



26 February 2015

Ms. Heather Hall,
Acting Director General
Spectrum Licensing and Auction Operations,
Industry Canada,
235 Queen Street,
Ottawa, Ontario K1A 0H5

Dear Ms. Hall,

Re: *Canada Gazette, Part 1, 3 January 2015, Notice No. SLPB-005-14 — Consultation on Repurposing the 600 MHz Band – FRPC's comments*

The Forum for Research and Policy in Communications (FRPC) is a non-profit and non-partisan organization established to undertake research and policy analysis about communications, including telecommunications. The Forum supports a strong Canadian communications system that serves the public interest.

FRPC is pleased to participate in the process initiated by Notice No. SLPB-005-14 in the Canada Gazette. Our comments on the issues and questions raised in the Commission's notice are attached.

FRPC looks forward to the opportunity of reviewing other comments submitted in this proceeding, and may submit reply comments.

If you have any questions, please do not hesitate to contact the undersigned.

Sincerely yours,

Monica L. Auer, M.A., LL.M.
Executive Director

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SLPB-005-14

Consultation on Repurposing the 600 MHz Band

**Comments of the
Forum for Research and Policy in Communications**

26 February 2015

Contents

Executive Summary	1
I Introduction: over-the-air television in Canada	1
II Response to Industry Canada questions	1
A Question 1: overall proposal	1
B Question 2: future spectrum requirements	7
C Question 5: notification	11
D Questions 6 and 7: low-power TV stations	12
III Comments on timing and evidence	13
IV Conclusions and summary	16
Appendices	1

Executive Summary

Introduction

- ES 1** The Forum for Research and Policy in Communications (FRPC) is a non-profit and non-partisan organization established to undertake research and policy analysis about communications, including telecommunications. We welcome Industry Canada's willingness to consult the public about this important proposal.
- ES 2** FRPC's answers to the Department's questions are summarized at the end of this section.
- ES 3** Our first overarching concern is that the *Consultation* notice states that over-the-air TV spectrum should be re-assigned to mobile services because data usage is growing, while the number of new OTA TV stations in recent years has been flat, with the implication that there is limited or no demand for new OTA TV station licences. We disagree with the premise of this statement.
- ES 4** FRPC's analysis of CRTC TV licensing decisions from 2000 to 2012 found that there were two applicants for every OTA TV station licence that was issued: the fact that the number of TV stations has not changed significantly reflects CRTC licensing decisions, therefore, not demand for such licences.
- ES 5** The incorrect premise in the *Consultation* means that the decisions not to accept any new applications for TV station broadcasting certificates, and not to set aside spectrum to permit new TV stations to launch, are flawed: they ignore the fact that demand for OTA TV services exceeds supply (granted by the CRTC's licensing decisions).
- ES 6** FRPC submits that a freeze on OTA TV certificates will limit ownership diversity in, and growth of, the conventional TV sector. The *Consultation* does not explain why these negative results are acceptable outcomes, or why allocating more spectrum for distribution-related businesses is to be preferred to maintaining the existing allocation of spectrum to content-related businesses.
- ES 7** Respectfully, the use of incorrect premises and the absence of supporting justification make the Department's decisions look as if they are being made for arbitrary reasons, rather than for reasons that serve the public interest.
- ES 8** Our second concern flows from the issue set out above: if no spectrum is set aside to permit new entrants to launch conventional TV stations, the potential for increased competition and diversity will be eliminated unless the CRTC almost immediately reconsiders its current approach to renewing conventional TV licences. The CRTC's current approach renews incumbent licensees regardless of the degree to which they

met past commitments/obligations. If new competitors cannot launch because policy decisions have made spectrum unavailable, policies should be changed to make the existing spectrum licensed to current over-the-air TV licences available when these licences expire – for example, in cases where licensees breach their programming or other significant commitments. An added benefit of this policy change would be to shift some of the burden of regulatory enforcement to the market: those seeking to use the spectrum used by current licensees would monitor the licensees' performance and report non-compliance to the CRTC.

- ES 9** In renewing private conventional TV stations in mid-2016, therefore, the CRTC should state clear and measurable programming objectives for their licensees: if these are not met, new applicants should be permitted to apply to use those licences when they expire. A competitive renewal process is a reasonable substitute for policy-driven spectrum scarcity.
- ES 10** Our third concern involves the issue of notification and funding. The recent analog-to-digital transition was marked by confusion and uncertainty about responsibilities for notifying the public affected by the transition. FRPC urges Industry Canada to ensure that its plans include details about the manner in which the public will be notified about the changes required by the 600 MHz changes. These details should identify the parties responsible for notification, the timelines for notification, the government agencies responsible for supervising the notification process, penalties for non-compliance, and reporting of the actions taken by the responsible parties. If required, funding should be provided to non-profit groups operating television undertakings to support their notification requirements. We also recommend that Parliament provide the Canadian Broadcasting Corporation with additional funding, if needed, for any capital projects that its services require as a result of the 600 MHz repurposing.
- ES 11** We have some additional comments regarding timing and evidence.
- ES 12** Insofar as timing is concerned, and while FRPC recognizes the importance of coordinating spectrum usage with the United States, these issues were known to the Department well before the CRTC announced its *Let's Talk TV* proceeding. The Department should have issued this *Consultation* notice either before the CRTC sought comments about the future of Canada's television system – to give the public the benefit of the Department's expertise, or after the Commission published all of its determinations in that proceeding – to take the CRTC's new policy into account.
- ES 13** FRPC is also concerned that the Department has offered no estimates of the number of people in Canada who will lose over-the-air TV service; this evidence should be provided independently by the department, as estimates from broadcasters that also own or want the chance to own very profitable wireless service spectrum may not be entirely

reliable. Public interest groups lack the resources to obtain such evidence, and in any event the 5.5 weeks originally granted for the consultation were inadequate to collect it.

ES 14 Finally, it is perplexing that these issues were not raised by the Department in the context of the CRTC’s two-year public proceeding on television policy. Going forward the Department should work collaboratively with the independent agency entrusted by Parliament with responsibility for implementing its broadcasting and telecommunications policies, to use public resources more efficiently.

Summary of FRPC’s response to Industry Canada questions

Industry Canada questions	Position of the FRPC
<p>Question 1: Industry Canada is seeking comments on the overall proposal of repurposing the band to include commercial mobile broadband and the initial step of participating in a joint repacking process with the United States.</p>	<p>FRPC supports Industry Canada’s overall proposal, provided that Canada’s interests are protected in its “joint repacking process with the United States”.</p>
<p>Question 2: Industry Canada is seeking comments on the future spectrum requirements for OTA TV broadcasting, taking into consideration the overall changes to the broadcasting industry, and noting that the CRTC Let’s Talk TV hearing recently closed.</p>	<p>The future spectrum requirements of OTA TV broadcasting will depend on the outcome of the CRTC proceeding on the future of television. The Department’s decision to call for comments after that proceeding concluded but before the CRTC has issued its policy determination raises concerns about a surprising lack of coordination between the departments and the CRTC – especially because the FCC’s 600 MHz ‘repurposing’ plans were already known in late 2012.</p>
<p>Question 3: Industry Canada is seeking comments on the Department's proposal to:</p> <ul style="list-style-type: none"> • adopt the U.S. 600 MHz band plan framework; and • commit to repurpose the same amount of spectrum as the United States, as determined in the FCC's incentive auction. 	<p>If required, federal funding should be provided to non-profit organizations operating television undertakings to enable them to notify their audiences of any pending channel relocations. The CBC should also be provided with additional capital funding if it requires new transmission equipment as a result of the 600 MHz repurposing.</p>
<p>Question 4: Industry Canada is seeking comments on the size of the proposed guard band between the TV broadcasting and mobile services.</p>	<p>FRPC has no comments on this issue at this time.</p>
<p>Question 5: Industry Canada is seeking comments on the proposed transition policy for the regular power TV stations, including but not limited to</p> <ul style="list-style-type: none"> • the design objectives for the development of the new DTV allotment plan; • the methodology and parameters to 	<p>FRPC recommends that community-funded television broadcasters be provided with additional support (including financial support) to cope with the changes being imposed on them.</p>

Industry Canada questions	Position of the FRPC
<p>ensure minimal impact to TV reception;</p> <ul style="list-style-type: none"> • the minimum notification period for the relocation to the new DTV assignments; and • the overall timing for the transition to the new DTV allotment plan. 	
<p>Question 6: Industry Canada is seeking comments on the proposed transition policy for LPTV undertakings in the spectrum to be repurposed to mobile use.</p>	<p>LP TV plays an important, but underappreciated, role in Canada’s television system. While low-power TV services may be aware that they lack the protection granted to ‘regular’ power TV stations, these services should be provided with the means to support their successful transition away from the 600 MHz band.</p>
<p>Question 7: Industry Canada is seeking comments on the proposed transition policy for LPTV undertakings below the 600 MHz band.</p>	
<p>Question 8: Industry Canada is seeking comments on the proposed transition policy for RRBS.</p>	<p>FRPC has no comments on this issue at this time.</p>
<p>Question 9: Industry Canada is seeking comments on the proposal to update the Canadian Table of Frequency Allocations by adding co-primary allocations to fixed and mobile services in the 512-608 MHz and 614-698 MHz ranges.</p>	<p>FRPC has no comments on this issue at this time.</p>

I Introduction: over-the-air television in Canada

- 1 The Forum for Research and Policy in Communications (FRPC) is a non-profit and non-partisan organization established in late 2013 to undertake research and policy analysis about communications, including telecommunications. We support the policy objectives set out in Canada's current communications statutes.
- 2 FRPC welcomes Industry Canada's willingness to consult the public about its proposal to 'repurpose' spectrum in the 600 MHz band away from over-the-air television, to mobile broadband services. We also welcomed the Department's decision to extend the deadline for public comment from January 26, 2015, to February 26, 2015.
- 3 Our response to the Department's questions is set out below, in section II. We make additional comments about the timing of and evidence set out in the notice of *Consultation*.

II Response to Industry Canada questions

A Question 1: overall proposal

Question 1: Industry Canada is seeking comments on the overall proposal of repurposing the band to include commercial mobile broadband and the initial step of participating in a joint repacking process with the United States.

- 4 Assuming the evidence purporting to establish high and continuing demand for commercial mobile broadband service is valid – a necessary assumption because that evidence is not set out in the *Consultation* notice – FRPC conditionally supports the Department's participation in a joint repacking process with the United States. In our view, joint planning offers a better opportunity of protecting Canadians' current and longer-term interests in the use of Canada's publicly owned spectrum, than uncoordinated planning.
- 5 The conditions we propose have to do with the Department's overall goals of the increasing mobile broadband spectrum and their relationship to the public interest in Canada.
- 6 First, the 'repurposing' and subsequent spectrum auction should be designed to ensure a significant increase in the number of Canadian companies competing for commercial mobile broadband customers. While recognizing that the Department has been trying to increase competition in the mobile telecom sector, the magnitude of the incumbents' headstart over new entrants makes this effort Sisyphean: incumbent telecommunications companies (Bell, Telus, Rogers and Quebecor) continue to dominate this sector because they have acquired the spectrum licences covering almost all of Canada's population (see Table 1).

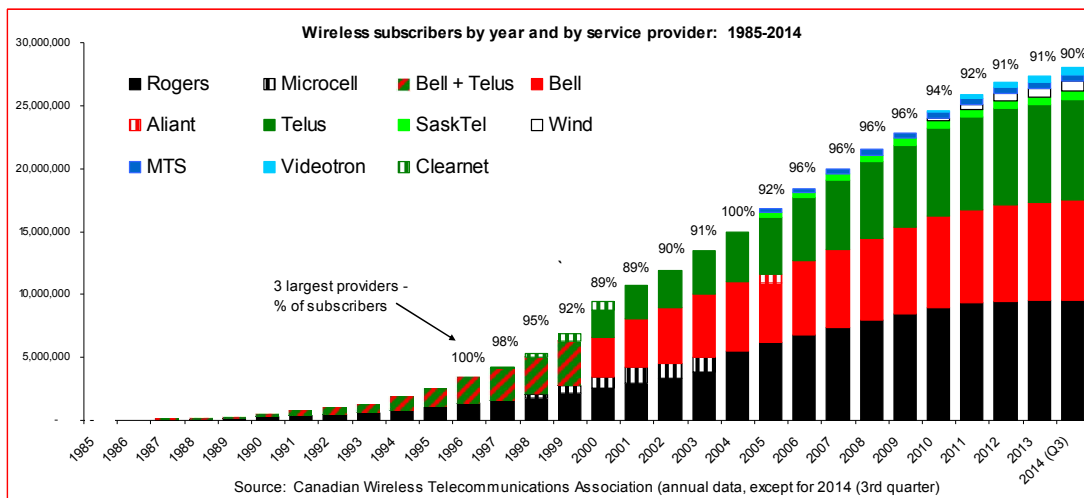
Table 1: Spectrum auction winners in 2008, 2009 and 2014, by current ownership and size of population covered by bids

Current owners (as of Jan 2015) of spectrum auction winners in 2008, 2009 and 2014	Maximum Total Population Covered by Bids			Largest population covered
	2008	2009	2014	
Bell	27,245,106		33,475,915	33,475,915
Telus	30,007,094		33,475,915	33,475,915
Rogers	30,007,094		33,368,700	33,368,700
Quebecor	14,687,045		28,030,489	28,030,489
Globalive Wireless	23,265,134			23,265,134
Data & Audio-Visual	16,121,864			16,121,864
Shaw	9,351,375			9,351,375
Bragg	4,886,983		3,101,204	4,886,983
MTS	1,118,283		1,206,968	1,206,968
Blue Canada Wireless	1,043,232			1,043,232
Sasktel	975,717		1,030,039	1,030,039
Cellular One		207,366		207,366
Rich Telecom Corp.	133,039			133,039
John Bitove			107,215	107,215
Abraham Finkel	107,029			107,029
Monophone Inc.		41,914		41,914
SSI Micro Ltd.		26,745		26,745
Will Gasteiger		22,073		22,073
I-NetLink Inc.		21,360		21,360

Source: Industry Canada

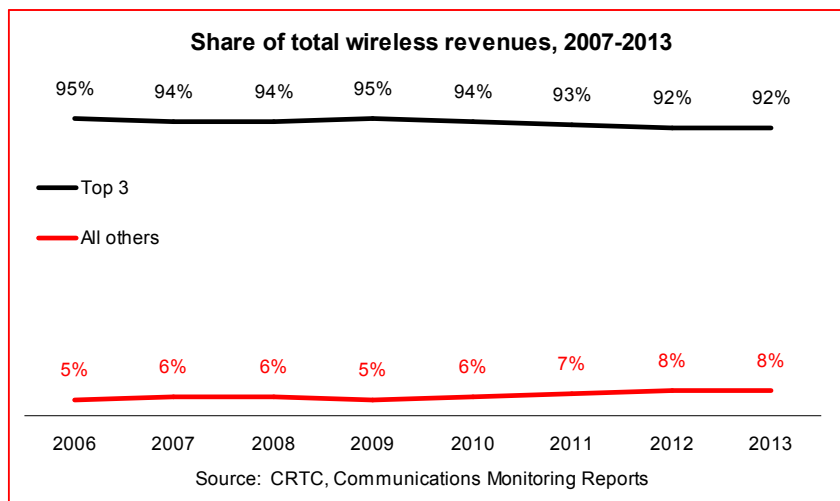
7 Even if the federal government accepted substantially lower bids from new, smaller entrants, these would be unlikely to create the meaningful competition required to bring down wireless rates due to incumbents' long-standing dominance among subscribers. The three largest companies have provided service to 89% or more Canada's wireless subscriber base since wireless/cell phone service began in 1985 (Figure 1).

Figure 1: Wireless service providers' share of subscribers over time



- 8 Incumbents' head-start is reflected in their share of wireless revenues in Canada. The three largest companies take in 92 cents of every dollar earned from wireless service (Figure 2).

Figure 2: Largest companies' share of total wireless revenues, 2007-2013



- 9 The financial strength afforded by incumbents' head start means that incumbents' dominance is very unlikely to change after the 600 MHz auction. In previous spectrum auctions bids from just four telecommunications incumbents accounted for \$10 billion (or 89%) of the \$11 billion in revenues yielded the auctions (see Appendix 2). Unless the federal government's approach to spectrum auction changes radically, the incumbents' dominance makes it unreasonable to expect well-financed bids from large numbers of new entrants. Respectfully, radical change is unlikely if this would also require the federal government to forgo significant income by granting spectrum to new, smaller entrants for substantially lower fees.
- 10 Moreover, even if the Minister and his staff at the Department are able to attract new entrants willing to undertake a significant financial risk,¹ we respectfully submit that they would still be unable to achieve the competition needed to meet the public interest in lower mobile telephone rates. A single auction cannot reasonably be expected to introduce the significant numbers of new large, well-financed competitors that would be needed to create a classic competitive marketplace (consisting of many buyers, and just as many sellers) in Canada's wireless service sector. Thirty years after wireless telephone service began in Canada, and with seven wireless service companies in place, the three largest companies still serve 90% of all subscribers (see Figure 1).

¹ In our view, the significance of the risk is related to the degree to which regulatory policies support new competitors' entrance in the Canadian market. Laissez-faire regulatory policies permit incumbents to maintain their head-start advantage.

- 11 In addition to setting aside 600 MHz spectrum for smaller Canadian companies, therefore, the government should encourage the Department and the CRTC to evaluate the impact of setting new policies for mobile telephone rates in Canada by considering the policies that have resulted in lower rates for mobile telephone users in Europe. The theoretical results of market-based competition, namely decreasing prices and increasing innovation, have not and will not be achieved in Canada through competition alone, because Canada's telecommunications sector is not a competitive marketplace: this sector of the economy is an oligopoly in which millions of buyers seek goods and services from a handful of very large sellers. Public policy makers should deal with this market – the market they have, not an idealized free-entry market of many, equally strong competitors - to protect the public interest.
- 12 Second, the licences granted to use the 600 MHz spectrum for mobile broadband should include requirements to support the Canadian audio-visual programming content that these licensees will be distributing to attract subscribers.
- 13 Canada's long-term spectrum licensees have been required to invest in research and development for over thirty years.² In 2007 Industry Canada noted that "...wireless companies generally undertake these R&D activities on an ongoing basis in order to be competitive in the marketplace and many continue to exceed the required level of R&D spending."³ Long-term spectrum licensees with annual gross wireless operating revenues of \$1 billion or more are currently required to invest a minimum of 2% of the adjusted gross revenues that result from the use of the licence, averaged over the licence term, in eligible research and development activities.⁴

² An R&D requirement was introduced in 1983 when the Department of Communications granted a licence to CANTEL (now Rogers) which required research and development expenditures. See Industry Canada, "R&D Investment and Learning Plan Obligations", Backgrounder, <http://news.gc.ca/web/article-en.do?nid=816889> (accessed 17 January 2015); Industry Canada, "Archived – A Brief history of Cellular and PCS Licensing", <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08408.html> (accessed 19 January 2015); Industry Canada, Spectrum Management and Telecommunications, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, Public Consultation Paper ("6.1 Research and Development (R&D)", <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09371.html#DGRB00109.06.1> (April 2009, accessed 19 January 2015).

³ Industry Canada, Spectrum Management and Telecommunications, *Consultation on Revisions to the Framework for Spectrum Auctions in Canada*, Public Consultation Paper ("6.1 Research and Development (R&D)", <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09371.html#DGRB00109.06.1> (April 2009, accessed 19 January 2015).

⁴ Industry Canada, Spectrum Management and Telecommunications, *Decisions on Conditions of Licence Regarding Research and Development and Learning Plans*, SLPB-002-14, <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10553.html>, (February 2014), at ¶22.

14 Industry Canada has explained that the R&D requirement is based on one of Parliament’s eight objectives for the *Telecommunications Act*:⁵ “to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services”.

15 Industry Canada should modify its licensing requirements for wireless service licensees to include financial support for new Canadian audio-visual program production, so as to meet two of the *Act*’s objectives. The modification we propose relates to Canada’s social fabric, competitiveness, and users’ social requirements, which are also objectives of the *Telecommunications Act*:

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;

...

(h) to respond to the economic and **social** requirements of users of telecommunications services

16 Large mobile telecommunications service providers should support the production of the Canadian audio-visual programming they distribute to their subscribers, in the same way that BDUs support the production of the Canadian audio-visual programming they distribute to their subscribers. BDUs have been required to support local program production since 1975, starting with the community channel,⁶ and continuing with the Canadian Media Fund in 1993-1994.⁷

⁵ *Ibid.*, at ¶4: “... In 1993, the objectives of the Canadian telecommunications policy were formally set out in the *Telecommunications Act*. One of these objectives is: ‘...to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services.’”

⁶ *Cable Television – The Community Channel*, CRTC Policy Statement (Ottawa, 8 April 1975), at 6: Having in mind the objectives established for the community channel, the level of revenue generated by cable systems in general and the diversity of the communities to be served, the Commission will expect licensees to expend a minimum of 10% of their gross annual subscriber revenue for the annual operation of their community channel. ...

The CRTC subsequently made the 10% threshold a guideline rather than a requirement (see *Policies respecting broadcasting receiving undertakings (cable television)*, CRTC Policy Statement (Ottawa, 16 December 1975) at 3). In 1991 the Commission reduced the guideline to 5% (see *Community Channel Policy*, Public Notice CRTC 1991-59 (Ottawa, 5 June 1991), <http://www.crtc.gc.ca/eng/archive/1991/PB91-59.HTM>).

⁷ In 1993 the CRTC considered the structure of Canada’s broadcasting distribution system, and adopted a modified version of a proposal made by the Canadian Cable Television Association in which BDUs would remit a percentage of their broadcasting revenues to a fund for Canadian television program production:

17 If the large, and according to their own annual reports, very profitable, wireless service providers that since 2005⁸ have bid \$500 million or more in spectrum auctions had been required to support Canadian audio-visual program production with a small percentage of their successful bids, hundreds of millions of dollars' worth of new Canadian television program could have been produced. For instance, if Canada's three largest wireless service providers had allocated 1% of their wireless revenues from 2011 to 2013 to television audio-visual program production, they would have created over half a billion (\$512.97 million) in program production funding (Table 2).

Table 2: Television program production funding generated by 1% of the wireless revenues from three companies

Licensee	Wireless revenues	2011	2012	2013	Total: 2011-2013	\$ M from 1%	% of revenues 2%
Rogers	Network revenue	\$6,601.00	\$6,719.00	\$6,748.00	\$20,068.00	\$ 200.68	\$ 401.36
Telus	Network revenue	5004	5367	5641	\$16,012.00	\$ 160.12	\$ 320.24
Bell	Operating revenues	\$4,769.00	\$5,086.00	\$5,362.00	\$15,217.00	\$ 152.17	\$ 304.34
Total, 3 largest companies						\$ 512.97	\$1,025.94

Source of revenue data: companies' annual reports for 2012 and 2013

18 A 1% contribution from wireless revenues – derived in part by attracting subscribers with the 'hook' of audio-visual programming content – would have significantly boosted Canadian program production: in 2013 cable and satellite distribution companies provided \$477.7 million in funding for Canadian audio-visual content (see Table 1).

Table 3: Television program production funding from cable, MDS and satellite companies in 2013/2014

Type of funding	\$ millions in 2013/2014
Contributions to CMF	\$216.3
Independent funds	\$61.05
Local programming improvement fund	\$75.16
Local expression (community channel)	\$125.20
Total	\$477.71

Source: CRTC, *Broadcast Distribution Financial and Statistical Summaries, 2009-2013* (<http://www.crtc.gc.ca/eng/publications/reports/BrAnalysis/dist2013/bdu.pdf>)

In its 4 February 1993 written submission, the CCTA announced that those of its members having 7,500 subscribers or more would be prepared, collectively, to contribute approximately \$20 million per year, for a maximum of \$100 million over a 5-year period, to a fund that would support independent production of under-represented Canadian programming in the areas of drama series, documentaries and children's programs. *Structural Public Hearing*, Public Notice CRTC 1993-74 (Ottawa, 3 June 1993), <http://www.crtc.gc.ca/eng/archive/1993/PB93-74.HTM>.

⁸ When mobile television launched in Korea.

19 Television service is growing in importance to the revenues of telecommunications service providers. From 2007 to 2013 the share of incumbent telecommunications service providers' revenues from television services increased by almost 58%, from \$1.6 billion, to \$2.5 billion (see Table 4).

Table 4: Television program production funding from cable, MDS and satellite companies in 2013/2014

	Total revenues (millions)	% from TV	\$ from TV (millions)
2009	\$ 27,204.90	5.8%	\$ 1,577.88
2010	\$ 27,172.70	6.5%	\$ 1,766.23
2011	\$ 27,674.90	7.2%	\$ 1,992.59
2012	\$ 27,953.00	7.8%	\$ 2,180.33
2013	\$ 28,268.80	8.8%	\$ 2,487.65
% change in television revenues, 2009 to 2013:			57.7%
Source: CRTC, <i>Communications Monitoring Report 2014</i> , p. 27, Table 3.03 (Industry convergence - Cable vs. telecommunications)			

20 Since the growth of wireless service revenues is based in part on wireless service providers' decisions to attract subscriber with audio-visual television programming content, the Department should initiate a second proceeding following this *Consultation*, to review the conditions applied to successful licensees of the 600 MHz spectrum. This proceeding would provide interested parties with an opportunity to comment on the public interest merits of requiring large and profitable mobile service providers to support Canadian audio-visual program production at levels comparable to the support they voluntarily give to R&D, or to that given by BDUs to the Canadian Media Fund. Increased support for Canadian television program production benefits Canadian consumers. The CRTC may also wish to begin a separate proceeding to consider whether mobile telephone service providers should be required to support Canadian audio-visual program production when they act as broadcast distribution undertakings.⁹

B Question 2: future spectrum requirements

Question 2: Industry Canada is seeking comments on the future spectrum requirements for OTA TV broadcasting, taking into consideration the overall changes to the broadcasting industry, and noting that the CRTC Let's Talk TV hearing recently closed.

⁹ Terry Pedwell, "Bell wants to appeal CRTC net neutrality decision on mobile TV app: company seeks legal costs from graduate student and other respondents" (23 February 2015), <http://www.cbc.ca/news/business/bell-wants-to-appeal-crtc-net-neutrality-decision-on-mobile-tv-app-1.2968021>: "Bell Mobility argues that Bell Mobile TV is a broadcasting service and doesn't fall under the Telecommunications Act."

- 21 The future of over-the-air television was an important part of the Let's Talk TV proceeding: when the CRTC asked for comments about the future of Canadian television in April 2014 it asked whether over-the-air television should be maintained and supported.¹⁰
- 22 The CRTC's 29 January 2015 determinations about local television and simultaneous substitution¹¹ will influence affect decisions by current and prospective over-the-air television licensees to maintain their current licences and/or apply for new licences.
- 23 Unfortunately even now, several weeks after the Commission issued its policies, any estimates about the future spectrum requirements for OTA television broadcasting remain speculative. This is, first, because it is not yet known whether the "decisions" issued by the CRTC in January 2015 will be challenged before the courts or the Governor in Council. Second, another important piece of the *Let's Talk TV* puzzle – being the CRTC's policy for broadcasting distribution undertakings (BDUs) and its implications for over-the-air television – remains unknown as the CRTC has not yet released that part of its television policy. It is very difficult to evaluate the impact of the CRTC's local television sub-policy due to its reliance on what are as-yet-unknown amendments to the Commission's BDU regulations:
- ... [Conventional television b]roadcasters electing to shut down their over-the-air transmitters will not be permitted to retain the privilege to be distributed on the basic service nor will they be able to make requests for simultaneous substitution in the manner described in the *Broadcasting Distribution Regulations* (the *Regulations*). The *Regulations* will be amended to reflect the Commission's decision with respect to simultaneous substitution set out in Broadcasting Regulatory Policy 2015-25, also issued today.¹²
- 24 Without knowing how the CRTC plans to amend the *BDU Regulations* it is impossible to predict the effect of this new policy approach on the future of over-the-air television in Canada.
- 25 Insofar as speculative estimates are concerned, though, FRPC notes that the *Consultation* notice states that "strong growth in demand for mobile data services is resulting in continued pressure for more spectrum to be made available for mobile service" – but that "TV licensing data shows [*sic*] that the number of TV undertakings in Canada has been static in recent years."¹³ In other words, the notice considers mobile data demand in terms of requests for more spectrum, but considers TV demand in terms of the numbers of actual licensees.

¹⁰ *Let's Talk TV*, Broadcasting Notice of Consultation CRTC 2014-190-3 (Ottawa, 21 August 2014), <http://www.crtc.gc.ca/eng/archive/2014/2014-190-3.htm> (question 24).

¹¹ *Over-the-air transmission of television signals and local programming*, Broadcasting Regulatory Policy CRTC 2015-24 (Ottawa, 29 January 2015), <http://www.crtc.gc.ca/eng/archive/2015/2015-24.htm>; *Measures to address issues related to simultaneous substitution*, Broadcasting Regulatory Policy CRTC 2015-25 (Ottawa, 29 January 2015), <http://www.crtc.gc.ca/eng/archive/2015/2015-25.htm>.

¹² Broadcasting Regulatory Policy CRTC 2015-24, *ibid.*, at para. 19.

¹³ *Consultation*, section 8.1 ("Transition Policy for Regular Power Television Broadcasting Undertakings").

- 26 The *Consultation* then goes on to say that the Department is not proposing to “include any vacant allotments for future use in the allotment plan” for OTA TV.¹⁴ Indeed, the *Consultation* also announces the Department’s decision to freeze broadcast certificates, by refusing to accept applications for new or amended certificates. We interpret the notice’s comments about static numbers of TV undertakings as implying that demand for new television stations is also static, or low.
- 27 With respect, the fact that the number of TV undertakings has been “static” in recent years reflects CRTC licensing decisions – but does not reflect demand or lack of demand for new OTA licences.
- 28 A better measure of ‘demand’ for OTA TV licences would be the number of applications that the CRTC actually receives for such services. Low numbers of such applications would imply low levels of demand.
- 29 Unfortunately precise numbers about the number of OTA TV programming undertaking applications submitted to the CRTC are unavailable, because the CRTC does not routinely publish lists of such applications. It is our understanding that the CRTC from time to time also returns applications to applicants without ever gazetting them.
- 30 The main source of public information about demand for conventional TV undertakings, therefore, consists of the number of TV licence applicants as listed in the CRTC’s final licensing decisions. To better understand the level of demand for OTA television services in Canada, FRPC reviewed the decisions published by the CRTC from 2000 to 2015 and counted the number of new OTA TV programming undertaking licences that the CRTC had granted, as well as the number of applicants for those licences.
- 31 In the last fifteen years the CRTC has received twice as many OTA TV applications as it has granted. From 2000 to 2012 its decisions state that it received 38 applications for OTA TV services between 2000 and 2012, but granted just 18 (47%) of these requests (Appendix 3).
- 32 Demand for commercial TV service licences was significantly higher than the number of licences granted: from 2000 to 2012 the CRTC granted just 4 (27%) of the 15 requests it received for commercial OTA TV programming licences (Appendix 4).
- 33 Respectfully, therefore, it is incorrect for the Department to conclude that demand for OTA television is either stagnant or defunct: demand to launch new OTA TV undertakings exists, but that demand is not being met due to the CRTC’s unwillingness to license new stations.

¹⁴ *Ibid.*

- 34 It is also worth noting that data about the number of stations in operation at a given point do not fully measure the concept of demand because it ignores audience interest in new OTA television programming services. For instance, when the CRTC considered applications for a new multilingual ethnic OTA television station in Vancouver, it received more than 500 written interventions, “virtually all expressing strong support for the establishment of an over-the-air ethnic television service in Vancouver.”¹⁵
- 35 Finally, we note that when the Department was considering the renewal of cellular and personal communications service licences six years ago, it measured the “great demand” for these services not by the numbers of services it had licensed, but using evidence about numbers of subscribers, access to services and coverage:

The deployment of services in the cellular and PCS bands has been extremely successful. PCS and cellular services are in great demand, with more than 21 million wireless subscribers in Canada at the end of Q3/08. According to the CRTC's 2008 report to the government, wireless service is available to 98% of Canadians and covers 20% of the geography. This coverage is significant considering Canada's vast land mass, which covers just less than 10 million km².¹⁶

- 36 Using similar measures, demand for conventional TV would be equally high, if not higher. The CRTC noted in January 2015 that 97% of Canada’s population lives within range of an over-the-air television transmitter.¹⁷
- 37 Our point is that demand for OTA TV services has several dimensions, and can be measured in several ways. Using the number of services alone to measure demand is insufficient.
- 38 We respectfully disagree, therefore, with the Department’s unilateral decision to put a freeze on all new TV station applications, as the evidentiary foundation for this decision is either absent or, if based on the numbers of TV stations that have been licensed by the CRTC, flawed:

Decision 2: Effective immediately, the Department will no longer accept the following types of applications:

- new applications for TV broadcasting certificates for all classes of TV stations;

¹⁵ *New multilingual ethnic television station to serve Vancouver*, Broadcasting Decision CRTC 2002-39 (Ottawa, 14 February 2002), <http://www.crtc.gc.ca/eng/archive/2002/db2002-39.htm>, at para. 1.

¹⁶ Industry Canada, Spectrum Management and Telecommunications, Consultation on the Renewal of Cellular and Personal Communications Services (PCS) Spectrum Licences, Public Consultation Paper (“3. Renewal of Cellular and PCS Licences”), <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09318.html#a2> (March 2009; accessed 19 January 2015).

¹⁷ *Over-the-air transmission of television signals and local programming*, Broadcasting Regulatory Policy CRTC 2015-24, (Ottawa, 29 January 2015), at para. 4.

....

- 39 FRPC's concern is that if spectrum is not set aside to permit new entrants to launch conventional TV stations, competition and diversity will be eliminated - unless the CRTC almost immediately reconsiders its current approach to renewing conventional TV licences. In the current approach, and with very rare exceptions (such as CHOI-FM) the CRTC renews broadcast incumbents regardless of the degree to which they met past commitments/obligations. If new competitors are unable to launch because spectrum is no longer available, existing over-the-air TV licences should be made available when programming commitments are breached.
- 40 The CRTC should therefore ensure that when it renews the majority of private conventional TV stations in mid-2016, the licences state clear and measureable programming or other objectives so that if these are not met, new applicants may seek the use of those licences when they expire. A competitive renewal process is a reasonable substitute for spectrum, when spectrum's finite resource has been exhausted.

C Question 5: notification

Question 5: Industry Canada is seeking comments on the proposed transition policy for the regular power TV stations, including but not limited to

- **the design objectives for the development of the new DTV allotment plan;**
- **the methodology and parameters to ensure minimal impact to TV reception;**
- **the minimum notification period for the relocation to the new DTV assignments; and**
- **the overall timing for the transition to the new DTV allotment plan.**

- 41 The recent analog-to-digital transition was marked by confusion and uncertainty about responsibilities for notifying the public affected by the transition. FRPC urges Industry Canada to ensure that its plans include details about the manner in which the public will be notified about the changes required by the 600 MHz changes.
- 42 These details should identify the parties responsible for notification, the timelines for notification, the government agencies responsible for supervising the notification process, penalties for non-compliance, and reporting of the actions taken by the responsible parties.
- 43 If required, federal funding should be provided to non-profit groups operating television undertakings to support their notification requirements, using a memorandum of understanding to define groups' required performance. The federal government could and should recoup the costs of such funding from the 600 MHz auction – either through a surcharge paid by successful bidders, or from the revenues yielded by the auction. Finally, the national public broadcaster should receive additional capital funding if the Corporation requires new transmission equipment as a result of the outcome of any 600 MHz transition requirements.

D Questions 6 and 7: low-power TV stations

Question 6: Industry Canada is seeking comments on the proposed transition policy for LPTV undertakings in the spectrum to be repurposed to mobile use.

Question 7: Industry Canada is seeking comments on the proposed transition policy for LPTV undertakings below the 600 MHz band.

- 44 The importance of communities' low-power television stations is set out in the *Broadcasting Act*. Section 3(1)(b) recognizes "community" as one of the three elements of the Canadian broadcasting system, the others being the "private" and the "public" elements. Section 3(1)(i)(iii) also states that the programming provided by Canada's broadcasting system should include community programs.
- 45 Section 3(1)(e) specifies that "each element of the Canadian broadcasting system shall contribute in an appropriate manner to the creation and presentation of Canadian programming", and community TV stations play a significant role in the broadcasting system.
- 46 The CRTC has implemented Parliament's support for community broadcasting in part by licensing community television services. They operate within the CRTC's 2010 *Community television policy*.¹⁸ In developing its current policy for community television the Commission noted this sector's long history of financial challenges.¹⁹
- 47 The CRTC's current *Community television policy*²⁰ requires community-based television programming undertakings to
- provide a high level of locally-produced, locally-reflective programming complementing conventional television and cable community channel programming
 - enrich the variety of local and community programming available to the public
 - provide opportunities for new voices to participate in the Canadian broadcasting system
 - not replicate the programming offered by existing television services
 - devote not less than 80% of the broadcast year to the broadcast of Canadian programs, and

¹⁸ Broadcasting Regulatory Policy CRTC 2010-622, (Ottawa, 26 August 2010).

¹⁹ *Ibid.*, at para. 32:

In general, most parties, including independent community services such as Neepawa Access Community TV (NAC TV), Telile Community TV (Telile TV) and Valemount Entertainment Society (Valemount), agreed that the reason behind the modest take-up was the lack of funding and financial resources.

²⁰ Broadcasting Regulatory Policy CRTC 2010-622, (Ottawa, 26 August 2010), Appendix.

- devote not less than 60% of the broadcast year to the broadcast of local programming.

- 48 Low-power television programming undertakings therefore play an important, but underappreciated, role in Canada's communications system, by providing communities with a mechanism to access the broadcasting system.
- 49 The role of LP OTA TV stations in Canada is underappreciated because so little is known about their actual performance. The CRTC's 2014 *Communications Monitoring Report* contains very little information about these services.
- 50 Bearing in mind the perennial funding challenges that plague community-based broadcasting services, however, FRPC urges the Department to provide low-power community-based television services with funding to support their move from the 600 MHz spectrum. This funding could be generated through a surcharge paid by successful spectrum bidders, or from the revenues generated by the spectrum auction.

III Comments on timing and evidence

- 51 Before concluding, FRPC wishes to address two points related to the process used in by the Department in this *Consultation*.
- 52 Our first point involves this *Consultation's* timing. The *Department of Industry Act* requires the Minister to use the information and expertise of federal government agencies such as the CRTC:
17. (1) The Minister, in exercising powers and performing duties and functions under this Act,
- (a) shall, where appropriate, make use of the services, facilities, information and expertise of other departments, boards or agencies of the Government of Canada; and
-
- 53 The future of over-the-air television in Canada was an important part of the *Let's Talk TV* public proceeding that the CRTC formally initiated in April 2014,²¹ and which ended in October 2014.²² This proceeding involved discussions about the status of 'free', over-the-air television services in Canada.

²¹ *Let's Talk TV*, Broadcasting Notice of Consultation 2014-190 (Ottawa, 24 April 2014). Question 24 asked whether regulatory intervention is required to maintain access to local television stations, whether compelling reasons exist to maintain and support over-the-air transmission, and whether the discontinuation of over-the-air transmission would permit local television stations to allocate more resources to programming.

²² Broadcasting Notice of Consultation CRTC 2014-190-3 (Ottawa, 21 August 2014), <http://www.crtc.gc.ca/eng/archive/2014/2014-190-3.htm>.

54 In mid-December 2014, however, the Department’s *Consultation* suddenly announced that some Canadian regular power OTA TV stations may not be assigned new TV channels at all, placing them in a regulatory limbo:

To ensure continued availability of channels for all operating Canadian regular power TV stations, as described in Section 8.1, most Canadian regular power stations may be reassigned to new TV channels. As a result of the changes to the regular power TV stations, secondary TV stations (low-power) and other users of the band for secondary services (wireless microphones, RRBS, TVWS devices) may, in turn, be subject to displacement, even if not operating in the 600 MHz frequency range.

55 Why did the Department wait until after the CRTC’s public process on the future of Canadian television had concluded, to raise the potential loss of some OTA TV stations due to the 600 MHz shift? Why did the Department wait until after the CRTC process to ‘freeze’ the numbers and status of over-the-air television broadcasting in Canada?

56 These announcements should have been made either before or at the same time as the CRTC’s *Let’s Talk TV* call for comments, to facilitate a more informed discussion of the future of over-the-air television.

57 After all, the American plans to transfer OTA TV spectrum to broadband were known to the Department well before the CRTC hearing began: the FCC began discussing the transfer of over-the-air television spectrum to broadband in 2010,²³ and its plans to auction spectrum used by over-the-air television broadcasters have been known since September 2012.²⁴ The Department was aware of the FCC’s plans at least by March 2013,²⁵ and was also cognisant of the necessity for Canada to harmonize the 600 MHz repurposing with the US.²⁶

²³ Federal Communications Commission, *Connecting America: The National Broadband Plan*, <http://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf>, Chapter 5, at 88: “Recommendation 5.8.5: The FCC should initiate a rulemaking proceeding to reallocate 120 megahertz from the broadcast television (TV) bands”

²⁴ Kevin Fitchard, “FCC outlines \$15B spectrum flip from TV to mobile”, online: gigaom (28 September 2012), <https://gigaom.com/2012/09/28/fcc-outlines-15b-spectrum-flip-from-tv-broadcast-to-mobile/>. The US Congress ordered the FCC to begin the auction process in *Middle Class Tax Relief and Job Creation Act of 2012*, United States Government Public Law 112-96 (enacted February 2012), <http://www.gpo.gov/fdsys/pkg/PLAW-112publ96/pdf/PLAW-112publ96.pdf>.

²⁵ Spectrum Management and Telecommunications, Industry Canada, *Commercial Mobile Spectrum Outlook*, (March 2013), <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09444.html>, section 4 (“Demand for Spectrum to Support Commercial Mobile Services”): “The 600 MHz band is in the process of being reallocated to commercial mobile services in the United States.”

²⁶ *Ibid.*:

It is expected that the Canadian usage of the UHF TV band will eventually be harmonized with usage in the United States. Industry Canada will evaluate the timing and the process that could be used in Canada for the repurposing of

- 58 The Department could and should have raised the issues in the current *Consultation* before the CRTC issued its public notice for the *Let's Talk TV* hearing in April 2014. At best, the Department's apparent disregard for this CRTC policy process leaves the impression that the current federal government's left hand does not know what the right one is doing; at worst, the Department appears to be ignoring the role played by the CRTC with respect to television policy.
- 59 In our view, the Department should work collaboratively with the independent agency entrusted by Parliament with responsibility for implementing its broadcasting and telecommunications policies. Collaborative processes use public resources more efficiently and effectively.
- 60 FRPC's second point relates to evidence. Seven years ago the *Cabinet Directive on Streamlining Regulation*²⁷ ordered departments such as Industry Canada to base regulatory changes on solid evidence – preferably objective and empirical evidence.
- 61 Contrary to the *Directive's* instructions, the *Consultation* notice offers no estimates of the number of people in Canada who may be negatively affected by the plans set out in the *Consultation*. The word "audience" does not even appear in the notice, even though people who watch or listen to over-the-air television will be affected if the stations in their area change channels or disappear from the over-the-air dial altogether.
- 62 Given the Minister's power to collect information about matters he administers,²⁸ the Department should have commissioned an impartial and independent third party (such as a Canadian university) to collect such data, and should have included that research in this *Consultation* process.
- 63 The absence of this information leaves parties concerned about these audiences with two options: to collect the data themselves, or to rely on any estimates generated through this *Consultation* process.

the 600 MHz band, based on the outcome of the incentive auction process in the United States. Any decision to review these bands will be made following consultations with the public.

²⁷ <http://www.tbs-sct.gc.ca/rtrap-parfa/gfrpg-gperf/gfrpg-gperf01-eng.asp>.

²⁸ *Department of Industry Act*, s. 6(b):

In exercising the powers and performing the duties and functions assigned by subsection 4(1), the Minister shall ... collect, gather, by survey or otherwise, compile, analyse, coordinate and disseminate information in respect of matters under the Minister's administration, as well as in relation to trends and developments, both within and outside Canada, in respect of those matters

- 64 The Department gave public-interest organizations too little time to commission independent research in this area,²⁹ however.
- 65 Meanwhile, large broadcasters' audience estimates – if any are provided – may be unreliable: the companies most likely to want more, highly lucrative, commercial mobile broadband spectrum are the same companies that now control less lucrative, over-the-air television programming undertakings, as well as the country's largest BDUs. It would be understandable if these companies underestimated the negative effects of the proposed re-purposing: they would benefit from higher BDU subscription levels if audiences who lose over-the-air access to local over-the-air television stations become BDU subscribers, and from lower operating costs.³⁰
- 66 In our view, when the Department proposes policies with the potential to disrupt Canadians' access to audio-visual news, information and entertainment, it should provide Canadians with estimates of the numbers of people who would be affected by the policies, and the degree to which they would be inconvenienced by the proposals. These estimates should be collected by professional researchers working independently of the Department and companies regulated by the Department.

IV Conclusions and summary

- 67 FRPC appreciates the opportunity to make these submissions regarding the Department's 600 MHz *Consultation* notice. As noted in our comments, above, we generally support the Department's proposal to work with the United States to repurpose spectrum currently used for broadcasting and other purposes. That said, we are concerned that decisions to repurpose this spectrum based on the premise of inadequate demand for broadcasting services are being based on incorrect assumptions about the demand for these services: demand for over-the-air television services remains strong. We have similar concerns about the Department's arbitrary decision to place a moratorium on over-the-air-television service applications.
- 68 We are also concerned that the Department has not clearly stated the impact on the public interest of the joint planning exercise. If the Department has not clearly defined the characteristics of the public interest that it plans to serve, it will be unable to achieve those characteristics in its negotiations.
- 69 To this end, we recommend that

²⁹ The extension of the deadline for comments from 26 January to 26 February offered little help in this regard, as several months would have been required to develop and implement a research program on the questions raised by the *Consultation*.

³⁰ As these broadcasters would no longer be required to finance over-the-air television transmitters and the personnel required to maintain and operate those transmitters.

- the repurposing and subsequent auction of the 600 MHz spectrum be designed to ensure a significant increase in the number of Canadian companies competing for commercial mobile broadband customers
- the Department and the CRTC evaluate the impact of new regulatory modalities to ensure lower mobile telephone rates in Canada
- successful bidders for 600 MHz spectrum be required to provide financial support for Canadian audio-visual programming, as audio-visual programming attracts wireless subscribers and helps to drive wireless revenues
- new limitations on over-the-air television spectrum be addressed by permitting new television station applicants to apply for the spectrum licensed to non-compliant over-the-air television licensees
- funding be provided to support non-profit organizations' notification of audiences about channel relocations, and to support any new costs imposed on the CBC and low-power television stations by the repurposing, and that
- the Department and the CRTC coordinate their public consultation activities so as to ensure that important policy proceedings do not take place in a manner that places the two organizations at cross purposes.

Appendices

Appendix 1: Original winners in Industry Canada spectrum auctions, 1999-2014

Appendix 2: Winning bids, by current owner (1999-2014)

Appendix 3: CRTC OTA licensing decisions, 2000-2012

Appendix 4: Summary - applicants and number of OTA TV programming licences granted by the CRTC, 2000-2012

Appendix 1: Original winners in Industry Canada spectrum auctions, 1999-2014

Winners in the auctions, at the time the winners were announced	Winning bid, by year (\$ millions)						Total
	1999	2001	2005	2008	2009	2014	
1380057 Alberta Ltd.				\$189.519			\$189.519
4253311 Canada Inc.			\$ 7.931				\$ 7.931
6934242 Canada Ltd.				\$40.774			\$40.774
6934579 Canada Inc.				\$52.385			\$52.385
768812 Ontario Inc.					\$ 0.031		\$ 0.031
9107-1365 Québec Inc.			\$ 0.081				\$ 0.081
9193-2962 Québec Inc				\$554.549			\$554.549
ABC Allen Business Communications Ltd.	\$ 0.008		\$ 0.050				\$ 0.057
Amtelecom Inc.			\$ 0.017				\$ 0.017
AT&T Canada Telecom Services Company	\$ 7.904						\$ 7.904
BCTel Mobility Cellular Inc.	\$ 0.913						\$ 0.913
Bell						\$565.706	\$565.706
Bell Canada			\$36.124				\$36.124
Bell Mobility Inc.		\$720.490		\$740.928			\$ 1,461.418
Blue Canada Wireless				\$ 1.153			\$ 1.153
Bogend Broadband Inc.			\$ 0.016				\$ 0.016
Bragg						\$20.298	\$20.298
Bragg Communications				\$25.628			\$25.628
BroadPoint International Telecom Inc.					\$ 0.029		\$ 0.029
ccROUTE Inc.			\$ 0.032				\$ 0.032
Celluworld Inc.				\$ 0.932			\$ 0.932
Chatham Internet Access			\$ 0.014				\$ 0.014
Cogeco Cable Inc.			\$ 0.025				\$ 0.025
Comcentric Networking Inc.			\$ 0.020				\$ 0.020
Cranbrook Internet Network Technologies Inc.				\$ 0.005			\$ 0.005
Data & Audio-Visual				\$243.159			\$243.159
Distributel Spectrum Inc.			\$ 0.010				\$ 0.010
Feenix						\$ 0.284	\$ 0.284
Gateway Telephone Ltd.	\$ 0.124						\$ 0.124
Globalive Wireless				\$442.099			\$442.099
I-NetLink Inc.			\$ 0.014				\$ 0.014
I-NetLink Incorporated					\$ 0.002		\$ 0.002
Javelin Connections Inc.	\$23.240						\$23.240
Lyon Wireless Inc.			\$ 0.038				\$ 0.038
Mipps Inc.			\$ 2.666				\$ 2.666
Monophone Inc.					\$ 0.037		\$ 0.037
MTS						\$ 8.772	\$ 8.772
Norigen Wireless Communications Inc.	\$39.876						\$39.876
Northwestel Inc.			\$ 0.027				\$ 0.027
Northwestel Mobility Inc.	\$ 0.005						\$ 0.005
Novus Wireless Inc.				\$17.900			\$17.900
Pathcom Wireless Inc.			\$ 0.093				\$ 0.093
Pathfinder Property Corporation o/a SmokeSignal				\$ 0.009			\$ 0.009

Peterborough Utilities Inc.			\$ 0.047				\$ 0.047
Réseau TW s.e.c.			\$ 0.017				\$ 0.017
Rich Telecom Corp.				\$ 0.739			\$ 0.739
RipNET Limited			\$ 0.030				\$ 0.030
Rogers				\$999.367	\$ 3,291.738		\$ 4,291.105
Rogers Wireless Inc.	\$393.520		\$10.820				\$404.340
Saskatchewan Telecommunications			\$ 0.103				\$ 0.103
SaskTel				\$65.690	\$ 7.557		\$73.247
Skycable Inc.	\$ 0.005						\$ 0.005
Sogetel Inc.			\$ 0.106				\$ 0.106
Source Cable & Wireless Limited			\$ 0.013				\$ 0.013
SSI Micro Ltd.					\$ 0.025		\$ 0.025
Telecom Ottawa Ltd.			\$ 0.065				\$ 0.065
Télédistribution Amos Inc.			\$ 0.001				\$ 0.001
Tele-Mobile Company			\$ 8.835				\$ 8.835
TELUS				\$879.889	\$ 1,142.953		\$ 2,022.842
TELUS Communications Inc.	\$355.920		\$ 0.059				\$355.979
Terago Networks Inc.	\$ 3.118						\$ 3.118
Thunder Bay Telephone		\$ 0.600					\$ 0.600
VCom Inc.			\$ 1.285				\$ 1.285
Vidéotron					\$233.328		\$233.328
Vidéotron Télécom Ltée	\$22.467						\$22.467
W2N Inc.		\$11.390					\$11.390
Wavecom Electronics Inc.	\$ 0.159						\$ 0.159
WNI Networks Inc.	\$74.020						\$74.020
Xcelco Limited			\$ 0.013				\$ 0.013
YourLink Inc.			\$ 0.198				\$ 0.198
Total	\$171.839	\$ 1,481.920	\$68.764	\$ 4,254.710	\$ 0.124	\$ 5,270.636	\$11,247.993
Number of successful participants	13	6	33	16	6	9	71

Appendix 2: Winning bids, by current owner (1999-2014)

Current owner (Jan 2015)	Spectrum auctioned	Winning bids (\$ millions)							Total	
		1999	2001	2005	2008	2009	2014	\$	%	
9107-1365 Québec Inc.	2300 & 3500 MHz			\$0.081				\$0.081		
Abraham Finkel	2 GHz				\$0.932			\$0.932		
Allen family	2300 & 3500 MHz			\$0.050				\$0.050		
	24 & 38 GHz	\$0.008						\$0.008		
Allen family Total		\$0.008		\$0.050				\$0.057		
Bell	2 GHz		\$720.490		\$740.928			\$1,461.418		
	2300 & 3500 MHz			\$36.151				\$36.151		
	24 & 38 GHz	\$0.005						\$0.005		
	700 MHz						\$565.706	\$565.706		
Bell Total		\$0.005	\$720.490	\$36.151	\$740.928		\$565.706	\$2,063.280	18.3%	
Blue Canada Wireless	2 GHz				\$1.153			\$1.153		
Bragg	2 GHz				\$25.628			\$25.628		
	2300 & 3500 MHz			\$0.017				\$0.017		
	700 MHz						\$20.298	\$20.298		
Bragg Total				\$0.017	\$25.628		\$20.298	\$45.943		
Cellular One	2300 & 3500 MHz Residual					\$0.029		\$0.029		
Chatham Internet Access	2300 & 3500 MHz			\$0.014				\$0.014		
Cogeco	2300 & 3500 MHz			\$0.025				\$0.025		
Comcentric (6 Ontario BSPs)	2300 & 3500 MHz			\$0.020				\$0.020		
Cranbrook Internet Network Technologies Inc.	2300 & 3500 MHz			\$0.005				\$0.005		
Data & Audio-Visual	2 GHz				\$243.159			\$243.159		
Distributel Spectrum Inc.	2300 & 3500 MHz			\$0.010				\$0.010		
Fiorini family	2300 & 3500 MHz			\$0.032				\$0.032		
Globalive Wireless	2 GHz				\$442.099			\$442.099		
I-NetLink Inc.	2300 & 3500 MHz			\$0.014				\$0.014		
	2300 & 3500 MHz Residual					\$0.002		\$0.002		
I-NetLink Inc. Total				\$0.014		\$0.002		\$0.016		
Javelin Connections Inc.	24 & 38 GHz	\$23.240						\$23.240		
Javelin Connections Inc. Total		\$23.240						\$23.240		
John Bitove	700 MHz						\$0.284	\$0.284		
Licence revoked in 2006	24 & 38 GHz	\$0.124						\$0.124		
Lyon Wireless Inc.	2300 & 3500 MHz			\$0.038				\$0.038		
Mipps Inc.	2300 & 3500 MHz			\$2.666				\$2.666		
Monophone Inc.	2300 & 3500 MHz Residual					\$0.037		\$0.037		
MTS	2 GHz				\$40.774			\$40.774		
	24 & 38 GHz	\$7.904						\$7.904		
	700 MHz						\$8.772	\$8.772		
MTS Total		\$7.904			\$40.774		\$8.772	\$57.450		
Norigen Wireless Communications Inc.	24 & 38 GHz	\$39.876						\$39.876		
Pathcom Wireless Inc.	2300 & 3500 MHz			\$0.093				\$0.093		
Pathfinder Property Corporation	2300 & 3500 MHz			\$0.009				\$0.009		
Peterborough Utilities Inc.	2300 & 3500 MHz			\$0.047				\$0.047		
Quebecor	2 GHz				\$554.549			\$554.549		
	24 & 38 GHz	\$22.467						\$22.467		
	700 MHz						\$233.328	\$233.328		
Quebecor Total		\$22.467			\$554.549		\$233.328	\$810.344	7.2%	
Réseau TW s.e.c.	2300 & 3500 MHz			\$0.017				\$0.017		
Rich Telecom Corp.	2 GHz				\$0.739			\$0.739		

Current owner (Jan 2015)	Spectrum auctioned	Winning bids (\$ millions)							Total	
		1999	2001	2005	2008	2009	2014	\$	%	
RipNET Limited	2300 & 3500 MHz			\$0.030				\$0.030		
Rogers	2 GHz		\$393.520		\$999.367			\$1,392.887		
	2300 & 3500 MHz			\$10.820				\$10.820		
	700 MHz						\$3,291.738	\$3,291.738		
Rogers Total			\$393.520	\$10.820	\$999.367		\$3,291.738	\$4,695.445	41.7%	
Sasktel	2 GHz				\$65.690			\$65.690		
	2300 & 3500 MHz			\$0.103				\$0.103		
	700 MHz						\$7.557	\$7.557		
Sasktel Total				\$0.103	\$65.690		\$7.557	\$73.350		
Shaw	2 GHz				\$189.519			\$189.519		
Skycable Inc.	24 & 38 GHz	\$0.005						\$0.005		
Sogetel Inc.	2300 & 3500 MHz			\$0.106				\$0.106		
Source Cable & Wireless Limited	2300 & 3500 MHz			\$0.013				\$0.013		
SSI Micro Ltd.	2300 & 3500 MHz Residual					\$0.025		\$0.025		
Telecom Ottawa Ltd.	2300 & 3500 MHz			\$0.065				\$0.065		
Télédistribution Amos Inc.	2300 & 3500 MHz			\$0.001				\$0.001		
Telus	2 GHz		\$355.920		\$950.174			\$1,306.094		
	2300 & 3500 MHz			\$16.825				\$16.825		
	24 & 38 GHz	\$0.913						\$0.913		
	700 MHz						\$1,142.953	\$1,142.953		
Telus Total		\$0.913	\$355.920	\$16.825	\$950.174		\$1,142.953	\$2,466.786	21.9%	
Terago Networks Inc.	24 & 38 GHz	\$3.118						\$3.118		
Thunder Bay Telephone	2 GHz		\$0.600					\$0.600		
Vecima Networks	2300 & 3500 MHz			\$1.285				\$1.285		
W2N Inc.	2 GHz		\$11.390					\$11.390		
Wavecom Electronics Inc.	24 & 38 GHz	\$0.159						\$0.159		
Winner declared bankruptcy	2300 & 3500 MHz			\$0.016				\$0.016		
Will Gasteiger	2300 & 3500 MHz Residual					\$0.031		\$0.031		
WNI Networks Inc.	24 & 38 GHz	\$74.020						\$74.020		
Xcelco Limited	2300 & 3500 MHz			\$0.013				\$0.013		
YourLink Inc.	2300 & 3500 MHz			\$0.198				\$0.198		
Total		\$171.839	\$1,481.920	\$68.764	\$4,254.710	\$0.124	\$5,270.636	\$11,247.993		
Top 4 (based on 2015 total) - total		\$23.385	\$1,469.930	\$63.796	\$3,245.018	\$0.000	\$5,233.725	\$10,035.85		
Top 4 (based on 2015 total) - as % of total		13.6%	99.2%	92.8%	76.3%	0.0%	99.3%	89.2%		

Appendix 3: CRTC OTA licensing decisions, 2000-2012

Date	Decision	Area	Type of service	Language	Applicants	Licences	Successful applicant
17-Feb-00	2000-46	Isle Madame	Low-power	Bilingual	1	1	Telile: Isle Madame
06-Jul-00	2000-218	Fraser Valley	Religious TV	English	1	1	Trinity Television
06-Jul-00	2000-219	Victoria	Conventional	English	3	1	CHUM
14-Feb-02	2002-39	Vancouver	Ethnic	Multilingual	2	1	Multivan
08-Apr-02	2002-81	Toronto/ Hamilton	Conventional	English	5	2	Craig Broadcasting, Rogers
08-Aug-02	2002-229	Winnipeg	Religious TV	English	1	1	Trinity Television
18-Oct-02	2002-322	Isle Madame	Community TV	Bilingual	1	1	Telile: Isle Madame
22-Aug-03	2003-413	Quebec	Community TV	French	1	1	Tele-Mag inc.
26-Feb-04	2004-98	Calgary	Conventional	English	2	0	<i>None</i>
26-Feb-04	2004-98	Edmonton	Conventional	English	2	0	<i>None</i>
26-Feb-04	2004-98	Red Deer	Conventional	English	2	1	Global Communications Limited
18-Nov-05	2005-544	St. Catharines	Conventional	English	1	0	<i>None</i>
23-Nov-05	2005-551	St. Andrews	Community TV	English	1	1	St. Andrews Community Channel
08-Jun-07	2007-166	Calgary	Ethnic	Multilingual	2	1	Rogers
08-Jun-07	2007-167	Calgary	Religious TV	English	2	1	Crossroads Television System
08-Jun-07	2007-166	Edmonton	Ethnic	Multilingual	2	1	Rogers
08-Jun-07	2007-167	Edmonton	Religious TV	English	2	1	Crossroads Television System
06-Jul-07	2007-219	Toronto	Community TV	English	1	0	<i>None</i>
03-Apr-08	2008-75	National	HD conventional	English	1	0	<i>None</i>
03-Apr-08	2008-76	Toronto	HD conventional	English	1	0	<i>None</i>
05-Mar-09	2009-118	Iles-de-la- Madeleine	Community TV	French	1	1	Diffusion communautaire des Iles Inc.
24-Sep-09	2009-595	Laval	Low-power	French	1	0	Television regionale de Laval
06-Aug-10	2010-556	Red Deer	Ethnic	English	1	1	CTV
20-Dec-12	2012-696	Montreal	Ethnic	Multilingual	1	1	4517466 Canada Inc.
Total					38	18	

Appendix 4: Summary - applicants and number of OTA TV programming licences granted by the CRTC, 2000-2012

Type of OTA TV service	2000	2002	2003	2004	2005	2007	2008	2009	2010	2012	Total	% appr.
Community TV												
# of applicants		1	1		1	1		1			5	
# approved		1	1		1	0		1			4	80%
Conventional												
# of applicants	3	5		6	1						15	
# approved	1	2		1	0						4	27%
Ethnic												
# of applicants		2				4			1	1	8	
# approved		1				2			1	1	5	63%
HD conventional												
# of applicants							2				2	
# approved							0				0	0%
Low-power												
# of applicants	1							1			2	
# approved	1							0			1	50%
Religious TV												
# of applicants	1	1				4					6	
# approved	1	1				2					4	67%
Total # of applicants	5	9	1	6	2	9	2	2	1	1	38	
Total # approved	3	5	1	1	1	4	0	1	1	1	18	47%
% approved	60%	56%	100%	17%	50%	44%	0%	50%	100%	100%	47%	

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