



ICTA Decision 2004-1

Grand Cayman, 7th April 2004

**Imputation Test of Cable & Wireless (Cayman Islands)
Limited Mobile Services**

The Authority finds that C&W's mobile services do not all meet the imputation test. Given the lack of information regarding all relevant service costs and volumes, and in the interests of expediency, the Authority applied the imputation test at the average subscriber plan level. In doing so, the Authority has, of necessity, had to make certain assumptions in order to carry out an appropriate imputation test for mobile services.

The Authority's findings are as follows: four of C&W's eight postpaid plans, one of C&W's three prepaid plans, and three of C&W's mobile IDD rates fail the imputation test. The details of the imputation test results are in Attachment 3 to this Decision.

The mobile plans and services which have failed the imputation test together with the minimum amounts the company is required to increase its rates, should it decide to continue offering these plans and services, are summarised below. They are as follows:

Postpaid Plan	Minimum amount required to increase monthly rate ¹
b350	\$8
b500	\$21
b750	\$6
bBiz7500	\$60

Prepaid Plan	Minimum amount required to increase per-minute rate on a weighted average basis ²
bFree Anytime	\$0.04

Mobile IDD	
Plan and Zone Time of Day	Minimum amount required to increase per-minute rate
TDMA/GSM Postpaid	
* Other	
- Day	\$0.16

¹ Figures have been rounded up to the nearest dollar.

² Figure has been rounded up to the nearest cent.

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Mobile IDD	
Plan and Zone Time of Day	Minimum amount required to increase per-minute rate
TDMA/GSM Postpaid	
- Evening	\$0.12
- Weekend	\$0.11

With some exceptions, the Authority has, without prejudice, relied on costs from C&W's adjusted fully allocated cost ("FAC") model. When the Authority finalises the mobile termination rate, it reserves the right to revisit the imputation tests for all the mobile plans that were revised in C&W's 3 March 2004 mobile services notification letters.

(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 the evening of 3 March 2004, Cable & Wireless ("C&W") notified the Authority that, with effect from 9 March 2004, it planned to introduce new post-paid, prepaid and international direct dial (IDD) rates for its mobile services.
2. On 4 March 2004, the Authority forwarded C&W's notification of the company's planned new mobile services rates to the other companies currently licensed to provide mobile services in the Cayman Islands, namely Digicel Cayman Limited (Digicel) and Wireless Ventures (Cayman Islands) Limited (Wireless Ventures).
3. On 5 March 2004, Digicel and Wireless Ventures issued requests for the Authority to prohibit C&W's planned new mobile services rates from taking effect on 9 March 2004. The Authority issued a letter to C&W that same day, requiring the company to respond to the concerns of Digicel and Wireless Ventures by no later than noon, 8 March 2004.
4. C&W replied to the Authority's letter, as requested, on 8 March 2004. In its reply, C&W stated that there was no basis in the company's Licence for the Authority to prevent the planned new mobile service rates from taking effect and, furthermore, that the concerns expressed by Digicel and Wireless Ventures were unfounded.
5. On 6 March 2004, Digicel submitted in confidence an analysis purporting to demonstrate that certain of C&W's proposed new mobile services rates were priced below cost. Two days later, on 8 March 2004, Digicel filed in confidence a second submission purporting to offer further evidence that C&W's proposed new mobile service rates were priced below cost.
6. Following its review of the changes proposed by C&W, the Authority, on its own initiative, issued a letter to C&W on 8 March 2004, requiring the company to submit an

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analysis by no later than 10 March 2004 demonstrating that its planned new mobile service rates were priced at or above the company's cost. In this correspondence the Authority further noted its concern that certain aspects of the new rates, if introduced, might well place C&W in breach of the anti-competitive conditions in its Licence. The Authority placed C&W on notice that if the Authority determined that certain of the mobile rates did not satisfy the imputation test or that the company was, in any other way, in breach of Condition 15 of its Licence, C&W would be required to rectify the situation immediately. Accordingly, the Authority strongly recommended that C&W defer the implementation of its planned new mobile rates until the Authority had made the relevant determinations.

7. On the same day, 8 March 2004, C&W confirmed to the Authority that the company was very confident that its planned new mobile rates would pass the imputation test and that it therefore would implement the new rates as planned.
8. On 10 March 2004, the company filed the imputation analysis in support of its new mobile service rates. A redacted version of the imputation analysis was provided by C&W to Digicel and Wireless Ventures. The latter two parties submitted comments on the redacted version of C&W's imputation analysis on 12 March 2004 and 29 March 2004 respectively.
9. Following its review of the company's imputation analysis, the Authority concluded that the information was insufficient to complete its assessment. As a result, on 15 March 2004, the Authority issued to C&W two sets of interrogatories, with replies due to the Authority by 30 March 2004 and 6 April 2004, respectively.
10. On 17 March 2004, the Authority issued to Digicel and Wireless Ventures a single set of interrogatories essentially requesting that they identify usage volume and patterns associated with post-paid mobile plans in the other Caribbean jurisdictions where they or an affiliate provide mobile services in calling party pays regimes, with replies due to the Authority on 26 March 2004.
11. On 19 March 2004, Wireless Ventures declined to provide the data requested by the Authority, contending that the information was highly confidential and that as it concerned markets other than the Cayman Islands was not relevant to the Authority's determination. On 29 March 2004, Digicel submitted its reply to the Authority's interrogatories.
12. C&W filed its responses to all of the interrogatories on 31 March 2004.
13. The Authority has carefully reviewed all of the above-mentioned submissions and issues its decisions herein.

Claims of Confidentiality

C&W

14. On filing its mobile service imputation test on 10 March 2004, C&W made a claim for confidentiality pursuant to Regulation 3 of the Information and Communication Technology Authority (Confidentiality) Regulations, 2003 (the Regulations) and provided a redacted copy for the public record. Although no other party disputed the claim for confidentiality submitted by C&W, the Authority, on its own initiative, on 18 March 2004 expressed the view that the company claimed confidentiality for more information than was supported in its submission and requested that a new redacted version be filed taking into account the Authority's comments. C&W complied with this request by filing a new redacted version of the mobile imputation test for the public record on 29 March 2004. Given that the Authority has not received any challenges to the latest filing of the new redacted version by C&W, it is satisfied to let the public record stand as it currently exists.
15. In its response to interrogatories filed 30 March 2004, C&W submitted a claim for confidentiality in accordance with the Regulations and provided a redacted copy for the public record. The Authority notes that it is issuing its decision prior to any party having had the opportunity to challenge the C&W claim for confidentiality. The Authority recognizes that some of the material filed by C&W is the proper subject for a claim of confidentiality. Additionally, in arriving at its determination, the Authority is called upon to assess and comment upon various information covered by the claim for confidentiality. Accordingly, in issuing its decision the Authority is providing both a confidential version and a redacted copy. Should any party successfully challenge the C&W claim for confidentiality on the interrogatory responses, the Authority will modify the redacted version accordingly.

Digicel

16. On 6 March and 8 March 2004, Digicel submitted various comments in confidence and provided a redacted copy of these comments for the public record. There has been no challenge to the Digicel claim for confidentiality and the Authority is satisfied to let the public record stand as it currently exists.

Wireless Ventures

17. Wireless Venture did not make any confidentiality claims.

Comments by Interested Parties

Wireless Ventures

18. In its comments of March 5 2004, Wireless Ventures requested that the Authority stay the effectiveness of Cable & Wireless' rates and assess whether these rates were

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predatory or anti-competitive using an appropriate imputation test to make such a determination.

19. Wireless Ventures stated that Cable & Wireless was in violation of paragraphs 8(1)(b) and 12(1)(f) of the Interconnection and Infrastructure Sharing Regulations if, using appropriate imputation methodologies, it was providing interconnection services to its wireless arm at rates that were lower than those made available to Wireless Ventures under its interconnection agreement. Wireless Ventures went on to state that C&W's rates were 66% below its 23 February rates and that it was using its monopoly power to offer below-cost pricing to stifle competition. They further contended that C&W would fail an appropriate imputation test.
20. Wireless Ventures stated that it would suffer irreparable harm if C&W's rates were permitted to go into effect and that allowing C&W to establish rates that did not reflect the actual cost of providing services would likely cause a new entrant to withdraw from the market.
21. In concluding, Wireless Ventures stated that C&W's mobile pricing fell squarely within the prohibited anti-competitive practices set forth in Condition 15 of its Licence.

Digicel

22. Digicel submitted comments through its legal counsel on 5 March 2004 and submitted further comments on 6 and 8 March 2004.
23. In the 5 March 2004 submission, legal counsel made a number of comments with respect to Condition 15 of the C&W Licence to the effect that C&W was under an obligation not to engage in anti-competitive conduct which includes predatory pricing and price squeezing.
24. Counsel for Digicel further stated that pricing could not be approved pursuant to paragraph 17 of Annex A of the C&W Licence if it failed the imputation test. Counsel maintained that until a Category 3 allocation had been agreed, mobile services must continue to be treated as a Category 2 service.
25. In its 6 March 2004 submission, Digicel states that C&W had the burden of proof to refute claims of anti-competitive pricing and that the Authority could require C&W to prove that they would pass the imputation test in accordance with paragraph 17 of Annex of the C&W Licence.
26. Digicel also submitted a confidential analysis with respect to C&W's post paid packages and IDD calls in support of its position that C&W was engaging in anti-competitive practices by selling below cost.
27. In its 8 March submission, Digicel queried why C&W had not submitted analysis to support its assertion that prior to adopting its new rates C&W had carried out a complete financial analysis on profitability by service and by plan. Digicel also filed an

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analysis on the margins available to C&W based on C&W's fixed termination costs, the range of disputed mobile termination costs and wholesale international prices.

C&W Response to Other Licensees' Comments

28. In the first of two letters sent on 8 March 2004, C&W responded to the comments of the other Licensees by stating that their objections were without merit and represented an attempt to use the regulatory process to frustrate the normal workings of a competitive market.
29. In the second letter, which was a response to a request from the Authority dated 5 March 2004, C&W addressed directly, and in more detail, the various comments made by Digicel and Wireless Ventures.
30. The company stated that neither Digicel and AT&T had justified their anti-competitive allegations and that there was no reasonable grounds upon which to base a cease and desist order. Under the procedures set out in Annex 5 of the Cable & Wireless Licence, the transfer of C&W "Mobile Services" to the service Category 3 was an automatic process, which occurred as soon as a mobile competitor began "commercial operations". C&W pointed out that the rates filed on March 3, 2004, were filed pursuant to paragraph 22 of Annex 5 and that they could be implemented upon three-business days notice, without any requirement for prior approval by the Authority, but subject to an ex post review within 180 days. C&W maintained that Digicel was incorrect in maintaining that the Authority should require ex ante approval of C&W mobile price decreases.
31. C&W took issue with Digicel's view that because there was no agreement as to which of the sub categories in Category 3 mobile services should fall within that it should remain as a Category 2 service.
32. C&W submitted that there was no evidence which could justify a review of C&W's prices. The fact that C&W's rates were now lower, following the introduction of mobile competition, and the fact that competition appeared to have reduced rates faster than either Digicel or AT&T expected, was not evidence that prices were below cost, and could not be the basis of a concern that would lead to intervention by the Authority.
33. The company was being accused of cross-subsidizing its retail mobile services out of its mobile termination revenue stream, when C&W had in fact fought consistently against the high mobile termination charges that the two new mobile entrants had been arguing for in the Cayman Islands. C&W stated that revenues from those high charges formed a central component of the typical mobile new entrant business model, to cross-subsidize their own retail rates.
34. With respect to the need for the imputation test, prior to adopting the rates that were filed on March 3, 2004, C&W carried out a complete financial analysis on the impact of these proposed rates on its profitability by service and by plan. There was no rate among the new rates filed on March 3, 2004, that were loss-making. The average unit

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revenue forecasted under reasonable assumptions for mobile-to-fixed, mobile-to-own-mobile, and mobile-to-third party-mobile calls showed that all rates were cost recovering, including an allowance for a reasonable return on capital, for all plans. C&W submitted that it was only under a naïve or disingenuous comparison of improbable consumption patterns that one could assert that these rates “clearly” fail an imputation test. Its rates were based on an informed view of the revenue generated by each plan and of actual consumption patterns.

35. C&W concluded that the Authority should dismiss the Digicel and AT&T requests for a review of the new mobile rates filed on March 3, 2004.

Authority’s Assessment of Interested Party Comments

36. The Authority takes seriously the comments concerning below cost pricing, the obligation not to engage in anti-competitive conduct, the necessity for rates to pass the imputation test and the potential for irreparable harm such as might cause a new entrant to withdraw from the market. However, the Authority notes that simple allegations to this effect are not sufficiently probative unless substantiated by empirical data and assessed within proper regulatory and legal constraints and parameters. It is for this reason that the Authority has undertaken the extensive assessment, discussion and disposition reflected in this decision and that of Decision 2004-2.
37. The Authority notes that Decision 2004-2 and the assessment undertaken herein address many of the comments made by the interested parties to these proceedings. However, additional comments are warranted to address specific submissions which may not otherwise be dealt with.
38. C&W is correct in stating that, as mobile services are a Category 3 service, its obligation is to pass an ex post imputation test if so required by the Authority. The operative paragraphs are 22 and 38 in Annex A of the C& W Licence. The Authority is appreciative of the various analysis submitted by Digicel. It is not necessary to provide any comment on these as the Authority itself has undertaken a comprehensive analysis of the costs and prices involved and this forms the basis of this Decision.
39. The Authority has addressed critically many of C&W’s comments later in this Decision and in Decision 2004-2. However, the Authority wishes to note here the very serious reservation it has as to the veracity of C&W’s assertion that it carried out a complete financial analysis as to profitability by service and by plan prior to implementing its new rates..

Natural Justice

40. The Authority has not taken lightly its examination of facts and circumstances leading to this decision, nor the potential impact of its decision on all the stakeholders in the marketplace.

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41. The Authority has endeavoured to respect the natural justice rights of the parties to be heard and to present their position. C&W was put on notice, at the earliest stage possible, that the Authority was concerned that its new rates, on an initial examination, might be in breach of the anti-competitive provisions of its Licence. It was for this reason, together with concern about the possible impact of its eventual decision upon all stakeholders, that the Authority strongly recommended that C&W delay the implementation of its new rates pending the appropriate investigation. Had the amendments to the Law been in effect at the time, it is likely that the Authority would have issued an interim direction in accordance with the new section 34P.
42. The Authority requested the imputation test from C&W in a relatively short time frame. In doing so, the Authority was mindful that officers of the company had repeatedly stated, both publicly and in writing to the Authority, that C&W was confident that all its rates would pass the imputation test. Given these public statements and the Licence obligation that mobile rates must pass the imputation test, it was reasonable for the Authority to assume that C&W had already undertaken a comprehensive study to satisfy itself that it met the necessary regulatory requirements, and that all relevant information therefore was readily available.
43. Upon receiving the imputation test from C&W, it was found to be significantly deficient in many areas, such that the Authority felt bound to send some nine pages of additional questions to C&W. The Authority provided C&W with a full 15 days to produce this additional information. The eventual C&W response runs to some 70 pages, with a similar number of appendices and spreadsheets. This gives an indication of size of the original deficiencies, and the additional work that had to be done. Other Licensees, and perhaps the general public, may have felt that this was an unduly lengthy period of time to give to C&W. However the Authority had to balance the requirement to obtain a rapid decision in emerging competitive marketplace especially when anti-competitive allegations are at issue with the requirements of natural justice and the need to obtain meaningful information about the imputation test .

Introduction

44. This decision provides the Authority's findings on the matter of whether Cable & Wireless (Cayman Islands) Limited ("C&W" or "company") mobile services satisfy the Authority's interim imputation test ("imputation test") requirements.
45. The issues central to this determination are the following:
 - a. Has C&W applied an imputation test methodology to the mobile services that are the subject of the service change notification filed 3 March 2004 in a manner consistent with Annex 5 to its Licence, and if it has not, what are the appropriate means to rectify the deficiencies of the company's methodology?
 - b. Upon application of an appropriate methodology, do the mobile services referred to in (1) above satisfy the imputation test, and if they do not, what are the appropriate remedies?

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46. By way of three letters dated 3 March 2004, C&W notified the Authority that it planned to restructure its postpaid mobile plans, reduce its mobile prepaid rates, and reduce its mobile international direct dial rates with effect from 9 March 2004. The following is a list of the services at issue:

Postpaid Mobile Calling Plans³	Prepaid Mobile Calling Plans⁴	Mobile International Direct Dial Services⁵
b350	Pay-As-You-Go	Jamaica, Turks & Caicos Islands, USA, Canada, United Kingdom, Ireland
b500	bFree	Rest of World except for Other
b750	bFree Anytime	Other ⁶
b1150	Prepaid Hiptop	
bBiz2200		
bBiz3750		
bBiz7500		
bBiz20000		

47. See Attachment 1 for a summary of the rates and service elements that underlie the postpaid and prepaid mobile plans identified in the above table.

Imputation Test Provisions in Annex 5 to C&W’s Licence

48. Paragraphs 38 to 40 in Annex 5 to the company’s Licence articulate the appropriate application of the imputation test as follows:

“38. The imputation test shall be applied on an ex ante basis for Category 1 Services, or Category 4 Services (ie., bundles that contain Category 1 Services). The imputation test shall be applied on an ex post basis, if the Authority requires an imputation test, for all other services. In each case the Imputation Test shall be administered by the Authority. C&W shall provide information to enable the Authority to conduct the Imputation Test and C&W bears the onus to demonstrate that it has satisfied the Imputation Test.

39. The Interim Imputation Test is set out below.

³ C&W letter, *Change to Postpaid Plan*, 3 March 2004.

⁴ C&W letter, *Mobile Prepaid Rate Change*, 3 March 2004.

⁵ C&W letter, *Mobile International Direct Dial Rates*, 3 March 2004.

⁶ The category “Other” includes the following: Antarctica, Ascension, Cook Islands, Cuba, Cuba – Guantanamo, Falkland Islands, Guinea-Bissau, Norfolk Islands, Saint Helena, Sao Tome & Principe, Solomon Islands, Syrian Arab Republic, Vanuatu; Thuraya; Iridium; Inmarsat (MSAT IO); and Inmarsat (MSAT AO, AOW, PO)

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40. The Authority has the right to require that a retail rate passes the imputation test and has the discretion to waive the requirement for a retail rate to pass the imputation test. (e.g. the Authority may determine that it is appropriate to exempt time limited promotions from an imputation test requirement.)”
49. Until the forward-looking long-run incremental costing (FLLRIC) methodology is developed, interim imputation test provisions apply. These provisions are also set out in Annex 5. Paragraphs 41 and 42 state:

“Interim Imputation Test

41. This Interim Imputation Test is to be used from the Effective Date until the Authority has determined the form of the Imputation Test.

42. The Interim Imputation Test identifies a floor price for downstream services included in the pricing proposal, based on the measure set out in Table 1, for purposes of determining whether C&W is engaging in anti-competitive behaviour. Table 2 defines the terms used in Table 1. A proposal passes the Interim Imputation Test if the proposed retail price is equal to or greater than the floor price that the Imputation Test identifies. For a bundle of services, the imputed floor price is the sum of the floor prices for all elements of that bundle.”

50. Tables 1 and 2 in Annex 5 of C&W’s Licence can be found on the Authority’s website at: <http://www.icta.ky/docs/Licences/CWLicence.pdf>.
51. On 8 March 2004, the Authority issued a letter to the company stating it had concerns with at least some of the new rates, and required the company to demonstrate that the new rates pass an imputation test.
52. Because paragraphs 40 and 42 refer to the service’s “retail price”, and since there is no single retail price for the “Mobile” service category identified in Table 1 to Annex 5, the Authority is of view that the interim imputation test applies, at a minimum, to the retail plan.
53. The question is whether the imputation test is more appropriately applied to the retail plan as a whole or individually to each service element of the retail plan. The Authority concludes that, for the postpaid and prepaid plans, it appears reasonable in this instance to apply the imputation test at a plan level, given that service bundling characterises the mobile services competition in most other liberalised jurisdictions and, thus far, does not appear to have negatively impacted the roll-out of competition in the mobile market in the Cayman Islands. What is of primary relevance in this context is whether the plan revenue recovers the total costs of the service elements within the plan.

C&W’s Approach

54. Attachment 2 describes various approaches to an imputation test.

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Postpaid Plans

55. C&W contends that it applies an imputation test to each of the individual service elements included in its postpaid plans. The company explains in its 10 March 2004 imputation test filing that “because [a service-level] approach implies the most rigorous type of imputation test, we have chosen to run our analysis at the service level. We hope thereby to present the strongest case to the Authority.”⁷
56. In actuality, C&W presents an incomplete set of service level imputation tests and does not clearly rectify the instances where it fails a service level imputation test. First, the company presents service level imputation tests only in those instances where it can identify the unit cost of a service in its adjusted fully allocated cost (“FAC”) model. For example, the unit costs of Custom Calling features (“enhanced features”), such as caller identification, call forwarding, call waiting, and three-way calling, are not identified in the FAC model. Hence, the company offers no service level imputation test for these services.
57. Second, among the services that the company chooses to test at the service level, certain services fail the imputation test. For instance, in the case of voicemail which is included in the plans, the service level imputation test identifies only the service’s cost but does not attribute any unit revenue to the service.
58. The company concedes that not every service passes a service level imputation test. In an effort to rectify this failure, the company applies a plan level imputation test and an overall, aggregate mobile services imputation test. These tests are likewise unsatisfactory. In the first instance, the Authority rejects an overall, aggregate mobile services imputation test on the grounds that it does not correctly define the relevant product market. The Authority believes that to effectively prevent the incumbent from engaging in a price squeeze or below-cost pricing, at a minimum, the imputation test must be applied to each individual calling plan.
59. Thirdly, the company’s plan level imputation test fails because it is based on an incoherent, or at best, an ad hoc methodology. In addition to the above issue, the plan level test attempts to unitize (on a per-minute basis) the aggregate, flat-rate monthly revenues associated with a plan and conclude that the company satisfies imputation as long as the derived unit of revenue exceeds the derived unit of cost of providing the plan.
60. The Authority rejects this methodology on the grounds that, as the company itself concedes, it imposes an “arbitrary apportionment [or unitization] of revenues.” Further, the company’s estimates of minutes and the period of time over which it has conducted its analysis are problematic as discussed in more detail below. Given the ad-hoc nature of the company’s methodology, the Authority finds that the company’s plan level tests are insufficient to demonstrate that the mobile plans satisfy imputation.

⁷ C&W letter, *Re: C&W Mobile Service Imputation Test*, 10 March 2004 ¶32.

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61. In addition to its objections to C&W's imputation methodology, the Authority takes issue with several of the company's underlying assumptions. First, the Authority objects to the company's method of forecasting current plan usage based on its previous plans. C&W justifies its forecast methodology, "as it was unable to forecast anything better given the knowledge that it had at its disposal."⁸ The Authority appreciates the paucity of knowledge C&W had at its disposal, but does not agree that this is a sufficient or relevant justification for its choice of assumptions, which give rise to the serious deficiencies of its analysis.
62. C&W explains that its mobile plan usage forecasts are based on the following assumptions:
- "For our analysis, we assumed that existing customers would remain on the plans to which they were transferred. We also assumed that the actual minutes demand for each call type would not change."⁹
63. Therefore, according to C&W's forecast assumptions, the company predicts that: (1) the customer who migrates from, e.g., a b150 plan (with 150 plan minutes per month) to a b750 plan (with 750 plan minutes per month) will consume the same number of minutes on the latter plan that she consumed on the former plan, even though she is now receiving 600 additional plan minutes per month without any additional charge; and (2) the customer will not seek an alternative, less expensive, plan that better matches her assumed fixed usage, such as the b350 plan (with 350 plan minutes per month).
64. As an overall proxy of reasonableness, the table below presents the actual usage of C&W's previous TDMA and GSM plans, and compares these figures to the forecasted figures applied by the company to its current plans. Note that, on a weighted average basis, the forecasted usage levels for its current plans are less than half of the actual usage levels for its previous plans. The Authority concludes that C&W's forecasts are not justifiable, and contradict elementary principles of economic behaviour.

⁸ C&W response dated 30 March 2004 to interrogatory 11a).

⁹ C&W response dated 30 March 2004 to interrogatory 11a).

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- 65. To support its forecast assumptions, C&W explains that there are two effects on customer demand: a stimulative effect of receiving a much larger bundle of monthly minutes at the same monthly rate; and a depressive effect of customer traffic going off-net to other Licensees' networks following the introduction of competition (i.e., mobile voice traffic that originates on C&W's mobile network and terminates on a third party mobile network). Which of these two effects dominates is, the company states, an empirical question. However, the Authority does not agree that the empirical evidence provided by the company supports its assertion that the repressive demand effects appear to outweigh the stimulative effects. First, the company's empirical analysis is based on three weeks of data (i.e., since the two mobile entrants began offering services on a commercial basis on 3 March 2004). This is an insufficient time period on which to draw conclusions on what will transpire over the longer term. Second, the apparent depressive effect constitutes a one percent decline in average subscriber daily "on-net" usage (i.e., the average duration of a mobile voice call that originates on C&W's mobile or fixed-line networks and terminates on C&W's mobile network). The Authority is not persuaded that this effect is statistically significant nor relevant given that it may simply reflect the addition of lower usage subscribers.

- 66. For purposes of forecasting the amount of off-net (C&W mobile to third party) traffic, the company readily admits that it developed no such forecast. As a result, it arbitrarily uses a fixed ### minutes a month for each prepaid and postpaid plan. This assumption appears to contradict other data the company provides regarding its off-net traffic. In particular, a fixed assumption of ### off-net minutes for each plan suggests that the proportion of off-net minutes to total plan minutes is less than ### percent. However,

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based on data provided by C&W for the last week of March 2004,¹⁰ off-net minutes were identified as approximately ### percent of all minutes for prepaid and postpaid plans combined. Since the per-minute rates for off-net calls exceed the per-minute cost, this assumption has the effect of underestimating the margin available to the company to recover other services within the monthly bundle (such as voice mail).

67. In calculating a plan level imputation test, the company weights the per-minute rates and per-minute costs it has applied to the services within the plan bundle by their respective minutes to arrive at a weighted average per-minute rate and per-minute cost for each plan. The company uses its FAC model to identify the per-minute costs of the following services included in its plans: on-net traffic, off-net traffic, and voice mail. The FAC model is also used to identify C&W's subscriber acquisition and maintenance costs.

Prepaid Plans

68. The company calculated monthly revenues by multiplying the previous month's usage by the proposed rates for each service offered under its prepaid plans: C&W mobile to C&W fixed, C&W mobile to C&W mobile, and C&W mobile to third party phones.
69. The company weights the rate of each service by its respective number of minutes to arrive at a weighted average per-minute rate for each plan.
70. Similarly for costs, the company sums the costs for different service elements and divides the sum by the total number of minutes.

Mobile International Direct Dial ("IDD") Services

71. In its 10 March 2004 imputation test filing, C&W stated that there were potentially two views of the imputation test for mobile IDD, based on Table 1 of Part 3 of Annex 5 to its Licence. The imputation test for mobile IDD could be either: a) the test for "international direct dial" or b) the test for "mobile" service. For the former, the floor price is measured by the wholesale IDD charge; for the latter, it is measured by the cost generated by the FAC model.¹¹
72. In its 10 March filing and its responses dated 30 March 2004 to interrogatories, C&W provided an analysis showing the wholesale rate as the price floor for mobile IDD for each of the following categories: TDMA prepaid, TDMA postpaid, GSM prepaid and GSM postpaid. Among other things, for each of the above categories, the company's analysis showed the proposed rate, the proposed rate with 20 percent Talkaway discount, and the cost per-minute (wholesale rate).

¹⁰ C&W response dated 30 March 2004 to interrogatory 11, Appendices 11A and 11B.

¹¹ C&W letter, *Re: C&W Mobile Service Imputation Test*, 10 March 2004 ¶19.

Conclusion

73. Although the Authority finds that C&W has generally applied an imputation test at the individual plan level, it has serious concerns about the manner in which C&W has applied the test, including the underlying data and assumptions used. The adjustments made by the Authority are discussed in greater detail below.

Authority's Analysis

74. The following analysis considers, in sequence, the imputation tests the Authority has applied to C&W's postpaid plans, prepaid plans, and mobile IDD services.

Postpaid Plans

75. C&W unitizes the monthly plan rate by imposing a forecasted usage of minutes for each plan. C&W was asked for information and analysis that supported its forecasts.¹² The company failed to respond to the question. In light of this failure and because the Authority considers the forecasts presented in C&W's analysis to be unreasonable, the Authority has adjusted these forecasts based on more reasonable assumptions. As implied in its responses to interrogatories, C&W's forecast relies on two primary assumptions: (1) customers migrated to a new plan will remain indefinitely on that new plan; and (2) customers migrated to a new plan will not alter their monthly usage. The Authority rejects the company's assumption that customers will remain on the plans to which they were migrated, based on the significant underutilization of plan minutes. Over time, in the Authority's view, it is more reasonable to assume that customers will choose a calling plan that best matches their demand. Having chosen a calling plan that best matches their demand, it is not unreasonable to assume that, in equilibrium, the average usage of subscribers within calling plans will be relatively insensitive to changes to the monthly plan rate.
76. The Authority modifies the company's plan level imputation test such that it does not impose an arbitrary unitization of the company's flat-rated plan revenues. The Authority's application of the average plan imputation test measures plan revenues as received from the average subscriber. Moreover, the test applied by the Authority measures the plan's costs based on the forecasted, average usage of each service within the plan. Therefore, the Authority's imputation methodology eliminates, or reduces to the greatest extent possible, the arbitrary unitization found in the company's methodology, and better captures the reality in which the company incurs the revenues and the costs of providing the mobile services included in its current plans; namely, the reality is that plan revenues are largely traffic insensitive, while plan costs, as identified in the FAC model, are largely traffic sensitive.
77. Attachment 3, pages 1 and 2, presents a table that identifies the Authority's imputation tests for each postpaid plan at issue in this decision. The column "Monthly Revenue" identifies the revenue C&W receives from serving the average plan subscriber, and the

¹² C&W response dated 30 March 2004 to interrogatory 11.

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column “Monthly Cost” identifies the cost C&W incurs from providing the service elements within the plan to the average subscriber. As articulated above, the components of revenue are insensitive to usage, with the exception of forecasted off-net usage and additional on-net usage, while the costs are sensitive to usage, with the exception of the subscriber acquisition and maintenance cost.

78. There are three major components to the Authority’s analysis of C&W’s postpaid plans: the revenue inputs, the cost inputs, and the average subscriber usage profile.

Revenue Inputs

79. The revenue inputs used in the Authority’s analysis are the same as those used in the company’s analysis, with the exception of upward modifications to the plans’ handset revenue, off-net usage revenue, and additional on-net usage revenue. Under the Authority’s methodology, these revenue sources are estimated based on an average subscriber’s forecasted demand for the services. The Authority’s methodology of forecasting the demand of an average subscriber is fully articulated below. In summary, forecasted handset demand is based on the number of handsets employed by the average subscriber to the previous plan with the most similar amount of plan minutes as the current plan. Since, the company’s forecasts consistently underestimate the Authority’s demand forecasts, all things being equal, this revision acts to increase the plan revenues. This result applies similarly to the Authority’s estimate of average off-net usage, and additional on-net usage (i.e., minutes consumed that exceed the included plan minutes).
80. In addition to modifying the company’s forecast assumptions, the Authority applies a price elasticity adjustment to additional on-net usage and to off-net usage to account for the stimulus caused by a decrease in the per-minute price of this service. The assumed price elasticity of demand for additional on-net usage and for off-net usage is -0.20.¹³ This assumption does not appear unreasonable in light of the price elasticity assumptions used by the company in its own FAC model.

Cost Inputs

81. The Authority has used, without prejudice, the costs derived by C&W’s FAC model with some exceptions, as explained in greater detail in this section. The Authority notes that there are presently two Determination Requests for a final mobile termination rate before the Authority. Since C&W has relied on the FAC model for its opening negotiating position on the mobile termination rate, the resolution of a final mobile termination rate will entail a review of the FAC model. Pending any adjustments made to the FAC model as part of that process, the Authority has, for the purposes of the imputation test for mobile services, relied on the costs from C&W’s FAC model. The Authority reserves the right to review the imputation test for mobile services once it has made its determinations on the final mobile termination rate.

¹³ Simply put, this means that every ten percent decrease in the per-minute price causes a two percent increase in additional minutes usage.

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82. Regarding the cost adjustments made by the Authority for purposes of the mobile services' imputation test, it has adjusted C&W's costs, at the plan level, to include subscriber acquisition and monthly maintenance costs.
83. For enhanced features, maintenance cost and additional support per additional handset, plan migration costs including subscriber plan termination costs, C&W provided no information on these costs or a forecast of usage. For the purposes of its imputation test, the Authority has made no additional adjustments to reflect these costs. However, as set out in the Determinations section below, the company is directed to provide the information requested. The information may be used by the Authority in its determinations on the final imputation test for mobile services once the Determination Requests regarding the final mobile termination rate are resolved.
84. With respect to the mobile to mobile interconnection cost assumptions for TDMA calls, C&W stated that the end-to-end cost of carrying one on-net minute is \$###. However, C&W stated that the end-to-end cost of carrying one minute of off-net traffic is \$### which it stated was FAC-based. C&W was asked in interrogatories to provide justification for using different origination and termination costs for on-net versus off-net calls and merely stated that the costs for its own costs are measured in its FAC model.¹⁴
85. The Authority considers it would be unjustly discriminatory if C&W used a different interconnection rate for estimating the costs of C&W's on-net traffic as opposed to off-net traffic. To do so would be contrary to section 44(5) of the ICTA Law which states:
- “Any interconnection provided by a licensee pursuant to the provisions of this section shall be provided at reasonable rates, terms, and conditions which are not less favourable than those provided to –
- (a) any non-affiliated supplier
 - (b) any subsidiary or affiliate of the licensees; or
 - (c) any other part of the licensee's own business;”
86. For that reason, the Authority used C&W's estimated cost of mobile call origination, plus its opening negotiating position of mobile call termination on third party networks for C&W's on-net mobile to mobile calls on its TDMA network. Given that the cost of terminating mobile calls on third-party networks represents the actual costs that would be incurred by C&W, the same rate has been used for the cost of terminating mobile traffic on its own network.
87. Regarding the mobile to fixed and mobile to mobile interconnection cost assumptions for GSM calls, C&W stated that the following GSM assets were not fully reflected in its FAC model: GSM switch; ### for its inbound/outbound GSM traffic between the Grand Cayman Base Station and the GSM switch in Jamaica; ### exclusively dedicated to signalling between the GSM switch to the voicemail platform; and ### for

¹⁴ C&W responses dated 30 March 2004 to interrogatories C13a) and c).

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inbound/outbound traffic between its GSM switch and TDMA or fixed network switch. C&W was asked to provide an estimate of the additional costs and an estimate of the cost of terminating a GSM mobile call. C&W said it did not have sufficient time to develop the cost estimates and had no reason to believe that the cost of terminating a TDMA call would not be a suitable proxy.¹⁵

88. The Authority considers that the cost of a GSM and a TDMA call are likely to be markedly different. The company states, in an interrogatory response, that at the time the FAC model was developed, the GSM assets included within the FAC model were treated as work-in-progress. Since that point in time, the GSM assets have been put into service. As a result, depreciation associated with the GSM assets are not included in the FAC model and should be reflected in the mobile termination rate for GSM. In addition, the cost inputs for the EIs are not reflected in the TDMA mobile termination rate since the TDMA switch is located in the Cayman Islands.
89. In the absence of any information from the company on costs and estimated volumes, an additional 25 percent has been applied both to the origination and termination portions of the per-minute cost for GSM mobile to mobile and GSM mobile to fixed calls.
90. In addition, C&W failed to provide support, including references to its FAC model, for the following costs:
 - a. C&W provided no explanation or rationale for the proportions of minutes used in the plans for mobile to fixed (approximately ### percent) or mobile to mobile (approximately ### percent) traffic. The proportions were hard-entered into the spreadsheet. It is unclear where the proportions were derived from, and whether the information represents a suitable proxy for the purposes of the imputation test.
 - b. Some key cost input numbers were revised downwards in C&W's responses to ICTA's interrogatories filed on 30 March 2004. C&W provided no explanation for the reduction other than stating that "We note that some of the unit costs associated with the call types requested by the Authority are higher, some lower, than the corresponding unit costs presented in our 10 March submission. With the greater time afforded in the interrogatory we have been able to be more precise in our analysis". One of those cost assumptions was the mobile to fixed termination which the company reduced from \$### per minute to approximately \$### to \$### per minute without explanation.
 - c. Only four of some 60 cost numbers for carrying different types of calls were referenced to the FAC model.¹⁶ The other numbers were simply hard-entered into spreadsheets.

¹⁵ C&W response dated 31 March 2004 to interrogatory 1.

¹⁶ C&W responses dated 30 March 2004 to interrogatories 6 and 8.

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91. The Authority has, in this instance, relied on the company’s assertion that the costs are derived from its FAC model. However, the company is requested to provide the source of the costs from the FAC model and additional support for its assumptions noted in the previous paragraph. When the Authority finalises the mobile termination rate pursuant to the Determination Requests, pending any adjustments made to the FAC model, the Authority may require C&W to file a revised imputation test for mobile services.

Average Subscriber Usage Profile

92. Data from C&W’s previous plans are used to forecast the usage of the average subscriber to the current postpaid plans. In particular, two conditions are imposed to determine which previous plans to use as the basis for forecasting usage of a current plan: first, to be conservative, only previous plans with fewer plan minutes than the current plan are considered; and second, only the previous plans that are the most similar, in terms of plan minutes, are considered. In each case, a single previous TDMA and GSM plan are considered. The final average usage profile is based on a simple average of the considered TDMA and GSM plans. For example, the previous TDMA and GSM plans considered for the b350 plan are the b300 (GSM) and the Digital 275 (TDMA). A complete mapping of previous plans used to forecast current plans is identified in the table below.

C&W Post-Paid Plans (Current "migrated too" Plans)				C&W Forecast Plan Inputs (Previous "migrated from" Plans)			ICTA Forecast Plan Inputs (Next-lowest "most similar" previous plans)		
New Plan	Monthly Rate	Plan Minutes	Monthly Rate/Plan Minutes	Former Plan	Monthly Rate	Plan Minutes	Former Plan	Monthly Rate	Plan Minutes
b350	\$ 35	350	\$0.10	Digital 40	\$ 39	40	b300	\$ 60	500
b500	\$ 45	500	\$0.09	b75	\$ 45	175	Digital 275	\$ 79	275
b750	\$ 60	750	\$0.08	Digital 150	\$ 59	150	b500	\$ 79	700
b1150	\$ 79	1,150	\$0.07	b150	\$ 45	350	Digital 500	\$ 129	500
bBiz2200	\$ 129	2,200	\$0.06	Digital 275	\$ 79	275	b500	\$ 79	700
bBiz3750	\$ 189	3,750	\$0.05	b300	\$ 60	500	Digital 500	\$ 129	500
bBiz7500	\$ 299	7,500	\$0.04	Digital 500	\$ 129	500	bBiz 800	\$ 129	1000
bBiz20000	\$ 599	20,000	\$0.03	b500	\$ 79	800	Bus 1000	\$ 220	1000
				Bus 1000	\$ 220	1000	bBiz 1500	\$ 189	1900
				bBiz 800	\$ 129	1100	Bs 1000	\$ 220	1000
				Bus 3000	\$ 630	3000	bBiz 3000	\$ 299	3400
				bBiz 1500	\$ 189	1900	Bus 3000	\$ 630	3050
				Bus 5000	\$ 950	5000	bBiz 5000	\$ 599	5600
				bBiz3000	\$ 299	3400	Bus 5000	\$ 950	5150
				bBiz5000	\$ 599	5600	bBiz 10000	\$ 949	11000
				bBiz10000	\$ 949	11000	Bus 10000	\$ 1,750	10150
				Bus 10000	\$ 1,750	10000			

93. The table above identifies C&W’s existing plans (left), C&W’s pre-existing plans that are the basis for its usage forecasts (middle), and the Authority’s selection of pre-existing plans that are the basis for its usage forecasts of C&W’s existing plans (right).

Prepaid Plans

94. The Authority has utilized, without modification, C&W’s prepaid per-minute rates. Monthly revenues are determined by multiplying one month’s usage (February 2004) by the proposed rates for each service element offered under its prepaid plans: C&W mobile to C&W fixed, C&W mobile to C&W mobile, and C&W mobile to third party

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phones. Each service element rate is then weighted by its respective share of minutes to arrive at a weighted average per-minute rate for each plan.

95. Similarly for costs, the cost for different plan components is summed and then divided by the sum by the number of minutes. The cost inputs used in the Authority's analysis of prepaid plans is the same as those used in its analysis of postpaid plans. A detailed articulation of these modifications is provided above in the discussion of the postpaid methodology. The one modification to the costs inputs that is unique to the prepaid analysis is that the monthly subscriber acquisition costs of \$### are unitized per the FAC model and added to the per-minute costs of the relevant service elements. The per-minute subscriber acquisition cost is estimated to be \$###.

Mobile IDD Services

96. The Authority accepts the company's method of reviewing mobile IDD services for each plan as a separate service from domestic mobile calling and other services.
97. Competitors may choose to serve niche markets, including specific routes within those markets. As competitors that purchase wholesale IDD services from C&W are constrained by the wholesale rates for the particular routes they choose to serve, the Authority considers the appropriate level to conduct the imputation test is by wholesale geographic segment.
98. The wholesale zones are:
- Jamaica, Turks & Caicos Islands, USA, Canada, United Kingdom, Ireland
 - Rest of the world (except for Other)
 - Other
 - Antarctica, Ascension, Cook Islands, Cuba, Cuba – Guantanamo, Falkland Islands, Guinea-Bissau, Norfolk Islands, Saint Helena, Sao Tome & Principe, Solomon Islands, Syrian Arab Republic, Vanuatu
 - Thuraya
 - Iridium
 - Inmarsat (MSAT IO)
 - Inmarsat (MSAT AO, AOW, PO)
99. In its 10 March 2004 filing and in an interrogatory response, C&W stated that the effective Talkaway discount was in the order of ### percent off average revenue per minute and not 20 percent off the mobile IDD rate.¹⁷ However, in response to the second part of that same interrogatory which asked the company to provide all the analysis and documentation in support of an effective ### percent Talkaway discount, the company appeared to state the ### percent Talkaway discount was based on information during a period when mobile customers were only offered Talkaway

¹⁷ C&W response dated 30 March 2004 to interrogatory 11a.

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discounts ranging from 5-15 percent. C&W went on to state that, if one analysed the data from Smartchoice customers (who qualify for 20 percent off calls to 3 to 6 predetermined IDD numbers), the effective discount is only ### percent.

100. Given that the number of predetermined numbers has increased from 2 to 3 predetermined IDD numbers to five numbers, even if mobile customers eligible for Talkaway did not take advantage of the increased eligible IDD numbers, the effective discount should remain the same. If, in addition, there was a stimulative effect from increasing the number of eligible IDD numbers, the effective discount based on average revenue per minute should increase and not decrease, all other things being equal.
101. The company was requested to provide information in support of its estimated ### percent discount.¹⁸ As the company did not provide this information nor make a sufficient case that the discount off the mobile IDD rate should be anything other than 20 percent off the mobile IDD rate for imputation test purposes, the Authority has applied 20 percent off the IDD retail rate to arrive at the appropriate per-minute rate for cost comparison purposes. Based on the information provided in Appendix 14 of the company's interrogatory responses, a comparison of the "Proposed Rate with 20% Talkaway Discount" with "Cost per minute (Wholesale Rate)" would suggest that daytime, evening and weekend rates for "Other" for TDMA postpaid and GSM postpaid plans do not meet the imputation test.¹⁹
102. Attachment 3 presents the Authority's imputation test results for each plan and service at issue in this decision. The Authority finds that the following mobile plans and services fail the imputation test (the magnitude of the failure is identified in parentheses):

Postpaid plans: b350 (-\$8/month), b500 (-\$21/month), b750 (-\$6/month), and bBiz7500 (-\$60/month).

Prepaid plans: bFree Anytime (-\$0.04/minute).

Mobile IDD: For all TDMA and GSM postpaid plans (i.e., b350, b500, b750, b1150, bBiz2200, bBiz3750, bBiz7500, bBiz20000), rates for "Other" country zone:

- Day (-\$0.16/minute);
- Evening (-\$0.12/minute); and
- Weekend (-\$0.11/minute).

Determinations

103. Based on the analysis and adjustments noted above, the Authority finds that four of C&W's eight postpaid plans, one of C&W's three prepaid plans, and some mobile IDD

¹⁸ C&W response dated 30 March 2004 to interrogatory 11b.

¹⁹ C&W response dated 30 March 2004 to interrogatory C19, Appendix 14.

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rates fail the imputation test. The details of the imputation test results are in Attachment 3.

104. The plans and services, and the minimum amount the company is required to increase the rates have been summarised from Attachment 3 below. They are as follows:

Postpaid Plan	Pass/Fail	Minimum amount required to increase monthly rate ²⁰
b350	Fail	\$8
b500	Fail	\$21
b750	Fail	\$6
b1150	Pass	-
bBiz2200	Pass	-
bBiz3750	Pass	-
bBiz7500	Fail	\$60
bBiz20000	Pass	-

Prepaid Plan	Pass/Fail	Minimum amount required to increase per-minute rate on a weighted average basis ²¹
bFree	Pass	-
bFree Anytime	Fail	\$0.04
Pay-as-you-go	Pass	-

Mobile IDD		
Plan and Zone	Pass/Fail	Minimum amount required to increase per-minute rate
TDMA/GSM Prepaid		
* USA, UK, Canada, Ireland, Jamaica & Turks	Pass	-
* Rest of World	Pass	-
* Other	Pass	-
TDMA/GSM Postpaid		
* USA, UK, Canada, Ireland, Jamaica & Turks	Pass	-
* Rest of World	Pass	-
* Other		
- Day	Fail	\$0.16
- Evening	Fail	\$0.12
- Weekend	Fail	\$0.11

²⁰ Rounded up to the nearest dollar.

²¹ Rounded up to the nearest cent.

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105. C&W is required to cease offering the mobile plans and services at rates that fail to meet the imputation test to any new customers as of the date of this decision. The company is order to notify its existing customers forthwith that the company is required to cease offering the mobile plans and services at rates that do not meet the imputation test, as identified in Attachment 3. The company is directed to provide a copy of the draft customer correspondence to the Authority within 2 business days of the date of this decision for review and approval prior to notifying its customers.
106. If C&W wishes to continue offering the affected mobile plans and services, the company must increase the rates by the minimum amounts identified in Attachment 3, effective immediately. In that case, the company is to file revised tariff pages forthwith reflecting the new rates.
107. The company is directed to file a plan with the Authority that will minimise the impact on its existing affected mobile customers within 7 days of the date of this Decision. Such a plan should provide existing affected customers the option of terminating their contracts without early termination charges or other charges and should provide the affected customers that purchased a handset or handsets from C&W as part of their new contract, the option of returning their handset(s) for a full refund.
108. As noted in paragraph 90, with respect to information regarding enhanced features, maintenance cost and additional support per additional handset, plan migration costs including subscriber plan termination costs and other costs identified in that paragraph, the company is directed to provide the cost estimates and the information supporting the estimates within 14 days of the date of this Decision. The Authority may use this information to review the mobile services imputation test, pending a determination on the final mobile termination rate.
109. As noted earlier, C&W did not provide an imputation test for hiptop Prepaid, since it stated that its imputation test for bFree Anytime includes hiptop Prepaid. Given the Authority's findings with respect to bFree Anytime, the Authority has concerns that hiptop Prepaid may not meet the imputation test. Accordingly, C&W is directed to file a separate imputation test for hiptop Prepaid, showing all supporting calculations and underlying assumptions within 14 days of this Decision.
110. Finally, the regime for Category 3 services requires the company to be truly confident that its services pass a rigorous imputation test prior to implementing Category 3 service changes. Given that C&W may implement rate reductions for Category 3 services without prior approval, if the Authority determines thereafter that certain the service rates do not satisfy the imputation test requirements, the company will be immediately required to rectify the situation. Because of the adverse impact that any such corrective action will have on C&W, its customers and other stakeholders, it is critical that C&W ensures that its services meet a rigorous imputation test requirement so that, if requested, all the information and analyses can be provided to the Authority in an expeditious manner and, presumably, with minimal adverse consequences.

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111. The company has not met this standard. There were a number of errors, omissions and inconsistencies in C&W's 3 March service notification letters, 10 March imputation test filing, and 30 March 2004 interrogatory responses. In the Authority's view, the effect of such errors, omissions and inconsistencies on the part of the company prevented the Authority from making an expeditious determination. The Authority was required to cross-check basic factual information and to ask numerous interrogatories. Some of these questions requested basic information that should have been provided at the time of the service notification. In addition, the Authority was required to seek clarification on conflicting and erroneous statements.
112. The Authority directs the company, on a going-forward basis, to provide proper notification of service changes to the Authority. If the information received is incomplete, inaccurate or late, the Authority may, at its discretion, not accept the information as proper notification and require the company to refile its service notification. The minimum information and process will be outlined in more detail in a separate letter from the Authority to C&W.

C&W Postpaid and Prepaid Mobile Plans

9 March 2004 - TDMA & GSM - bMobile Postpaid Plans²²

Plan	b350	b500	b750	b1150
Monthly Charge	\$35	\$45	\$60	\$79
Minutes Included with Plan (Plan minutes do not include calls to 3 rd party mobile)	350	500	750	1150
Additional Per Min Rate				
C&W Mobile to C&W Mobile	\$0.15	\$0.15	\$0.15	\$0.15
C&W Mobile to C&W Fixed	\$0.27	\$0.27	\$0.27	\$0.27
C&W Mobile to Other Mobile	\$0.27	\$0.27	\$0.27	\$0.27
Text Messages included with plan	50	75	100	150
Additional Text Messages				
C&W to C&W Cayman	\$0.12	\$0.12	\$0.12	\$0.12
C&W to C&W Caribbean	\$0.20	\$0.20	\$0.20	\$0.20
C&W to other operators/destinations	\$0.30	\$0.30	\$0.30	\$0.30
Family Circle				
Maximum Handsets	5	8	15	30
Extra handset monthly charge	\$10	\$10	\$10	\$8
Talkaway				
International nominated numbers	5	5	5	5
Talkaway Discount	20%	20%	20%	20%
Voicemail Retrieval	Free	Free	Free	Free
Mobile Reward Points	4	5	6	8
Executive Voicemail, Call Forwarding, Caller ID, Call Waiting, 3 Way Calling	Free	Free	Free	Free

Plan	bBiz 2200	bBiz 3750	bBiz 7500	bBiz 20000
Monthly Charge	\$129	\$189	\$299	\$599
Minutes Included with Plan (Plan minutes do not include calls to 3 rd party mobile)	2200	3750	7500	20,000
Additional Per Min Rate				
C&W Mobile to C&W Mobile	\$0.15	\$0.15	\$0.15	\$0.15
C&W Mobile to C&W Fixed	\$0.27	\$0.27	\$0.27	\$0.27
C&W Mobile to Other Mobile	\$0.27	\$0.27	\$0.27	\$0.27
Text Messages included with plan	200	300	400	500
Additional Text Messages				
C&W to C&W Cayman	\$0.12	\$0.12	\$0.12	\$0.12
C&W to C&W Caribbean	\$0.20	\$0.20	\$0.20	\$0.20
C&W to other operators/destinations	\$0.30	\$0.30	\$0.30	\$0.30
Family Circle				
Maximum Handsets	50	65	85	200
Extra handset monthly charge	\$8	\$5	\$5	\$5
Talkaway				

²² C&W's response dated 30 March 2004 to interrogatory 1.

C&W Postpaid and Prepaid Mobile Plans

Plan	bBiz 2200	bBiz 3750	bBiz 7500	bBiz 20000
International nominated numbers	5	5	5	5
Talkaway Discount	20%	20%	20%	20%
Voicemail Retrieval	Free	Free	Free	Free
Mobile Reward Points	13	19	30	60
Executive Voicemail, Call Forwarding, Caller ID, Call Waiting, 3 Way Calling	Free	Free	Free	Free

9 March 2004 - TDMA & GSM – Pay As You Go & bFree Prepaid Plans²³

Prepaid Mobile Plans	Pay as You Go	bFree	bFree Anytime
Daily Charge	0.00	0.00	0.25
C&W Mobile to C&W Mobile			
Day	0.30	0.30	0.25
Evening	0.25	0.25	0.20
Weekend	0.20	0.20	0.15
Late Night	n/a	n/a	0.07
C&W Mobile to C&W Fixed			
Day	0.30	0.30	0.25
Evening	0.25	0.25	0.20
Weekend	0.20	0.20	0.15
Late Night	n/a	n/a	0.07
C&W Mobile to Other Mobile			
Day	0.40	0.40	0.35
Evening	0.35	0.35	0.30
Weekend	0.30	0.30	0.25
Late Night	n/a	n/a	0.07
Voicemail Retrieval	Free	Free	Free
Included Text Messages	n/a	20	20
Additional Text Messages			
C&W to C&W Cayman	0.20	0.12	0.12
C&W to C&W Caribbean	0.20	0.20	0.20
C&W to Other	0.30	0.30	0.30
Voicemail, Call Waiting, Caller ID	Free	Free	Free

9 March 2004 – GSM Prepaid Hiptop²⁴

²³ C&W's response dated 30 March 2004 to interrogatory 1.

C&W Postpaid and Prepaid Mobile Plans

Prepaid Mobile Plans	Prepaid Hiptop
Daily Charge	0.99
C&W Mobile to C&W Mobile	
Day	0.25
Evening	0.20
Weekend	0.15
Late Night	0.07
C&W Mobile to C&W Fixed	
Day	0.25
Evening	0.20
Weekend	0.15
Late Night	0.07
C&W Mobile to Other Mobile	
Day	0.35
Evening	0.30
Weekend	0.25
Late Night	0.07
Voicemail Retrieval	Free
Included Text Messages	20
Additional Text Messages	
C&W to C&W Cayman	0.12
C&W to C&W Caribbean	0.20
C&W to Other	0.30
Voicemail, Call Waiting, Caller ID	Free

²⁴ C&W did not provide a description of Prepaid Hiptop. This information has been summarized by the Authority from C&W's letters dated 3 March and 10 March 2004. In its 10 March letter, the company inferred that the services and rates for Prepaid Hiptop were the same as bFree Anytime ("The rates and plans in those service filings are as follows: ... bFree Anytime (includes Prepaid Hiptop)").

Imputation Test Methodologies

The following description of the various approaches to an imputation test was provided by C&W in its 10 March 2004 filing.²⁵ The Authority agrees generally with the company's description and, for the purposes of the memo, has expanded on some of the advantages and disadvantages of each approach.

Aggregate plan level test

Under this approach, the imputation test is conducted at the plan level. To determine whether the plan passes the imputation test, the volumes of each of the services consumed under each plan is forecasted. Total expected revenue under the new prices is calculated. Total expected cost for each plan can be projected on the basis of the adjusted FAC model unit costs, in accordance with Part 3 of Annex 5, and multiplied by the relevant volumes. Under this approach, the "price" floor of the plan would be the total cost generated for each plan. If the revenue forecasted for each plan exceeded the floor price for the plan, then the plan passes the imputation test. The imputation test under this approach tells us whether, on the whole, each plan is recovering its costs.

The advantage of this approach is that it requires no apportionment of revenue: the totality of revenue expected is compared to the totality of cost generated under the plan. However, one requires forecasts of total demand for each service offered within the plan in order to obtain aggregate revenues and costs at the plan level (the services have different rates). Estimating demand generally involves making assumptions about whether there will be any stimulation in demand as a result of the price change, and if so, by how much; what the growth/decline in total market demand will be as a result of general market trends; and what the gain/loss in market share for C&W will be as a result of competition and the availability of other substitute products, among other factors.

Forecasting demand by service requires the company to quantify how it believes customers and its competitors will react to the service. This can be a complex exercise for new services or for significantly restructured services, however, it is not impossible and can be useful for company planning purposes since competition will tend to impact services differently. A potential disadvantage of this approach is that a plan may pass the imputation test with loss-making services within the plan. This may or may not be an issue from an anti-competitive cross-subsidy point of view depending on whether the individual services within the plan are offered on a stand-alone basis. If so, it could be an issue for the Authority because, in effect, the loss-making services would be made available to certain customers or class of customers at different (i.e., lower rates) than those available to the rest of the customer market. This could result in unjust discrimination which may be of a concern to the Authority, particularly for basic, non-discretionary or essential services.

Average plan level test

Under this approach, instead of looking at the aggregate forecast costs and revenues for the entire plan, per unit revenues and costs are applied to forecasted usage volumes for

²⁵ C&W letter, *Re: C&W Mobile Service Imputation Test*, 10 March 2004.

the average customer to determine whether the revenues generated from the average consumer in each plan is equal to or greater than the cost of providing the underlying services to the average consumer. The imputation test under this approach tells us whether the average consumer in each plan is recovering the cost of providing him service.

An advantage of the average plan level test is it reduces the number of forecast estimates one requires compared to the aggregate plan level test – reasonable estimates about the average customer’s usage profile only are required. Although a forecast of the average customer’s usage profile should be consistent with overall market trends, forecasts about market share loss and growth in the total market are generally not required. It is also more stringent than the aggregate plan level test in that high-volume users cannot cross-subsidize low-volume users as long as the average customer is the mean customer. Indeed, a disadvantage with this approach is that using data for the average customer could mean the company could pass the imputation test when, in fact, it should not. That is, there may be a large number of low volume users and a few very high volume users, resulting in an average that enables the company to pass the imputation test.

Individual service level test

Under this approach, the unit cost of each individual service of a particular plan is calculated and compared to the corresponding forecasted unit revenue. A service level imputation test, therefore, determines whether each service of the plan, on a stand-alone basis, is recovering the cost of providing that service.

An advantage of this approach is that it requires each service to meet its cost which can be useful in a number of ways, including minimizing any unjust discrimination across subscribers. However, it also limits any pricing flexibility the company may have in marketing its services since the sum of the costs of the individual services forms the minimum price floor. Absent a specific rule, the company could not offer the plan at a discount off the sum of the individual service costs. This would result in fewer innovative pricing packages being available.

A disadvantage of this approach is that revenues must be apportioned across the services. As with most allocation methodologies, assigning revenues to each service does not provide a true picture of individual prices for services within the plan. This could lead to erroneous conclusions particularly if the results are sensitive to the way revenues are apportioned.

Authority's Imputation Test Results

b350							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			35.00				35.00
Additional Handsets	10.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	(7.60)

b500							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			45.00				45.00
Additional Handsets	10.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	(20.41)

b750							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			60.00				60.00
Additional Handsets	10.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	(5.30)

b1150							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			79.00				79.00
Additional Handsets	8.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	10.95

Authority's Imputation Test Results

bBiz2200							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			129.00				129.00
Additional Handsets	8.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	40.26

bBiz3750							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			189.00				189.00
Additional Handsets	5.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	4.85

bBiz7500							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			299.00				299.00
Additional Handsets	5.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	(59.72)

bBiz20000							
	Unit Revenue	Monthly Usage	Monthly Revenue	Unit Cost	Monthly Usage	Monthly Cost	Difference (Rev-Cost)
Monthly Rate			599.00				599.00
Additional Handsets	5.00	#	#				#
Customer Acquisition						#	#
On-net				#	#	#	#
On-net Additional	0.15	#	#	#	#	#	#
Off-net	0.27	#	#	#	#	#	#
V-Mail				#	#	#	#
SMS				#	#	#	#
Enhanced							
Total			<u>#</u>			<u>#</u>	124.22

Note

The following subscriber usage profiles are based on the average subscriber usage profile of the next lowest, "most similar" pre-existing C&W GSM and TDMA calling plans. The term "most similar" is defined as the amount of included on-net plan minutes. In particular, the usage profiles are based on a simple average of the "most similar" pre-existing C&W GSM and TDMA calling plans.

Definitions

- Monthly Rate: The recurring monthly flat fee for a given mobile calling plan.
- Additional Handsets: The number of per subscriber handsets to a given plan. Note that additional handset revenue only applies to handsets beyond the initial handset.
- Customer Acquisition: Customer acquisition and maintenance cost, as identified in the adjusted FAC model.
- On-net: Mobile voice usage of minutes included in a given plan.
- On-net Additional: Mobile voice usage that exceed the number of minutes included in a given plan.
- Off-net: Mobile voice usage that originates on C&W's mobile network and terminates on a third-party's mobile network.
- V-Mail: Mobile voice mail usage associated with a given plan.
- SMS: Text message/short message service usage associated with a given plan.
- Enhanced: Custom calling features provided with a given plan, such as call forwarding, caller ID, call waiting, and 3-way calling.

Authority's Imputation Test Results

Analysis based on C&W cost inputs:							ICTA analysis based on revised cost inputs:				
Plan	Call Type	Time Band	Proposed Rate	Effective Cost		Proposed Rate minus Cost	Pass Imputation	Effective Cost		Proposed Rate minus Cost	Pass Imputation
				per Minute	Cost			per Minute	Cost		
bFree	Totals	Daytime	#	#	#	#	#	#	#	#	#
		Evening	#	#	#	#	#	#	#	#	#
		Late Night	#	#	#	#	#	#	#	#	#
		Weekend	#	#	#	#	#	#	#	#	#
bFree Total		Total	#	#	#	#	Yes	#	#	#	Yes

Analysis based on C&W cost inputs:							ICTA analysis based on revised cost inputs:				
Plan	Call Type	Time Band	Proposed Rate	Effective Cost		Proposed Rate minus Cost	Pass Imputation	Effective Cost		Proposed Rate minus Cost	Pass Imputation
				per Minute	Cost			per Minute	Cost		
bFree Anytime	Totals	Daytime	#	#	#	#	#	#	#	#	#
		Evening	#	#	#	#	#	#	#	#	#
		Late Night	#	#	#	#	#	#	#	#	#
		Weekend	#	#	#	#	#	#	#	#	#
bFree Anytime Total		Total	#	#	#	#	Yes	#	#	\$ (0.031)	No

Analysis based on C&W cost inputs:							ICTA analysis based on revised cost inputs:				
Plan	Call Type	Time Band	Proposed Rate	Effective Cost		Proposed Rate minus Cost	Pass Imputation	Effective Cost		Proposed Rate minus Cost	Pass Imputation
				per Minute	Cost			per Minute	Cost		
Pay as you Go	Totals	Daytime	#	#	#	#	#	#	#	#	#
		Evening	#	#	#	#	#	#	#	#	#
		Weekend	#	#	#	#	#	#	#	#	#
Pay as you Go Total		Total	#	#	#	#	Yes	#	#	#	Yes

Authority's Imputation Test Results

TDMA + GSM PrePaid International

Destination	Timeband	Proposed Rate	Cost per minute (Wholesale Rate)	Proposed Rate minus Cost
USA,UK,Canada, Ireland, Jamaica & Turks	DY	\$ 0.45	\$ 0.36	\$ 0.090
	EV	\$ 0.40	\$ 0.32	\$ 0.080
	WN	\$ 0.35	\$ 0.28	\$ 0.070
Rest of World	DY	\$ 0.55	\$ 0.44	\$ 0.110
	EV	\$ 0.50	\$ 0.40	\$ 0.100
	WN	\$ 0.45	\$ 0.36	\$ 0.090
Other	DY	\$ 0.80	\$ 0.80	\$ -
	EV	\$ 0.60	\$ 0.60	\$ -
	WN	\$ 0.55	\$ 0.55	\$ -

TDMA + GSM PostPaid International with Talkaway Discounts

Destination	Timeband	Proposed Rate	Proposed Rate with 20% Talkaway Discount	Cost per minute (Wholesale Rate)	Proposed Rate with 20% Talkaway Discount minus Cost
USA,UK,Canada, Ireland, Jamaica & Turks	DY	\$ 0.45	\$ 0.36	\$ 0.36	\$ -
	EV	\$ 0.40	\$ 0.32	\$ 0.32	\$ -
	WN	\$ 0.35	\$ 0.28	\$ 0.28	\$ -
Rest of World	DY	\$ 0.55	\$ 0.44	\$ 0.44	\$ -
	EV	\$ 0.50	\$ 0.40	\$ 0.40	\$ -
	WN	\$ 0.45	\$ 0.36	\$ 0.36	\$ -
Other	DY	\$ 0.80	\$ 0.64	\$ 0.80	\$ (0.160)
	EV	\$ 0.60	\$ 0.48	\$ 0.60	\$ (0.120)
	WN	\$ 0.55	\$ 0.44	\$ 0.55	\$ (0.110)