



ICT Decision 2008-5

Grand Cayman, 18 December 2008

Decision and Further Process on Local Number Portability

Overview

In this decision, the Authority determines that, based on the evidence filed with the Authority to date, the benefits likely to arise from the requirement to provide local number portability outweigh the likely cost of implementing it. The Authority is also satisfied on reasonable grounds that such a requirement will not impose an unfair burden on any licensee.

Therefore, in accordance with section 71(3) of the ICTA Law, the Authority hereby directs all operators licensed to provide telephony services (Type 1, 3, 4 and 5 Services) to implement LNP no later than 30 June 2010. This requirement will not apply initially to the porting of numbers from a fixed network operator to a mobile network operator and vice versa. Furthermore, after careful consideration, the Authority finds that it is preferable not to mandate any specific LNP solution, including any on-switch solution or off-switch solution. The licensees will be responsible for choosing an appropriate LNP solution for the Cayman Islands and implementing this solution no later than 30 June 2010.

(Note: This overview is provided for the convenience of the reader and does not constitute part of the Decision. For details and reasons for the conclusions, the reader is referred to the various parts of the Decision.)

Background

1. In ICT Decision 2005-1, Interim Decision and Further Process for Local Number Portability, released 29 March 2005, the Information and Communications Technology Authority (“the Authority”) determined that there were significant benefits to Local Number Portability (“LNP”) and that it would be appropriate to further consider the cost of implementing LNP in the Cayman Islands. Accordingly, the Authority established a Local Number Portability Consortium (“LNP Consortium”), consisting of major ICT network licensees with Authority Staff providing administrative support, to identify the most appropriate LNP model for the Cayman Islands and to investigate its costs.
2. The Authority also determined that the fees payable to an outside vendor to host a central clearinghouse should be shared among the licensees. However, it concluded that it was not necessary at the time to make a determination as to the methodology for allocating these costs to the various licensees. Furthermore, the

Authority determined that it would be permissible, if LNP is mandated, for licensees to introduce a new line item on monthly bills to identify the central clearinghouse costs that each subscriber is paying.

3. The Authority also ruled that licensees should be responsible for their own internal LNP costs. These include the costs of system upgrades and the costs of training staff to make the required changes throughout the licensee’s databases. The Authority concluded that licensees should be free to pass these costs on directly to consumers if they so wish, either as part of the price of their services or as a separate line item on their bills.¹ Alternatively, some licensees may choose to absorb these costs as an expense.
4. From June 2005 to May 2007, the LNP Consortium examined the models in place in a wide variety of jurisdictions. The LNP Consortium then approached a number of vendors and requested proposals for the implementation of LNP in Cayman. Based on these discussions, the LNP Consortium concluded that a model involving an electronic query of all calls would be most appropriate for the Cayman Islands. Having reached this conclusion, the LNP Consortium chose not to consider other solutions. From June 2007 to April 2008, the Authority’s Staff also received estimates from each licensee of the internal LNP costs of implementing a model involving an electronic query of all calls.

Process

5. On 21 April 2008, the Authority launched a public consultation to determine whether LNP remains a desirable option for the Cayman Islands, in the light of likely costs to subscribers (“CD 2008-1”). In CD 2008-1, the Authority noted that mandating of LNP would result in increased costs for all telephony providers in the Cayman Islands. The Authority also noted that, in the event that LNP is mandated in the Cayman Islands, licensees would have the ability to recover these costs over time from their subscribers. The Authority proposed that the maximum costs that may be attributed to LNP on the monthly telephone bills of all subscribers to be:

LNP Recurrent Costs:	CI\$0.20 per telephone number per month
LNP Implementation Costs:	CI\$0.65 per telephone number per month ²
TOTAL:	CI\$0.85 per telephone number per month

6. CD 2008-1 emphasised that these are maximum figures and that actual costs may be less, and individual licensees could choose not to charge subscribers directly for LNP, or to charge less than the maximum, and so gain competitive advantage.

¹ Having said that, the Authority notes that some of Cable & Wireless’ (C&W) services are price regulated. As such, C&W would be required to seek the Authority’s approval in order to pass on LNP costs to customers who subscribe to these services. The Authority’s approval of any such proposal would likely involve a detailed review of the LNP cost estimates and calculation methodology.

² May be reviewed by the Authority after 5 years.

In addition, the Authority proposed that when a number is ported, the “receiving” licensee may charge a maximum one-time porting fee of CI\$10 or less.

7. In inviting comments on the proposal detailed above, the Authority raised specific questions, namely:
 - Given the maximum cost recoveries detailed above, are you in favour of number portability being mandated in the Cayman Islands?
 - Are the maximum monthly charges acceptable?
 - Is the one-time porting charge acceptable?
8. The Authority initiated this consultative proceeding on 21 April 2008 and invited interested parties to file comments no later than 30 May 2008. That deadline was subsequently extended to 27 June 2008. After considering all of the submissions, the Authority determined that a second round of comments would be appropriate and accordingly invited comments from licensees and members of the public on the comments submitted in the first stage of the process no later than 1 September 2008.

First Round Comments

9. The Authority received comments from several users of telecommunications services (business and residential), namely, A.L. Thompson Building Supplies Ltd. (“A.L. Thompson”), Century 21 Thompson Realty Ltd. (“Century 21”), Neil and Mary Anne Cox, Darren Enns, Fortis Bank (Cayman) Limited (“Fortis”), Hurley’s Entertainment Corporation (“Hurley’s”), Fred Speirs and the The Ritz Carlton, Grand Cayman. Comments were also received from telecommunications service providers, namely, Blue Sky Wireless Limited (“Blue Sky Wireless”), Cable & Wireless (Cayman Islands) Ltd. (“C&W”), Digicel Cayman Ltd (“Digicel”), TeleCayman Ltd. (“TeleCayman”) and WestTel Ltd. (“WestTel”). TeleCayman also delivered 103 signed form letters supporting LNP.

Users of Telecommunications Services

10. Century 21 submitted that the maximum monthly charge of CI\$0.85 for LNP is acceptable. It noted that the maximum porting fee of CI\$10.00 would likely not be charged if Century 21 were to commit to another provider for more than a year. Of concern to Century 21 is that LNP should not affect service provision and in particular cause service interruption.
11. Neil and Mary Anne Cox also supported LNP. They noted that it is currently not easy to change providers and give up an existing telephone number that has been circulated to contacts.
12. Darren Enns indicated that LNP is an important step towards increased competition and lower rates. Therefore, he expressed his support for LNP.

13. Fortis submitted that LNP would allow users to reduce their monthly telecommunications costs. It noted that LNP will benefit its employees as they will likely pay less for their phone service. While Fortis argued the proposed LNP costs are reasonable, it noted that the internal LNP costs identified by telecommunications providers are likely to be overstated. Fortis also argued that telecommunications providers should be required to absorb their own start up costs, or to make those costs more precise. All in all, Fortis submitted that the benefit of LNP will outweigh its monthly cost.
14. Hurley's submitted that the monthly LNP costs set out in CD 2008-1 are acceptable given the fact that they will likely lead to lower rates for telecommunications services. Hurley's noted that business and residential users currently stay with their existing providers despite the existence of alternative lower competitive rates due to lack of LNP.
15. The Ritz Carlton submitted that the LNP costs outlined in CD 2008-1 are acceptable and therefore that LNP should be mandated in the Cayman Islands. As one of the largest user of telecommunications services in the Cayman Islands, the Ritz Carlton considers that the absence of LNP in the Cayman Islands causes significant disruption and costs to business users of telecommunications services who wish to change telecom providers. The Ritz Carlton considers that the ability to change providers without operational disruption is foremost in achieving better service, reduced costs through competition, and ultimately an improved telecommunications system in Cayman.

Blue Sky Wireless

16. Blue Sky Wireless submitted that it fully supports the process of LNP and the associated maximum charge of CI\$0.85 per telephone number that could be added to a customer's monthly telephone bill. Blue Sky Wireless believes that the benefit of preserving the same number while changing provider far outweighs the charging of the suggested fee.

C&W

17. C&W submitted that consultation process outlined in CD 2008-1 is flawed and noted that the costs of implementing LNP, as described in CD 2008-1, are incomplete and understate the true cost of implementing LNP in the Cayman Islands. According to C&W, the central clearinghouse costs referred to in CD 2008-1 are highly speculative. C&W noted that the LNP Consortium received other quotes, some of which were higher and lower than CI\$300,000. Further, it argued that the use of the number of working telephone numbers in calculating the maximum LNP recurrent costs charge of CI\$ 0.20 per month is problematic. If that number were to decrease, CI\$ 0.20 may be insufficient to recover the costs of the central clearinghouse. In addition, C&W submitted that taxation of

telecommunications revenue would result in less money available to fund the clearinghouse.

18. According to C&W, it is unclear how the Authority determined that internal LNP costs will consist of “start-up costs of no more than CI\$ 2.2 million and ongoing costs of no more than CI\$380,000 per annum”. C&W noted that these amounts may not accurately represent the true cost of implementation. According to C&W, it is unclear whether all licensees supplied cost information. In addition, the cost information supplied by C&W to the Authority did not include any costs for the connection of the C&W network to the central clearinghouse platform. C&W also pointed out that the Authority did not disclose the interest rate used to annualize one-time costs, the period over which these costs were amortized or indeed the methodology used, making an evaluation of the maximum LNP internal cost recovery amount difficult.
19. C&W also submitted that there are number of non-monetary costs that Authority has failed to clearly articulate in CD 2008-1, including:
 - the loss of ability to identify whether a particular call is fixed or mobile (assuming the introduction of intermodal number portability) or on-net or off-net;
 - related to the above, the programming of call accounting systems of businesses / hotels to account for the highest call cost because of the inability to distinguish between call type and hence a need to bill clients / guests at an overall higher cost;
 - impaired features, for example the development of value added store and forward services; and
 - loss of incoming calls, due to the higher risk of not receiving calls from overseas carriers.

Digicel

20. Digicel argued that any decision to mandate LNP should be founded on a rigorous cost benefit analysis. According to Digicel, the cost figures outlined in CD 2008-1 appear incomplete and undefined. Furthermore, Digicel noted that the Authority has not as yet sought to quantify the benefits of LNP or to identify the categories of benefit. Therefore, Digicel considers that the analysis necessary to satisfy the test pursuant to section 71(3) of the Information and Communications Technology Authority Law (2006 Revision) (“ICTA Law”) has not yet been done.
21. Digicel submitted that, once information on all of the relevant costs have been considered, it will be determined that the benefits of implementing LNP would not outweigh the significant costs which would be incurred and which would have

- to be recovered from a very small subscriber base. It noted that LNP involves significant set-up and ongoing costs and therefore, economies of scale and ability to pass on costs to a smaller subscriber base have often made LNP uneconomic for smaller countries. According to Digicel, market circumstances in Cayman (i.e. two mobile networks; prevalence of locked handsets; widespread multiple handset ownership etc.) mean that there would be a significantly reduced average benefit per subscriber from LNP compared to other countries. Therefore, Digicel suggested that it is premature to mandate NP at the present time.
22. With respect to the cost information outlined in CD 2008-1, Digicel argued that the CI\$ 300,000 quoted by the Authority to be the annual cost of an off-shore central data base option is too indefinite at this stage to be used as a basis for calculating the maximum level of recurrent LNP costs. Digicel also noted the figure of CI\$ 380,000 per annum quoted by the Authority for LNP Internal Cost Recovery cannot be relied on. In addition, Digicel provided revised cost information (compared to a spreadsheet submitted in August 2007) associated with the rollout of mobile number portability (“MNP”) in the Digicel Cayman network noting that these are estimates only.
 23. Digicel submitted that the Authority’s position on the absolute size of porting costs (a maximum of CI\$10 per ported number) and the charging principle employed is inappropriate. It noted that the recommendation of independent experts is that the cost of porting numbers from an operator’s network should be recoverable from the customer’s new operator. Regarding the charge of CI\$ 10 per ported number, Digicel submitted that this will be significantly below Digicel’s actual costs and hence imposes an unfair burden on Digicel in contravention of section 71(3) of the ICTA Law.
 24. Digicel argued that the Authority’s methodology of sharing LNP costs adversely affects entrants and those operators which do not operate both fixed and mobile networks, as the ability to recover costs from a proportionally smaller subscriber base could translate into operational losses. Further, Digicel submitted that the apportionment of costs based on the number of subscriber lines is a fundamental error. Digicel argued that differences in usage profile results in fixed line users contributing a disproportionately low amount towards the cost of implementation, while mobile users make a disproportionately high contribution.
 25. In addition to providing comment on the costs of LNP, Digicel devoted a portion of its submission to the benefits that are likely to arise from LNP. Digicel reiterated the commonly used approach to classify benefits in ex ante cost benefit analyses. Digicel noted that the vast majority of benefits have been shown to be of Type 1 (i.e. benefits obtained directly by customers that switch) and these have been overstated in ex ante studies, in particular due to the ease by which users can contact their circle of callers through other electronic means.

26. Digicel submitted that Ovum has advised of average net present value of benefits of MNP for the Caribbean to be in the low US\$20 range, and that the presence of two mobile networks in Cayman will substantially reduce available benefits below this level.
27. Digicel also submitted that there are number of factors that would not appear to have been fully taken account in the Authority's analysis. These include:
- The influence of market conditions - LNP increases the willingness of customers to switch to another provider and thus can potentially make competition between networks more intense. With only two competing mobile network operators with roughly equal market shares (as is the case in Cayman), Digicel expects the effect of LNP to be far less than if there were five or six competing operators. Further, many users in Cayman have active subscriptions with both C&W and Digicel. Digicel submitted that multiple handset ownership is a very strong substitute for NP. Finally, locking of mobile handset to the respective networks and selling of handsets at less than cost, i.e. subsidizing them by the future sale of services may have the effect of reducing the potential demand for NP.
 - Network resilience - with an off-shore database solution, Digicel is concerned that the resilience of its network and potentially its ongoing ability to bill customers, will partly be under the control of another firm based in the USA. Digicel submitted that any prudent operator would seek to insure against potential losses due to outages of this configuration and therefore the additional insurance costs should also be included in any cost estimate of LNP.
 - Data protection - Digicel noted that the holding of a centralised database 'off shore' is also likely to incur additional compliance costs, and these should also be factored in as part of Authority's cost benefit assessment.
 - Impact on consumers - Digicel noted that the Authority appears to consider fixed to mobile NP or inter-model NP to be an option in Cayman. Its submission referred to the experience from Denmark where concerns about technical and consumer protection issues relating to intermodal number portability ultimately led the regulator there to abandon its proposal. The potential problems encountered were a reduction in customer ability to control spend, adverse impact on the provision of international calls, increased call usage costs and reduced quality of service.
28. As to the questions to be addressed in CD 2008-1, Digicel submitted that it:
- Has fundamental concerns that the cost estimates detailed in CD 2008-1 do not accurately reflect all of the costs which are necessary for the

implementation of LNP in Cayman. As a result, Digicel is not in favour of LNP being mandated in Cayman at the present time as it does not consider the test set out in section 71(3) of the ICTA Law is satisfied.

- Is firmly of the view that the maximum monthly charges and the one-time porting charge does not accurately reflect the true cost of implementing and operating LNP in Cayman. Digicel does not consider these charges to be acceptable as they were calculated on the basis of incomplete information.

TeleCayman

29. TeleCayman submitted that a maximum monthly charge of CI\$0.85 is acceptable for subscribers. TeleCayman noted that LNP is 1) extremely beneficial to consumers for the ability to easily transfer their phone number to the service provider that best meets their needs and 2) advantageous to new entrant service providers as it removes the impediment to changing provider by removing administrative costs.
30. TeleCayman noted it is reasonable to conclude that annual central clearinghouse costs would be in the order of CI\$300,000. Further, TeleCayman accepts that this amounts to a monthly cost CI\$0.20 on a working telephone basis.
31. TeleCayman submitted that the line item on a subscriber's bill for "LNP internal cost recovery" should be no more than CI\$0.65 and notes that it expects to operate at or below this amount.
32. Finally, TeleCayman noted that the suggested maximum fee of CI\$10 to recover porting costs provides sufficient flexibility.

Second Round Comments

Users of Telecommunications Services

33. A.L. Thompson submitted that LNP is a fundamental mechanism for increasing competition and keeping telecommunication rates manageable. It noted that the maximum charge of CI\$0.85 is acceptable and strongly urged the Authority to implement LNP as a matter of urgency.
34. The Ritz Carlton noted that, following its review of the comments filed during the first round of consultation, it is still of the view that LNP should be mandated. The Ritz Carlton reiterated previous comments that LNP is beneficial for business users and will bring about increased competition resulting in better customer service and a greater focus on the subscriber. In addition, it stated that the operators themselves will stand to gain from LNP referencing a report by Syniverse Technologies (from Jun 2007) where it is stated that "... *NP need not*

be looked at by an operator as a burden or additional cost; just the opposite, it should be viewed as an opportunity to gain market share...”

35. The Ritz Carlton submitted the following in response to the C&W submission:
- Even with an increase in cost by C\$ 0.016 due to the taxation of revenues the Ritz Carlton still favours the introduction of LNP.
 - Contrary to the C&W claim that LNP will cause customer confusion, the Ritz Carlton considers that the confusion that occurs without LNP from the need to change numbers is paramount.
 - The likelihood of competition bringing rates down outweighs the nominal charge and hence the “higher bills” claimed by C&W due to LNP.
 - “Impaired features” and site loss of functionality when changing between mobile to fixed lines is a non-issue as it is unlikely there are subscribers who believe they will be able to SMS from their fixed line simply because they could from their mobile phone.
 - The “loss of incoming calls” argument is flawed. A higher loss of calls will occur if the Ritz Carlton were forced to change phone numbers when changing providers.
36. In response to the Digicel submission, the Ritz Carlton submitted the loss of calls as a result of intermodal number portability is unlikely, specifically it noted that competition will ensure that customers will be able to call the country of their choice by selecting the provider who is able to complete the call successfully.
37. Fred Speirs expressed his support for LNP.

C&W

38. C&W argued that, although virtually all parties other than Digicel accept the costs proposed by the Authority, they did so assuming the suggested costs are accurate. C&W noted that the public’s comments might have been different had they been properly and completely informed about the issues.
39. C&W also described the evidence filed by Digicel on the difference between the predicted and actual cost of implementing MNP in Hong Kong, Ireland, the Netherlands and the UK as “quite disturbing”. C&W expressed some doubt that the comments filed by other parties would have been as supportive of the Authority’s proposed “maximum” prices if they knew they could be subject to substantial increases or face a shortfall in their recovery of implementing LNP.
40. C&W indicated that it is not convinced by Digicel’s assertion that “fixed line users will invariably contribute a disproportionately low amount towards the cost of implementation, while mobile users will make a disproportionately high contribution” as a result of the Authority’s proposed working telephone number based methodology for setting the prices to be charged to consumers for LNP

services. C&W noted that it is not necessarily the case that businesses will have one telephone number used by potentially hundreds of employees. Rather large business will more than likely have direct inward dial numbers assigned to individual employees, and each of these will count as a working telephone number. C&W submitted that a methodology is required that fairly apportions the costs to all operators to satisfy paragraph 71(3)(b) of the ICTA Law.

41. C&W agreed with Digicel's concerns relating to network resilience and data protection risks involved in establishing an off-shore LNP database solution.

TeleCayman

42. TeleCayman expressed some concern about the consultation process followed by the Authority. Firstly, TeleCayman noted that both Digicel and C&W submitted new arguments and evidence extraneous to the specific questions upon which the Authority sought comment. Secondly, it noted that the Authority appears to have accepted the new arguments and evidence put before it by Digicel and C&W. Thirdly, TeleCayman stated that it would have made an appropriate submission for the public record had it been aware that new arguments and evidence was permitted.
43. TeleCayman submitted that procedural fairness requires that the Authority disregard the comments submitted by Digicel and C&W which do not pertain specifically to the issue of likely costs to subscribers raised in CD 2008-1.
44. TeleCayman strongly disagreed with the submissions made by Digicel and C&W suggesting the process followed by the Authority has been flawed. Specifically, TeleCayman noted that their participation in the process in the past without any submissions on the flawed nature of the process makes the comments in this regard suspect.
45. On a number of issues raised by Digicel, such as additional internal costs, indirect costs and Ovum studies for jurisdictions including South Africa, TeleCayman submitted that they are irrelevant to the queries raised by the Authority in the proceeding. TeleCayman pointed to the Isles of Jersey and Guernsey as relevant jurisdictions.
46. TeleCayman submitted that the Authority needs to publish a defined process with specific dates for the purpose of addressing the remaining issues associated with the introduction of LNP.
47. TeleCayman noted that the Authority should arrive at a determination which favours the introduction of LNP since no opposition was raised by the general public as to the maximum monthly charge on subscriber's bill.

48. TeleCayman also delivered 103 signed form letters attesting the fact that LNP is a fundamental mechanism for increasing competition and keeping telecommunications rates low in the Cayman Islands and that maximum increase of CI\$0.85 per subscriber per month is acceptable.

WestTel

49. WestTel argued that that the costs of LNP outweigh the likely financial benefit. WestTel submitted that the CD 2008-1 lacks significant detail concerning cost sharing, project timelines, proposed regulations and solution criteria.

Authority's Analysis and Determinations

50. The Authority wishes to express its appreciation for the comments received from both the public and licensees. In particular, the Authority is grateful for the members of the public who have taken the time to submit their written views on the issue. The Authority encourages the public to continue to make its views known on all issues facing the Authority as it exercises its mandate to regulate the ICT marketplace and to promote long-term sustainable competition in the Cayman Islands.

51. In reaching a decision in this proceeding, the Authority is guided by section 9 of the ICTA Law which states:

9. (1)...the principal functions of the Authority are-
- (a) to promote competition in the provision of ICT services and ICT networks where it is reasonable or necessary to do so;

52. In addition, the Authority is guided by section 71(3) of the ICTA Law which states:

71. (3) Subject to this Law, the Authority may make rules imposing on any licensee, the responsibility to offer number portability if the Authority is satisfied on reasonable grounds that-
- (a) the benefits likely to arise from the requirement to provide a particular form of number portability outweigh the likely cost of implementing it; and
 - (b) the requirement will not impose an unfair burden on any licensee.

53. Amongst the members of the general public who provided comments, strong support for LNP was provided during CD 2004-1 and once again in CD 2008-1 after consideration of the likely costs of mandating LNP.

54. Business users of telecommunications services, such as the Ritz Carlton and A.L. Thompson, expressed the view that having to change telephone numbers when changing providers without LNP disrupts business operations and in addition

- results in costs related to such items as changing information on websites, business cards, and printed media. Further, business users pointed to increased competition between service providers as a result of LNP. In all cases, the submissions from the business users were in favour of LNP.
55. Residential users such as Darren Enns also provided support for the introduction of LNP, noting increased competition and lower rates and the difficulties entailed in changing telephone number. TeleCayman provided more than 100 signed form letters indicating the maximum increase of CI\$0.85 per subscriber per month due to LNP to be acceptable. In addition, Fortis argued that LNP will benefit their employees.
 56. While the Authority appreciates the responses it has received from the users of telecommunications services (general public and businesses), it recognizes that some of these submissions did not provide specific comments on the acceptability of the cost information set out in CD 2008-1. Furthermore, the Authority notes that some of these submissions consisted of form letters signed by the users and filed by TeleCayman. The Authority considers that such form letters should be given a lesser weight than the other submissions filed directly by users of telecommunications services. Nevertheless, the Authority acknowledges that all submissions filed by users in response to CD-2008-1, via the TeleCayman form letter or otherwise, were unequivocal and unanimous in their support of LNP.
 57. The licensee responses generally fall in two categories: one in favour of implementing LNP in the Cayman Islands based on the maximum cost estimates provided (TeleCayman and BSW) and another critical of the implementation of LNP based on the cost information outlined in CD 2008-1 and other anecdotal evidence (C&W, Digicel and WestTel).
 58. In its submission, WestTel stated that CD 2008-1 lacks significant detail concerning cost sharing, project timelines, proposed regulations and solution criteria. The Authority notes that the purpose of the consultation was not to seek input on any of these issues. Indeed the proposed LNP solution for the Cayman was discussed at length in the LNP Consortium and is reflected in the costing information provided by the licensees. Further, it is unclear to the Authority what WestTel has in mind by reference to proposed regulations.
 59. C&W expressed some concern about the consultation process followed by the Authority. In particular, C&W noted that the Authority has:

...misrepresented incomplete information as if it were final, and downplayed the negative or uncertain aspects of LNP, thereby depriving the public of an opportunity to understand the issues and comment in a fully informed manner”.

60. Similarly, Digicel noted that the process of collecting data on the cost of LNP is incomplete. As a result, Digicel argued that it is unclear on which basis the Authority determined the maximum internal LNP cost which can be passed on to customers.
61. The Authority reiterates that costing information used to derive the maximum cost in CD 2008-1 is based on information provided in part by outside vendors and in part by licensees. The information received from outside vendors on central clearinghouse costs has been subject to scrutiny by the LNP Consortium. Neither Digicel nor C&W have provided concrete evidence to suggest the costs received from outside vendors to be either too high or too low.
62. With respect to the cost information received from licensees, the Authority acknowledges that the precise internal costs cannot be determined at this stage in the process. In reaching an estimate of the likely LNP implementation costs the Authority accepted the information provided by the licensees as current best estimates. Where information was not made available, the Authority estimated reasonable costs based on the information received. This was only necessary for a minor share of total costs received. No costing information was altered other than the conversion to an annual figure. The Authority believes this was an acceptable approach given its intention to derive a maximum cost per telephone number per month.
63. However, Digicel has, in its submission provided revised information on internal number portability costs, i.e. costs associated with the roll-out of mobile network portability in the Digicel Cayman network. These cost estimates are significantly higher than those submitted by Digicel in August 2007. Digicel's submission provided no justification for such a significant increase in costs. Without detailed justification for the revised cost estimates, the Authority cannot accept this new information.
64. In its submission, Digicel noted that implementation costs are largely independent of the number of network users and that this results from an absence of economies of scale. Digicel submitted that number portability will often be uneconomic for small countries and that this is "*the main reason that the introduction of MNP has resulted in a net loss for Ireland, which has a population of 4 million*". In reaching this conclusion Digicel rely on a report by Ovum.³
65. The Authority has reviewed that report and notes that Ovum essentially conducted an ex post cost benefit analysis of the introduction of MNP in Ireland. This analysis indicates a net loss due to higher costs and more modest porting volumes than forecast in the ex ante analysis. The relevant section of the Ovum report is replicated below:

³ Ovum (2005), Mobile Number Portability – an international benchmark, Report for MNT (South Africa), January.

...if the actual costs and porting volumes are substituted for the predictions in the Cost Benefit Analyses which underpinned the regulatory decision to implement MNP in each of the above countries, we find that:

- *the CBA models in Hong Kong, the Netherlands and the UK all continue to generate overall net benefits, however,*
- *the CBA model in Ireland no longer generates positive economic benefits and the case for MNP is at best marginal.*

Ireland, even with its relatively high take-up of MNP, has paid quite a high cost to reduce its porting times to 1 hour, and that by reducing the porting times to 1 hour the economic benefits of number portability are questionable.”

Digicel’s submission suggests that the lack of economies of scale is the main reason for MNP being uneconomic in Ireland. However, as the quote above illustrates, it is the high port speed and resultant higher cost that results in an unfavourable outcome for Ireland. In fact the Authority has been unable to find any references to economies of scale in the Ovum report.

66. Regarding the one-time charge of up to CI\$10 per ported number, Digicel stated that CI\$10 per ported number will be significantly below Digicel's actual costs and that a requirement to offer number portability at an amount which does not allow for a full recovery of costs would be an "undue burden" on Digicel. In response, the Authority notes that the Consultation Document identified that some licensees "may also choose to recover a portion of these [LNP] costs by charging a one-time fee to customers who choose to port their numbers" (emphasis added). Clearly, the Authority did not intend that porting costs would be fully recovered from the one-time fee. Total LNP costs would be recovered from a combination of monthly charges and any one-time per port fees.
67. Digicel also suggested that the cost of porting numbers from an operator's network should be recoverable from the customer's new operator. In response, the Authority notes that, in ICT Decision 2005-1, it determined that each licensee should be responsible for their own internal LNP costs which include the start-up and ongoing costs. Digicel's request that one operator recover costs from another operator is not consistent with that approach and, therefore, is denied.
68. Digicel also raised concerns over the perceived benefits of number portability, in particular those benefits derived directly by those who switch and are able to retain their telephone number. Digicel claimed that these have been overstated in ex ante cost benefit studies, the main reason being the ease by which users can contact their circle of callers through other electronic means (e.g. through e-mail or SMS). During second round comments, TeleCayman noted that any discussion

of benefits does not pertain specifically to the issue of likely costs to subscribers raised in CD 2008-1 and should be disregarded by the Authority.

69. The Authority notes that benefits were discussed at length in ICT Decision 2005-1 and it was concluded that the introduction of LNP brings internationally recognised benefits to all consumers, not just those who choose to make use of the facility. The Authority remains of this view.
70. Digicel repeatedly refers to a “cost/benefit analysis” rather than a weighing of the likely costs and benefits (as articulated in section 71(3) of the ICTA Law). Based on the Digicel submission and its external references, Digicel appears to be arguing that the determination of whether or not to mandate LNP must be based upon a definitive mathematical cost-benefit model.
71. The Authority disagrees with this interpretation of section 71(3). The Authority views this provision as requiring that the Authority satisfy itself, on “reasonable grounds” that the likely benefits of LNP will outweigh its costs, and that LNP will not impose an unfair burden on any licensee. Given the limited resources available to the Authority and the small size of the Cayman market, the Authority considers that section 71(3) does not require a formal cost-benefit analysis. As the Authority noted in ICT Decision 2005-1 (paragraph 91), it is possible to make meaningful financial estimates of the direct costs to licensees, but attempting to do so for indirect (non-monetary) costs, or direct and indirect benefits would be an exercise in futility. The Authority therefore considers the appropriate process for determining whether LNP should be mandated or not to be one in which the direct costs are estimated and made subject to public consultation to determine whether they are acceptable taking into account other relevant considerations following a public consultation. This is the process followed in CD 2008-1.
72. In their second round response to the Digicel submission, TeleCayman points to the Isles of Jersey and Guernsey as relevant jurisdictions to consider as comparators to the Cayman Islands. The solution currently being implemented in the Channel Islands is essentially an off-switch solution based on a central reference database. It is hosted in the Netherlands by PortingXS⁴, allowing centralised support and sharing of the generic software components and hardware. The Authority understands that the network operators would require their own routing databases to be updated from the central database using a push scenario, i.e. using the broadcast functionality of the PortingXS database to update their own routing databases.⁵
73. PortingXS has indicated to the Authority that the price of the solution depends on the processes, validations, the service level agreement etc. and that the exact

⁴ <http://www.portingxs.nl/en/index.php>

⁵ This preference for having their own databases for routing may be explained by the commercial nature of call routing and that the commercial rationale for routing could change on a regular basis. Accordingly, operators may wish to keep a tight control over this.

processes designed by the Channel Islands operators are part of a non disclosure agreement. Although the PortingXS solution is not too dissimilar to that proposed for Cayman, the limited costing information the Authority has received related to the system suggests that further investigation is warranted.

74. Both C&W and Digicel raise a number of issues related to the implementation of intermodal number portability, i.e. the ability to port a number between mobile and fixed operators. The Authority has not previously considered the impact of intermodal number portability and notes that only one respondent, the Ritz Carlton, considered the submissions by Digicel and C&W on this issue.
75. For avoidance of doubt, the Authority notes that LNP in the current context is understood as allowing subscribers to the service provided by one fixed network operator to port their numbers to another fixed network operator and likewise, subscribers to the service provided by one mobile network operator to port their numbers to another mobile network operator. Cross platform or intermodal number portability between fixed and mobile networks (“intermodal NP”) was not considered.
76. The Authority notes that the introduction of intermodal NP would allow customers to have a greater choice to port their fixed and mobile numbers and may also assist in promoting cross platform competition between operators. It would also be in line with the general technologically-neutral approach to ICT regulation in the Cayman Islands.
77. However, once intermodal NP is allowed, the demarcation between fixed and mobile numbers is blurred. A fixed number could become a mobile number, and vice versa. As Digicel cautions in its submission, there are a number consumer protection issues that should be considered before deciding whether intermodal number portability is to be implemented, e.g. the reduced ability of customers to control spend in a calling party pays system. While the Authority acknowledges the existence of these issues, it notes that technological solutions may be available or could be developed to solve such issues.
78. Intermodal NP introduces a range of issues that have not been considered in detail in previous consultations by the Authority. While both C&W and Digicel focus on consumer protection issues, C&W also raised technical considerations. However, there may be other issues that warrant closer consideration. Furthermore, the Authority is aware of only a few countries who have implemented intermodal number portability or a restrictive version of it. These include Canada, Finland, Ireland, the UK and USA.

Conclusion and Further Process

79. The consultation responses have revealed a strong support for LNP from the users of telecommunications services. Licensees, however, appear to be divided into

those providing support for LNP and those expressing some reservations and uncertainty as to the potential costs to consumers of LNP.

80. Digicel's late submission of additional costs suggests a fundamental revision or complete revaluation of the internal solution upon which it had previously relied when submitting cost information to the Authority. However, Digicel has provided little or no information to explain why previously submitted costing information was inadequate or indeed how the increase in costs can be explained or justified. Accordingly, the Authority cannot accept the information provided.
81. With regard to other comments on the uncertainty of the Authority's estimate of the maximum costs attributable to LNP on the monthly telephone bills, it notes that information of this nature per definition will be uncertain as the actual costs cannot be determined until an LNP solution is in place. Since initiating the LNP process the Authority has endeavoured to follow a process that would yield the best possible information for purposes of deciding whether or not to mandate LNP in the Cayman Islands. This included the creation of a LNP Consortium consisting of industry members to investigate in detail the various LNP solutions and their costs and the invitation to each licensee to submit to the Authority the cost of upgrading its systems to cater for LNP. The cost estimates used by the Authority fully reflect the information received from the industry.
82. In deciding whether or not to mandate the introduction of LNP in the Cayman Islands the Authority must act in best interests of consumers. As noted earlier, the opinion of the users of telecommunications services on the acceptability of LNP costs is important in making a determination under section 71(3). The comments received from users in response to CD 2008-1 show a unanimous and unequivocal support for LNP. While not all users refer directly to the adequacy of costs involved, the Authority interprets the responses as an acceptance of LNP given the likely costs to users, i.e. that the benefits to users exceed those of the costs to users. As such the Authority determines, in accordance with section 71(3) of the ICTA Law, that the benefits likely to arise from the requirement to provide local number portability outweigh the likely cost of implementing it. Based on the cost information provided by the licensees and outside vendors, the Authority is also satisfied on reasonable grounds that such a requirement will not impose an unfair burden on any licensee.
83. However, the Authority recognizes that it may be appropriate to further examine the implementation of LNP in other small jurisdictions. The investigation of solutions for smaller jurisdictions has only become possible recently and the LNP solution recommended by the LNP Consortium may no longer be optimal or cost efficient. There may be other systems which are better suited for a small jurisdiction such as Cayman.

84. The Authority also acknowledges that it may be appropriate to consider the costs and benefits of intermodal NP prior to making a final determination under section 71 of the ICTA Law.
85. Therefore, in accordance with section 71(3) of the ICTA Law, the Authority hereby directs all operators licensed to provide telephony services (Type 1, 3, 4 and 5 Services) to implement LNP no later than **30 June 2010**. This requirement will not apply initially to intermodal NP. Furthermore, after careful consideration, the Authority determines that it is preferable not to mandate any specific LNP solution. Based on the comments received from C&W, Digicel and WestTel, the Authority recognizes that the LNP solution recommended by the LNP Consortium (electronic query of all calls) may no longer be the most cost-effective solution. The licensees will therefore be free to choose another LNP solution if they deem another solution to be more cost-effective.
86. In order to meet this 30 June 2010 deadline, the Authority requires the LNP Consortium to provide a report for approval to the Authority by **29 May 2009** that describes the recommended LNP solution and provides a detailed implementation plan and milestones. The Authority will organize a meeting of the LNP Consortium within 30 days of this decision to begin this process. The Authority will not, however, participate actively in these discussions. As noted above, the licensees will be responsible for choosing an appropriate LNP solution for the Cayman Islands and implementing this solution no later than 30 June 2010.