Canadian Radio-television and Telecommunications Commission
Conseil de la radiodiffusion et des télécommunications canadiennes

Telecom Decision CRTC 2009-88

Ottawa, 24 February 2009

CISC Network Working Group – Non-consensus report NTRE044 regarding the calculation of bill and keep trunking requirements and the imbalanced minutes for the application of the imbalance tariff

File number: 8621-C12-01/08

In this decision, the Commission approves the consensus items in non-consensus report NTRE044 *and provides direction to parties on the two non-consensus issues. The Commission determines that, in cases where parties fail to reach a bilateral agreement on a method to settle imbalance compensation, the billing carrier has the discretion to use the methodology set out in non-consensus report* NTRE044. *In such cases, the Commission also directs that carriers are to settle imbalance compensation using a floating time period and a time-consistent busy hour approach, as set out in this decision.*

Introduction

1. In *Local competition*, Telecom Decision CRTC 97-8, 1 May 1997 (Telecom Decision 97-8), the Commission mandated the use of a bill and keep[1] approach to determine compensation for traffic termination between carrier networks. The Commission also concluded that in instances where it is demonstrated that traffic between local exchange carriers (LECs) is not balanced for a significant period of time, mutual compensation[2] should be implemented and the rate used for such compensation should be capped at the incumbent local exchange carrier (ILEC) rate, as set out in the ILECs' imbalance tariffs.

2. Participants of the CRTC Interconnection Steering Committee's (CISC) Network Working Group (NTWG)[3] noted that, since Telecom Decision 97-8, the lack of a common industry approach to determining mutual compensation for traffic imbalances has given rise to discrepancies between carriers and has often resulted in lengthy reconciliation activities.

3. As a result, in October 2007 the NTWG undertook to develop a common set of definitions and a common methodology for imbalance compensation between LECs.

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1 Under a bill and keep approach, the originating carrier bills its customers for calls and keeps the corresponding revenue. The originating carrier does not compensate the terminating carrier for call termination expense.

2 Under a mutual compensation approach, all LECs measure terminating minutes in order to be compensated for the costs of traffic termination, based on Commission-approved cost-based tariffs.

3 Parties that submitted contributions towards the completion of non-consensus report NTRE044 were Bell Canada, Distributel Communications Limited, Execulink Telecom Inc., MTS Allstream Inc., Rogers Communications Inc., Telnet Communications, and TELUS Communications Company. Although it did not submit a contribution to the report, Quebecor Media Inc. filed a response to Commission interrogatories in this proceeding.

4. Despite having reached consensus on an overall approach, the NTWG was unable to agree on two aspects of the methodology. Accordingly, on 22 July 2008, the NTWG filed non-consensus report NTRE044 (the report), in which the NTWG requested that the Commission approve the consensus items listed in section 6 of that report and provide guidance to the industry on the two outstanding non-consensus issues.

5. The report is available on the Commission's website at www.crtc.gc.ca.

Consensus items

6. The Commission has reviewed the general consensus elements listed in section 6 of the report and finds them to be reasonable. Accordingly, the Commission **approves** the general consensus elements listed in section 6 of the report.

Non-consensus issues

7. The NTWG noted that parties were unable to agree on the time period basis to be used in calculations related to imbalance compensation, i.e., which days of the month to include for calculation purposes. The NTWG noted that parties were also unable to agree on the busy hour basis to be used in calculations related to imbalance compensation, i.e., how to measure peak traffic for the purpose of estimating the network usage experienced in an imbalance scenario.

8. Accordingly, in this decision the Commission provides direction to parties on the following non-consensus issues:

    I. What is the appropriate time period basis to use when calculating imbalance compensation?

    II. What is the appropriate busy hour basis to use when calculating imbalance compensation?

I. What is the appropriate time period basis to use when calculating imbalance compensation?

9. Bell Canada submitted that bill and keep compensation should be based on all calendar days in a given month, arguing that this method would be simple and competitively neutral.

10. TELUS Communications Company (TCC) submitted that including weekends and statutory holidays in the calculation would understate the number of trunks required and artificially reduce imbalance payments. As such, TCC submitted that "eligible days," which it defined as normal business days in a calendar month, exclusive of weekends and statutory holidays, was the appropriate measure. Rogers Communications Inc. (RCI) also employed business days in its proposed compensation methodology.

11. Distributel Communications Limited (Distributel) and Telnet Communications (Telnet) submitted that imbalance compensation should be based on the 20 busiest days in a given month, i.e., a floating time period. In their view, a floating time period would represent the most neutral solution since using all calendar days would artificially decrease imbalance

compensation for those LECs who are busier on business days, whereas using exclusively business days or eligible days would artificially decrease compensation for those LECs who are busier on weekends. Quebecor Media Inc. also supported a floating time period.

12. The Commission notes that parties generally agreed that the methodology for imbalance compensation should be based on the principle of competitive neutrality, such that the method employed does not favour any particular business strategy.

13. As such, the Commission considers that relying purely on business days or eligible days for imbalance compensation could disadvantage LECs who experience higher traffic volume during weekend hours, since specifically excluding weekends from the calculation would not reflect true network activity for those LECs whose business strategies result in weekend calling.

14. Conversely, the Commission considers that relying on all calendar days in a month, when compared to a floating time period, could disadvantage certain LECs because of the inherent bias which exists from having more business days than weekend days in any given month.

15. Furthermore, the Commission considers that the abnormal traffic experienced on certain statutory holidays could skew the imbalance calculations.

16. In the Commission's view, the use of a floating time period would best align with the principle of competitive neutrality as it would not favour any particular business strategy, and would mitigate the inherent bias which exists from having more business days than weekend days in any given month.

17. With regard to the number of days to be used in the floating time period sample, the Commission notes that parties favouring this option suggested the use of 20 days. The Commission considers that this would represent an appropriate sample size, since many parties currently use either 20 business days or 20 weekdays as the time period in their imbalance calculations. The Commission also considers that, given the unique traffic patterns that are experienced on statutory holidays, these days should be excluded from imbalance compensation calculations.

18. In light of the above, the Commission determines that, subject to its determinations set out in paragraph 28 below, LECs are to use a floating time period, defined as the 20 busiest days in a given month, excluding statutory holidays, contiguous or otherwise, as the basis for calculating imbalance compensation.

II. What is the appropriate busy hour basis to use when calculating imbalance compensation?

19. Bell Canada and TCC proposed a time-consistent approach whereby the busy hour in a month is determined by separately adding the traffic volume experienced during each hour of the day for each eligible day and dividing the total for each hour by the number of eligible days. Put another way, this approach calculates the average traffic volume for each hour of the day, e.g., 11 a.m., 12 p.m., 1 p.m. etc. The highest value resulting from these

calculations would represent the busy hour. In Bell Canada's and TCC's view, a time-consistent approach is consistent with standard engineering practice and would produce compensation results that are reflective of actual network usage.

20. Bell Canada and TCC further noted that all parties agreed that trunking requirements should be determined using the Neal-Wilkinson 1% medium traffic table,[4] which already accounts for some variation in the daily peaks in traffic volume. As such, using a variable busy hour approach, as opposed to a time-consistent approach, would amount to double-counting for traffic peaks and would result in an overestimation of trunking requirements.

21. Distributel, RCI, and Telnet proposed a bouncing busy hour approach, i.e., a variable approach, to estimate trunking requirements. Under this method, the busiest hour of each day over the course of the month is used to determine the average daily peak traffic. These parties generally argued that a variable approach would best approximate actual traffic activity during a given month and that a time-consistent method would result in an unacceptable level of call blocking.

22. The Commission considers that a bouncing busy hour method would result in higher average peak traffic measurements because it would derive average peak traffic from each day's busiest hour. The Commission also notes that the Neal-Wilkinson traffic model, which was agreed to by all participating parties, already accounts for some variation in traffic peaks. As such, the Commission is of the view that a bouncing busy hour would represent an overestimation of trunking requirements and the corresponding compensation amounts.

23. The Commission notes that certain parties expressed concern that a time-consistent busy hour approach would result in an unacceptable level of call blocking. In this regard, the Commission considers that the calculations used to determine the trunking requirements in an imbalance scenario, including busy hour calculations, are theoretical in nature and meant to approximate network usage over a period of time for the purpose of determining an appropriate level of compensation. As such, the busy hour basis used for imbalance compensation should have no bearing on how carriers manage their actual networks, including call blocking practices. Furthermore, the Commission notes that all parties have agreed to use the Neal-Wilkinson 1% medium traffic table to determine trunking requirements, where one percent represents the maximum level of call blocking. Under this model, the Commission notes that theoretical trunking requirements will be based on a low level of call blocking and therefore considers that imbalance compensation will be calculated appropriately.[5]

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[4] The Neal-Wilkinson traffic model is a probability model for network engineering which uses a peakedness factor to determine trunking requirements. The Neal-Wilkinson traffic model is one of several network engineering models that carriers can use to manage and optimize their network traffic. The Neal-Wilkinson 1% medium traffic table is a probability table which determines trunking requirements based on a call blocking factor of one percent.

[5] The desired level of call blocking affects the theoretical number of required trunks such that the lower the call blocking percentage, the higher the trunking requirements. Conversely, a higher call blocking percentage results in lower trunking requirements. This is necessarily so because greater network capacity is needed to ensure that more calls are able to be completed. Likewise, less network capacity is required if lower call completion standards are accepted.

24. Accordingly, the Commission determines that, subject to the determinations set out in paragraph 28 below, LECs are to use the time-consistent approach, as defined in section 10 of the report, when determining imbalance compensation.

Bilateral negotiations

25. The Commission notes that certain parties submitted that a single standardized method is not necessary and that parties should negotiate bilateral agreements on a preferred method that best fits their particular circumstances. Some parties also suggested that the Commission approve several methodologies, from which parties can choose the method that best fits their circumstances.

26. In this regard, the Commission considers that parties have been able to, and may continue to attempt to, negotiate bilateral agreements to settle imbalance compensation. The Commission also recognizes that the methodologies that some parties may agree upon in bilateral negotiations may differ from the standard methodology developed by the NTWG and may contain definitions of the time period and busy hour that differ from those outlined in this decision.

27. However, the Commission considers that having a standard methodology and definitions as a fallback in cases where agreement cannot be reached would minimize the discrepancies and lengthy reconciliation processes that parties are seeking to avoid.

28. As such, the Commission considers that, where a bilateral agreement cannot be reached between two parties, the billing party has the discretion to employ the standard method developed by the NTWG, as outlined in the report. In such instances, the Commission considers that parties are to use the methodology outlined in the report as approved by the Commission in this decision and the definitions of time period and busy hour as set out in this decision.

Secretary General