

Gazette Notice No. DGTP-002-07
Consultation on a Framework to Auction
Spectrum in the 2 GHz Range including Advanced
Wireless Services

Submission of

Mipps Inc.

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INTRODUCTION

1. These comments are filed by Mipps Inc. pursuant to Gazette Notice No. DGTP-002-07 – Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services ("the Discussion Paper"). Mipps Inc. applauds the Department on the timeliness of this consultation.

2. By way of background, Mipps Inc. is one of the first companies in Canada to use fixed wireless technologies to conveniently and cost-effectively meet the full range of communications and e-services needs of organizations of all sizes. In addition to supplying its customers with robust and secure wireless broadband service at speeds ranging from T1 through to an unprecedented 480 Mbps, Mipps provides a host of other comprehensive Internet related services. Its world class technology takes advantage of international standards and provides innovative services to end-users with the highest reliability.

3. Mipps' market strategy is to focus on a "wholesale" model where it provides the network infrastructure to Telecom Service Providers and major enterprises. It has taken the necessary steps to achieve its goals by building on the company strength and core competency which include:
 - Network design and architecture
 - Spectrum management, coordination and acquisition
 - Technology selection and implementation
 - Site negotiation
 - Business development

4. In 2004 and 2005 Mipps acquired licenses for 3.5 GHz spectrum in 35 licensed areas covering most major cities and towns across Canada potentially serving over 15 million in population.
5. In this submission, Mipps provides its views on the most appropriate way to structure the AWS auction as well as recommendations on the development of policy for the post auction environment. Our comments will first establish that the wireless market in Canada is not sufficiently competitive compared to other countries and that competitive entry is required to stimulate competition to ensure that Canadians receive the benefits of the newest and most advanced technologies and services as quickly and as economically as do the inhabitants of competing economies. Starting from that premise, we provide our recommendations for the best way to achieve this goal both in terms of the auction structure as well as post auction policy.
6. In the sections that follow, we focus on four main areas of discussion:
 - The need for competitive entry
 - The auction structure that is most appropriate for achieving competitive entry
 - The case for tower sharing
 - The case for mandated roaming

THE NEED FOR COMPETITIVE ENTRY

7. Mipps submits that there is significant supporting evidence to buttress the fact that the Canadian wireless market is not sufficiently competitive in comparison to other like economies. Characterized as it is by three large, vertically integrated, national facilities based providers, absent developments that would provide a catalyst for change, the Canadian market is expected to continue to lag behind that of other countries for the foreseeable future.
8. The Telecom Policy Review Panel ("the Panel") agrees. In the Telecom Policy Review Panel Final Report ("the TPR Report"), the Panel concludes that Canada is lagging behind other western economies in terms of wireless market competitiveness. It found that Canada is less competitive than most countries in terms of usage, penetration rates and adoption of advanced technologies. In addition, the Panel found that, on the whole, price plans in Canada are more expensive on average than in the U.S.
9. According to data set out in the TPR Report (based on statistics from 2004), Americans use their wireless phones almost twice as much as Canadians do (757 minutes per month vs. 392) but pay on average just 25% more per month, equating to an effective per minute rate 35% cheaper in the U.S. than in Canada.¹
10. Data for 2006 shows that while the gap in minutes of use has closed somewhat, the gap in the effective per minute rate is growing. Americans used their phones on average around 700 minutes per month and paid on average \$57.50 for use of the phone, for an effective rate of \$0.082/min. Average monthly usage in Canada was 420 minutes while the average

¹ TPR Report, pg. 1-20

Canadian paid \$56.60 every month in 2006, for an effective per minute rate of \$0.135, or 64% higher than in the U.S.²

11. With respect to penetration, the TPR report found that in 2004 Canada was second to last of all OECD countries at 47% and significantly behind the U.S., where 61 of 100 inhabitants subscribed to wireless service³. By end-2006, the situation was hardly different; wireless penetration in Canada had increased to 58%⁴ and in the U.S. to 74%⁵, suggesting that there has been little if any improvement in the relative standings of the two countries.

12. Price differentials between Canada and the U.S. are most apparent for wireless long distance services. In Canada, rates range from 20 to 30 cents per minute, with very few plans that include long distance as part of the monthly fee. In the U.S., LD charges have been all but eliminated.⁶ In addition, many plans include all in-network mobile to mobile calls, something that has only recently been introduced in Canada.⁷

13. A vigorous competitive environment is characterized by leading edge innovation and true choice. Canada lags behind most of the world in deployment of third generation technologies. As noted in the TPR report:

Canada also lags in the rollout of many new mobile wireless services and features. Perhaps the largest gap between Canada, the U.S. and other countries is with respect to the implementation of third-generation (3G) high-speed data services. Canadian deployment of 3G wireless systems lags not only the U.S. (2004), where every major operator is in the late stages of building and marketing these services, but also significantly lags

² U.S. data from CTIA web site and Canadian data from Lemay Yates Associates' presentation at CWTA AWS conference. All dollar amounts in Canadian dollars, assuming a \$1.14 US dollar exchange rate.

³ Ibid., pg. 1-18

⁴ CWTA web site

⁵ CTIA web site

⁶ Verizon, at&t, T-Mobile web sites

⁷ For example, see <http://www.bce.ca/en/news/releases/bm/2007/02/28/74179.html> and http://www.shoprogers.com/investorrelations/news_wireless.asp

deployment in Europe (2002), South Korea (2002) and Japan (2001). As already mentioned, 3G networks in Japan and South Korea are well under way and both countries are nearly at the point of convergence between their wireless and broadband networks nationally. In Canada to date, there has been only limited 3G rollout in a few large cities, and the Panel notes that separate spectrum for the service has yet to be allocated.

14. It is evident that in Canada, market forces alone have served to retard rather than encourage innovation. Of course, taken in isolation, Canada's record is impressive: three national networks that provide 98% of the population with access to high quality voice and data services. However, the picture is much less inspiring when one compares Canada's level of innovation and market penetration to other countries.
15. Taking all of the above evidence together, the Panel draws a clear link between the relative stagnation of the Canadian wireless market and the fact that Canada has fewer facilities based wireless providers compared to the U.S., where close to 90% of the population are served by at least five providers:

These pricing differences may be explained by the relatively small number of mobile service providers in Canada. In the U.S., 97 percent of the population live in areas with three or more mobile providers, 87 percent live in areas with five or more mobile wireless operators, and 41 percent live in areas with at least six. This is in contrast to Canada where, although 94 percent of the Canadian population has access to three or more wireless service providers, the maximum number of wireless carriers in any given area is three.

The smaller number of mobile providers in Canada — and the fact that all three national wireless service providers are also owned by large telecommunications service providers that also provide wireline services — may mean that there is less competition in the Canadian wireless market than in the U.S. market, which consequently has resulted in higher prices, less innovation, lower uptake and lower rates of usage.⁸

⁸ TPR Report, pg. 1-21

16. Section 7(c) of the *Telecommunications Act* provides as one of the objectives of Canadian telecommunications policy to “*to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications*”. If Canada indeed lags behind other countries in the competitiveness of its wireless market, it is incumbent upon the Government to act to rectify the situation. Mipps submits that facilitating the entry of additional facilities based providers in a manner that encourages national coverage and rapid build-out ensuring the maximum competitive advantage is the most effective way to inject new life into the market in terms of consumer choice, technology and service innovation, and lower air time and wireless long distance pricing.
17. The conclusions reached by the Panel recognize that if left to market forces alone, it is highly doubtful that the goal of a more competitive wireless market would be reached. Market forces have had free reign in the Canadian wireless industry ever since the third and fourth national operators, Clearnet and Microcell, were licensed in 1995 in a comparative review process that had as its a priori goal the licensing of two new competitors. Since then, Telus acquired Clearnet in 2000 (just prior to the PCS auction) and Rogers absorbed Microcell in 2005, leaving Canada with the current market structure.
18. Market forces have allowed the three remaining national carriers to constrain competition through consolidation and at the same time have failed to promote a vigorous competitive environment that would place Canada on par with other westernized economies – the U.S. in particular - in terms of market penetration and service and technology innovation.
19. It is clear therefore that market forces alone cannot be relied upon to bring about an improvement in the situation and other steps must be taken. in order to create an environment that will facilitate the desired change. The Panel agrees with this assessment and recommends that Industry Canada utilize its

role as spectrum manager to foster a more rivalrous wireless industry, in keeping with Section 7(c) of the *Telecom Act*.

In developing the new spectrum policy, Industry Canada should take into account work completed as part of its ongoing spectrum policy framework review, and make certain to address the following areas:

- ...continuing the use of regulatory approaches to increase the opportunity for Canadians to have an expanded choice of service providers, such as spectrum caps and reservations for new market entrants.⁹

20. Only through policies that ensure competitive entry and create conditions that facilitate unobstructed network deployment and a level playing field - matters that are discussed in the following sections – will Industry Canada achieve what market forces alone have thus far failed to accomplish. As noted by the Panel:

After reviewing this evidence, the Panel concludes that Canada's mobile wireless industry lags behind its major trading partners on a number of key measures. This finding reinforces the Panel's belief that because of the growing importance of this segment, Canada should develop a more efficient and vibrant wireless industry.¹⁰

21. Another indication of the lack of competitiveness of the wireless market is the paucity of wholesale alternatives. With the number of facilities based providers limited by the amount of available spectrum, the only manner in which a true multiplicity of providers can emerge is through wholesale. It is our understanding that of the three national carriers, only one (Rogers) allows unaffiliated providers to resell service as Mobile Virtual Network Operators ("MVNOs") off of its network. Telus to date has refused to consider resale while Bell will only allow entities in which it has an ownership stake (such as Virgin Mobile) to resell its service as an MVNO. Therefore, there is no real choice of wholesale providers for entities that would like to become MVNOs in

⁹ Ibid., Executive Summary, pg. 8

¹⁰ Ibid., pg. 1-21

Canada. It is assumed that a new entrant to the Canadian wireless market would be more favourably inclined to facilitate wholesale access to its network.

22. Thus, with regard to both the retail and wholesale markets, establishing an auction structure and post auction policy that facilitate market entry by new wireless service providers would result in a more rigorously competitive wireless market in Canada.

USING THE AUCTION TO FOSTER COMPETITIVE ENTRY

23. Having established the need for competitive entry, the task at hand is to determine the most appropriate manner in which to bring about that outcome. To do so requires an examination of what are the major barriers to entry. Self-evident is the fact that the only way facilities based entry is possible is through the acquisition of radio spectrum. The inability to acquire spectrum is the single most significant barrier to wireless market entry. Industry Canada in its Discussion Paper shows that it well understands this notion:

Creating an opportunity for new entry at the time of auction is, in many respects, the only time to introduce further competition in the wireless market.¹¹

24. Allowing entrants to participate in the auction is, on its own, not sufficient. To simply allow all comers to bid unfettered - i.e., to rely solely on market forces - would not result in competitive entry. In the PCS auction that took place in 2000, even with the spectrum aggregation limits that applied to them at that time¹², the incumbents were able to acquire virtually all of the spectrum despite participation by numerous potential entrants. Nothing has transpired in the seven years since that would indicate that reliance on market forces alone in the AWS auction would produce a different result.

25. Industry Canada has at its disposal at least two options that would create the opportunity for competitive entry:

- Spectrum set-aside and
- Spectrum aggregation limit on auction spectrum (“Spectrum Cap”).

¹¹ The Discussion Paper, pg. 21

¹² An overall spectrum cap (as opposed to an auction specific cap) applied in 2000 that did not prevent incumbents from obtaining all of the spectrum.

26. Mipps' preference in this regard is the latter. Placing a limit on the amount of spectrum that any one party can acquire at the auction is inherently non-discriminatory, as opposed to set-aside which gives a clear (if not undue) preference to entrants for a specific block. Moreover, using a set-aside, especially as proposed, pre-determines the industry structure and unnecessarily limits the number of potential entrants. (Having said that, should the Department determine that Mipps' proposal for a spectrum cap is not in the public interest, our second choice would be for the 30 MHz block in the band plan proposed in the Discussion Paper to be set aside for new entrants, since such a set-aside still achieves the principle goal of competitive entry.)
27. To determine the appropriate cap, it is important to balance the need of new entrants for sufficient spectrum to provide a viable service with the desire to maximize potential for competitive entry. At one extreme, it is possible to limit bidders to 10 MHz each and divide the AWS spectrum into 10 MHz blocks; this would achieve the maximum number of blocks – 10 including the 10 MHz in the 1900 MHz (PCS) spectrum - but at the expense of new entrant viability, 10 MHz being insufficient capacity-wise for most applications over the medium term. Further, such a structure would unnecessarily de-value the spectrum.
28. At the other extreme, a 30 MHz cap can be instituted using the AWS band plan proposed in the Discussion Paper, which consists of two 10 MHz and two 20 MHz blocks in addition to the one 30 MHz portion. This alternative, however, would likely result in the incumbents acquiring all but 10 MHz of the combined AWS and PCS spectrum. While changing the band plan slightly by combining the two 10 MHz blocks would allow for at least one new entrant to acquire 20 MHz, it would limit the number of potential new entrants to one.

29. Therefore, we suggest an aggregation limit of 20 MHz out of the 100 MHz of the combined AWS/PCS spectrum. A 20 MHz block should be sufficient for new entrant and incumbent alike for at least the medium term (five to seven years), by which time additional spectrum in the 700 MHz range is expected to become available. At the same time, this option allows for up to two new entrants in each license area.

30. The AWS spectrum band plan proposed in the Discussion Paper, which includes a 30 MHz block, would be precluded in the event Mipps' proposal is adopted. Instead we propose the following alternative plan, which includes four 20 MHz blocks and one 10 MHz block:

Block Licences	Pairing	Amount of Spectrum
A	1710-1720 MHz and 2110-2120 MHz	2 x 10 MHz
B	1720-1730 MHz and 2120-2130 MHz	2 x 10 MHz
C	1730-1740 MHz and 2130-2140 MHz	2 x 10 MHz
D	1740-1745 MHz and 2140-2145 MHz	2 x 5 MHz
E	1745-1755 MHz and 2145-2155 MHz	2 x 10 MHz

31. The fact that the blocks are not harmonized with those of the U.S. should pose no serious issues as long as the minimum channel size remains 5 MHz. The fact that the licenses will be transferable and divisible belies the notion that band edges must be precisely harmonized with that of the U.S.

32. The band plan as proposed by Mipps will facilitate up to five operators in any given license area. One may ask: Can the Canadian market bear five providers? One need only look to the U.S. for an answer. Eighty seven percent of Americans have access to at least five providers where they live¹³. There is no reason why five providers could not thrive in Canada as well. Many large and medium-sized cities in Canada mirror closely the demographic and spatial characteristics of similar-sized U.S. markets that

¹³ TPR Report, pg. 1-21

typically support five or six providers. Potential entrants possessing an intelligent auction strategy, an economical IP-based technology rollout plan aided by policies that call for mandated roaming and tower sharing (see below) should be able to compete effectively in many regions of the country.

33. In any event, while Industry Canada would be justified, based on all the arguments presented above, in taking the appropriate steps to create the conditions for sustainable competitive entry (including spectrum caps and, as discussed at length below, mandated tower access and roaming), determining beforehand the precise market structure is not necessary since, as noted in the Discussion Paper, unviable entry can be corrected by market forces should a new entrant fail¹⁴. In fact, absent justification for such intervention (and in our view none exists), the Department would be contravening its own policy, as enunciated in the Minister's Policy Direction to the CRTC, of relying to the extent possible on market forces.

34. In other words, while there is a clear need to introduce new blood into the Canadian wireless market, and therefore justification for proactive steps to enable this outcome, there is no clear need to limit the number of new entrants into the market. This is especially true in light of the expectation that new business models will develop based on new, leading edge IP-based technologies that promise to significantly reduce the amount of up-front capital required to build out the network¹⁵.

¹⁴ Ibid.

¹⁵ See for instance http://www.utstar.com/Solutions/Wireless/CDMA-GSM/Core_Voice_Network/

TOWER SHARING

35. Rooftops and towers are essential inputs that a mobile provider requires in order to deploy its network. However, most key rooftops and tower locations are already being used by the incumbent providers. The incumbents, therefore, if left unchecked, can be expected to thwart a new entrant's efforts to build out its network by refusing access to its rooftops and towers. In fact, the sharing of antenna structures and rooftops has been a contentious issue ever since rooftops became increasingly scarce and municipalities and home owners began taking issue with the proliferation of unsightly towers in close proximity to residential areas.

36. While Industry Canada has encouraged the sharing of towers and has discouraged entering into exclusive arrangements with building owners for rooftop access, the problem endures. The TPR report provides a good synopsis of the issue:

Access to antenna towers, including rooftop antennas, is also critical to the expansion and operation of Canada's telecommunications and ICT infrastructure. Increasing demand for new wireless services and technologies requires the continuing development of fixed and mobile wireless infrastructure. As discussed in Chapter 1, the Panel is convinced that wireless technology is a promising avenue for increased competition in a number of telecommunications markets such as voice services and broadband access. The Panel therefore believes access to antenna towers to be essential for the development of a competitive telecommunications market.¹⁶

37. Thus, towers can be considered essential facilities. It cannot be argued, as some do in the context of the wireline market, that mandating incumbents to provide reasonable terms and conditions for rooftop and tower access in any way acts as a disincentive for the deployment by the competitor of its own facilities since it is the towers and the rooftops themselves that enable the

¹⁶ Ibid., pg. 5-11

build out in the first place. It is equally evident, based on experience to date, that absent such a mandate, incumbents will use their market power to impede an entrant's network deployment. As noted in the TPR Report:

During the Panel's consultation process, a number of parties expressed concerns about the current lack of antenna tower sharing and the difficulties they had encountered in trying to co-locate on existing towers. The Panel is also aware of instances in which a telecommunications carrier has been unable to install a rooftop antenna because another carrier has entered into an exclusive arrangement with a building owner. The Panel considers it essential for these kinds of barriers to market entry and network expansion to be removed, so competitive markets can offer customers a full choice of service providers and services and so the cost of network expansion can be reduced.¹⁷

38. Beyond the competitive issue, the proliferation of towers also raises environmental and health concerns. Unsightly towers cause visual pollution and raise concerns about the health effects of radiofrequency emissions. In a report compiled for Industry Canada entitled "The National Antenna Tower Policy Review" that studies in depth the complex inter-relationships between tower placements, land-use authorities and wireless providers, there are no fewer than six recommendations on tower sharing. The gist of these recommendations is that Industry Canada should devise policies that encourage tower sharing wherever possible.¹⁸ The TPR Report concurs with the recommendations of the National Antenna Tower Policy Review and goes further to suggest that powers for dealing with antenna sharing and rooftop access issues should be transferred to the CRTC:

Recommendation 5-5

The CRTC should be empowered to regulate and promote the sharing of antenna towers used for telecommunications purposes, resolve disputes regarding tower access, and enforce its regulations in an effective and timely manner.¹⁹

¹⁷ Ibid.

¹⁸ The National Antenna Tower Policy Review, pg. ix

¹⁹ TPR Report, pg. 5-13

39. We would concur with this recommendation. While Industry Canada has the tools to address the concerns of land-use authorities and members of the public regarding safety and environmental effects of radio installations, the CRTC is better equipped to deal with the competitive disputes that will inevitably arise when dealing with carriers of unequal market dominance.

40. As noted above, the TPR Report has identified exclusive rooftop arrangements as one of the most intractable issues related to this matter. In its recommendations, the TPR addresses this issue:

Recommendation 5-6

The CRTC should be empowered to prohibit wireless carriers from entering into exclusive arrangements for locating telecommunications antennas on rooftops and, in those cases where building owners and wireless service providers are unable to agree on terms and conditions of access, should be empowered to resolve the dispute on such terms as it considers appropriate, with its rulings binding on the parties.²⁰

41. We would concur with these recommendations. When considering the environmental/health effects and the potential abuse by the incumbents that would result from allowing the status quo to endure, mandating sharing and prohibiting exclusive agreements between carriers and rooftop owners are clearly in the public interest.

42. While the incumbents may object based on principles of fairness, it is difficult to see the harm caused them by the development of mandated sharing policies since they will be fairly compensated for tower and shelter space. With respect to rooftop space, a fairness argument would be patently disingenuous as any exclusive arrangement is by definition unfair. Besides, the overwhelming public interest achieved in mandating tower and rooftop sharing outweighs by a wide margin any perceived damage that the incumbents may suffer as a result.

²⁰ Ibid.

MANDATED ROAMING

43. Mandated roaming is essential for the success of any new entrant. Without it, a new competitor would be required to build out its entire network before it is able to offer coverage across multiple regions of Canada. Where an entrant has bought spectrum on a regional basis only, even ubiquitous coverage within its own serving area will not provide coverage in the rest of the country absent mandated roaming.
44. The Department recognized this fact when it licensed Microcell and Clearnet in 1995, at which time it established analogue roaming as a condition of license for the then incumbents, Cantel and the ILEC affiliates. It can be argued that without mandated roaming, the incumbents would have had no incentive to provide it, in which case it is doubtful that either of the new entrants would have achieved the success that they did, amassing 1 million plus subscribers in a relatively short period of time.
45. As alluded to above, mandated roaming is critical for the emergence of regional players, such as rural independent telephone companies and regional cable firms. Without mandated roaming, these potential entrants would only be able to provide an island of service, a sure recipe for failure.
46. Analogue roaming was sufficient in 1995 for three reasons: 1. Analogue was the predominant technology at the time; 2. The incumbents' networks were expected to provide ubiquitous analogue coverage over the long term; and 3. Data services were yet to emerge. Circumstances today, on the other hand, would render an analogue roaming mandate meaningless. By late-2008, analogue technology will cease to exist in the incumbents' networks. Further, users are increasingly becoming accustomed to data services that require the most advanced digital technologies. Therefore, entrants' customers must be

able to roam on the incumbents' digital networks over the full range of technologies.

47. It is clear that the incumbents will not enter into roaming arrangements with new entrants short of being required to do so. This has been borne out by the experience of Microcell, which was unable to obtain digital roaming from Rogers. The fact that Bell and Telus have entered into a digital roaming arrangement without a mandate is due to the quid pro quo that each gains through the arrangement (neither Bell nor Telus have built beyond the major metropolitan areas outside their respective ILEC territories instead roaming on each other's ubiquitous networks) that would not exist for a new entrant.

SUMMARY

48. In this submission, Mipps has established, with the aid of solid evidence and supported by the conclusions of the Telecom Policy Review Panel, that the wireless market in Canada is lacking in competitiveness compared to other like economies, most notably its largest trading partner, the U.S. Usage, penetration and the rate of adoption of new technologies are all lower in Canada than in the U.S. while prices on average are higher. In accordance with Section 7(c) of the *Telecom Act*, steps need to be taken to bring Canada in line with other westernized economies.

49. The entrance of new players in the market is the best way to stimulate competition. Facilities based entry is limited for the most part to those that can obtain spectrum at auction. The upcoming AWS auction is a great opportunity to facilitate entry for the purpose of enhancing the competitiveness of the wireless market in Canada. Steps can be taken, both in terms of auction structure and auction policy, to foster sustainable entry.

50. Mipps suggests that Industry Canada adopt the following policies for the upcoming AWS auction:

- The AWS band plan should be revised to include four 20 MHz and one 10 MHz blocks;
- An auction spectrum cap of 20 MHz for the combined AWS/PCS spectrum should be instituted to facilitate entry of up to two new competitors in all regions of Canada;
- If Industry Canada prefers not to set an auction cap, Mipps recommends a new entrant set aside of 30 MHz in accordance with the band plan proposed in the Discussion Paper;
- Tower sharing should be mandated and exclusive rooftop arrangements prohibited to enable build-out of new entrant networks; and
- Digital roaming should be mandated to provide new entrants with an opportunity for success.