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**by Email**

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Dear Mr. Florea:

**Subject: Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum SMSE-018-10 – Comments of MTS Allstream Inc.**

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Pursuant to the procedures established in Canada Gazette, Part I, 4 December 2010, Vol. 144, No. 49, Notice No. SMSE-018-10, *Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum*, MTS Allstream Inc. (MTS Allstream) submits the attached Comments in response to the questions in the consultation documents.

As permitted by the consultation document, responses to questions 4-2 through 4-5 are being filed in confidence in the attachment at Appendix A and marked as confidential. MTS Allstream requests that the Department notify the undersigned of any requests made to disclose that confidential information, made under the *Access to Information Act* or any other legislation.

The 700 MHz auction represents a further opportunity for the Department to advance the long-term objective of promoting competition in the commercial mobile wireless services market in Canada. At the same time, the 700 MHz spectrum band is uniquely suited to the provision of broadband wireless services to less densely populated regions. MTS Allstream welcomes the opportunity to comment on the development of a technical and policy framework for the 700 MHz spectrum band that best achieves the Department's policy objectives.

Yours truly,

  
for Teresa Griffin-Muir

Attachment

c.c.: Geoff White, MTS Allstream, 613-688-8770

***Consultation on a Policy and Technical  
Framework for the 700 MHz Band and  
Aspects Related to Commercial Mobile  
Spectrum***

**Canada Gazette, Part I, 4 December 2010**

**SMSE-018-10**

**Comments of**



**28 February 2011**

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## EXECUTIVE SUMMARY

### Promotion of Competition and Rural Broadband

- ES1. The auction of the 700 MHz band presents a unique opportunity for the Government of Canada to pursue two overarching policy objectives: (i) promoting sustainable competition and end-user choice in the wireless sector and (ii) ensuring that Canadians in all regions, and in particular, the large expanses of rural Canada, have access to affordable, state of the art, broadband services.
- ES2. There is a continued need to stimulate competition and choice in Canadian telecommunications markets, including the national mobile wireless market. This national wireless market is dominated by the Big 3 incumbent wireless network operators (Rogers Communications, Bell Canada, and TELUS Communications) who together hold close to 95 per cent of the national wireless market by revenue.
- ES3. In the Advanced Wireless Spectrum (AWS) auction, the Department recognised that as compared to the Big 3, all other market participants would face distinct challenges in gaining access to spectrum, and in sustainably challenging their market dominance. The Department, therefore, divided market participants into two groups – on the one hand, the Big 3 and on the other, all other participants (including smaller regional carriers such as MTS Allstream) - the latter being defined as “new entrants”, a classification which remains relevant and appropriate today because it addresses the inherent challenges of competing with the Big 3.
- ES4. Mobile wireless traffic is growing at an accelerated pace due to such trends as increased smartphone usage, increased demand for video content, and increased demand for network connectivity. This is expected to continue as wireless networks become more accessible to consumers and support faster data speeds, and as many existing broadband applications migrate to wireless. MTS Allstream’s experience mirrors the market’s, with data usage growing from 19 TB of data being transmitted over MTS Allstream’s wireless network for the *entire year* in 2008 to 19+ TB in a *single month* in 2010.
- ES5. Simultaneously, there is unfulfilled demand for mobile broadband applications and services in less densely populated rural and remote regions. A revealing fact is that MTS Allstream’s customer base outside of Winnipeg has an average data usage per subscriber per month that is roughly double the comparable

metric for users within Winnipeg. Failing to recognise and meet this demand could broaden the broadband gap between urban and rural Canadians.

ES6. Although MTS Allstream maintains and upgrades its wireless network facilities, there is neither enough spectrum nor sufficiently sound economic investments that can be made to meet the net increase in demand for mobile wireless services.

ES7. As a result, a set-aside block for smaller players; conditions of licence on set-aside blocks; restricting transfer of same to companies that do not meet the “new entrant” criterion; a rural deployment commitment on the most valuable Lower B and C blocks; and post-auction market rules governing tower sharing and roaming should be instituted as specific measures to promote sustained competition and deployment of broadband wireless services to Canadians in all regions.

#### **Need for Additional Commercial Mobile Spectrum in All Regions**

ES8. Given that all mobile wireless spectrum is not created equal and that Canada inescapably operates in a North American device ecosystem, the Department must balance the following technical and marketplace realities:

- a. The different propagation characteristics of high frequency mobile spectrum (greater than 2 GHz) and low frequency mobile spectrum (less than 1 GHz) make them non-interchangeable. High frequency spectrum alone will not immediately nor necessarily be able to meet customer demand in the short to medium term;
- b. By way of illustration, on a greenfield basis, a high frequency AWS/PCS build out would be approximately *twice as expensive* as a low frequency cellular/700 MHz build;
- c. Additional low frequency spectrum is needed in order to deliver affordable, state of the art, broadband services to unserved or underserved rural Canadians;
- d. Considering the North American device ecosystem in which we operate, of necessity the band plan for 700 MHz must follow the U.S. band plan. 3GPP band plans and terminal devices already exist to match the U.S. allocation in 700 MHz. Following the U.S. band plan will speed network build-out and user-adoption in Canada;

- e. The largest carriers in the U.S. are focussed on deploying LTE using 700 MHz spectrum, therefore, in the short-term, the device ecosystem that first develops in Canada will be for LTE using 700 MHz not PCS and AWS spectrum; and
- f. Mobile wireless spectrum that is currently in use cannot be migrated overnight to newer technologies. Indeed, MTS Allstream anticipates that it and other similarly-positioned carriers will in the near-term (5 to 10 years) need to simultaneously support up to *three* different commercial mobile service technologies.

### **Need for Specific Regulatory Measures to Promote Competition**

- ES9. As recognised by the Department in the AWS auction, smaller market participants, including MTS Allstream, face inherent disadvantages in the marketplace when compared to the Big 3, not having the national geographic scope, they lack scale when it comes to accessing the risk capital necessary to purchase scarce spectrum. Absent specific regulatory measures, they all confront the same, undeniable interest that the Big 3 have to buy all the available spectrum in order to preclude competition.
- ES10. The single largest barrier to entry for smaller players is the relative disadvantage they face in accessing capital and building out wireless networks. Conversely the Big 3 have the ability to readily fund such expenditures. As illustrated by recent consolidation in the wireless marketplace, the incentive and means of the Big 3 to acquire all available spectrum is clear and great. Without specific regulatory measures to enable smaller players a reasonable opportunity to participate in the market, there is little likelihood any participant could prevail against the Big 3.
- ES11. Absent specific regulatory measures, the challenges faced by smaller players in accessing capital are compounded by the inherent difficulties they face in negotiating the necessary site and tower sharing arrangements, roaming agreements, and interconnection agreements, and also in purchasing leading-edge devices and applications for end users.
- ES12. The foreign investment restrictions hamper smaller players far more than they hamper the Big 3. Accordingly, MTS Allstream continues to recommend Option 2 of the 3 options presented by the Government of Canada in *Opening Canada's Doors to Foreign Investment in Telecommunications*:

*Options for Reform* – the immediate and *partial* lifting of the foreign investment restrictions for new entrants (defined as carriers representing less than 10 per cent of national telecommunications revenues), or Option 3 – the complete removal of the restrictions.

ES13. However, the mere lifting of the foreign investment restrictions will not address the fundamental challenges faced by smaller players. Time, and concerted and sustained effort of smaller carriers and the Department are required to level the playing field between the Big 3 and the smaller players.

ES14. The enthusiasm with which the challenge of competitive entry was taken as a result of the AWS Policy Decision has been impressive. Even within this short time span since 2007, end users have begun to see the benefits of competition in the form of investments enabling the transition to 3G+ HSPA and LTE trials, increased brand and service plan options, and, on a limited basis, some price differentiation.

ES15. However, the market dynamic that existed at the time of the AWS auction – *i.e.*, Big 3 dominance, remains unchanged. Vigilance is needed to realize sustainable and vibrant competition in the Canadian mobile wireless market. Accordingly, the regulatory measures established at that time remain appropriate for the 700 MHz spectrum. Another critical component to achieving this policy objective is the partial or total lifting of the foreign investment restrictions.

### **Policy and Technical Recommendations**

ES16. In order to realise the full benefits of the policy measures initiated by the Government in the AWS auction, and given the unfulfilled demand for broadband alternatives in less densely populated regions of Canada, MTS Allstream recommends the following:

- a. The adoption of the U.S. band plan for 700 MHz, with guardbands;
- b. With respect to foreign investment restrictions, implementation of Option 2 as soon as possible and well ahead of the 700 MHz auction to maximize the ability of all potential bidders to access sufficient capital;
- c. Adoption of a Tier 2 definition in the most highly-contested or desirable blocks in the 700 MHz band (*i.e.*, the lower B and lower C blocks);



- d. Imposition of a rural broadband deployment commitment by way of a condition of licence on winners of spectrum in the lower B and C blocks;
- e. Exclusion of Census Metropolitan Areas (CMAs) for purposes of defining the rural commitment;
- f. For all blocks other than lower B and lower C, adoption of a Tier 3 definition, and no rural broadband deployment condition;
- g. A “set-aside” of 22 MHz of spectrum in the Upper C block for exclusive bidding by smaller carriers;
- h. New entrants should be eligible to bid on both set-aside and non-set-aside spectrum while the Big 3 should only be eligible to bid on non-set-aside spectrum;
- i. Restrictions on the transfer of licences for set-aside blocks, as per the AWS auction, for a set period of time post-auction;
- j. Auctioning of the 700 MHz spectrum ahead of the 2,500 MHz spectrum;
- k. Continuing with the existing conditions of licence regarding tower and site sharing and roaming; and
- l. Assuming adoption of foregoing, which will establish conditions for sustainable competition, open access need not be mandated.

ES17. Upon implementation of these recommendations, Canadians will receive the full benefits of a viable and sustainable competitive mobile wireless market. These include consumer choice, the proliferation of leading edge devices and applications, innovations both in the core and the periphery of the network, and all of the benefits that these will entail for Canadian productivity in the global digital economy. Further, along with the benefits of choice amongst providers, plans and prices, increased competition in the wireless marketplace should motivate wireless carriers themselves to pursue open access policies without the need for regulatory intervention.

## I. INTRODUCTION

1. With *Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum* (the 700 MHz Consultation Document) issued November 30, 2010, Industry Canada is seeking input on a policy and technical framework for the frequency range 698-806 MHz (the 700 MHz band), including, more specifically, (i) current and future spectrum demand and usage plans; (ii) 700 MHz band planning issues; (iii) required changes to the Canadian table of frequency allocations; (iv) the need for measures to promote competition; (v) service deployment in rural areas; (vi) open access policies; and (vii) auction timing. In addition, Industry Canada is seeking input on how the adoption of potential changes to existing foreign investment restrictions in the telecommunications sector would influence the foregoing.
2. MTS Allstream remains focused on two overarching policy objectives: (i) promoting sustained competitive entry in the wireless sector, and (ii) ensuring that Canadians in all regions, particularly in the largely rural Province of Manitoba have access to affordable, good-quality broadband telecommunications services.
3. Market conditions remain largely similar to those at the time of the Advanced Wireless Spectrum (AWS) auction in 2007.<sup>1</sup> The Big 3 incumbent wireless carriers *i.e.*, Rogers Communications, TELUS Communications and Bell Canada – offer their services on a national basis via national networks, agreements and service platforms. Notwithstanding the pro-competitive policies introduced in the AWS spectrum auction, the Big 3 continue to control almost 95 per cent of the national wireless market by revenue, which remains virtually *unchanged* from the degree of market concentration in 2007.
4. The remaining mobile carriers collectively account for *less than 10 per cent* of total Canadian subscribers and *much less than 10 per cent* individually. MTS Allstream accounts for 1 per cent or less of total spectrum holdings, weighted by population, as

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<sup>1</sup> Industry Canada, *Policy Framework for the Auction for Spectrum Licences for Advanced Wireless Services and other Spectrum in the 2 GHz Range*, (AWS Policy Decision) November 2007.

noted by the 700 MHz Consultation Document. Continuing to distinguish smaller players or “new entrants” on the basis of national market share would therefore be consistent with the views of the Telecom Policy Review Panel, which defined “smaller players” as being those with less than 10 per cent market share.

5. Specific regulatory measures, namely (i) the setting aside of blocks of spectrum for exclusive bidding by “new entrants”, defined as smaller players with less than 10 per cent market share of national wireless revenues; (ii) restrictions on transfer of licences for such set-aside blocks for a set period of time post-auction; and (iii) the institution of post-auction antenna site sharing and roaming rules, ensured competitive entry on a significant scale for the first time in over 25 years in Canada. While entry was enabled, there is still significant improvement needed in market concentration, penetration and pricing in the wireless services.
6. As a smaller regional provider that serves a largely rural population with only one large urban centre, MTS Allstream remains a company that is focused on narrowing the broadband gap between urban and rural subscribers. As with any telecommunications service, such as voice services and wireline broadband services, carriers must use the profits from high density areas to support the build-out of rural networks.
7. Rural users are, in fact, more intensive wireless data users than their urban counterparts, and there is an unfulfilled rural demand for broadband services across the country. The potential of widespread LTE deployment using AWS-band spectrum in an urban setting, however, risks leaving a gap in relation to mobile wireless broadband services, between urban and rural areas. Thus, it is essential that LTE be explored as a serious option for rural broadband access.
8. In order to effectively and affordably deploy broadband services using wireless spectrum to rural users, additional low frequency spectrum is required. The 25 MHz of low frequency spectrum currently available to MTS Allstream in the cellular band is simply insufficient to bridge the wireless broadband gap for rural regions, given existing deployments and the specific challenges associated with rural deployment. This prime

consideration should be a driving factor in the Department's review of the technical and policy framework for the 700 MHz spectrum band.

## II. COMMERCIAL MOBILE SERVICE

### 4.2 Stakeholder Holdings, Demand and Business Considerations

#### (1) **General Need for Additional Commercial Mobile Spectrum**

4-1. *What is the general need for additional commercial mobile spectrum at this time and what do you anticipate the future needs to be?*

9. At the present time, the Department has licensed a total of 465 MHz of commercial mobile spectrum consisting of:
  - (a) 50 MHz in the 850 MHz cellular band;
  - (b) 10-15 MHz in the 800 MHz mobile trunking band;
  - (c) 120 MHz in the 1900 MHz Personal Communication Systems (PCS) band;
  - (d) 90 MHz in the 1700/2100 MHz AWS band; and
  - (e) 190 MHz in the 2500 MHz Broadband Radio Services (BRS) band.
10. While this is, in theory, a large amount of spectrum, there is a lack of adequate capacity to meet the demand for mobile services and mobile broadband services in particular. Consideration of market factors, which are set out in these comments in response to section 7, as well as several technical factors, are key to understanding the spectrum demand situation in Canada.
11. First, while incumbent operators have done a good job of making wireless services available to a broad swath of the population, there are regional variations in demand for wireless broadband services, and in MTS Allstream's view, there is unsatisfied demand for wireless broadband in less densely populated regions of the country where adequate,

affordable wireline alternatives may not be economically available. It may come as a surprise to some that regional demand for commercial mobile spectrum could be even greater on a per subscriber basis in less densely populated centres, as compared to urban centres. As the data provided in Table 1 of MTS Allstream's confidential Appendix "A" submitted herewith illustrates, average data usage on a per subscriber per month basis on MTS Allstream's mobile wireless network outside of the Winnipeg area is roughly double that of the average subscriber within Winnipeg. Thus, the Department and the industry must consider not only the expected growth in demand for mobile data based on current growth rates on deployed networks, but also the latent, unfulfilled demand in rural communities that are currently unserved or underserved by a minimal level of functional broadband access.

12. Second, it is important to distinguish between high frequency mobile spectrum (greater than 2 GHz) and low frequency mobile spectrum (less than 1 GHz) and the implications of this distinction for rural mobile broadband.
13. High frequency commercial mobile consists of PCS, AWS, and BRS spectrum. High frequency spectrum in these bands is characterised by lower propagation characteristics and a higher tendency to scatter. The design consequence of the physical attributes of higher frequency spectrum is that they require smaller cell radii. Thus, where there is sufficient subscriber density, there may be an economic case to build the dense antenna infrastructure required to deliver mobile communication services using high frequency spectrum. This type of frequency is best-suited to deliver voice and data services in urban areas. For example, AWS spectrum is a cost-effective means of covering high density population centres. However its propagation characteristics are poor for covering large geographical areas with less dense population.
14. On the other hand, low frequency commercial mobile spectrum, like 700 MHz spectrum, is characterised by better propagation and penetration characteristics, meaning that every antenna site covers a wider radius, thereby alleviating the need for more tower infrastructure.

15. High frequency and low frequency spectrum are not interchangeable, particularly in rural areas. Low frequency spectrum is uniquely-suited to provide both voice and data service coverage to rural Canada where population densities are low to extremely low. Instituting rural coverage using high frequency PCS, AWS or BRS spectrum would require dotting the landscape with a costly and significant number of additional towers which may not be fully utilized. Indeed, on a greenfield basis, an AWS/PCS build-out would be approximately twice as expensive as a cellular/700 MHz build.
16. Thus, high frequency spectrum is best seen as *complementary* to cellular and 700 MHz spectrum rather than interchangeable. And while other fundamental challenges to delivering broadband to rural communities via backhaul facilities remain, currently, the rural broadband challenge is further complicated by the scarcity of suitable spectrum to provide the access portion of rural telecommunications networks.
17. Third, it bears noting, and repeating, that given the size of the Canadian wireless market, Canadian deployment designs and plans are contingent on the availability of a variety of subscriber devices at a reasonable cost. It is expected that the LTE device ecosystem will largely centre around the spectrum holdings of the major U.S. carriers, namely Verizon and AT&T, who are currently focused on their 700 MHz broadband deployments. Given the relatively small size of the domestic Canadian market for commercial mobile communications services, made-in-Canada band allocations in these services would stifle growth. It would be even more problematic if blocks of spectrum that were awarded to a service provider did not correspond to a similar award south of the border. Coordinated cross-border band plans will further enhance the deployment and delivery of advanced broadband services.
18. Fourth, spectrum must always be in place or be available to a carrier in order to manage transitions between declining and ascendant technologies. Managing the transition of networks and subscribers from legacy technologies to advanced technologies requires time and capital, as well as spectrum for hold-over since mobile operators must maintain service in legacy technologies while also making services in new technologies ubiquitously available.

19. For this reason, established cellular network providers will need to simultaneously support at least two, but in some cases three, network technologies, for a total minimal spectral requirement of 17.4 MHz of spectrum, consisting of a dual UMTS/HSPA carrier channel of 10 MHz (2x5 MHz) and one CDMA carrier channel and one EVDO carrier channel of 7.4 MHz (2x3.7 MHz).
  
20. MTS Allstream anticipates that it will be required to support up to three different commercial mobile service technologies at a time over the near-term (five to ten years), namely CDMA/EVDO, UMTS/HSPA, and LTE. This signifies that the total minimal spectral requirement would be a minimum of 37.4 MHz - before taking capacity considerations into account.

### **III. 700 MHZ BAND PLAN ISSUES AND CONSIDERATIONS**

#### **5.1 700 MHz Band Plan Architecture for Commercial Mobile Systems**

##### **(1) Which Band Plan should be Adopted and Why? Option 1**

5-1. *Which of the four band plan options should be adopted in Canada? Why is this option preferred over the other options? If Option 3 (APT band plan) is selected, what should the block sizes be?*

21. Subject to the position set out below in relation to guardbands, MTS Allstream recommends alignment with the U.S. band plan for 700 MHz. As stated in response to question 4-1, the Canadian market operates within a larger North American device ecosystem of base stations and handsets. Of necessity, therefore, the band plan that is chosen should at a minimum match the base transmit frequency (Tx) and base receive frequency (Rx) assignments used in the U.S. There are significant advantages for Canadian mobile operators and consumers associated with the adoption of the U.S. band plan for the 700 MHz band, namely the economies of scale derived from being able to use the same or similar handsets and other equipment being used with compatible technologies deployed south of the border. This, in turn, speeds up network build-out and user adoption in the 700 MHz band.

22. Although all of the U.S.-based band plan options under consideration suffer a fundamental problem of spectral inefficiency, *i.e.*, under Option 1, as explained in the 700 MHz Consultation Document, up to 12 MHz of spectrum would not be used effectively, and no guardbands are provided between the paired and unpaired blocks in the lower 700 MHz band.<sup>2</sup> Given our proximity to the United States and the nature and extent of formal and informal interaction between the Canadian mobile wireless market and the U.S. market, MTS Allstream supports alignment with the U.S.-based band plan under Option 1 as described in the 700 MHz Consultation Document. 3GPP band plans and terminal equipment already exist to match the U.S. allocations in the 700 MHz band – this will speed network build-out and user-adoption in this band. Options 2a and 2b, which are permutations of the U.S. band plan, do not create any net benefit, given existing 3GPP bands match the U.S. allocation.
23. While Option 3 (the Asia-Pacific Telecommunity band plan or APT band plan) is the best overall plan from a spectral efficiency perspective, the main and fatal drawback of the Option 3 is that under this option, the base Tx and the base Rx in both the lower and upper 700 MHz bands will result in the transmitters of Canadian network operators transmitting in the receive frequencies of U.S. operators, and conversely the transmitters of U.S. network operators transmitting in the receive frequencies of Canadians operators. Mitigating these impacts would be extremely difficult, and would make cross-border coordination troublesome.

**(2) Should Guardbands Be Retained? Yes**

5-2. *The band plans presented in [Options 2a and 2b] include guardbands. Should the Department auction the guardbands, or should these frequencies be held in reserve for future use such that they are technically compatible with services in the adjacent bands?*

*Also comment on any related aspects not addressed above or other possible options, including combinations of options.*

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<sup>2</sup>

700 MHz Consultation Document, pp. 16-17.



24. Guardbands should be held in reserve by Industry Canada to ensure that there is no interference between Time Division Duplex (TDD) and Frequency Division Duplex (FDD) frequencies.<sup>3</sup>
25. In addition, if the guardbands are to be held in reserve, they should not be considered for future use by licence-exempt wireless systems, since such use has the potential to cause the very risk of interference that the reservation of guardbands is meant to mitigate in the first place.
26. In the event that guardbands are nonetheless considered for future use by licence-exempt wireless systems, the guard bands should not be used for high-power broadcast applications, which are the most likely to cause harmful interference.

## **5.2 Public Safety Systems**

### **(3) Public Safety's Need for Broadband Spectrum**

5-3. *Do public safety agencies need spectrum for broadband applications?*

27. Today, the voice communications needs of public safety agencies are met by separate and distinct networks, while the data systems of most public service agencies use the public cellular networks across Canada. Going forward, it is possible that the data demands of public safety communications networks will increase hand-in-hand with technological innovation. And, as demand on the public cellular networks increases, there is a possibility that critical data communications capacity will be unavailable in an emergency or crisis situation increases. Given that public cellular networks are running at or near full capacity at the present time, it will become increasingly difficult to guarantee fail-safe priority for public safety uses on commercial networks.
28. Just as emergency response agencies require a separate network for their voice communications needs today, they will likely require a separate network for their data

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<sup>3</sup> See comments to similar effect in MTS Allstream's 10 September 2010 comments on *Consultation on changes related to the band plan further to Consultation on Transition to Broadband Radio Service (BRS) in the Band 2500-2690 MHz* at paragraph. 7.

and broadband applications in the future. In all likelihood, technological innovation will permit converged, spectrally efficient mobile wireless transmission and reception of both their voice and data communications.

(a) *How much and for which type of applications?*

29. Public safety agencies require access to broadband spectrum for such things as running mapping applications in real-time, report-generation, exchange of still and moving-picture video, and access to databases.

(b) *What are the anticipated deployment plans and the possible constraints, if any, in implementing these plans?*

30. As a general comment, it would be prudent and efficient for the Department to await or seek to provide input into the U.S. administration's decision-making on the allocations and standards for public safety services in the 700 MHz band.

31. In MTS Allstream's view, public safety deployments are likely to be beyond the 2014 timeframe. Based on the timing of the commercial 700 MHz licences anticipated in 2012, and the need to wait for an established Public Safety ecosystem in the 700 MHz band in the U.S., MTS Allstream does anticipate a dedicated public safety deployment in Canada until after 2014.

(c) *Is there suitable alternate spectrum to the 700 MHz to meet these broadband requirements?*

32. Due to the propagation characteristics of the 700 MHz spectrum, this is an ideal band for public safety voice and data communications. Additionally, both user equipment and network equipment is being produced with support for this band.

**(4) *Interoperability of Public Safety Broadband Radio Systems***

5-4. *Comments are sought on the need for public safety broadband radio systems to be interoperable:*

(a) *between various Canadian public safety agencies;*

(b) *between Canadian and U.S. public safety agencies.*

5-5. *What are the challenges faced today by public safety agencies to have cross-border radio interoperability in other frequency bands?*

*Supporting rationale for your responses should be provided.*

33. Public safety agencies are better placed to specifically comment on the challenges and issues associated with the lack of interoperability that may exist today, and on the extent of the need for improved interoperability in the future.

**(5) *Can Public Safety Broadband Needs Be Met Using Commercial Systems?***

5-6. *Notwithstanding your responses to questions 5-3 to 5-5, the Department seeks comments on whether public safety broadband needs can be met by using commercial systems with priority access rights for public safety, at commercial rates.*

(a) *Your views and comments are invited on priority access rights, including pre-emption, and on the feasibility of such a system.*

34. While there are mechanisms in all current commercial technologies to support pre-emption, these are all predicated on the assumption that the demands on the radio access network are not so great that in a disaster situation the cell site in question can still discriminate and receive messaging from a priority device trying to get access.

35. There are reasons to doubt the validity of that assumption as there is a possibility of failure of the existing mechanisms which could represent an unacceptable risk for critical public safety communications.

(b) *What public safety technical and operational requirements cannot be met by commercial systems, from either a public safety or commercial operator point of view?*

36. Operationally, commercial networks are managed differently than public safety networks. The grade of service metrics on commercial systems are generally lower than those required by public safety communications systems.

(c) *What specific rules, if any, should be mandated by the Department to make such a system viable?*

37. MTS Allstream supports the creation of a dedicated public safety spectrum and dedicated public safety networks and infrastructure, and therefore no such rules should be mandated on commercial networks. Existing rules around mandated tower sharing and the recent upgrades to Canada's commercial networks will naturally aid in the build-out of such public safety networks in the future.

**(6) Dedicated Interoperable Broadband Networks**

- 5-7. *Comments are sought on the need for regional (local, provincial, etc.) dedicated broadband networks to provide access to all public safety agencies, and the institutional feasibility of implementing such a system.*

38. There are inherent advantages to creating and maintaining a dedicated broadband public safety network, for all agencies to use in the event of an emergency or disaster, which is purposely designed and built to handle the demands of all levels of public safety.

**(7) Need for Dedicated National Interoperable Broadband Public Safety Network**

- 5-8. *Is there a need for a dedicated national interoperable broadband network to provide access to all public safety agencies? The Department seeks comments on the institutional feasibility of implementing such a system.*

39. Public safety agencies are better-placed to provide specific comments on the desirability of an interoperable national broadband network.

**IV. 700 MHZ BAND PLAN ARCHITECTURE FOR PUBLIC SAFETY SYSTEMS**

**(1) Public Safety Band Plan Options**

- 5-9. *If band plan Option 1, 2a, or 2b in Section 5.1 is chosen, which one of the three options described above should be adopted and why is this option preferred over the other options?*

40. Consistent with the comments above on the commercial mobile wireless band plan, MTS Allstream believes that harmonization with the U.S. band plan in the 700 MHz band offers the greatest benefit to Canadian public safety agencies, as developments in that market will not adversely affect the systems deployed in Canada.

**(2) Tier Sizes If Commercial Operators Are Mandated to Support Public Safety Services**

5-10. *If commercial operators are mandated to support public safety services, what tier size should be applied in order to ensure adequate public safety coverage?*

41. Tier 1 or Tier 2 service areas should be applied to meet the coverage needs of public safety services. This tier definition aligns with the provincial mandate and boundaries within which most public safety agencies operate, thereby reducing the administrative and operational burden on public safety agencies.

**(3) APT Public Safety Band Plan**

5-11. *If the APT band plan (See Option 3 in Section 5.1) is adopted:*

- (a) *Given that the APT band plan requires a 55 MHz duplexing separation, can Canadian public safety services operate their current narrowband systems in this band plan configuration? If not, what are possible alternatives to address public safety needs?*
- (b) *Should spectrum be designated for dedicated public safety broadband systems, and how much?*
- (c) *You are also invited to comment on any related aspects that are not addressed above, including whether the decision should be delayed until the U.S. situation is known.*

42. As stated above, MTS Allstream does not believe it is practical or prudent to adopt the APT band plan (Option 3) for 700 MHz. Current trunked radio systems used for public safety in the 700 MHz band are fixed to a 30 MHz duplexing separation, and would therefore be incompatible with the 55 MHz duplexing separation used in the APT band plan.

**5.3 Tier Sizes for 700 MHz Auction of Commercial Spectrum**

**(1) Tier Sizes for 700 MHz Spectrum**

5-12. *The Department seeks comments on whether the auction of 700 MHz commercial spectrum should be based on uniform tier sizes across all spectrum blocks, or a mixture of tier sizes.*

5-13. *Based on your answer above, what tier size(s) should be adopted?*

43. MTS Allstream recommends that for commercial mobile services in the 700 MHz band, the Department should adopt an approach similar to that used in the AWS band, namely a mixture of Tier 2 and Tier 3 definitions.
44. As noted in MTS Allstream's comments in the *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*<sup>4</sup>, *Canada Gazette*, Part I, 11 April 2009 - DGRB-001-09, the Department's geographic "tiers" provide useful ways of aggregating markets over the country, particularly for mobile service. Given the historical licensing regimes – e.g., assignment of cellular licenses to individual incumbent phone companies – there is a patchwork of operators and license types across Canada.
45. As a result of the AWS auction there are a number of entrant carriers that have spectrum on a regional basis.
46. The existing tiers include both urban and rural areas, and in some cases remote areas, within the same tier. This is the case both at the "higher level" tiers – e.g., the Tier 2 license for most provinces covers the entire province – as well as the more granular Tier level. For example, the Tier 4 licenses that cover core urban areas include more population than Statistics Canada includes in the "Census Metropolitan Areas" (CMAs).<sup>5</sup> This added non-CMA population is essentially rural in nature, otherwise Statistics Canada would have presumably included them in the CMA, which is the urbanized area.
47. The decision on tier sizes should balance the objective of promoting competition, which is most likely to materialise in urban areas, with the equally important objective of promoting rural wireless broadband deployment.
48. However, tier size definition alone is unlikely to result in achievement of both objectives, and especially not the latter in particular. Dividing up tiers into rural and urban areas

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<sup>4</sup> Comments of MTS Allstream, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, *Canada Gazette*, Part I, 11 April 2009 - DGRB-001-09 (15 June 2009).

<sup>5</sup> Industry Canada uses 2001 census figure for the license Tiers. The Toronto T4 area has 5.6M population, whereas the StatsCan CMA census figure for 2001 includes only 4.6M. For Vancouver the T4 includes 2.2M, compared to 1.9M in the CMA in 2001, Montreal includes 3.7M in the T4 versus 3.4M in the CMA I in 2001, Winnipeg includes 722k in the T4 area compared to 677k in the CMA in 2001.

would be resource-intensive, and while it may provide greater incentive on smaller players to bid on a greater number of licences, it would do little to meaningfully promote bidding on licences for rural areas. In the absence of specific regulatory intervention, licensing only large geographic areas would disincent new entrants and would not, of itself, rectify the urban-rural imbalance.

49. 700 MHz spectrum has the potential to be effectively deployed in less densely populated regions of Canada. Given that 700 MHz is suitable for rural broadband applications, it would be a wasted opportunity for the auction to result in no take-up of licences in rural areas or take-up with no rural deployment. In order to achieve a balance between the twin objectives of promoting competition and achieving sustainable rural wireless broadband deployment, MTS Allstream recommends that:

- (a) The Department adopt a Tier 2 definition in the most highly-contested or desirable of the blocks in the 700 MHz band (*i.e.*, the lower B and lower C) blocks;
- (b) For all other blocks, MTS Allstream recommends that the Department use a combination of Tier 2 and Tier 3 definitions, depending on the density of the population in question.

50. MTS Allstream's comments pertaining to tier sizes as they relate to the promotion of service deployment in remote and rural areas (and a recommended specific rural broadband commitment attached to lower B and lower C block licences) are addressed within the responses to Section 8 of this 700 MHz Consultation Document.

#### **5.4 Treatment of Existing Spectrum Users**

##### **(1) LPTV Stations**

*5-14. The Department Seeks Comments on the Transition Policy for LPTV Stations*

51. The Department proposes that the displacement of the incumbent LPTV stations be subject to a notification period of one year for LPTV stations located in urban areas or in

specific geographic areas, such as along highway corridors; and a period of two years for LPTV stations in all other areas. A displacement notification can be issued only after technical determination is made concluding that continued operation of the incumbent LPTV station would impede the deployment of new licensed systems in the 700 MHz band.

52. MTS Allstream agrees with the Department's proposal regarding the treatment of existing LPTV Broadcasters and the transition periods for clearing the 700 MHz commercial spectrum.

**(2) Low-Powered Devices, Including Microphones**

5-15. *The Department seeks comments regarding its proposal to permit low-power licensed devices, including wireless microphones, to operate in the band 698-764 MHz and 776-794 MHz only until March 31, 2012*

53. MTS Allstream agrees with the Department's proposal to permit low-power devices in the band 698-754 MHz and 776-794 MHz only until March 31 2012. While these devices have a very limited range, they do have the ability to impair the proper operation of mobile stations operating in the same area.

**V. CHANGES TO CANADIAN TABLE OF FREQUENCY ALLOCATIONS**

**(1) Agreement with Proposed Changes to the CTFL**

6-1. *The Department seeks comments on its proposed changes to the Canadian Table of Frequency Allocations for the band 698-806 MHz.*

54. In RP-014, issued in 1995, Industry Canada clarified the definition of a Cellular Mobile Radio Service (CMRS), and placed no limitations on the types of mobile radio or personal communications applications to be deployed in the cellular mobile bands.
55. The Department proposes to refer to the commercial radio systems to be deployed in the 700 MHz band as Mobile Broadband Services (MBS) band. The MBS systems would be compliant with the RP-14 definition for CMRS. Subject to technical compatibility considerations, there will be no restrictions on the services to be offered by licensees in



the MBS. The 700 MHz band will be allocated to MBS with the exception of any frequency blocks that may be designated for public safety uses.

56. MTS Allstream agrees with the proposed changes to the Canadian Table of Frequency Allocations.

**(2) Agreement with Spectrum Utilization Policy**

6-2. *The Department seeks comments on the spectrum utilization policy proposed above.*

57. MTS Allstream agrees with the proposed spectrum utilization policy and with the designation of commercial radio systems deployed in the 700 MHz band as Mobile Broadband Systems (MBS), where such systems are compliant with the definition of Cellular Mobile Radio Service defined in RP-14.

**VI. PROMOTING COMPETITION**

**7.1 Possible Need to Promote Competition**

7-1. *The Department seeks comments on the current state of competition and its anticipated evolution, including the impact on consumers in the Canadian wireless services market:*

- (a) *in general;*
- (b) *in terms of its contributions and interaction to the broader Canadian telecommunications service market;*
- (c) *in comparison with the wireless markets of other jurisdictions.*

7-2. *Provide views, and any supporting evidence, on the impacts of government measures adopted in the AWS auctions, including the impacts on consumers and on the state of competition. In particular, what has been the impact, if any, of such measures on industry concentration, barriers to entry or expansion of services, and the availability of new or improved service offerings and pricing plans?*

58. As a result of the AWS Policy Decision, the challenge brought by competitive entry has been met with enthusiasm. Even within this short time span, end users have seen the benefits of competition in the form of investments enabling the transition to 3G+ HSPA and LTE trials, increased brand and service plan options and on a limited (but restrained) basis, some price differentiation. To name but a few highlights:

- (a) Innovation: With the exception of Public Mobile, which has deployed a CDMA network, all of the new entrants have deployed network infrastructure based on 3G+ wireless technology and are in the process of expanding the geographic coverage of their respective networks. Collectively, this represents a significant further investment in wireless network infrastructure in Canada. For instance, Videotron indicated that its 3G+ infrastructure investment in Quebec over the last two years came to \$1.0 billion in total.<sup>6</sup> In response to competitive entry and the mere threat of competitive entry, Bell and TELUS announced and launched a joint 3G+ (HSPA) network across the country ahead of schedule in November 2009,<sup>7</sup> and in late 2010, each announced that they were the first carriers in North America to begin deployment of upgrades to their joint 3G+ network using HSPA+ Dual Cell technology, which allows a doubling of data network access speeds.<sup>8</sup> Moreover, Bell and TELUS' joint network development plans also include provision for further network upgrades to LTE technology in the future.<sup>9</sup>
- (b) Rogers, for its part, while having a 3G+ wireless network built out well in advance of Bell and TELUS, has recently announced the launch of a 4G LTE-based wireless technology trial.<sup>10</sup>
- (c) Brand Choices: There has been a proliferation of brand choices, from both the Big 3 with their flanker brands and new entrants, namely, WIND Mobile, Mobilicity, Public Mobile and Videotron, with others, such as Shaw and Bragg Communications readying to deploy.
- (d) Service Options: The new entrants have launched a range of innovative new services, featuring, for instance, non-contracted unlimited talk,<sup>11</sup> unlimited text,

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<sup>6</sup> Videotron, *Videotron launches new mobile service on the fastest network and introduces unprecedented offerings*, Press Release, 9 September 2010.

<sup>7</sup> BCE, *It's On: Bell's new HSPA network now live across Canada*, Press Release, 4 November 2009.

<sup>8</sup> BCE, *Bell doubling data speeds on world-leading HSPA+ wireless network*, Press Release, 18 November 2010 and TELUS, *TELUS to increase Canada's fastest wireless data network speeds*, Press Release, August 3, 2010.

See BCE Press Release, *Bell announces strategic 3G wireless network investment, maximizing consumer choice in mobile data and confirming its path forward to 4G LTE wireless*, 10 October, 2008 and TELUS Press Release, *TELUS announces evolution to fourth generation wireless Progressing leadership position in high speed wireless*, 10 October 2008.

<sup>10</sup> Rogers, *Rogers announces first LTE technical trial in Canada*, Press Release, 6 October 2010.

unlimited national, U.S., and even international long-distance and unlimited data service plans. The incumbents have been forced to respond to these by providing comparable new service plans of their own (to date, typically through their flanker brands).

59. However, two years is not enough time for this *nascent* competition in the wireless market to sustainably take root, especially for a market the size of Canada's. In terms of market concentration, wireless penetration rates and prices, the Canadian wireless market has a long way to go, especially for rural Canadians or those living in less densely populated regions.

**(1) Market Concentration**

60. In 2007, the Government and Industry Canada were clearly concerned with the highly concentrated structure of the Canadian wireless sector, noting at the time that the Big 3 accounted for 94 per cent of subscribers and 95 per cent of revenues in the national wireless market.<sup>12</sup> The balance of the market was accounted for by regional wireless service providers such as MTS Allstream and SaskTel, and a number of Mobile Virtual Network Operators (MVNOs).
61. As illustrated below in Figures 1 and 2, little has changed.<sup>13</sup> Investment analysts have suggested that new entrants (*i.e.*, WIND, Mobilicity, Public Mobile and Videotron) likely acquired in the order of 350,000 to 400,000 subscribers as of year-end 2010.<sup>14</sup> MTS Allstream estimates that the small regional operators collectively gained in the order of 70,000 subscribers last year, for a combined total of approximately 1.2 million

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<sup>11</sup> Fido and Clearnet introduced unlimited local plans in certain localities several years prior to the AWS auction. However, these have been expanded and improved as noted by new entrants as a result of the AWS auction.

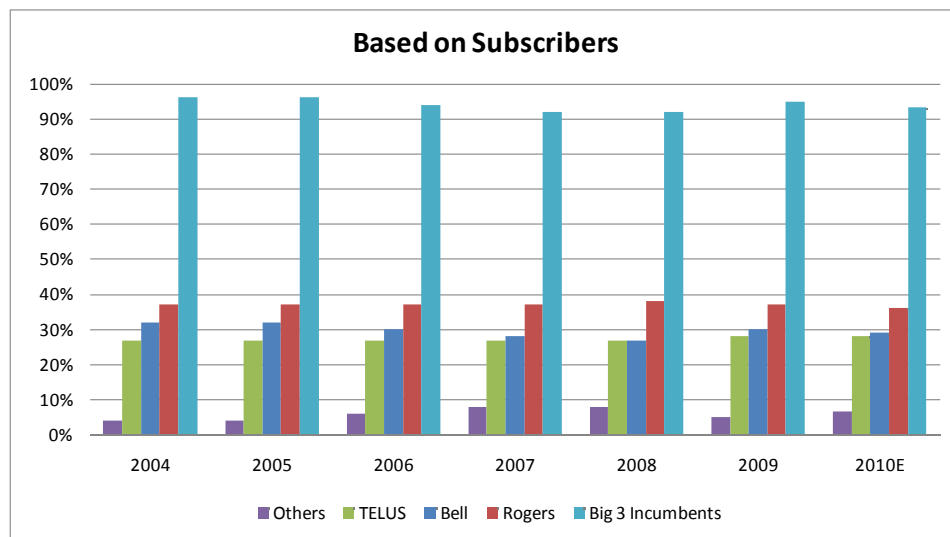
<sup>12</sup> Industry Canada, Press Release, *Government Opts for More Competition in the Wireless Sector*, 28 November 2007.

<sup>13</sup> Note that the subscriber and revenue-based market shares reported in Figures 1 and 2 for the years 2004 to 2009 have been drawn from the CRTC's annual Monitoring Reports. MTS Allstream developed comparable market estimates for 2010 based on its own and Bell, TELUS and Rogers' publicly reported fourth quarter 2010 financial and operating results. MTS Allstream also relied on investment analyst reports to estimate new entrants' year-end 2010 subscriber levels and revenues.

<sup>14</sup> Bank of America Merrill Lynch, *Canada's wireless new entrants gain momentum*, 20 December 2010, page 5. This figure could be as high as 450,000 including Videotron's pre-existing MVNO subscriber base as reported in its quarterly financial and operating results.

subscribers.<sup>15</sup> In contrast, the Big 3 grew their joint wireless subscriber base by over 1.3 million in the same period, for a combined total of 23.2 million subscribers.<sup>16</sup> Thus, as of year-end 2010, the new entrants likely accounted for *no more than 1.5 per cent* of the overall market, and the small regional operators likely accounted for close to 5% of the market.<sup>17</sup> For their part, the Big 3 continue to control almost 95 per cent of Canadian wireless market by revenues and subscribers.

**Figure 1 – Canadian Wireless Market Shares**



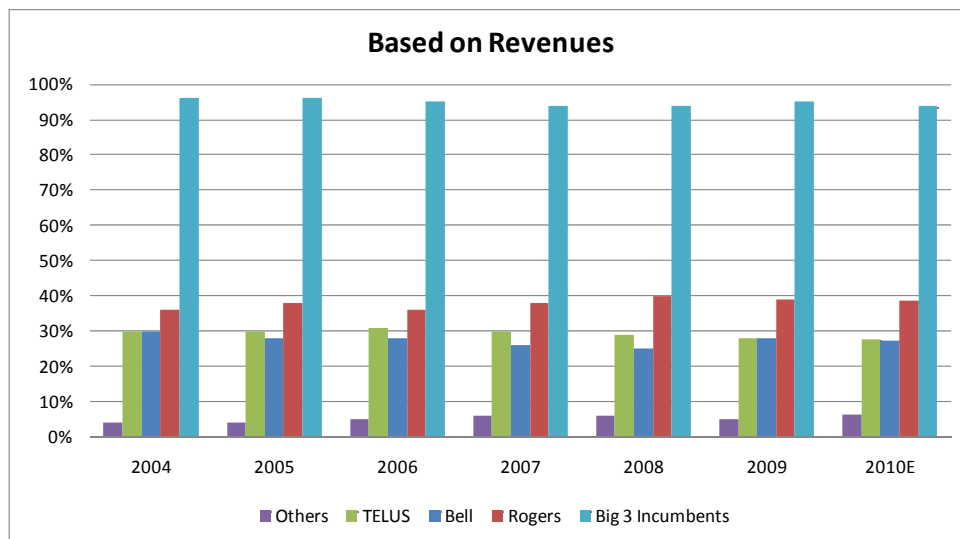
Source: CRTC Monitoring Reports (2004-09) and MTS Allstream estimates for 2010.

<sup>15</sup> This includes a net gain of roughly 25,000 subscribers in MTS Allstream's own case, as reported in its fourth quarter 2010 financial and operating results.

<sup>16</sup> Based on Bell, TELUS and Rogers' publicly reported fourth quarter 2010 financial and operating results.

<sup>17</sup> This market share estimate includes all wireless service providers, including the Big 3, MTS Allstream, SaskTel, regional operators and MVNOs. In Videotron's case its pre-existing MVNO subscriber base is included as part of the new entrants market share.

**Figure 2 – Canadian Wireless Market Shares**



Source: CRTC Monitoring Reports (2004-09) and MTS Allstream estimates for 2010.

62. Although according to Merrill Lynch's *Global Wireless Matrix*<sup>18</sup> mobile market scorecard for third quarter 2010, Canada now ranks among the highest in terms of competitiveness when compared to other developed countries in Europe and the Asia-Pacific area, that ranking is based on the assumption that the number of wireless networks in Canada is *five*. This fails to take into account the limited scale and scope of the new entrant roll-out, which is largely in major urban areas, and fails to capture the very real urban/rural divide in Canada.

**(2) Mobile Penetration**

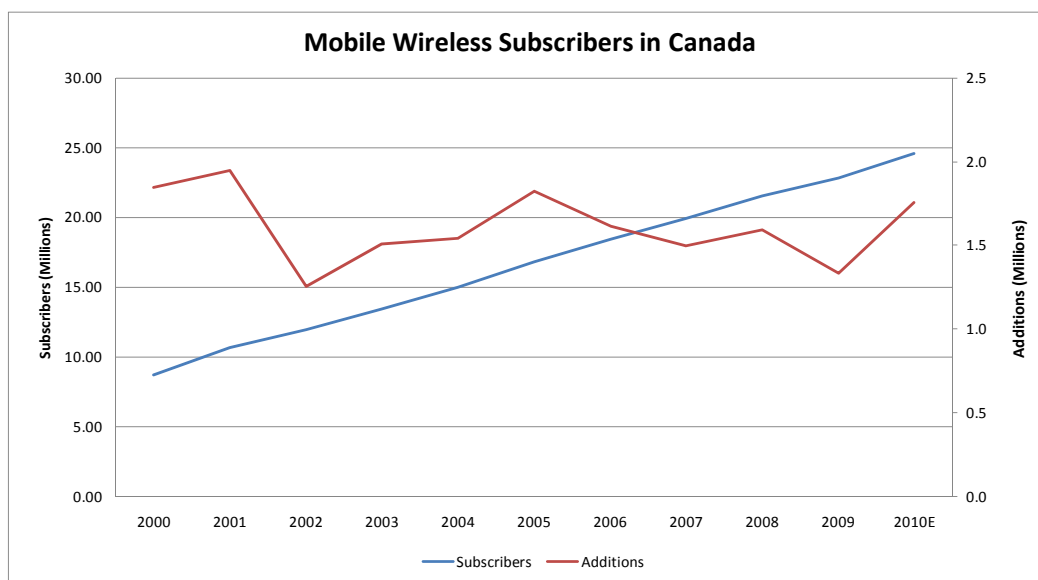
63. In terms of mobile penetration rate relative to that of other developed countries, according to Merrill Lynch's *Global Wireless Matrix Reports*,<sup>19</sup> as of the third quarter of 2010, Canada's mobile penetration rate (as a percentage of population) was 70 per cent, up from 58 per cent in mid 2007. However, during the same period, penetration in the U.S. grew from 80 per cent to 95 per cent. Thus, the penetration gap between Canada and the U.S. has increased *slightly* over the last three years. Notably, the penetration

<sup>18</sup> Bank of America Merrill Lynch, *Global Wireless Matrix 3Q10*, September 24, 2010, page 23.  
<sup>19</sup> Merrill Lynch, *Global Wireless Matrix 2Q07*, October 4, 2007 and Bank of America Merrill Lynch, *Global Wireless Matrix 3Q10*, September 24, 2010.

gap between Canada and the developed economies of Europe and Asia-Pacific has further widened.

64. It is too early for the AWS policy to have had any significant impact on the mobile penetration rate in Canada; however, the presence of new and lower priced mobile service offerings should help accelerate subscriber growth and therefore mobile penetration in the coming years. Figure 4 below, shows that the growth rate in mobile subscribers in Canada has fluctuated between 1.3 and 1.9 million net additions each year over the last decade. Based on available data, it appears that net additions for 2010 should be in the order of 1.75 million.<sup>20</sup> Investment analysts expect growth in 2011 and 2012 to be in the 1.75 to 2.0 million range, with new entrants accounting for up to one-third of net additions.<sup>21</sup> Therefore, while new entry may help accelerate mobile penetration in Canada, it will likely only do so to a limited degree in the intermediate term.

**Figure 4**



Source: CWTA and MTS Allstream estimates for 2010.

<sup>20</sup> MTS Allstream on its own and Bell, TELUS and Rogers' publicly reported fourth quarter 2010 financial and operating results along with investment analyst reports to estimate 2010 wireless subscriber net additions.

<sup>21</sup> See, for instance, Bank of America Merrill Lynch, *Canada's wireless new entrants gain momentum*, 20 December 2010 and BMO Capital Markets, Telecom Research, *Tracking of the Canadian Wireless Industry*, 19 August, 2010.

**(3) Wireless Service Prices and International Price Comparisons**

65. There is some limited, but conflicting evidence of price movement since 2007. The 2010 Wall Communications' price comparison study conducted for the CRTC and Industry Canada,<sup>22</sup> for instance, shows that the total price for a "medium use" basket of mobile wireless services<sup>23</sup> has fallen considerably over the last three years (*i.e.*, by 15 per cent in 2010 compared to 2008). However, "low use" and "high use" baskets were found to have changed little over the same three-year period.<sup>24</sup>
66. An interesting example is how the Big 3 eliminated their respective monthly system access fees (which had ranged from \$6.95 to \$8.95) in view of the fact that that none of the new entrants planned to charge customers such a fee. Notably, however, while these fees were eliminated, the Big 3's service plan rates were increased to offset, in large part, the associated revenue loss.<sup>25</sup> The fact that the Big 3 were able to do this provides further evidence that their market power has not been diminished by new entry.
67. In terms of international price comparisons, different international price comparison studies yield significantly different country ranking results depending on how service baskets are specified and prices are measured, among other factors. This caveat must be kept in mind when relying on the results of any single study. For example,
- (a) With respect to international voice plan comparisons, in reaching its AWS Policy Decision in 2007, Industry Canada indicated that it had taken into account the fact that Canadian wireless price levels ranked poorly among OECD countries based on the OECD's 2007 *Communications Outlook*.<sup>26</sup> The OECD's more recent 2009 *Communications Outlook*, shows that Canada's relative price

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<sup>22</sup> Wall Communications, *Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions: 2010 Update*, (2010 Wall Report) prepared for the Canadian Radio-television and Telecommunications Commission and Industry Canada, 16 April 2010.

<sup>23</sup> Which includes 450 monthly minutes of use, voice mail, caller display and 150 text messages per month.

<sup>24</sup> The low use basket includes 150 monthly minutes of use with no other features, whereas the high use basket includes 1,200 monthly minutes of use, a full set of calling features, 150 text messages and 1 GB of data usage per month.

<sup>25</sup> 2010 Wall Report, page 16.

<sup>26</sup> Industry Canada, *Government Opts for More Competition in the Wireless Sector*, Press Release, 28 November, 2007.

performance fell further rather than improved compared to the results reported in the 2007 *Communications Outlook* for each of the three mobile wireless service baskets included in the OECD's price comparison analysis of the 30 OECD member states. However, it should be noted that the OECD's wireless voice plan comparisons are based on low, medium and high voice usage levels that are *well below* those typically found in Canada and, even more so, the U.S. As a result, the Canadian and U.S. wireless service plans relied on by the OECD in its price comparison analysis tend to include more voice minutes than required to meet the OECD wireless service basket definitions for low, medium and high usage, and therefore, they also tend to be more costly than European plans;

- (b) Using Canadian average usage patterns for low, medium and high voice and text usage levels (including in the latter case 1 GB of monthly data usage) as a reference point, a comparison<sup>27</sup> of mobile wireless services rates in Canada with those in the U.S., U.K., France, Australia and Japan shows that in the case of the low volume basket, rates in Canada were found to be lower than those in the U.S., but higher than those of all other countries included in the study. In the case of the U.K. and Australia, the price gap is significant and has been growing over the last three years. In the medium volume basket, rates in Canada were found to be lower than those in the U.S. and France, but well above those in the U.K., Australia and Japan. In the case of the high volume basket (which includes 1 GB of data), Canada fell in the middle of the group in terms price, with rates that are once again higher than those in the U.K. and Australia. Overall, the results indicate that Canada, *at best*, falls within the middle of the group of selected countries;
- (c) Average revenue per minute (ARPM) provides an alternative basis to compare prices over time and across countries. According to Merrill Lynch's Global Wireless Matrix Reports,<sup>28</sup> over the last three years, Canada's ARPM has remained flat at US\$0.10. The ARPM in the U.S. has also remained flat over this same time period, albeit at a much lower still rate level of US\$0.04. While

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<sup>27</sup> 2010 *Wall Report*, pages 17-20.



Canada's ARPM of US\$0.10 is lower than found in most of the 15 European countries included in the Merrill Lynch *Global Wireless Matrix Report*, it is slightly higher than the ARPMs measured for the U.K., Sweden and Greece. Canada, therefore, compares relatively favourably on the basis ARPM, other than the fact that it is more than twice the level found in the U.S.;<sup>29</sup>

- (d) Industry Canada also indicated that it was concerned with the high prices of wireless data service rates in Canada relative to those in the U.S., Germany and the U.K. in 2007 when it issued the AWS Policy Decision.<sup>30</sup> This concern has been mitigated since that time, at least, with respect to the U.S.<sup>31</sup> However, rates for the high volume service basket, which include 1 GB of data, are consistently reported to be much lower in the U.K. relative to those in Canada (even when considering the results for WIND Mobile)<sup>32</sup>; and
- (e) Lastly, an international comparison of mobile wireless Internet service plans that included monthly data usage of 2 GB, with a minimum advertised download speed of 1.5 Mbps<sup>33</sup>, shows that the average price for this service in Canada was found to be \$54 in early 2010. Rates for the same service basket were found to be higher in the U.S. and Japan, while lower in France, the U.K. and Australia (significantly so in the latter two cases). Therefore, here again, Canada was found to fall largely in the middle of the group of selected countries.

68. All told, the evidence shows that there is considerable room for improvement in Canada in terms of mobile wireless service prices compared to other countries. Based on recent

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<sup>28</sup> Merrill Lynch, *Global Wireless Matrix 2Q07*, 4 October 2007 and Bank of America Merrill Lynch, *Global Wireless Matrix 3Q10*, 24 September 2010.

<sup>29</sup> The significantly lower ARPM in the U.S. relative to not only Canada but to other European countries as well is in large part due to the far higher average monthly minutes of use levels (AMOU) of U.S. subscribers. The large minute-bucket plans available in the U.S., which include unlimited local and nation-wide long distance evening and weekend calling, have resulted in AMOU levels in the U.S. which are roughly double those in Canada and several times higher than those in many European countries. These wireless service plans have resulted in significantly higher AMOUs and significantly lower ARPMs in the US compared to Canada as well as many other developed countries.

<sup>30</sup> Industry Canada, *Government Opts for More Competition in the Wireless Sector*, Press Release, Toronto, 28 November 2007.

<sup>31</sup> 2010 *Wall Report*.

<sup>32</sup> 2010 *Wall Report*, Figure 8, page 19.

<sup>33</sup> 2010 *Wall Report*, pages 26-29.

experience, it is clear that the main source of downward pressure on prices comes from the incumbent response to new entrants fighting for market share.

**(4) Need for Specific Measures to Promote Competition**

7-3. *In light of the current conditions in the Canadian wireless service market(s), is there a need for specific measures in the 700 MHz and/or 2500 MHz auction to increase or sustain competition?*

69. As demonstrated above, the AWS Policy Decision and in particular, the decision to set aside spectrum for new entrants, including smaller regional players, has proven effective in promoting entry and in increasing rivalry in the marketplace for the benefit of consumers. Competitive entry has stimulated appropriate competitive responses on the part of the Big 3, however, their market share remains virtually unchanged, penetration rates are lagging behind that of leading global economies and Canadians pay persistently high prices, particularly for what is today seen as “high” usage in Canadian terms, but is not seen as such in other parts of the world.
70. In order to improve the competitive picture, the market requires sustained new entrance. As the 700 MHz Consultation Document plainly shows, the Big 3 currently account for 85 per cent of existing spectrum holdings in the cellular, PCS, AWS and BRS spectrum bands (240 MHz of the 280 MHz available). Further, Red Mobile has estimated that 2 incumbent operators hold between 60-95 MHz in Toronto, 55-105 MHz in Montreal, 40-105 MHz in Vancouver and 40-105 MHz in Calgary). In contrast, new entrants collectively account for only 11 per cent of the cellular, PCS, AWS and BRS spectrum bands,<sup>34</sup> and some of the new entrants have 10 to 20 MHz of AWS spectrum in these four largest cities. The new entrants do not have sufficient spectrum assets to build the scale and scope that they would need to effectively compete into the future. They will require additional spectrum in the 700 MHz band in order to do so.
71. The barriers to entry and expansion in the Canadian wireless sector that the Department identified prior to AWS spectrum auction remain in place for new entrants, namely (i) access to spectrum; (ii) access to capital; and (iii) the dominance of the incumbents.

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<sup>34</sup> Industry Canada, 700 MHz Consultation Document, Figure 4.5, page 10.

72. The first barrier to entry arises from the fact that spectrum is a finite resource that is controlled by government. As Industry Canada aptly stated at page 3 of the AWS Policy Decision:

Radio frequency spectrum is a finite public resource essential to entry into wireless markets, and that resource is not readily available on the open market. Access to spectrum is a barrier to entry that only government can lift, and the amount and type of spectrum that can be made available at any given time are dependent on a range of international and domestic factors.

73. The second barrier is the relative and inherent disadvantage that smaller players of all stripes have in gaining access to capital. The costs of acquiring spectrum and building out wireless network facilities is substantial and all carriers' ability to fund such a build is predicated on revenues from operations and the ability to gain access to capital at economic rates. This is directly correlated to (i) overall service connection; (ii) overall revenues; and (iii) capital expenditures (generally a function of i) and ii)). Given the overall number of connections and overall revenue of the Big 3, it is clear that their relative ability to access capital is far greater than the rest of the industry.

74. The Big 3 provide customer connections for wireless and wireline telephony, Internet and video (cable, satellite and IPTV) services that total roughly 44 million connections.<sup>35</sup> Of these, wireless services account for about 23 million or 52 per cent of the connections.<sup>36</sup>

75. These connections furnish the Big 3 with combined total annual operating revenues of roughly \$40 billion, ranging from \$9.8 billion for TELUS, \$12.1 billion for Rogers to a high of \$18.1 billion for Bell. Collectively, wireless services contributed about \$17 billion or about 42 per cent of this ~\$40 billion. Not surprisingly, given that annual capital expenditure is generally a function of overall connections and revenues, the Big 3 have been able to expend roughly \$1.9 billion on their wireless networks over the course of

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<sup>35</sup> As at the end of 2010, based on fourth quarter financial and operating results, TELUS, Bell and Rogers provided roughly 12.2 million, 17.8 million and 14.0 million customer connections, respectively as at the end of 2010, based on fourth quarter financial and operating results, TELUS, Bell and Rogers provided roughly 7.0 million, 7.2 million and 9.0 million wireless customer connections, respectively.

this past year. These capital expenditures, or at least a large portion thereof, were no doubt stimulated because of the AWS policy supporting wireless entry and competition.

76. For the rest of the industry as a whole, customer connections and revenues (covering wireless, wireline, Internet and video services) are in the order of 15 million and \$9 billion, respectively,<sup>37</sup> falling far short to the Big 3 on both counts. As well, for the rest of the industry as a whole, wireless services contributed a significantly smaller portion of the overall connections and revenues, at roughly 1.5 million and less than \$1 billion, respectively, due to either the time in operation or the regional nature of the service providers.<sup>38</sup>
77. While the capital expenditures of the smaller players are either proportionately in excess of, or at minimum proportional to, those made by the Big 3, the sheer size and national

<sup>37</sup>

The rest of the industry includes: Bragg, Mobilicity, MTS Allstream, Public Mobile, SaskTel, Shaw, Videotron and WIND Mobile. Customer connection counts and revenues have been drawn from the latest available company-specific quarterly financial and operating results, where possible.

(i) **Bragg** has no wireless subscribers as of yet. It has otherwise indicated on its website that it currently has over 500,000 cable subscribers. Assuming penetration rates for its cable Internet and telephony services are similar to other cable companies, suggests that it provides at least 1.2 million customer connections in total. No revenue data is publicly available for Bragg.

(ii) According to Bank of America Merrill Lynch (20 Dec 2010), **Mobilicity** likely had in the order of 90,000 wireless subscribers as of year-end 2010; no revenue data is publicly available.

(iii) **MTS Allstream** had 484,000 wireless subscribers and 1.9 million customer connections as of year-end 2010. In addition, for 2010, its wireless revenues came to \$329 million and total operating revenues, \$1.8 billion.

(iv) According to Bank of America Merrill Lynch (20 Dec 2010), **Public Mobile** likely had in the order of 30,000 wireless subscribers as of year-end 2010; no revenue data is publicly available.

(v) **SaskTel** had 554,000 wireless subscribers and 1.4 million customer connections as of year-end 2009. In addition, for 2009, its wireless revenues came to \$376 million and total operating revenues, \$1.2 billion. SaskTel's year-end 2010 financial and operating results are not yet publicly available.

(vi) **Shaw** has no wireless subscribers as of yet; however, it otherwise provided 6.2 million customer connections as of 30 Nov 2010. In addition, as of fiscal year-end 2010 (31 Aug 2010), its total revenues were \$3.7 billion.

(vii) **Videotron** had 95,000 wireless subscribers as of the end of Q3 2010 (results for year-end 2010 have not yet been publicly released). As of that same time, it provided 4.2 million customer connections in total. Full year financial results are only available in Videotron's case for year-end 2009. As of that time, it had \$41 million in wireless service revenues and \$2.0 billion in total operating revenues.

(viii) According to Bank of America Merrill Lynch (20 Dec 2010), **WIND Mobile** likely had in the order of 200,000 wireless subscribers as of year-end 2010; no revenue data is publicly available.

Note that the estimated "rest of the industry" total operating revenue figure of roughly \$9 billion is somewhat under stated since it excludes revenues for Bragg, Mobilicity, Public Mobile and WIND Mobile and relies on 2009 revenues for SaskTel and Videotron.

<sup>38</sup>

See previous footnote. The same caveat applies with respect to the wireless revenue estimate of less than \$1.0 billion for the rest of the industry.

share of the Big 3 provides them with a greater advantage both in terms of cash flow to fund expenditures and economic access to capital overall.<sup>39</sup>

78. These realities are exacerbated by the existing legislated constraints on access to capital that arise from the foreign ownership restrictions on facilities-based carriers in Canada. In light of the foregoing data, it is clear that these restrictions hamper smaller players far more than the Big 3. In its AWS Policy Decision, Industry Canada recognized that the existing Canadian ownership requirements "... act as restrictions on foreign investment which constitutes a barrier to market entry." While there have been numerous recommendations to eliminate or at least modify the existing legislated Canadian ownership requirements, and the Government has announced its intention to make legislative changes in this regard in the near future, there is currently no certainty as to if or when such changes will be made.
79. In terms of all three of the key metrics – wireless subscriber counts and overall service connection counts; revenues; and access to capital, it is clear *that the Big 3 continue to enjoy significant advantages over new entrants and smaller regional wireless operators. This advantage not only provides the Big 3 with the ability to raise the capital necessary to fund spectrum acquisition and wireless network augmentation, it increases the relative value of the spectrum to these carriers. In order to maintain the advantages gained through their position of dominance, the Big 3 also have the significant incentive (and the clear ability) to try to squeeze smaller players out of the auctions.*
80. Industry Canada shares this view, as recognized in its AWS Policy Decision:

*With respect to spectrum auctions, submissions received in the AWS consultation have shown how incumbents have an incentive to pay a premium for spectrum to prevent market entry. The ability of incumbents to effectively act on these incentives and opportunities depends on a number of factors. These include how competitive the market is, notably ease of entry, and the prevailing policy and regulatory framework. In the case of the forthcoming*

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Comparable capital expenditure data is not available for WIND, Mobilicity and Public Mobile, but given that they are in the process of building out their networks, their capital expenditures are likely significant. MTS Allstream and SaskTel's total annual capital expenditures are, on average, \$273 million – i.e., roughly 13 per cent of the comparable average for the Big 3.

*auction, the policy framework can serve to constrain such behaviour, thereby promoting competition.*

81. As the evidence discussed above shows, all of these barriers to entry and expansion are as true today with respect to the forthcoming 700 MHz and 2,500 MHz spectrum auctions as they were in the period leading up to and spanning the AWS auction.

**(5) *Lifting of Foreign Investment Restrictions Would Not Mitigate Need for Regulatory Measures to Further Promote Competition***

7-4. *The Government of Canada has undertaken a consultation on potential changes to the foreign investment restrictions that apply to the telecommunications sector. How would the adoption of any of these proposed changes impact your responses to the questions above?*

82. Canada's legislated restrictions on foreign investment in telecommunications present a serious barrier to competitive entry due to the absence and/or very high cost of risk capital in Canada, and they are therefore an ongoing impediment to competition.<sup>40</sup>
83. The continued presence of foreign investment restrictions, particularly after repeated study and expert commentary from panels appointed by the Canadian government, respected international organizations, and our trading allies and partners, has branded Canada globally as having a *closed market* in telecommunications – an industry pivotal to our global competitiveness and productivity growth.
84. These restrictions are far more onerous on entrants and smaller regional players than the large national service providers. Factors such as agility and technical expertise notwithstanding, Canadian capital is typically risk averse, and there is less risk or more precisely, better ability to spread risk, on the part of the Big 3.
85. The outcome is the current and persistent dominance of the Big 3 and the consequent lagging innovation, productivity and adoption of information technology by Canadian businesses, and lack of choice for Canadian consumers and businesses alike.

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<sup>40</sup> In its 30 July 2010 submission to the Government of Canada: *Opening Canada's Doors to Foreign Investment in Telecommunications: Options for Reform Consultation* (30 April 2010), MTS Allstream outlined the negative consequences of the prevailing foreign investment restrictions in the telecommunications sector.

86. The Government of Canada demonstrated its willingness to actively work to counteract this state of affairs in the wireless telecommunications sector. With its AWS Policy Decision the Government took the first step, with great success. The recommendations in this submission for the 700 MHz auction and post-auction structure, in conjunction with the lifting of foreign investment restrictions for those in the industry with less than 10 per cent share of the national market, will encourage achievement of the Government's stated goal.<sup>41</sup> It will encourage investment, innovation and competition in the telecommunications sector for the benefit of both businesses and consumers. In MTS Allstream's view, this can best be met by the staged reform of Option 2 of the three options presented by the Government of Canada in *Opening Canada's Doors to Foreign Investment in Telecommunications: Options for Reform*. Option 2 involves the removal of all foreign investment restrictions for new entrants and existing carriers with less than a 10 per cent share of the national telecommunications market. It has a strong evidentiary basis, including the recommendations of both the Telecommunications Policy Review Panel and the Competition Policy Review Panel (the CPRP). Indeed, in the context of strengthening Canada's position as a global competitor, the CPRP, in its report *Compete to Win*, concluded that foreign investment restrictions for the telecommunications sector should be removed on a staged basis. The initial phase of this staged approach is mirrored by the Consultation Paper's Option 2, that is, removing all foreign investment restrictions for new entrants and existing carriers with less than \$4 billion in annual revenues.
87. While Option 2 is the preferred option – Option 3 – the immediate and complete removal of the foreign investment restrictions for all Canadian carriers, regardless of their size – would also create meaningful change by removing an uncharacteristically protectionist and counter-productive measure from Canadian regulation.
88. Option 1, only altering the percentage of voting shares that can be held by non-Canadians from the existing 46 2/3 per cent to 49 per cent and retaining the control in fact test – will do nothing to alter the telecommunications landscape. It will not increase

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<sup>41</sup> "Our goal is to encourage investment, innovation and competition in the telecommunications sector for the benefit of both businesses and consumers" – Minister Clement, News Release, 11 June 2010, *Government of Canada Consults with Canadians on Foreign Investment in the Telecommunications Industry*

access to much-needed risk capital in a meaningful way, if at all. *At best, this option will result in inconsequential change at the margin – a poor return on what will still require significant legislative effort.* It is no surprise that this option has not been recommended by any of the bodies that have studied the impact of the investment restrictions over the past ten years in Canada

89. Under either of the preferred options – Option 2 or Option 3 – lifting the foregoing investment restrictions alone will not be sufficient to promote and sustain wireless entry. In wireless markets entry is subject to a price dictated by an auction structure, therefore, lifting the restrictions without providing new entrants and smaller regional players access dedicated blocks of spectrum would likely result in the Big 3 national players using their relative wealth to squeeze smaller providers out of the bidding for the highly-coveted (low frequency) 700 MHz spectrum. Lifting the investment restrictions under either Option 2 or Option 3 will not change the risk profile of new entrants and smaller regional players. Irrespective of legislative action to remove this longstanding barrier to competitive growth, measures similar to those adopted in the AWS auction are necessary to promote and sustain competition in the best interests of Canadian consumers and businesses.

## **7.2 Specific Mechanisms Applicable to the 700 MHz and 2500 MHz Auctions**

7-5 *If the Department determines that there is a need for measures to promote competition, which of the above mechanisms [spectrum aggregation limits and set-asides] would be most appropriate and why should this mechanism be considered over the other? Comments should also indicate if further restrictions should apply so that policy objectives are met, for example, over a given time period?*

90. Relative access to capital continues to be a relevant criterion for acquisition of mobile wireless spectrum where the asset being sought is finite, and failure to acquire it generally bars entry to or expansion within the market. A spectrum set-aside recognises that certain potential participants face significant barriers to acquiring capital, particularly risk capital while the Big 3 have significant resources and incentive to impede others from acquiring spectrum. A set-aside addresses the relative sizes and relative abilities of potential participants to access capital and it worked effectively in the AWS auction.



The new entrant set-aside and definition of “new entrant” as per the AWS spectrum auction rules remain entirely appropriate.

91. As noted in response to questions 7-1 and 7-2 above, Industry Canada’s AWS spectrum policy has led to *some* of the benefits of competition, such as more choice in terms of service offerings and some price competition. However, while some progress has been made in providing choice and lower pricing to consumers, new entrants have but a toehold into the market due to their overall lack of spectrum. *The Canadian wireless marketplace is far from fully competitive on a national scale.* Accordingly, in conjunction with lifting the foreign investment restrictions either via the Government’s Option 2 or Option 3, for the 700 MHz auction, a set-aside remains appropriate for national new entrants to promote sustained competition in the Canadian wireless market.

**(6) No Spectrum Caps**

*In light of your response above, and recognizing that pending decisions on the specific band plan, spectrum for public safety system, tier sizes and open access requirements could influence your response:*

- 7-6. (a) *If the Department were to implement spectrum aggregation limits (caps):*
- (i) *Should the cap apply to the 700 MHz band only or be broader?*
  - (ii) *What should the size of the cap be?*
  - (iii) *Should bidders and their affiliates or associates share the cap?*
  - (iv) *How long should the cap remain in effect?*

92. Imposing a spectrum cap would be complicated and, as demonstrated by the AWS Policy Decision, is not necessary to fulfil the Department’s policy objectives. In fact, the complexities involved may frustrate those objectives. LTE is the current industry standard and this is first being deployed in the U.S. using 700 MHz spectrum. Therefore all potential auction participants should have an opportunity to bid on and potentially acquire some of this spectrum. Further, in addition to promoting competition, an equally important policy objective is the deployment of mobile broadband services to currently unserved and underserved areas of Canada. Depending on the criteria, imposition of a spectrum cap could hinder or potentially preclude those players that are likely to accept

to provide mobile broadband services to rural and remote areas from acquiring the necessary 700 MHz spectrum.

**(7) Set-Aside in the 700 MHz Spectrum Band**

7-6. *If the Department were to implement a set-aside in the 700 MHz auction:*

- *Who should be entitled to bid in the set-aside block(s) and should the entitled bidders be restricted to bidding on the set-aside only?*
- *How much spectrum should be set-aside and which block(s) should be set-aside?*
- *If the set-aside were to include multiple blocks of spectrum, should they be contiguous?*
- *What restrictions should be put in place to ensure that policy objectives are met (for example, should trading of the set-aside spectrum be restricted for a given time period)?*

**(a) Entitlement to Set-Aside – New Entrants, Including Smaller Regional Players**

93. In 2008, the Department established a set-aside for “new entrants.” New entrants were defined as participants holding less than a 10 per cent share of the national wireless market in terms of revenue. At the time the definition captured brand new players as well as smaller regional players based on the essential criterion of relative ability to access capital markets to fund market entry.

94. Relative access to capital remains as a relevant criterion for market entry and particularly for wireless markets for which market entry is dictated by performance in a public auction process. A spectrum set-aside recognises the importance of this barrier to entry and effectively remedies against this. Given that this remains a relevant criterion and that the relative sizes and relative ability to garner capital remains unchanged, the new entrant set-aside and definition of new entrant to include smaller regional players, per the AWS spectrum auction rules, remain entirely appropriate.

**(b) How Much Spectrum – At Least 10 + 10**

95. The 700 MHz spectrum band, if the U.S. band plan is followed, makes available only 80 MHz of spectrum in total, assuming that 30 MHz of spectrum in the upper portion of this band are allocated to public safety and guard bands.
96. LTE deployment currently optimally requires paired Tx and Rx spectrum of at least 10 contiguous MHz per channel. Given the U.S. band plan contains five paired blocks (three contiguous paired blocks of 12 MHz per pair, one paired block of 22 MHz and 1 paired block of 10 MHz), there are limited options available to the Department in selecting the spectrum to be set aside.

*(c) Contiguous Spectrum*

97. Bearing in mind that optimality requires a minimum of ten contiguous MHz per Tx and Rx channels, the options are further limited.
98. In light of the options available, the limited spectrum resources available for commercial deployment in the 700 MHz band, and the expectation that new entrants will in relative terms be less able to generate the necessary capital to bid on spectrum, MTS Allstream accordingly recommends that the Upper C block be identified as set-aside spectrum. The Upper C block offers 22 MHz in total, in two blocks of a contiguous 11 MHz each. Should any new entrant require additional spectrum, Upper D would also be available for set-aside. As well, new entrants should also be allowed to participate in the bidding for non-set-aside spectrum.

*(d) Additional Restrictions*

99. MTS Allstream proposes a restriction on the transfer of set-aside spectrum for a period of 10 years, similar to the transfer restriction imposed on AWS licenses. The restriction would prevent any of the spectrum required in the set-aside to be subsequently acquired by one of the Big 3 for a period of ten years after the auction.

### **Other Mechanisms to Promote Competition**

7-7. *Are there other mechanisms that should be considered and, if so, how should these be applied?*

100. MTS Allstream recommends that the Department maintain as a condition of licence of all commercial mobile wireless licences mandatory antenna tower and site sharing and roaming. These conditions have worked relatively effectively and have provided needed structure to all market participants, and continue to be necessary.

### **Lifting of Foreign Investment Restrictions Would Not Alleviate Need for 700 MHz Spectrum Set-Aside**

7-8. *The Government of Canada has undertaken a consultation on potential changes to the foreign investment restrictions that apply to the telecommunications sector. How would the adoption of any of the proposed changes affect your responses to the questions above?*

101. In response to Question 7-4, MTS Allstream explained that the need for sustained and effective competitive entry will be assisted (albeit not completely in the immediate term) by lifting the foreign investment restrictions. Irrespective of the adoption of the preferred alternative of Option 2 – staged lifting of foreign investment restrictions beginning with lifting for new entrants including smaller regional players with less than 10 per cent national market share by revenue – the Department will need to undertake specific regulatory measures in order to ensure access to sufficient quantities and quality of spectrum, particularly in the low frequency 700 MHz spectrum band.

## **VII. PROMOTING SERVICE DEPLOYMENT IN RURAL AND REMOTE AREAS**

### **Challenges of Deploying Broadband Mobile in Rural and Remote Areas**

8-1. *In the above context, the Department seeks comments on challenges and specific problems affecting the deployment of broadband mobile services to low-density rural and remote areas.*

102. MTS Allstream has first-hand experience with the challenges and specific problems affecting the deployment of broadband services, including mobile broadband services, to low-density rural and remote areas.

103. There are varying degrees of “rural” on the continuum between “rural” and “remote” in a country as vast as Canada, and the degree to which areas are served. On one end of the continuum, one could place the many small communities dotting Southwestern Ontario. With their proximity to urban centres such as London, Kitchener/Waterloo, Windsor or Hamilton, the challenges attendant on closing the broadband mobile wireless gap to some of these (perhaps) underserved communities are clearly quite different from those attendant on networks to truly remote communities such as Thompson or Kuujjuaq. It is 900 km by road from Thompson to Winnipeg, and Kuujjuaq does not have road access to southern Quebec.
104. From a network deployment perspective, regardless of whether one is considering a fixed-line network or a wireless network, far-flung and sparsely populated communities entail higher costs (primarily due to exponentially higher backhaul costs) and a lower base of potential end users to cover these same higher costs. The combination of higher costs and lower subscriber base makes it economically unattractive for incumbent carriers to serve remote and certain rural communities and has largely deterred competitive entry.
105. During its participation in the Canadian Radio-television and Telecommunications Commission’s (CRTC) Basic Service Objective proceeding, and in the context of broadband access services in general, MTS Allstream stated that there is “a real and growing disparity between urban and rural Canadians in terms of access to a basic telecommunications service of increasingly fundamental importance.”<sup>42</sup> The so-called “broadband access gap”, is a major public policy and infrastructure challenge facing Canada. While competition is spurring investment in urban centres, the absence of competition in rural and remote communities, coupled with the high cost to provision those communities with broadband, is exacerbating a growing urban/rural gap.
106. MTS Allstream has quantified the cost of closing the current broadband access gap of providing a service of a maximum download speed of 5 Mbps to currently underserved

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<sup>42</sup> Final Arguments of MTS Allstream, 12 November 2010, Telecom Notice of Consultation 2010-43, *Obligation to serve and other matters* at para. 66.

and unserved so-called “high-cost serving areas” and has made a proposal to the CRTC as to how that cost may be funded through the existing contribution mechanism.

107. Consistent with these proposals, and keeping in mind that mobile wireless spectrum bands may be instrumental in providing the last-mile portions of the networks required to provide both narrowband and broadband services to currently unserved or underserved areas, MTS Allstream believes that regulatory measures could and should be put into place to promote and encourage rural deployment using the 700 MHz spectrum band.

### **Regulatory Measures to Promote Service Deployment in Rural and Remote Areas**

8-2. *Is there a need for further regulatory measures or changes to existing regulatory rules (e.g. RP-19) to facilitate service deployments in rural and remote areas that remain unserved and/or underserved?*

8-3. *Should the Department decide that measures are necessary, comments are sought on specific measures that could be adopted within the 700 MHz spectrum auction process to ensure further deployment of advanced mobile services in rural and remote areas (e.g. roll-out conditions, tier structure, etc.).*

108. Rural and remote coverage of Manitoba (and indeed, other regions of Canada) for mobile wireless services is not complete.
109. Ensuring that 700 MHz licenses in all but the set-aside blocks will be transferable, divisible and assignable, and minimizing the administrative burden in gaining approval for such arrangements, would permit a wider range of options for bringing wireless services to rural and remote regions.
110. 700 MHz spectrum, in contrast to high frequency band spectrum (such as PCS or AWS spectrum), is particularly well-suited to deployment in rural areas. In relative terms, propagation characteristics of the 700 MHz spectrum will allow carriers to reach further and cover wider areas, an especially desirable feature for rural deployment, which is subject to severe cost challenges. However, the availability of 700 MHz spectrum alone will not be sufficient to overcome the economic disincentives inherent in serving less densely populated areas.

111. Competitive entry will not gravitate to rural and remote areas, apart from perhaps the “rural” areas lining Southwestern Ontario. Nor, in MTS Allstream’s view, will direct government funding address the current and widening gap. Thus, in addition to directly funding wireless expansion initiatives, indirectly promoting service to rural and remote areas through flexible license conditions (relating to assignability, transferability, and divisibility), and simplifying the administrative requirements to effect such flexible arrangements, Industry Canada should consider awarding licences in the lower B and C blocks of the 700 MHz spectrum band with a condition of licence that the licensee meet detailed rural broadband deployment commitments.
112. The lower B and C blocks being the most desirable and valued spectrum blocks in the 700 MHz band by reason of handset availability, the possibility of roaming revenues due to the allocation of the spectrum in the United States and a host of other factors, equity and efficacy, all support attaching a rural commitment to the spectrum licences that will generate the most economic benefit to the licensees in question. A specific rural commitment in conjunction with a Tier 2 definition for the lower B and C blocks, will make the achievement of rural wireless broadband a more concrete reality in the intermediate term.
113. For remote areas, if there is a specific need to address coverage of existing services in areas that are underserved or not yet serviced at all, the Department should consider using a single-bid first-price process whereby the department awards licenses based not just on monetary value but on the prospective bidder’s ability to meet certain conditions to build out to, and sustainably serve remote areas that are underserved or not being serviced at all as a result of past licensing processes. And in this regard, urban coverage should not be counted towards achievement of the rural coverage commitment.
114. MTS Allstream would not, however, propose imposing this condition on blocks other than lower B and lower C and in particular on set-aside spectrum of Upper C block in the 700 MHz band. Subjecting new entrants including smaller regional players operating

outside of their traditional serving territory to such conditions will likely exclude them from winning any spectrum.

## VIII. OPEN ACCESS

- 9-1 *The Department seeks comments on whether there is a need for government intervention to promote open access, by increasing access by users to handsets and/or applications.*
- 9-2. *If government intervention is needed, which of the following options should be implemented?*
- Option 1: Mandated open access requirements across all future commercial mobile bands*
- Option 2: Mandated open access requirements for the entire commercial mobile spectrum in the 700 MHz band.*
- Option 3: Mandated open access requirements for the "C Block" (746-757/776-787 MHz) as in the United States.*

115. In the context of mobile wireless communications, open access is a multi-faceted concept that incorporates the differing perspectives of carriers, hardware manufacturers, application developers, content providers and end users. The most useful perspective is perhaps that of the end user or customer. The Department has expressed in very practical terms what the open access concept entails for the end user: the ability or expectation "to be able use their mobile broadband devices with the same degree of flexibility and access as using a personal computer connected to the Internet."<sup>43</sup>
116. While the benefits of an open access regime in the foregoing sense are obvious, the issue is, as recognised by the Department, complex.
117. Currently in Canada, wireless carriers have the ability to restrict both the types of devices and applications that can be connected or run on their wireless networks. This "closed access" regime disadvantages end users but increasingly also smaller new entrant or regional wireless carriers who have less ability to negotiate access to desirable devices and applications. Larger wireless carriers, who, by virtue of their scale and bargaining power, are able to arrange exclusive arrangements with device manufacturers for certain devices or applications.

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<sup>43</sup> 700 MHz Consultation Document, p. 43.



118. At the same time, most Canadian carriers have now deployed networks based on the GSM family of standards which support devices that can be purchased from third party retailers compatible with the standards. Carrier networks now also support smartphones which act like a computer running a wide range of applications without restriction. Furthermore, carriers have started to open up network interfaces to application developers allowing them to build applications into existing network functionality. A case in point is that of Verizon Wireless in the United States, which sought and acquired the U.S. open access blocks (upper C). While in Canada, carriers cannot dictate terms to device manufacturers, the conduct of the U.S. market suggests that the market will itself tend towards open access policies.
119. Open access has already tended to evolve naturally in the marketplace and therefore should be permitted to continue to grow in an increasingly competitive environment. MTS Allstream believes that another beneficial side effect of increased competition in the wireless marketplace will be a tendency towards the adoption of open access policies by wireless carriers themselves.
120. However, the Department must be mindful of the fact that the Big 3, left to their own devices, have little incentive to allow open access. If the pro-competitive measures proposed by MTS Allstream are not adopted, then the Department will have to consider implementing direct regulation in order to bring more openness to the marketplace.

## **IX. AUCTION TIMING**

*10-1. The Department is considering three options to proceed with the 700 MHz and 2500 MHz bands auction processes:*

*Option 1: to conduct an auction for licences in the 700 MHz band first, followed by an auction for licences in the 2500 MHz band approximately one year later;*

*Option 2: to conduct an auction for licences in the 2500 MHz band first, followed by an auction for licences in the 700 MHz band approximately one year later;*

*Option 3: to conduct one combined auction for licences in both the 700 MHz and 2500 MHz bands, which would be six months later than the first auction in the case of separate auctions.*

*Industry Canada is seeking views on the merits or disadvantages of proceeding with each of the various options stated above. The Department seeks to understand the magnitude of interdependencies*

*between the two bands from a business/operational perspective. Specifically, comments are sought as to the extent spectrum in these bands is interchangeable or complementary from both a technological and a strategic perspective. In addition, views on the business and financial capabilities of participating in a joint auction for both bands are sought. Comments should include the rationale for selecting one option rather than another.*

121. MTS Allstream supports Option 1 in terms of the timing of the auctions of 700 MHz and 2500 MHz spectrum.
122. Option 2 is the least desirable auction timing option. Again, the appropriate perspective is driven by the device ecosystem for the 2,500 MHz band, which is far from clear. While current European deployment in the 2,500 MHz band signifies that there are some devices available, it is unclear when device support for the North American market will become available.
123. Neither is there, in MTS Allstream's view, a compelling reason to hold a joint auction. The low frequency 700 MHz spectrum is not interchangeable with the high frequency 2500 MHz spectrum from a technological and strategic perspective. End-user handsets or other equipment are not expected to become available to the North American marketplace in the near-term, and may complicate the auction for no apparent benefit.

\* \* \* End of Document \* \* \*