



**PUBLIC INTEREST ADVOCACY CENTRE  
LE CENTRE POUR LA DÉFENSE DE L'INTÉRÊT PUBLIC**

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## **The Importance of a Spectrum Set-Aside in the AWS-3 Auction**

### **Spectrum is a Public Resource**

Radio frequency spectrum (“**spectrum**”) is a scarce public resource, not unlike a natural resource, that is regulated by the Government of Canada. Spectrum forms the basis for many types of wireless communications services in Canada, including radio, over-the-air television, wireless Internet and mobile telephone services. These services comprise part of the communications industry, which generated over \$60.7 billion in revenues in 2012.<sup>1</sup>

Spectrum is particularly important for the mobile telephone (“**wireless**”) industry, since this industry represents over 33% of all communications industry revenues and is by far the fastest growing sector.<sup>2</sup> This increased growth has led to recent auctions of spectrum licenses generating billions of dollars in revenue for taxpayers, from wireless service providers purchasing licenses to provide or expand wireless services.<sup>3</sup>

However, what is often lost among discussions of spectrum management, and the wireless industry generally, is that spectrum is a *public* resource. The *Radiocommunication Act*,<sup>4</sup> which gives the Minister of Industry the power to license spectrum, references the policy objectives of the *Telecommunications Act*, which include:

7. It is hereby affirmed that **telecommunications performs an essential role in the maintenance of Canada’s identity and sovereignty** and that the Canadian telecommunications policy has as its objectives

(a) to facilitate the orderly development throughout Canada of a telecommunications system that **serves to safeguard, enrich and strengthen the social and economic fabric of Canada** and its regions;

(b) to render reliable and **affordable** telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;

<sup>1</sup> Canadian Radio-television and Telecommunications Commission, “Communications Monitoring Report 2013” (September 2013), online: <<http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2013/cmr2013.pdf>> at 41.

<sup>2</sup> *Ibid* at 42.

<sup>3</sup> The “AWS-1” auction in 2008 generated \$4.25 billion, and the “700MHz” auction in 2014 generated \$5.27 billion, see: Industry Canada, “Auction of Spectrum Licences for Advanced Wireless Services and Other Spectrum in the 2 GHz Range — Licence Winners” (July 2008), online: <<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09002.html>> and Industry Canada, “700 MHz - Spectrum Auctions – Winners” (February 2014), online: <[http://agora.ic.gc.ca/ccawinners\\_eng.cfm?p\\_auction\\_id=8.0](http://agora.ic.gc.ca/ccawinners_eng.cfm?p_auction_id=8.0)>.

<sup>4</sup> RSC 1985, c R-2.

(h) to respond to the **economic and social requirements of users** of telecommunications services;<sup>5</sup>

Industry Canada, the government department responsible for spectrum management, including the issuance of spectrum licenses and imposing conditions on the use of spectrum, has a single policy objective it uses to guide the licensing process:

To maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource.<sup>6</sup>

These policy objectives have a clear focus: the best interests of the Canadian public. This is the starting point from which any policy involving the use of spectrum must be analyzed.

### **The Changing Nature of the Wireless Industry**

PIAC recently released a backgrounder on the state of the wireless industry,<sup>7</sup> with the ultimate conclusion that Canadians deserve better. The Government has made a number of attempts to increase competition in the industry, with the goal making wireless services more affordable and more available for Canadians. The upcoming AWS-3 spectrum auction presents yet another opportunity.

Industry Canada's proposed AWS-3 auction rules include several measures that seek to encourage more competition; but first it is important to understand the broader context.

Wireless devices that make use of data services, including smartphones, tablets, and mobile broadband devices, have become an increasingly important part of revenues for wireless providers. The following chart shows the growth of revenue resulting from data services.<sup>8</sup>

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<sup>5</sup> SC 1993, c 38, s 7. Emphasis added.

<sup>6</sup> Industry Canada, "Spectrum Policy Framework for Canada" (June 2007), online: <<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08776.html>>.

<sup>7</sup> PIAC, "Wireless Services in Canada: Why Canadians Deserve Better" (3 September 2014). online: <[http://www.piac.ca/telecom/piac\\_releases\\_backgrounder\\_wireless\\_services\\_in\\_canada\\_why\\_canadians\\_deserve\\_better](http://www.piac.ca/telecom/piac_releases_backgrounder_wireless_services_in_canada_why_canadians_deserve_better)>.

<sup>8</sup> Data for 2010-2012: CRTC, *supra* note 1, at 159; 2013-2015 are estimated based on linear growth.

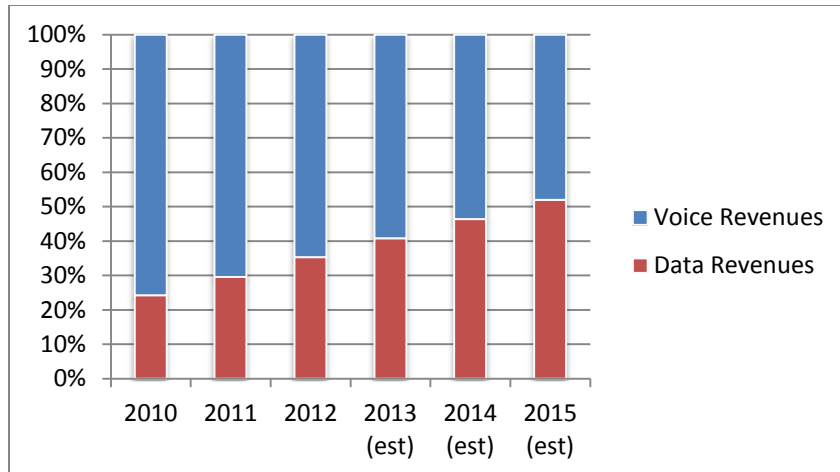


Figure 1. Percentage of carrier ARPU resulting from voice and data service

If current trends continue, then as Figure 1 shows, data revenues will account for more than half of the average revenue per user (“ARPU”) carriers receive from wireless subscribers, by 2015. This, in part, can explain some of the difficulties<sup>9</sup> that the smaller wireless competitors have encountered in competing with the incumbents. To provide high-speed data service, as well as a reliable voice and text network, service providers require a significant amount of spectrum.

Due to limited spectrum holdings, when compared with the vast spectrum holdings of the “Big Three” national incumbents,<sup>10</sup> the smaller competitors have significantly less spectrum to dedicate towards high-speed data service; they must first ensure they can provide reliable voice and text functionality.<sup>11</sup> By contrast, the incumbent wireless providers have been able to dedicate their recent spectrum additions to further develop their high-speed data networks,<sup>12</sup> since their existing spectrum holdings are sufficient to provide voice, text and lower-speed data functionality.

The following chart showing the percentage of spectrum allocated for the wireless industry per service provider as compared to wireless subscriber market share, is illustrative of the issue:<sup>13</sup>

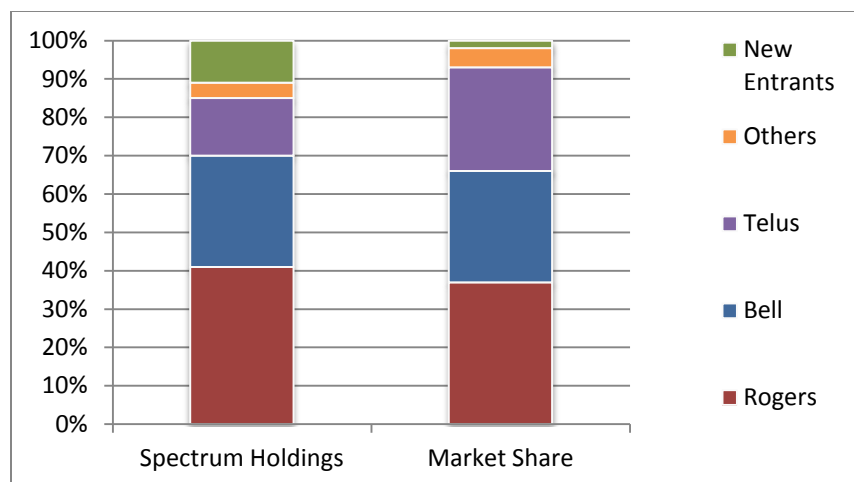
<sup>9</sup> Other difficulties are described in PIAC’s previous background on the wireless industry; see *supra* note 7.

<sup>10</sup> Bell Mobility Inc., Rogers Communications Partnership, and TELUS Communications Company, who collectively have over 90% nation-wide subscriber market share.

<sup>11</sup> Despite this fact, the smaller competitors continue to offer packages including data service that are more affordable than the incumbents. See e.g. Wall Communications Inc., “Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions: 2014 Update” (March 2014), online: <[http://www.wallcom.ca/pdfs/price-comp-report\\_2014update\\_final\\_CRTC.pdf](http://www.wallcom.ca/pdfs/price-comp-report_2014update_final_CRTC.pdf)> at 19.

<sup>12</sup> See: Rogers Communications Inc., “Rogers flips the switch on 700 MHz spectrum to deliver the ultimate video experience to customers” (17 April 2014), online: <[http://about.rogers.com/About/Media\\_Relations/News/14-04-17/Rogers\\_flips\\_the\\_switch\\_on\\_700\\_MHz\\_spectrum\\_to\\_deliver\\_the\\_ultimate\\_video\\_experience\\_to\\_customers.asp](http://about.rogers.com/About/Media_Relations/News/14-04-17/Rogers_flips_the_switch_on_700_MHz_spectrum_to_deliver_the_ultimate_video_experience_to_customers.asp)> and Daniel Bader, “Bell first in Canada to launch 700Mhz LTE service, beginning with Hamilton, Ontario” (3 April 2014), online: MobileSyrup <<http://mobilesyrup.com/2014/04/03/bell-first-in-canada-to-launch-700mhz-lte-service-beginning-with-hamilton-ontario>>.

<sup>13</sup> Data from 2010, before the 700MHz auction. Sources: Industry Canada, “Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum” (30 November 2010), online: <<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09949.html>> and CRTC, “Communications Monitoring Report 2011” (July 2011), online: <<http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2011/cmr2011.pdf>>.



**Figure 2. Total spectrum holdings and total wireless subscriber market share**

Note that the disparity in TELUS’s spectrum holdings versus their market share is partly due to TELUS and Bell sharing their networks with one another since 2001; first for a CDMA network (voice and low-speed data), then HSPA and now LTE (high-speed data).<sup>14</sup>

These facts clearly show the importance spectrum has in the wireless industry, especially going forward as subscribers’ increasing consumption of mobile data and increasingly bandwidth hungry applications will require higher speeds from higher capacity networks.

While there are other issues<sup>15</sup> that need to be addressed to promote increased and sustained competition in the wireless industry, access to spectrum by smaller competitors must be the cornerstone of spectrum licensing policy in order to achieve the Government’s policy objectives.

### **Proposed AWS-3 Auction Rules Benefit Consumers**

Industry Canada’s proposed AWS-3 auction rules include a set-aside of a 30 MHz block of paired spectrum out of the total 50 MHz, for which only ‘operating new entrants’ can bid.<sup>16</sup> In essence, ‘operating new entrants’ are the smaller national or regional competitors below a specified market share who are already offering wireless service in the areas they have spectrum licenses.

<sup>14</sup> See: BCE, “Bell signs wireless agreement with TELUS which will significantly expand access to digital voice and data services across Canada” (17 October 2001), online: <<http://www.bce.ca/news-and-media/releases/show/bell-signs-wireless-agreement-with-telus-which-will-significantly-expand-access-to-digital-voice-and-data-services-across-canada>> and Jamie Sturgeon, “Telus and Bell’s wireless partnership still a sore spot for competitors” (12 June 2012), online: Financial Post <<http://business.financialpost.com/2012/06/12/telus-and-bells-wireless-partnership-still-a-sore-spot-for-competitors>>.

<sup>15</sup> For example, tower sharing, site sharing and wholesale roaming agreements. See PIAC’s previous backgrounder, *supra* note 7.

<sup>16</sup> Industry Canada, “Consultation on the Technical, Policy and Licensing Framework for Advanced Wireless Services in the Bands 1755-1780 MHz and 2155-2180 MHz (AWS-3)” (28 July 2014), online: <[http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-14-AWS-3-EN.pdf/\\$file/SLPB-004-14-AWS-3-EN.pdf](http://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-004-14-AWS-3-EN.pdf/$file/SLPB-004-14-AWS-3-EN.pdf)>.

Some commentators have suggested that such a set-aside is unnecessary; will not work to create sustainable competition; or would result in significant losses for taxpayers resulting from decreased auction revenues.

However there is evidence that a set-aside policy will actually benefit consumers.

The spectrum set-aside in the 2008 AWS-1 spectrum auction brought into the marketplace several new competitors such as Mobilicity, Public Mobile, WIND Mobile and wireless divisions from cable companies Eastlink and Videotron. By contrast, the lack of a set-aside in the early 2014 700 MHz auction led to essentially a preservation of the status quo, due to the deep pockets of the incumbents and a complex and untested auction format. For example, Rogers spent \$3.29 billion on spectrum in the 700MHz auction, more than double the *combined* amount *all* potential new competitors spent in the AWS-1 auction.

A set-aside for the upcoming AWS-3 auction will benefit smaller competitors, who need more spectrum to expand their services. Further, the size of this set-aside block, and the AWS band's propagation characteristics, make it particularly well-suited for deploying the high-speed data service that consumers increasingly rely on.

Looking to the experience of other countries, a spectrum set-aside was used in the United States' "PCS" auction in the late 1990s, and in the United Kingdom's 3G auction in 2000. The new competitors that emerged from those auctions have, in the years since, become strong regional or national competitors.<sup>17</sup>

Finally, the presence of another strong competitor in each region of Canada is likely to result in significant savings for consumers; enough savings to offset potential "losses" from reduced auction revenues. PIAC previously released its analysis on this point,<sup>18</sup> but it bears repeating.

Revenues for spectrum auctions are not budgeted, nor earmarked for a specific purpose. Auction revenues are a one-time influx of money for general government use, rather than the real reduction in the year-over-year cost of services to consumers that would result from lower pricing from increased competition. In a submission to the Canadian Radio-television and Telecommunications Commission for the Competition Bureau, the Brattle Group estimated that consumers would see savings of \$1 billion *per year* from a fourth national player.<sup>19</sup>

The ongoing savings to consumers on their monthly wireless bills provides a more significant benefit than a one-time lump sum, without an earmarked destination, given to the Government.

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<sup>17</sup> Lemay-Yates Associates Inc., "Report: Implications of reserving spectrum for entrants" (27 June 2007), online: <[https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/dgtp-002-07-rep-MTS-Allstream\\_Appendix-B\\_LYA.pdf/\\$FILE/dgtp-002-07-rep-MTS-Allstream\\_Appendix-B\\_LYA.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/dgtp-002-07-rep-MTS-Allstream_Appendix-B_LYA.pdf/$FILE/dgtp-002-07-rep-MTS-Allstream_Appendix-B_LYA.pdf)>.

<sup>18</sup> PIAC, "The "AWS-3" Spectrum Auction – What is the Best Deal for Consumers?" (9 July 2014), online: <[http://www.piac.ca/telecom/piac\\_releases\\_backgrounder\\_on\\_aws\\_3\\_auction\\_costs\\_and\\_benefits\\_for\\_consumers](http://www.piac.ca/telecom/piac_releases_backgrounder_on_aws_3_auction_costs_and_benefits_for_consumers)> at 2-3.

<sup>19</sup> Brattle Group, "Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier" (12 May 2014), online: <<https://services.crtc.gc.ca/pub/DocWebBroker/OpenDocument.aspx?DMID=2131727>> at 35.

## **Conclusion**

The proposed spectrum set-aside of 30 MHz of paired spectrum for operating new entrants in the upcoming AWS-3 auction has great importance to consumers and to the future of the Canadian wireless industry. Consumers deserve that spectrum, a public resource, is put to the most effective use by improving the affordability and accessibility of the telecommunications system for all Canadians.

The growing importance of data services to the wireless industry means that smaller competitors require more spectrum to stay competitive with the large incumbents; incumbents who own virtually all of the currently allocated spectrum and control virtually all of wireless subscriber market share.

Spectrum set-asides have proven to be an effective tool to encourage competition in the past, both in the experience of other countries and in Canada, and consumers stand to gain significant savings year-over-year from increased competition in the industry.

While PIAC has made specific comments about who should be eligible for the set-aside, and how the set-aside should be structured,<sup>20</sup> Industry Canada's proposed spectrum set-aside should be lauded for the potential positive impact it can have on the level of competition in the Canadian wireless sector and the affordability of wireless service.

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<sup>20</sup> Comments of the Public Interest Advocacy Centre in response to Canada Gazette Notice SLPB-004-14 (2 August 2014) – *Consultation on the Technical, Policy and Licensing Framework for Advanced Wireless Services in the Bands 1755-1780 MHz and 2155-2180 MHz (AWS-3)*, (4 September 2014).