



Final Comments of

Shaw Cablesystems G.P.

Telecom Notice of Consultation CRTC 2013-551;

Review of wholesale services and associated policies

December 19, 2014

CRTC File No: 8663-C12-201313601

ABRIDGED

I. INTRODUCTION AND EXECUTIVE SUMMARY

1. The overarching objective of the three major policy reviews this fall, including this review of wholesale services, is to ensure that Canadians can benefit from “a dynamic, affordable and high-quality” communications system,¹ with “access to compelling content as well as the choice of innovative wireless services and Internet services wherever they live in Canada”.²
2. Over the course of the oral phase of this proceeding, it became clear to Shaw that, in order to achieve this objective, certain priorities must be given sufficient weight in the Commission’s deliberations. Above all else, the Commission must put Canadian consumers first. Regulation must promote the public interest, not the interest of any particular competitor or group of competitors. In addition to that touchstone, Shaw submits that the wholesale framework that emerges from this proceeding should be:
 - future-oriented;
 - technologically and competitively neutral;
 - structured to facilitate a gradual transition to market forces; and
 - stable.³
3. Shaw has addressed the issues raised throughout this proceeding from the perspective of its customers and Shaw’s determination to respond to their rapidly changing needs. Shaw has reinvented itself as a network and content experience company that is willing to disrupt its business in constructive ways to add value for customers. We have made substantial investments and developed unique customer-friendly and customer-inspired innovations, including access to a completely new connectivity experience: Shaw Go WiFi. We will continue to invest and innovate to meet and exceed the needs of our customers.
4. This final submission will not revisit the evidence we have already presented regarding Shaw’s investments and commitments to customers. We simply wish to highlight the importance and relevance of this evidence and the competitiveness of the broadband market that it underscores. Canada’s wireline markets are characterized by intense competition among facilities-based providers investing in a variety of networks – cable broadband, telco, mobile, satellite, fibre and fixed-wireless. Shaw thrives on this rivalry. It was the catalyst for Shaw Go WiFi, and it continues to drive us to invest, innovate and look to the future. There are many still unknown ideas, innovations and disruptive forces that will materialize in the market to offer new and unique customer experiences and choice. We need to create an

¹ The Chairperson’s concluding remarks at the public hearing, Volume 9, paragraphs 11595-97.

² *Ibid.*

³ Shaw Testimony, Transcript Volume 5, paragraphs 5877, 5881, 5884, 5886 and 6025, and Volume 8, paragraphs 10392, 10396, and 10401.

environment that brings those unknowns to life for consumers, rather than micro-manage market outcomes that may quell them.

5. This is why it is so important for wireline wholesale regulation to be future-oriented. A policy framework designed on the basis of a static snapshot of the wireline telecommunications market at a given point in time will inevitably be outdated before it can become meaningfully implemented.
6. Consumer expectations and needs for broadband services are evolving at a rapid pace that is difficult to predict. Canadians already spend more time online than anyone else in the world, seeking (and creating) content on all media, whether they are at home, at the office or on the go, regardless of the device they are using. Canada's networks must respond with reliable, high-quality and innovative services.
7. In today's competitive environment, distinct networks and platforms are evolving in unique ways to meet growing consumer demands. Fibre-to-the-home is one, but not the only, technological path forward for Canada's broadband future. DOCSIS can and will compete with fibre-to-the-home on next-generation speeds.
8. This highlights the critical need for a wholesale regulatory regime that abides by technological and competitive neutrality. As Shaw stated in Phase 2 of the public hearing: "Technological neutrality...encourages the diversity of networks that drives consumer choice and benefit, as well as sustainable competition, well into the future."⁴ Shaw's suggestion of immediate forbearance on next-generation speeds (above 25 Mbps) would ensure, and restore, technological and competitive neutrality to the wholesale framework. Conversely, if TPIA services continue to be mandated, then technological and competitive neutrality requires that fibre-to-the-home facilities be mandated as well.
9. Building the infrastructure to power Canada's Internet age requires forward-looking investment strategies that can accommodate an environment in which technological change is both rapid and unpredictable. Network providers must anticipate consumer demands over the long-term and invest at all levels of the network, not just the access portion, regardless of the technology used. We must design and implement flexible, creative and cost-efficient investment plans in order to compete with our rivals. A stable regulatory environment is crucial to ensuring these investment conditions. Unnecessary and disruptive changes to the regulatory environment, with no basis in promoting consumer benefit, will only serve to undermine our focus on the future.

⁴ Shaw Testimony, Transcript Volume 8, paragraph 10393.

10. Adhering to the fundamental principles of Canadian telecommunications regulation will also foster regulatory stability.⁵ Canadian telecommunications policy can be credited for much of the success in Canada's wireline telecommunications markets. The *Telecommunications Act*, the Policy Direction and a body of Commission decisions have collectively contributed to a regulatory environment that is forward-looking and consumer-focused, while emphasizing the primacy of market forces and facilities-based competition. In Shaw's view, this approach continues to position Canada as a global leader in compelling, inter-platform choice for high-quality broadband services.
11. A key tenet of Canadian telecommunications policy is that regulation should fall away when it is no longer necessary to protect consumers.⁶ Canada's wholesale markets are vibrant,⁷ and Shaw, like many others, is committed to negotiating mutually beneficial terms for wholesale high speed access.⁸ Shaw's proposals as set out in our written reply dated October 24, 2014 (the **Shaw Reply**) are intended to facilitate these negotiations and a gradual transition to market forces, with a back-stop to mandatory Commission staff-assisted mediation where necessary.⁹
12. We have already outlined our positions, with supporting evidence, as to why certain proposals made by other parties should not be adopted, including Equivalence of Inputs, Broadband Access Service, and the Efficient Operator and other alternatives to Phase II costing.¹⁰ In this final reply submission, we highlight certain additional points as necessary to respond to comments made or issues that arose during the oral phase. Our general observation is that these proposals are out of sync with the competitive state of Canada's wireline telecommunications markets, which should be assessed based on what consumers experience in the market, rather than on whether particular competitors are successful.

⁵ *Telecommunications Act*, S.C. 1993, c.38 (the **Act**), section 7, and *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, SOR/2006-355 (the **Policy Direction**).

⁶ Shaw Testimony, Transcript Volume 8, paragraphs 10402; the Act, section 34(2); the Policy Direction, section 1(c)(ii); Telecom Decision CRTC 98-9, *Regulation Under the Telecommunications Act of Certain Telecommunications Services Offered by "Broadcast Carriers"*; Telecom Order CRTC 99-52, *Forbearance from Retail Internet Service*; Telecom Decision CRTC 2013-290 *TELUS Communications Company – Application to Review and Vary Telecom Decision 2012-507 Regarding Forbearance from the Regulation of Business Local Exchange Services*; Telecom Decision CRTC 2012-556, *Decision on Whether the Conditions in the Mobile Wireless Market have Changed Sufficiently to Warrant Commission Intervention with respect to Mobile Wireless Services*.

⁷ Shaw Testimony, Transcript Volume 5, paragraphs 5943-44; see also SaskTel, Transcript Volume 4, paragraph 5577; MTS and Allstream Inc., Transcript Volume 5, paragraph 6517.

⁸ In that regard, an example of this is Cogeco's statement at the public hearing that, in light of the current developments in the retail and wholesale high-speed markets, it has decided to embrace the growing demand in the wholesale market and increase its competitive presence in the market through improved cooperative business relationships with independent ISPs. See Cogeco Testimony, Transcript Volume 4, paragraphs 4608-4611.

⁹ See Shaw Reply, pages 11-15.

¹⁰ Shaw Testimony, Transcript Volume 8, paragraphs 10406. Also see Shaw Reply, pages 28-33.

13. The Commission should reject proposals for further regulation of wholesale services where there is no evidence of consumer benefit, and refrain from market-outcome engineering that favours a particular class of competitor. Such action would derogate from the core principles of regulating efficiently and relying on market forces to the maximum extent possible.¹¹ Notably, this approach would also take us away from what matters most – the consumer.
14. Some of these proposals may be appropriate in an environment characterized by monopoly or threatened competition. However, there is no evidence that Canada’s retail or wholesale wireline markets are at risk of becoming less competitive. Competition in the Canadian residential wireline broadband market is anchored in the rivalry between cable broadband and the ILECs. That is not something to lament; it is something to celebrate as unique in the world. At the same time, alternative platforms, namely mobile wireless, fixed wireless and satellite, already offer additional choice in the marketplace. Evidence shows that these platforms are growing in capacity, not diminishing.¹² Independent ISP market shares are also increasing across the country. Competition in the business segment is also growing. In short, there are more choices for consumers and businesses than ever before, as all providers continue to innovate and improve to deliver superior and more extensive offerings.

II. THE REGULATORY REGIME SHOULD BE FUTURE-ORIENTED

15. There is an unprecedented level of dynamic competition in Canada’s wholesale and retail wireline markets. Canadians have access to a variety of competing facilities-based networks, including cable broadband, telco, wireless carriers with extensive LTE deployments, as well as fibre-to-the-home, fixed-wireless and satellite networks. Other potentially disruptive networks and technologies are emerging and will continue to proliferate. Indeed, the rapid pace of technological and market change in communications services was a common theme throughout the public hearing.
16. Significant new spectrum allocations have increased mobile capacity. LTE is now widely available in Canada. Moreover, a number of carriers have already introduced LTE Advanced in many cities across Canada, which allows carriers to combine separate spectrum bands and maximize speeds, driving even more media consumption on to mobile networks. 5G

¹¹ The Act, section 7(f).

¹² See Bell Testimony, Transcript Volume 3, paragraphs 3323-3328; Fibre to the Home Council Americas, Transcript Volume 7, paragraph 9551; Shaw Testimony, Transcript Volume 5, paragraph 5868. See also Sascha Segan, “Fastest Mobile Networks Canada 2014,” PCMAG, 22 September 2014, online at <http://www.pcmag.com/article2/0%2c2817%2c2468511%2c00.asp>, accessed 23 October 2014.

wireless systems are also on the horizon. Technological advancements have enhanced satellite broadband and fixed wireless capabilities.¹³

17. In Shaw's view, this market dynamism must continue to thrive, so that evolving consumer demand for broadband services can be met through inter-platform choice. This requires that Canada's wholesale wireline regulatory framework be future oriented.¹⁴ It must be sufficiently flexible to allow market forces to replace regulation when appropriate.

18. Shaw's suggestion of gradually transitioning to negotiated arrangements for wholesale services satisfies these criteria.¹⁵ It will allow market forces and consumer choice to drive the investment and business decisions for next generation broadband. Moreover, in drawing a distinction based on speed, not technology, it adheres to the principle of technological and competitive neutrality, as described below.

III. THE WHOLESALE FRAMEWORK SHOULD BE TECHNOLOGICALLY AND COMPETITIVELY NEUTRAL

19. Technological and competitive neutrality is a fundamental principle of Canadian telecommunications policy.¹⁶ This principle is not just about fairness for competitors; it allows a diversity of networks to flourish by ensuring that particular platforms are not favoured or hindered. In this respect, the principle is critical to drive innovation, consumer choice and sustainable competition.

¹³ Shaw Testimony, Transcript Volume 5, paragraphs 5868-69; "Xplornet Announces Plan to Deliver 25 Mbps Broadband Internet to 100% of Rural Canadians," Press Release dated July 28, 2014, available online <http://www.xplornet.com/about-us/news-releases/2014/xplornet-announces-plan-to-deliver-25-mbps-broadband-internet-to-100-of-rural-canadians/>, accessed 16 December 2014.

¹⁴ We note that the consumer groups emphasized the importance of a future-looking regime in their opening presentation. See PIAC/CAC Testimony, Transcript Volume 6, paragraph 8076-8077.

¹⁵ Shaw's proposal comprises three key elements:

- 1) The Commission would refrain from mandating wholesale access for speeds higher than 25 Mbps – the majority of Canadians currently subscribe to services at or below this speed.
- 2) The Commission would introduce a five-year phase-out for services below 25 Mbps in markets with at least three unaffiliated facilities-based providers, two of which provide 25 Mbps speeds. For the first year, rates would continue to be regulated. After that, rates would be negotiated, failing which parties could seek Commission-assisted mediation.
- 3) Wholesale access would continue to be mandated, and subject to rate regulation, in all other markets, until they become sufficiently competitive.

See Shaw Reply, pages 11-15 for the complete details of and rationale behind our proposals.

¹⁶ Policy Direction, section 1(b)(iii).

20. As Shaw noted at the public hearing, fibre-to-the-home is not the only technology with significant potential for Canada's broadband future.¹⁷ DOCSIS can and will compete with fibre-to-the-home on next-generation speeds. Thus, any determinations made by the Commission to forbear from wholesale access regulation on the one hand, or continue to regulate on the other hand, must focus on speeds rather than technologies. To uphold the principle of technological and competitive neutrality, a determination to continue to mandate TPIA services, must also mandate services supported by fibre-to-the-home.
21. Similarly, higher mark-ups for riskier investments should not be exclusively reserved for fibre-to-the-home. There were suggestions at the hearing that the costs and risks of investment to support next-generation cable broadband are not comparable to those that support fibre-to-the-home.¹⁸ Shaw disagrees: we have had to make significant investments in all levels of the network, including the metro and backbone transport network, to deliver next-generation data services to customers and to meet exponential growth in Internet usage. Existing and future DOCSIS standards (3.0 and 3.1) are capable of performance and speeds comparable to fibre-to-the-home, but enabling them is not as simple as flicking a switch.
22. In order to provide the experience that our customers expect from next-generation broadband, significant and expensive upgrades are required across Shaw's footprint. In the next five years, Shaw will invest over \$# # million per year to create greater upstream and downstream capacity and support higher speeds in the network, through the following key projects:#

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¹⁷ Shaw Testimony, Transcript Volume 5, paragraph 5857.

¹⁸ See Bell Testimony, Transcript Volume 3, paragraph 3139.

23. As the foregoing demonstrates, significant network investments are necessary to provide next-generation higher speeds to consumers, regardless of the technology used or where fibre terminates. These investments are risky in view of the uncertain consumer demand for speeds over 25 Mbps. The take-up of these services may ultimately not materialize on the timeline or scale that we initially anticipated.¹⁹ Accordingly, the Commission should not create an exclusive regulatory category for “fibre-to-the-home” in determining the appropriate role, if any, for regulation of wholesale access or the approach to costing and rates. The Commission must take a symmetrical approach to next-generation broadband.
24. At the oral hearing, the issue of symmetry arose in the context of CNOC’s request for mandated access to cable carrier wholesale Ethernet services. Shaw notes adherence to the principle of technological and competitive neutrality does not mean that incumbents and new entrants must be subject to the same requirements, regardless of the service or market in question. In the business market, Shaw and the other Canadian cable carriers operate as *new entrants*. This underscores the fact that the business market is distinct from the residential market. Industry data does not support describing Shaw as an incumbent in the business market. As Rogers explained at the oral hearing, citing data in the CRTC’s 2014 Communications Monitoring Report (the **Monitoring Report**),²⁰ cable carriers account for 26 percent of the revenues for retail business Internet services, *below* the shares of alternative competitors (31 percent) and the incumbent telephone companies (43 percent).²¹
25. In view of the foregoing, CNOC’s request for access to cable carrier wholesale Ethernet and other services targeted at business customers should be dismissed. As acknowledged new entrants in the business market, Shaw and the other cable carriers benefit from mandated access, not the other way around. The framework should not penalize Shaw for investing and succeeding in a market segment where it operates as a new entrant. This approach would create a significant disincentive to invest and enter the market.

¹⁹ This issue was addressed in Shaw’s reply appearance at the public hearing in response to questions from Commissioner Molnar: see Shaw Testimony, Transcript Volume 8, paragraphs 10444-45. A number of parties corroborated the point that most Canadians subscribe to services at or below 25 Mbps during the oral hearing: Dan McKeen of Bell (Bell Testimony, Transcript Volume 8, paragraphs 10701-2), John Meldrum of Sasktel (SaskTel Testimony, Transcript Volume 4, paragraph 5713), Dave Watt of Rogers Communications Partnership (Rogers Testimony, Transcript Volume 7, paragraph 9311), Kelvin Shepherd of MTS (MTS Testimony, Transcript Volume 5, paragraph 6601).

²⁰ CRTC Communications Monitoring Report, October 2014.

²¹ See CRTC Communications Monitoring Report, October 2014, Table 5.3.3, page 175 and Rogers Testimony, Transcript Volume 8, paragraph 9989-90. In that testimony, Rogers also observed: “This is obviously a competitive market and we are not aware of any jurisdiction that has imposed regulation on a category of competitor with 26 percent market share. This is far below the 35 percent threshold used by the Competition Bureau for merger review. In Rogers’ territory we account for about 15 percent of the business Internet market. Of that, 6 percent are fibre-based Internet services and 9 percent are cable modem services that could be served by TPIA. The Commission cannot impose monopoly wholesale regulation on a party with 9 percent market share.”

IV. THE WHOLESALE MARKET SHOULD EMBRACE THE ROLE OF MARKET FORCES

26. Canadian telecommunications regulation has firmly emphasized the role of market forces and should continue to do so.²² Shaw submits that it is timely to transition to market-based arrangements for wholesale services. As we explained at the hearing, wholesale is a large and growing part of our business, with nearly six-fold growth in wholesale TPIA revenue.²³
27. There is clearly strong potential for mutually beneficial deals that can respond to the specific needs of consumers in the relevant market and enhance consumer benefit. This is particularly important in light of the distinct characteristics of the different regions and markets in Canada.²⁴ In the Shaw Reply and subsequently at the hearing, Shaw suggested a transitional regime that would gradually introduce market forces to facilitate a flourishing wholesale market.²⁵
28. In its deliberations, the Commission must also have regard to the state of market forces in Canada's retail wireline broadband markets. Overall, as Shaw and several other parties have argued with considerable supporting evidence,²⁶ the market is vibrant and dynamic.

V. THE REGULATORY FRAMEWORK SHOULD PROMOTE STABILITY

29. As Shaw described at the hearing, long-term, network-wide investments are required to provide the speeds, bandwidth and coverage needed for Canada's broadband future:

This requires ongoing significant investment at all levels of the network, regardless of technology: the access portion, whether mobile, fibre, copper or coax, which reaches the individual, the home or the community; the metro network, which routes traffic to friends, families and businesses across neighbouring communities; and the backbone, including over 750,000 kilometers of fibre which extends from coast to coast to deliver traffic across the country and around the world. The future of broadband in Canada is not just about the access portion of our network. We have to invest at every level. ... We have to look forward to the future and anticipate where customers are going. We have to be flexible, creative and cost-efficient as we design long-term technology investment strategies.²⁷

²² The Act, section 7(f); Policy Direction, at section 1(a)(i).

²³ Shaw Testimony Transcript, Volume 5, paragraph 5941. See also Shaw Response to Undertaking filed (in confidence) 12 December 2014.

²⁴ Several parties, as well as the Commission, have acknowledged the differences between the broadband markets in Western, Central and Eastern Canada over the course of this proceeding. See, for example, Shaw Testimony, Transcript Volume 5, paragraphs 5907-5908; and Telus Testimony, Transcript Volume 6, paragraph 7225.

²⁵ *Supra*, note 15.

²⁶ See, for example, Bell Testimony, Transcript Volume 3, paragraphs 2962-2966; and Cogeco Testimony, Transcript Volume 3, paragraphs 4603-4608.

²⁷ Shaw Testimony, Transcript Volume 5, paragraphs 5860-5865.

30. The regulatory framework must aim to ensure a stable environment for these long-term investments. The objective of stability would be undermined if the Commission adopts the proposals put forward by certain parties in this proceeding, such as Equivalence of Inputs and Broadband Access Service, and other proposals for top-down reductions in wholesale rates designed to achieve a “socially optimal” level of competition. There is insufficient evidence of compelling consumer benefit that will result from implementation of these proposals. Adoption of these proposals would be costly and would fundamentally shift the framework toward more regulation. This would be inconsistent with the facts of today’s competitive landscape in wireline telecommunications, which is characterized by mature inter-platform rivalry and new and disruptive platforms, such as fibre, LTE and WiFi.
31. Moreover, if adopted, these measures would derogate from the principles in the Act and the Policy Direction requiring the Commission to regulate efficiently and rely on market forces to the maximum extent possible.²⁸ The result would be to effectively crystallize the status quo while conferring on one market segment (independent ISPs) a targeted rate of return or profitability. This would have the immediate effect of stifling investment and innovation, and thwarting market forces. This static approach would also be ill-suited to the current state of the broadband market, which is characterized by rapid technological change and market dynamism.
32. In Shaw’s view, given the state of competition in Canada’s wireline retail and wholesale markets, the regulatory framework should be moving towards less mandated access, not more. This approach is consistent with regulatory stability. The framework – comprised of the Act, the Policy Direction and a body of Commission decisions and policies – has created an expectation that regulation can and will fall away when it is no longer needed to protect consumer interests.²⁹ The wholesale wireline framework should evolve in accordance with this expectation by shifting to market forces and away from unnecessary regulation. This was the basis for Shaw’s proposals for a gradual and technologically neutral transition to negotiated arrangements for wholesale services.³⁰
33. As we explain below, the following proposals would have the effect of taking us backwards to unnecessary, inefficient and costly regulation. These proposals are directed at supporting the business models of certain competitors, rather than focusing on measures aimed at maximizing consumer welfare and choice through a dynamic downstream market. The result

²⁸ The Act, section 7(f); Policy Direction, section 1(a)(i).

²⁹ Shaw Testimony, Transcript Volume 8, paragraph 10402. During the Review of wholesale mobile wireless services public hearing, the Chairperson of the Commission noted that the CRTC “only regulate[s] where necessary” (see Transcript Volume 3, paragraph 3486).

³⁰ *Supra*, note 15.

will be less stability, which is critical to long-term investment and Canada's broadband future.

Broadband Access Service

34. If the Commission disagrees with our characterization of the retail market and continues to mandate wholesale high-speed access, the Broadband Access Service proposal must be denied. Redesigning TPIA in this manner – which is a complete reversal of recent ISP demands for greater aggregation to decreased TPIA interconnection points³¹ – would create uncertainty in the market and undermine our long-term investment plans, which have been carefully designed to optimize the customer's experience by responding to and anticipating their ever-increasing demands for data.
35. Implementing the Broadband Access Service would reverse, halt or require modifications to the network advancements that Shaw is making in order to create a better experience for our customers.³² This proposal, and its potential impact on our plans for our network, would impede our ability to respond to market forces, slowing network evolution and harming customer choice.
36. A proposal of this degree of complexity does not respect the Policy Direction's requirement for regulatory efficiency and proportionality.³³ Shaw questions whether disaggregation of its TPIA service would provide any discernible benefits to consumers or allow independent ISPs the ability to differentiate their services. There is insufficient, if any, evidence on the record of consumer benefit or demand. In certain regions in Shaw's territory, independent ISPs have confirmed that they do not foresee using the Broadband Access Service in view of the absence of significant cost savings.³⁴
37. As we previously explained in our written interventions and Shaw Reply, there are three significant challenges to deploying Broadband Access Service:
- first, Shaw would have to redesign its broadband network architecture in order to implement the proposal. As we indicated, it is impossible for Shaw to precisely estimate the cost and time involved in such an undertaking. At a minimum, it would

³¹ As noted in Telecom Decision CRTC 2010-632, TekSavvy Solutions had submitted that traffic should be aggregated to greatest extent possible. See Commissioner Molnar discussion with CNOc at the public hearing, Transcript Volume 2, paragraph 2323.

³² We refer the Commission to our Response to Undertaking filed 12 December 2014 which provides a technical explanation of the prejudicial impact of CNOc's proposals on Shaw's network.

³³ Policy Direction, section 1(a)(ii).

³⁴ See BCBA's interrogatory response BCBA(CRTC)24November2014-2, dated 12 December 2014, paragraph 9.

divert finite resources away from increasing our network capacity and providing new, innovative service offerings to our customers;

- second, this proposal would create significant complexity with respect to management of the network, requiring further equipment at a significant cost; and
- third, the points of interconnection required for supporting Broadband Access Service would likely make it uneconomic for ISPs to establish direct interconnection within Shaw's network footprint, compared to Shaw's current TPIA configuration.

38. Shaw also notes that the statement made at the public hearing³⁵ that the Broadband Access Service is equivalent to the disaggregated TPIA service which existed prior to Telecom Regulatory Policy 2010-632 is inaccurate. As highlighted in the Normand Picard et Associés' report entitled "Unbundled Third Party Internet Access to Cable Distribution Network Technical Solution", which formed the basis for CNOC's proposal, the disaggregated TPIA service that existed before Telecom Regulatory Policy 2010-632 featured aggregation of traffic across multiple cable operator head-end facilities.³⁶ By contrast, the Broadband Access Service proposal is intended to reduce ISP reliance on the cable operator's aggregation and transport network by moving the ISP point of interconnection deeper into the network. Specifically, the ISP will connect at a location within the cable operator's network that houses the Cable Modem Termination System (CMTS) device, therein avoiding the use of the cable operator's metro- and backbone transport facilities. This is very different from the former disaggregated TPIA service because it would entail far more points of interconnection within the network, significantly more switching and routing equipment, increased traffic routing policies and increased interconnection facilities.³⁷

³⁵ William Sandiford for CNOC said, "For cable carriers, Broadband Access Service is analogous to the disaggregated TPIA service that used to be available." (CNOC Testimony, Transcript Volume 9, paragraph 10954.)

³⁶ *Unbundled Third Party Internet Access to Cable Distribution Network Technical Solution*, Normand Picard et Associés, dated 22 June 2009, referenced in paragraph 117 of CNOC's written intervention dated 27 June 2014.

³⁷ To illustrate the difference between the disaggregated TPIA service and CNOC's Broadband Access Service proposal, we provide the following details: Shaw's pre-TRP 2010-632, disaggregated head-end based TPIA service had approximately 20 points of interconnection. Under the Broadband Access Service proposal, Shaw would have 160 points of interconnection. Each of these points of interconnection would require the additional of equipment specific to Broadband Access Service TPIA, plus, as mentioned in our interrogatory responses Shaw(CRTC)31July2014-15, we would need to completely re-engineer the delivery of traffic to our ISP customers to facilitate interconnection at these locations.

We also note that the Broadband Access Service proposal contemplates the introduction of Policy Based Routing and/or ISP Virtual Routing and Forwarding in its CMTS devices. Shaw's CMTS devices do not and cannot support these functionalities, which were not required as part of Shaw's disaggregated head-end based TPIA service.

39. Other parties have uniformly opposed the Broadband Access Service proposal for similar reasons.³⁸ It is evident from the responses to undertakings filed with the Commission, that the implementation of Broadband Access Service will be extremely complex.³⁹ In that regard, Bell noted in its responses to undertakings that:

The question for the Commission is not simply whether there might be demand for BAS from some ISPs but whether there are public policy benefits from mandating BAS (beyond the current regulatory measures or even market forces) that outweigh the very significant costs that it would entail. For the reasons we gave in our oral testimony (including the very high costs to implement), BAS could never pass a cost-benefit analysis undertaken from a public policy perspective, even if the potential demand were higher than what we have estimated.

40. The foregoing underscores that there is no compelling justification grounded in a consumer benefit as to why network configurations should be changed mid-stream to accommodate Broadband Access Service. At the public hearing, there was no description of how consumers would directly benefit from the Broadband Access Service proposal, other than stating that the service would help CNOC members.⁴⁰ Shaw respectfully submits that proponents of the Broadband Access Service have not met their burden of justifying what would comprise a significant departure from the current regulatory framework.

41. The Commission should disregard implausible suggestions that the Broadband Access Service could be introduced within three months of a request for the service.⁴¹ Three months is the time allotted for the “turn-up” of a new ISP under the existing aggregated TPIA service, where the necessary equipment is already installed. A three-month timeframe is completely unrealistic given the need to order equipment, complete the installation, undertake the traffic routing changes, introduce IP routing, and complete the interconnection with the ISP. Additionally, there will be feasibility challenges at some hubsites given the capacity needed to accommodate the new equipment – # #.

42. Given the very low apparent demand for the service, Shaw is also concerned as to how the start-up costs of this endeavour would be recouped. In the event that the Commission were to mandate Broadband Access Service (which Shaw, for the reasons noted herein and on the record, strongly opposes), the requesting ISP must bear the full implementation costs, up front, rather than over a longer, costing study period, in light of the significant expense required to redesign our network for the service. If a second ISP comes forward to request

³⁸ Rogers Testimony, Transcript Volume 7, paragraph 9019.

³⁹ Bell Testimony, Transcript Volume 8, paragraph 10718.

⁴⁰ CNOC Testimony, Transcript Volume 2, paragraphs 2168-69.

⁴¹ CNOC Testimony, Transcript Volume 9, paragraph 10955.

the service, the second ISP would reimburse the first ISP for a share of the upfront costs. If a third ISP demands the service, it would reimburse the first and second parties accordingly, and so forth.

Equivalence of Inputs

43. As Shaw noted in its previous written filings, the Equivalence of Inputs proposal would import a dramatic and ill-suited remedy from countries with distinctly different market structures, namely those with no (or minimal) facilities-based competition. This ignores the reality of Canada’s highly competitive and vibrant retail broadband markets.⁴² During the hearing, one expert noted that, under the EU regulatory regime, a remedy such as Equivalence of Inputs would never be imposed in the Canadian context, in view of the market characteristics in Canada, which are not compatible with a finding of significant market power. Given the administrative burdens and high compliance costs, Equivalence of Inputs is a “last resort remedy” – even in the EU – where the markets are far less competitive than in Canada.⁴³

Costing

44. The proposed “efficient operator” costing model would impose customer-unfriendly uniformity on networks, while departing from the sound principles of Phase II costing. This approach would undermine the diversity of networks that is fuelling consumer choice in Canada, as Shaw noted at the hearing.⁴⁴ The concern with moving away from sound costing principles was appropriately summarized by one of Bell’s witnesses, as follows:

MR. WEISMAN: So the economics and welfare economics literature is clear that the only real meaningful measure of cost for pricing purposes is incremental or marginal costs. So once you accept that, whether you are talking about retail minus or you are talking about an efficient operator approach, both are back doors into Phase II.

⁴² The proposals would also be inefficient, ineffective and burdensome from a regulatory perspective. Dave Watt of Rogers made this point in his testimony when he indicated that the EOI proposal “would significantly increase the complexity and costs of designing, implementing and managing wholesale in Canada” (Rogers Testimony, Transcript Volume 7, paragraph 8716; Jonathan Daniels of Bell indicated that “the cost of doing EOI is extremely significant and would be massively, massively disruptive to all of the incumbents” (Bell Testimony, Transcript Volume 3, paragraph 3527). Professor Hahn, an expert testifying for Bell at the public hearing, stated that Equivalence of Inputs is a very stringent and costly form of regulation. Professor Hahn referred to the costs incurred in the UK to implement functional separation in Equivalence of Inputs, which were approximately £50 million per year for three years, by way of example. He concluded that in the absence of any fundamental market failure, the Equivalence of Inputs regime would not be justified from a cost-benefit standpoint. See Bell Testimony, Transcript Volume 3, paragraphs 3536-3538.

⁴³ See Testimony of Robert Hahn, Professor of Regulatory Economics at the University of Oxford and Andrea Renda, Senior Research Fellow at the Center for European Policy Studies, Bell Testimony, Transcript Volume 3, paragraph 3535-3545.

⁴⁴ Shaw Testimony, Transcript Volume 5, paragraph 6052.

And while Phase II is complicated and difficult, it's the only scientifically valid basis for costing, plain and simple.⁴⁵

45. In a stable regulatory environment that promotes long-term investment, rates for wholesale services should allow a carrier to fully recover its costs while also including a mark-up that reflects the risk of investment and a reasonable return on investment. Cost recovery and a mark-up that reflects fixed and common-costs, the risk of the investment and a reasonable return on investment are all critical components of a regulated rate in competitive markets. The cost of capital does not cover off all components of the mark-up. As Bell noted at the public hearing, the cost of capital reflects risk at an enterprise level, not the project-specific risk.⁴⁶ In addition, the cost of capital is a cost, and therefore does not reflect a return on investment.
46. When applied consistently, Phase II costing ensures just and reasonable rates as required by the Act. In the interest of stability, there cannot be arbitrary adjustments to rates or alterations to the costing model that would impede a carrier's ability to fully recover its costs.
47. In addition, suggestions that the Commission should periodically review select inputs within a ten-year costing study are inappropriate and would undermine both the purpose of long run incremental costing through Phase II and any rate stability in the wholesale market. As many parties to this proceeding have explained, when using Phase II costing the incremental costs of providing the wholesale service are amortized over the length of the cost study – in the case of wholesale Internet services this is currently ten years. It would be fundamentally unfair to re-examine and lower certain cost elements during the costing period, because this would foreclose the carrier's opportunity to recover the amortized cost. It would therefore result in rates that are not just and reasonable, as required by the Act.
48. As an alternative to arbitrary rate adjustments that attempt to engineer market outcomes, the Commission could employ shorter Phase II costing study periods for wholesale Internet services. The cost inputs would more accurately capture actual changes in the market, equipment costs and capacity requirements as they would be developed using a more manageable five-year forecast timeframe, rather than a ten-year period.
49. During the hearing, concerns were expressed by CNOC members regarding the usage sensitive costs for TPIA services. CNOC argued that the Commission should review the peak usage, transport equipment costs and competitor demand elements that support TPIA costs to ensure that they are appropriate in view of recent changes in the marketplace.⁴⁷ From Shaw's

⁴⁵ Bell Testimony, Transcript Volume 6, paragraphs 7662-63.

⁴⁶ Bell Testimony, Transcript Volume 3, paragraphs 3490-96.

⁴⁷ CNOC Testimony, Transcript Volume 2, paragraph 1800.

perspective, we would agree with CNOC that the Commission did not correctly account for market changes with respect to these three costing elements when it approved Shaw's TPIA service rates in Telecom Regulatory Policy 2011-703. In fact, this was the basis of Shaw's Review and Vary Application in 2012. Peak traffic growth was set at a rate of only 20% per year, whereas we continue to see peak traffic growth of over 50% per annum.⁴⁸ In addition, the competitor demand forecast was set higher than what has been achieved – or could be achieved in Shaw's market, given the maturity of the market. As well, the Commission applied an excessively high productivity improvement factor for our network equipment.

50. However, adjusting costs within the amortization timeframe of a costing study is not the solution to this problem. Tinkering with certain elements in the hopes of reducing monthly rates would only undermine a carrier's ability to recover its costs of providing the service and introduce instability into the wholesale costing process. The preferable approach is to reduce the time period of wholesale Internet Phase II costing studies from ten years to five years.

51. Another costing-related proposal discussed at the hearing is the use of an independent, third party audit of input costs for certain network equipment. As Shaw stated during our appearance in Phase 2, the Commission already serves as an impartial third-party, with the requisite expertise to review and test cost submissions with respect to network equipment components. Therefore, there would be little incremental value in hiring an external auditor to perform a similar function, particularly given the expense and anticipated additional layer of procedure on what is already a time-consuming and complex process. Moreover, imposing such a requirement would run contrary to recent Commission decisions favouring simpler, more streamlined approaches over complex audit requirements.⁴⁹

52. As Rogers noted at the hearing,⁵⁰ there is already a significant amount of transparency with respect to the disclosure of equipment costs. Various Commission proceedings have also resulted in significantly more information being placed on the public record in terms of categories of costs and detailed segmentation of specific cost items.⁵¹ Shaw echoed Rogers' comments during our appearance at the hearing in noting that "...the incremental benefit that would be derived from the incremental cost of an auditor reviewing those inputs...isn't compelling to us".⁵² Moreover, it is difficult to discern what the concept of a third-party audit would involve in terms of its potential scope. Given the current environment of

⁴⁸ Telecom Regulatory Policy 2011-703, paragraph 98.

⁴⁹ See, for example, to Telecom Decision CRTC 2012-248, *Shaw Communications Inc. – Application to revise the reporting requirement for Canadian Numbering Administration funding*. As well, in July, 2014, the Commission approved requests to replace external auditors' reports with attestations by senior officers with respect to 2014 Local Programming Improvement Fund annual reports.

⁵⁰ Rogers Testimony, Transcript Volume 8, paragraph 10012

⁵¹ Rogers Testimony, Transcript Volume 8, paragraph 10016.

⁵² Shaw Testimony, Transcript Volume 8, paragraph 10427.

transparency with respect to costs and the potential administrative burdens and costs, Shaw submits that this additional layer of process is not warranted.

Multicasting

53. There was much discussion during the public hearing phase of the proceeding relating to multicast access to IPTV services. Members of CNOC have described multicasting as an essential telecommunications facility and have demanded that the Commission institute a proceeding to require that this capability be offered in conjunction with all incumbent high-speed access services.⁵³
54. Shaw currently does not use or apply multicasting anywhere in its network. Moreover, as Bell noted during its appearance, multicasting is strictly a video service covered under the *Broadcasting Act* and is outside the scope of the Act.⁵⁴ Shaw should not be required to re-design its network for the purposes of supporting our competitors' broadcasting services. This would threaten the stability of investments made by companies such as Shaw based on the existing wholesale regulatory framework.
55. In any event, if these proposals were accepted by the Commission, it would amount to effectively re-engineering a telecommunications network to serve broadcast needs.

VI. OTHER CLARIFICATIONS

56. In light of the intense competition in the Western Canadian markets that Shaw and others operate in, it is necessary to correct CNOC's assertion in the reply phase of the hearing that, based on the Monitoring Report, retail broadband prices are lower in Ontario and Quebec than in the West.⁵⁵ Shaw disputes this statement, which is inaccurate and not in fact supportable when the data in the Monitoring Report are examined.
57. First, the Report displays pricing data only for 5 Mbps service.⁵⁶ However, as the Monitoring Report notes, "[s]ome service providers only offer options that are greater than 5 Mbps, and these were included in the analysis."⁵⁷ Shaw does not currently offer a 5 Mbps service; the least expensive service we offer is our High Speed 10 service. The Shaw prices used to arrive at the data in Figures 5.3.2 and 5.3.3. of the Monitoring Report were likely based on the price of our 10 Mbps service. Second, the data in those figures do not appear to account for usage-based billing, which is not currently levied by ISPs in Western Canada (or at the time the data were collected). Therefore, the actual rates that customers experience are

⁵³ CNOC Testimony, Transcript Volume 9, paragraph 10972.

⁵⁴ Bell Testimony, Volume 3, paragraph 3446.

⁵⁵ CNOC, Transcript Volume 9, paragraph 11084.

⁵⁶ CRTC Communications Monitoring Report, October 2014, page 182.

⁵⁷ CRTC Communications Monitoring Report, October 2014, page 181.

likely higher in Central Canada, where usage-based billing is more common, than those depicted in the Monitoring Report. Finally, the rates cited do not account for non-price service attributes such as Shaw Go WiFi, which is currently available to all Shaw Internet customers at no additional charge (as it was at the time the data were collected).

58. In any event, as was widely recognized throughout the proceeding, retail prices are one of many indicia of competition in the marketplace. In our first and second interventions and Shaw Reply, we cited factors such as capital intensity, innovations like Shaw Go WiFi, Netflix adoption, and penetration metrics as evidence of the intense rivalry in Western Canada that has benefitted consumers.⁵⁸ Indeed, what we have heard from the consumer groups is that Canadians want choice, quality, and innovation, along with reasonable prices, from their broadband service providers.⁵⁹
59. In summary, in view of the above-noted considerations relating to the data in the Monitoring Report and the non-price attributes featured in the Western Canadian market, a more reasonable and likely conclusion to be drawn is that Western Canadians enjoy all of the benefits of a more competitive environment, notwithstanding the relatively weaker presence of service-based providers.⁶⁰ This demonstrates how facilities-based competition is the primary driver of rivalry, investment and consumer benefit in wireline markets. As Mr. Mehr noted at the hearing, “you get the ... TPIA customer you earn. And I think the competitive environment in Western Canada has been so competitive for so long that we have all had to get better.”⁶¹

VII. CONCLUSION

60. As was emphasized at the hearing and in these final comments, the Commission’s deliberations in this proceeding must put Canadian consumers first. Canadians want ongoing access to high-quality, innovative and reasonably-priced broadband services that will enable them to realize the full potential of the next phase of Canada’s Internet age. For these reasons, Shaw’s written and oral submissions have addressed the issues in the context of our ongoing efforts to engage with our customers and respond to their changing needs. The customer’s perspective cannot be overstated.

⁵⁸ See Shaw Reply, paragraph 60; and Lemay-Yates Associates Inc., “Discussion of Broadband Investment and Outcomes Across Canada,” Final Report dated 30 January 2014, filed as an appendix to Shaw’s first intervention.

⁵⁹ See PIAC/CAC Testimony, Transcript Volume 6, paragraph 8067; and Open Media Testimony, Transcript Volume 6, paragraphs 8317 and 8342.

⁶⁰ As Shaw noted at the hearing, our TPIA customers’ subscribers account for less than 1 percent of the total subscribers on our network. (Shaw Testimony, Transcript Volume 5, paragraph 5909.) By contrast, in Ontario and Quebec, 17 percent of the end users on Bell’s network are with independent ISPs. (Bell Testimony, Transcript Volume 3, Paragraph 3081.)

⁶¹ Shaw Testimony, Transcript Volume 5, paragraph 5907.

61. To deliver on the promise of Canada's broadband future for consumers, the wholesale regulatory framework must be future-oriented, technologically and competitively neutral, structured to facilitate a transition to market forces, and, finally, promote stability.
62. To date, Canada's wireline telecommunications market has flourished under a forward-looking framework that has allowed market forces to thrive and regulation to fall away where appropriate. Facilities-based competition has promoted world-leading investment in broadband infrastructure in Canada, while delivering innovation, value, performance and reliability.
63. Given the evidence of vibrant and increasing competition from multiple platforms, Canada's wireline markets are well-suited to a gradual shift to further reliance on market forces. As part of its participation in this proceeding, Shaw proposed a set of suggestions to facilitate this transition in a technologically neutral manner that would provide our TPIA customers with the opportunity to negotiate continued access. This will ultimately result in a stable regulatory framework and market environment for carriers, wholesale customers and consumers.
64. We thank the Commission for the opportunity to participate in this important review.

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