



Telecom Order CRTC 2014-537

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File number: Tariff Notice 445

TELUS Communications Company – Provision of a new residential wholesale high-speed access service speed

*The Commission **approves on a final basis** the provision of TCC's 50-megabit-per-second wholesale Internet asymmetric digital subscriber line service, with the division of the service into a single-line configuration and a bonded configuration, and associated modified monthly rates. This new service speed will enable competitors to offer more choice to their end-users, thereby stimulating competition.*

Introduction

1. The Commission received an application from TELUS Communications Company (TCC), dated 26 September 2012, in which the company proposed revisions to its Carrier Access Tariff item 226 – Wholesale Internet ADSL [asymmetric digital subscriber line] Service. Specifically, TCC proposed to provide a residential wholesale high-speed access (HSA) service with a speed of up to 50 megabits per second (Mbps) downstream and up to 10 Mbps upstream (50 Mbps wholesale HSA service), at a proposed rate of \$57 per month per end-user.¹ TCC filed a cost study in support of its application.
2. TCC's proposed rate is a single blended rate for its two possible service configurations, plus a service charge: (i) a single-line configuration that provides end-user access through a single copper pair, or (ii) a bonded configuration that provides end-user access through two copper pairs.²
3. In Telecom Order 2012-580, the Commission approved TCC's application on an interim basis, effective 29 October 2012.

¹ Through the wholesale HSA service, a very-high-speed access path is provided from an end-user's premises, through an incumbent local exchange carrier's network (in this case, TCC's network), to an interface where a competitor connects its own network. This service enables competitors to provide high-speed Internet service and other services to their own end-users.

² The bonded configuration uses two copper pairs (i.e. dry loops) to connect an end-user of a digital subscriber line HSA service to the telecommunications service provider's network. Typically, an end-user is connected to the network with a single copper pair. However, the chosen service speed may not be attainable through a single copper pair if the pair is too long or if it has degraded over time. In this situation, a second copper pair is provisioned. The two copper pairs are "bonded" in that they share the carriage of end-user data, and jointly provide the chosen service speed.

4. The Commission received no interventions regarding TCC's application. The public record of this proceeding, which closed on 12 May 2014 following an extensive process of interrogatories and revised cost studies, is available on the Commission's website at www.crtc.gc.ca or by using the file number provided above.
5. The Commission has identified the following issues to be addressed in this order:
 - Are the proposed costs for the 50 Mbps wholesale HSA service appropriate?
 - What are the appropriate study period and cost increase factors?
 - What are the appropriate asset lives to be used?
 - Should growth technology be used for the aggregation device?
 - Are the network-related costs appropriate?
 - Is the proposed service charge appropriate?
 - Should TCC offer separate rates for each of its service configurations?
 - Should the rates for TCC's 50 Mbps wholesale HSA service be effective as of the interim approval date?

Are the proposed costs for the 50 Mbps wholesale HSA service appropriate?

What are the appropriate study period and cost increase factors?

6. TCC used a five-year study period and the company's capital increase factors (CIFs) in determining its proposed rate for the 50 Mbps wholesale HSA service.
7. The rates for TCC's other wholesale HSA services were set in Telecom Regulatory Policy 2011-703, in which the Commission determined that
 - a study period of 10 years would reflect potential reductions in capital unit costs that may occur over the years due to technological advancements and increases in network usage; and
 - while the use of the company's CIFs is in line with the approved filing process set out in its regulatory economic study manual, this does not preclude the use of service-specific capital unit cost changes that are more appropriate, such as -5% for the access component and -10% for the usage component of wholesale HSA services.
8. Consistent with the above-mentioned determinations for TCC's other wholesale HSA services, the Commission determines that a 10-year study period and CIFs of -5% for

the access component and -10% for the usage component should be applied in estimating the costs for the company's 50 Mbps wholesale HSA service.

What are the appropriate asset lives to be used?

9. TCC proposed to use asset lives shorter than those the Commission approved in Decision 2001-238 for some of the company's equipment. TCC submitted that the asset lives were reduced to reflect traffic growth.
10. The Commission notes that the use of reduced asset lives increases the frequency of equipment replacement, resulting in higher costs. The Commission considers that TCC did not provide sufficient rationale for using shorter asset lives and for not using the asset lives set out in Decision 2001-238.
11. In light of the above, the Commission determines that the Commission-approved asset lives should be applied in estimating the costs for TCC's 50 Mbps wholesale HSA service. The Commission has included this adjustment in the calculation of the final rates, set out in paragraph 43 below.

Should growth technology be used for the aggregation device?

12. In its cost study, TCC proposed to use two types of aggregation devices:³ the 7450 DE (the 7450) and the 7750 RE (the 7750).
13. TCC submitted that it is gradually replacing the 7450 with the 7750, but that each device currently accounts for approximately half of the aggregation function in its network.
14. The Commission notes that according to Phase II costing methodology, the capital expenditures included in a cost study are to reflect the cost of growth technology, i.e. the technology the company will deploy going forward.
15. Since the 7750 is replacing the 7450, the Commission considers that the 7750 should be used in estimating the costs for TCC's 50 Mbps wholesale HSA service. The Commission has included this adjustment in the calculation of the final rates, set out in paragraph 43 below.

Are the network-related costs appropriate?

16. TCC calculated the average cost of delivering 1 Mbps of traffic through the switching equipment and transmission equipment that carry end-user traffic associated with the 50 Mbps wholesale HSA service. TCC provided separate costs for its Metro Gigabit Ethernet (GigE), Layer 2 Provider Edge (L2PE), and Multiprotocol Label Switched (MPLS) networks, and applied structure cost factors to estimate the associated outside plant costs.

³ Aggregation devices group customer data, and carry routing and other information.

17. TCC then estimated the average peak traffic that a typical end-user would generate, and applied this to the average cost per Mbps of traffic flowing through the switching equipment, transmission equipment, and associated outside plant equipment for each of its networks to determine the per-end-user network-related usage costs.
18. The Commission finds that TCC's methodology used in its cost study raises the following issues:
- Is TCC's calculation method for its switching and transmission costs appropriate?
 - Is it appropriate for TCC to include out-of-territory locations in the calculation of its MPLS costs?
 - Is the calculation method for TCC's Metro GigE transmission costs appropriate?
 - Should TCC's outside plant costs be adjusted?
 - What is the appropriate method for calculating the average peak usage per end-user for use in determining TCC's network-related usage costs?

Is TCC's calculation method for its switching and transmission costs appropriate?

19. TCC estimated the average cost per Mbps for its Metro GigE networks by determining the cost per Mbps for each Metro GigE network and then using a simple average of the costs of the individual Metro GigE networks. Similarly, for each of its L2PE and MPLS networks, TCC determined the cost per Mbps for each network route, and then estimated the average cost per Mbps for each network using a simple average of the costs of the individual routes for each network. TCC provided revised average costs per Mbps for each of its networks, which included weighted individual network or route costs, as applicable, based on traffic data for each network. The Commission considers that TCC's revised costs use acceptable traffic-based weighting factors.
20. In light of the above, the Commission considers it appropriate to calculate the average cost per Mbps for each of TCC's networks using weighted individual network or route costs, as applicable, based on the traffic data TCC provided. The Commission has included these adjustments in the calculation of the final rates, set out in paragraph 43 below.

Is it appropriate for TCC to include out-of-territory locations in the calculation of its MPLS costs?

21. In its initial calculations of the average cost per Mbps for its MPLS network, TCC included costs related to locations outside its operating territories in Alberta and British Columbia. TCC subsequently revised its calculations for the MPLS network, to exclude these locations.

22. The Commission considers that since TCC provides its 50 Mbps wholesale HSA service within its Alberta and British Columbia operating territories only, any out-of-territory network costs do not affect the company's costs for this service, and that accordingly, these costs should be excluded. The Commission has included this adjustment in the calculation of the final rates, set out in paragraph 43 below.

Is the calculation method for TCC's Metro GigE transmission costs appropriate?

23. The Commission notes that some of TCC's Metro GigE networks require transmission systems for the interconnection of Ethernet switches, while others do not.

24. TCC calculated an average transmission cost per Mbps for its Metro GigE networks based on the subset of those networks that require transmission systems. The Commission considers that TCC's calculation method does not take into account the fact that a significant proportion of end-users would connect through TCC's Metro GigE networks that do not require separate transmission systems, and that therefore, no transmission system costs would result for these end-users.

25. Accordingly, the Commission considers it appropriate to adjust the average transmission cost per Mbps for TCC's Metro GigE networks to include the weighted impact of traffic carried by the company's Metro GigE networks that have no transmission system costs. The Commission has included this adjustment in the calculation of the final rates, set out in paragraph 43 below.

Should TCC's outside plant costs be adjusted?

26. TCC applied fibre and structure cost factors to its transmission costs to estimate its outside plant costs, i.e. mainly fibre cable (aerial, buried, and underground), pole, conduit structure, and cable closure costs.

27. The Commission considers that TCC applied the fibre and structure cost factors to its transmission costs appropriately. The Commission notes, however, that since it has adjusted TCC's transmission costs, the company's outside plant costs should be adjusted accordingly.

28. In light of the above, the Commission has adjusted TCC's outside plant costs to reflect the revised transmission costs.⁴ The Commission has included this adjustment in the calculation of the final rates, set out in paragraph 43 below.

What is the appropriate method for calculating the average peak usage per end-user for use in determining TCC's network-related usage costs?

29. TCC estimated the average peak usage of a typical end-user of the 50 Mbps wholesale HSA service, and applied this usage to the average cost per Mbps for the

⁴ See paragraphs 20, 22, and 25.

switching equipment and transmission equipment for each of the company's networks that carry end-user traffic to determine the per-end-user network-related usage costs.

30. TCC initially calculated the average peak usage per end-user by dividing the subscribed downstream service speed⁵ per end-user by an oversubscription ratio.⁶
31. TCC subsequently revised its approach by replacing the subscribed downstream service speed in its calculation with a larger number that, according to TCC, compensated for the additional traffic related to the authentication and usage measurements required by TCC for its 50 Mbps wholesale HSA service.
32. The Commission notes that TCC did not provide any quantitative evidence to justify the use of this larger number.
33. In light of the above, the Commission considers that, consistent with TCC's initial approach, the subscribed downstream service speed of 50 Mbps should be used to calculate the average peak usage per end-user. The average peak usage per end-user would then be applied in the estimation of the costs for TCC's 50 Mbps wholesale HSA service. The Commission has included this adjustment in the calculation of the final rates, set out in paragraph 43 below.

Is the proposed service charge appropriate?

34. TCC proposed a service charge that is equal to the existing service charge for TCC's other wholesale HSA services. Accordingly, TCC did not file a cost study to support its proposed service charge.
35. The Commission finds it appropriate for TCC to use the same service charge it uses for its other wholesale HSA services, since they are similar services.
36. In light of the above, the Commission approves TCC's proposed service charge of \$70.56 for its 50 Mbps wholesale HSA service.

⁵ In this case, the subscribed downstream service speed or advertised service speed is 50 Mbps.

⁶ The oversubscription ratio is equal to the combined service capacity that a group of end-users have subscribed to, divided by the network capacity provisioned to support those end-users. When an end-user subscribes to a 50 Mbps service, he/she expects to be able to use the subscribed capacity of 50 Mbps at any time. However, since not all end-users of the service are active at the same time, the network does not have to be provisioned with 50 Mbps of capacity for each end-user. TCC has determined that to estimate the network costs per end-user of the 50 Mbps service during peak periods, it would take a certain number of end-users of the 50 Mbps service to generate a total of 50 Mbps of traffic in its network. For example, if it takes 90 end-users to generate a total of 50 Mbps of traffic in a peak period, the oversubscription ratio would be equal to 50 Mbps / 90 end-users, giving 0.911 Mbps. The average costs for the transmission equipment and switching equipment required per kilobit per second would then be applied to the 0.911 Mbps.

Should TCC offer separate rates for each of its service configurations?

37. To achieve the required 50 Mbps download speed in certain areas, TCC provisions a bonded configuration⁷ that requires a second copper pair (a dry loop). TCC estimated that a certain proportion of end-users of its 50 Mbps wholesale HSA service would require the bonded configuration.
38. TCC's proposed single rate for its 50 Mbps wholesale HSA service reflects costs for the inclusion of a dry loop and an additional port on the digital subscriber line access multiplexer (DSLAM), along with associated DSLAM equipment for a proportion of end-users.
39. TCC calculated the included dry loop costs based on a proportion of the average of dry loop costs for Band A in Alberta and British Columbia. TCC used Band A costs since the 50 Mbps wholesale HSA service is sold predominantly in urban areas.
40. Under TCC's proposal, a competitor would bear a proportion of the costs of the additional dry loop and the DSLAM port, along with the associated DSLAM equipment, even for end-users who do not require the bonded configuration.
41. Further, if a competitor orders the bonded service for an end-user who does not subscribe to TCC's local service, the competitor would pay the blended rate (which includes TCC's proposed costs for a dry loop for a proportion of end-users) plus the cost of a second dry loop at the price set out in the tariff. This implies that a competitor would pay a different rate for the second dry loop. The Commission considers that in this situation, it is appropriate to apply a consistent rate for both dry loops.
42. In light of the above, the Commission considers that there should be two distinct rates for TCC's 50 Mbps wholesale HSA service:
- a monthly rate for a single-line configuration service that excludes the costs of a bonding-related DSLAM port, the associated DSLAM equipment, and the dry loop; and
 - a monthly rate for a bonded service that includes the additional DSLAM port and associated DSLAM equipment costs, but excludes the dry loop cost. The required dry loop is to be obtained as a separate service provided by TCC through its Carrier Access Tariff.
43. The Commission therefore **approves** a monthly rate of \$26.95 for the single-line service and a monthly rate of \$32.85 for the bonded service. The Commission considers that these rates reflect all of its determinations and adjustments set out in this order. The Commission also **approves** a service charge of \$70.56 for each type of service.

⁷ See footnote 2 for an explanation of this term.

Should the rates for TCC's 50 Mbps wholesale HSA service be effective as of the interim approval date?

44. The Commission considers that the approved rates set out in paragraph 43 are just and reasonable, and that it is therefore appropriate to apply them retroactively.
45. In light of the above, the Commission **directs** TCC to issue, within **10 days** of the date of this order, revised tariff pages⁸ reflecting the approved rates for its 50 Mbps wholesale HSA service, effective on 29 October 2012, the date the rate was made interim.
46. Further, the Commission **directs** TCC to credit its 50 Mbps wholesale HSA service customers, within **45 days** of the date of this order, the difference between the rates set out in paragraph 43 above and the interim rates that TCC charged for the period between 29 October 2012 and the date of this order.

Secretary General

Related documents

- *TELUS Communications Company – Addition of two new speeds to Wholesale Internet ADSL Service*, Telecom Order CRTC 2012-580, 19 October 2012
- *Billing practices for wholesale residential high-speed access services*, Telecom Regulatory Policy CRTC 2011-703, 15 November 2011, as amended by Telecom Regulatory Policy CRTC 2011-703-1, 22 December 2011
- *Restructured bands, revised loop rates and related issues*, Decision CRTC 2001-238, 27 April 2001, as amended by Decisions CRTC 2001-238-1, 28 May 2001; and 2001-238-2, 7 August 2001

⁸ Revised tariff pages can be submitted to the Commission without a description page or a request for approval; a tariff application is not required.