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The New Telecommunications Sector Foreign Investment Regime and Rural Broadband

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Abstract

Canada's telecommunications sector is in the midst of significant change. New rules on foreign investment and upcoming auctions for licenses for wireless mobile services are aimed at increasing competition; however, these changes are unlikely to produce significant benefit for rural Canadians. An analysis of the new foreign investment regulations reveals that the new approach will likely weaken the government's ability to meet the goals of Canadian telecommunications policy outlined in the *Telecommunications Act*. Furthermore an examination of the licensed purchase and services provided from the last wireless spectrum auction in 2008 reveals new entrants' clear preference for providing service in urban areas. The paper concludes by positing that if the Government of Canada wishes to ensure that next generation 4G wireless services are available to Canada's rural and remote population, the government must stop its reliance on market forces to develop national broadband and instead create a comprehensive national plan.

Key words: spectrum management, rural broadband, foreign investment, 700MHz spectrum auction, Radio System Policy 019

1.0 Introduction

In 2011 the Canadian Radio-television and Telecommunications Commission established a national goal of having all Canadians connected to broadband internet by 2015 and emphasized that this objective was a reflection of the crucial importance of broadband to a range of social, economic and cultural objectives. (CRTC, 2011c, para. 71 and 78). In 2012 the Government of Canada took a series of policy steps aimed at increasing competition in Canada's telecommunications sector by easing the restrictions on foreign investment in Canadian telecom companies. While these changes are likely to result in increased competition and ultimately lower prices for urban and suburban Canadians, the one fifth of Canadians who live in rural communities are much less likely to benefit from greater foreign capital in the Canadian telecom sector. The change to the foreign investment regime comes at a particularly important time – just in advance of the 700 MHz band spectrum license auction set to begin on November 19, 2013 (Industry Canada, 2013, p. iii). Although Canada's telecommunication policy

explicitly aims at providing reliable, high quality, and affordable telecommunications to both urban *and* rural Canadians (*Telecommunications Act*, 1993, s. 7(b)), the new foreign investment regime will disproportionately benefit urban Canadians, particularly with regard to wireless broadband services. As noted by Industry Canada the upcoming auctions in the 700MHz band is particularly valuable because of its propagation characteristics that allow it to be used for wireless broadband services in both rural and urban areas (Industry Canada, 2010b, p. 17; Industry Canada, 2012e, p. 29, 33 and 42). Given the importance of next generation (4G) wireless services for facilitating high speed, wireless internet access, and the importance of such access for political, social and economic action and participation, the government will have to take additional policy measures to ensure that rural Canadians are not left behind. As noted by the OECD, wireless internet connections are now estimated to be twice as common as fixed or wireline broadband subscriptions (OECD, 2012, p. 22). It is likely that without additional incentives foreign companies will be unwilling to assume the high cost of investing in mobile wireless infrastructure to serve sparsely populated areas. As demonstrated by the last spectrum auction, new entrants into Canada's wireless sector, including those backed by foreign capital, will concentrate their efforts on servicing urban areas.

This paper begins by briefly noting the state of wireless and broadband services in rural and remote Canada and the economics of rural broadband. It then examines and contextualizes the historical roots of Canada's restrictions of foreign investment in the telecommunications sector, and also reviews the high level policy debates occurring since 2000 on liberalizing Canada's foreign investment regime. This section also examines the recent legal cases involving a new wireless company Globalive (operator of the WIND Mobile brand) which placed increased pressure on the government to alter the foreign investment regime. This section is followed by an examination of two recently announced policy changes. The first, announced March 14, 2012, is the removal of restrictions on foreign investment for firms that make up less than 10 percent of telecom sector revenues (Industry Canada, 2012c), and the second change is the relaxation of the investment review threshold in the *Investment Canada Act* (Canada, 2012c). These two changes are examined with reference to existing foreign investment regime in the telecom sector and the inherent limitations in the *Investment Canada Act*'s net benefit test (*Investment Canada Act*, s. 16(1), 1985).

The third part of the paper presents a case study that investigates the last spectrum auction in 2008. Although this auction led to the development of increased competition in the wireless industry through the emergence of several new providers (WIND, Public Mobile and Mobilicty), an analysis of the licenses purchased and current services offered by the foreign backed Globalive/WIND demonstrates that new, foreign capitalized entrants are most interested in providing service to urban Canadians. The paper concludes by suggesting that greater access to foreign capital, facilitated by the new foreign investment regime stands to be to the greatest benefit of urban and not rural Canadians; however, the paper also argues that the government still has policy mechanisms that it can use to enhance wireless rural broadband services and specifically calls on the government to follow through with its commitment to review RP-019 (Industry Canada, 2012e, p. 31-2), and ultimately expand Industry Canada's Policy for the Provision of Cellular Services by New Parties (RP-019) (Industry Canada, 1998) to cover greater spectrum frequencies.

This paper examines the impact of the announced changes to the foreign ownership restrictions in the telecommunications sector on access to mobile wireless broadband for rural Canadians. Although access is a crucial part of connecting Canadians, we note that access is only one consideration in ameliorating the communications divide between urban and rural Canadians. Although the paper is not focused on issues of speed and pricing, the lack of access and corresponding lack of competition further compound the issues of ensuring accessible, affordable and high quality telecommunications services to all Canadians.

2.0 Rural Broadband Technologies and Economics

Next generation 4G wireless broadband is only one of a range of options available for providing broadband access. Fixed or wireline broadband is a well-established technology for delivering broadband services through different types of wired infrastructure. While copper phone lines, coaxial cable and fibre optic cable all can be used for broadband, with the latter offering the fastest speeds,[1] the costs of connecting individual households (often referred to as 'last mile' costs) can make provision of fixed broadband to rural and remote Canadian prohibitively expensive. Several technologies are better suited to rural and remote areas including fixed wireless, where a fixed location is connected wirelessly to a base station (CRTC, 2009a), satellite based systems that can connect multiple remote users from a single point (Theckedath & Thomas, 2011, p. 4), and wireless (mobile) broadband that uses licensed sections of the radio-spectrum dedicated for mobile communications. Each of these technologies has specific advantages and limitations. While fixed wireless is more cost efficient than connecting copper, cable or fibre wire, the wireless receiver must have a line of sight with the base station making it suitable for communities but not sparsely populated areas (National Broadband Network, 2012, p. 4). Wireless broadband over the 700MHz spectrum can be well suited for low-density communities. A single high gain antenna using 700MHz spectrum can provide broadband access at speeds up to 12Mbps 14km from a tower and doesn't require line of sight, though signal strength deteriorates with distance (Australian Government, 2010, p. 274-276). Both fixed wireless and wireless require the construction of costly base stations/antennas. While satellite avoids this problem, broadband over satellite can be adversely affected by weather, suffers from latency making it less useful for real-time uses and may require multiple satellites (Australian Government, 2010, p. 277). There is no universally optimal broadband technology for rural and remote communities.

The lack of a single best technology and high costs associated with each contribute create significant economic barriers to covering 100% of the population. The 2010 Australian *National Broadband Network Implementation Study* recommended that for the most rural 10% of the population, fibre be extended the least rural 3%, fixed wireless used to connect the next 4%, but that the most remote final 3% of the population rely on satellite, the poorest performing technology (Australian Government, 2010, p. 279). Canada faces as similarly difficult situation. The Northwest Territories, Nunavut and Yukon comprise 41% of the country's land mass, but only 0.3% of the population (though the vast majority of this land is uninhabited), the Toronto, Montreal, Vancouver, Ottawa and Calgary metropolitan

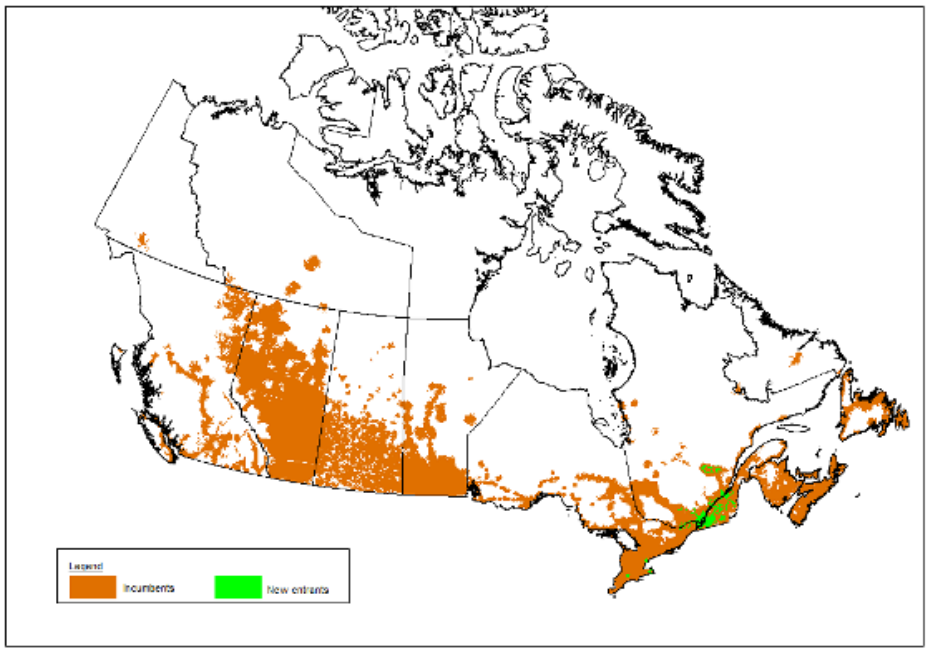
[1] For example, Bell's Fibre [fibre optic cable] Internet advertises speeds of up to 175 Mbps (Bell, 2013**).**

regions combined make up 0.3% of the land but contain 41% of the population (Theckedath et al., 2011, p. 2). Given these kinds of population density differences, it is clear that ensuring these regions get broadband internet access requires affirmative policy intervention, since the lack of potential customers fails to drive market forces.

2.1 Wireless Broadband in Rural Canada

Despite the economic limitations on rural broadband, it could be argued that rural and remote Canadians are not significantly disadvantaged in terms of access to broadband. According to the 2012 Canadian Radio-television and Telecommunications Commission's (CRTC) *Communications Monitoring Report*, residential broadband access (through a variety of technologies) is available to 83% of rural Canadians in comparison to 100% of urban Canadians. Wireless mobile services are available to 99.3% of the population, and the high-speed HSPA+ wireless network technology is available to 99% of the populace. However, national coverage statistics obscure the urban/rural digital divide. Wireless service coverage in Canada's northern territories covers only 66.4% of the population, and the more advanced HSPA+ technology reaches less than half the population (CRTC, 2012, p. 147). The limited coverage in remote areas is shown in Figure 1 below.

Figure 1. Map of Presence of HSPA+ wireless facilities-based service providers



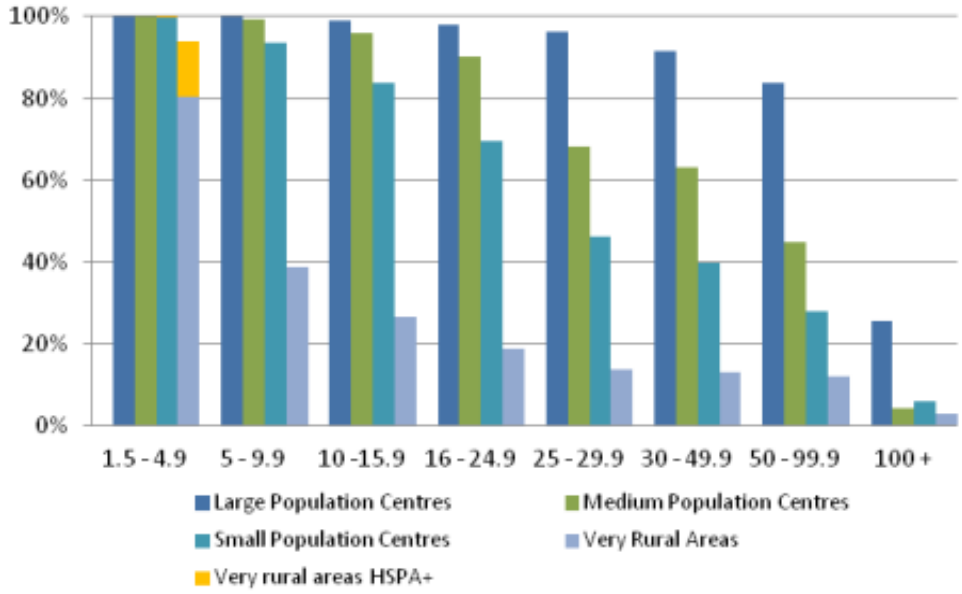
Source: CRTC, 2012, p. 176.

As indicated by Figure 1, numbers based on the percentage of population covered provide only limited insight into the actual state of geographic coverage, and while many subserviced rural and remote areas are sparsely populated, the areas connecting these communities are often without service. Furthermore, while the

CRTC has noted that more than 80% of very rural areas (areas without population centres totaling at least 1000 persons) have broadband access, this coverage includes only the slowest range of broadband speeds (1.5-4.9 Mbps), and as demonstrated by Figure 2, there is considerably less access in very rural areas for higher speeds of broadband.

Although remote areas are at an extreme disadvantage with respect to higher speed broadband connections, one solution may be 4G mobile broadband, or example, Rogers advertises that speeds on its 4G network range between 12-25Mbps and can go as high as 40Mbps (Rogers, 2013). The upcoming 700Mhz auction provides an opportunity for higher speed broadband in rural areas. However, recent changes to the foreign investment restrictions on Canada's telecommunications sector are unlikely to encourage such foreign investment.

Figure 2. Broadband availability, by size of community and speed (Mbps)



Source: CRCT, 2011a, p. 13.

3.0 Foreign Investment Restrictions in Canada's Telecommunications Sector: An Ongoing Policy Debate

The general (non-sectoral) restrictions on foreign ownership have a roughly 40-year history in Canada. In 1973 the government passed the *Foreign Investment Review Act* that provided a legal mechanism for the government to test whether the benefits of foreign investments outweighed the costs (Transport Canada, 2003). In 1985 Canada relaxed these restrictions with the passing of the *Investment Canada Act* that requires foreign investments above a certain threshold ($330 million in 2012 (Industry Canada, 2012d)) to be of a net benefit to country (*Investment Canada Act*, s. 21, 1985). While the *Investment Canada Act* provides the general framework for foreign investment in Canada, three specific sectors – banking, telecommunications and broadcasting – have their own unique foreign ownership restrictions.

Federal policy limiting foreign investment in the Canadian telecom sector can be traced back to the 1980s. In 1984 the Department of Communication issued a

cellular operating license to Rogers Cantel and capped the level of foreign ownership of voting share equity at 20% (House of Commons, 2010). The 1987 *A Policy Framework for Telecommunications in Canada* that grew out of the Canada-U.S. free trade debate considerably expanded restrictions by imposing them on all common carriers, though this principle was not enacted in law until the 1993 *Telecommunications Act* (Industry Canada, 2010c). The government's actions were motivated by a belief that domestic ownership of telecommunications infrastructure was essential to national security and sovereignty and to harmonize Canadian policy with that of other countries (Transport Canada, 2003). The 1993 *Telecommunications Act* contains two important sections limiting foreign investment in Canada's telecom sector. Section 7 outlines Canada's telecommunications policy, and section 7(d) specifically states that one of the policy objectives is, "to promote the ownership and control of Canadian carriers by Canadians (*Telecommunications Act*, s. 7(d), 1993)." Section 16 of the Act details the three primary Canadian ownership requirements. To qualify as Canadian owned and controlled at least 80% of the members of the board of directors must be Canadians, Canadians must own (directly or indirectly) 80% of the voting shares and finally the corporation must not be otherwise controlled by non-Canadians (*Telecommunications Act*, s. 16(3), 1993). To provide greater specificity section 16 of the *Act* was complimented by the *Canadian Telecommunications Common Carrier Ownership and Control Regulations* (1994) that provide the absolute limit of foreign ownership as no more than 46.7% of the voting shares.[2] The first two conditions in section 16 are objective *de jure* tests, while the third "control in fact test" is a more subjective *de facto* test. The *Radiocommunication Regulations* (s. 10, 1996) also restrict foreign ownership in a similar manner.

Although foreign investment restrictions are enshrined into Canadian law through the *Act* and its regulations, there has been a slight degree of liberalization and a considerable amount of policy discussion and recommendations in the two decades since the enactment of the *Telecommunications Act*. Though Canada did not commit to liberalizing its telecom sector as part of the General Agreement on Trade in Services, in 1997 it lifted some restrictions on foreign ownership of submarine cables and satellite systems stemming from a World Trade Organization agreement on investment in telecommunications that led many other nations to substantially (but not necessarily fully) dismantle their own foreign investment regimes (Transport Canada, 2003). However, in Canada general limitations on common carrier ownership remained (World Trade Organization, 1997). More recently in 2010 *Jobs and Economic Growth Act* (the *Budget Implementation Act*), the government completely removed restrictions on the foreign ownership of submarine cables and satellite (*Jobs and Economic Growth Act*, s. 2184, 2010). According to the Organisation for Economic Cooperation and Development's 2011 *Communications Outlook*, Canada and South Korea stand alone as having the most restrictive foreign ownership regimes, while Austria, Belgium, Chile, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Iceland, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Sweden, Turkey and the United Kingdom have no restrictions (OECD, 2011).

[2] A foreign company can hold 20% of the voting shares directly and indirectly though by owning another 33.3% of a holding company that owns a telecommunications carrier or 20% + (33.3% x 80%) = 46.7%.

3.1 The Policy Debate over the Past Decade

Until March 2012, Canada maintained one of the most restrictive foreign investment regimes in the telecom sector. This state of affairs this is not for lack of high-level debate. There have been five important sets of policy recommendations made in the past decade on foreign investment restrictions in the telecom sector (Industry Canada, 2010c).

In 2003 the House of Commons Standing Committee on Industry, Science and Technology recommended that foreign investment restrictions be eliminated for both telecommunications common carriers and Broadcasting Distribution Undertakings (BDUs) (Industry Canada, 2010c; House of Commons, 2003, p. xiii). However, that same year the House of Commons Standing Committee on Canadian Heritage made the completely opposite recommendation suggesting all foreign ownership restrictions for both the telecom and broadcast sectors remain (House of Commons, 2003, p. 420). In 2006 the Telecommunications Policy Review Panel suggested a two-phase liberalization approach with the second phase opening up both the telecom and broadcasting sectors. In the first phase companies that made up less than 10% of telecom sector revenues would be completely exempt from foreign ownership restrictions, with broader liberalization to follow in the second phase (Canada – Telecommunications Policy Review Panel, 2006, p. 11 - 25-26). The two-step phase in approach was also recommended by the 2008 Competition Policy Review Panel (Canada – Competition Policy Review Panel, 2008, p. 49). While this Panel's final report, *Compete to Win*, reiterated the call for a two phase liberalization of the telecom sector, it also called for the government to raise the threshold for review in the *Investment Canada Act* to $1 billion (Canada - Competition Policy Review Panel, 2008, p. 31). In response to the panel's recommendation for changing the *Investment Canada Act*, the government raised the review threshold to the recommended level in the 2009 omnibus budget bill (*Budget Implementation Act*, s. 448, 2009). However, the changes to the 2009 *Investment Canada Act* also required changes to the *Investment Canada Regulations* (1985), which were only completed in May of 2012 (Canada, 2012c). In 2010 the House of Commons Standing Committee on Industry, Science and Technology again investigated the issue of foreign competition, and made two recommendations. First, the Government should clarify the control in fact test (that a corporation is not otherwise controlled by non-Canadians (*Telecommunications Act*, s. 16(3)(c), 1993); and second, the restrictions on foreign satellite ownership should be removed (which was accomplished with the 2010 *Budget Implementation Act*) (House of Commons, 2010, p. 45). Over the past decade there have been a myriad of policy recommendations regarding how, and if at all, the government should alter the foreign investment regime in the telecommunications sector. But the issue of reform gained increased urgency following the most recent wireless spectrum auction and the resulting controversy surrounding one of the new **entrants in Canada's** wireless sector, the foreign backed Globalive Wireless.

3.2 Foreign Investment through the Backdoor: The Globalive Case

While there had been a considerable discussion around foreign investment in policy circles, the debate ascended in importance due to developments from the last major spectrum auction for advanced wireless services (AWS) licenses held in May-June 2008. During that auction Globalive Wireless LP (operating under the WIND Mobile brand) successfully bid for 30 AWS licenses spending a total of

$442,099,000 (Canadian Radio-Television and Telecommunications Commission (CRTC, 2009a). In March 2009 Industry Canada issued a spectrum license to Globalive after concluding that it met the Canadian ownership requirements (CRTC, 2009b). After the licenses were issued, Telus, and later Shaw, petitioned the CRTC to review the ownership and control of Globalive, which eventually culminated in the CRTC's October 2009 finding that Globalive was in fact controlled by the Egyptian-based Orascom. Despite Globalive making several changes to its corporate structure, the CRTC found these changes unsatisfactory, identifying three factors that led to its conclusion that Orascom had control over Globalive. First, Orascom held two thirds of Globalive's equity. Second, Orascom provided Globalive with its primary source of technical expertise. Finally, Orascom provided Globalive with the WIND trademark that is an established brand in other foreign markets. As a result of these factors, the CRTC concluded that Globalive was not eligible to operate under section 16 of the *Telecommunications Act* (CRTC, 2009b). The CRTC's ruling on the ownership of Globalive precipitated a cascade of rulings and court decisions on the ownership of Globalive.

On December 10, 2009 the Cabinet varied the CRTC's decision concluding that Globalive *was* a qualifying Canadian company and eligible to hold a common carrier license under the *Telecommunications Act* (Privy Council Office, 2009). In accord with section 12 of the *Telecommunication Act*, Cabinet (the Governor-in-Council) has the authority to vary, rescind or refer back CRTC decisions (*Telecommunications Act*, s. 12(1), 1993). Cabinet concluded that the Canadian ownership requirements were not absolute but only applied "when possible (Privy Council Office, 2009)." Furthermore it also suggested that the *Telecommunications Act* should not be interpreted in a manner that discourages access to foreign capital and expertise. While the Cabinet acknowledged that Orascom controlled significant amount of Globalive debt, it did not interpret this as a controlling factor, and ruled Globalive a qualifying Canadian company thereby reversing the CRTC's decision (Privy Council Office, 2009).

The Cabinet decision to vary the CRTC's finding did not go unopposed. Under the *Federal Courts Act* (*Federal Courts Act*, s. 18.1, 1985), Public Mobile, another new entrant into Canada's cellular market from the AWS auction, sought judicial review of the Cabinet variance of the CRTC's decision. On February 4, 2011, the Federal Court quashed the Governor-in-Council order (*Public Mobile v. Canada*, 2010, para. 120), concluding that Cabinet had overstepped its authority by introducing the idea that the *Telecommunications Act* aims to encourage foreign investment (para 117). Furthermore, the court took issue with the Cabinet order because the Cabinet appeared to only allow foreign investment for Globalive only and not other telecommunications common carriers (*Public Mobile v. Canada*, 2010, p. 118). The court's order setting aside the Cabinet order and restoring the CRTC decision was in turn appealed by Globalive. On June 8, 2011 the Federal Court of Appeal made its ruling restoring the Cabinet decision (*Globalive v. Public Mobile*, 2011 FCA 194, para. 59), holding that encouraging foreign investment *did* fit within the objectives of the Canadian telecommunications policy in the *Telecommunications Act* (*Globalive v. Public Mobile*, 2011, para. 47). The court noted that since Parliament had granted Cabinet the power to review CRTC decisions it intended for Cabinet to incorporate policy concerns in its review (*Globalive v. Public Mobile*, 2011, para. 50). Although this ruling represented the third time the original CRTC decision had been altered in some manner, Public

Mobile sought leave to appeal to the Supreme Court (Public Mobile, 2011). But in April 2012, the Supreme Court denied Public Mobile's leave to appeal (Supreme Court of Canada, 2012). While the court does not give reasons when deciding not to grant leave to appeal, the decision likely reflects the fact that the governments' proposed changes to the *Telecommunications Act* rendered the controversy moot.

3.3 The Government's Push to Liberalize Foreign Investment

Since the Cabinet decision to overturn the CRTC ruling on Globalive, the Government has made several announcements that it intends on liberalizing the foreign investment restrictions. The 2010 Speech from the Throne and federal budget both indicated that the government would increase foreign investment in the telecom sector (Canada, 2010a; Canada, 2010b). In May of 2010 in its digital economy consultation document, the Government of Canada once again indicated that easing of foreign investment restrictions was a priority (Canada, 2010c, p. 17). The Government's rhetoric ultimately culminated in a consultation document, *Opening Canada's Doors to Foreign Investment in Telecommunications*, by Industry Canada released in June of 2010. The consultation paper invited comments on three proposed options for liberalization. Under the first option the direct limit of ownership on voting shares for a telecom common carrier would be raised from 20% to 49%. The second option would allow telecom carriers with revenues less than 10% of the total telecom sectors revenues ($40.3 billion in 2008) to be exempt from the section 16 restrictions in the *Telecommunications Act*. The final option was to remove foreign investment restrictions entirely (Industry Canada, 2010c, p. 9-10). The consultation document also indicated that it was only interested in removing restrictions on foreign investment in the telecom sector and that changes to the broadcasting policy were not being considered (Industry Canada, 2010c, p. 10). The government's call for comments generated a broad range of responses for a diverse range of respondents.

In 2011 the Government's tone on changing the foreign investment rules appears to have shifted slightly to a less aggressive stance. In its June 2011 Throne Speech the Government once again committed to increased foreign investment, but did not specifically identify the telecom sector as a priority (Canada, 2011). In a speech before to the 2011 Canadian Telecom Summit, the new Industry Minister Christian Paradis stated that he was interested in "getting right" the foreign ownership issue, but did not explain what this approach entailed (Paradis, 2011). Though Minister Paradis has been meeting with telecom executives in advance of the 700MHz auction, Telus' senior VP for regulatory affairs was left wondering if anything will be done on the issue of foreign investment before the auction (Mayeda, 2011). While the government's less committed rhetoric in 2011 left some members of the telecommunications sectoring wondering if any reform would occur, in early 2012 the government announced plans to alter the foreign investment regime while also releasing the upcoming policy framework for the 700MHz spectrum auction.

4.0 The New Telecommunications Sector Foreign Investment Regime

On March 14, 2012 the government announced in advance of the upcoming spectrum auction that the *Telecommunications Act* would be amended to allow greater access to foreign capital for some telecom companies (Industry Canada, 2012c). These changes follow over a decade of high level policy discussions about

altering the foreign investment rules in the telecommunications sector, and follow through on the government's commitment to liberalize the telecommunications sector that it promised in the 2010 *Speech from the Throne* and the digital economy consultation paper (Canada, 2010a; Canada, 2010c). Under the new regime companies that make up less than 10% of total revenues in the telecommunications sector will be exempt from the foreign ownership restrictions. Foreign owned companies that eventually grow larger than 10% of sectoral revenues would continue to be exempt from the foreign ownership restrictions provided their growth was not achieved through mergers and acquisitions (Industry Canada, 2012c). In 2011 the Telecommunications sector in Canada had revenues of $42.7 billion (CRTC, 2012, p. i), and as such companies with revenues less than $4.27 billion would be exempt from the foreign ownership restrictions. Only Rogers, Bell and Telus would continue to be subject to the existing foreign investment restrictions (Kheterpal, 2012; Geist, 2012). In announcing these changes, the government noted that investments would still be subject to review under the *Investment Canada Act* (Industry Canada, 2012c). However, given the governments' recent announcement that it would increase the threshold for review from the current $330 million to $1 billion by 2016, the combined changes would allow a foreign company to purchase a domestic telecommunications company that makes up 2% of sectoral revenues without triggering any type of review in 2016.[3]

For those foreign investments above the *Investment Canada Act* review threshold but below the 10% of sectoral revenues threshold the *Investment Canada Act* net benefit test would be used to determine if the investment would proceed, but the test itself is not without its own limitations. The six factor[4] net benefit test has been labeled by media critics as the "'whatever Cabinet wants' test (Watson, 2012)," and an undefinable and meaningless test (Coyne, 2012). Canadian public policy think tanks on both the left and right have called for a scrapping of the test with the C.D. Howe Institute calling the test, "highly subjective and unpredictable (Bergevin & Schwanen, 2011, p. 17)" and the Canadian Centre for Policy Alternatives describing the test as "opaque and ineffective (Stanford, 2012a, p. 9)." While much of the criticism is directed at the test's vagueness, it does possess a

[3] Authors calculation based on a $999,999,999 investment and telecommunications sectoral revenues in 2016 equal to $47.5 billion (which was calculated by extrapolating the of the current sectoral revenues value ($42.7) at an annual rate of growth of 2.16% which is the average growth rate from 2008-11 (CRTC, 2010, p. 111; CRTC, 2011b, p. 111; CRTC, 2012, p. 123).

[4] The six factors in the net benefit test are: a) the effect of investment on the level and nature of economic activity in Canada, including, without limiting the generality of the foregoing, the effect on employment, on resource processing, on the utilization of parts, components and services produced in Canada and on exports from Canada; b) the degree and significance of participation by Canadians in the Canadian business or new Canadian business and in any industry or industries in Canada of which the Canadian business or new Canadian business forms or would form part of; c) the effect of the investment on productivity, industrial efficiency, technological development, production innovation and product variety in Canada; d) the effect of the investment on competition within any industry or industries in Canada; e) the compatibility of the investment with national industrial, economic and cultural policies, taking into consideration industrial, economy and cultural policy objectives enunciated by the government or legislate of any province likely to be significantly affected by the investment; and f) the contribution of the investment to Canada's ability to compete in world markets (*Investment Canada Act*, s. 20, 1985).

high degree of predictability. Since being passed in 1985, the government has approved 1,637 takeovers, and only rejected two proposed takeovers (Stanford, 2012b). Even two highly controversial takeovers in Canada's energy sector that were initially rejected (the $5.2 billion acquisition of Progress Energy Resources by Malaysia's Petronas and the $15.1 billion acquisition of Nexen by the Chinese National Offshore Oil Company (CNOOC)) were ultimately approved (Canada, 2012a; Canada, 2012b; Wherry, 2012). Simply put, by relying on the *Investment Canada Act*'s net benefit test, the government is practically ensuring that all foreign investments in the telecom sector that qualify under the less than 10% rule will be allowed unless politically unpalatable.

These changes to the telecommunications sector foreign investment regime present several areas of concern. First, while the government may be aiming to improve competition in the telecom sector, the approach adopted creates a bifurcated set of regulations – one set of rules on access to foreign capital for Bell, Rogers and Telus, and a second set of rules for all others. While the big three do have a considerable advantage, particularly in the area of wireless spectrum where Rogers, Bell and Telus combined already have 93% of the wireless subscribers and own 85% of all commercially available spectrum (Industry Canada, 2012e, p. 4-5), creating two sets of rules will be potentially problematic in the long run. Assuming that the new foreign investment regime is successful in encouraging competition to the big three, it could eventually harm the Canadian market and consumers by preventing the big three from competing with new companies on even regulatory grounds. More importantly, though the government has adopted the 10% approach first put forward by the Telecommunications Policy Review Panel, it provides no clear indication of when, if at all, it will follow through on the second part of the panel's recommendation that the foreign investment restrictions be phased out entirely (Canada – Telecommunications Policy Review Panel, 2006, p. 11-26). Furthermore, the reliance on the *Investment Canada Act* net benefit test is problematic. Although one of the factors in the test is, "the compatibility of the investment with national industrial, economic and cultural policies, taking into consideration industrial, economy and cultural policy objectives enunciated by the government or legislate of any province likely to be significantly affected by the investment (*Investment Canada Act*, s. 21(e), 1985)," the new approach de-emphasizes the importance of the Canadian Telecommunications Policy found in section 7 of the *Telecommunications Act*. While the *Telecommunications Act* has the specific policy objective, "to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada (s. 7(b), 1993)," under the net benefit test this policy objective, along with the other eight policy objectives become simply one factor in an six factor test. Furthermore, given the overwhelming historical record of foreign investment approvals, it would appear reasonable that the government would not approve foreign investment even if there was little or no promise that a foreign backed telecommunications provider would undertake the cost to service low density, rural regions of Canada. The recent AWS wireless spectrum auction, examined in the following section, provides several useful insights on where new entrants, and in particularly those that are foreign backed, are interested in providing telecom services. Unfortunately, as demonstrated by the licenses purchased and services deployed, foreign capital simply has little interest in rural Canada.

5.0 The AWS Spectrum Auction and the Interest of New Entrants in Servicing Rural Areas

The 2008 auction provides a valuable case study for examining how new entrants into Canada's telecommunications sector are likely to behave in future auctions. Given the expensive cost of deploying services to rural and remote areas, spectrum is a particularly effective means for developing higher speed rural broadband. A lack of enthusiasm for lower density rural and remote region licenses on the part of new entrants was a predictable outcome. But what was also surprising was how active WIND had been in purchasing a range of urban and rural licenses, but has since failed to deploy spectrum outside of urban areas.

The AWS auction was conducted using a mix of tier 2 and tier 3 license sizes. Tier sizes refer to the geographic area covered by spectrum licenses. There are a total of 14 Tier 2 regions (Industry Canada, 2010e)[5] and 59 smaller Tier 3 regions (Industry Canada, 2010f) (see Figure 2).

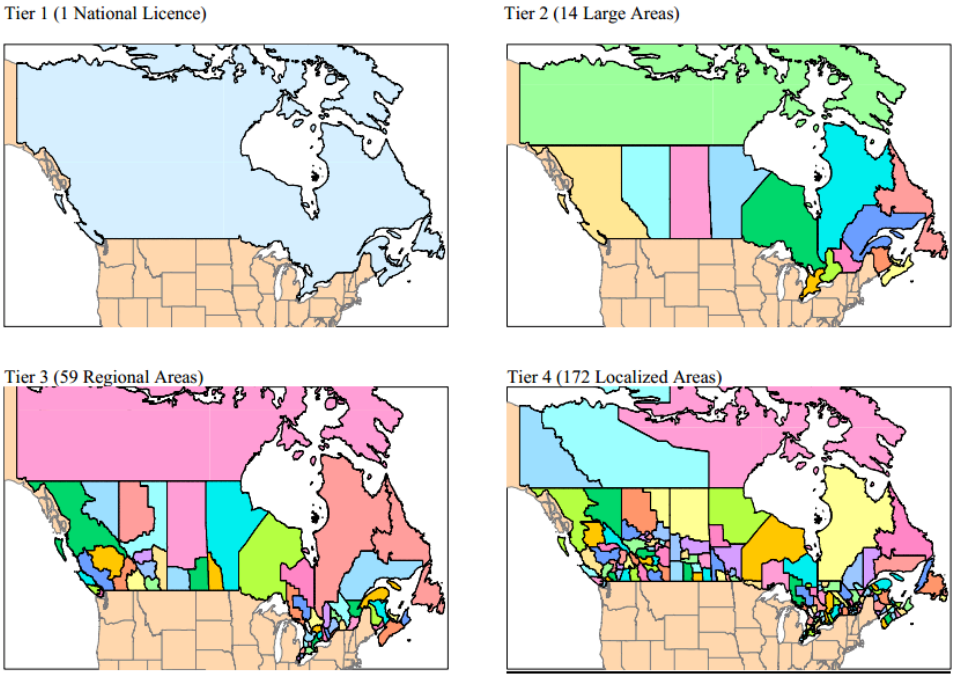
One of the three new entrants, Public Mobile (that participated in the auction as 6934579 Canada Inc. (Hardy, 2009)) purchased only four licenses total all of which were Tier 2 sized licenses. Public Mobile purchased licenses in the two most populous regions (Southern Ontario and Southern Quebec) (Industry Canada, 2010a), and also in the third most densely populated[6] service area (Eastern Ontario and Outaouais) (Industry Canada, 2010a; Industry Canada, 2010e). The least densely populated service area for which Public Mobile purchased a license is Eastern Quebec, which has a population of over 1.5 million (Industry Canada, 2010a). A second new entrant, Data & Audio-Visual Enterprises (DAVE) Inc., which now operates as Moblicity (Moblicity, 2012), purchased a total of 10 licenses. Like Public Mobile, DAVE/Moblicity concentrated its purchases in urban areas purchasing Tier 2 licenses in the most populous and most densely populated Tier 2 service area, Southern Ontario, and also the third most dense Tier 2 service area, Eastern Ontario & Outaouais (Industry Canada, 2010a; Industry Canada, 2010e). With regard to the eight Tier 3 licenses purchased by DAVE Inc., five were in the top six most densely populated Tier 3 services areas (Industry Canada, 2010a; Industry Canada, 2010f). The least densely populated Tier 3 service area that DAVE acquired, ranking 38th out of 59, was the Edmonton area, which despite possessing a low ranking density, has a population of nearly 1.2 million (Industry Canada, 2010a; Industry Canada, 2010f). Of the three new entrants, Globalive not only purchased the most licenses, but also purchased licenses in several low population/density services areas. While Globalive acquired licenses in the heavily populated Tier 2 service areas of Southern Ontario, B.C. and Alberta, it also obtained licenses in the four least dense service areas including three blocks of spectrum in the Yukon, Northwest Territory (NWT) and Nunavut service area (Industry Canada, 2010a; Industry Canada, 2010e). Globealive also purchased

[5] Tier 2 regions are: 2-01 Newfoundland and Labrador; 2-02 Nova Scotia and Prince Edward Island; 2-03 New Brunswick; 2-04 Eastern Quebec; 2-05 Southern Quebec; 2-06 Eastern Ontario & Outaouais; 2-07 Northern Quebec; 2-08 Southern Ontario; 2-09 Northern Ontario; 2-10 Manitoba; 2-11 Saskatchewan; 2-12 Alberta; 2-13 British Columbia; and, 2-14 Yukon, Northwest Territories and Nunavut.

[6] All population density calculations are the authors, based on population and area information provided by Industry Canada (Industry Canada, 2010e).

several low-density Tier 3 services areas (Industry Canada, 2010a; Industry Canada, 2010f).

Figure 2. Map of the 4 Spectrum License Tier Sizes in Canada



Source: Industry Canada, 2010d, p. 195

However, before Globalive can be commended for purchasing licenses in more rural areas with low population densities, two factors should be considered. First, licenses for low density/low population service areas are usually much cheaper than their populous counterparts. For example, Globalive spent $279 million to acquire a block of spectrum in the Tier 2 Southern Ontario service area (Industry Canada, 2010a). By contrast the three blocks of Tier 2 licenses purchased for the Yukon, NWT and Nunavut cost less than half a million dollars (Industry Canada, 2010a). In fact, of the total $442 million spent by Globalive, more than 60% went to acquiring the Tier 2 Southern Ontario license. More importantly, Globalive's current coverage map reveals that four years after the AWS license there is no service in Canada's north, and most of the areas where service is offered are in more heavily populated regions (WIND, n.d.). Furthermore, service on the actual WIND network (as opposed to areas deemed roaming) is limited to a handful of cities in eastern and southern Ontario, Edmonton, Calgary, Vancouver and Whistler (WIND, n.d.). Thus despite the purchasing of licenses that cover rural areas, Globalive has only provided service in urban areas. The case of Globalive is particularly informative because it demonstrates that new entrants, particularly those that are foreign backed,[7] are most interested in providing service in densely populated areas. This outcome is hardly surprising – dense populations are cheaper to provide wireless service as each tower covers more potential customers than in

[7] On January 18, 2013, WIND announced that it would become the first fully foreign owned telecom firm under Canada's new telecommunications foreign investment regime (CBC News, 2013).

rural areas. Moreover the case of Globalive provides empirical evidence that the changes to the foreign investment regime in advance of the upcoming 700MHz wireless auction are on their own unlikely to support greater investment in service for rural Canadians.

6.0 Policy Options for Promoting Wireless Rural Broadband

While the government's recently announced changes to the foreign investment regime are unlikely to encourage the development of wireless rural broadband, there are several policy measures that the government should use to promote increased high speed service in rural and remote areas. To its credit Industry Canada has included specific rollout requirements as part of the policy and technical framework for the upcoming 700MHz auction. Specifically, owners of two or more paired blocks of spectrum in the 700MHz band will be required to provide 700 MHz services (or 4th generation (4G) service) to 90% of the population currently served by HSPA (3G) services in five years from the grant of the license, and to reach 97% of the population by seven years (Industry Canada, 2012e, p. 34). This approach though is weakened because not all service providers will hold two paired blocks of spectrum, and Industry Canada notes that even after the rollout conditions are met, 6% of Canadians (or just over 2 million people (Statistics Canada, 2011)) will not have access to 4G services (Industry Canada, 2012e, p. 33-34).

Although the rollout requirements in the upcoming spectrum auction are one means of promoting rural broadband, several other policy options exist. The government could restart the Broadband Canada: Connecting Rural Canadians program that ended on March 31, 2012, under which the government funded 84 projects and brought broadband access to 218,000 unserved and underserved households (Industry Canada, 2012a). While useful for improving broadband access generally, the program does have a very limited track record for providing mobile wireless broadband. Only eight of the projects funded developed mobile services with just 20,000 households connected, and all of these projects were in Quebec (Industry Canada, 2012b). Furthermore Broadband Canada funding often resulted in public money subsidizing the initiatives of large telecom firms including Shaw, Bell Aliant and Videotron Ltee (Industry Canada, 2012 b).

A more useful policy mechanism existing in Industry Canada's toolkit (though it would have to be expanded from its current form) is Radio Systems Policy 019 (RP-019) *Policy for the Provision of Cellular Services by New Parties.* RP-019 provides a mechanism by which interested and capable providers can apply for authorization to provide cellular services in areas that are not served or where there is only a single service provider (Industry Canada, 1998, p. 2). It allows for potential providers to petition Industry Canada to be granted a license to provide service in areas where an existing provider has a license but fails to provide service (Industry Canada, 1998, p. 2, 4). Though not a prominent part of Canadian spectrum policies, RP-019 is nonetheless an essential mechanism for ensuring that valuable spectrum is not wasted. RP-019 does have some limitations. The cost and length involved in an RP-019 application have been criticized (Industry Canada, 2011, p. 6). While RP-019 only applies to specific bands of wireless frequencies (824-849 MHz and 869-894 MHz), it stems from a policy goal of maximizing access to wireless service (Industry Canada, 1998, p. 4). Most importantly, Industry Canada raised the issue of expanding RP-019 to cover new band

frequencies as part of the consultation process for the upcoming 700MHz auction. It is crucial that Industry Canada be held to its commitment to review, assess and possibly expand RP-019 to cover more frequencies (Industry Canada, 2012e, p. 32). Even though Industry Canada has noted that there will be a significant delay before it considers extending RP-019 to cover the 700 and 2500 MHz bands, the government must consider expanding RP-09 to include frequencies in the 1800 MHz band (part of which is currently licensed for mobile wireless services (Industry Canada, 2009, p. 33)) as this band is the most popular band in the world for the deployment of 4G LTE (Long Term Evolution) wireless technology (Global Mobile Suppliers Association, 2012). Given that the 1800 MHz band can sustain the fastest mobile broadband connections and that some frequencies in the band are currently licensed for mobile use, expanding RP-019 to include this band would be an excellent means of improving access to advanced mobile broadband services in rural and remote regions of Canada.

To ensure that rural Canadians benefit by the opening up prime spectrum licenses in the 700MHz band, Industry Canada should expand Radio Systems Policy 019 to cover new frequencies. While it is ultimately up to Industry Canada to expand RP-019, there is also an important role for individuals to play in participating in future discussions about expanding and enhancing rural broadband generally, and RP-019 as a means to achieve that end.

7.0 Conclusion

The core of the problems with rural and remote broadband in Canada can be found in two related causes – lack of a clear national strategy and the over-reliance on market forces.

7.1 Piecemeal Nature of Canada's Approach to Broadband

A major issue with Canada's approach to broadband is the lack of a clear, coherent plan. Industry Canada has its Broadband Canada initiative with the goal of increasing rural broadband, and the spectrum management division of Industry Canada is mindful of rural broadband issues in spectrum licensing. At the same time the CRTC has its own national broadband goals, though these are not without serious shortcomings. The major flaw with the CRTC's broadband policy is its decidedly unambitious download and upload speed minimums. While the CRTC wants all Canadians to have download speeds of 5 Mbps by 2015 (CRTC, 2011c, para. 76-78), Australia's national broadband plan aims to deliver speeds of 12 Mbps to rural Australians (Australian Government, 2010, p. 274). Finally the federal government has tinkered with foreign ownership restrictions in an effort to increase competition, though there is no clear indication when the government will take the second step in the Telecommunications Policy Review Panel report and open up the sector up to further foreign investment.

While these various initiatives are well intentioned, the lack of a formal plan is notable. Comparable countries such as the United States (2012) and Australia (2010) have clear national plans. The U.S. national plan calls for the creation of a "Connect America Fund" that would provide broadband access to areas where there is not a business case for private sector services (United States, 2012, p. 145). A comprehensive national broadband strategy is essential, and the nation cannot simply leave its need for this critical infrastructure to the private sector.

7.2 Market Oriented Bias in Canadian Telecommunications Policy

While the lack of a coherent national strategy is a weakness of Canadian broadband policy, the more significant problem is the inherent market-oriented structure of Canadian telecommunications policy. Given the economics of rural broadband, and the high potential for market failure, decisive government action is needed. However, the interventionist policy is inhibited by a national telecommunications policy that has as its objective, "to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective" (*Telecommunications Act*, s. 7(f)). Furthermore, in late 2006 the government directed the CRTC to "rely on market forces to the maximum extent feasible as a means of achieving the telecommunications policy objectives," (Privy Council Office, 2006, s. 1(a)(i)), and a Spectrum Policy Framework for Canada that notes, "market forces should be relied upon to the maximum extent feasible" (Industry Canada, 2007, p. 9). While the 1993 *Telecommunications Act* was a clear step towards increased dependence on market forces, it also developed a national telecommunications policy (in section 7 of the act). But the government's more recent policy initiatives are a clear abdication of its role of leadership in the area of broadband. Not only is the emphasis on market forces harmful to those Canadians who live in areas where market forces have failed, but the policy direction is also duplicitous as the government continues to shield the major domestic telecommunications companies from full competition from foreign rivals. A truly effective plan for rural broadband in Canada will require two simple things, a plan and government action – neither of which this government appears willing to contribute.

The new regulations governing foreign investment in the telecommunications sector should help improve competition and ultimately lower prices for the majority of Canadians; however, the benefits of foreign investment will likely disproportionately benefit urbanites, and the new system is not without its own shortcomings. As demonstrated by the actions of Globalive and other new entrants in the last wireless spectrum auction, new companies and in particularly foreign backed ones are likely to concentrate their efforts and capital in acquiring licenses to densely populated areas. Future studies must explore RP-019 in greater detail to determine how effective it can be in encouraging investment in wireless infrastructure for underserved communities. Further research is also needed to monitor and examine the effects of the changes to the foreign investment regime. Crucially researchers must also take a keen interest in critically examining the results of the two upcoming spectrum auctions to determine their impacts, and special consideration must be paid to how the auctions narrow or deepen further the divide between rural and urban Canadians.

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