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

INTERVENTION OF CANADIAN NETWORK OPERATORS CONSORTIUM INC.

15 MAY 2019

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EXECUTIVE SUMMARY

ES-1. CNOC has structured the Executive Summary to this intervention to respond to the specific questions posed by the Commission in TNC 2019-57. Section 1.1 of CNOC's intervention also indicates where in CNOC's intervention answers to the Commission's specific questions may be found. CNOC's intervention consists of written comment as well as three expert reports, the Chen Report, the von Wartburg Report, and the Roetter Report. Capitalized terms not defined in the Executive Summary are defined in the body of the main submission.

ES-2. To summarize its main position, CNOC believes that the Commission should, as a result of this proceeding, mandate that the national carriers provide wholesale access for full MVNOs. Despite years of efforts on the part of the Commission and the federal government, Canada's market for mobile wireless services remains uncompetitive and the dominance of the national carriers is entrenched. Full MVNOs have the capability to inject greater competition into Canada's market for mobile wireless services and to rein in the market power of the national carriers.

ES-3. However, CNOC has concerns with the Commission's proposal to limit the duration for which the national carriers should be required to provide wholesale access to their networks to MVNOs. The use of sunset clauses for wholesale access is not economically sound regulation and will deter entry by MVNOs and undermine their ability to compete. Instead, the Commission should use a properly calibrated forbearance framework to determine when it may be appropriate to cease mandating wholesale access for full MVNOs.

ES-4. The balance of the Executive Summary responds to the specific questions posed by the Commission in TNC 2019-57.

ES-5. Question 1 of TNC 2019-57 asks:

> Provide your views on how the Commission should define markets for the purpose of assessing the state of competition in the retail market.
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> - How should the relevant product market be defined for the purpose of assessing retail competition? Can the product market be segmented for this analysis and, if

so, how? For example, should the Commission consider the prepaid and postpaid markets separately?

- What is the appropriate geographic market for the assessment retail competition?
- Identify the key market indicators for the assessment of the state of retail competition in the mobile wireless service market(s). In other words, what specific evidence should the Commission gather and how can that information be used to assess competitiveness?

ES-6. Pursuant to the Chen Report, the markets for retail mobile wireless services encompass voice, text and data services and the demand for these services exhibits a great degree of heterogeneity as reflected in a wide selection of plans offered by mobile wireless service providers. Despite the wide array of available plans, different plans (including pre-paid and post-paid plans) are likely to be at least partially substitutable with each other.

ES-7. Moreover, Canada's MNOs, and especially the national wireless carriers, have a stranglehold on the supply of such retail mobile wireless services, all of which are dependent on the spectrum that they, and only they, control.

ES-8. Accordingly, for all practical purposes, and as a matter of administrative efficiency, the hypothetical monopolist test indicates that the product market should include all retail mobile wireless plans in the market at the time that the analysis is conducted.

ES-9. The appropriate geographic market for the assessment of retail competition in mobile wireless services is each individual province. However, it is important to note that the market for wholesale wireless services is national.

ES-10. Some key market indicators that the Commission should use to assess the state of retail competition in mobile wireless services markets include:

i. Provincial market shares and concentration levels
ii. Comparison of Canadian mobile wireless service pricing with international jurisdictions
iii. Comparison of Canadian MNO EBITDA margins with MNOs in international jurisdictions

iv. Comparison of mobile wireless adoption and penetration levels with those in international jurisdictions
v. Comparison of mobile wireless data usage levels in Canada with those in international jurisdictions
vi. Barriers to entry to the mobile wireless market
vii. The impact of network sharing arrangements
viii. Lack of differentiation in retail service offerings

ES-11. Question 2 of TNC 2019-57 asks:

> Comment on the competitiveness of the mobile wireless service market(s). Are the mobile wireless service needs of Canadians currently being met? How have competitive conditions changed over the past five years? If the Commission's mobile wireless service regulatory framework remains unchanged, what do you expect the level of competition to be in the future?

ES-12. Canada's mobile wireless services market is insufficiently competitive.

ES-13. Despite over a decade of policies aimed at introducing more competition into the market and curbing the dominance of the national carriers, their market shares remain essentially unchanged.

ES-14. The Competition Bureau has already determined that the national carriers engage in coordinated behaviour that results in higher prices for Canadians.

ES-15. The Chen Report also demonstrates that the regional carriers are having an insufficient competitive effect on their own and do not restrain the market dominance of the national carriers.

ES-16. As a result of this lack of progress in reining in the market shares of the national carriers, Canada's mobile wireless market remains extremely concentrated, with each province having an HHI level well above that of other jurisdictions where wholesale MVNO access has been mandated.

ES-17. The lack of competition in Canada's mobile wireless market is further demonstrated by the lack of product differentiation amongst the national carriers. The national carriers' retail websites indicate that they are offering nearly identical mobile wireless service plans to consumers.

ES-18. In terms of international comparisons, Canada is routinely an extreme outlier amongst other industrialized countries on a variety of different mobile wireless metrics. Canadians pay amongst the highest prices for mobile wireless services in the world, use some of the lowest amounts of mobile wireless data, and are international laggards when it comes to mobile wireless penetration and adoption.

ES-19. The insufficient state of competition in Canada's mobile wireless market is also seen through the fact that Canada has no naturally occurring MVNO market, unlike the situation just across the border in the United States, where hundreds of MVNOs operate and are sought out as valued business partners by MNOs.

ES-20. Due to this lack of competition, the mobile wireless needs of Canadians are not being met. Close to $1/3^{rd}$ of low-income Canadians do not subscribe to mobile wireless services, almost certainly due to issues with affordability. Moreover, over the past few years, tens of thousands of Canadians have written to the Commission and government officials expressing their dissatisfaction with the state of Canada's mobile wireless market and, in particular, the lack of choice, high prices, and poor service.

ES-21. Competition has not improved in the five years since the Commission last reviewed the state of mobile wireless services in Canada or since TRP 2015-177 was issued. Unless new policy measures are adopted, and mandated wholesale access for full MVNOs in particular, there is no reason to expect that competition will improve in the future.

ES-22. Question 3 of TNC 2019-57 asks:

> Are there issues that require regulatory measures at the retail level (i.e. beyond current measures such as the Wireless Code and mandatory participation in the Commission for Complaints for Telecom-television Services Inc. [CCTS])? If so, what are the issues and what measures would be required? Explain why these measures are necessary.

ES-23. Further regulatory measures are not required at the retail level. The fundamental issue afflicting Canada's mobile wireless market at the present time is a lack of competition. Only the creation of a robust wholesale market can address this issue.

ES-24. Question 4 of TNC 2019-57 asks:

> Discuss how Canada's retail mobile wireless service market(s) compare(s) internationally, and provide any studies and reports you have in this regard. Which countries offer the best comparisons with Canada and why? Discuss whether international comparisons are meaningful in the context of mobile wireless service regulation.

ES-25. CNOC already provided its comments on how Canada's retail mobile wireless market compares internationally above in its discussion on the state of competition in Canada's mobile wireless market.

ES-26. CNOC provides its answers to Question 5 and Question 8 of TNC 2019-57 together.

ES-27. Question 5 of TNC 2019-57 asks:

> If the retail market, or a portion of it, is found to be insufficiently competitive to protect the interests of users, what regulatory measures (e.g. the application of additional conditions of service or mandating of the provision of lower-cost data-only plans), if any, ought to be applied to ensure that the policy objectives of the Act, as well as the Policy Direction, are met? [Footnotes omitted]

ES-28. Question 8 of TNC 2019-57 asks:

> Comment on whether the Commission's preliminary view that the national wireless carriers should be required to provide wholesale MVNO access on a mandated basis is appropriate. Should this requirement apply to other wireless carriers as well and, if yes, why?

ES-29. The retail market is clearly insufficiently competitive for all the reasons noted above. CNOC agrees with the Commission's preliminary view that the appropriate remedy is that the national wireless carriers be required to provide wholesale MVNO access on a mandated basis. In particular, CNOC requests that the Commission require the national carriers to provide wholesale access to full MVNOs.

ES-30. CNOC defines a full MVNO as an MVNO that owns all of its own facilities except for the RAN and, at its sole discretion, the local backhaul. Importantly, full MVNOs completely control their customer base and must also be entitled to access the same network speeds and technologies that the host MNOs use to serve their own retail end-users. Full MVNOs may also choose to provide wholesale services to other MVNOs.

ES-31. Full MVNOs will have a more significant impact on competition than other forms of MVNOs, such as branded resellers. By completely controlling their own networks, full MVNOs are able to distinguish their service offerings and have much greater scope to innovate compared to branded resellers.

ES-32. The Chen Report concurs that full MVNOs will have a positive impact on competition, so long as wholesale rates, terms, and conditions are properly set by the Commission. This positive impact on competition will act in conjunction with the impact of the regional carriers.

ES-33. The Chen Report indicates that full MVNOs will compete by targeting niche and underserved segments of the market with innovative and affordable service options. This is borne out by the examples of a diverse range of MVNOs in foreign jurisdictions, which have used unique innovations to compete. In response to this kind of competitive pressure, the national carriers will also be compelled to lower prices and develop their own innovations, thus creating a virtuous cycle of competition.

ES-34. Only the national carriers should be mandated to provide wholesale access to full MVNOs. It is only the national carriers that have the near ubiquitous network coverage for full MVNOs to achieve the nationwide service that the Commission identified in TRP 2015-177 as being necessary for wireless carriers to offer in order to compete in the mobile wireless market.

ES-35. Question 6 of TNC 2019-57 asks:

> Discuss whether the current wholesale mobile wireless service regulatory framework effectively supports competition in the retail market.

ES-36. The current wholesale mobile wireless service regulatory framework does not effectively support competition in the retail market. This is borne out by the fact that there is no naturally occurring market for MVNOs in Canada.

ES-37. Despite many years of effort on the part of potential full MVNOs to try and seek wholesale access on reasonable terms and conditions, the Incumbent-owned wireless carriers have steadfastly refused to consider granting wholesale access to their networks. It is for this reason that Canada has zero full MVNOs operating on any of the Incumbent-owned carriers' networks at the present time.

ES-38. Unless the Commission mandates that the national carriers provide wholesale access to full MVNOs, no full MVNOs will be able to enter the Canadian market.

ES-39. Question 9 of TNC 2019-57 asks:

> Comment on how a wholesale MVNO service should be structured and implemented. In particular, discuss the following:
>
> - whether there should be a requirement for an MVNO to own a minimum amount of facilities in order to be eligible for a wholesale MVNO service. If so, what should that amount be and how should evidence of facilities ownership be demonstrated by a potential MVNO seeking access?
> - whether there should be other restrictions or eligibility criteria. If so, why?
> - whether it would be appropriate and/or feasible to establish different regulatory requirements for wholesale MVNO service on the basis of geographic divisions. For example, should the service be mandated provincially or on another basis, as opposed to nationally?

ES-40. A full MVNO is already required to own all of its own facilities except for the RAN, and, at its option, the local backhaul. There should be no requirements for full MVNOs to own a minimum amount of facilities, such as spectrum or access facilities, as this would severely limit the number of new entrants and be antithetical to the entire idea of MVNOs. Full MVNOs must make substantial investments in order to enter the market and compete.

ES-41. There should be no other restrictions or eligibility criteria other than requiring full MVNOs to register with the Commission and adhere to any regulatory obligations generally imposed on MNOs, such as public safety obligations.

ES-42. It would not be appropriate to establish different regulatory requirements for wholesale MVNO service on the basis of geographic divisions. The Commission already determined in TRP 2015-177 that the geographic market for wholesale mobile wireless services is national and there are no new circumstances to justify deviating from that finding. Moreover, there is no justification for only providing the benefits of MVNOs to some Canadians and not others.

ES-43. Question 10 of TNC 2019-57 asks:

> What terms or conditions should apply to regulated wholesale MVNO access?

ES-44. In order for full MVNOs to be able to compete effectively, in addition to the requirement for the Commission to set wholesale rates, which CNOC discusses further below, the following terms and conditions should apply to regulated wholesale MVNO access:

a) A robust quality of service regime that includes comparisons to the quality of service of the national carriers' retail offerings. Wholesale quality of service data is useless if it is provided in a vacuum without reference to the equivalent retail quality of service data.

b) Access to the national carriers' retail service qualification and service provisioning information. CNOC notes that this should be much less complex than in the case of wireline services.

c) The implementation of data barriers between wholesale and retail functions of the national carriers.

d) To the extent that the national carriers engage in the bundling of mobile wireless services with other services (which is not typically the case now but may develop as greater competition for mobile wireless services develops), these bundles should be routinely tested for anti-competitive conduct.

e) No head-starts and technological neutrality, such that MNOs do not delay making new technologies available to MVNOs at the same time as the MNOs make such technologies available to their own end-users.

f) Regulatory measures to ensure that full MVNOs have access to the latest mobile wireless devices.

ES-45. Question 11 of TNC 2019-57 asks:

> Discuss whether the Commission should set a wholesale rate for MVNO access.
>
> - If a rate is to be set, would it be appropriate to establish an interim rate as part of this proceeding and, if so, what principle(s) should be used to set that rate?
> - Alternatively, should the national wireless carriers be required to make available a certain amount of capacity on their networks for MVNOs to use at commercially negotiated rates? If so, how should the amount of reserve capacity be determined? In this scenario, would it be appropriate to have a default tariffed rate to act as a backstop if negotiations fail?
> - What are the advantages and disadvantages of each approach?

ES-46. In order for wholesale access for full MVNOs to be effective, the Commission must set a wholesale rate. Given the national carriers' demonstrated hostility towards full MVNOs and the antipathy of the Incumbents to wholesale access generally, it is clear that the national carriers will not propose reasonable wholesale access rates that will enable market entry and expansion by full MVNOs.

ES-47. Wholesale rates should be set using the Commission's well-established Phase II costing methodology, which will ensure that the national carriers are fully compensated for their costs and earn a fair return that will incent them to continue to invest in network facilities.

ES-48. It is both appropriate and simple to set not only an interim rate, but an entire interim regime for wholesale access for full MVNOs. With a few minor modifications, the Commission can use the current wholesale roaming tariffs of the national carriers as the basis for a full MVNO wholesale regime. These changes include:

a) The restrictions on permanent roaming in the tariffs must be removed since, by definition, an MVNO is making permanent use of the host MNO's network.

b) The like-for-like roaming restrictions must be removed. Currently the wholesale roaming tariffs of the national carriers allow them to limit a wholesale roaming customer to the same speeds that the wholesale roaming customer provides to its own end-users on its PMN. Thus, if a wholesale roaming customer only offers 3G service on its PMN it is only entitled to 3G service from the PMN of the wholesale roaming provider.

   Obviously this does not make sense in the context of full MVNOs, which do not have a PMN by which a comparison could be made. Moreover, as explained below, there is no basis for limiting the network technologies that MVNOs are able to access and such a limitation would be harmful to competition.

ES-49. CNOC notes that mandating call-hand back service is its answer to Question 7 of TNC 2019-57, which asks:

> Discuss whether there have been any developments, technological or otherwise, that would require the current wholesale roaming policy to be modified. For any proposals to modify that policy, provide rationale for why the change is necessary and how it would benefit retail competition.

ES-50. In both an interim and final wholesale regime for full MVNO access, the national carriers should be mandated to provide call hand-back services, which will lower the costs of operation for full MVNOs, result in more efficient call-routing, and enhance their ability to compete.

ES-51. CNOC is aware that the currently approved wholesale roaming rates are outside the scope of the present proceeding. However, CNOC notes that while the wholesale roaming rates will allow full MVNOs to enter the market, the wholesale roaming data rate, in particular, is extraordinarily high and will limit their ability to compete effectively. CNOC expects that this issue will be corrected during the follow-up costing proceeding to set final wholesale rates for full MVNO access.

ES-52. Question 12 of TNC 2019-57 asks:

> Discuss what would be an appropriate phase-out process for a mandated wholesale MVNO access service. For example, should the service be phased out on a specific, pre-determined date, be subject to a trigger that initiates a phase-out period, or be subject to another process?

ES-53. The Chen Report explains that setting a pre-determined date for the phase-out of mandated wholesale MVNO access service is not economically sound and will deter entry and expansion by MVNOs.

ES-54. Instead, the Chen Report proposes that the Commission use a properly calibrated forbearance framework that would require an assessment of market conditions prior to forbearing. The Chen Report proposes a forbearance test that involves an assessment of the market shares of the national carriers as well as MVNOs, which would then be followed by a comprehensive review of market conditions.

ES-55. CNOC provides its answers to Questions 13 through 17 of TNC 2019-57 together.

ES-56. Question 13 of TNC 2019-57 asks:

> Provide your views on the future of retail and wholesale mobile wireless services in Canada. How do you foresee the rollout of small cells and 5G technology taking place? Over what time period do you expect this rollout to occur?

ES-57. Question 14 of TNC 2019-57 asks:

> What are the challenges facing carriers as they continue to deploy their networks, particularly with respect to small cells?

ES-58. Question 15 of TNC 2019-57 asks:

> Identify any expected changes or new technologies that are likely to be deployed in Canadian wireless networks that will have regulatory implications in the near term. How can the Commission ensure that its regulatory frameworks account for market and technological changes?

ES-59. Question 16 of TNC 2019-57 asks:

> What are the issues associated with wireless carriers obtaining access to infrastructure, including towers, sites, structures, and fibre transport? Discuss whether the Commission’s existing rules are sufficient to address these issues and

> what changes, if any, could be made to improve these rules under the Commission's current statutory framework.
>
> - If there is a need for the Commission to mandate additional wholesale services to support network deployment, identify those services and demonstrate their essentiality in accordance with the Essentiality Test set out in Telecom Decision 2015-326.
>
> - If a wholesale service that ought to be mandated is currently forborne from regulation, explain how that service no longer satisfies the conditions for forbearance under section 34 of the Act.

ES-60. Question 17 of TNC 2019-57 asks:

> Are there any other matters, issues, or proposals related to mobile wireless services, beyond those listed above, that the Commission should be aware of and potentially make determinations on as part of this proceeding? Identify and explain why those issues are relevant and include proposed regulatory solutions.

ES-61. With respect to Question 16 in particular, CNOC believes that the Commission should mandate tower and site sharing. Mandated tower and site sharing will lower the costs of network deployment and expansion, particularly in rural and remote areas where the costs of deploying infrastructure are high, for regional carriers that hold spectrum. It is also a way to avoid the inefficient use of infrastructure. Finally, efficient access to tower and site sharing will provide full MVNOs an easier path to becoming MNOs by acquiring spectrum should the economics of the marketplace develop in such a way as to create an incentive for them to choose that course of action.

ES-62. With respect to 5G deployment, CNOC is concerned that there remains uncertainty from a constitutional standpoint over the scope of the federal government's jurisdiction, and thus the Commission's jurisdiction, over the passive provincial and municipal infrastructure that will be needed to support the widespread small-cell deployment associated with 5G networks. In order to resolve this uncertainty, CNOC recommends that the Commission recommend to the government of Canada that a reference be directed to the Supreme Court of Canada on the subject.

ES-63. CNOC is also concerned that unless action is taken to introduce greater competition into Canada's mobile wireless market, through mandated wholesale access for full MVNOs, the immense economic, social, and technological capabilities of 5G will be concentrated in the hands of the national carriers.

ES-64. CNOC also notes that as 5G, and future technologies are deployed by mobile wireless carriers into networks, the technical details of interconnection arrangements may need to be reviewed. As a general principle, CNOC maintains that full MVNOs must be able to serve their own customers using, at a minimum, the same technologies and interconnection methods that the wireless carriers use for their own customers and operations.

ES-65. CNOC's proposals advance the policy objectives set out in section 7 of the *Telecommunications Act* and are fully consistent with both the current, and proposed, policy directions.

1.0 INTRODUCTION

1. Canadian Network Operators Consortium Inc. ("CNOC") is hereby submitting its intervention in the proceeding initiated by Telecom Notice of Consultation CRTC 2019-57[1] ("TNC 2019-57"). In accordance with the instructions in TNC 2019-57, CNOC is making the following statement: "I request to appear at the public hearing."[2]

2. CNOC's intervention consists of its written comments as well as three appendices. Appendix 1 is an expert economic report by Dr. Zhiqi Chen ("Chen Report") prepared for CNOC, Independent Telecommunications Providers Association, and Canadian Communications System Alliance, Inc. for this proceeding. Appendix 2 is an expert economic report by Dr. Markus von Wartburg ("von Wartburg Report") that was previously submitted to the Commission by Ice Wireless Inc. ("Ice Wireless") in the proceeding initiated by Telecom Notice of Consultation CRTC 2017-259 ("TNC 2017-259").[3] Appendix 3 is an expert report prepared by Dr. Martyn Roetter ("Roetter Report") that was previously submitted by CNOC to the Broadcasting and Telecommunications Legislative Review Panel. This latter report provides additional evidence that is germane to this intervention.

3. CNOC fully supports the preliminary view of the Commission that it should mandate that Bell Canada, Rogers Communications Canada Inc. ("Rogers"), and TELUS Communications Inc. ("TELUS") (collectively, "the national carriers" or "national wireless carriers") should be required to provide wholesale mobile virtual network operator ("MVNO") access as an outcome of this proceeding.[4] For the reasons set out more fully below, mandating that the national carriers provide wholesale MVNO access is a necessary action in response to the sustained lack of meaningful competition in Canada's market for mobile wireless services.

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1 Telecom Notice of Consultation CRTC 2019-57, *Review of mobile wireless services*, 15 May 2019 ("TNC 2019-57").

2 *Id.*, at para 55.

3 Telecom Notice of Consultation CRTC 2017-259, *Reconsideration of Telecom Decision 2017-56 regarding final terms and conditions for wholesale mobile wireless roaming service*, 20 July 2017.

4 TNC 2019-57, at para 39.

4. In order for MVNOs to have a sufficient competitive impact, it is imperative that the Commission mandate that the national carriers be required to provide wholesale access to "full MVNOs", which is a particular type of MVNO that CNOC defines in detail further below. Additionally, given the market power of the national carriers and their interest in seeing MVNOs fail, it will be necessary for the Commission to set just and reasonable wholesale rates as well as take other measures to ensure that MVNOs are not subject to anti-competitive conduct by the national carriers.

5. CNOC has significant concerns with the Commission's preliminary view that the national carriers should only be mandated to provide wholesale MVNO access for a "limited amount of time", which appears to imply that the Commission is considering imposing a sunset clause on mandated wholesale access for MVNOs.[5] Imposing a sunset clause on mandated wholesale access for MVNOs will deter entry by potential MVNOs and potentially compromise the MVNO market before it has had a chance to develop and become self-sustaining. Instead, the Commission should follow a properly calibrated forbearance framework in determining whether, and if so, when, to forbear from mandating wholesale MVNO access.

6. CNOC has further recommendations to improve the state of competition in Canada's mobile wireless market and consumer outcomes. These recommendations are set out in the sections that follow.

1.1 Structure of CNOC's intervention and locations of answers to specific Commission questions

7. Broadly speaking, the structure of CNOC's intervention tracks the order of the questions posed by the Commission in TNC 2019-57.

8. In part 2.0 CNOC defines the retail market for mobile wireless services and establishes the indicators that the Commission should look to when assessing the state of competition in the retail market. It is in this section that the Commission will find CNOC's answer to Question 1 of TNC 2019-57.

[5] *Id.*, at para 40.

9. In part 3.0 CNOC assesses the current state of competition in Canada's mobile wireless market. It is in this section that the Commission will find CNOC's answer to Question 2 of TNC 2019-57.

10. In part 4.0 CNOC explains why additional measures to regulate the retail market are not warranted. It is in this section that the Commission will find CNOC's answer to Question 3 of TNC 2019-57.

11. In part 5.0 CNOC explains its proposed solution to the lack of competition in Canada's mobile wireless market, namely that the Commission mandate that the national carriers provide wholesale access for full MVNOs. It is in this section that the Commission will find CNOC's answers to Questions 4 to 12 of TNC 2019-57, as well as Question 15 in part (when discussing the issues of head-starts and technological neutrality in section 5.8.1).

12. In part 6.0 CNOC addresses the other questions posed by the Commission with respect to mobile wireless services. It is in this section that the Commission will find CNOC's answers to Questions 13 to 17 of TNC 2019-57, although Question 15 is also partially addressed in section 5.8.1.

13. In part 7.0 CNOC explains how mandating that the national carriers provide wholesale access for full MVNOs advances the policy objectives set out in section 7 of the *Telecommunications Act*[6] in a manner that is consistent with the Policy Direction.[7]

14. Part 8.0 is the conclusion to CNOC's intervention.

[6] SC 1993, c 38 ("*Telecommunications Act*").

[7] Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives, SOR/2006-355 ("Policy Direction").

2.0 RETAIL MARKET DEFINITION AND INDICATORS

15. In TNC 2019-57 The Commission posed the following questions with respect to market definition:

> Q1. Provide your views on how the Commission should define markets for the purpose of assessing the state of competition in the retail market.
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> - How should the relevant product market be defined for the purpose of assessing retail competition? Can the product market be segmented for this analysis and, if so, how? For example, should the Commission consider the prepaid and postpaid markets separately?
> - What is the appropriate geographic market for the assessment [of] retail competition?
> - Identify the key market indicators for the assessment of the state of retail competition in the mobile wireless service market(s). In other words, what specific evidence should the Commission gather and how can that information be used to assess competitiveness?[8]

16. In the sections that follow, CNOC provides its views on how the Commission should define markets for the purposes of assessing the state of competition in the retail market for mobile wireless services as well as key market indicators the Commission should examine.

17. For the purposes of defining the market to be examined, CNOC urges the Commission to rely upon the hypothetical monopolist test used by the Competition Bureau in its Merger Enforcement Guidelines.[9] This test is well-established in Canadian competition law and there is no compelling reason for the Commission to deviate from it in this proceeding for the purposes of defining markets.

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[8] *Id.*, at para 50, Question 1.
[9] Competition Bureau, *Merger Enforcement Guidelines*, 6 October 2011.

18. As summarized by the Competition Bureau:

> Conceptually, a relevant market is defined as the smallest group of products, including at least one product of the merging parties, and the smallest geographic area, in which a sole profit-maximizing seller (a "hypothetical monopolist") would impose and sustain a small but significant and non-transitory increase in price ("SSNIP") above levels that would likely exist in the absence of the merger. In most cases, the Bureau considers a five percent price increase to be significant and a one-year period to be non-transitory. Market characteristics may support using a different price increase or time period.[10] [Footnotes omitted]

2.1 Retail product market definition

19. The markets for retail mobile wireless services encompass voice, text and data services and the demand for these services exhibits a great degree of heterogeneity as reflected in a wide selection of plans offered by mobile wireless service providers.[11] Despite the wide array of available plans, in CNOC's view a SSNIP on any given mobile wireless service is likely to lead to consumers engaging in switching to other mobile wireless services, including between prepaid and postpaid plans. In other words, different plans are likely to be at least partially substitutable with each other.

20. For example, while one mobile wireless plan may offer 10 GB of wireless data and another plan offers 8 GB of wireless data, it may be the case that consumers of the 10 GB wireless plan will switch to the 8 GB plan in response to a SSNIP and perhaps make greater use of Wi-Fi to offset the lower data allowance.

21. Similarly, postpaid and prepaid plans are, to a substantial degree, functionally equivalent and it is likely that the main reason that some consumers use prepaid plans is to be able to better control their costs or perhaps because they do not require the device subsidies that often come with postpaid plans. However, it is likely that prepaid users will switch to postpaid plans in response to a SSNIP, particularly if the cost-savings associated with prepaid plans were reduced. Thus, there is no reason to segment the analysis between postpaid and prepaid plans.

[10] *Id.*, at 4.3.
[11] Chen Report, at para 6.

22. Moreover, from the standpoint of administrative efficiency, it is necessary to include all mobile wireless services in one product market as to try and assess competitive conditions for every different type of plan and mobile wireless service offered would be an inordinately complex task. Such a minute segmentation of the market would not actually serve any useful purpose because, as explained further below, the competitive problems that afflict Canada's mobile wireless market are pervasive, regardless of the particular retail market for mobile wireless services examined. This is because Canada's mobile network operators ("MNOs"), and especially the national wireless carriers, have a stranglehold on the supply of such services, all of which are dependent on the spectrum that they, and only they, control.

23. Accordingly, for all practical purposes in this proceeding, the hypothetical monopolist test indicates that the product market should include all retail mobile wireless plans in the market at the time that the analysis is conducted.

2.2 Retail geographic market definition

24. Applying the hypothetical monopolist test to determine the appropriate geographic market definition leads to the conclusion that the appropriate geographic market for assessing the level of retail competition is provincial.[12]

25. The Chen Report indicates that there are significant price differences for mobile wireless services between provinces. As the Chen Report states, "[t]hese significant price differences imply that an application of the hypothetical monopolist test would lead to the conclusion that a provincial hypothetical monopolist can profitably impose a significant and non-transitory increase in the price of mobile wireless services."[13]

26. Both the Chen Report and the von Wartburg Report note that the Competition Bureau has used provincial geographic markets in the past when analyzing mergers involving wireless carriers,

[12] CNOC notes that in using the term "provincial" it is treating each of the three territories as a province. CNOC further notes that the Commission in its Communication Monitoring Reports treats the three northern territories as a single geographic market and does not object to this practice.

[13] Chen Report, at para 7.

such as the acquisition of Microcell Telecommunications Inc. ("Microcell") by Rogers and the acquisition of Manitoba Telecom Services ("MTS") by Bell Canada.[14] Indeed, it bears noting that in its analysis of the Microcell acquisition, the Competition Bureau concluded that demand-side substitution would not render a provincial monopolist's SSNIP unprofitable.[15] Furthermore, as the von Wartburg Report states: "Canada has a regional spectrum licensing regime and smaller carriers operate only in certain regions of the country."[16]

27. Assessing retail competition on the basis of individual provinces is also administratively simple and reflects the current practice of the Commission in gathering information on provincial market shares when preparing its annual Communications Monitoring Report.[17]

28. All of this evidence indicates that the relevant geographic market for assessing retail competition in Canada consists of individual provinces. However, CNOC hastens to add that while it is suggesting that the relevant geographic market for assessing retail competition for mobile wireless services is provincial, wholesale access for MVNOs must be mandated on a national basis in order to be effective and the geographic market for wholesale MVNO services is national. CNOC will have more to say on the appropriate scope of mandated wholesale MVNO access and the applicable geographic market further below.

2.3 Key market indicators to assess the state of retail competition

29. As noted above, the Commission has asked parties to identify the specific evidence that that the Commission should gather and how that information can be used to assess the state of competition in Canada's retail market for mobile wireless services.

30. CNOC believes that the following evidence should be gathered by the Commission as part of this proceeding:

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[14] Chen Report at para 7, von Wartburg Report, at para 17.

[15] Competition Bureau "Acquisition of Microcell Telecommunications Inc. by Rogers Wireless Communications Inc.: Technical backgrounder," April 2005, under section heading "Geographic Market".

[16] von Wartburg Report, at para 17.

[17] See, for example, Canadian Radio-television and Telecommunications Commission, *2018 Communications Monitoring Report* ("2018 CMR"), at pg. 161.

a. Provincial market shares and concentration levels:

a) The Commission should gather information on the market shares of each MNO[18] operating in each province and assess the level of market concentration in each province, using the widely accepted Herfindahl-Hirschman Index ("HHI") described in the von Wartburg Report.[19]

b) HHI levels for each province should be obtained for as long a period as data is available to show the relative success, or lack thereof, of previous policies designed to introduce a greater level of competition into Canada's mobile wireless market.

c) CNOC expects that this data will show that every province in Canada has a highly concentrated mobile wireless market and that in all cases, the HHI is higher than that of several other jurisdictions where wholesale MVNO access has been mandated, as demonstrated by the von Wartburg Report.[20]

d) CNOC notes that the provincial market share information it seeks is not fully available in the Commission's Communications Monitoring Reports.

For reasons that are not clear, the Commission has chosen to exclude Freedom Mobile and Eastlink from its calculations of provincial market shares of mobile wireless service providers.[21] The exclusion of this vital information from the Communications Monitoring Reports undermines the procedural fairness rights of parties to this proceeding as it results in parties being unable to comment on the competitive impact of Freedom Mobile and Eastlink in the provinces in which they operate. For example, the Commission's 2018 Communications Monitoring Report ("2018 CMR") shows the national carriers having 100% of the market share of British Columbia, Alberta, New Brunswick, Nova Scotia, and Prince Edward Island. These numbers are obviously inaccurate as Freedom Mobile and Eastlink clearly have at least some competitive presence in those regions. As a matter of procedural fairness, the provincial market share data in the 2018 CMR should be restated and placed on the public record of this proceeding such that it includes Freedom Mobile and Eastlink.

As a result of this inexplicable reporting gap by the Commission, the HHI levels in the von Wartburg Report do not account for the presence of Eastlink and Freedom Mobile.[22] The Chen Report used publicly available data to make

[18] Canadian MNOs are called wireless carriers in this submission.
[19] von Wartburg Report, at para 16.
[20] *Id.*, at pgs 40-42.
[21] 2018 CMR, at pg 161.
[22] Von Wartburg Report, at pg 9.

an estimate of these two carriers' market share in the provinces in which they operate.[23]

b. Comparison of Canadian mobile wireless service pricing with international jurisdictions:

   a) CNOC will have more to say on appropriate comparisons with international jurisdictions below, but the Commission should gather evidence on the prices of mobile wireless services in Canada with other industrialized jurisdictions.

   b) CNOC notes that much of this international comparison data is already available to the Commission through the 2018 Wall Report.[24]

   c) This information will help demonstrate if Canada is a significant global outlier in terms of the cost of mobile wireless service. In the absence of other explanations, to the extent that mobile wireless services are significantly more expensive in Canada compared to other jurisdictions, this is an indication that the current regulatory framework is not working to stimulate sufficient competition.

c. Comparison of EBITDA margins with international jurisdictions:

   a) The Commission acknowledges in the 2018 CMR that EBDITA margins are essential for assessing the financial performance of a telecommunications company.[25]

   b) The Commission should compare the EBDITA margins of Canadian MNOs with those in international jurisdictions.

   c) This comparison will serve two purposes. Firstly, to the extent that the EBIDTA margins of Canadian MNOs are significantly greater than those of MNOs in other jurisdictions, this may indicate that there is insufficient competition in the Canadian market and that Canadian carriers are achieving supra-normal levels of profitability. Secondly, to the extent that EBIDTA margins in jurisdictions where MNOs host MVNOs are not significantly lower than Canadian margins, this would be compelling evidence that MVNOs do not have a material impact on the margins of the host carriers.

d. Comparison of mobile wireless adoption and penetration levels with international jurisdictions:

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[23] Chen Report, at paras 13-15.

[24] Innovation, Science and Economic Development Canada, "Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions - 2018 Edition", at section 4.3 ("2018 Wall Report").

[25] 2018 CMR, at pg 104.

a) The Commission should gather information assessing mobile wireless adoption and penetration levels in Canada compared to international jurisdictions.

b) To the extent that this information indicates that mobile wireless adoption and penetration levels in Canada are significantly lower than levels in international jurisdictions, this may suggest that the Canadian market is insufficiently competitive and Canadians are not satisfied with the affordability of mobile wireless services, or that certain market segments are not being adequately served, thus limiting the adoption and penetration levels of mobile wireless services.

e. Comparison of mobile wireless data usage levels in Canada with international jurisdictions:

a) The Commission should gather information assessing the average monthly mobile data used by Canadians compared to end-users in international jurisdictions.

b) To the extent that this information indicates that mobile wireless usage levels in Canada are significantly lower than those in other international jurisdictions, this may indicate an issue with the affordability of mobile wireless data in Canada.

f. Barriers to entry to the mobile wireless market:

a) The Commission should gather information on the extent of barriers to entry to Canada's mobile wireless market and how these have limited the development of competition in Canada.

b) Data points to examine include spectrum costs, the remaining availability of spectrum, the effects of vertical integration and service bundling, head starts in deploying new technologies, the effectiveness of tower and site sharing, the reasons underlying the refusal of the national carriers to offer wholesale access for MVNOs on reasonable terms and conditions, and evidence of coordinated behavior between/among Canadian MNOs, and particularly the national wireless carriers.

g. The impact of network sharing arrangements:

a) The Commission should review the content of any network sharing arrangements to assess whether they contain terms that may affect the development of competition negatively. This is particularly a concern when MNOs with market power, such as Bell and TELUS, enter into network sharing arrangements.

h. Lack of differentiation in retail service offerings:

a) The Commission should review the retail service offerings of Canada's MNOs, and in particular the national carriers, to determine whether there is a significant amount of differentiation in these retail service offerings.

b) To the extent that there is little to no differentiation, for example if all the national carrier's top-end plans provide 15 GB of mobile data with unlimited voice and text, this is an indication that the market is insufficiently competitive as MNOs do not perceive the need to differentiate their service offerings in order to maintain their market share. A lack of differentiation in retail service offerings may also be an indicator of coordinated behaviour.

31. CNOC is pleased that through its requests for information ("RFIs") issued on April 5, 2019, the Commission has already set about gathering some of the information discussed above.[26]

3.0 THE STATE OF COMPETITION IN CANADA'S MOBILE WIRELESS SERVICE MARKET

32. The Commission asks parties to address the following questions about the state of competition in Canada's mobile wireless service market:

> Comment on the competitiveness of the mobile wireless service market(s). Are the mobile wireless service needs of Canadians currently being met? How have competitive conditions changed over the past five years? If the Commission's mobile wireless service regulatory framework remains unchanged, what do you expect the level of competition to be in the future?[27]

33. It is clear, using a variety of different metrics, that Canada's market for mobile wireless services is insufficiently competitive.

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[26] Telecom Commission Letter addressed to Distribution List, CRTC File 1011-NOC2019-0057, 5 April 2019.

[27] TNC 2019-57, at para 50, Question 2.

3.1 Market shares of the national carriers remain unchanged

34. The 2018 CMR indicates that, despite the Commission's intent through Telecom Regulatory Policy 2015-177[28] ("TRP 2015-177") to create a more competitive wireless market in Canada[29], four years later the subscriber and revenue market shares of the national carriers are essentially unchanged.

35. The 2018 CMR notes that, as of the end of 2017:

> The Top 3 captured 92% of these revenues, leaving 8% to be divided among the remaining competitors. Although the Top 3 lost about 1% in total revenue market share from 2013 to 2017, they were still able to retain about 92% of the revenue share from internal growth and through acquisitions.[30]

36. Moreover, the 2018 CMR indicates that the dominance of the national carriers is in fact worsening:

> The mobile sector continued to be dominated by the three largest mobile service providers ("the Top 3"), <u>and increasingly so</u>. In 2017, these entities accounted for 92% of retail mobile revenues, compared to 90% in 2015 and 91% in 2016. The Top 3 held the majority revenue share in each province/territory except for Saskatchewan, <u>where the other providers captured 62% of the sector, a decrease from 68% in 2013.</u> The Top 3 consists of the Bell Group, Rogers and TELUS.[31] [Emphasis added and footnotes omitted]

37. The preceding passage from the 2018 CMR just quoted raises two significant concerns about the state of competition in Canada's mobile wireless market. First and foremost, it indicates that despite the Commission's efforts in TRP 2015-177 to create a more robust level of competition in retail markets for mobile wireless services, the dominance of the national carriers appears to be increasing, not lessening. Secondly, the information relating to Saskatchewan suggests that the competitive impact of the regional carrier there, SaskTel, is faltering. CNOC notes that since TRP 2015-177 was issued, one regional carrier, MTS, has been absorbed by Bell Canada. It is not

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28 *Regulatory framework for wholesale mobile wireless services*, Telecom Regulatory Policy CRTC 2015-177, 5 May 2015 ("TRP 2015-177").
29 TNC 2019-57, at para 34.
30 2018 CMR, at pg 154.
31 *Id.*, at pg 109.

unreasonable to suspect that SaskTel may be the next to fall, particularly given the financial difficulties it is currently experiencing as further described in Section 3.3 of this intervention.

38. The lack of any meaningful development of competition since TRP 2015-177 was issued is borne out by the combined subscriber market share of the national carriers. CNOC notes that as far back as the end of 2011, the national carriers controlled 92% of wireless subscriptions.[32] As of the end of 2017, according to the 2018 CMR, the national carriers still controlled 90% of all wireless subscriptions.[33] Thus, in eight years, the national carriers have only lost 2% of their subscriber market share.

39. The Chen Report posits that the Canadian mobile wireless market may become sufficiently competitive to warrant further review and consideration of possible forbearance from mandated MVNO wholesale access once the national carriers reach an 80% market share threshold.[34, 35] Based on the current rate of decline the combined market share of the national wireless carriers of 1% every four years, assuming all else remains equal, <u>it will take 40 years</u> before Canada's mobile wireless market even approaches a point where a more detailed market review would be triggered for the purpose of assessing whether forbearance from mandated MVNO access to MNO networks should be granted.

3.2 Coordinated behavior

40. It is important to note that the Competition Bureau has already determined that the national carriers are engaged in coordinated behaviour. The Competition Bureau reached this conclusion during its analysis of the acquisition of MTS by Bell Canada in 2017.[36] CNOC submits that nothing has changed since 2017 that would disrupt this coordinated behaviour.

[32] 2013 Communications Monitoring Report, at pg. 161.
[33] 2018 Communications Monitoring Report, at pg. 160.
[34] Chen Report, at para 97.
[35] As explained further below, the Chen Report finds that the national carriers reaching an 80% market share threshold is only one indicator that needs to be met before the market may be considered sufficiently competitive. See Chen Report, at paras 93-97.
[36] Competition Bureau, "Competition Bureau statement regarding Bell's acquisition of MTS", 15 February 2017.

41. The Chen Report summarizes the conclusions of the Competition Bureau's analysis as follows:

> One of the reasons for the high prices of mobile wireless services in Canada is the coordinated behavior among the national wireless carriers. During its nine-month investigation of Bell's acquisition of Manitoba Telecom Services (MTS), the Competition Bureau conducted a pricing analysis and concluded that as a result of coordinated behavior among Bell, TELUS and Rogers, mobile wireless prices in Canada were higher in regions where these three carriers did not face competition from a strong regional competitor. Conversely, in markets where the three national wireless carriers faced competition from a strong regional competitor, the Competition Bureau found that prices were substantially lower. The Bureau reached these conclusions based on a systematic and thorough analysis using confidential internal company data.[37]

42. Thus, at least in regions where the national carriers do not face a regional competitor, they are engaging in coordinated behaviour that is inflating prices above what they otherwise would be. This situation is the very opposite of the definition of a competitive retail market.

43. Furthermore, as explained in the section that follows, the regional carriers[38] are not effectively constraining the national carriers from engaging in coordinated behaviour.

3.3 Regional carriers are not having a material impact on competition in the provision of retail mobile wireless services

44. The above information from the 2018 CMR with respect to market share demonstrates that the regional carriers are not having a significant impact on the dominance of the national carriers. This is further borne out by the Chen Report, which finds that Freedom Mobile and Eastlink have done very little to improve affordability in the markets in which they operate.[39]

45. The Chen Report, as well as the 2018 CMR, do find that prices are lower in Saskatchewan and Quebec, where Videotron and SaskTel have admittedly been more successful as regional competitors.[40] However, as the Chen Report's HHI analysis in the section that follows

[37] Chen Report, at para 35.
[38] CNOC defines the regional carriers as including Eastlink, Freedom Mobile, SaskTel and Videotron.
[39] *Id.*, at paras 40-46.
[40] *Id.*, at para 44.

demonstrates, these markets are still highly concentrated, which indicates that prices are still likely significantly inflated over what they would be in a truly competitive market.[41]

46. In the case of SaskTel, it has been losing market share at a significant rate since 2015, which calls its long-term survivability into question. In its most recent annual report, SaskTel stated that its net income was actually in decline, from $134.8 million in 2016/2017 to $121.0 million in 2017/2018.[42] Indeed, SaskTel has examined the possibility of selling up to 49% of itself under legislation which allows the government of Saskatchewan to sell up to 49% of the province's Crown corporations.[43] In terms of who would buy SaskTel, or at least its wireless business, as with the case of Bell Canada's acquisition of MTS, it is likely that only a national carrier would have the financial resources necessary to complete such a transaction.

3.4 The mobile wireless market remains highly concentrated

47. The lack of competition in Canada's mobile wireless market is also demonstrated by examining market concentration levels. The von Wartburg Report conducted an analysis of market concentration levels in Canada using HHI and data that was current up to the end of 2015.[44] The von Wartburg Report's market concentration analysis found that every market in Canada had an HHI over 2,500, which is the threshold set by the United States Department of Justice for what constitutes a highly concentrated market.[45]

48. CNOC acknowledges that the analysis conducted in the von Wartburg Report, being based off the incomplete data provided in the Commission's Communications Monitoring Report, does not account for the market shares of Freedom Mobile and Eastlink.[46] Using publicly available data from Shaw's financial reports, and assuming that Eastlink has a comparable share of the market in

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[41] *Id.*, at paras 14, 44.
[42] SaskTel 2017/2018 Annual Report, at pg 26.
[43] CBC News, "SaskTel has studied potential impact of selling up to half of company", 28 April 2017, https://www.cbc.ca/news/canada/saskatchewan/sasktel-minority-sale-mistake-1.4090730.
[44] von Wartburg Report, at pgs 8-9, Footnote 21.
[45] *Ibid.*
[46] CNOC reiterates that this data must be placed on the public record and that the failure of the Commission to include this information in the 2018 CMR undermines the procedural fairness rights of parties by hindering their ability to comment on market concentration levels in Canada.

the provinces in which it primarily operates as Freedom Mobile, the Chen Report has estimated the market shares of Freedom Mobile and Eastlink in the provinces in which they carry on business to be 5.9%.[47] Based on this estimate of Freedom Mobile and Eastlink's market share, the Chen Report has determined the HHI levels for retail mobile wireless markets in each province as follows[48]:

Table 2. Estimated Provincial Wireless Service Subscriber Market Share, 2017

	Bell	Telus	Rogers	Others WSPs	Combined Share of National Carriers	HHI
British Columbia	19.7	38.8	35.4	6.2	93.8	3177
Alberta	23.6	49.2	20.9	6.3	93.7	3453
Saskatchewan	19.5	13.6	5.0	61.8	38.1	4409
Manitoba	45.4	15.2	39.0	0.4	99.6	3813
Ontario	28.4	19.9	44.0	7.5	92.4	3199
Quebec	29.5	26.5	27.9	16.1	83.9	2610
New Brunswick	51.8	24.2	17.9	6.2	93.9	3628
Nova Scotia	49.8	32.3	11.7	6.2	93.8	3700
Prince Edward Island	50.4	31.6	11.9	6.1	94.0	3720
Newfoundland and Labrador	63.9	27.7	1.9	6.6	93.4	4890

Source: Author's calculations using data associated with CRTC, *Communications Monitoring Report 2018*, Tables 6.6 and 6.15. The number of subscribers for each of the three national wireless carriers in each province was estimated by multiplying a carrier's market share given in Table 1 by the difference between the total number of wireless subscribers in the province and the estimated/assumed number of subscribers of Freedom Mobile or Eastlink.

49. This market concentration analysis reveals that each geographic market for mobile wireless services in Canada is highly concentrated, since it is well above the 2,500 HHI threshold.[49] Moreover, as demonstrated by the von Wartburg report, these HHI levels are well above the HHI of other international jurisdictions that have mandated wholesale MVNO access.[50]

47 Chen Report, at para 14.
48 *Ibid*.
49 von Wartburg Report, at pgs 8-9, Footnote 21.
50 von Wartburg Report, at pgs 40-42.

3.5 International comparisons

50. The Commission asks parties the following question with respect to comparing Canada's retail mobile wireless market with those of foreign jurisdictions:

> Discuss how Canada's retail mobile wireless service market(s) compare(s) internationally, and provide any studies and reports you have in this regard. Which countries offer the best comparisons with Canada and why? Discuss whether international comparisons are meaningful in the context of mobile wireless service regulation.[51]

51. International comparisons in the mobile wireless context are helpful in determining broad trends and understanding whether a country is an outlier with respect to mobile wireless services. Of course, each country will have unique regulatory, economic, social, and cultural factors that may affect how wireless services are used, priced, and how the market developed. However, to the extent that a country is a significant outlier on a variety of different metrics, which Canada is, international comparisons are helpful in determining whether there is a problem with that country's mobile wireless market.

52. A comparison of Canada's mobile wireless market on various metrics with international jurisdictions paints a troubling picture of a nation that is increasingly falling behind the rest of the world. The Chen Report extensively details the latest international comparator evidence.[52]

53. In terms of prices, the Chen Report demonstrates that amongst industrialized states, depending on the particular basket of services being examined, Canada is generally the most expensive or second most expensive country for mobile wireless services, and that this trend has persisted over multiple years.[53]

54. The expensive nature of Canadian mobile wireless service plans is borne out not only by looking at the total price paid by consumers, but also at the cost per 10 GB of mobile wireless data,

[51] TNC 2019-57, at para 50, Question 4.
[52] Chen Report, at paras 27-34.
[53] *Ibid.*

where, amongst the thirty-six countries that make up the Organization for Economic Co-operation and Development ("OECD"), Canada was the third most expensive nation, at approximately $65.00 USD per month, with only Japan and Mexico having more expensive mobile data.[54]

55. The high cost of mobile data in Canada was further borne out by an analysis by Rewheel Research, which found that the maximum data allowance achievable in Canada for 30 Euros was a mere 4 GB per month, whereas in many other jurisdictions that amount would entitle end-users to unlimited mobile data plans.[55] One of these jurisdictions where 30 Euros would buy an unlimited mobile data plan is Finland (in fact only 26.9 Euros is required), which CNOC notes is also a sizeable nation with substantial rural and remote areas.[56]

56. Rewheel Research also determined that the median price per GB in Canada was 7.3 Euros, which was three times the OECD average of 2.2 Euros per GB.[57] This finding was consistent with an analysis by the Swedish research firm Tefficient, which found that Canada has the highest total mobile service revenue per GB out of the diverse range of countries examined.[58]

57. The Chen Report also demonstrates that amongst OECD countries, Canada has the lowest rate of mobile wireless penetration, one of the lowest rates of mobile broadband subscriptions, and one of the lowest rates of mobile data usage.[59] On average Canadians use just 2 GB of data per month compared to the Finns who use an average of 15 GB of mobile data per month.[60]

58. CNOC suspects one of the reasons why Canada's mobile wireless market performs so poorly relative to other jurisdictions on a variety of metrics is that, other than a few marginal branded resellers such as Petro-Canada Mobility[61] and 7-Eleven[62], Canada is completely devoid

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[54] *Id.*, at pg 16, Figure 3.
[55] *Id.*, at pg 17, Figure 4.
[56] Rewheel Research, "Mobile Data Pricing – How many 4G gigabytes 30 Euros buys – April 2019", http://research.rewheel.fi/.
[57] Chen Report, at para 29.
[58] *Id.*, at para 30.
[59] *Id.*, at paras 32-35.
[60] *Id.*, at pg 21, Figure 8.
[61] See Petro Canada Mobility, https://mobility.petro-canada.ca/.
[62] See 7-Eleven Speak Out Wireless, https://www.speakout7eleven.ca/.

of MVNOs. This near total absence of any form of MVNOs, and total absence of full MVNOs explains Canada's poor international performance.

59. As the Chen Report demonstrates, MVNOs are significant forces in Australia, the United States, and Europe.[63] In 2018 MVNOs held a 4.7% market share in the United States, a 13.1% market share in Australia, and, a market share of 11.2% to 34.6% in the European Union, depending on the country examined.[64]

60. In contrast, the MVNO market share in Canada is so negligible that the Commission appears to have stopped reporting on it for the 2018 CMR.[65]

61. Taken as a whole, the international data indicates that Canada's mobile wireless market is not producing outcomes that are keeping Canada competitive with the rest of the world, and, in particular, other OECD nations.

3.6 Lack of product differentiation

62. A cursory examination of the retail mobile wireless service offerings of the national carriers also indicates that there is a lack of competition in Canada's mobile wireless market. For example, as of May 6, 2019, in Ontario, Bell Canada, Rogers, and TELUS all offered mobile wireless plans with unlimited talk, text, and 6 GB data.[66] Rogers and TELUS both charged $90.00 per month for these plans whereas Bell Canada was slightly more expensive at $95.00 per month.[67]

63. Similar patterns of near identical pricing and data allowance persists for the other service offerings of the national carriers both across different Canadian jurisdictions and with differing

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[63] Chen Report at para 51.

[64] *Id.*, at para 51, Footnote 40.

[65] See the 2017 Communications Monitoring Report at pg. 303, which appears to be the last time that this data was reported. It showed "resellers/rebillers" having a wireless market share of no more than 1%.

[66] Bell Canada, "Mobility", https://www.bell.ca/Mobility/Cell_phone_plans; Rogers, "Wireless", https://www.rogers.com/consumer/home; TELUS, "Mobility", https://www.telus.com/en/mobility/?linktype=ge-meganav.

[67] *Ibid.*

levels of data. For example, in Quebec, each of the national carriers offered 6 GB of data, consisting of 2 GB of data + 4 GB of "bonus data", as well as unlimited talk and text, for $50.00 per month.[68]

64. The lack of significant differentiation in the retail service offerings of the national carriers is indicative of the fact that they are not competing vigorously with each other.

3.7 No naturally occurring MVNO market

65. Excluding marginal resale arrangements through entities such as Petro-Canada Mobility, no MVNOs have emerged in Canada as a result of commercial negotiations.

66. In a properly functioning competitive market, one would expect the carriers to compete for MVNO business as a means to differentiate themselves and increase the use of spare capacity by attracting additional end-users on their networks. This is the situation that prevails just across the border in the United States where dozens, if not hundreds, of MVNOs operate as a result of commercial arrangements reached with American MNOs, who are eager for the wholesale business as a means of competing against their facilities-based rivals.[69]

67. In the four years since TRP 2015-177 was issued, contrary to the Commission's expectations, no market for wholesale MVNO access has emerged in Canada.[70] This is particularly concerning as the Commission found in TRP 2015-177 that MVNO access service was "essential for competition" and "that denying access to this service would likely result in a substantial lessening or prevention of competition in the downstream retail market"[71] [Emphasis added].

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[68] *Ibid.*

[69] See https://ipfs.io/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/List_of_United_States_mobile_virtual_network_operators.html; Chen Report at para 57.

[70] TNC 2019-57, at para 34.

[71] *Id.*, at para 34.

68. The lack of a naturally occurring MVNO market is demonstrative of the fact that there is a serious competitive problem in Canada's mobile wireless market.

3.8 The mobile wireless market is not meeting the needs of Canadians

69. The Commission's question on the state of Canada's mobile wireless market also asks if the mobile wireless needs of Canadians are being met.[72] The evidence is clear that they are not.

70. According to the 2018 CMR, at the end of 2016, 31.3% of Canadians in the lowest income quintile still did not have a subscription to a mobile wireless service.[73] While the 2018 CMR does not explore whether this lack of adoption by lower income households stems from affordability issues, it is logical to assume that this is the underlying cause.

71. The evidence cited above in section 3.5 of this intervention demonstrating that Canada has amongst the lowest mobile wireless data usage in the world, as well as some of the most expensive mobile wireless data in the world, is also demonstrative of the fact that Canadians' mobile wireless needs are not currently being met.

72. Lest the national carriers argue that Canadians do not actually need more mobile wireless data, it is important to remember that 5% of total mobile wireless revenues in 2017, a whopping $1.22 billion, were generated from data overage charges.[74] The national wireless carriers are getting rich by refusing to provide Canadians with the services they need at reasonable prices.

73. The frustration that Canadians feel with the state of their mobile wireless market is shown by the more than 82,000 Canadians who have participated in OpenMedia campaigns over the last few years calling for more competition and lower prices.[75] Similarly, through Pay Less to Connect, a letter-writing campaign organized by TekSavvy Solutions Inc., over 72,000 Canadians have

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[72] TNC 2019-57, at para 50, at Question 2.
[73] 2018 CMR, at pg 37.
[74] 2018 CMR, at Open Data Table 6.16.
[75] Open Media, "Break Up the Big Three!", https://act.openmedia.org/BreakUpTheBigThree?utm_source=nom&utm_medium=slideshow&utm_content=&utm_campaign=7177&utm_term=&tdid=2196

written to their Members of Parliament to express their desire for lower prices, more choices, and better telecommunications services.[76] By contrast, CNOC believes that there have been only a few dozen, if that, individual Canadians over the past few years that have written to the Commission and their Members of Parliament supporting the *status quo*. CNOC is not suggesting that the Commission should make its regulatory decisions on the basis of majority rule, but the stark contrast in the number of Canadians writing to the Commission asking for change versus those that support the positions of the national carriers is a strong indication that many Canadians do not feel that their mobile wireless needs are being met.

74. The Commission itself stated in TNC 2019-57 that since TRP 2015-177 was issued, it has been compelled to intervene directly in retail markets due to concerns that these markets have not been meeting the needs of Canadians.[77]

75. CNOC notes that one of these interventions consisted of Telecom Decision CRTC 2018-475[78] ("TD 2018-475") in which the Commission essentially compelled the national carriers to introduce lower-cost data-only plans. While CNOC does not have access to the market data from the national carriers, CNOC strongly suspects that these plans have had minimal take-up due to their limited voice allowances and extremely low data caps, which do not exceed 1 GB per month.[79] Given that Canadians are paying $1.22 billion per year in data overage charges, the last thing that Canadians need are more mobile wireless plans that offer minimal data allowances.

76. The evidence cited above conclusively demonstrates that the mobile wireless needs of Canadians are not being met. The only logical explanation is that the failure of Canada's mobile wireless market to meet the needs of Canadians stems from a lack of competition in Canada's market for mobile wireless services. If the market was truly competitive, wireless carriers would have no choice but to meet the needs of Canadians, otherwise Canadians would move to alternative carriers that did meet those needs. It is only in a tight oligopoly situation where the national wireless carriers do not feel the need to vigorously compete against each other, and thus only offer

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[76] TekSavvy Solutions Inc., "Pay Less to Connect", https://paylesstoconnect.ca/#features.
[77] TNC 2019-57, at para 25.
[78] Telecom Decision CRTC 2018-475, *Lower-cost data-only plans for mobile wireless services*, 17 December 2018 ("TD 2018-475").
[79] *Id.*, at para 17.

plans designed to maximize their collective profits as opposed to plans that would gain them market share from each other, that this odd situation of suppliers deliberately ignoring the demands of the marketplace can prevail.

3.9 Competition has not improved over the last five years

77. The Commission also asks parties to comment on how the competitive environment has changed over the past five years, and how the competitive environment will look in the future if the Commission's regulatory framework for mobile wireless services remains unchanged.

78. The market share data cited above from the 2018 CMR indicates that very little has changed over at least the past five years in the competitive environment.[80] If anything, the 2018 CMR indicates that the situation is worsening as in recent years the national carriers have been increasing their overall share of wireless revenues such that it now stands at 92%.[81]

79. The last five years has seen the absorption of MTS by Bell Canada, such that the number of wireless carriers competing against the national carriers has been diminished. The 2018 CMR also paints a troubling picture of SaskTel's continued ability to survive against the national carriers as its market share tumbles.[82] SaskTel's most recent financial statements also indicate that its net income is declining.[83]

80. CNOC acknowledges that at the end of February 2019, Freedom Mobile had 1.5 million subscribers[84], however, it is clear from the Chen Report as well as the 2018 CMR, that Freedom Mobile has failed to make any significant dent in the dominance of the national carriers.[85] There is also no indication that it will be able to do so in the future.

81. In terms of what the next five years will look like if no modifications are made to the Commission's regulatory framework for mobile wireless services, there is no reason to think that

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[80] 2018 CMR, at pg 154.
[81] *Id.*, at pg 109.
[82] *Ibid.*
[83] SaskTel 2017/2018 Annual Report, at pg 26.
[84] Shaw Communications Inc., Second Quarter 2019 Financial Report, at pg 1.
[85] Chen Report, at para 47; 2018 CMR, at pg 154.

the trends seen over the last five years will change. CNOC expects that the national carriers will continue to dominate the market, the market will remain uncompetitive, and the needs of Canadians will continue not to be met.

82. This is a particularly alarming possibility as wireless carriers across Canada commence the roll-out of 5G networks. It is an accepted fact by all participants in the telecommunications ecosystem that the enhanced capabilities of 5G networks have the potential to have significant social, cultural, and economic impacts on Canadians. CNOC urges the Commission not to allow this immense power to be concentrated in the hands of the three national carriers.

83. The Commission can reverse the trend of the last five years of ever greater concentration of Canada's mobile wireless market in the hands of the national carriers and declining levels of competition by mandating that the national carriers provide wholesale access to full MVNOs.

4.0 ADDITIONAL REGULATORY MEASURES AT THE RETAIL LEVEL ARE NOT REQUIRED OR APPROPRIATE

84. The Commission has asked parties the following question pertaining to whether additional regulatory measures are required at the retail level:

> Are there issues that require regulatory measures at the retail level (i.e. beyond current measures such as the Wireless Code and mandatory participation in the Commission for Complaints for Telecom-television Services Inc. [CCTS])? If so, what are the issues and what measures would be required? Explain why these measures are necessary.[86]

85. There are no additional regulatory measures required at the retail level beyond what is already in place. As noted above, the principal issues that need to be addressed, such as high levels of market concentration, high prices, and services that do not meet the needs of Canadians, stem from a lack of effective competition in Canada's mobile wireless market, which is a problem that is not amendable to being solved through retail regulation.

[86] TNC 2019-57, at para 50, at Question 3.

86. A sustained lack of competition over the course of several years is clearly a problem that requires wholesale regulation.

87. In fact, CNOC notes that attempting to use retail regulation to address competitive problems in Canada's wireless market would be inconsistent with the policy objective in subsection 7(f) of the *Telecommunications Act*[87] as well as the direction to the Commission in the Policy Direction to rely on market forces to the maximum extent feasible as a means of achieving the telecommunications policy objectives.[88] Between the two forms of regulation, wholesale regulation that creates competition in downstream wholesale and retail markets involves greater reliance on market forces than the Commission directly intervening in retail markets through retail regulation. When the Commission has the option of using either wholesale or retail regulation to achieve its goals, the policy objective in subsection 7(f) of the *Telecommunications Act* and the Policy Direction require that it use wholesale regulation. Moreover, additional regulatory measures at the retail level will, by definition, not effectively address the lack of competition in Canada's retail markets for mobile wireless services.

5.0 MANDATED WHOLESALE ACCESS FOR FULL MVNOS IS REQUIRED TO GENERATE A SUFFICIENT LEVEL OF COMPETITION AND PROTECT THE INTERESTS OF END-USERS

88. The Commission has asked parties to answer the following question:

> If the retail market, or a portion of it, is found to be insufficiently competitive to protect the interests of users, what regulatory measures (e.g. the application of additional conditions of service or mandating of the provision of lower-cost data-only plans), if any, ought to be applied to ensure that the policy objectives of the Act, as well as the Policy Direction, are met?[89]

89. As CNOC previously stated in this intervention, the most effective remedy in response to the demonstratively insufficient level of competition in Canada's retail market for mobile wireless services is for the Commission to mandate that the national carriers provide wholesale full MVNO

[87] SC 1993, c 38 ("Telecommunications Act").
[88] Policy Direction, at paragraph 1(a)(i).
[89] TNC 2019-57, at para 50, Question 5.

access. While CNOC believes that additional regulatory measures are required, as explained further below, mandated wholesale access for full MVNOs is the principal remedy that is required.

5.1 A definition of full MVNO

90. CNOC is asking that the Commission mandate that the national carriers be required to provide wholesale access to a particular type of MVNO, a full MVNO. It is important that the Commission, and all parties to the present proceeding, are clear on exactly how CNOC defines a full MVNO.

91. In TNC 2019-57, the Commission defines a full MVNO as an MVNO that "owns all of its own facilities except for the RAN and local backhaul."[90] The Commission also provides a more expansive definition of full MVNO on its registration list website:

> A full mobile virtual network operator is an [sic] full MVNO that meets these criteria:
> It is registered with the CRTC
> It owns and operates core network hardware (e.g., switches or routers) separate from all Wire Service Providers.
> It has a service profile management system (e.g., Home Location Register; Home Authentication, Authorization, and Accounting; or Home Subscriber System) for end-user devices that can access Wire Service Provider networks in Canada.

92. While these definitions are not inaccurate (CNOC has some concerns about the Commission's statement on local backhaul explained further below), they lack sufficient detail.

93. The most comprehensive definition of full MVNO of which CNOC is aware, which CNOC endorses, comes from an organization similar to CNOC known as MVNO Europe.[91] MVNO Europe is dedicated to advancing the interests of full MNVOs in Europe. MVNO Europe's definition of a full MVNO looks at both the technical and commercial aspects of full MVNOs and is as follows with some minor grammatical adjustments to improve readability:

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[90] *Id.*, at Footnote 19.
[91] See MVNO Europe, at http://mvnoeurope.eu/.

MVNO Europe has a long-standing description of what Full MVNO access constitutes. We provide it hereafter, distinguishing the technical aspects from the commercial aspects.

Full MVNO access – in technical terms

1. In technical terms, we believe that the following conditions must be fulfilled in order to achieve Full MVNO access, and thereby achieve the necessary technical independence of the MVNO from the Host Operator(s):

   a) Rights-of-use over numbering resources granted by the national regulatory authority directly to the Full MVNO, including: IMSI mobile network code, MSIDSN number range, non-geographic numbers, signalling point codes, operator ID code/number portability code, etc.

   b) Own SIM cards, including control over all SIM card functionalities.

   c) Control over all network elements, with the exception of: (1) the Radio Access Network (RAN); and (2) at the Full MVNO's discretion, the local backhaul from the RAN. This implies that the Full MVNO has its own HLR (Home Location Register), MSC (Mobile Switching Centre), SMSC/MMSC (SMS and MMS Switching Centre(s)), SGSN/GGSN (Mobile Data network elements). [Emphasis added.]

   d) Control over all OSS/BSS (Operations Support and Business Support systems), billing system, customer care system, ability to provision post-paid and pre-paid customers, etc.

   e) All calls, SMS/MMS, and data sessions are delivered to the Full MVNO's equipment (i.e. none stay 'on-net' of the Host MNO, none are routed end-to-end by the Host MNO).

   f) Full MVNO benefits from the same RAN technologies (e.g. 2G/3G/4G LTE + LTE-M/NB-IoT and 5G) and the same RAN coverage as the Host MNO.

Note: In some cases, the Full MVNO may wish to 'outsource back' the ownership and/or management of certain technical resources or technical processes to the Host MNO, or to outsource them to another provider. This is acceptable as long as it is clear that it is done by the Full MVNO on a fully voluntary basis, without coercion or operational/financial pressure from the Host MNO, and likely under a contract that is separate from the wholesale access contract.

Full MVNO access – in commercial terms

2. In commercial terms, we believe that the following conditions must be fulfilled in order to achieve Full MVNO access, and thereby achieve the necessary commercial independence from the Host Operator:

   a) Full MVNO unequivocally owns its customer base, and is able to migrate that customer base to another Host MNO, to its own network, to sell that customer base, etc.

   b) No restrictions on the type of services provided, and on the type of customers (retail and wholesale) to whom services are provided.

   c) No restrictions on the setting of retail prices to customers and wholesale charges to third parties.

   d) No restrictions on the receipt of wholesale call / SMS termination payments.

   e) No restrictions on the Full MVNO organising its own international roaming.

   f) No restrictions on the ability to contract with any third parties (in particular no exclusivity; the Full MVNO must be able to use multiple domestic Host MNOs and international roaming partners if it so wishes).

3. On the basis of its experience, MVNO Europe considers that where regulatory obligations are imposed on MNOs towards MVNOs, these should include internal-external non-discrimination and transparency principles not only on quality, but also on the wholesale access charges, and specific safeguards against margin-squeeze, in

order to ensure that MVNOs are able to replicate ALL retail/channel offers marketed by the Host MNO at all times, without facing a margin-squeeze situation.

In addition, there is a need for specific safeguards for innovation, specifically the prohibition of technical and commercial restrictions as set out above, and a guarantee that MVNOs will be able to benefit from the same RAN technologies (e.g. 2G/3G/4G LTE + LTE-M/NB-IoT and 5G) and the same RAN coverage as the Host MNO, at the same time as the Host MNO. This is important because we are aware of cases where, for example, 4G was offered to MVNOs several years after the Host MNO started providing it to its own retail customers.[92] [Emphasis in original]

94. CNOC notes that this definition of full MVNO has been operationalized in parts of Europe and is not novel or unprecedented. For example, France recently awarded spectrum licences, and in so doing, required that the licence holders permit full MVNO operations on terms and conditions that are functionally similar to the definition put forward by MVNO Europe.[93] Notably, full MVNOs in France are, through these conditions of licence, able to:

> (i) switch between Host MNO networks, (ii) rely on multiple host MNOs in parallel, (iii) have full commercial autonomy on all retail markets and distribution networks, and (iv) own their customer base, and not be subject to restrictions on changes in their shareholding structure, or selling the wholesale access rights they contractually acquired. In addition, the MNO licence conditions provide for: (v) technical non-discrimination in favour of MVNOs on quality of service, compared to the Host MNO's own services, (vi) an explicit right for the Full MVNO to own and operate its own core network and its own interconnections with third party

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92 MVNO Europe provided this definition in a submission to the telecommunications regulator of the Czech Republic on April 8, 2019, available here: https://www.ctu.cz/sites/default/files/obsah/ctu/sdeleni-o-zahajeni-konzultace-k-predbezne-analyze-velkoobchodniho-trhu-mobilnich-sluzeb/obrazky/mvnoeuresponsectuanalyzavelkoobchodnihotrhumobilni.pdf at paras 12-16. The above is an English translation.

93 MVNO Europe, "Response to BoR (17) 176: Draft BEREC Work Programme 2018", 8 November 2017, https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/8429-contribution-by-mvno-europe-to-the-berec_0.pdf, at para 5 ("MVNO Europe BEREC Submission"). See also Autorité de Régulation des Communications Électroniques et des Postes, *Décision n° 2012-0037 de l'Autorité de régulation des communications électroniques et des postes en date du 17 janvier 2012 autorisant la société Bouygues Telecom à utiliser des fréquences dans la bande 800 MHz en France métropolitaine pour établir et exploiter un réseau radioélectrique mobile ouvert au public*, https://www.arcep.fr/uploads/tx_gsavis/12-0037.pdf, at pgs. 14-16 ("ARCEP Decision No. 2012-0037").

> operators, and (vii) reasonable economic conditions, compatible with effective and loyal competition on wholesale and retail markets.[94]

95. CNOC draws the Commission's attention to section 5 of Decision No. 2012-0037 of the French telecommunications regulator, Autorité de Régulation des Communications Électroniques et des Postes ("ARCEP"), which is an example of one of the French spectrum licences that contain the above-cited licensing conditions with respect to full MVNOs.[95]

96. The definition of full MVNO provided by MVNO Europe differs slightly from the Commission's definition in that it permits the full MVNO, at its sole discretion, to own and operate its own local backhaul. This would allow the full MVNO to interconnect directly with host MNOs in instances where it deems it appropriate, instead of going through a third-party clearing house. CNOC notes that it is continuing to study the issue of interconnection and will have more to say on this subject following the request for information stage of the present proceeding.

97. Of particular importance, CNOC wishes to emphasize that a full MVNO should be entitled to resell its wholesale access to the MNO's networks on a wholesale basis to other entities that may lack the resources or the desire to become a full MVNO, but instead wish to operate as "lighter MVNOs" right down to branded resellers that do not own and operate all of the network elements described above.

5.2 The superiority of the full MVNO model for competition versus other MVNO models

98. The technical and commercial characteristics of full MVNOs described by MVNO Europe are indicative of why the full MVNO model is the superior model for competition versus other models, such as branded resellers.

99. Notably, the full MVNO model fully frees the competitor from any constraints imposed on it by the host MNO. Indeed, other than accessing the RAN, and, at the full MVNO's option, the local backhaul of the host MNO, the full MVNO has no other connection with the MNO.

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[94] MVNO Europe BEREC Submission, at para 14.
[95] ARCEP Decision No. 2012-0037, at pgs 14-16.

100. This complete separation between the networks of the full MVNO and a host MNO allows the full MVNO to fully own its customer base by being able to provision its own SIM cards that it can remotely program to access the networks of any host MNO. This is vitally important. By controlling its customer base, the full MVNO can: (a) switch to an alternate host MNOs if it is able to negotiate superior commercial terms with a particular MNO; (b) leverage wholesale access from multiple MNOs in order to improve coverage and reliability; and (c) sell its customer base as part of a business transaction without requiring the consent of a host MNO, which improves the value of full MVNOs and makes market entry a more attractive prospect.

101. By completely controlling their own networks, full MVNOs are also able to distinguish their service offerings and have much greater scope to innovate.

102. The Chen Report also confirms that due to the greater control over their service offerings enjoyed by full MVNOs, they are likely to be a stronger competitive force than mere branded resellers.[96]

103. An additional benefit of the full MVNO model is that it allows full MVNOs to offer various wholesale solutions for prospective MVNOs that may not have the resources or the desire to operate as full MVNOs. Full MVNOs are able to offer customized wholesale solutions to these prospective MVNOs that would allow them to enter the market as resellers for example, without having to make the same level of investment in network facilities. This situation would be very similar to what happens in the wireline context where some ISPs resell wholesale access to other ISPs that may not have the technical or business capability to interconnect directly with the Incumbents.[97]

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[96] Chen Report, at para 59.

[97] For the purposes of this submission, "Incumbents" refers to both Incumbent Local Exchange Carriers "ILECs", which includes Bell Canada (including the operations that were previously operated by Bell Aliant Regional Communications, Limited Partnership and MTS Inc., collectively "Bell"), Northwestel Inc., TELUS Communication Inc. and SaskTel, as well as the Cable Carriers including 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.

104. For these reasons, regardless of any other measures that the Commission might take, enabling the full MVNO model is necessary in order to have the greatest competitive impact on Canada's mobile wireless market.

5.3 The positive impact on competition of MVNOs

105. The Chen Report details the positive impact that the introduction of MVNOs would have on competition in Canada's mobile wireless market, so long as wholesale rates, terms, and conditions are appropriately set so as to not hinder market entry.[98] CNOC will have more to say on this below.

106. It is also important to note that CNOC views the positive impact on competition of MVNOs as operating in conjunction with the positive impact on competition of the presence of wireless carriers like the regional carriers. Indeed, the Chen Report notes that it is the combined presence of MVNOs and facilities-based wireless carriers that will act to constrain the market power of the national carriers.[99] Clearly, based on the discussion of the present state of competition above, the facilities-based competitors to the national carriers have not been able to have a sufficient impact on competition on their own.

107. While the Chen Report notes that it is difficult to forecast the anticipated market share of MVNOs in Canada, the Chen Report assumes, based on the experience of MVNOs in the United States, Europe, and Australia, that it is feasible that they will capture between 5% and 15% of the retail market.[100]

108. The Chen Report indicates that MVNOs will likely target niche and underserved areas of the mobile wireless market with affordable and innovative service offerings.[101] In turn, this will put pressure on the mobile wireless carriers and require them to respond with their own enhancements to affordability and service offerings in order to avoid suffering significant

[98] *Id.*, at Part IV.
[99] *Id.*, at para 59.
[100] *Id.*, at para 51.
[101] *Id.*, at para 62.

subscriber losses.[102] Thus, a virtuous cycle of competition will be created through the introduction of more players into the Canadian mobile wireless market.

109. The Roetter Report provides examples as to how MVNOs in foreign jurisdictions have distinguished themselves and emphasizes that it is a common misconception that MVNOs only compete on price.[103] As just some examples of how MVNOS in foreign jurisdictions have developed innovative solutions to distinguish themselves, the Roetter Report cites the following examples:

> 1. America Movil's Mobile MVNO brands in the US with a total in 2018 of some 22 million customers, which address through both pricing and customer service the needs of Mexicans and Mexican Americans in the US who have strong ties to Mexico, exploiting this opportunity well before the practice of major US operators to offer plans with flat rate pricing within North America (i.e. including Mexico and Canada) was introduced.
>
> 2. The UK is well known for MVNOs, from the original Virgin Mobile launched almost 20 years ago to the more recent entry of China Mobile, under the CMLink brand name, targeting the Chinese community of some 430,000 as well as the more than 80,000 Chinese in the UK on student visas.
>
> 3. Telefonica, which owns the operator O2 in the UK launched its own MVNO giffgaff in 2009, which is distinguished by being an online-only proposition. Giffgaff, which originated in the development group at O2, targets a lower-income, younger, but mobile-savvy niche of the market, offering SIM cards for an average of £10 (3 times cheaper than the standard large mobile wireless operators would offer). Giffgaff does not have a call center since its business model rests upon its customers, also known as community members, who help each other with any questions (and earn points if they do), are motivated to recruit new members (for a modest check of £5) and share ideas and strategies to help Giffgaff grow. As of early 2018 Giffgaff had some 2.7 million members.
>
> 4. Other examples of MVNO differentiation from the UK include a money transfer service to meet the needs of an ethnic community, a service that allows customers to cash in their unused data in exchange for savings on a range of devices and accessories, and a service that is connected to a retail chain's loyalty programme.
>
> 5. Australia offers the example of the MVNO amaysim, which has expanded beyond mobile wireless services, delivered through the Optus network, to offer a range of home-related services including for example electricity and gas plans. As of 2018 amaysim had over 1.1 million subscribers. [Footnotes omitted]

[102] *Id* , at para 65.
[103] Roetter Report, at pg 33.

110. Across the border, CNOC has become aware of innovations by American MVNOs Republic Wireless, Google Fi, Ultra Mobile:

Google Fi[104]:

a) When end-users are roaming outside of the United States, Google Fi offers data roaming at no extra charge in almost every country in the world, as well as unlimited texting, and voice calls from as low as $0.02 USD per minute.

b) For phones that are designed for Google Fi, the phones will also automatically connect to open Wi-Fi networks that Google Fi determines are sufficiently high quality. Data transmitted over these open Wi-Fi networks is automatically protected with a built-in Virtual Private Network ("VPN").

c) For Google's own Pixel 2 and Pixel 3 phones Google Fi is piloting eSIM, which eliminates the need for a physical SIM card.

Republic Wireless[105]:

a) Republic Wireless has patented "Adaptive Coverage" technology such that phones will automatically switch between Wi-Fi and cellular networks without dropping calls. When the Wi-Fi network is not sufficiently strong enough, as determined by Republic Wireless' software, the phone will leverage both cellular networks and Wi-Fi networks together for maximum voice quality.

b) Republic Wireless has created a simple smartphone, the "Relay", for young children. The Relay does not have a screen and is designed for children to be able to easily reach their parents or other family members with the press of a button. It also has a GPS tracker to allow parents to monitor their children's location. More information is available here: https://relaygo.com/relay

c) Republic Wireless has 50 patents.

Ultra Mobile[106]:

a) Ultra Mobile specializes in serving customers in the United States with a need to communicate frequently with other countries.

b) It has bundled unlimited talk to over 80 international destinations and unlimited global text into all of its basic plans.

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[104] Google Fi, "About", https://fi.google.com/about/.
[105] Republic Wireless, "FAQs", https://republicwireless.com/faqs/.
[106] Ultra Mobile, "Plans", https://www.ultramobile.com/monthly-plans/.

c) Aside from its retail business, Ultra Mobile also has a focus on IoT solutions for business customers.

111. Just as has happened abroad, Canadian MVNOs will be compelled to develop unique innovations in order to differentiate themselves in the market and gain market share.

112. For all of these reasons, the introduction of MVNOs into the Canadian market, and in particular full MVNOs, subject to appropriate wholesale terms and conditions, will have a positive impact on the state of competition in Canada's mobile wireless market and go a long way towards meeting the currently unmet wireless needs of Canadians.

5.4 Full MVNOs will not enter absent Commission intervention

113. None of the benefits of full MVNOs described above will come to pass if the Commission does not mandate that the national carriers be required to provide wholesale access to MVNOs.[107]

114. Despite many years of effort on the part of potential full MVNOs to try and seek wholesale access on reasonable terms and conditions, the Incumbent-owned wireless carriers have steadfastly refused to consider granting wholesale access to their networks. It is for this reason that Canada has zero full MVNOs operating on any of the Incumbent-owned carriers' networks at the present time.

115. The hostility of the Incumbent-owned wireless carriers to anything but branded reseller MVNOs was amply demonstrated during the proceeding leading to Telecom Decision 2017-57[108], in which Rogers was prepared to terminate its entire roaming agreement with Ice Wireless just to prevent Ice Wireless' affiliate MVNO, Sugar Mobile, from using Rogers' network.[109]

116. Thus, there is no prospect of the national carriers granting access to full MVNOs on reasonable terms and conditions, or at all, absent regulatory intervention from the Commission.

[107] This section 5.4 answers Question 6 of TNC 2019-57.

[108] Telecom Decision CRTC 2017-57, *Ice Wireless Inc. – Application regarding roaming on Rogers Communications Canada Inc.'s network by customers of Ice Wireless Inc. and Sugar Mobile Inc.*, 1 March 2017 ("TD 2017-57").

[109] *Id.*, at para 1.

5.5 Wholesale access for full MVNOs must be mandated nationwide

117. The Commission has asked parties to comment on

> whether it would be appropriate and/or feasible to establish different regulatory requirements for wholesale MVNO service on the basis of geographic divisions. For example, should the service be mandated provincially or on another basis, as opposed to nationally?[110]

118. It would not be appropriate or feasible to establish different regulatory requirements for wholesale MVNO service on the basis of geographic divisions.

119. The Commission already determined in TRP 2015-177 that the appropriate geographic market for wholesale MVNO access is nationwide. [111] There have been no changes to the market for wholesale MVNO services since that time that would justify using a different geographic market. This definition of the geographic market for wholesale MVNO access service accords with the findings of the Chen Report.[112]

120. More significantly, from a public policy perspective it is inappropriate to only extend the benefits of MVNOs to some parts of the country while denying them to others. CNOC is of the opinion that Quebec consumers, for example, would justifiably be outraged should the Commission mandate MVNO access in other provinces but not in Quebec. As noted above, a significant number of Canadians are not having their wireless needs met by the traditional wireless carriers and all Canadians should have the option of using the innovative services of MVNOs.

5.6 The Commission will need to set wholesale rates

121. The Commission has asked parties to comment on whether it should set a wholesale rate for MVNO access or, in the alternative:

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[110] TNC 2019-57, at para 50, Question 9.
[111] TRP 2015-177, at para 83.
[112] Chen Report, at para 9.

> should the national wireless carriers be required to make available a certain amount of capacity on their networks for MVNOs to use at commercially negotiated rates? If so, how should the amount of reserve capacity be determined? In this scenario, would it be appropriate to have a default tariffed rate to act as a backstop if negotiations fail?[113]

122. CNOC maintains that the Commission absolutely must set a wholesale rate in order for wholesale MVNO access to have any chance at success. The Commission's alternative proposal will not lead to market entry by MVNOs.

123. CNOC members have a long history of attempting to negotiate rates with the Incumbents. All of CNOC's members are competitors to the Incumbents and make at least some use of their wholesale services. In the experience of CNOC members, the Incumbents will never offer reasonable terms and conditions for wholesale services in situations where they exercise market dominance and there is no tariff backstop. In fact, this is the reason that the Commission has had to require the three national wireless carriers to file tariffs for national wholesale roaming services.

124. Moreover, the fact that the national carriers have uniformly refused to offer wholesale access to full MVNOs at all, instead only making available, in limited instances, branded resale options, demonstrates that the national carriers view full MVNOs as a competitive threat and have no interest in seeing them succeed. As such, it is unreasonable to expect that the national carriers will offer reasonable wholesale rates on a commercial basis, even if they are directed to set aside a certain amount of capacity on their networks for MVNOs.

125. With respect to the Commission's suggestion that the national carriers should set aside a certain amount of capacity, CNOC is not sure why the national carriers should only be required to provide MVNOs with access to a portion of their network or how this amount would even be determined. Instead, properly set wholesale rates will incent the national carriers, through the operation of market forces, to expand their network capacity should it be necessary to do so as a result of MVNO activity.[114]

[113] TNC 2019-57, at para 50, Question 11.
[114] Chen Report, at para 74.

126. Wholesale rates for full MVNO access should be set using the Commission's well-established Phase II costing methodology. Phase II costing will allow the Commission to set rates such that the national carriers are compensated for their costs and receive a fair return on their capital, through a reasonable mark-up, such that their incentives to invest are not undermined.

5.7 An interim full MVNO solution can be implemented immediately using the wholesale roaming tariffs

127. The Commission has asked parties to comment on whether it would be appropriate to establish an interim rate for wholesale MVNO access as part of this proceeding.[115] CNOC notes that not only would it be appropriate, but it is possible to go much further than just setting interim rates. The Commission has the ability to create, immediately, an interim regime for wholesale access for full MVNOs that will allow full MVNOs to enter very quickly following Commission approval of that regime.

128. From a technical perspective, there is no significant difference between wholesale roaming and full MVNO access. As such, the presently approved wholesale roaming tariffs of the national carriers (including the currently approved national wholesale roaming rates) may be used as the basis for interim full MVNO access, subject to some minor, but necessary modifications.

129. These modifications are:

a) The restrictions on permanent roaming in the tariffs must be removed since, by definition, an MVNO is making permanent use of the host MNO's network.[116]

b) The like-for-like roaming restrictions must be removed.[117] Currently the wholesale roaming tariffs of the national carriers allow them to limit a wholesale roaming customer to the same speeds that the wholesale roaming customer provides to its own end-users on its public mobile network ("PMN"). Thus, if a

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[115] TNC 2019-57, at para 50, Question 11.
[116] See Bell Mobility Access Services Tariff ("Bell Roaming Tariff"), Item 100, 1(a)(23); TELUS Carrier Access Tariff ("TELUS Roaming Tariff"), Item 233.2, 2nd Revised Page 233-2; Rogers ("Rogers Roaming Tariff") Communications Canada Inc., One-Way Domestic Wireless Roaming Services Tariff, at 1.20.
[117] See Bell Roaming Tariff Item 100, 5(a)(1); TELUS Roaming Tariff Item at 233.3, 2nd Revised Page 233-4; Rogers Roaming Tariff, at 5.4.3.

wholesale roaming customer only offers 3G service on its PMN it is only entitled to 3G service from the PMN of the wholesale roaming provider.

> Obviously this does not make sense in the context of full MVNOs, which do not have a PMN by which a comparison could be made. Moreover, as explained below, there is no basis for limiting the network technologies that MVNOs are able to access and such a limitation would be harmful to competition.

130. With these minor necessary modifications, full MVNOs would be in a position to start providing wireless services to Canadians immediately. The evidence for this is found in the case of Sugar Mobile, which has only been prevented from operating as a national MVNO as a result of the permanent roaming restrictions in Rogers' wholesale roaming tariff.

131. It is possible that there may be a few other minor wording changes required to the wholesale roaming tariffs in order to fully operationalize an interim full MVNO solution, as well as for clarity, but the national carriers should be responsible for making these, as well as the two changes indicated above, no more than thirty days following a Commission decision to mandate wholesale access for full MVNOs on an interim basis.

132. In addition, as part of both an interim and full MVNO solution, the roaming tariffs of the national carriers should be modified to include call hand-back provisions. As the Commission described call hand-back in TD 2017-56:

> When an end-user is roaming on an incumbent's network, long distance calls are made/received on the incumbent's network. There are two options for handling a roaming end-user's long distance calls: (i) the incumbent can directly route the call and charge the wholesale roaming customer, at forborne rates, for calls made by the roaming end-user; or (ii) <u>a technical solution known as call hand-back can be used to automatically route the call from the incumbent's network to the home network.</u>[118]
> [Emphasis added]

133. The Commission determined in TD 2017-56 that the national carriers were not required to provide a call hand-back service.[119] With respect, CNOC believes that this was an error that results

[118] Telecom Decision CRTC 2017-56, *Wholesale mobile wireless roaming service tariffs – Final terms and conditions*, 1 March 2017, at para 183.
[119] *Id.*, at paras 189-190.

in inefficient call routing and unnecessary charges for both wireless carriers using the roaming tariffs as well as, should they be mandated, full MVNOs, which will hinder their ability to compete effectively.

134. CNOC urges the Commission to mandate call hand-back service, for both roaming customers and full MVNOs, and require the national carriers to include it in their wholesale roaming tariffs. CNOC's understanding is that implementing call hand-back would require only minor technical efforts from the national carriers and thus it should be capable of being implemented contemporaneously with the other changes noted above, which are necessary to create an interim regime for full MVNO wholesale access.[120]

135. However, CNOC does not want to see any delay in the introduction of an interim regime for full MVNO wholesale access. Thus, if there is any prospect of delay resulting from the issue of call hand-back, CNOC requests that an interim regime for full MVNO wholesale access be implemented immediately by making the two minor changes to the wholesale roaming tariffs described above, and that call hand back be required to be implemented no more than 12 months after the interim regime for wholesale access for full MVNOs first comes into effect.

136. It is important to remember that full MVNOs are responsible for provisioning all aspects of their network and business, with the exception of the RAN and, at their option, the local backhaul. As a result, there is no need for lengthy follow-up proceedings to determine the configurations and costs of various aspects of the wholesale service.

137. CNOC is aware that the currently approved wholesale roaming rates are outside the scope of the present proceeding. However, CNOC notes that while the wholesale roaming rates will allow full MVNOs to enter the market, the wholesale roaming data rate, in particular, is extraordinarily high and will limit their ability to compete effectively. CNOC expects that this issue will be corrected during the follow-up costing proceeding to set final wholesale rates for full MVNO access.

[120] The need to implement call hand-back service answers Question 7 of TNC 2019-57, at para 50.

138. CNOC urges the Commission to seize the opportunity provided by the full MVNO model and the already approved wholesale roaming tariffs to create an interim framework that will allow for full MVNOs to enter the market immediately upon the Commission ruling that wholesale access by the national carriers for full MVNOs should be mandated.

5.8 The structure of a final full MVNO wholesale regime

139. Aside from the requirement to set final wholesale rates, certain other measures will need to be taken by the Commission to create a final full MVNO wholesale regime that is capable of restraining the market power of the national carriers.

140. In particular, in order to ensure that full MVNOs are able to compete effectively, a final full MVNO wholesale regime should contain the following provisions:

a) A robust quality of service regime that includes comparisons to the quality of service of the national carriers' retail offerings. Wholesale quality of service data is useless if it is provided in a vacuum without reference to the equivalent retail quality of service data.

b) Access to the national carriers' retail service qualification and service provisioning information.[121] CNOC notes that this should be much less complex than in the case of wireline services.

c) The implementation of data barriers between wholesale and retail functions of the national carriers.[122]

d) To the extent that the national carriers engage in the bundling of mobile wireless services with other services (which is not typically the case now but may develop as greater competition for mobile wireless services develops), these bundles should be routinely tested for anti-competitive conduct.

e) No head-starts and technological neutrality, such that MNOs do not delay making new technologies available to MVNOs at the same time as the MNOs make such technologies available to their own end-users.

f) Regulatory measures to ensure that full MVNOs have access to the latest mobile wireless devices.

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[121] This could include, for example, information that is not disclosed on retail websites about network coverage, the coverage of different network technologies such as LTE-A, 3G, etc., and areas where cross-border interference from the networks of American MNOs is an issue.

[122] The national carriers should not be able to use any insight into full MVNOs' operations that they may gain from hosting full MVNOs on their networks to compete against those full MVNOs.

141. The above-cited provisions are necessary for full MVNOs to have a reasonable chance of competing against the entrenched dominance of the national carriers.

142. CNOC wishes, in particular, to emphasize the importance of the principles of no head-starts and technological neutrality, as well as the importance of ensuring that full MVNOs have access to the latest mobile wireless devices, in creating a successful full MVNO wholesale regime.

5.8.1 No head-starts and technological neutrality

143. When CNOC refers to a principle of no head-starts and technological neutrality, CNOC means that that it is imperative that full MVNOs not be limited in the technologies they can access and must be able to access the same network technologies used by the national carriers to serve their own retail customers. For example, if a national carrier is using 5G or LTE-A to serve its own end-users, the full MVNO should also be able to access these network technologies. The same would be true of any other new technologies adopted by the national carriers.

144. The full MVNO model allows for this access to the same network technologies of the host MNO to be done as a matter of course and does not require new proceedings every time a new technology is introduced.

145. The damage caused by head-starts is well known in the wireline market where the continued Incumbent head-start on fibre-to-the-premises ("FTTP") is jeopardizing the very existence of the competitive industry and allowing the Incumbent service providers to re-monopolize the wireline market in many parts of Canada. Identical Incumbent head-start issues occurred with respect to wholesale access to the Incumbents' fibre-to-the-node ("FTTN") networks.

146. CNOC urges the Commission not to allow a similar fate to befall full MVNOs. There should be no doubt that limiting full MVNOs to slower and less advanced network protocols will hinder their ability to compete in the marketplace, as Canadians' demands for mobile data delivered at ever greater speeds continues to increase.

5.8.2 Access to mobile wireless devices

147. In the Canadian mobile wireless market, end-users generally expect to be able to purchase a mobile wireless device from their mobile wireless service providers. CNOC has every reason to believe that Canadians will continue to apply this expectation to full MVNOs.

148. CNOC members have raised concerns that the large device suppliers, such as Apple, will withhold access to mobile wireless devices for MVNOs or enter into exclusive arrangements with the national carriers.

149. This concern is not merely speculative. Apple has previously been investigated by the Competition Bureau for anti-competitive conduct in relation to its agreements with wireless carriers for the supply of iPhones.[123] CNOC acknowledges that the Competition Bureau terminated its inquiry into Apple's practices as it did not have sufficient evidence to find that a contravention of the *Competition Act*[124] had occurred.[125] However, the Competition Bureau did find that Apple has market power and that the iPhone is a "must-have" for wireless carriers. CNOC submits that this conclusion is equally valid as applied to other mobile wireless devices such as those manufactured by Samsung, Google and other manufacturers.

150. In order for full MVNOs to be able to compete effectively, they must be able to access wireless devices, including the latest premium devices, on reasonable terms and conditions and then be able to sell those devices to their end-users.

151. While CNOC is not necessarily proposing specific action at this point in time, CNOC is flagging access to mobile wireless devices for full MVNOs on reasonable terms and conditions as necessary for full MVNOs to be able to compete effectively. To the extent that full MVNOs are unable to access mobile wireless devices on reasonable terms and conditions, the Commission must be prepared to intervene rapidly.

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[123] Competition Bureau, "Competition Bureau statement regarding its investigation into alleged anti-competitive conduct by Apple", 6 January 2017 ["Competition Bureau Investigation into Apple"].
[124] RSC 1985, c C-34.
[125] Competition Bureau Investigation into Apple.

5.9 Full MVNOs must make significant investments in facilities and incur significant risk

152. The Commission has asked parties to comment on

> whether there should be a requirement for an MVNO to own a minimum amount of facilities in order to be eligible for a wholesale MVNO service. If so, what should that amount be and how should evidence of facilities ownership be demonstrated by a potential MVNO seeking access?[126]

153. This question becomes moot under a full MVNO model as the full MVNO must own every part of its network except the RAN, and should it not wish to self-provision, the local backhaul. Full MVNOs represent the maximum amount of investment that an MVNO can make short of actually acquiring spectrum. The amount of capital required to obtain all the network elements described further above is not insignificant. While different companies will adopt different business strategies that will significantly impact their costs of entry, CNOC would anticipate most full MVNOs spending well over $1 million to enter the market.

154. However, if the Commission is asking through this question whether there should be a requirement for a full MVNO to own spectrum or access facilities before being permitted to obtain wholesale access to the RAN of the national carriers, CNOC objects to any such requirement. Such a requirement would be counter-productive, as well as inconsistent with the entire concept of an MVNO, and severely limits the number of new players that can enter the market and meet the unmet mobile wireless needs of Canadians.

5.10 Regulatory obligations of MVNOs

155. The Commission has asked parties to comment on whether additional restrictions or eligibility criteria should apply to full MVNOs as a condition of obtaining wholesale access.[127]

156. CNOC is not aware of any justification for unique obligations being imposed on full MVNOs.

[126] TNC 2019-57, at para 50., Question 9.
[127] *Ibid.*

157. However, all MVNOs should be required to register with the Commission and abide by all applicable Commission requirements that are generally imposed on telecommunication service providers, including adhering to the Wireless Code and any public safety obligations.

5.11 Only the national carriers should be mandated to provide wholesale access to full MVNOs

158. The Commission has asked parties to answer the following question:

> Comment on whether the Commission's preliminary view that the national wireless carriers should be required to provide wholesale MVNO access on a mandated basis is appropriate. Should this requirement apply to other wireless carriers as well and, if yes, why?[128]

159. As CNOC has already made clear throughout this intervention, it fully supports the Commission's preliminary view that the national carriers should be required to provide wholesale MVNO access on a mandated basis, with the gloss that the requirement should be for wholesale access for full MVNOs in particular.

160. However, CNOC sees no reason at the present point in time to extend the requirement to other wireless carriers.

161. It is only the national carriers that have the near ubiquitous network coverage that is necessary for full MVNOs to achieve the nationwide service that the Commission has identified is necessary for wireless carriers to offer in order to compete in the mobile wireless market.[129]

162. Of course, there is nothing to prevent the regional carriers from voluntarily entering into full MVNO arrangements on commercially negotiated terms and they are more likely to do so once the additional competitive forces brought about by the presence of full MVNOs in the marketplace are unleashed.

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[128] *Id.*, at Question 8.
[129] TRP 2015-177, at para 101.

5.12 Sunset clauses are not economically sound

163. The Commission has asked parties to answer the following question:

> Discuss what would be an appropriate phase-out process for a mandated wholesale MVNO access service. For example, should the service be phased out on a specific, pre-determined date, be subject to a trigger that initiates a phase-out period, or be subject to another process?[130]

164. CNOC notes that the Commission has adopted the following preliminary view on this subject, with which CNOC has significant concerns:

> However, the Commission also continues to support the view that an appropriate mix of facilities-based and service-based competitors can and should exist in the market without specific regulation requiring their presence. In this regard, the Commission considers that while mandated wholesale MVNO access would be an effective means to stimulate the development of a retail MVNO market, as this market matures and MVNOs establish themselves, regulatory intervention should eventually give way to a market-based approach. Accordingly, the Commission's preliminary view is that the national wireless carriers' <u>mandated wholesale MVNO access should be in place for a limited amount of time</u> and be subject to a phase-out period as market forces take hold.[131] [Emphasis added]

165. CNOC has no objection to forbearance occurring once sufficient competition takes hold to protect the interests of end-users in accordance with subsection 34(2) of the *Telecommunications Act*. However, to set a predetermined date for forbearance to occur, commonly known as a sunset clause, is not an economically sound policy and will potentially deter full MVNOs from entering the market at all.

166. The Chen Report demonstrates that setting a predetermined date for forbearance will have the following negative effects:

> a) There is significant difficulty in determining at this point in time when MVNOs will be firmly established, thus there is a risk of phasing out mandated access prematurely.

[130] TNC 2019-57, at para 50, Question 12.
[131] *Id.*, at para 40.

b) The premature phaseout of mandated access could compel MVNOs to shut down entirely since they are necessarily dependent on access to the RAN of the wireless carriers to operate.

c) The risk of premature phaseout of mandated access will make it more costly for MVNOs to raise capital from investors who will demand a risk premium. The higher cost of capital will inhibit entry and expansion into the market by MVNOs.

d) Setting a predetermined date for the phaseout of mandated wholesale access for full MVNOs may also incent the national carriers to not invest in sufficient spare capacity to meet the needs of MVNOs, knowing that the capacity will not be needed following a certain date.

e) Setting a predetermined date for the phaseout of mandated wholesale access for full MVNOs will incent the national carriers to obstruct the entry and expansion of MVNOs into the marketplace.[132]

167. Instead of setting a predetermined date for the phaseout of mandated access, the Chen Report recommends that the test for initiating the phase-out process should be based on an assessment of market conditions.[133]

168. The Chen Report proposes a forbearance test that is based upon subsections 34(2) and 34(3) of the *Telecommunications Act*.[134] More specifically, the Chen Report proposes that in order for the forbearance process to commence, there should be sufficient competition in the mobile wireless retail markets throughout Canada to protect the interests of end-users.[135] Secondly, the Chen Report proposes that MVNOs in particular should be established as a meaningful competitive force in the mobile wireless retail markets in Canada such that " it would not be profitable for the national wireless carriers, acting independently or cooperatively, to deny access to their facilities by MVNOs."[136]

169. In order to operationalize this proposed forbearance test, the Chen Report suggests a two-stage process whereby in the first stage, certain market thresholds, described below, must be

[132] Chen Report at paras 88-92.
[133] *Id.*, at para 93.
[134] *Ibid*.
[135] *Id.*, at para 94.
[136] *Id.*, at paras 86, 89-90.

met.[137] In the event that these thresholds are met, the second stage would be triggered, which is a comprehensive review of market conditions to determine whether mobile wireless retail markets are sufficient competitive and MVNOs are firmly established.[138]

170. The market thresholds proposed by the Chen Report are that first the national carriers must fall to an 80% subscriber market share in seven out of ten provinces representing at least 50% of the population of Canada.[139] With respect to an appropriate market share for MVNOs, the Chen Report notes that it is too early to determine what that market share should be due to the near total absence of MVNOs from the market, but that once the MVNO market develops, it will be possible to determine an appropriate figure.[140]

171. Once this threshold is met, the Commission would then launch a full review of market conditions to determine if mandated access may be withdrawn such that an appropriate mix of facilities and non-facilities based mobile wireless service providers will exist in the market absent regulatory intervention.[141]

172. Overall, using a properly calibrated forbearance test is far more economically sound than using an arbitrarily selected predetermined date for the phaseout of wholesale access for mobile wireless services.

5.13 Full MVNOs will not negatively impact investment in wireless infrastructure

173. The Commission notes that it previously chose not to mandate wholesale access for MVNOs partially due to concerns about possible negative impacts on investments in wireless infrastructure.[142]

174. As CNOC has always opposed this idea, it is pleased to see that the Commission has adopted the initial view in the present notice of consultation that:

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[137] *Id.*, at para 95.
[138] *Ibid*.
[139] *Id.*, at para 98.
[140] *Id.*, at para 100.
[141] *Id.*, at para 95.
[142] TNC 2019-57, at para 35.

> on balance, it is likely that the benefits that a well-developed MVNO market would deliver to Canadians are now more likely to outweigh any negative impacts that a policy of mandated wholesale MVNO access might have on wireless carriers' network investments, particularly given the extensive investments that have been made in recent years. Further, properly structured rates, terms, and conditions should further mitigate potential negative impacts on future investments.[143]

175. The Commission's point of view with respect to investment is fully supported by both the Chen Report and the von Wartburg Report.

176. The Chen Report finds that mandated wholesale access to the networks of the national carriers for MVNOs is unlikely to have any negative impact on the investments of either the national carriers or other wireless carriers, and may in fact stimulate greater investment in infrastructure by the national carriers.[144]

177. As the Chen Report states:

> In the benchmark scenario, the national wireless carriers choose not to meet MVNOs' demand for capacity because they want to protect their profits in the retail markets. Under the mandated wholesale access, on the other hand, they will no longer have the option of denying MVNO access to their facilities. This will change the decision question faced by the national wireless carriers. Instead of "do we want to meet MVNO's demand for capacity?" the question they face will become, "how do we meet MVNOs' demand for capacity?" Given the assumption that the markup in the regulated wholesale rates will be sufficient to offer a fair return on their investments, the national wireless carriers could very possibly find it profitable to increase their investments in network capacity to meet the larger demand brought by the entry of MVNOs. Therefore, mandated wholesale MVNO access could very possibly stimulate investments by the national wireless carriers.[145]

178. The Chen Report notes that this finding is consistent with academic literature that finds that wireless carriers that host an MVNO invest more than their rivals.[146]

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[143] *Id.*, at para 39.
[144] Chen Report, at paras 66-83.
[145] *Id.*, at para 74.
[146] *Id.*, at para 82.

179. The Chen Report also finds that mandated wholesale access for MVNOs to the networks of the national carriers is unlikely to have any negative impact on investments by other wireless carriers, such as Freedom Mobile, Eastlink, Videotron, or SaskTel. Most importantly, the Chen Report points out that carriers will always be able to earn a higher return on the use of their own network infrastructure than purchasing wholesale access from other wireless carriers at rates that will include a mark-up.[147]

180. The ability to generate higher returns using one's own infrastructure versus relying on wholesale access is borne out by the statistics from the 2018 CMR which demonstrate that in 2017 whereas cable carriers had an overall EBITDA margin of 45.1%, and Incumbent TSPs had an overall EBIDTA margin of 38.1%, "other service providers", which includes many providers reliant on wholesale access, had an average EBITDA margin of 20.7%.[148]

181. The Chen Report also points out that the emergence of an MVNO market will be a new market for the other wireless service providers to offer service to, and they will be able to do so on commercially negotiated terms. Far from threatening the smaller wireless service providers, the MVNO market opens up new revenue lines and thus reduces the risk of investing in infrastructure.[149]

182. Both the Chen Report and the von Wartburg Report demonstrate that the EBITDA margins of the national wireless carriers are significantly above the 37 % to 40% threshold whereby the academic literature indicates that greater competition actually increases investment in infrastructure. The Chen Report compiled the following table using data from the annual reports of the parent companies of the national wireless carriers:

[147] *Id.*, at paras 75-76.
[148] 2018 CMR, at pg 88.
[149] Chen Report, at paras 72-74.

Table 2. EBITDA Margins of the National Wireless Carriers

	Bell	Rogers	TELUS
2016	41.9%	41.5%	42.2%
2017	42.6%	43.5%	42.9%
2018	42.3%	44.5%	43.3%
Average	42.3%	43.2%	42.8%

Notes: (a) EBITDA margins in this table are those of the wireless segment of the respective company.

(b) Rogers' EBITDA margin in 2016 is from the author's calculation in order to be consistent with other numbers in this table. The 2016 EBITDA margin presented in Rogers' annual reports is as a percentage of wireless service revenue rather than total revenue of its wireless segment.

Source: Annual reports of BCE Inc., Rogers Communications Inc., and TELUS Corporation.[150]

183. Consequently, there is no evidence to suggest that full MVNOs will negatively impact incentives by any wireless carriers to invest in mobile wireless infrastructure. In fact, the evidence suggests that mandated access for full MVNOs will incent increased investment in mobile wireless infrastructure by all wireless carriers.

6.0 OTHER MOBILE WIRELESS ISSUES

184. Aside from the questions already addressed above, the Commission also asked parties a few general questions, being Questions 13 through 17, about additional regulatory measures that should be taken with respect to mobile wireless services as well as some questions about the deployment of 5G.[151]

185. CNOC will not reproduce these questions here, but below are CNOC's answers to the Commission's remaining questions.

[150] Chen Report, at para 81; von Wartburg Report, at paras 74-85.
[151] TNC 2019-57, at para 50, Questions 13 to 17.

6.1 Tower and site sharing

186. CNOC had previously argued for mandated tower and site sharing with rates set by the Commission in its submissions in the proceeding initiated by Telecom Notice of Consultation 2014-76.[152] CNOC continues to believe that this is wholesale service is necessary and would be helpful, combined with mandated wholesale access for full MVNOs, for stimulating greater competition in Canada's mobile wireless market.[153]

187. Mandated tower and site sharing will lower the costs of network deployment and expansion, particularly in rural and remote areas where the costs of deploying infrastructure are high, for regional carriers that hold spectrum. It is also a way to avoid the inefficient use of infrastructure. Finally, efficient access to tower and site sharing will provide full MVNOs and easier path to becoming MNOs by acquiring spectrum should the economics of the marketplace develop in such a way as to create an incentive for them to choose that course of action. Unfortunately, the national wireless carriers have shown little interest in enabling tower and site sharing on reasonable terms and conditions.

6.2 5G network deployment

188. The Commission asks parties to comment on potential regulatory issues that may arise from the deployment of 5G networks.[154]

189. CNOC is concerned that there remains uncertainty from a constitutional standpoint over the scope of the federal government's jurisdiction, and thus the Commission's jurisdiction, over the passive provincial and municipal infrastructure that will be needed to support the widespread small-cell deployment associated with 5G networks. In order to resolve this uncertainty, CNOC recommends that a reference be directed to the Supreme Court of Canada on the subject.

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[152] See sections sections 2.6.3, 3.3.2, and 4.7 of Canadian Network Operators Consortium Inc., First Intervention dated 15 May 2014 in the proceeding initiated by *Review of Wholesale Mobile Wireless Services*, Telecom Notice of Consultation 2014-76, 20 February 2014.

[153] This section 6.1 answers Question 16 of TNC 2019-57, at para 50.

[154] This section 6.2 answers Questions 13 to 15, and 17 of TNC 2019-57, at para 50.

190. In addition, as CNOC already discussed above, due to their enhanced capabilities over present technology, 5G networks are likely to have a significant social, technical, and cultural impact on the lives of Canadians. CNOC urges the Commission not to allow the power of 5G networks to be concentrated into the hands of the national wireless carriers and to introduce mandated wholesale access for full MVNOs as a means of ensuring that control over the capabilities of 5G networks is spread over a diffuse group of mobile wireless service providers.

191. CNOC also notes that as 5G, and future technologies are deployed by mobile wireless carriers into networks, the technical details of interconnection arrangements may need to be reviewed. As a general principle, CNOC maintains that full MVNOs must be able to serve their own customers using at a minimum, the same technologies and interconnection methods that the wireless carriers use for their own customers and operations.

7.0 THE POLICY OBJECTIVES AND THE POLICY DIRECTION

192. The proposals that CNOC has set out herein, notably mandating wholesale access for full MVNOs to the networks of the national carriers advances the policy objectives set out in section 7 of the *Telecommunications Act* (collectively, "Policy Objectives", each individually, "Policy Objective") and are fully consistent with the Policy Direction.

193. Mandated access for full MVNOs to the networks of the national wireless carriers would advance a number of the Policy Objectives, as follows:

a) The Policy Objective in subsection 7(a) will be enhanced as full MVNOs will ensure that the social and economic benefits of mobile wireless services, and of 5G mobile wireless services in particular, are not concentrated in the hands of just a few Incumbent-owned mobile wireless carriers.

b) The Policy Objective in subsection 7(b) will be enhanced as full MVNOs will introduce greater competition into the Canadian market and thus more affordable telecommunications services;

c) The Policy Objective in subsection 7(c) will be enhanced as full MVNOs will enhance the efficiency and competitiveness of the Canadian mobile wireless market, both domestically and relative to foreign jurisdictions;

d) The Policy Objective in subsection 7(f) will be enhanced as full MVNOs will negate the need for the Commission to keep intervening in retail mobile wireless markets;

e) The Policy Objective in subsection 7(g) will be enhanced as full MVNOs will, by necessity as a means of distinguishing themselves and competing, offer innovative services to meet the needs of Canadians;

f) The Policy Objective in subsection 7(h) will be enhanced as full MVNOs will be responding to the economic requirements of users of telecommunications services for more affordable and innovative mobile wireless service offerings.

194. The regulatory framework proposed by CNOC for full MVNOs also aligns with the applicable provisions of the Policy Direction for the reasons set out below.

195. For example, by relying on wholesale regulation versus retail regulation, mandating wholesale access for full MVNOs relies on market forces to the maximum extent feasible as a means of achieving the Policy Objectives.[155]

196. Similarly, by relying upon the pre-existing wholesale roaming tariffs as the basis for a full MVNO regime, CNOC's proposals are efficient and proportionate to their purpose and use tariff approval mechanisms that are as minimally intrusive and onerous as possible.[156]

197. Moreover, by leveraging wholesale markets instead of retail regulation, and by proposing a properly calibrated forbearance framework, CNOC's proposals for a full MVNO regime will interfere with the operation of competitive market forces to the minimum extent necessary.[157]

198. As they require minimal changes to the regulatory framework in order to be established and must self-supply almost all of their own facilities, with the exception of the RAN and, at the option of individual MVNOs in individual circumstances, the local backhaul, full MVNOs also represent economically efficient competitive entry into the marketplace.[158]

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[155] Policy Direction at paragraph 1(a)(i).
[156] *Id.*, at para 1(a)(ii), c(i).
[157] *Ibid*.
[158] Policy Direction, at paragraph 1(b)(ii).

199. As full MVNOs should have access to the same network technologies as their host MNOs, and through properly set wholesale rates will not be unduly favoured or prejudiced in any way, full MVNOS also represent technologically and competitively neutral regulation.[159]

200. CNOC is aware that the Governor in Council has proposed that an additional policy direction be issued to the Commission, but that it is not yet in force and its final form remains uncertain.[160] CNOC's positions are consistent with the proposed policy direction as well, but CNOC will address this matter during the further comment stage of this proceeding in October, by which time any new policy direction would be expected to be have been finalized and be in force.

8.0 CONCLUSION

201. In this proceeding, the Commission has an opportunity to inject the competition that so many Canadians are seeking into Canada's mobile wireless markets following a decade in which other policies failed to make <u>any inroads whatsoever</u> in the market shares and dominant positions of Canada's national mobile wireless carriers.

202. Through minimal regulatory changes, the Commission can set the groundwork to permit full MVNOs to enter Canada's mobile wireless market and start delivering affordable and innovative services to Canadians almost immediately. The presence of full MVNOs in Canada will finally bring Canada in line with jurisdictions like Australia, the EU, and the United States, where mobile wireless subscribers enjoy the benefits of robust competition and options from a variety of facilities and non-facilities based wireless service providers.

203. CNOC urges the Commission not to be dissuaded by what it expects will be the usual chorus of Incumbent fear-mongering claiming that any form of mandated wholesale access will remove their incentives to invest and plunge Canada into a telecommunications Dark Ages. These

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[159] *Id.*, at para 1(b)(iv).

[160] See *Proposed Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives to Promote Competition, Affordability, Consumer Interests and Innovation*, Canada Gazette, Part I, Vol. 153, No. 10, 9 March 2019.

threats have been made in every regulatory proceeding going back to the introduction of competition in the early 1990s. <u>They have never, not once, come to pass.</u>

204. The Commission has recognized that the time to act to fix the competitive woes of Canada's mobile wireless market is now. CNOC submits that the solution is clear: mandate wholesale access for full MVNOs to the networks of the national carriers, and then let the benefits of competition do the rest.