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

Telecom Decision CRTC 2013-659

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Route reference: Telecom Notice of Consultation 2013-80

Ottawa, 6 December 2013

Review of outstanding wholesale high-speed access service issues related to interface rates, optional upstream speed rates, and modem certification requirements

File numbers: 8661-C12-201303487; Bell Aliant Tariff Notices 440, 449 and 449A (Aliant Telecom); Bell Canada Tariff Notice 7386; TCC Tariff Notices 457 and 595 (TCQ)

The wholesale high-speed access (HSA) services of large cable carriers and telephone companies enable independent service providers to offer retail and other services to their own end-users. In issuing Telecom Notice of Consultation 2013-80, the Commission considered that, having decided upon the general principles on which wholesale HSA service rates should be based in previous decisions, it was necessary to examine to what extent, if at all, it would be appropriate to extend those principles to legacy wholesale HSA services and to other outstanding wholesale HSA service issues that various parties had raised in related proceedings.

In this decision, the Commission sets final rates for the wholesale HSA interfaces of Bell Aliant, Bell Canada, and TCC based on the information filed, with adjustments as required. The Commission also finds that for incumbent carriers that have implemented the flat rate billing model, the appropriate pricing approach for optional upstream speeds is to use Phase II costs plus a 30 percent markup. For incumbents that use the capacity-based billing (CBB) model, the rates for optional upstream speeds should be set at $0 per month per end-user, on the basis that CBB recovers both downstream and upstream capacity costs. The Commission expects that the setting of final interface and optional upstream speed rates will promote competition, ultimately leading to greater choice for consumers.

The Commission also finds that modem testing and certification for certain modems on the network of the Bell companies in their operating territories in Ontario and Quebec is necessary, and that the companies should carry out this testing. Accordingly, the Commission has established modem testing guidelines that match those of the cable carriers as closely as possible. Giving competitors the option to have certain modem models tested following established processes, terms, and conditions will enable them to offer more choice in terms of functionality and price to their end-users, thereby stimulating competition.

Canada

Introduction

1. The wholesale high-speed access (HSA) services of large cable carriers and telephone companies enable independent service providers to offer retail and other services to their own end-users. As a result of the availability of wholesale HSA services, residential and business end-users have greater choice in Internet service providers. The Commission has previously addressed issues related to the rates, terms, and conditions applicable to these services in a series of decisions, including Telecom Regulatory Policies 2011-703[1] and 2011-704[2] and Telecom Decisions 2013-73[3] and 2013-480.[4]

2. These decisions approved new pricing rules and rates for most wholesale HSA services, but the application of these rules did not extend to certain other wholesale HSA services (legacy wholesale HSA services), because they were not within the scope of the proceeding. In issuing Telecom Notice of Consultation 2013-80, the Commission considered that, having decided upon the general principles on which wholesale HSA rates should be based, it was necessary to examine to what extent, if at all, it would be appropriate to extend those principles to legacy wholesale HSA services. In the proceeding that led to Telecom Regulatory Policy 2011-703, and in the review and vary applications filed by incumbents and independent service providers with regard to that decision, parties also identified other issues related to wholesale HSA services that warranted examination.

3. In Telecom Notice of Consultation 2013-80, the Commission began a public proceeding to review the highest priority outstanding items that had been brought to its attention regarding remaining issues related to wholesale HSA services. The specific issues that were selected to be part of this proceeding were chosen on the basis of their significance to the wholesale HSA service rates and to the parties involved.

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1 In Telecom Regulatory Policy 2011-703, the Commission decided that there are two acceptable billing models for residential wholesale HSA services: (1) a capacity-based billing model, wherein independent service providers pay a monthly access rate per end-user (excluding usage) and a rate for the capacity that they require to support the usage demand of their end-users; and (2) a flat rate model, wherein the independent service providers pay a flat monthly rate per end-user.

2 In Telecom Regulatory Policy 2011-704, the Commission approved the flat rate billing model for the business wholesale HSA services of Bell Aliant Regional Communications, Limited Partnership (Bell Aliant); Bell Canada; and TELUS Communications Company (TCC), and decided that the rates for these services would be based on costs plus an appropriate markup.

3 In Telecom Decision 2013-73, the Commission, in order to correct costing errors, revised the residential wholesale HSA rates set in Telecom Regulatory Policy 2011-703 for Bell Canada and Bell Aliant in Ontario and Quebec, and for TCC in Alberta and British Columbia. The Commission also decided that the rates for business wholesale HSA services were to be the same as the rates for comparable residential wholesale HSA services, and set the rates accordingly.

4 In Telecom Decision 2013-480, the Commission determined that the rates for the legacy business wholesale HSA services of the Bell companies in their operating territories in Ontario and Quebec should be the same as the rates for their comparable legacy residential wholesale HSA services.

4. Based on the criteria set out above, the Commission decided to examine issues related to (i) interface rates for the wholesale HSA services of Bell Aliant Regional Communications, Limited Partnership (Bell Aliant) and Bell Canada (collectively, the Bell companies) and TELUS Communications Company (TCC); (ii) optional upstream speed rates for all incumbents' wholesale HSA services; and (iii) modem certification requirements for the large telephone companies' wholesale HSA services.

5. The Commission received interventions from the Bell companies; the Canadian Network Operators Consortium Inc. (CNOC); Cogeco Cable Inc., Quebecor Media Inc. on behalf of its affiliate Videotron G.P., Rogers Communications Inc., and Shaw Communications Inc. (collectively, the Cable carriers); Oliver Crosby; Neil Mavin; MTS Inc. and Allstream Inc. (collectively, MTS Allstream); Teresa Murphy; Primus Telecommunications Canada Inc. (Primus); Brian Riquelme; Julian Restrepo; Saskatchewan Telecommunications (SaskTel); TCC; and Vaxination Informatique (Vaxination).

6. The Commission also received tariff applications from the Bell companies and TCC (see the file numbers at the beginning of this decision). The Bell companies, for their operating territories in Ontario and Quebec (the Bell companies in Ontario and Quebec); Bell Aliant, for its operating territory in Atlantic Canada (Bell Aliant Atlantic); and TCC proposed monthly rates and service charges associated with their interfaces.[5] These applications were approved on an interim basis[6] and will be addressed in this decision.

7. The public records of these proceedings are available on the Commission's website at www.crtc.gc.ca under "Public Proceedings" or by using the file numbers provided above.

Issues

8. The Commission has identified the following issues to be addressed in this decision:

    I. Interface rates for the wholesale HSA services of Bell Aliant Atlantic, the Bell companies in Ontario and Quebec, and TCC

    II. Optional upstream speed rates

    III. Modem testing guidelines and related matters

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[5] An interface is an interconnection point at which an independent service provider connects its network to an incumbent local exchange carrier's (ILEC) network in order to gain access to and exchange traffic with its own retail customers through high-speed access paths on the ILEC's network.

[6] See Telecom Orders 2013-211, 2013-244, 2013-441, and 2013-560.

I. Interface rates for the wholesale HSA services of Bell Aliant Atlantic, the Bell companies in Ontario and Quebec, and TCC

9. Bell Aliant Atlantic, the Bell companies in Ontario and Quebec, and TCC proposed monthly rates and service charges associated with their interfaces based on the associated Phase II costs[7] plus a specified markup.[8]

10. The Commission has reviewed the costing methodology and assumptions in each company's cost estimates for interfaces and has made a number of adjustments. In the following sections, the Commission reviews each company's rate structure and discusses the cost adjustments.

a) Should Metro Ethernet transport costs be recovered in the interface rates for the Bell companies in Ontario and Quebec, and should the companies offer distinct rates for each of their configurations?

11. The Bell companies in Ontario and Quebec proposed three different configurations for their 100 and 1000 megabit-per-second (Mbps) interfaces:

    - Configuration 1a: competitor served by an interface port on an Internet Protocol (IP) Edge router in the serving central office.

    - Configuration 1b: competitor served by an interface port on an Ethernet switch in the same central office as the IP Edge router.

    - Configuration 2: competitor served by an interface port on an Ethernet switch in a central office that is not equipped with an IP Edge router. The configuration requires multiple Ethernet switches (Metro Ethernet) to carry traffic from the competitor's Ethernet switch to the edge of the IP Core.

12. The Bell companies in Ontario and Quebec proposed a single rate for all three configurations based on the weighted average of the costs of each configuration plus a markup. Bell Aliant Atlantic proposed a single interface configuration equivalent to configuration 1b above. TCC proposed a single interface configuration that serves a competitor by an interface port on a router at a central office.

13. CNOC and Primus submitted that the Bell companies in Ontario and Quebec should be required to offer separate interface rates based on the configuration being used by a competitor. They submitted that there are significant additional costs for configuration 2 because of the need for Metro Ethernet transport, and that

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[7] Phase II costs reflect the costs of the prospective incremental resources used to provide the service, consistent with the costing methodologies and assumptions set out in the large telephone companies' approved regulatory economic study manuals.

[8] Markup is the amount that is added to the Commission-approved costs to set the cost-based rate for a service. This difference between the rate and the Commission-approved costs serves as a contribution towards the company's fixed and common costs and a profit margin.

competitors using configurations 1a and 1b should not subsidize those that use configuration 2.

14. MTS Allstream submitted that any additional transport costs should be excluded from the interface rates, should be borne by the affected independent service providers, and should not be cross-subsidized by all other independent service providers.

15. Vaxination submitted that the aggregation of end-user traffic is part of the capacity-based billing (CBB) charge and that the Bell companies' interface port should not include any costs associated with usage or aggregation.

16. The Bell companies submitted that the Metro Ethernet transport costs are not recovered through the rates for any other tariff items such as those for CBB, and are therefore legitimate costs to be included in their cost study. Moreover, the Bell companies argued that applying different rates for each of the configurations would be unfair to existing customers as they did not have a choice of configurations with rate differentials at the time they ordered the service. Finally, they submitted that introducing a separate rate would result in additional costs for modifying billing systems that were not included in the proposed costs.

Commission's analysis and determinations

17. The Commission considers that the Bell companies in Ontario and Quebec provided evidence to support their claim that the Metro Ethernet transport costs associated with configuration 2 are causal to the provision of wholesale HSA services and are not recovered through any existing tariff items. Accordingly, the Commission considers that the Bell companies in Ontario and Quebec should be allowed to recover these costs in their interface rates.

18. The Commission also considers, however, that the inclusion of Metro Ethernet transport costs causes a significant difference in the costs for configuration 2. As a result, the proposed use of a single rate based on a weighted average of the costs of the three different configurations would result in subsidization of competitors that are connected through configuration 2 by competitors that are connected through configuration 1a or 1b.

19. The Commission considers that subsidization would not be appropriate, because it would raise costs for those companies relying on service provided pursuant to configurations 1a and 1b. The Commission notes that since the Bell companies in Ontario and Quebec provided separate cost studies for each configuration, rates can be established separately, which would eliminate possible subsidization.

20. The Commission notes the Bell companies' submission that they would incur additional costs for modifications to billing systems if an additional new rate structure were implemented and that, consequently, these additional costs would have to be incorporated in any new rate. The Commission notes that there are small

differences in the costs proposed by the Bell companies in Ontario and Quebec for configurations 1a and 1b. Given these differences, the Commission considers it appropriate to provide a single blended rate for configurations 1a and 1b to lessen the additional billing-system-related costs that would occur if separate rate structures were implemented for these two configurations.

21. In light of the above, the Commission directs the Bell companies in Ontario and Quebec to provide a single blended rate for configurations 1a and 1b and a separate rate for configuration 2.

b) Are the proposed costs for interfaces appropriate?

i) Annual capital cost changes

22. Capital costs relate to the equipment required to provide the interface component of the wholesale HSA service. There are two types of capital costs included in the interface cost studies: (i) access-driven capital costs, and (ii) usage-driven capital costs. In cost studies filed with the Commission, companies typically reflect annual capital unit cost changes for equipment through the application of capital increase factors (CIFs).[9]

23. The Bell companies submitted that the CIFs used in their cost studies are asset-class-specific and supported by thorough studies. They further submitted that the CIF values were filed with the Commission and are included in their Phase II manuals.

24. TCC submitted that it did not apply the CIFs included in its Phase II manual in its cost study. TCC further submitted that its capital costs for provisioning interfaces have risen because of increasing costs to the company for interface ports and associated labour costs. TCC provided a comparison of its costs for a 10/100 Ethernet interface port in 2007 and 2013 to support its claim.

Commission's analysis and determinations

25. In Telecom Notice of Consultation 2013-80, the Commission directed the Bell companies and TCC to file updated cost studies and proposed rates for their wholesale HSA service interfaces using the pricing rules in effect for the interfaces of MTS Allstream and SaskTel, as set out in Telecom Regulatory Policy 2011-703. These pricing rules include the application of specific annual capital unit cost changes.

26. The Commission notes that TCC compared its cost for a 10/100 Ethernet port from one manufacturer in 2007 with its cost for one from a different manufacturer in 2013. The Commission also notes that TCC did not provide any information on whether

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[9] CIFs are forecasts of year-over-year price level changes for capital equipment.

each manufacturer's ports are suitable for use as 10/100 Mbps interface ports in a carrier's network. The Commission further notes that although TCC offers both 100 Mbps and 1000 Mbps interfaces, it did not provide any comparison for its costs over time for Gigabit Ethernet ports that are required for 1000 Mbps interfaces. In light of the above, the Commission finds that TCC has not provided sufficient evidence to support its claim of a price increase for this equipment.

27. The Commission notes that the Bell companies' proposed annual unit cost changes based on their CIFs are in line with the values set out in their Phase II manuals. However, the Commission considers that service-specific capital unit cost changes could be applied in the alternative if they are deemed more appropriate.

28. In Telecom Regulatory Policy 2011-703, the Commission determined that, for all large telephone companies, annual capital unit cost changes of minus 5 percent for access-driven equipment and minus 10 percent for usage-driven equipment provide reasonable estimates of the impact of expected equipment capacity increases and unit cost reductions for Internet-related equipment over the study period.[10] The Commission considers that this determination applies equally to interface capital equipment.

29. Further, the Commission notes that MTS Allstream's and SaskTel's interface rates reflect this determination, and that the determination took into account the fact that labour is a component of the overall capital costs of this type of equipment.

30. The Commission finds that the Bell companies and TCC did not provide sufficient evidence and rationale to support the use of their proposed annual capital unit cost changes for capital equipment in their cost studies instead of the annual unit cost changes the Commission had directed them to use.

31. In light of the above, the Commission concludes that, consistent with its determinations in Telecom Regulatory Policy 2011-703, it is appropriate to apply annual capital unit cost changes of minus 5 percent for access-driven equipment and minus 10 percent for usage-driven equipment to the proposed interface costs in this proceeding.

ii) Study period

32. Bell Aliant Atlantic and the Bell companies in Ontario and Quebec proposed a study period of 10 years in estimating their interface costs.

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[10] The study period is the period of time over which revenue and cost cash flows caused by providing the service to the independent service provider are assessed. The study period need only be as long as necessary to ensure that all the significant causal cash flows are reflected in the study. Typically, the study period of a regulatory economic study is between three and ten years.

33. TCC proposed a five-year study period, submitting that the interface is an established service component that has been available for some time and that there are few, if any, start-up costs to recover over an extended period of time. TCC also submitted that forecasting demand beyond five years is unreliable in light of the rapidly changing technology and that the five-year study period therefore adequately captures the impact of the major cash flows.

Commission's analysis and determinations

34. The Commission notes that in Telecom Notice of Consultation 2013-80, the Bell companies and TCC were directed to file cost studies using the pricing rules set out in Telecom Regulatory Policy 2011-703, which include a 10-year study period. The Commission also notes that the Bell companies in Ontario and Quebec and Bell Aliant Atlantic did not object to using a 10-year study period, which is consistent with the one used by MTS Allstream and SaskTel in their recent interface cost studies.

35. In Telecom Regulatory Policy 2011-703, the Commission considered that a study period of 10 years for wholesale HSA service cost studies would adequately reflect potential reductions in capital costs that may occur over the years due to technological advancements and increases in usage. Accordingly, the Commission finds that a 10-year study period is appropriate in these circumstances and has adjusted the costs associated with TCC's cost studies to reflect this determination.

iii) Expense adjustments

36. CNOC, supported by Primus, submitted that the significantly higher expenses proposed by the Bell companies in Ontario and Quebec relative to those proposed by Bell Aliant Atlantic and TCC are not justified, as the same technology is used by all companies. CNOC added that the Bell companies in Ontario and Quebec should benefit from economies of scale because of higher competitor demand. CNOC also noted the significant difference in time estimates for expense-related activities and associated costs between the Bell companies in Ontario and Quebec, Bell Aliant Atlantic, and TCC for maintenance, service provisioning, advertising and sales management, ongoing billing queries, and product management.

37. MTS Allstream submitted that the Bell companies in Ontario and Quebec overestimated their maintenance, advertising and sales management and billing queries expenses, questioning whether three and a half hours per month per interface port would be required for those activities. MTS Allstream also submitted that the Bell companies in Ontario and Quebec had inflated the costs for their interface ports by including several layers of administrative activities, such as numerous reviews by customer service engineers, many coordination activities and ongoing support for billing queries, and constant capacity monitoring and management. MTS Allstream noted that TCC's time estimate for similar activities is only approximately three quarters of an hour.

38. The Bell companies submitted that the activities included in their interface cost studies are fully justified and that the activity costs are company-specific and therefore not comparable. They also submitted that as a result of significantly higher demand in Ontario and Quebec versus the Atlantic provinces, the Bell companies in Ontario and Quebec have higher costs related to account executives, product managers, service managers, and technical support resources.

Commission's analysis and determinations

39. The Commission notes the significant differences between certain expenses proposed by the three companies in these proceedings and those proposed in previous cost studies filed with the Commission for interfaces. The Commission also notes that certain expenses proposed by the Bell companies in Ontario and Quebec in this proceeding are significantly higher than those proposed by Bell Aliant Atlantic and TCC.

40. The Commission notes that the three companies calculated the majority of the ongoing activity costs by multiplying the time it takes to perform the activity by the labour unit cost of the employee performing the work, and multiplying the result by the frequency of occurrence (occurrence rate). The Commission notes that the time estimates and occurrence rates are not based on empirical evidence, such as measured data or time and motion studies, but rather on the companies' own subject matter expert estimates for many of the proposed activity costs.

41. Following its review of each company's cost studies and consideration comments from the parties, the Commission has adjusted these estimates based on comparisons with similar activities of other companies, and competitors' experience regarding specific activities. The Commission has also adjusted or removed costs that are not considered causal to the service, incremental, monthly ongoing, or sufficiently supported with rationale and evidence.

42. The adjustments made affect the following expense categories:

- maintenance;
- service provisioning;
- advertising and sales management;
- ongoing billing queries;
- other expenses causal to demand;
- other expenses causal to service; and
- service charges.

Maintenance

43. Bell Aliant Atlantic proposed maintenance costs using the company's corporate average maintenance factors. The Bell companies in Ontario and Quebec proposed maintenance costs using a combination of corporate average maintenance factors and additional activity costs based on time estimates, occurrence rates, and labour unit costs. TCC proposed maintenance costs based on time estimates and labour unit costs.

44. CNOC questioned the large discrepancy in costs associated with maintenance expenses across the three companies, and submitted that maintenance costs should be lower for the larger carriers due to economies of scale. CNOC also noted that the maintenance expenses for the Bell companies in Ontario and Quebec are greater than the cost of the interface port itself.

45. The Bell companies submitted that maintenance expenses included not only ongoing repair and maintenance activities, but also escalation management and customer service engineering activities such as trouble resolution and planning for future needs.

Commission's analysis and determinations

46. The Commission notes that the Bell companies in Ontario and Quebec included activities related to customer service engineering for installation-related activities and future capacity-planning tasks. The Commission considers that future capacity-planning tasks are pre-sale activities that are not incremental expenses and will be incurred whether or not the service will be sold. The Commission further considers that other activities, such as helping clients configure their networks, are service charge activities and should be excluded from ongoing expenses. As a result, the Commission has removed any costs associated with these activities.

47. The Commission also notes that the escalation manager's tasks, as described by the Bell companies, mostly involve coordination and supervision activities. The Commission notes that the Bell companies' corporate average maintenance factors include non-management labour and supervision, such as the escalation manager's tasks. Accordingly, the Commission finds that these costs should be removed from the maintenance expenses of the Bell companies in Ontario and Quebec. As a result, the Commission has reduced the maintenance expenses for the Bell companies in Ontario and Quebec by 95 percent for the 100 Mbps interface and by 89 percent for the 1000 Mbps interface.

48. The Commission notes that TCC assumed an annual occurrence rate of 100 percent for service repair and trouble resolution. Under this assumption, it could be argued that every interface would require repair and trouble resolution on a regular basis. The Commission considers it reasonable to assume that the interfaces are reliable and not subject to frequent failures, and has therefore reduced TCC's occurrence rate for service repair and trouble resolution to 20 percent. This adjustment results in a reduction of TCC's maintenance expenses of approximately 40 percent.

Service provisioning

49. Bell Aliant Atlantic proposed both service termination costs and ongoing service assurance costs based on time estimates and labour unit costs under the service provisioning category. The Bell companies in Ontario and Quebec proposed only service termination costs based on time estimates and labour unit costs. TCC did not propose any costs for service provisioning.

50. CNOC submitted that the costs for service provisioning for the Bell companies in Ontario and Quebec and for Bell Aliant Atlantic appeared to be too high.

Commission's analysis and determinations

51. The Commission notes that as part of service provisioning, the Bell companies in Ontario and Quebec proposed an estimate of 470 minutes for removing IP addresses from servers for customers having an interface disconnected, but did not provide a detailed breakdown of the activity in increments of no more than 15 minutes as requested. In the absence of this detailed breakdown, the Commission finds that the Bell companies in Ontario and Quebec have not provided sufficient evidence and rationale to justify their proposed time estimate. The Commission notes that Bell Aliant Atlantic proposed a significantly lower time estimate for a similar activity, and finds that estimate to be reasonable. The Commission considers that this is a fully established process that can be efficiently mechanized to take much less time than the amount of time proposed. The Commission has therefore reduced the time estimates provided by the Bell companies in Ontario and Quebec for removing IP addresses, resulting in a reduction of 57 percent in service provisioning expenses.

52. The Commission notes that Bell Aliant Atlantic proposed ongoing service assurance costs that include assessing trouble report details, developing troubleshooting plans, reviewing configurations, and checking hardware updates. The Commission considers that not all these activities will be performed on a regular basis, and that some of the activities will be done on a per-competitor, as opposed to per-interface, basis. In light of the above, the Commission has reduced the occurrence rate from 100 percent to 70 percent, resulting in a reduction of 29 percent in service provisioning expenses for Bell Aliant Atlantic.

Advertising and sales management

53. Bell Aliant Atlantic and the Bell companies in Ontario and Quebec proposed advertising and sales management costs based on time estimates and labour unit costs. TCC did not propose any costs in this category.

54. CNOC submitted that the advertising and sales management expenses of the Bell companies in Ontario and Quebec represented a significant proportion of their proposed costs. CNOC submitted that such expenses should not be allocated to interfaces, given that interfaces are not typically marketed on their own and that this type of product has a limited market as a secondary service associated with wholesale HSA services. CNOC also noted that TCC did not include any such

expenses in its cost study and that the equivalent expenses of Bell Aliant Atlantic are less than 20 percent of the costs claimed by the Bell companies in Ontario and Quebec.

55. Primus questioned how the tasks that the Bell companies in Ontario and Quebec described as "working with customers to establish their AHSSPIs"[11] could be a monthly undertaking rather than a one-time activity. Primus further submitted that, in its experience, the Bell companies in Ontario and Quebec did not spend the proposed 1.05 hours per interface per month on ongoing sales activities and managing their relationship with Primus with regard to interfaces.

56. The Bell companies submitted that it is not reasonable to conclude that because their costs are higher than those of the other two companies, that these costs are overestimated. They also noted that because of higher demand, more resources are needed to manage contracts and meet with customers for network planning purposes. Finally, the Bell companies noted that the time estimate per interface that Primus referred to is an average and that more time may be needed for other customers.

Commission's analysis and determinations

57. The Commission notes that the Bell companies in Ontario and Quebec included in their advertising and sales management expenses one-time set-up activities (e.g. establishing an interface port) and pre-sale activities (e.g. reviewing configurations for potential changes). The Commission considers that these costs are covered by the service charge and pre-sale activities and are thus not incremental (incurred whether or not the service is sold). Accordingly, the Commission finds that these costs should be removed from Phase II ongoing expenses.

58. The Commission notes that competitors generally objected to the inclusion of any ongoing expenses related to advertising and sales management. The Commission agrees that the interface is a mandatory component of the wholesale HSA service, and as such, is not marketed on its own. The Commission notes Primus's submission that in its experience, the Bell companies in Ontario and Quebec did not spend the proposed amount of time on managing their relationship and on ongoing sales activities. The Commission further notes that TCC did not include any such expense in its cost study during these proceedings.

59. Accordingly, the Commission finds the time estimates associated with advertising and sales management for the Bell companies in Ontario and Quebec to be unjustified. The Commission has therefore reduced the proposed time estimates to reflect the minimal ongoing advertisement and sales management activity that could be required, which results in a 99 percent reduction in advertising and sales management expenses.

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[11] AHSSPI (aggregated high-speed service provider interface) is the Bell companies' name for their wholesale HSA service interface.

60. The Commission notes that Bell Aliant Atlantic proposed advertising and sales management expenses that include time for receiving and managing service updates, providing customer updates on trouble issues, acting as a contact for trouble resolution, and escalating issues to higher management. The Commission considers that these activities are primarily ongoing maintenance expenses, which are already covered under general maintenance expenses where management is responsible for supervising and coordinating repair and trouble issues. The Commission also considers that escalation activities are costs related to inefficiencies that should not be borne by competitors. In light of the above, the Commission finds that Bell Aliant Atlantic has not provided sufficient rationale to support its estimates in this category, and has reduced the company's advertising and sales management expenses by 83 percent.

Ongoing billing

61. The Bell companies in Ontario and Quebec proposed monthly billing costs of $38.80, reflecting 0.53 hours of billing query activity per interface per month, while TCC proposed billing costs of $3.11 per interface per month. Bell Aliant Atlantic did not include any costs in this category.

62. Primus submitted that the estimate proposed by the Bell companies in Ontario and Quebec for billing queries does not reflect its experience, and further submitted that interface billing is a straightforward process.

63. Vaxination submitted that the ongoing billing costs proposed by the Bell companies in Ontario and Quebec are excessive, since the billing charges for the interface represent predetermined amounts based on ordered quantities, and the generation of billing does not require the collection and processing of network usage data.

64. The Bell companies submitted that their proposed billing costs do not include any costs for generating the invoice or sending out the bill, as submitted by Vaxination. They submitted that the billing costs only include the cost of supporting customers who have billing queries related specifically to the interface.

Commission's analysis and determinations

65. The Commission considers that billing queries should be simple, as they involve predetermined charges with no usage measurement. The Commission also considers that it is not reasonable to assume, as the Bell companies in Ontario and Quebec have, that these queries will occur every month for each interface. The Commission therefore finds the monthly billing costs proposed by the Bell companies in Ontario and Quebec to be unjustified. Therefore, for the Bell companies in Ontario and Quebec, the Commission has reduced (i) the time estimates from 30 to 20 minutes, and (ii) the occurrence rate. These changes result in an 87 percent decrease in billing expenses.

Other expenses causal to demand

66. Bell Aliant Atlantic proposed service assurance costs, including an enterprise service manager, an escalation manager, and a product manager, in this category, whereas the Bell companies in Ontario and Quebec proposed bad debt costs.[12] TCC did not propose any costs in this category.

Commission's analysis and determinations

67. The activities submitted by Bell Aliant Atlantic included supervision and escalation activities, which the Commission considers to be covered as a loading cost in the labour rate. The Commission considers that the costs associated with escalation managers responsible for missed deadlines and other issues are incurred as a result of inefficiencies and should not be borne by competitors. As a result, the Commission has removed the time allocated to enterprise service and escalation managers for Bell Aliant Atlantic.

68. The Commission notes that the interface technology has been in place for many years, and major technical issues should have already been resolved. Accordingly, the Commission considers that activities for product management dedicated to the analysis of trouble reports for potential technical issues would require less time than what was proposed. As a result, the related proposed cost should be reduced.

69. In light of the above, the Commission finds the service assurance costs proposed by Bell Aliant Atlantic to be unjustified, and has therefore reduced the company's expenses related to service assurance by 89 percent.

70. The Commission has also reduced the bad debt expenses for the Bell companies in Ontario and Quebec to reflect the lower Commission-adjusted costs. The revised bad debt expenses are calculated by multiplying the bad debt factor by the Commission-adjusted costs. As a result, the Commission has reduced the bad debt expenses by 85 percent for the 100 Mbps interface and by 73 percent for the 1000 Mbps interface.

Other expenses causal to service – Product management

71. CNOC submitted that the product management expenses proposed by the Bell companies in Ontario and Quebec are overstated because the number of person-years required to manage interfaces, which have a limited select market, should not be significant. CNOC added that the product management costs of the Bell companies in Ontario and Quebec should be much lower than those of Bell Aliant Atlantic due to economies of scale.

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[12] Bad debt expenses cover the costs of uncollectible accounts. The factor used to develop the amount of bad debt is based on a corporate average factor calculated by dividing total company debt expenses by total revenues.

72. The Bell companies submitted that product management activities include building and maintaining service descriptions and other documentation, attending customer calls to provide product and process details to the customer, engaging with most orders for interfaces to review available capacity, and preparing regular forecasts for network planning.

Commission's analysis and determinations

73. The Commission considers that the Bell companies in Ontario and Quebec proposed significant costs to manage interfaces, which do not rely on complex technology and are just one component of wholesale HSA service. Further, the Commission notes that TCC proposed no product management costs, and that Bell Aliant Atlantic's costs in this category are much lower. In light of the above, the Commission finds that the Bell companies in Ontario and Quebec failed to justify the significant level of costs proposed, and that it is appropriate to reduce the product management expenses of the Bell companies in Ontario and Quebec by 97 percent to reflect the minimal ongoing product management that is expected to be required.

Other expenses causal to service – Billing system changes

74. The Bell companies in Ontario and Quebec proposed one-time information systems and information technology development costs of over $130,000, or $3.38 per interface per month, for implementation of the interface rate change. CNOC submitted that this is an exorbitant cost to implement a simple set of rate changes, especially given that Bell Aliant Atlantic proposed a cost of $0.22 per interface per month. CNOC added that, given economies of scale, the costs of the Bell companies in Ontario and Quebec on a per-interface basis should be lower than those of Bell Aliant Atlantic.

75. The Bell companies submitted that the proposed expenses included the costs associated with analysis of the systems affected by the rate change and assessments of the changes that have to be made in these systems but excluded any development costs that had already been incurred. The Bell companies also submitted that Bell Aliant Atlantic's billing system change costs are lower because there is only one billing system to be modified in its territory.

Commission's analysis and determinations

76. The Commission notes that TCC proposed no costs for billing system changes, and that Bell Aliant Atlantic proposed a small amount. The Commission considers that the proposed costs of the Bell companies in Ontario and Quebec are excessive and unjustified. However, the Commission notes that the Bell companies are required to introduce separate interface rates to reflect two different configurations. The Commission has therefore reduced the costs for billing system changes to $50,000, taking into account this new requirement.

Service charges

77. TCC proposed a reduction in service charges, while Bell Aliant Atlantic and the Bell companies in Ontario and Quebec proposed increases. CNOC submitted that it was not clear whether the companies had accounted for savings associated with the fact that competitors often have to order multiple interfaces in a single order.

78. With regard to TCC's service charge, CNOC submitted that there is not enough of a breakdown of time estimates available on the public record of the proceeding to assess whether all the relevant estimates are reasonable.

79. MTS Allstream submitted that any increase in Bell Aliant Atlantic's service charge costs should be attributable only to labour rate increases, since Bell Aliant Atlantic continues to use the flat rate billing model.

80. The Bell companies submitted that there would be minimal efficiencies associated with requests for more than one interface and, therefore, minimal cost savings. In the case of Bell Aliant Atlantic, the Bell companies noted that costs associated with some activities, such as domain name configuration on radius servers, tunnel switches, and broadband access servers, were previously captured in the monthly equivalent cost rather than in the service charge, which explains the significant increase in the service charge.

Commission's analysis and determinations

81. The Commission notes that the proposed time estimates and occurrence rates for service-charge-related activities were largely based on estimates from subject matter experts and were not supported by empirical evidence, such as measured data or time and motion studies.

82. The Commission has reviewed the service charge cost estimates submitted by each company and finds that a number of adjustments are required. As set out in more detail in Appendix 2, the Commission finds that the time estimates and occurrence rates for service charge activities proposed by the companies must be adjusted to

    (i) exclude certain activities that are not considered to be causally related to the service charge order process;
    (ii) reduce the time estimates for certain activities that are considered to be too high compared to other companies' estimates for similar activities, and/or for which the companies did not provide sufficient rationale;
    (iii) reduce the time estimates for certain activities to reflect the Commission's view that excessive administrative tasks were being proposed for simple activities; and (iv) reduce occurrence rates that are considered to be too high and for which the companies did not provide sufficient supporting rationale.

Conclusion – Interface rates

83. In light of all the above, the Commission has adjusted the rates proposed by the Bell companies and TCC in order to ensure that wholesale HSA services are offered at just and reasonable rates. These rates are set out in Appendix 1. With regard to the tariff applications referred to in paragraph 6 above, the Commission **approves on a final basis** these applications, as modified by this decision. The approval takes effect the date of this decision. The Commission directs each affected company to issue, within **20 days** of the date of this decision, revised tariff pages that reflect the determinations in this decision, including the rates listed in Appendix 1.[13]

II. Optional upstream speed rates

84. In Telecom Regulatory Policy 2010-632, the Commission required incumbents to provide wholesale HSA services that match the upstream and downstream speeds of their retail Internet services (the speed-matching requirement). In the event that any incumbent provides faster upstream speeds to its retail end-users, or even provides optional speed arrangements to its retail end-users, those same capacities must be made available to independent service providers, consistent with the speed-matching requirement.

85. The Commission invited parties to file comments on (i) whether the pricing approach for optional upstream services should be consistent with the pricing approach approved for other similar ancillary wholesale HSA services in Telecom Regulatory Policy 2011-703, namely Phase II costs plus a 30 percent markup; and (ii) whether rates for optional upstream speeds approved as a result of this process should be retroactive to the date that such rates were approved on an interim basis.[14]

86. Bell Aliant Atlantic and Bell Canada in Ontario and Quebec filed tariff applications in which they proposed rates for optional upstream speeds. The records of the proceedings associated with those applications[15] have been incorporated into this proceeding.

a) What should be the pricing approach and rates for optional upstream speeds?

87. The Bell companies noted that in March 2013, they had filed an application to review and vary Telecom Decisions 2013-72 and 2013-73. In that application, the

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

[14] The optional business upstream interim rate was approved in Telecom Order 2012-220; the optional residential upstream interim rate was approved in Telecom Order 2011-377.

[15] The proposed optional upstream speed rates were originally filed in Bell Aliant Tariff Notice (TN) 400 and Bell Canada TN 7345; these proposals were subsequently refiled, with supporting cost studies, in Bell Aliant TN 411 and Bell Canada TN 7357.

companies (i) disagreed with the principle that residential and business wholesale HSA services should have the same markup, and (ii) requested the reinstatement of the ability to choose either the flat rate billing model or the CBB model for their residential and business wholesale HSA services.

88. The Bell companies, CNOC, MTS Allstream, Primus, and Vaxination submitted that it would be appropriate to set the rates for optional upstream speeds based on Phase II costs plus an appropriate markup.

89. The Bell companies submitted that a common markup of 50 percent on business and residential optional upstream speeds would achieve revenue neutrality and, therefore, would not impair their incentives to invest in new infrastructure.

90. CNOC, MTS Allstream, and Primus submitted that the appropriate markup for optional upstream speeds should be 30 percent, consistent with the pricing approach approved for other similar ancillary wholesale HSA services in Telecom Regulatory Policy 2011-703. CNOC further submitted that optional upstream speeds, while subject to the speed-matching requirement, are ancillary features that do not form part of the Bell companies' core wholesale HSA service offerings. It submitted that, given the optional nature of these speed options, their pricing will not affect the Bell companies' incentive to invest in new infrastructure.

91. CNOC, MTS Allstream, Primus, and Vaxination noted that the Bell companies in Ontario and Quebec have chosen to use the CBB model for their residential and business wholesale HSA services. They submitted that any costs related to upstream traffic will be recovered through the CBB rate, which is set based on the amount of capacity the competitors require to meet their customer demand requirements. Accordingly, they submitted that the rate that the Bell companies should charge for residential and business optional upstream speeds is $0 per month per end-user.

Commission's analysis and determinations

92. The Commission notes that in Telecom Decision 2013-399, it denied the Bell companies' application to review and vary Telecom Decisions 2013-72 and 2013-73.

93. The record of the current proceeding indicates that only the Bell companies in Ontario and Quebec offer optional upstream speeds on a retail or wholesale basis.

94. With respect to the Bell companies' submission that a common markup of 50 percent is needed for the optional upstream speeds, the Commission finds that there is no evidence on the record of this proceeding that the Bell companies' incentives to invest in new infrastructure would be impaired by a markup lower than 50 percent.

95. Consistent with its determinations in Telecom Regulatory Policy 2011-703, the Commission considers that, since markups for wholesale HSA services and wholesale HSA service orders are generally to be set at 30 percent, ancillary wholesale HSA features should also be set at 30 percent.

96. For the incumbents that have implemented the CBB model for all their wholesale HSA services, the competitors bear the responsibility for purchasing sufficient CBB capacity to meet both downstream and upstream traffic requirements for all their subscribers. Consequently, the Phase II costs associated with optional upstream speeds would be recovered through the CBB rate.

97. In light of the above, the Commission concludes that, for the incumbents that have implemented the flat rate billing model, the appropriate pricing approach for optional upstream speeds is to use Phase II costs plus a 30 percent markup. The Commission further concludes that, for incumbents that use the CBB model, the rates for business and residential optional upstream speeds should be set at $0 per month per end-user on the basis that CBB recovers both downstream and upstream capacity costs.

b) Should the final rates be applied retroactively?

98. The Cable carriers submitted that the final rates for optional upstream speeds should be applied retroactively to the date interim rates were set.

99. CNOC requested that the revised residential optional upstream rates be applied retroactively to 15 November 2011, the date that Telecom Regulatory Policy 2011-703 was issued.

100. Further, CNOC and the Bell companies requested that the revised business optional upstream speed rates be applied retroactively to 13 April 2012, the date on which the Bell companies' business optional upstream service rate of $0 per month per end-user was made interim.

Commission's analysis and determinations

101. As indicated above, the Commission determined that where the flat rate billing model is employed, it is appropriate to base optional upstream speed rates on Phase II costs plus a 30 percent markup. For incumbents that use the CBB model, optional upstream speed rates should be $0 per month per end-user because the costs are recovered through the CBB rate.

102. The current rate of $3.75 per month per end-user for the Bell companies in Ontario and Quebec's residential optional upstream service was made interim effective 15 June 2011, and the current rate of $0 per month per end-user for their business optional upstream service was made interim effective 13 April 2012. The Commission considers that if the rates based on the pricing approach approved in this decision were made effective on a retroactive basis, the retroactive payments would be immaterial based on the low in-service competitor demand for these services from 2011 to 2013. Consequently, the Commission finds that the costs associated with reconciling and making retroactive payments would outweigh the benefits of the rate adjustments.

103. In light of the above, and given that the Bell companies in Ontario and Quebec have chosen to use the CBB model for their business and residential wholesale HSA

services, the Commission **approves on a final basis** the rate of $0 per month per end-user for the residential and business optional upstream services offered by the Bell companies in Ontario and Quebec, effective the date of this decision. The Commission directs the Bell companies in Ontario and Quebec to issue, within **20 days** of the date of this decision, revised tariff pages to reflect the determinations in this decision.

III. Modem testing guidelines and related matters

104. In Telecom Notice of Consultation 2013-80, the Commission noted that in order for independent service providers to make effective use of the incumbents' wholesale HSA services, their end-users must use modems that are compatible with the incumbent's network. Cable carriers offering wholesale HSA services are required to follow an established modem certification process, including specifications, fees, and timelines, but no comparable guidelines were put in place for the large telephone companies.[16]

105. The Commission was concerned that absent formal modem testing guidelines for the large telephone companies, independent service providers may be placed at a competitive disadvantage and be exclusively dependent on modems provided by the large telephone companies in order to provide competitive retail services. The Commission therefore invited parties to file comments on whether specific modem testing guidelines are required for the large telephone companies and whether those guidelines should be consistent with those set out for cable carriers.

a) Are modem testing guidelines necessary for large telephone companies and, if so, for which ones?

106. CNOC submitted that although digital subscriber line (DSL)[17] technology is standardized, the Bell companies in Ontario and Quebec have only allowed one type of modem to be used in conjunction with very-high-bit-rate DSL (VDSL)[18] technology on their network due to network incompatibility issues. This modem must be purchased or rented from the Bell companies. CNOC proposed that the Bell companies in Ontario and Quebec should be required to provide a time frame, not exceeding one year, by which they will ensure that off-the-shelf VDSL modems can be used ubiquitously on their network, as is the case with TCC.

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16 In Order 2000-789, the Commission directed that each cable carrier include in its wholesale HSA service tariff terms related to the availability of competitor-supplied modems, including modem certification requirements and processes, that are compatible with the cable carrier's access and distribution systems. Subsequently, in Telecom Decision 2004-37, the Commission established a certification process, specifications, fees, and timelines applicable to the cable carriers.

17 DSL is a family of technologies that provide Internet access by transmitting digital data over the wires of a local telephone network.

18 VDSL technology provides data transmission faster than asymmetric digital subscriber line (ADSL) technology. VDSL modems are typically required for services offering download speeds of at least 25 Mbps and/or upload speeds of at least 7 Mbps.

107. In the event that the use of ubiquitous off-the-shelf VDSL modems within their network is not possible, CNOC proposed that the Bell companies in Ontario and Quebec be required to work collectively with multiple modem manufacturers to encourage the rapid development and deployment of VDSL modems that work on their network. Failing this, as a last resort, CNOC proposed that the rental and sale of VDSL modems by the Bell companies in Ontario and Quebec to their wholesale customers should be regulated with modem rates based on Phase II costs plus a 15 percent markup, reflecting the essential nature of the sole-sourcing of VDSL modems from these incumbents.

108. CNOC also submitted that the Commission should only impose regulation on companies whose networks experience VDSL compatibility issues. CNOC noted that its members do not yet have a considerable amount of experience with VDSL modems in the operating territories of Bell Aliant Atlantic, SaskTel, or MTS Allstream. CNOC urged the Commission to investigate whether these companies experience similar VDSL compatibility issues.

109. The Bell companies submitted that asymmetric digital subscriber line (ADSL) and VDSL are mature standards with wide operability on their networks. However, only one VDSL modem is certified to work with the Bell companies' Alcatel-Lucent Stinger DSLAM,[19] which is now manufacturer-discontinued but remains prevalent in the Bell companies' networks. The installation of these DSLAMs began in 2000, before VDSL standards had evolved, and the majority were installed between 2006 and 2009. These DSLAMs are no longer being deployed, and each has a life expectancy of seven years.

110. The Bell companies also submitted that network-certified VDSL modems can be rented or purchased from them or, if the independent service providers prefer, could possibly be purchased directly from the manufacturer (with rates and features they will have mutually agreed upon), as no exclusivity clauses are in effect.

111. The Bell companies noted that they continue to investigate alternative compatible VDSL modems, and expect that their network specifications will soon be updated to increase the number of compatible modem chipsets as a result of work they have undertaken with two large chipset vendors.

112. The Bell companies further submitted that they would be prepared to perform modem tests given certain conditions, including (i) the assurance that the modems to be tested are already CS-03-certified,[20] and (ii) the independent service provider

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[19] DSLAM: Digital subscriber line access multiplexer. DSLAM equipment collects the data from its many modem ports and aggregates the traffic into one signal.

[20] CS-03 specification is a comprehensive specification covering the minimum technical requirements for all terminal equipment that may be attached to public switched telephone networks. This terminal equipment includes the various DSL technologies used by the incumbents. Terminal equipment that meets the CS-03 specification must be certified by an authorized independent certification body and registered with Industry Canada.

proposes only models which the manufacturer reasonably believes are compatible with the DSLAM equipment in the Bell companies' networks.

113. The Bell companies noted that Bell Aliant Atlantic experiences similar network compatibility issues but that competitors have not raised this issue to date.

114. SaskTel submitted that only one VDSL modem is currently known to work with its network in all configurations,[21] but that changing the company's network to be fully compliant with more stabilized VDSL standards would be prohibitively expensive. SaskTel also submitted that it does not possess the market power to work with equipment manufacturers to develop compatible modems, and doubts that any large Canadian telephone company has such power.

115. TCC submitted that many competitors buy, test, and use their own modems on its network with no involvement or certification from the company. TCC added that no competitors have taken issue with its process and that there is therefore no need to impose modem testing guidelines on TCC.

116. MTS Allstream submitted that DSL is a global technology and compatible modems are widely available, indicating that it is unnecessary for the Commission to establish onerous modem testing guidelines for the modems of large telephone companies unless there is an issue of forced exclusivity of modems, as is the case with the Bell companies.

Commission's analysis and determinations

117. The Commission notes that there is general agreement that (i) VDSL modem testing is required to ensure compatibility with networks that are not fully VDSL-compliant (i.e. those of the Bell companies and SaskTel), and (ii) the testing of ADSL and VDSL modems on networks that are fully compliant with VDSL standards (i.e. those of TCC and MTS Allstream) is unwarranted.

118. The Commission considers that it would be premature to impose VDSL modem testing guidelines on large telephone companies whose wholesale demand does not currently warrant intervention (i.e. SaskTel and Bell Aliant Atlantic), as the problematic DSLAM equipment has a limited lifespan and incompatibility issues are therefore temporary.

119. With regard to CNOC's proposal to have incumbents with VDSL compatibility issues proactively replace DSLAMs, the Commission considers that this solution would be prohibitively expensive. The Commission also considers that having incumbents with VDSL compatibility issues work with alternative equipment

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[21] Alcatel 7330 DSLAMs provisioned with VDSL EVLT-F cards, known to have compatibility issues with off-the-shelf VDSL modems, are prevalent in SaskTel's network.

manufacturers to develop network-specific compliant VDSL modems is not realistic given the relatively small number of modems involved.

120. With regard to CNOC's proposal to potentially re-establish rate regulation for VDSL modems, the Commission notes that the Bell companies offer the same modems to their own retail customers. Further, the Commission has reviewed the costs for the modems and considers that the rate charged to independent service providers for modems currently sourced from the Bell companies is reasonable. The Commission therefore considers that there is no apparent competitive advantage to the Bell companies, or preference in favour of itself or its customers, with respect to the supply of these modems to independent service providers. Further, the Commission finds that there is insufficient evidence to justify rate regulation of VDSL modems.

121. The Commission considers that due to the VDSL modem compliance requirement, any alternative modem proposed by competitors must be tested for compatibility on the companies' networks. The Commission therefore considers that VDSL modem testing is required on the network of the Bell companies in Ontario and Quebec.

122. The Commission notes that the Bell companies are amenable to performing modem testing to ensure compatibility between their networks and the modems proposed by the independent service providers. The Commission notes the Bell companies' submission that they had received a number of favourable responses from alternative modem vendors during the sourcing process that resulted in their current modem selection, indicating that they expect there to be other options in the near future. The Commission considers that the ability to have additional modems certified would give independent service providers more options in terms of VDSL modem price and functionality.

123. In light of the above, the Commission determines that VDSL modem testing and certification on the network of the Bell companies in Ontario and Quebec is necessary because the unique network architecture of these companies presents compatibility issues with standard VDSL modems and their wholesale end-user demand currently warrants intervention. Furthermore, the Commission determines that the Bell companies must carry out competitor-initiated modem testing and certification, as set out further below.

b) Should the modem certification requirements be consistent with those set out for cable carriers?

124. The Bell companies submitted that, if required, the compatibility tests for new VDSL modems proposed by independent service providers should be subject to the following conditions:

- only independent service providers (i.e. the wholesale customers of the Bell companies) can request that candidate modems be tested, provided that those

modems are CS-03 certified and are reasonably expected to be compatible with the Bell companies' networks, which include Alcatel-Lucent Stinger DSLAMs;

- testing is to be limited to verifying compatibility of the VDSL modem with the Bell companies' networks, not troubleshooting modem problems; and

- the testing costs should be borne by the independent service providers.

125. With regard to cost recovery, CNOC submitted that, given the fact that VDSL modem compatibility issues associated with the Bell companies' networks appear to stem from the fact that the networks are not fully compliant with normally applicable VDSL standards, wholesale customers should not bear the costs incurred by the Bell companies associated with the resolution of these technical issues. CNOC submitted that, at the very least, in these circumstances, each competitor should be allowed one free modem test per year, and any modem certified should be placed on a list that is made available to all competitors.

126. TCC submitted that it has developed a certification program that allows independent service providers to have their own VDSL modems certified for a $9,000 fee. The total time to complete the VDSL modem certification process is typically six to eight weeks.

127. The Cable carriers submitted that the technical differences between the cable network architecture and the telephone network architecture will necessitate differences in modem testing guidelines. They argued that it would be impossible to make the guidelines identical, but that the Commission must ensure that modem testing guidelines remain as symmetrical as possible between cable carriers and large telephone companies.

Commission's analysis and determinations

128. The Commission notes that no parties disagreed with the Bell companies' proposed modem testing conditions.

129. The Commission is of the view that modem testing should be completed in an efficient and effective manner to avoid both unnecessary delays in the rollout of competitive services and anti-competitive behaviour.

130. The Commission considers that allowing the Bell companies in Ontario and Quebec six calendar weeks to complete the testing of a modem is reasonable, given that (i) TCC has been performing similar tests on VDSL networks in that amount of time without Commission intervention, and (ii) testing would be limited to verifying compatibility.

131. With regard to cost recovery for modem testing, the Commission determined in Telecom Decision 2004-37 that requiring each cable carrier to allow each independent service provider one free modem test per 12-month period and two free failures per modem model would provide an incentive for cable carriers to reduce the

cost of testing over time and would discourage cable carriers from using the modem testing process in an anti-competitive manner. For example, the first modem submitted for testing in a 12-month period could fail testing three times before the independent service providers would be charged a fee for testing. This would allow for the two free failures, and the third failure would count as the free test. This cost recovery model would also incent independent service providers to keep the number of requests for modem testing within reasonable limits. The Commission is of the view that VDSL modem testing should also follow this approach, for the same reasons.

132. The Commission notes that some requirements for modem testing established in Telecom Decision 2004-37 are cable-specific and could not be applied without modifications to the large telephone companies' modem testing guidelines. Accordingly, the cable-specific requirements should be removed or slightly modified to better suit the telephone companies' environment.

133. In light of the above, the Commission determines that, for the Bell companies in Ontario and Quebec, VDSL modem testing is warranted and the following guidelines should apply:

- All VDSL modems to be tested must be certified in accordance with CS-03 standards administered by Industry Canada, and the minimum requirements for wholesale HSA service should be VDSL2 G.993.2-compliant modems.

- No testing is required for a VDSL modem that was previously found to be compatible with the company's network or that is the same model as that used by the company for its retail customers.

- The company shall publish summary specifications that detail specific design parameters and identify which modem information variables are used in its network. The modems brought for testing must be reasonably expected to be compatible with the company's network. The company must comply with the notification procedures for changes as established by the Commission in Telecom Letter Decision 94-11.

- Company-specific test plans cannot be more demanding than those used for testing the company's own modems.

- Modem testing must be completed within six calendar weeks of the date that the request is made, and the request must be made by a wholesale customer of the company.

- The company is not required to troubleshoot modem problems, but must provide clear and supportable reasons for rejecting a modem within the specified timeframe.

- The testing fee does not apply to one modem model submitted by a competitor per 12-month period.

- The fee does not apply to the testing of a modem model where the modem model fails testing, to a maximum of two failures. Modem testing failures shall not be considered as the one free test, unless that modem model has already failed testing twice.

134. The Commission directs the Bell companies in Ontario and Quebec to file proposed tariffs for VDSL modem testing, along with appropriate cost justification in support of their proposed rates, within **30 days** of the date of this decision. The proposed tariffs must specify that (i) the fee does not apply to one modem model submitted by an independent service provider for VDSL modem testing per 12-month period; (ii) the fee does not apply to the testing of a VDSL modem model where the model fails testing, to a maximum of two failures; and (iii) modem testing failures referenced in (ii) shall not be considered the one free test referenced in (i) unless that modem model has already failed testing twice.

135. Finally, the Commission sets an interim rate of $9,000 per test for VDSL modem testing on the network of the Bell companies in Ontario and Quebec, effective the date of this decision. This rate is based on the modem testing rate charged to competitors by TCC, as submitted by TCC during this proceeding.

c) Additional matters raised by interveners

i) Should the Bell companies in Ontario and Quebec be required to remove Bell branding from wholesale end-user modem hardware/firmware?

136. CNOC submitted that the modems supplied to wholesale competitors by the Bell companies in Ontario and Quebec display the Bell logo on the modem itself and when the firmware is activated. CNOC added that the Bell companies had advised competitors that wholesale-specific firmware would be available in the first quarter of 2013, but to date no such firmware has been made available.

137. The Bell companies submitted that it was their intention to address the branding issue by applying a sticker to hide the Bell logo on the modem and packaging as well as make available, at the time of the next release, a non-Bell-branded firmware version for use by competitors.

Commission's analysis and determinations

138. The Commission considers inappropriate any presence of Bell branding on modems and firmware used by wholesale end-users and agrees with Bell's approach to rectify the problem. Accordingly, the Commission directs the Bell companies to remove Bell-specific branding from new wholesale end-user modem firmware/hardware within **30 days** of the date of this decision.

ii) Should the Bell companies in Ontario and Quebec continue to track wholesale end-user modems using a serial number?

139. CNOC submitted that the Bell companies track the serial numbers of all purchased modems and do not allow a new wholesale end-user order to be placed without the inclusion of a unique modem serial number. It is not clear if the disconnection of an end-user releases the serial number to the pool of available numbers so that it can be reused by the end-user who moves location or transfers to another service provider. CNOC submitted that this lack of transferability would constitute a barrier to end-user transfers and a breach of the end-user transfer rules established by the Commission in Telecom Regulatory Policy 2011-191.

140. The Bell companies submitted that the tracking of serial numbers is used to identify which modems are still under warranty and to manage firmware versions and updates. The Bell companies also submitted that the serial numbers are transferrable. Furthermore, when independent service providers source their own modems directly from a modem manufacturer, the Bell companies do not need to track serial numbers.

Commission's analysis and determinations

141. The Commission considers that CNOC's concerns related to the tracking of serial numbers were addressed by the Bell companies during the proceeding. In cases where a modem is sourced from the Bell companies, the companies are to track the serial numbers of wholesale end-user modems only for warranty purposes.

iii) Should the Bell companies in Ontario and Quebec be permitted to restrict wholesale end-user modem functionality by disabling certain features?

142. Vaxination, supported by CNOC, submitted that certain functions have been disabled in modems supplied by the Bell companies, including the ability for end-users to access line statistics used to diagnose problems. Vaxination added that while the Bell companies are free to limit the functions of their modems for their own retail subscribers, they must not impose their own retail service decision onto wholesale competitors that may wish to offer different modem functionality to their customers.

143. The Bell companies submitted that wholesale end-users have always had the ability to use the modems they supply in point-to-point protocol over Ethernet pass-through mode, whereby the modem terminates the high-speed access connection while a separate end-user-supplied modem can be used.

144. The Bell companies also submitted that the ability to access line statistics was disabled years ago to reduce the significant number of service calls from end-users who do not understand that DSL performance is distance-sensitive.
End-users who wish to obtain speed connection information can still do so via easy-to-use web-based tools. In addition, the Bell companies provide the independent

service providers with diagnostic tools accessible via a web portal, which includes line synchronization rates (the access line statistic information that would have been available on the modem).

Commission's analysis and determinations

145. The Commission considers that the functionality of the modems that the Bell companies make available to wholesale end-users is the same functionality made available to their own retail customers. The Commission therefore considers that there is no unjust discrimination or undue preference in favour of the Bell companies.

146. The Commission also considers that if independent service providers source modems from a manufacturer directly, as a result of new modem testing/certification procedures, modem functionality will be negotiated between the independent service provider and the supplier.

147. Considering that workarounds have been put in place to address competitors' concerns, the Commission determines that it is appropriate to continue to allow the Bell companies to define the functionality of the modems they supply, if required for legitimate technological and business reasons.

iv) Should the diagnostic maintenance charges of the Bell companies in Ontario and Quebec continue to be levied for known modem limitations?

148. CNOC submitted that the Bell companies in Ontario and Quebec apply a diagnostic maintenance charge when well-known issues associated with end-user modems arise. It proposed that the Commission order a stop to the levying of diagnostic maintenance charges in these circumstances, since the service issues clearly do not originate with the wholesale customers or their end-users.

149. The Bell companies submitted that diagnostic maintenance charges are applied only when a technician is dispatched to the end-user's premises to resolve a problem. If the problem is identified as being on the end-user's premises, and not on the side of the demarcation point belonging to Bell companies in Ontario and Quebec, a diagnostic maintenance charge is charged to the competitor. The Bell companies submitted that prior to dispatching technicians, they follow a complete problem resolution protocol. They added that this is the same process followed for their retail end-users.

Commission's analysis and determinations

150. The Commission notes that the application of diagnostic maintenance charges for the Bell companies' Gateway Access Service (GAS) and HSA service was defined in

Telecom Order 2009-772.[22] The Commission considers that there is a process in place to address when diagnostic maintenance charges should be applied, and that the parties have a different understanding of the effectiveness of that process as it relates to known modem issues.

151. The Commission therefore directs the Bell companies and CNOC, on behalf of its members, to begin discussions relating to the application of diagnostic maintenance charges for known modem issues within **10 days** of the date of this decision. In the event that the parties fail to come to an agreement within 60 days of the date of the first meeting, parties may apply to the Commission for dispute resolution, in accordance with Broadcasting and Telecom Information Information Bulletin 2013-637.

v)Should second-level testing obligations for cable carriers be updated so that testing is fully funded by competitors?

152. The Cable carriers noted that cable modem certification guidelines were developed at a time when there was substantially less competition in the Internet market, and that the guiding principle in developing the cable modem certification guidelines was to encourage competitive Internet options. They submitted that now that this goal has been achieved and the Internet market is highly competitive, it would be appropriate to remove some modem certification requirements from cable carriers, rather than extending them to large telephone companies. Specifically, the Cable carriers submitted that it is no longer appropriate for them to complete one modem certification test per independent service provider per year, essentially absorbing competitor costs without compensation.

153. CNOC submitted that the unique requirements of cable networks drive the need for modem testing. Allowing each competitor one free modem certification per year per carrier simply places competitors on a more equal footing, and is therefore consistent with regulation that is symmetrical and competitively neutral.

Commission's analysis and determinations

154. The Commission notes that in Telecom Decision 2004-37, it allowed for one free test per year to provide incentives (i) for cable carriers to minimize the cost of second-level testing over time, and (ii) for competitors to keep the number of testing requests within reasonable limits. The Commission considers that the Cable carriers did not present any new evidence to support a decision to amend this requirement.

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[22] In that order, the Commission noted that a diagnostic maintenance charge can apply only when an independent service provider initiates a request to have the Bell companies perform diagnostic maintenance on GAS or HSA service facilities or equipment and when, upon investigation, no fault is found in the Bell companies' facilities or equipment.

155. Accordingly, the Commission **denies** the Cable carriers' request to modify the cable modem second-level testing guidelines defined in Telecom Decision 2004-37.

Compliance with the Policy Direction

156. The Policy Direction[23] states that the Commission, in exercising its powers and performing its duties under the Act, shall implement the policy objectives set out in section 7 of the *Telecommunications Act* (the Act), in accordance with paragraphs 1(*a*), (*b*), and (*c*) of the Policy Direction.

157. The Commission considers that its findings in this decision advance the policy objectives set out in section 7 of the Act, including paragraphs 7(*a*), (*b*), (*c*), (*f*) and (*h*).[24] The Commission considers that the rates approved in this decision were established with a view to ensuring that competitors pay rates constituting Phase II costs plus a reasonable markup, while the incumbent providers legitimately recover the costs that are incurred. The Commission also considers that these rates provide a basis for robust competition.

158. Consistent with subparagraph 1(*a*)(ii) of the Policy Direction, the Commission considers that the regulatory measures approved in this decision are efficient and proportionate to their purpose, and minimally interfere with market forces. In particular, the Commission notes that modem testing regulation is only being introduced for the Bell companies in Ontario and Quebec, the only large telephone companies to experience VDSL compatibility issues and the level of demand required to warrant Commission intervention.

159. Subparagraph 1(*b*)(ii) of the Policy Direction requires that regulatory measures that are of an economic nature neither deter economically efficient competitive entry into the market not promote economically inefficient entry. In this regard, the Commission considers that the wholesale cost-based rates identified in this decision are calculated with a view to ensuring that competitors are paying rates constituting Phase II costs plus an appropriate markup, while incumbents legitimately recover the costs that they incur. The Commission considers that the rates and timelines

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[23] *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, P.C. 2006-1534, 14 December 2006.

[24] The cited policy objectives of the Act are
7(*a*) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;
7(*b*) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;
7(*c*) to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;
7(*f*) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective; and
7(*h*) to respond to the economic and social requirements of users of telecommunications services.

established in this decision will lower barriers to entry, while encouraging incumbents to continue to invest in infrastructure upgrades.

Secretary General

Related documents

- *Practices and procedures for staff-assisted mediation, final offer arbitration and expedited hearings,* Broadcasting and Telecom Information Bulletin CRTC 2013-637, 28 November 2013

- Telecom Order CRTC 2013-560, 21 October 2013

- *Review of rate principles for legacy business wholesale high-speed access services,* Telecom Decision CRTC 2013-480, 11 September 2013

- Telecom Order CRTC 2013-441, 26 August 2013

- *Bell Aliant Regional Communications, Limited Partnership, and Bell Canada – Application to review and vary determinations made in Telecom Decisions 2013-72 and 2013-73 regarding the use of a common billing model for both residential and business wholesale high-speed access (HSA) services and the markup associated with business wholesale HSA services,* Telecom Decision CRTC 2013-399, 9 August 2013

- Telecom Order CRTC 2013-244, 14 May 2013

- Telecom Order CRTC 2013-211, 2 May 2013

- *Review of outstanding wholesale high-speed access service issues related to interface rates, optional upstream speed rates, and modem certification requirements,* Telecom Notice of Consultation CRTC 2013-80, 21 February 2013

- *Canadian Network Operators Consortium Inc. – Application to review and vary Telecom Regulatory Policies 2011-703 and 2011-704,* Telecom Decision CRTC 2013-73, 21 February 2013

- *Canadian Network Operators Consortium Inc. – Application requesting relief to address implementation of the capacity model approved in Telecom Regulatory Policy 2011-703,* Telecom Decision CRTC 2013-72, 21 February 2013

- *Bell Aliant Regional Communications, Limited Partnership and Bell Canada – Introduction of a wholesale business fibre-to-the-node high-speed access service and an optional upstream speed,* Telecom Order CRTC 2012-220, 13 April 2012

- *Billing practices for wholesale business high-speed access services,* Telecom Regulatory Policy CRTC 2011-704, 15 November 2011

- *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

- *Interim rates for wholesale residential and business high-speed access services*, Telecom Order CRTC 2011-377, 15 June 2011

- *The customer transfer process and related competitive issues*, Broadcasting and Telecom Regulatory Policy CRTC 2011-191, 18 March 2011

- *Wholesale high-speed access services proceeding*, Telecom Regulatory Policy CRTC 2010-632, 30 August 2010

- *Bell Aliant Regional Communications, Limited Partnership and Bell Canada – Application to amend tariffs for Gateway Access Service and High Speed Access Service by including a provision for diagnostic maintenance charges*, Telecom Order CRTC 2009-772, 11 December 2009

- *Cable modems for third-party Internet access*, Telecom Decision CRTC 2004-37, 4 June 2004

- *Terms and rates approved for large cable carriers' higher speed access service*, Order CRTC 2000-789, 21 August 2000

- Telecom Letter Decision CRTC 94-11, 4 November 1994

Appendix 1

Interface – Monthly rates and service charges

Monthly rate

Service speed	**Bell companies in Ontario and Quebec**		**Bell Aliant Atlantic**	**TCC**
	Configuration 1	Configuration 2		
10 Mbps	n/a	n/a	$82.15	n/a
100 Mbps	$86.31	$146.04	$82.23	$55.15
1000 Mbps	$62.27	$429.20	$82.42	$159.39

Service charge

Service speed	**Bell companies in Ontario and Quebec**	**Bell Aliant Atlantic**	**TCC**
speeds	$1,159	$1,162	$1,199

Appendix 2

Bell companies in Ontario and Quebec – Interface service charge adjustments

Proposed costs	Commission adjustment	Rationale for adjustment
Costs based on a 20% occurrence rate for new customers' orders. Applies to service provisioning activities, including customer service engineering support and new billing account and agreement preparation.	Reduce frequency of new customer requests versus existing customer requests from 20% to 2.5%	Recent data shows that the number of Internet service providers (ISPs) has been relatively stable. Therefore, most new orders will come from current customers. The occurrence rate is reduced to a nominal value to reflect this situation.
Costs based on an 80% occurrence rate and time estimates for existing customers' orders. Applies to similar activities as above.	Increase occurrence rate of existing customer requests to 97.5% and reduce time estimate for updating template by 50%	Increase of occurrence rate reflects the above adjustment to lower the occurrence rate of new customers. Time estimate reduced based on assuming an efficient, fully established process.
Costs based on time estimates for order creation in business office – Typing customer information in system	Reduce time estimate by 32%	Excessive time estimate for routine activity. Time estimate reduced based on assuming an efficient, fully established process.
Costs based on time estimates for mapping of IP addresses in servers	Reduce time estimate by 74%	Did not provide detailed breakdown of activity into small time increments as requested. Proposed time estimate not supported by sufficient rationale. Bell Aliant Atlantic proposed a significantly lower time estimate for a similar activity. Time estimate reduced based on assuming an efficient,

		fully established process.
Costs based on time estimates for reconciling billing records with third-party supplier details on a monthly basis	Remove	Ongoing activity and not service charge activity
Costs based on time estimates to determine and check critical dates, and investigate if due date missed at business coordination desk	Reduce time estimates by 51%	Excessive time estimates for routine activity. Time estimates reduced based on assuming an efficient, fully established process.
Costs based on time estimates for escalating various issues when dates are not met at business coordination desk	Remove	Inefficiency costs should not be borne by Internet service providers
Costs based on time estimates for checking capacity of IP Edge router in database in Broadband Network Engineering department (BBNE)	Reduce time estimate by 50%	Excessive time estimate for routine activity. Time estimate reduced based on assuming an efficient, fully established process.
Costs based on time estimates for various tasks, such as verifying, viewing, and resolving mismatches in order information in BBNE group Logical Path Assignment group and Business Coordination Desk.	Reduce time estimates by 57%	Excessive time estimates for routine activities. Time estimates reduced based on assuming an efficient, fully established process.

Bell Aliant Atlantic – Interface service charge adjustments

Proposed costs	Commission adjustment	Rationale for adjustment
Costs based on time estimates for reviewing inventory of facilities in Network Engineering group	Reduce time estimate by 83%	Excessive time estimate for routine activity. Time estimate reduced based on assuming an efficient, fully established process.
Costs based on time estimate for installation of Ethernet Connection by network technicians	Reduce time estimate by 33%	Excessive time estimate for routine activity. Time estimate reduced based on assuming an efficient, fully established process.
Costs based on time estimates for repairing, activating, coordinating iterative testing and simulating authentication in Internet Network Operations Centre.	Reduce time estimates by 56%	Excessive time estimates for activities. Proposed time estimates not supported with sufficient rationale. Time estimates reduced based on assuming an efficient, fully established process.
Costs based on time estimates for sales sales support engineering activities: communicate technical details to business service representative, customer consultation, assist technical resources during installation	Reduce time estimates by 67%	Excessive time estimates for routine activities. Time estimates reduced based on assuming an efficient, fully established process.

process		
Costs based on time estimates for coordinating meeting and discussion with customer and technical resources	Remove	Duplication of activity. Communication with customer already covered by business office representative and sales engineer.
Costs based on time estimates for sales support to ensure order details are communicated between company and customer	Remove	Duplication of activity. Order details already given to company by customer at order time and verified by sales engineer.

TCC – Interface service charge adjustments

Proposed costs	Commission adjustment	Rationale for adjustment
Costs based on time estimates for design and installation	Reduce time estimates by 33%	Did not provide detailed breakdown of activities in small time increments as requested; did not provide sufficient detail to support its estimates. Time estimates for aggregated activities aligned with adjusted estimates for similar activities for Bell Aliant Atlantic and the Bell companies in Ontario and Quebec.
Costs based on time estimates for sales process	Reduce time estimate by 52%	Did not provide detailed breakdown of activities in small time increments as requested; did not provide sufficient detail to support its estimates. Time estimates for aggregated activities aligned with adjusted estimates for similar activities for Bell Aliant Atlantic and the Bell companies in Ontario and Quebec.