May 25, 2007

By email and by courier

Mr. Leonard St-Aubin,
Director General,
Telecommunications Policy Branch,
Industry Canada,
1612A,
300 Slater Street,
Ottawa, Ontario
K1A 0C8.

Dear Mr. St. Aubin:

Re: Gazette Notice DGTP-002-07 – Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services
Canada Gazette, 17 February 2007

On behalf of WorldLynx Communications Corp. (“WorldLynx”), a private Canadian company involved in the wireless telecommunications industry, I am pleased to submit the following comments on Industry Canada’s public notice in the Canada Gazette concerning the “Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services”, issued on February 17, 2007.

WorldLynx commends the Department of Industry (“the Department”) and the Canadian government for their continued efforts to keep the Canadian wireless infrastructure in step with developments in North America, Europe and Asia in order to foster the development and deployment of world class information and telecommunications technologies and services that will enable Canadians to fully participate in the new economy. We strongly support the reduction of barriers to entry to promote competition, innovation, and the availability of reliable and affordable telecommunications services to all regions of Canada. WorldLynx submits that in order to achieve these objectives certain pre-conditions within the auction framework, as proposed herein, would create more favourable market conditions in order to successfully achieve the Department’s stated policy objectives.

BACKGROUND

1. The Canadian Market

With reference to the Canadian Market, the Department states correctly that “The incumbents have purchased virtually all the mobile spectrum that was made available through the 2001 PCS auction process, and they have acquired significant amounts of spectrum in recent auctions for Fixed Wireless Access
spectrum.1 In fact, at the end of the 2001 auction for additional PCS spectrum in the 2 GHz frequency range, only 4 of the 52 available licences were won by new entrants (W2N Inc. and Thunder Bay Telephone) after 51 rounds over a 14 day period.2 And most of those licences were acquired in later years by incumbents. WorldLynx contends that, if given the same opportunity within the same regulatory environment, the incumbents will continue, and in fact, are motivated to purchase virtually all the available mobile spectrum in order to block new entrants.

Indeed, today’s wireless service providers experienced growth in EBITDA from $3.7 billion in 2004 to $4.4 billion in 2005.3 Because of the maturity of their networks, capital expenditure was $1.1 billion in 2005 with relatively few changes expected in the years following.4 WorldLynx feels there is no doubt the incumbents have the means, the motive and, without the Department’s intervention, the opportunity to stifle competition by acquiring additional spectrum for the purpose of preventing access by prospective competitors.

COMMENTARY

2. The Potential For New Entry – Enabling New Participants

WorldLynx feels it important that appropriate measures be taken to enable entry of new participants in a government regulated market. Further, WorldLynx is of the opinion that the benefits to the general public attained by government intervention to enable the entry of new participants outweighs the risk of further spectrum concentration among incumbent companies likely to occur without such intervention. Additionally, WorldLynx believes that this and other barriers to entry must be minimized, if not eliminated, if the Department’s stated objectives of fostering a competitive wireless market in Canada are to be achieved.

For example, WorldLynx notes that most of the “prime” sites in the greater metropolitan areas of Canada are controlled by the incumbents. In many cases they occupy the roof-tops of the best located buildings within each urban area and their towers are located in the most strategic areas within the surrounding suburbs and rural geography. In consideration of environmental issues alone, WorldLynx encourages stronger co-location thus preventing the explosion of new towers and visible infrastructures and expansion beyond that which proliferated throughout our cities and countryside during the 1990’s. Instead, WorldLynx promotes the concept of fair access to infrastructure on a peer-to-peer basis much like the concept of CLEC and ILEC in the local exchange market for the

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3 Gazette Notice DGTP-002-07 – Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services, Canada Gazette, 17 February 2007, page 17
4 Ibid., page 17.
access and the unbundling of the ILEC’s cabled infrastructure. As co-location is in the interest of the general public and our environment, WorldLynx would propose that the Department mandate co-location and further ensure the implementation of fair business practices between the parties in respect of same.

i Spectrum Set-aside

WorldLynx supports the Department's proposal to auction spectrum in the 2 GHz range for AWS and PCS expansion and recommends that important improvements be made to encourage the participation of new and smaller participants so that the government may achieve its objectives of fostering a competitive wireless market in Canada; the key benefactor being the Canadian public.

In the spirit of fair and sustainable competition, WorldLynx respectfully recommends, for the 2008 auction, that the Department follow its earlier precedent and set aside 60 MHz out of the total 105 MHz for new entrants leaving the remaining 45 MHz of spectrum open to all participants. This additional 45 MHz of spectrum can be used for either PCS expansion or for AWS, as chosen by the operator. It is roughly equivalent to the 40 MHz auctioned in 2001 for the expansion of PCS and, when combined with the amount of spectrum already controlled by each incumbent, aggregates to more than sufficient spectrum for each to expand their current services to include AWS.

To sustain competition on a national basis, new entrants require access to sufficient spectrum to achieve economies of scale and foreseeable growth over the next 10 years. The Department recognized this necessity in 1995 by wisely awarding 60MHz of spectrum between Microcell and Clearnet. Based on the foregoing and in recognition that incumbents generally control over 55MHz of spectrum currently (i.e. until 2004 when the aggregation caps were removed, each incumbent had access to a minimum of 55MHz of spectrum). WorldLynx proposes that the Department continue with said precedent by allocating a minimum of 60MHz of spectrum for new entrants, essentially splitting the current spectrum licensing plan equally (50/50) between new entrants and others (see table below). In addition, a mix of spectrum range and coverage areas should be available for both new participants and existing wireless

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5 Telecommunications Act, 1997
7 Section 2.7.1, Gazette Notice DGTP-002-07 – Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services, Canada Gazette, 17 February 2007.
8 Gazette Notice DGTP-010-14 – Decision to Rescind the Mobile Spectrum Cap Policy, Canada Gazette, August 27, 2004
service providers to ensure a competitive landscape with respect to both products and services.

The following is WorldLynx’s proposal for the 2 GHz auction block plan which achieves a good range and combination of spectrum set-aside, coverage areas and ensures sustainable growth in a highly competitive wireless market in Canada.

Proposed Auction Licences, Service Areas, Eligibility and Technical Considerations

<table>
<thead>
<tr>
<th>Block Licences</th>
<th>Pairing</th>
<th>Amount of Spectrum</th>
<th>Proposed Tiers</th>
<th>Number of Licences</th>
<th>Spectrum Set-aside*</th>
<th>Mesh Support</th>
<th>Duplex</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1710-1715 MHz and 2110-2115 MHz</td>
<td>2 x 5 MHz</td>
<td>4</td>
<td>172</td>
<td>New</td>
<td>Yes</td>
<td>TDD/FDD</td>
</tr>
<tr>
<td>B</td>
<td>1715-1720 MHz and 2115-2120 MHz</td>
<td>2 x 5 MHz</td>
<td>4</td>
<td>172</td>
<td>Open</td>
<td>Yes</td>
<td>TDD/FDD</td>
</tr>
<tr>
<td>C</td>
<td>1720-1730 MHz and 2120-2130 MHz</td>
<td>2 x 10 MHz</td>
<td>3</td>
<td>59</td>
<td>New</td>
<td>Yes</td>
<td>TDD/FDD</td>
</tr>
<tr>
<td>D</td>
<td>1730-1740 MHz and 2130-2140 MHz</td>
<td>2 x 10 MHz</td>
<td>3</td>
<td>59</td>
<td>Open</td>
<td>Yes</td>
<td>TDD/FDD</td>
</tr>
<tr>
<td>E</td>
<td>1740-1755 MHz and 2140-2155 MHz</td>
<td>2 x 15 MHz</td>
<td>2</td>
<td>14</td>
<td>New</td>
<td>Yes</td>
<td>TDD/FDD</td>
</tr>
<tr>
<td>1910-1915 MHz and 1990-1995 MHz</td>
<td>2 x 5 MHz</td>
<td>2</td>
<td>14</td>
<td>Open</td>
<td>No</td>
<td>FDD</td>
<td></td>
</tr>
<tr>
<td>1670-1675 MHz</td>
<td>1 x 5 MHz</td>
<td>2</td>
<td>14</td>
<td>Open</td>
<td>Yes</td>
<td>TDD</td>
<td></td>
</tr>
</tbody>
</table>

* The designation "New" directly above refers to new entrants only while "Open" suggests leaving same open to all participants for bidding.

The following table summarizes the amount of spectrum and licence set-aside for new entrants which, under this proposed scenario, follows earlier precedent afforded Clearnet and Microcell while at the same time showing an approximate 50/50 split of licenses between new entrants and incumbents.

Summary of Proposed Auction Licences and Spectrum

<table>
<thead>
<tr>
<th>Eligibility</th>
<th>Amount of Spectrum</th>
<th>Number of Licences</th>
<th>% of Licences</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>2 x 30 MHz</td>
<td>245</td>
<td>48.6%</td>
</tr>
<tr>
<td>Open</td>
<td>2 x 20 MHz</td>
<td>259</td>
<td>51.4%</td>
</tr>
<tr>
<td></td>
<td>1 x 5 MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>105 MHz</td>
<td>504</td>
<td>100%</td>
</tr>
</tbody>
</table>

There is no doubt that the wireless cellular industry has experienced consistent growth since the licensing of 60 MHz of additional spectrum of PCS to new entrants in 1995. It is this precise experience that we propose be repeated by the Department for the stimulation of competitive and comprehensive service offerings for the industry.

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10 Ibid.
In terms of number of licences, and as demonstrated in the tables above, WorldLynx’s proposed distribution of licences between new entrants and other participation, is almost perfectly distributed at half and half (48.6% vs. 51.4%). This achieves the Department’s objective to “foster increased reliance on market forces” by ensuring that the new entrants have the adequate means, in terms of affordable and ample spectrum, to compete against the incumbent’s offerings of wired and cable services, satellite services and Fixed Wireless Access services.

WorldLynx recommends that after a reasonable implementation period, to be determined at the Department’s discretion, that the post-auction rules currently in effect should apply.

ii Spectrum Aggregation Limit on Auctioned Spectrum

Given the Department is seeking to increase competition to the benefit of the general public and assuming the Department intends to set aside enough spectrum to allow for multiple new entrants, WorldLynx does not believe aggregation caps are required.

3. Mandated Roaming

In order to foster the development of competitive wireless communication services, Worldlynx recommends that incumbent mobile wireless operators must be mandated to allow roaming by new entrants on their networks. Without such, there exists a significant risk that incumbents will utilize their current position of early market dominance to the competitive disadvantage of new entrants, in essence inhibiting the ability of new entrants to offer competing services to the general public.

WorldLynx believes that all wireless communications services, existing and new, on all bands (GSM, CDMA, SMS, MMS, Edge, 3G, etc.) should be allowed to roam on incumbent networks, in a manner similar to that established by the Department with 800MHz during the launch of PCS and until such time (a reasonable amount of time to be established by the Department) as new entrants have expanded their networks to a sufficient level of maturity.

As mandatory roaming is in the interest of the general public to ensure best available pricing and technological innovation, WorldLynx would propose that the Department mandate roaming and further ensure the implementation of fair business practices between the parties in respect of same.

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11 Gazette Notice DGTP-002-07, Section 2.7.2
12 Ibid., Section 3
WorldLynx views that the Department’s policy objectives regarding roaming can best be implemented through consultation with the industry; setting up a roaming steering committee, using best international practices and developing roaming and interconnection templates specifically for new entrants.

4. Technical Considerations

WorldLynx agrees that final technical specifications should be established in consultation with the Radio Advisory Board of Canada after the final spectrum policy and licensing procedures document is released.

i Spectrum Bands

a) The Bands 1710-1755 MHz and 2110-2155 MHz

We agree that the band plan and edges be harmonized with the U.S. and other countries, where possible, to provide common mobile and base station equipment profiles. Insofar as technical neutrality is considered, WorldLynx prefers that both TDD and FDD be available at the onset for all blocks in the bands 1710-1755 MHz and 2110-2155 MHz. The nature of advanced wireless services is asymmetric; a feature for which TDD operation is better suited than FDD. In at least one of 4th generation mobile standards, the TDD profile is the only available duplex mode.

We are also of the opinion that mesh networking should be allowed in this band. Mesh networking is an advantageous technique to reduce the cost of backhaul between base stations, both in terms of equipment and in licensing additional spectrum for operators.

With reference to section 2.7.1, WorldLynx views that 60 MHz of spectrum should be set-aside for new entrants with one of each size paired blocks available: 2 x 5 MHz, 2 x 10 MHz and 2 x 15 MHz. The reminder of the bands, which accounts for 30 MHz of spectrum, should be available for all participants with licence blocks as follows: 2 x 5 MHz and 2 x 10 MHz.

b) The Band 1670-1675 MHz

WorldLynx is of the opinion that TDD operation in this band is a natural, given that it does not easily pair with other licence blocks.

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13 Ibid., Section 4
14 Ibid., Sections 4.1.1 – 4.1.3
As with the AWS band, mesh networking should be allowed. We also view that all participants should be eligible to bid on this band.

c) The Bands 1910-1915 MHz and 1990-1995 MHz

WorldLynx is of the opinion that these bands are a natural extension of the bands 1850-1910 MHz and 1930 to 1990 MHz for Personal Communications Services. To maintain consistency with the existing spectrum, the operation of mobile equipment should maintain an FDD duplexing scheme with 80 MHz spacing and mesh networking should not be allowed. Also, we agree with the Department to apply the Standard Radio System Plan 510 and Radio Standards Specification 133 with a modified band plan to account for the additional 5+5 MHz of spectrum. In addition, WorldLynx notes that wireless operators can use, and are in fact converting usage of the PCS bands, in favour of AWS. All participants should be eligible to bid on these bands.

ii. Service Areas\textsuperscript{15}

WorldLynx agrees with the Department to use a combination of Tier 2, Tier 3 and Tier 4 service areas, with corresponding amounts of spectrum, as appropriate for three types of wireless carriers:

- Provincial and nationwide mobile operators
- Regional fixed and mobile operators to complement existing wire line services
- Local operators to serve low populations over small geographic areas

With reference to 2.7.1, we propose that at least one Tier 2 licence, one Tier 3 licence and one Tier 4 licence is set-aside for new entrants, leaving an equal number of Tier 2, Tier 3 and Tier 4 licences available open for other interested parties.

a) AWS Service Areas, 1710-1755 MHz and 2110-2155 MHz

WorldLynx agrees with the Department’s proposed tiers sizes with corresponding spectrum amount. This arrangement provides opportunities for local and regional development as well as opportunities for a new national entrant.

b) PCS Expansion Service Areas, 1910-1915 MHz and 1990-1995 MHz

\textsuperscript{15} Ibid., Sections 4.2.1 – 4.2.3
WorldLynx is of the view that this spectrum is mainly amenable for incumbent PCS operators, which mostly operate nationally, and is an extension of their current licences. The proposed Tier 2 for large service areas is in line with the current approach for PCS operation and the auction, in this band, should be opened to all.

c) 1670-1675 MHz Service Areas

WorldLynx agrees with the Department’s view that the services likely to be offered with 1670-1675 MHz spectrum should be auctioned as Tier 2 service areas and that the auction, in this band, should be opened to all.

iii. Co-channel/Adjacent Area Coordination\textsuperscript{16}

WorldLynx agrees with the Department’s view that actions to mitigate co-channel interference between neighbouring licensees should be resolved through mutually agreeable arrangements. The process and criteria used for cellular and for PCS have worked well in the past. However, in view of the advanced wireless technologies and smart antenna systems proposed for the 4\textsuperscript{th} generation of wireless systems, there will be a need to review specific technical requirements at a later date.

iv Adjacent Channel/Same Area Coordination\textsuperscript{17}

WorldLynx looks forward to participating in the development of the Radio Standards Specification and in the Standard Radio System Plan for AWS.

v Sharing Issues with Other Services\textsuperscript{18}

WorldLynx agrees with the proposed arrangements to protect incumbent services in the AWS bands.

vi Equipment Certification\textsuperscript{19}

WorldLynx looks forward to participating in the development of the Radio Standards Specification for the certification of radio apparatus operating in the AWS bands.

vii International Coordination\textsuperscript{20}

\textsuperscript{16} Ibid., Section 4.3
\textsuperscript{17} Ibid., Section 4.4
\textsuperscript{18} Ibid., Section 4.5
\textsuperscript{19} Ibid., Section 4.6
\textsuperscript{20} Ibid., Section 4.6
WorldLynx agrees with the Department’s view on international coordination and compliance with ITU-R resolutions, where applicable.

5. Licensing Process

WorldLynx agrees with the use of the multiple round auction process over the Internet and that provisional licence winners demonstrate eligibility and meet the related ownership and control requirements before licences are issued. WorldLynx does not encourage the Department to demand eligibility before the end of the auction process as it is generally a lengthy process and will unduly delay the start of the auction.

i Conditions of License

WorldLynx is in agreement with the licensing conditions being proposed by the Department for AWS, PCS expansion and the 1670 -1675 MHz spectrum band.

ii Post-auction Licensing Process

WorldLynx is in agreement with the current process utilized by the Department.

6. Financial Aspects of the Auction

i Pre-Auction Deposits

WorldLynx agrees that all bidders submit a pre-auction financial deposit in the form of a certified cheque or money order, or an irrevocable standby letter of credit. This arrangement has worked well in previous auctions.

CONCLUSION

To summarize, WorldLynx supports the government’s objective of fostering a competitive wireless market in Canada and the Department's proposal to auction spectrum in the 2 GHz range for AWS and PCS. We respectfully recommend the following:

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20 Ibid., Section 4.7
21 Ibid., Sections 5.4 & 5.5
22 Ibid., Section 6.2
• that the Department follow its earlier precedent and set aside 60 MHz out of the total 105 MHz for new entrants leaving the remaining 45 MHz of spectrum open to all participants;

• that the Department mandate co-location of cell sites and further ensure the implementation of fair business practices between the parties in respect of same;

• that incumbent mobile wireless operators be mandated to allow roaming by new entrants on their networks for all wireless communications services, existing and new, on all bands;

• that final technical specifications for the bands in question should be established in consultation with the Radio Advisory Board of Canada after the final spectrum policy and licensing procedures document is released;

• the Department use a combination of Tier 2, Tier 3 and Tier 4 service areas, with corresponding amounts of spectrum, as appropriate for three types of wireless carriers: provincial and nationwide mobile operators, regional fixed and mobile operators to complement existing wire line services, and local operators to serve low populations over small geographic areas; and

• that actions to mitigate co-channel interference between neighbouring licensees should be resolved through mutually agreeable arrangements;

We would like to thank you for the opportunity to participate in this very important process, and we look forward to continuing the dialogue with you.

Yours truly,

Jeff P. Henry
President and CEO
WorldLynx Communications Corp.