



May 25, 2007

Director, Spectrum and Radio Policy  
Telecommunications Policy Branch, Industry Canada  
1604A, 300 Slater Street, 16th Floor  
Ottawa, Ontario  
K1A 0C8.

Filed in electronic format to: [aws@ic.gc.ca](mailto:aws@ic.gc.ca) using Microsoft Word 2003 on Microsoft Windows XP Professional.

Subject: Barrett Xplore Inc. (BXI) Comments with respect to the consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services, Canada Gazette – Part 1, Notice No. DGTP-002-07 dated February, 2007

1. BXI is pleased to submit the attached comments concerning the consultation framework.
2. If there are any questions concerning these comments, please do not hesitate to contact the undersigned.

Yours truly,

A handwritten signature in black ink, appearing to read "John Maduri". The signature is fluid and cursive.

John Maduri  
CEO  
Barrett Xplore Inc.

cc Dr. M. Binder  
Jan Skora  
Peter Hill  
Encl. Attachment

Canada Gazette Notice No. DGTP-002-07  
February, 2007

Consulation on a Framework to Auction Spectrum in the  
2 GHz Range including Advanced Wireless Sercices,

Published in the *Canada Gazette*, Part 1  
February, 2007

**Comments of**

Barrett Xplore Inc.



MAY 25, 2007

## Table of Contents

1. INTRODUCTION .....	4
2. BACKGROUND .....	4
3. COMMENTS .....	6

## **1. Introduction**

Pursuant to Notice No. DGTP- 002-07, Barrett Xplore (BXI) is pleased to provide its general comments. BXI will provide general comments as they pertain to the application of spectrum to advancing the closing of the digital divide between rural and urban areas in Canada. BXI will not provide specific comments on those items outline in the consultation framework, but will concentrate on the all important priority of making reasonably priced spectrum available to new entrants that are directing their efforts to providing an urban grade broadband service to rural areas. Urban markets have numerous broadband facility options, including DSL, Cable modem, wireless broadband, and 3G cellular. Given the rural market's characteristic of lower population density, wireless broadband will play a much more important role in rural than urban Canada. Hence, a thoughtful and differentiated approach to awarding spectrum has great potential to encourage new and sustainable competitive entry as well as accelerating deployment of service over a much shorter period of time than generally anticipated.

## **2. Background**

Barrett Xplore Inc. (BXI) is Canada's FIRST, NATIONAL RURAL broadband provider. Our vision is simple—more for rural Canada: more choice, competition, and availability of broadband access, applications, and accessories. The vision speaks to a change in the historical paradigm for telecom in rural Canada. Historically, with lower population density and consequently, higher capital and operating costs, rural Canadians have been challenged by higher costs and less availability of broadband telecom services enjoyed by urban Canadians. Further, rural Canada has historically been subject to first, a regulatory monopoly for telecom services, and then a de facto monopoly owing to the high barriers to entry in competing with Canada's telephone companies. The

execution of our strategy is focused on achieving an urban quality broadband experience in our target market, rural Canada.

It is not an inconsequential consideration that BXI is headquartered in Woodstock, New Brunswick. Our location is consistent with and reflective of the Barrett family's legacy of serving this market; the best example is our pivotal involvement in StarChoice, over 1996 to 2004, in bringing satellite TV to over 700,000 Canadians. Today, our focus is in providing broadband to rural and remote areas of Canada using new, state-of-the-art fixed wireless and Ka-band satellite technology. BXI's commitment to "broadband everywhere" is fulfilled by applying a "best fit" approach to technology, based on the characteristics of the market being served. By using advanced Ka-band satellite services to address markets where fixed wireless and other terrestrial based service is uneconomical to deploy, BXI has developed and is implementing a sustainable and economically viable solution to the broadband needs of Canadians in areas that until recently had been unable to obtain this service.

Currently, BXI has more than \$50 million of private capital invested in its rural broadband initiatives and the company has entered into supply contracts valued at \$240 million to fulfill its business objective of becoming the leading supplier of broadband services to rural and remote areas of Canada. BXI has raised \$100 million of private capital to complete its roll out plan to 2011. With quantum advances in the cost, capability, and reliability of fixed wireless and satellite broadband technology; with the evolution of innovative provincial Internet backbone models such as SuperNet and Network BC; and with the entry of BXI and other alternative rural broadband providers, 2006 marked a critical juncture in the availability of rural broadband and the development of a competitive rural market.

As indicated above, BXI's business strategy has been to focus on extending the reach of affordable broadband service to Canadians that reside outside areas that terrestrial carriers can economically serve. BXI's fixed wireless services offer bandwidths from 1 to 8 mbps, depending on customers' requirements, at prices starting as low as \$29.99 per month. BXI's Ka-band satellite service delivers high quality broadband services with speeds from 500 kbps to 2 mbps at reasonable prices, starting at \$54.99 per month. These prices and bandwidth offerings compare favorably with prices available in other parts of Canada with higher population densities. BXI services its customers with a network of over 800 local community-based partners who sell, install and support its services.

Demand for BXI's services has been extremely robust. BXI is serving customers in all provinces and territories of Canada, including vast regions of the country that are hundreds of miles from any urban centre.

### **3. Comments**

BXI notes that Canada continues to be progressive in its application of spectrum management. However, it is becoming apparent that Canada e readiness ranking in the world economy is slipping from a 9th position to 13 in the world (Economist Unit e readiness ranking 2007). The e readiness index is a function of a variety of factors including broadband availability and the closing of the digital divide.

BXI offers the following comments:

- A. There can be no question that rural and remote areas of Canada lag the urban/suburban areas in terms of i) availability of broadband or high-speed Internet service; and ii) the intensity of competition and extent of choice for these and other telecommunications services.

- B. The characteristics of rural and remote areas of Canada, notably lower population density, make wireless broadband technology and the availability of wireless spectrum, so much more important for rural areas, than for urban/suburban areas. In these latter areas, there are considerable “wired” alternatives such as DSL, fibre, and cable modem services available to serve residences and businesses.
- C. Clearly, for Industry Canada, and for the country, at large, there is the question of priorities in licensing spectrum—is it more important to:
- 1) bring new advanced wireless services to market. More than likely, these new services will first benefit urban markets where population density and the concentration of existing users will make roll-out of services that much more profitable for service providers; or
  - 2) eliminate the digital divide in Canada, between urban/suburban and rural markets, significantly advancing both the availability and the choice and competition for broadband in rural Canada?
- D. Given the fundamental strategy of Barrett Xplore Inc., it will come as no surprise that our Company believes strongly that the elimination of the digital divide is the greater priority, and hence that Industry Canada should be prioritizing:
- 1) The award of available spectrum in 700, 2,500, 3,500, and 3650 MHz bands for the specific purpose of advancing rural broadband availability, as well as choice and competition, in rural broadband telecommunications. Within these bands, high capability wireless broadband infrastructure choices are well developed and benefit from the volume and scale driven by much larger countries which are aggressively deploying this technology to support both broadband and basic telecommunications requirements.

- 2) The specific tailoring of spectrum in the 1,700 to 2,100 MHz bands for rural broadband use.

A further consideration in this question of priorities relates to the state of technology readiness. Wireless broadband technology of the nature used by Barrett and other wireless or rural broadband providers across the globe is well developed and “ready now” to meet the needs of our target market. However, as we engage in understanding carrier grade WiMAX or next generation broadband evolutions of traditional cellular technology, there is great debate as to readiness of the technology and the willingness of service providers to invest heavily now, or in the next 2-3 years.

- E. Beyond the issue addressed above, as to which spectrum should be licensed first, we further offer a perspective that the differential characteristics of urban vs. rural Canada suggest a differential approach to awarding spectrum for these areas of Canada. These characteristics include:

- 1) The greater importance of wireless broadband in rural as compared to urban markets, as discussed above.
- 2) The greater cost pressures inherent in operating in the rural market: lower population density, fewer alternatives for cost effective backbone, the upward cost pressure driven by greater distances incurred in ongoing support and service of customers—“windshield time”.

- F. We believe that the proposed award process fails the rural market in a number of significant ways:

- 1) Auctions are clearly attractive to the Government of Canada in terms of the funds which can be generated. Auctions as currently constructed add considerably to an already challenged economic model for rural broadband. Perhaps, it can be argued that auctions are the only market-based approach to award

spectrum: however, with greater cost pressure on the economic model, competitive entry is discouraged, and greater are the calls for government or public subsidy.

- 2) Of equal concern are current market or licensed area definitions which include significant rural areas with large urban markets. In an auction process, rural broadband providers are severely discouraged from, and disadvantaged in bidding for these licenses. It would be uneconomic to bid for the entire license and to carry the cost burden of the true urban market area, when it is simply the rural market area which the rural provider seeks.
- 3) As indicated in BXI' comments Canada Gazette Notice No. DGTP-006-06, August 2006, BXI is currently using license exempt spectrum (predominantly in the 900 MHz and 2.4 GHz range) for its wireless deployments; there has been considerable effort expended in identifying other licensed spectrum options and in evaluating these for the purposes of rural broadband deployments —specifically in the 700 MHz, 2.3-2.5 GHz, and 3.5 GHz bands. While licensed spectrum has been awarded through various processes in the 2.3, 2.5, 2.6 and 3.5 GHz blocks, deployment of broadband in rural service areas, on these spectrums, has been minimal to date. Some of the reasons for this are:
  - i)* The geographic area covered by licenses often encompasses large territories that include varying population densities. An example of this is the Calgary Tier 4 service area – 4-136 which covers approximately 20,000 square km and covers high density urban and suburban areas as well as rural areas surrounding the city. This structure and

definition of license areas needs to change. Alternative rural broadband providers cannot compete with the ILEC's and other large service providers in an auction process, where bid values would focus on the core urban portions of licenses. A rural provider cannot afford to acquire an entire license area and then leave the urban and suburban portions of it unused. The result: an in-ability for rural broadband providers such as BXI to access licensed spectrum in order to serve rural communities—and, in turn, rural communities are then denied the opportunity for choice, competition, and availability of broadband.

- ii)* BXI believes it important that there be made available licensed spectrum sufficient to meet the needs of national, regional/provincial alternative rural broadband providers. A constant theme in the discussion of rural broadband strategies is the need to offset the inherent cost disadvantages relating to low population densities and lack of cost-effective IP backbone/backhaul with other cost advantages. One critical cost advantage is economies of scale, which follows a more broadly based national or regional business model—economies of scale in purchasing network equipment, in negotiating favourable backbone and tower rental agreements, and in operations (network operations, customer care, and billing). The ability to deploy and scale across the entire nation or specific provincial or regional markets will be severely handicapped by a Tier 4

level market-by-market approach. While the market-by-market approach may initially yield the benefit of local entrepreneurial engagement, over time, there will be incredible economic pressure for consolidation. Consolidation, in turn, results in incremental transaction costs and speculative profits which will not be helpful in advancing the speed and extent of rural broadband deployment.

- iii)* The problem of urban-rural market segmentation can also be seen in the results of the 2.5 GHz MCS comparative selection process conducted in 2000 that awarded almost all of the Canadian licenses to Inukshuk Internet Inc. through a comparative licensing or “beauty contest” approach. Unfortunately the very large MCS license areas include both rural and urban markets. The lure of the large urban population and easier business case returns likely explains why the deployments, announced to date, focus on large urban areas.

G BXI recommends that there be distinct separate licenses covering rural areas and recommends the following for Service Area licensing:

- 1) Divide licenses into urban and rural based on the Department’s definitions as found in RIC-27 (or an updated approach to rural/urban segmentation). This will ensure consistent population densities and definition of licenses between Urban vs. Rural/Remote.

Applying this approach, for example, to the Calgary license 4-136, would highlight the great extent to which this license is

made up of mainly rural cells. A separation of the rural and urban cells into 2 new licenses would allow for a significant geographic area (Figure 1) to be licensed to an appropriate new entrant with a business plan targeted to this market.

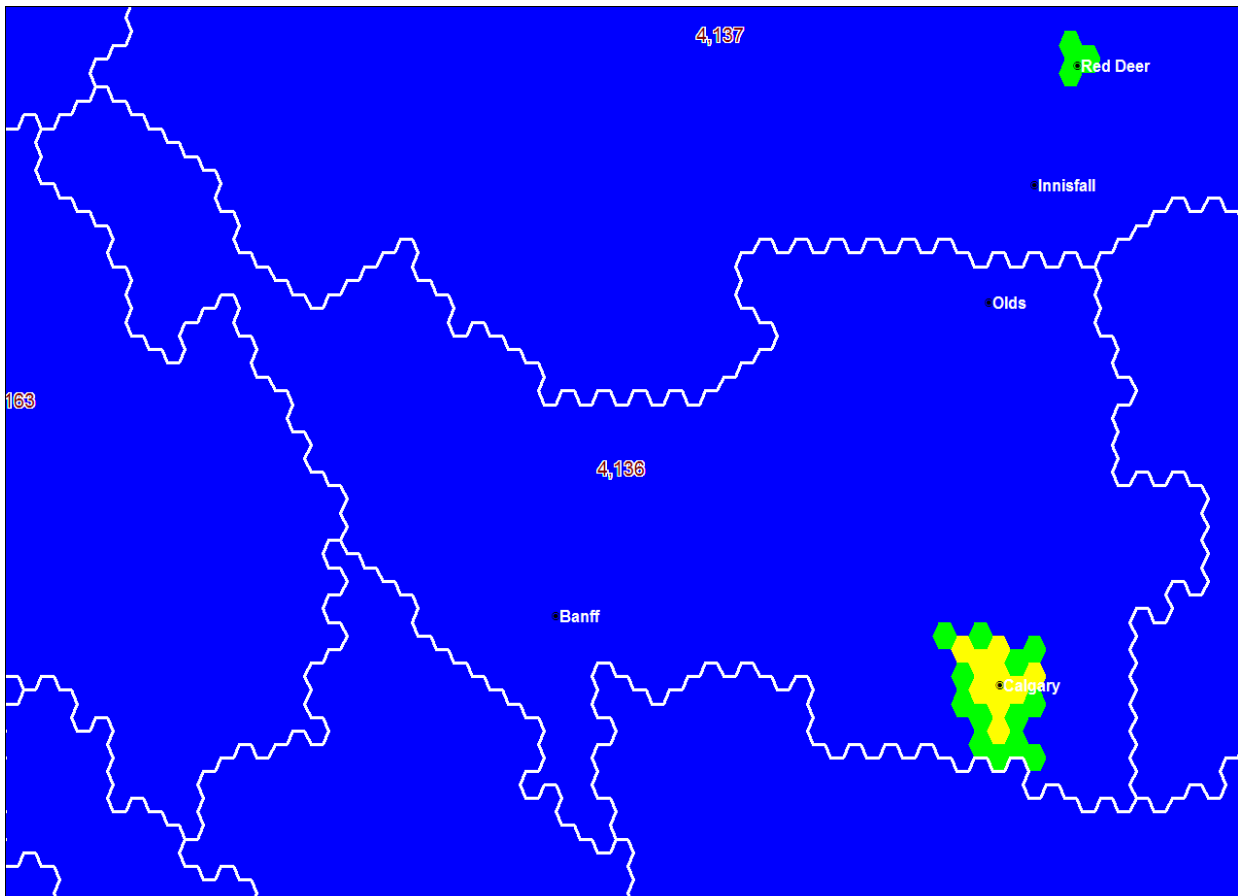


Figure 1 – Calgary Tier 4 License

Household Density /sq km

- 0 - 25
- 25 - 250
- 250 – 2,500

- 2) Offer licenses at a provincial or regional level (Tier 2 or Tier 3) for each of the defined categories rural and urban categories in order to afford effective economies of scale in each service area.

- 3) Segment the 50 MHz spectrum block into two regional/provincial 25 MHz blocks. This structure would afford a number of regional/provincial providers the economies of scale needed to support the rural markets.
  
- 4) We ask that Industry Canada reflect on i) the differential characteristics of rural Canada; ii) the priority for closing the digital divide; and iii) the imperative for developing a competitive rural broadband and telecommunications market with real choice. Reflecting on these three important factors, BXI respectfully request that Industry Canada reorient the entire discussion of spectrum in a manner which gives new technology players a fighting chance to deliver service where the established players have chosen not to aggressively engage. To date rural broadband has been a discussion of subsidization; BXI submits there is an effective and profitable business model available to rural Canada in a progressive policy is advanced effectively utilizing licensed spectrum as the corner stone of delivery.