

**BEFORE THE CANADIAN RADIO-TELEVISION
AND TELECOMMUNICATIONS COMMISSION**

IN THE MATTER OF

**TELECOM NOTICE OF CONSULTATION CRTC 2019-57, *REVIEW OF MOBILE
WIRELESS SERVICES*, 28 FEBRUARY 2019**

**REPLY OF
CANADIAN NETWORK OPERATORS CONSORTIUM INC. TO THE ECONOMIC
STUDY OF THE COMMISSIONER OF COMPETITION**

13 JANUARY 2020

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EXECUTIVE SUMMARY

ES-1. CNOC's reply to the Chipty Report consists of its written comments as well as the Third Chen Report, an expert economic report prepared by Dr. Zhiqi Chen. Capitalized terms not defined in the Executive Summary are defined in the body of the main submission.

ES-2. The Chipty Report analyzed Canada's mobile wireless market and reached several conclusions. Notably, the Chipty Report found that the national carriers possess market power, that greater levels of competition result in lower mobile wireless prices for consumers, and that there is no measurable impact on the network quality of the national carriers when they are faced with greater levels of competition. These economic conclusions are not controversial and CNOC concurs with these findings of the Chipty Report.

ES-3. However, the Chipty Report makes a number of policy recommendations that are not supported by its own conclusions and which CNOC opposes. The Chipty Report recommends that the Commission mandate wholesale access for MVNOs only for those MVNOs that are prepared to commit to becoming MNOs, which means that these MVNOs would need to have or acquire spectrum. In addition, the Chipty Report recommends that wholesale access for these MVNOs only be mandated for a finite period. These recommendations are flawed as they are not supported by evidence, do not consider the realities of Canada's telecommunications markets, and are inconsistent with the 2019 Policy Direction.

ES-4. Instead of adopting the flawed proposals in the Chipty Report, CNOC urges the Commission to mandate wholesale access to the networks of the national carriers by full MVNOs, without the use of sunset clauses, irrespective of whether those full MVNOs later choose to acquire spectrum and operate as MNOs.

1.0 INTRODUCTION

1. Pursuant to the process established by Telecom Notice of Consultation CRTC 2019-57-1¹, Canadian Network Operators Consortium Inc. (“CNOC”) is hereby submitting its reply to the Commissioner of Competition’s economic study (“Chifty Report”).² CNOC’s reply consists of its written comments as well as one appendix. Appendix 1 is an expert economic report by Dr. Zhiqi Chen (“Third Chen Report”)³ that assesses the validity of the conclusions reached in the Chifty Report.

2. The Chifty Report determines that the national carriers possess market power.⁴ The Chifty Report also finds that greater levels of competition result in benefits for consumers in the form of lower prices for mobile wireless services.⁵ The Chifty Report finds that there is no measurable impact on the network quality of the national carriers when they are faced with greater levels of competition.⁶ As explained further below, these economic conclusions are not controversial and CNOC concurs with these findings of the Chifty Report.

3. However, while CNOC agrees with the conclusions of the Chifty Report noted above, CNOC opposes the policy recommendations made in the Chifty Report, which are not supported by its economic analyses. The Chifty Report recommends that the Commission mandate wholesale access for mobile virtual network operators (“MVNOs”) only for those MVNOs that are prepared to commit to becoming mobile network operators⁷ (“MNOs”), which means that these MVNOs would need to have or acquire spectrum. In addition, the Chifty Report recommends that wholesale access for these MVNOs only be mandated for a limited period of time.⁸ As explained further below and in the Third Chen Report, the Chifty Report’s policy recommendations are

¹ Telecom Notice of Consultation CRTC 2019-57-1, *Review of mobile wireless services - Changes to procedure*, 28 October 2019, at para 23.

² “Report Studying the State of Competition in the Retail Wireless Marketplace and the Benefits of Additional Competition among Wireless Service Providers”, Dr. Tasneem Chifty, Matrix Economics, 22 November 2019 [“Chifty Report”].

³ CNOC is referring to Appendix 1 of this reply as the Third Chen Report to distinguish it from the other two expert economic reports that Dr. Chen has prepared on behalf of CNOC in the present proceeding.

⁴ Chifty Report, *supra* note 2, at para 59.

⁵ *Id.*, at paras 4-5.

⁶ *Id.*, at para 4.

⁷ *Id.*, at para 71.

⁸ *Ibid.*

flawed as they are not supported by evidence, do not consider the realities of Canada's telecommunications markets, and are inconsistent with the 2019 Policy Direction.⁹

4. CNOC continues to maintain the positions that it has set out in its various submissions in this proceeding thus far. To reiterate, the principal position that CNOC has taken in this proceeding is that, in order to remedy the many problems stemming from the lack of sufficient competition in Canada's mobile wireless markets, the Commission must mandate wholesale access to the networks of the national carriers by full MVNOs, irrespective of whether those full MVNOs later choose to acquire spectrum and operate as MNOs. Moreover, CNOC opposes any form of sunset clause for mandated wholesale access for full MVNOs as being economically unsound.¹⁰

2.0 SUMMARY OF THE FINDINGS OF THE THIRD CHEN REPORT

5. The Chifty Report relies upon two econometric analyses to assess the state of competition in Canada's mobile wireless markets, and, in particular, the impact of regional MNOs upon the prices of the three national carriers.¹¹ The Chifty Report finds that, as a general proposition, higher penetration levels for regional MNOs result in lower prices for mobile wireless services from the national carriers.¹² The Chifty Report also concludes, as CNOC and Dr. Chen have noted in previous submissions in the present proceeding, that the national carriers possess market power.¹³ Furthermore, the Chifty Report finds that there is no measurable impact on the network quality of the national carriers from greater levels of competition.¹⁴

6. The Chifty Report also includes a counterfactual analysis that considers the negative impacts on consumers that may result from a mandated wholesale access policy for MVNOs that

⁹ *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives to Promote Competition, Affordability, Consumer Interests and Innovation*, SOR/2019-277 ["2019 Policy Direction"].

¹⁰ Intervention of Canadian Network Operators Consortium Inc., CRTC File 1011-NOC2019-0057, 15 May 2019 ["CNOC Intervention"], at paras 163-172.

¹¹ Chifty Report, *supra* note 2, at Sections III-IV.

¹² *Id.*, at paras 4-5.

¹³ *Id.*, at para 59. See also para 26 of "An Economic Analysis of Mandated Wholesale Access for MVNOs and Competition in the Mobile Wireless Telecommunications Industry in Canada, Dr. Zhiqi Chen, Delta Economics Group, Inc.", filed as Appendix 1 to CNOC Intervention, *supra* note 10.

¹⁴ Chifty Report, *supra* note 2, at para 4.

“slows the expansion of the regional facilities-based competitor Freedom.”¹⁵ As explained further below, the Third Chen Report shows how this counterfactual analysis is flawed as it fails to consider any benefits that MVNOs may bring to Canadian consumers.¹⁶

7. The Chifty Report then goes on to make several flawed policy recommendations. Specifically, the Chifty Report calls for a time-limited mandated wholesale access regime that would be available only to MVNOs that “make credible commitments to enter as a facilities-based competitor”.¹⁷ The Chifty Report makes it clear that its proposals are aimed at lowering “the barriers for regional wireless service providers to expand or enter into new geographies, including those directly adjacent to their core market.”¹⁸

8. Moreover, given the Chifty Report’s almost exclusive focus on Incumbent-owned¹⁹ regional MNOs such as Freedom Mobile and Eastlink, it is clear that when it recommends measures to further the development of “regional wireless service providers”, it is primarily focused upon further entrenching Canada’s Incumbent-owned regional MNOs, not independent competitors.

9. In the Third Chen Report, Dr. Chen assesses the econometric analyses and policy recommendations of the Chifty Report. To summarize, Dr. Chen’s key findings are:

- a. The econometric methods used in the Chifty Report “are standard and well established in the economics literature, and the model specifications are reasonable.”²⁰

¹⁵ *Id.*, at para 69.

¹⁶ Third Chen Report, at para 10.

¹⁷ Chifty Report, *supra* note 2, at para 71.

¹⁸ *Id.*, at para 73.

¹⁹ For the purposes of this submission, “Incumbents” refers to both Incumbent Local Exchange Carriers “ILECs”, which consist of BCE Inc. (which owns Bell Canada (including the operations that were previously operated by Bell Aliant Regional Communications, Limited Partnership and Bell MTS / MTS Inc., collectively “Bell”) as well as Northwestel Inc.), TELUS Communication Inc. and Saskatchewan Telecommunications (“SaskTel”), as well as the Cable Carriers consisting of Bragg Communications Inc. c.o.b. Eastlink (“Eastlink”), Cogeco Communications Inc. (“Cogeco”), Rogers Communications Canada Inc. (“Rogers”), Quebecor Media Inc. on behalf of its affiliate Videotron Ltd. (“Videotron”) and Shaw Cablesystems G.P. CNOC is aware that not all the Incumbents operate mobile wireless networks.

²⁰ Third Chen Report, at para ES2.

- b. As the Chipty Report’s policy recommendations are founded upon the results of the econometric analyses, it is important to be clear about what the econometric analyses do and do not show.²¹
- i. The econometric analyses demonstrate “that increased competition from regional MNOs of certain sizes exerts significant competitive pressure on the national wireless carriers. They confirm a basic economic principle that competition can restrain the exercise of market power and bring significant benefits to consumers. However, in order to have a measurable restraining impact on the national wireless carriers, the size of the competitive force has to reach a minimum threshold.”²²
 - ii. The econometric analyses are necessarily focused on the impact of the regional MNOs because, due to the lack of any material MVNO presence in Canada, the regional MNOs are currently the only meaningful competitors to the national carriers.²³ However, the econometric analyses do not demonstrate that it is only the regional MNOs that are capable of exerting the competitive force necessary to discipline the national wireless carriers.²⁴ In fact, the econometric analyses do not contain any evidence about the consumer benefits that full or partial MVNOs may generate if they become established in Canada.²⁵
 - iii. The econometric analyses, as well as the counterfactual analysis that estimates the “savings loss” caused by Freedom Mobile slowing its expansion, do not show that the establishment of MVNOs will harm Canadian consumers.²⁶ The counterfactual analysis in the Chipty Report is an incomplete cost-benefit analysis as it fails to take into account any consumer benefits from the growth

²¹ *Id.*, at para 10.

²² *Ibid.*

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ *Ibid.*

of MVNOs in Canada, including more choices for affordable and innovative mobile wireless services.²⁷

- c. The Chipty Report equates all MVNOs with resellers.²⁸ The Chipty Report excludes partial and full MVNOs from its definition of MVNO.²⁹ Full MVNOs, as a result of their greater control over their networks, are able to compete more aggressively than resellers.³⁰ Full MVNOs also make investments in all key network components except spectrum.³¹ The Chipty Report's improper understanding of MVNOs may have led to a "significant underestimation of their competitive impact."³²
- d. The Chipty Report's concerns over negative impacts on investment from the presence of MVNOs are not valid as they are "built on the implicit assumption that the rates for MVNO wholesale access will not compensate MNOs for the risks associated with their network investments."³³ Moreover, the introduction of MVNOs could actually benefit the regional MNOs by providing them with new opportunities to sell services to MVNOs.³⁴ Other measures to mitigate any concerns about negative impacts on investment include exempting the regional MNOs from the requirement to provide wholesale access to MVNOs and limiting wholesale access to full MVNOs, which must make the highest level of investments amongst all types of MVNOs.³⁵
- e. The Chipty Report's policy recommendation will effectively prevent the entry of terminal MVNOs (i.e., those that do not intend to transition to being MNOs).³⁶ Moreover, the increased risks, caused by the Chipty Report's recommendations that mandated wholesale access for MVNOs be time-limited and that financial penalties apply to MVNOs that do not transition to MNOs, reduce the likelihood that the regional

²⁷ *Ibid.*

²⁸ *Id.*, at para 13.

²⁹ *Ibid.*

³⁰ *Id.*, at para 14.

³¹ *Id.*, at para 16.

³² *Id.*, at para 14.

³³ *Id.*, at para 21.

³⁴ *Id.*, at para 22.

³⁵ *Id.*, at paras 22-23.

³⁶ *Id.*, at para 25.

MNOs will even bother to utilize mandated wholesale access for MVNOs.³⁷ The end result is that many niche market segments that are currently underserved or unserved will not be in a position to enjoy the benefits that MVNOs can bring to these segments.³⁸

10. Based on these findings, the Third Chen Report recommends that, instead of adopting the proposals made in the Chifty Report, the Commission should adopt a more open mandated wholesale access policy for MVNOs whereby mandated access is granted to both full MVNOs and regional MNOs.³⁹ The Third Chen Report notes that it is the combined competitive force of full MVNOs and regional MNOs that is most likely to effectively discipline the national carriers.⁴⁰

11. The findings of the Third Chen Report, which demonstrate serious flaws in the reasoning of the Chifty Report, and its policy proposals, constitute compelling evidence for why the Commission should not adopt the more limited mandated wholesale access regime for MVNOs that would only apply to regional MNOs, as proposed by the Chifty Report.

3.0 THE CHIPTY REPORT FAILS TO CONSIDER THE REALITIES OF CANADA'S TELECOMMUNICATIONS MARKET

12. In addition to the reasons set out in the Third Chen Report, CNOC believes that the Chifty Report's proposals are fundamentally flawed as they betray a lack of understanding about the reality of Canada's telecommunications market. In particular, the Chifty Report's recommendations ignore the overt hostility of the Incumbent-owned regional MNOs to any form of mandated wholesale access for MVNOs, the lack of available spectrum for additional entry, and the unintended consequences that may stem from recommendations that essentially limit mandated wholesale access for MVNOs to Incumbent-owned MNOs.

13. The Chifty Report's proposal to limit mandated wholesale access to those MVNOs that can make credible commitments to transition to MNOs is designed to facilitate the expansion of

³⁷ *Id.*, at paras 26-29.

³⁸ *Id.*, at para 25.

³⁹ *Id.*, at para 29.

⁴⁰ *Ibid.*

the regional MNOs.⁴¹ Moreover, given the almost exclusive focus of the Chifty Report on Incumbent-owned regional MNOs such as Freedom and Eastlink, it is clear that when the Chifty Report talks about facilitating the expansion of regional MNOs, it is referring to the Incumbent-owned MNOs and not smaller regional MNOs.⁴² The Chifty Report states with respect to its proposals that they “would lower the barriers for regional wireless service providers to expand or enter into new geographies, including those directly adjacent to their core market.”⁴³ However, this position ignores the hostility of the Incumbent-owned regional MNOs to any form of mandated wholesale access for MVNOs.

14. CNOC noted the hostility of the Incumbent-owned regional MNOs to mandated wholesale access for MVNOs in its further comments.⁴⁴ CNOC posited in its further comments that the hostility of the Incumbent-owned regional MNOs to mandated wholesale access for MVNOs may stem from a desire to protect the marginal niches that they have carved out for themselves in their respective regions instead of taking the risk of competing outside of these regions.⁴⁵ CNOC further posited that the Incumbent-owned regional MNOs may fear retaliation in the wireline and broadcasting markets from the national carriers if they compete outside their existing regional territories.⁴⁶ CNOC finds it alarming that the Chifty Report does not seem to have been aware of, or commented upon, the highly vertically integrated nature of Canada’s telecommunications market and the impact that this may have on the Incumbent-owned regional MNOs’ incentives to compete.

15. Moreover, the narrow focus of the Chifty Report on the mobile wireless market in isolation fails to consider the ramifications that its policy recommendations may have on the broader Canadian telecommunications market. One of the benefits of CNOC’s proposal for mandated wholesale access for full MVNOs is that it will allow competitors, including many CNOC members, that currently can only offer services such as Internet, broadcasting, and voice, also to

⁴¹ Chifty Report, *supra* note 2, at para 73.

⁴² See, *e.g.*, the Chifty Report’s counterfactual analysis which focuses exclusively on Freedom Mobile at para 69.

⁴³ *Ibid.*

⁴⁴ Further Comments of Canadian Network Operators Consortium Inc., CRTC File 1011-NOC2019-0057, 22 November 2019, at Section 4.3 [“CNOC Further Comments”].

⁴⁵ *Id.*, at para 103.

⁴⁶ *Ibid.*

offer mobile wireless services. In effect, CNOC's proposal will allow independent competitors to transition from being triple-play to quad-play service providers and thus offer the same suite of services as the Incumbents. This ability to offer a quad-play of services will strengthen competitors and the disciplining effect of competitors on the Incumbents in all telecommunications markets. CNOC suspects that Canadians will be more willing to obtain voice or Internet access service from a competitor if they are also able to obtain their mobile wireless services from the same competitor. Thus, mandated wholesale access for full MVNOs generally, not just the regional MNOs, will have positive spillover effects in other Canadian telecommunications markets by strengthening competitors who compete in those other product markets.

16. Finally, CNOC notes that the complete absence of any discussion in the Chipty Report about the scarcity of spectrum in Canada is indicative of the fact that the Chipty Report's proposals are only aimed at facilitating the expansion of the Incumbent-owned regional MNOs. There is effectively no further low-band spectrum available and Innovation, Science, and Economic Development Canada's spectrum allocation website indicates that the overwhelming majority of spectrum is held by vertically-integrated Incumbent-owned MNOs.⁴⁷ The consequence of this fact is that if the Commission adopts the Chipty Report's proposals, which necessitate an MVNO being able to acquire spectrum to convert itself to an MNO within a finite period of time, it will essentially be foreclosing any significant new entry into the Canadian mobile wireless market from entities that are not Incumbent-owned. CNOC submits that such an outcome would not best serve Canadian consumers who should be entitled to enjoy the benefits of non-Incumbent owned MVNOs enjoyed by consumers in other jurisdictions around the world. Moreover, as explained further below, such an outcome is inconsistent with the 2019 Policy Direction.

17. In addition, CNOC notes that, based on the results of the recent auction for 600 MHz spectrum, it seems that the Incumbent-owned MNOs are settling into their pre-existing territories and have no intention of expanding further. Given that the 600 MHz auction occurred within the last year, and MNOs spent billions of dollars to acquire spectrum, it provides the best indications of the future expansion plans and intentions of MNOs. In the final results, Eastlink acquired

⁴⁷ See, generally, Innovation, Science, and Economic Development Canada, "Spectrum allocation", <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01847.html>.

spectrum in the Maritimes, Freedom Mobile acquired spectrum in Southern Ontario, Eastern Ontario/Outaouais, Alberta, and British Columbia, SaskTel acquired spectrum in Saskatchewan, TBayTel acquired spectrum in Northern Ontario, and Videotron acquired spectrum in Quebec and the Eastern Ontario/Outaouais region.⁴⁸ That is to say, all of the Incumbent-owned regional MNOs acquired spectrum in regions in which they already operate, which indicates that Freedom Mobile, for example, has little intention of expanding into Quebec, Atlantic Canada, or anywhere else beyond the portion of Ontario and Outaouais, Alberta, and British Columbia, where it already operates. The results of the 600 MHz auction suggest that the Chipty Report's belief that the Incumbent-owned MNOs will use MVNOs to expand into new markets is flawed.

18. More generally, the failure to the Chipty Report to conduct any analysis of available spectrum to investigate whether its belief in the continued expansion of regional MNOs is even feasible is a serious oversight that severely undermines the credibility of its policy recommendations.

19. Consequently, the Chipty Report's failure to acknowledge the reality of Canada's telecommunications markets makes its proposals unlikely to have any noticeable effect on competition, indeed regional MNOs will probably have little interest in these proposals. In fact, if they are implemented, the Chipty Report's recommendations will have serious deleterious effects on competition in telecommunications more broadly by entrenching the dominance of vertically-integrated Incumbent-owned MNOs.

4.0 THE CHIPTY REPORT'S POLICY RECOMMENDATIONS ARE INCONSISTENT WITH THE 2019 POLICY DIRECTION

20. CNOC demonstrated extensively in its further comments how its proposal for mandated wholesale access for full MVNOs to the networks of the national carriers would advance the directions to the Commission set out in the 2019 Policy Direction.⁴⁹ In particular, CNOC discussed how mandated access for full MVNOs would:

⁴⁸ Innovation, Science, and Economic Development Canada, "600 MHz Auction – Final Results", <<https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11499.html>>.

⁴⁹ CNOC Further Comments, at Section 7.0.

- a. encourage all forms of competition and investment,⁵⁰
- b. foster affordability and lower prices,⁵¹
- c. ensure that affordable mobile wireless access is available in all regions of Canada,⁵²
- d. enhance and protect the rights of consumers, including rights related to accessibility,⁵³
- e. reduce barriers to entry to the market and to competition,⁵⁴ and
- f. stimulate innovation and investment in research and development.⁵⁵

21. In contrast, the Chipty Report's focus on exclusively promoting facilities-based competition in Canada's mobile wireless market is inconsistent with the 2019 Policy Direction. In this respect, it is worth reproducing in full CNOC's discussion in its further comments as to why the 2019 Policy Direction requires the Commission to pivot from its traditional focus on promoting facilities-based competition:

It is significant that the 2019 Policy Direction instructs the Commission to “encourage all forms of competition and investment”. [Emphasis added]

The clear meaning of this direction is that the Governor in Council wishes for the Commission to cease unduly prioritizing facilities-based competition at the expense of wholesale-based competition. By mandating wholesale access for full MVNOs, the Commission will ensure meaningful wholesale-based competition in Canada's mobile wireless market for the first time.

Moreover, as CNOC noted in its first intervention, full MVNOs are required to make significant investments in order to enter the mobile wireless market. Indeed, full MVNOs will need to self-provision all the various components of a mobile wireless market except for the RAN. By mandating wholesale access for full MVNOs, the Commission will enable significant investments into Canada's mobile wireless markets by wholesale-based competitors.

Mandating wholesale access for full MVNOs thus advances the directive of the Governor in Council in subparagraph 1(a)(i) of the 2019 Policy Direction to “encourage all forms of competition and investment”.⁵⁶ [Footnotes omitted]

⁵⁰ *Id.*, at paras 135-138.

⁵¹ *Id.*, at paras 139-142.

⁵² *Id.*, at paras 143-146.

⁵³ *Id.*, at paras 147-150.

⁵⁴ *Id.*, at paras 151-154.

⁵⁵ *Id.*, at paras 155-159.

⁵⁶ CNOC Further Comments, at paras 135 through 138.

22. In making its recommendation that the Commission exclusively focus on promoting facilities-based competition, the Chipty Report ignores the clear intent of the 2019 Policy Direction. Moreover, by effectively preventing full MVNOs from entering the mobile wireless market the Chipty Report's proposals would prevent full MVNOs from contributing to the achievement of the other objectives noted in the 2019 Policy Direction and discussed by CNOC in Section 7.0 of its further comments.

23. For all of these reasons, the policy proposals of the Chipty Report are inconsistent with the 2019 Policy Direction.

5.0 CONCLUSION

24. The Chipty Report's proposals require that MVNOs make a commitment, and suffer financial penalties if they renege, to transition to an MNO, within a finite period of time.⁵⁷ The Chipty Report's policy proposals are misguided and will do nothing to ameliorate the problems caused by a lack of competition in Canada's mobile wireless market, and may in fact aggravate them by entrenching the dominance of vertically-integrated Incumbent-owned MNOs. Moreover, by attempting to perpetuate an outdated regulatory focus upon promoting facilities-based competition, the Chipty Report's proposals clearly contradict the clear intent of the 2019 Policy Direction to promote all forms of competition, including wholesale-based competition.

25. The Third Chen Report demonstrates that the Chipty Report's proposals do not have any evidentiary basis and that the Chipty Report appears to misunderstand the nature of MVNOs by consigning all MVNOs to the category of 'resellers', thus ignoring the enhanced competition brought by full and partial MVNOs. Moreover, CNOC is alarmed by the Chipty Report's apparent failure to consider basic realities of the Canadian telecommunications markets, including the hostility of the Incumbent-owned regional MNOs to any form of MVNO wholesale access, the negative spillover effect that entrenching the dominance of vertically-integrated Incumbent-owned MNOs may have in other telecommunications markets, the scarcity of spectrum, and the 2019 Policy Direction.

⁵⁷ Chipty Report, *supra* note 2, at para 71.

26. CNOC urges the Commission to reject the Chipty Report's proposals as they are fundamentally unsound and betray a serious misunderstanding of Canadian telecommunications. Instead, CNOC urges the Commission to adopt CNOC's proposal, namely that mandated wholesale access to the networks of the national carriers should be granted to full MVNOs. Importantly, under CNOC's proposal, there are no arbitrary pre-determined sunset clauses on mandated wholesale access or a requirement for MVNOs to transition to MNOs. As CNOC has demonstrated throughout this proceeding, the widespread introduction of full MVNOs to the Canadian mobile wireless market, combined with the existing competition from other MNOs, will undermine the market power of the national carriers and bring untold benefits to Canadian consumers, including more options for affordable and innovative mobile wireless services.⁵⁸

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⁵⁸ See, for example, CNOC Intervention, *supra*, note 10 at Section 5.0; CNOC Further Comments, *supra*, note 44, at sections 2.3.1, 2.3.2, 2.3.4, 4.0.