forwarding functionality to any customer who chooses to have his or her number ported to another carrier.

Following the publication of responses to Question 1, the following comments were received:

Cable & Wireless Bermuda commented that the only respondent that did not believe that the lack of number portability was a barrier to switching was BDC. Cable & Wireless Bermuda says that it is worth noting, however, that even BDC acknowledged that the lack of number portability meant that business customers in particular will face an additional cost burden when they choose to change providers.

Cable & Wireless Bermuda believes that BTC's current offering of call forwarding is an inferior form of number portability. Any of BTC's customers that wish to port their number are still liable for BTC's monthly line rental charge together with a \$3 per month charge for call forwarding capability. Cable & Wireless Bermuda thinks that this does not make this an appealing option for customers and again highlights the need for there to be proper wholesale products available, at cost-based prices, in order for the regulatory reform proposals to achieve the objective of increasing competition in Bermuda.

Ministry's Views

The Ministry, after careful consideration of the responses and comments received, considers that the lack of LNP in the Bermuda market can be considered to be a "barrier to switching" and thus limit the effect of competition.

The Ministry understands that BTC believes that by offering call forwarding there is not a barrier to switching in the fixed market however, the call forwarding product currently used by BTC to provide portability is not an efficient and effective solution for LNP and is currently only offered by one carrier in Bermuda.

Question 2:

Can the respondent describe the problems that it believes the lack of LNP causes in the Bermuda market?

The respondents highlighted various problems that they believe a lack of LNP causes in the Bermuda market. However one problem in particular was highlighted by six of the respondents. BLDC, M3 Wireless, North Rock Communications, Cable & Wireless Bermuda, Digicel and Transact all highlighted the problem of the customer being tied/locked into the carrier's service due to a lack of LNP. M3 Wireless and Transact say that this is due to the inconvenience of switching. BDC, Cable & Wireless Bermuda, Transact and Quantum say the cost of switching is a problem, especially for business customers that need to change advertising materials, stationary etc. when they change their number.

BDC says the most pronounced problem associated with changing carriers is that individuals and businesses that do switch service provider have to inform others of the change, which can potentially lead to missed contacts during the transition period. Cable & Wireless Bermuda also says that the lack of LNP in Bermuda makes it easier for telecommunications providers to offer inferior services or prices, even if competing carriers have better offerings. Logic views the main problem being that new carriers entering into the market have no customers. A lack of LNP will slow customer acquisition because it is a barrier to switching for customers.

In contrast to the other responses, BTC claims that there is not a lack of number portability in the fixed line market in Bermuda since this service is available to customers today via fixed call forwarding.

Ministry's Views

The Ministry considers that the carriers have identified a number of problems that it believes are due to the lack of LNP in Bermuda. In the Ministry's view an important problem that was identified by the carriers is the effect that customers are 'locked' to a carrier because there is no LNP solution available.

Question 3

Can the respondent describe what difference it believes the introduction of LNP will make for consumers and carriers in the Bermuda Market?

In relation to the differences that LNP will make for consumers in the Bermuda market, of the nine respondents to this question, seven of them mention that consumers will be given a choice and that they can switch providers without any cost or inconvenience. However Digicel says that through research undertaken by leading consultancies this benefit is understood to have been overstated due, in part, to insufficient account being taken of the increasing ease with which private users can notify their circle of callers of their number change. Other differences highlighted were that consumers would experience better customer service, more competitive prices, more privacy and innovative products. In terms of negative impacts, Logic claims consumers will face higher bills as carriers pass on the cost of implementing LNP.

M3 Wireless, North Rock Communications, Cable & Wireless Bermuda and Transact say that one of the differences that LNP will make for carriers in the Bermuda market is that they will face increased competition as the barriers to the market decrease. Cable & Wireless Bermuda and Transact both mention that carriers will move into new markets, and develop new products as the barriers are reduced. Two carriers believe that carriers will face an increased churn ratio. Logic claims that existing carriers will need to find new value added differentiators that decrease churn. Logic also highlights a less favourable impact of LNP on carriers, saying the cost of doing business for carriers will increase, as will operational complexity.

BDC believes that the deployment of LNP will have a very limited impact on the Bermuda market but it acknowledged the advantages of being able to keep the same number.

Ministry's Views

The Ministry notes that the majority of carriers agree that the introduction of LNP will make a difference for consumers in Bermuda. The Ministry understands that the majority of carriers consider that the introduction of LNP will give consumers a choice of service providers and that consumers can switch service provider without any cost or inconvenience. The main advantages for consumers that carriers

identified included better customer service, more competitive prices, more privacy and innovative products.

Following the responses and comments it is the Ministry's considered view that the introduction of LNP will provide clear benefits for consumers.

The Ministry notes that a number of carriers identify increased competition as a consequence of the introduction of LNP however the Ministry is pleased to note that the introduction of LNP is seen by a number of carriers as an opportunity to enter new markets.

Following consideration of the carriers comments the Ministry considers that overall LNP could provide benefits to both consumers and carriers.

Question 4

Can the respondent describe what difference it believes the introduction of LNP will make to its own business in terms of offering services and attracting customers for different market segments?

Of the ten submissions, nine respondents answered Question 4. North Rock, Cable & Wireless Bermuda, Transact and Quantum view the difference that the introduction of LNP would make on their own business as being a positive occurrence. Two of the respondents said it would attract more customers to their business. They also think that LNP would remove cost barriers from their business and that customers will be able to take advantage of the savings and service. One carrier says this in turn would help expand the network. Digicel states that 60% of the handsets that it sells in Bermuda are network locked at the time of sale so that there is some surety that these losses can be recovered with future purchases of service. After sale however a small percentage of these are unlocked by subscribers or by persons that do this on the subscriber's behalf. Digicel thinks that about 5%-10% of subscribers have done this and suggests that if LNP was available in Bermuda more than 55% of its customers would face significant switching costs if for some reason they wished to shift from Digicel and take their number with them.

One respondent, says that the difference the introduction of LNP will make on its business will depend on the cost of implementation. Two respondents claim that the introduction of LNP will have little impact on their businesses. BTC also claims it will experience a negative impact of LNP as it will accelerate the decline in its residential and business access lines due to customers switching to new providers.

Following the publication of responses to Question 4, the following comments were received:

Cable & Wireless Bermuda commented on how Digicel notes that a significant proportion of its handsets are locked in order for Digicel to recover the costs of subsidised handsets and as a result, this would increase the switching costs of consumers wishing to change providers, which in turn could limit the demand for

number portability. Cable & Wireless Bermuda is aware that handset locking is common practice in the industry but it is the subject of consumer dissatisfaction and therefore becoming increasingly discouraged by regulators. Cable & Wireless Bermuda doubts whether such a practice is actually as great a barrier to switching as Digicel seems to suggest given the ease with which it seems possible for most customers to find some way of unlocking their handsets and indeed the frequency with which customers choose to change their handsets. Even if mobile carriers' business models are so fragile that they are dependent on handset and SIM locking to prevent customers switching, this should be their own business issue to address. Cable and Wireless Bermuda thinks it should not be allowed to become a constraint on implementing a policy that would be to the overall benefit to customers and the competitive process.

Ministry's Views

The Ministry notes that the view of some of the carriers who responded is that the introduction of LNP will have a positive effect on their businesses including the benefit of attracting more customers and the removal of some cost barriers from their businesses. However, some carriers believe that the benefits of the introduction of LNP will depend on the cost of implementation and that the cost of implementation of LNP could force carriers to reduce investment in other areas.

Following consideration of the responses and comments received, the Ministry believes that overall the introduction of LNP could have a positive effect on the business of carriers, however an LNP solution should be chosen that will not have an undue cost burden on the carriers.

Question 5

Can the respondent quantify what it believes to be the potential demand for LNP in Bermuda?

Five of the ten respondents said they were unable to quantify the potential demand for LNP in Bermuda. Although one carrier commented that demand would decrease if consumers were informed about cost in conjunction with the benefits. North Rock suggests that there will not be great demand for LNP.

M3 Wireless, BDC, Cable & Wireless Bermuda and Quantum used previously undertaken research and estimates from other jurisdictions in an attempt to quantify demand. M3 Wireless said that 48% of respondents in its research indicated a "very likely" chance of switching wireless providers if their existing number could be retained. 25% indicated a "somewhat likely" chance.. Cable & Wireless Bermuda states its best estimate of potential demand based on the experience in other jurisdictions that have introduced LNP, is that less than 10% of customers will actually choose to port their numbers. Quantum also undertook research, in 2007, and found that the majority of respondents were familiar with the concept of number portability and that they would like to see the service in Bermuda. However only 2 of those respondents said they would actually pay for the service. Most believed that either the carriers or the government should pay for the service. In a separate report Quantum also found that half of those questioned would switch carriers but that

changing their number is an issue. BTC noted that 13.2% of all assigned numbers in the US have been ported since number portability was introduced there in 1998. Using that rate, BTC projected that about 4,100 wireline residential customers and 3,500 business customers would likely switch carriers over some period of time.

Following the publication of responses to Question 5, the following comments were received:

Cable & Wireless Bermuda commented that regardless of the actual numbers that end up porting their telephone numbers, it stands by its view that the ability to port numbers in itself will increase the competitive pressure on all providers, which is obviously good for consumers.

Ministry's Views

The Ministry notes that there was limited qualification by carriers of the potential demand for LNP in Bermuda. The Ministry understands that predicting the likely demand for LNP in Bermuda is difficult but from information provided by carriers the Ministry can deduce that there is a demand for LNP in Bermuda.

Question 6

Does the respondent agree that simple call forwarding could constitute a suitable LNP platform for Bermuda? The respondent is requested to confirm that its own switches are capable of supporting this solution. If the respondent disagrees that simple call forwarding could constitute a suitable LNP platform for Bermuda, then the respondent is requested to provide reasoning for its position.

Six of the ten respondents said that their switches are capable of supporting simple call forwarding. One respondent said that they are not capable of supporting it and the others did not cover this point in their responses.

On the issue of whether simple call forwarding is a suitable LNP platform for Bermuda, BLDC and North Rock were the only respondents to wholly agree that it is suitable. BTC, M3 Wireless, BDC and Quantum say it is suitable but only under certain circumstances and conditions. BTC, M3 Wireless, Digicel and Quantum claim it is suitable but only on a temporary basis and that it will not work once LNP becomes widespread. This is because call forwarding consumes network resources and ties up channels on the donor switch; also it can put a strain on the carrier's number management and administration. Quantum says that it is suitable as long as it can maintain the integrity of Calling Line ID. BDC says it could possibly be a suitable LNP platform as long as the porting carriers are compensated for transiting traffic to a ported carrier.

Cable & Wireless Bermuda and Transact do not agree that simple call forwarding is a suitable LNP platform for Bermuda. Many of the same arguments are used as in the above paragraph but in addition they say that it is inefficient and that problems can arise when providing outbound calling information and conferencing features. Cable & Wireless Bermuda is aware that a number of jurisdictions that used call forwarding as the initial method of implementing LNP have now decided to abandon it.

Following the publication of the responses to Question 6, the following comments were received:

Quantum commented that while many believe simple call forwarding to be a good short term solution for Bermuda, it must be noted that it is very difficult for a customer to choose an alternate service to the incumbent whilst expecting them to continue the cost for their existing access line plus a forwarding rate. Quantum sees this as grossly unfair to continue charging for an access line just to retain a published number when there is really no access line or copper resource being reserved. Quantum continued to say that a customer who desires to move away from their original carrier will be forced to rely on the original carrier's network forwarding capability and will not have the independence he/she might expect by transferring service to an alternate provider.

Ministry's Views

The Ministry notes that six of the ten respondent's switches are capable of supporting simple call forwarding and one respondent stated that its switch was not capable of supporting this solution. Following careful consideration of the responses the Ministry believes that further investigations of this solution should be undertaken. It understands the comments on the solution not being a suitable long term solution for LNP but believes that as a number of carriers already have this solution available on its switches then this solution should be considered in the context of a 'quick to market' and 'potentially low-cost' solution for LNP in Bermuda.

Question 7

Does the respondent agree that modified call forwarding with tromboning inefficiency could constitute a suitable LNP platform for Bermuda? The respondent is requested to confirm whether its own switches are capable of supporting this solution. If the respondent disagrees that this solution could constitute a suitable LNP platform for Bermuda, then the respondent is requested to provide reasoning for its position.

Eight of the ten respondents addressed Question 7. One of the nine respondents is not capable of supporting modified call forwarding, five respondents can support it and the remaining respondents did not answer this part of the question.

Of the eight respondents, only one thinks that modified call forwarding with tromboning inefficiency could constitute a suitable LNP platform for Bermuda. Quantum takes the same position as it did with Question 6, stating that it supports it as a temporary solution in order to expedite regulatory reform.

BTC, M3 Wireless, BDC, Cable & Wireless Bermuda and Transact disagree that it is a suitable LNP platform for Bermuda. Many reasons are the same as those described in the responses to Question 6 but there are other reasons. BTC says that modified call forwarding with tromboning requires more configuration than simple call forwarding in order to establish a routing scheme. This can mean an increase in cost without any additional benefits. M3 Wireless also says there is an increase in complexity. Cable &

Wireless Bermuda believes that this solution makes no sense for Bermuda due to the architecture of the local voice network and interconnects, whereby every switch has direct routes to every other switch and no tandem switching exists. There is therefore no possibility to revert the call to the Donor Carrier's tandem and the call will simply forward on the direct route from the Donor Switch to the Recipient Switch.

Ministry's Views

The Ministry notes that the majority of carriers do not believe that the modified call forwarding solution could constitute a suitable LNP platform Bermuda. Following consideration of the responses received the Ministry believes that this solution should not be considered as a suitable solution for Bermuda.

Question 8

Does the respondent agree that the call drop back option could be suitable LNP platform for Bermuda? The respondent is requested to confirm whether its own switches are capable of supporting this solution.

Nine of the ten respondents answered Question 8. Five of the nine respondents are not capable of supporting the solution, two respondents said they can support call drop back and the remaining respondents did not address this part of the question.

Only one respondent, North Rock, agreed that the call drop back option could be a suitable LNP platform for Bermuda but there would be an increase in cost due to the need to purchase the new software. M3 Wireless said that from a technology standpoint call drop back could be suitable as there would be an improvement in efficiency however operationally there are limitations to this solution.

Seven of the respondents believe that call drop back is not a suitable LNP platform for Bermuda. BTC says that there could be errors in the data provided in the databases that can lead to calls getting dropped; it also thinks that heavy investment is required into outmoded technology which will lead to increase in costs. BDC agrees saying that it is not an economically feasible solution. Along with the issues it raised in response to Question 6 & 7, Transact states that it would not be suitable as Bermuda does not a two tiered network. The other respondents hold the same opinions of call drop back as they have for simple and modified call forwarding.

Ministry's Views

The Ministry notes that the majority of carriers do not believe that the call drop back solution could constitute a suitable LNP platform Bermuda. This solution is more suited to networks with more than one tier of switching and therefore this solution is not ideal for the single tier switching networks currently deployed in Bermuda. Following consideration of the responses received the Ministry believes that this solution should not be considered as a suitable solution for Bermuda.

Question 9

Does the respondent agree that an off-switch solution using a central database should be investigated as a potential LNP solution for Bermuda? If the respondent disagrees then it is requested to present reasoning for its position. The respondent is requested to confirm that its own switches are capable of supporting this solution.

Seven respondents were able to provide an answer to Question 9. One of the respondents, BDC, disagreed that an off-switch solution using a central database should be investigated as a potential LNP solution for Bermuda. BDC thinks that this solution is not economically feasible.

Five of the respondents agreed that an off-switch solution using a central database should be investigated as it is an efficient and consistent solution to porting numbers. BTC and M3 Wireless warn that the cost of implementing such a solution would be high, with BTC questioning if the benefits will justify the costs. Quantum says that although it can manage either an All Calls Queried (ACQ) or Query on Release (QoR) access type, its preference is an All Calls Queried solution.

Cable & Wireless Bermuda says that it would support a central database solution for Bermuda but does not believe that this needs to involve an off-switch solution for call processing. One reason for this is that its network is already capable of supporting an on-switch LNP solution for call processing and would not therefore wish to incur additional expenditure in setting up an off-switch solution. Also an off-switch call processing solution would have to be ultra-reliable in terms of both availability and connectivity since every telephone call in Bermuda would use it. The cost of such a system is likely to be prohibitive. Finally, the option of such a system being located outside Bermuda would also mean that Bermuda would be dependent on international connectivity to complete local calling.

In its response BTC assumed that a conservative estimate of the first year costs for all carriers would be about \$2.5 - \$3m and suggested that before going down the path of mandating LNP the industry along with Government needs to consider what \$3m would buy in terms of tangible assets.

Ministry's Views

The Ministry notes that the five of the seven carriers who responded to this question believe that an off-switch solution using a central database could constitute a suitable LNP platform Bermuda. In addition the carriers who responded positively believe that the solution could be an efficient and consistent solution for porting numbers. However, two carriers believe that the cost of such a solution could be high and one carrier questioned whether the benefits will justify the costs.

The Ministry believes, following consideration of the responses received and also by understanding recent developments in other jurisdictions similar to Bermuda, that this type of solution could potentially be a cost-effective solution to introduce LNP in Bermuda. The Ministry therefore recommends that further consideration be given to this solution as a potential way of introducing LNP.

Question 10

Does the respondent agree that an off-switch solution using a distributed database should be investigated as a potential LNP solution for Bermuda? If the respondent disagrees then it is requested to present reasoning for its position. The respondent is requested to confirm that its own switches are capable of supporting this solution.

Of the eight responses to Question 10, only seven of them were in a position to provide an opinion. One of the respondents agreed that an off-switch solution using a distributed database should be investigated as a potential LNP solution for Bermuda.

Four of the respondents, BTC, M3 Wireless, BDC and Digicel, disagree that the off-switch solution using a distributed database should be investigated. The reasons vary amongst the respondents but concerns over increased cost and complexity were expressed by three of the respondents. M3 Wireless says that updating a distributed database can be a problem and that this solution creates additional inter-carrier communication in order to achieve synchronisation. M3 Wireless and Digicel say they would prefer a centralised database to a distributed database.

Cable & Wireless Bermuda and Quantum did not respond to this question but directed readers to their response to Question 9.

Ministry's Views

The Ministry notes that the majority of the respondents to this question did not favour a distributed database as a potential solution for LNP.

The Ministry believes that, following consideration of the responses received and also by understanding recent developments in other jurisdictions similar to Bermuda, the benefits of a centralised database are greater than a distributed database. Therefore the Ministry considers that only one form of off-switch solution be considered further, that being the centralised database.

Question 11

Does the respondent agree that the five proposed LNP solutions should form the short list of potential solutions for LNP? If the respondent disagrees then it is requested to present reasoning for its position and propose alternative potential LNP solutions.

One of the nine respondents was unable to provide comment on this issue. Of the eight other respondents BLDC, North Rock Communications and BDC agree that the five proposed LNP solutions should form the short list of potential solutions for LNP.

Five of the respondents do not agree that all five proposed LNP solutions should form the short list of potential solutions. BTC and M3 Wireless recommend simple call forwarding and a centralised database as the other solutions are not appropriate for Bermuda's carrier infrastructure. Transact agrees that a centralised database should be

on the short list and also the off switch solution distribution database. Cable & Wireless Bermuda and Quantum would not recommend any call forwarding solution. Quantum would also not recommend Donor Switch correspondent as Quantum thinks that both of these options are not network efficient.

Ministry's Views

The Ministry notes that no carriers suggested another LNP solution that was not included in this consultation process.

The Ministry believes that a short list of solutions taken from the five solutions in the consultation paper should be considered further in order to find an LNP solution for Bermuda.

Question 12

Does the respondent have a favoured solution for the provision of LNP taking into consideration the Bermudian market condition and its own network capability for implementing an LNP solution? If the respondent has a favoured LNP solution then it is requested to present reasoning for this position

Of the ten respondents to Question 12, three said that they do not have a favoured solution for the provision of LNP. Digicel says that off-switch solutions are viable long term.

The centralised database was the most favoured solution of all, with M3 Wireless, Transact, and Quantum all proposing it. One reason put forward is that it suits a dynamic market such as Bermuda. However some respondents do not agree on who should take responsibility for the database, with Transact suggesting the Telecom Authority and Quantum suggesting that an independent third party administers the database. Quantum says that the central administrative database would be queried by an automated process to populate a cached local database. All Calls Queried (ACQ) or Query on Request (QoR) schemes pointed at the cached local database provides for efficient and reliable call switching with ownership residing wholly with the PIC'd carrier. Another respondent also has a preference for an ACQ method with a non-call processing single reference database. It says that adoption of an ACQ with a centralised database would also be consistent with developments elsewhere in the world.

Other favoured solutions included the modified call forwarding solution and BTC suggests that simple call forwarding be implemented while a centralised database is being investigated further. BTC does not yet favour a centralised database; further cost/benefit analysis must be undertaken before a decision can be made.

Ministry's Views

The Ministry has considered the favoured solutions of the carriers and proposes that two solutions are considered further. These solutions are:

- On-switch – simple call forwarding

- Off-switch – centralised database

Question 13

Does the respondent agree that an Industry Working Group is the most useful means of evaluating the technical options for implementing LNP in Bermuda? If the respondent disagrees, then it is requested to provide reasons for this and to offer alternative means of evaluating the technical LNP options for Bermuda

All ten of the respondents agree that an Industry Working Group is the most useful means of evaluating the technical options for implementing LNP in Bermuda. BTC suggests that the Working Group could cover operational requirements and inter-carrier processes. Cable & Wireless Bermuda suggests a series of different Working Groups, with specific responsibilities that METEC/RA should set up and also chair a Steering Group, which would be responsible for setting an overall timetable for implementation and for directing the various work-streams that will need to be completed to achieve implementation.

Following the publication of responses to Question 13, the following comments were received:

Quantum is happy that there is clear agreement from the carriers that an Industry Working Group be established to resolve the correct technical solution for Bermuda and would like to reiterate its agreement with this position. As mentioned in its response, Quantum believes this group would best be served by having an external and independent arbiter (possibly a member of METEC) to ensure efficient progress is made towards a targeted outcome irrespective of divergent views on various matters. Quantum also comments that there are many remarks about cost/benefit analysis requirements before implementation of a call forwarding solution. Quantum expects such an analysis to be part of the working group's crafted solution. The costs can only be determined as the solutions are defined. Quantum says that it is interested that the consumer is provided with an opportunity to port its number and is able to take advantage of quality service at flat, known rates. Many of its customers have already completed their cost/benefit analysis and would switch tomorrow if they didn't have the overhead costs of their former provider simply to retain the number.

Cable & Wireless Bermuda agrees that some degree of cost benefit analysis of specific number portability solutions will need to be done and it believes that this should be one of the outputs of the industry Working Group. Cable & Wireless Bermuda says that there is no need to delay the establishment of this Group by insisting that a cost benefit analysis of all the possible options is undertaken first. Cable & Wireless Bermuda says that it will be able to bring to the Working Group information from its recent experiences in the implementation of number portability in another small jurisdiction.

BTC also commented on how the Working Group can be used in order to further facilitate the implementation of LNP. It believes that the Working Group can be established to evaluate the technical and operational aspects of simple call forwarding and the centralised database solutions. BTC is also concerned that the consultation paper did not mention how costs will be recovered. BTC says it is not enough for the Government to call for significant industry investment without providing the business case to justify it. BTC suggests that the relevant cost-benefit analysis and cost recovery proposals can be included in a further industry consultation that can run in parallel with the Industry Group's technical and operational investigations. BTC also states that all carriers should be subject to the same requirements for implementing LNP and the same cost recovery mechanisms to ensure that costs are shared widely among industry participants and recovered equitably.

Ministry's Views

The Ministry is pleased to note that all respondents believe that the use of an industry working group is the most useful means of evaluating the technical options for implementing LNP in Bermuda.

The Ministry proposes to set up an industry working group with a clear mandate to investigate the two short listed solutions and report back to the Ministry with a proposed industry solution for LNP.

Next Steps

Following METEC's careful consideration of the responses received to this consultation it has decided on the following next steps.

Following the publication of this consultation report to all respondents, METEC will set up an Industry Working Group in order to identify a suitable technical solution for the implementation of LNP in Bermuda. This working group will:

- Have a clear (and agreed) terms of reference;
- Be facilitated and chaired by a chairperson who is independent of the industry; and
- Hold its first meeting in January 2009.

All carriers will be invited to attend the working group and to actively participate.

On completion of the working groups activity METEC will consult on the proposed solution and other key parameters of LNP such as time to port and cost to port.

Following this consultation METEC will set up a further Industry Working Group for the implementation of the chosen LNP solution.

Working Group Terms of Reference

In order to select a suitable solution for Local Number Portability (LNP) in Bermuda, Ministry of Energy, Telecommunications and E-Commerce (METEC) proposes to invite all carriers to join an Industry Working Group.

- This working group shall be convened and facilitated by METEC.
- METEC will appoint an external and independent chairperson for the duration of this working group.
- The working group will be convened during the first two weeks of January 2009 and will present its recommendation by 6th March 2009.
- All licensed carriers will be invited to join the working group.
- The working group will investigate a short list of two potentially viable LNP solutions for Bermuda. These solutions are:
 - On-switch solution: Simple Call Forwarding, and
 - Off-switch solution: Central Database (central reference database for number portability with each carrier managing its own routing of calls).
- The proposed solution chosen by the working group will be presented to METEC. METEC will, following consultation, decide on the way forward for the implementation of an agreed LNP solution.

The mandate of the working group will be as follows:

- To investigate and document the short list of technical options for implementing LNP in Bermuda, including:
 - To review the pros and cons of each technical option investigated; and
 - To estimate the approximate costs of implementation and operation of each of the technical options investigated.
- To recommend a technical LNP solution for adoption by all carriers in Bermuda.
 - If the working group cannot reach agreement on a preferred technical solution then it shall present the pros and cons of the options reviewed with a view METEC to make the final decision.