Manager, Emerging Networks
DGSO
Industry Canada
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RE: Canada Gazette Notice No. DGSO-006-12
Consultation on Renewal Process for 2300MHz and 3500MHz Licences

We are writing from the standpoint of a company which sought to license spectrum in 2300 MHz and 3500 MHz during the original auctions, and has had to postpone investment for years while the airwaves have remained frozen to any constructive use while license-holders merely ensured base stations were installed in order to meet the minimum requirements of licensing but at the same time to not compete in any way with their very own service offerings using other, more-economical, spectrum.

Over 1400 3.5Ghz WiMAX radios stand at the ready to be installed to provide real 'carrier-class' services to customers throughout Prince Edward Island, and they have been waiting, stacked next to the wall in storage, for this day to arrive. Likewise, I have units for use on 2.3GHz ready to deploy right away.

Unlike Rogers, which shut down its 'Portable Internet' service, and Bell, which seems to want to use the spectrum for backhaul, our company, through the Metrocom brand, wants to deliver cost-effective service in under-served and uncompetitive areas.

What competition exists in the Maritimes? One wireline provider, Bell, offers DSL service, and one cable provider offers cable internet access. That is it. In Nova Scotia, where the government has sponsored some wireless services, it can be argued there is a 'third way' but none compete on service quality or price, and throughout Prince Edward Island and New Brunswick the situation is even weaker. Wireless options consist of either mobile-phone networks from the oligopoly providers, charging some of the highest rates in the world for data carriage, or smaller operators using first- and second-generation Wi-Fi type gear on unlicensed spectrum, with all of the inherent spectral inefficiency and service unreliability issues which comes with that.

No small operator of such network actually expects Industry Canada shall show Inukshuk the door, but it should.
Called it 'creative destruction' but we should call it innovation.

After the clear low interest in the first round of the original auctions, Industry Canada relaxed the rules as to the amount of spectrum which could be controlled by a bidder, and allowed Bell and Rogers to collectively take up the majority of the best blocks, so that the second round saw far higher prices for the available frequencies.

If the duty of IC is to simply generate as much revenue as possible, it can simply allow the effective oligopoly to continue. The frequencies will remain 'banked' and no new competition will result. But if IC wants to engender innovation and competition, then it is time to start anew with a new policy which is grounded in experience.

New auctions, for entrants which do not have national licenses in other frequencies, along with a pioneer programme and a public benefit plan, would be the best approach.

While it is reasonable to look to the FCC in the United States of America so as to coordinate frequencies and to avoid interference, IC spectrum policy should be made in Canada.

This means that if IC has deemed unlicensed use of spectrum in the 3 GHz range in the U.S. as successful, and seeks to emulate this as an experiment, it would be useful to set out one or more blocks as being for mid- to long-range wireless communications in fixed, mobile, and ad-hoc configurations where the operator is registered. This requirement to register as an operator would enable future evaluation of the importance of the block to the actual users without requiring a 'license-heavy' implementation that would hinder small or experimental operators of wireless services while at the same time ensuring professional usage rather than wide-open use for the general public, which is generally not acquainted with the planning or physics of radio access networks.

Based on specific regions where only the Inukshuk JV and one other party has held spectrum, it would be useful to now offer pioneer blocks, based on first to conquer, being specific blocks in specific cells, which would require contention-based base stations and coordination between users, or some basic implementation of WiMax or LTE technology which would allow multiple spectrum users to overlap.

Ten years ago this could have been unworkable, but the technology is now in place. The blocks should be open for three years without any license costs and then be solidified or awarded on a formal basis only when users have met specific thresholds for customer coverage rather than merely building a base station. Should spectrum remain fallow after the three year window, IC could decide to grant one or more additional extensions for new users, following which any unused spectrum could be offered first to existing users in these frequency blocks, from local users, to regional users, and then to users anywhere in Canada. This would act to encourage successful user to expand areas served and would attract capital to innovative companies.
The remainder of the blocks which have not been allocated for either unlicensed users or pioneer users should be auctioned off using the same mechanism IC used in its very innovative auction of mobile spectrum which resulted in new businesses in the mobile telephone marketplace, provided the auction excludes any and all of the mobile operators.

To this end, the successful bidders should be permitted to use any technology, and any device, to offer services, provided they do so within three years, with a preference for those bidders in under-served areas. There are enough technologies, in particular software-defined radio, and enough products, in existence that networks are able to be deployed rapidly with reasonable costs, and this remains one basis upon which the existing operators such as Inukshuk have not excelled. It would be a tragedy to see this useful spectrum, particularly in 2300 Mhz, relegated to be cheap back-haul for mobile-phone networks rather then being used to offer new, innovative services, or to remain as spectrum buoys which merely 'ping' to show licenses are 'in use'.

Should IC take the view that innovation, customer choice and operator diversity, along with network access resilience, is the priority for Canada then it is time for the creative destruction to begin. For a decade, Rogers and Bell have let the spectrum essentially sit fallow. Rogers has withdrawn its own 'Portable Internet' and to a large extent Inukshuk has been a shell for hoarding spectrum, with some areas, such as within Manitoba, only going up this year.

Smaller companies, which not only can, but must, react swiftly in order to compete with massive enterprises or foreign-controlled operators, are closer to customers, typically being based in the very same communities they serve, and respond to customer demands immediately without being burdened by the hierarchies found in those larger companies.

We are ready to make investments, and to deploy to actual customers. The decision last week by the FCC to permit Dish to use satellite link spectrum to offer terrestrial service points to the need for new services, and hints at the fact that getting LTE gear in other frequencies is not at all as difficult as some incumbent licensees might claim.

Your comments or questions would be most welcome and we remain at your service if you require additional information or clarification.

Yours truly,

/s

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Eidos Response to Industry Canada

Question (1): Industry Canada seeks comments of the proposed wording of the condition of licence related to deployment. Comments are also sought on the following proposals that:

A. **Deployment of fixed links not servicing an end user directly should be considered as an alternative method to meet WCS and FWA spectrum deployment license conditions;**

   We do not believe that using fixed Point to Point links as a condition of appropriate spectrum use is acceptable. The spectrum was auctioned off with a condition that it would be used at an acceptable level within 5 years. There was a First Extension to year 8 of the license, and a second extension to the end of the license term. We believe that there is sufficient choice of equipment available to provide Point to Multi-Point services, and that 10 years is sufficient time to deploy.

B. **When a requirement is considered for fixed links not servicing an end user directly, it should be set at 15 links per million population, per the Tier 4 area at the end of the license term.**

   15 links per million population equates to 1 link per 66,666 population. Of the 172 Tier 4 areas, 127 could meet this requirement by deploying a single Point to Point link, an additional 31 areas would meet the requirement by deploying 5 or less links. This policy could effectively tie up 92% of the Tier 4 areas with no benefit to Canadian End Users.

   There are superior spectrum bands available for Point to Point Microwave systems with additional bandwidth to support this use. While license holders should be able to deploy Point to Point systems that complement their Point to Multi-Point network, Point to Multi-Point should always be the primary use of this band and the basis of deployment license conditions.

   We believe that the obligation to the license holder should be that the spectrum be used as it was originally intended – i.e. for Broadband Wireless Access. If a license holder is not able to deploy services in a reasonable amount of time (10 years has been more than reasonable), then that spectrum should be made available to providers who will.
Question (2): For the 2300MHz band, which of the two options is preferred?

For the 2300MHz band, we support Option 2 for licenses that have met the original deployment conditions but seek a return to single block limits, with a return of additional blocks. We think that 10 year terms are acceptable as long as timely reviews of deployment conditions are met. We support the ability to modify current licenses to reflect the portion of the service area that has coverage. All unassigned subdivided licenses to be returned to Industry Canada.

Question (3): For the 3500MHz band, which of the two options is preferred?

For the 3500MHz band, we support Option 2 for licenses that have met the original deployment conditions but seek a return to single block limits, with a return of additional blocks. We think that 10 year terms are acceptable as long as timely reviews of deployment conditions are met. We support the ability to modify current licenses to reflect the portion of the service area that has coverage. All unassigned subdivided licenses to be returned to Industry Canada.

Question (4): For Option 1 – (detailed in section 7.1 of the consultation):

A. Should license terms be extended by the same length for all licensees?
   We do not support the extension of the license term to allow licensees to meet deployment requirements for either bands.

B. Should the deployment requirement also be extended to the end of the proposed term?
   No.

C. In considering an extension of the license term, do you expect equipment in the 2300 MHz band to become available soon enough to achieve the deployment requirements by December 2017? Equipment already exists; one of our investments is in a company which supplies wireless equipment and can state there is no lack for equipment, but rather a lack of interest to comply.

D. In considering an extension of the license term, do you expect LTE equipment in the 3500 MHz band to become available soon enough to achieve the deployment requirements by December 2017?
   LTE is not an end unto itself, and LTE-like characteristics are possible using proprietary or modified systems, including up-converted Wi-Fi and expanded WiMAX variants. Even with lower cell sizes, LTE is technically possible to deploy but economically unsound vis-a-vis other options.

E. Are there and additional considerations that should be taken into account by Industry Canada?
   Only the unwillingness of license holders to act according to the requirements of the licenses.
Question (5): For Option 2 (detailed in section 7.2 of the Consultation):

A. Given the potential upcoming changes, is 10 years an appropriate term for new licenses issued through the renewal process?
   No. New operators, which are competing with internationally active or national operators licensed in other frequencies, would prefer a 10 + 5 + 5 model that would enable longer investment horizons in order to attract capital. If any license holder removes or 'redeploys' equipment, then the license should be returned to Industry Canada.

B. Should deployment requirements apply to new licenses under the renewal process? If so, what should the deployment requirements be?
   Deployment requirements should remain as issued in the original license auction, but with a condition to either register or formally enumerate actual end-users to demonstrate penetration. Licenses should be sub-divided geographically to allow license holders to meet requirements, unused licenses should be returned to Industry Canada.

C. Are there any additional matters that should be considered by Industry Canada when issuing a new license for a new term?
   Spectrum harmonization or coordination with the FCC for areas near the U.S. border would be laudable, in the same manner operators must concern themselves about operating in other spectrum bands near airports for potentially interfering with radar, or other facilities, but the very highest priority for Industry Canada should be productive use of any spectrum in Canada in the most beneficial and efficient manner possible. We note the FCC is an inherently political body as the commissioners are appointed by party lines, and the long-term, best, interests of Canadians would not be of concern to Republicans or Democrats in Washington, DC.

Question (6): Are there any other options for the license renewal process that Industry Canada should consider?

We do not support spectrum in 2300 and 3500 MHz remaining in the hands of incumbents, and seek the path to new and innovative services by new and innovative license-holders.

Question (7) Industry Canada invites comments on the proposed wording of the condition of license related to the license term (detailed in section 8 of the consultation):

While not calling for terminal licenses, we would consider a requirement for license-holders to register of customer on each end-point, to then deliver verified aggregate user numbers on an annual basis in such form that Industry Canada would be able to monitor license penetration and overall aggregate service demand in each block so that it can be better able to evaluate future needs for other spectrum auctions or license reviews.