1. Broadband Service

In today's world, access to high speed Internet, at a reasonable cost, has become essential. An Environics poll found that "80% of respondents indicated that Broadband Internet service at home is essential, to varying degrees, with 37% responding that it is "absolutely essential." Another question found "84% of respondents believe that all Canadians should have access to broadband Internet service at home no matter where they live in Canada, compared to only 15% who do not."[1]

What is needed now in most of Canada is high speed access to Internet Broadband through fibre lines in urban areas as well as coverage in all rural areas. The Canadian Radio-television and Telecommunications Commission (CRTC) defines high-speed as any download speed greater than 256 Kbps and broadband is defined as any service with a 1.5 Mbps download speed or greater.[2] Dial up through copper lines or copper to home from fibre is no longer good enough if Canada wants to provide the kind of speeds that people want today and businesses need. At the same time many Canadians in rural and remote areas do not have any access at all. And many low income Canadians cannot afford the connection charges as well as the equipment necessary to use the Internet at home.

Canada Post can play an important role in the roll out of a comprehensive broadband strategy. Canada Post has long recognized that the world is switching more and more from paper mail to internet and email. This massive change has led to a decline in letter mail but a rise in parcels as more and more citizens order goods on line. Canada Post has tried to adjust to this in several ways such as:

1) Increasing parcel delivery services with postal delivery having trucks to carry parcels as well as letters for home delivery, online parcel tracking and even installing same day parcel delivery for on-line shopping in Toronto, Vancouver and Montreal
2) Building an epost network to deliver bills and notices
3) Offering many online services such as mail holds, flex delivery and forwarding

Canada Post has gone too far in recently writing off home delivery of letters claiming erroneously that because mail has declined, home delivery is no longer needed. But on the other side, has Canada Post done enough to develop the Internet business to its fullest extent? And does offering Broadband Internet services fit into the mandate of Canada Post?

The basic "objects of the Corporation" as found in the Canada Post Corporation Act of 1985 note that the first object is "(a) to establish and operate a postal service for ***the collection, transmission and delivery of messages, information, funds and goods both within Canada***

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[1] Appendix "A" – Environics June 2015 Survey Results
This survey was commissioned by the Public Interest Advocacy Centre (PIAC) and carried out by Environics Research Group. https://services.crtc.gc.ca/pub/ListeInterventionList/Documents.aspx?ID=224017&en=2015-134&dt=f&lang=e

[2] CRTC, Communications Monitoring Report 2015,
http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2015/cmr.pdf

and between Canada and places outside Canada and (b) ***to manufacture and provide such products and to provide such services as are, in the opinion of the Corporation, necessary or incidental to the postal service*** provided by the Corporation; And then in the next section the Act notes " While maintaining basic customary postal service, the Corporation, in carrying out its objects, shall have regard to a) ***the desirability of improving and extending its products and services in the light of developments in the field of communications***;"[3]

All of the above points, as interpreted in the light of today's advances in communications, surely imply that Canada Post should move with the times and offer Internet services across Canada, with a particular emphasis on services to low income citizens and to rural communities and indigenous communities as well as helping small businesses to upgrade their Internet connectivity.

Many of the points in Canada Post Service Charter (all quotes below are from the Charter) also fit with the delivery of new services such as broadband, which we can say are now necessary to:

- "maintain a postal system that allows individuals and businesses in Canada to send and receive mail within Canada and between Canada and elsewhere."
- Assure "the provision of postal services to rural regions of the country"
- Guarantee "Uniform postage rates" for Canada that are "fair and reasonable" and,
- Offer "Frequent and Reliable Delivery" "to every Canadian Address"[4]

These are now points which need to be offered by electronic means as well as letter and parcel mail. Offering Broadband services could assure a new continuum.

This study will try to examine how Canada Post could do just that.

Before getting into the study, it is important to note that in April 2015, the Canadian Radio and Telecommunications Commission (CRTC) launched "a review of basic telecommunications services to address "a range of related topics, including upload/download speeds necessary in the digital age, the roles of economic and regulatory players in the public and private sectors, possible funding mechanisms to support telecommunications services and a range of related topics."[5] This process resulted in hearings and reports from many of the most important stakeholders particularly around broadband issues. The CRTC is expected to report back on its conclusions in December 2016, so much of what we say here now may hopefully be surpassed by some progressive new policy decisions.

[3] http://www.laws.justice.gc.ca/eng/acts/C-10/page-1.html#h-6
[4] Canada Post Service Charter
https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/ombudsman/en/cpservicecharter_en.pdf
[5] CRTC, Communications Monitoring Report 2015,
http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2015/cmr.pdf

2. International Examples of Postal Services which offer Broadband

Many post office services around the world have gone further in digital services than Canada Post and now offer Internet services. Among these in countries with comparable development levels to Canada are the British, French and Italian Post Office systems.

United Kingdom

The UK Post Office offered both telephone landlines, e-cards and Broadband services to some 454,000 customers in 2014-15. These services brought in some £130 million in sales in 2015-16 and an increase of 36,000 new Broadband customers and a 8.3% rise in sales over 2014-15.[6] UK Post Office Broadband rates are cheap and the premium package costs run at £24 a month but delivered over phone lines with low broadband speeds but with unlimited downloads. The number of Broadband customers alone is not stated.

In 2012, the PO announced a five year deal with Fujitsu, along with TalkTalk, Capita and billing specialist MDS, which took over taking over from previous service providers British Telecom Wholesale and Logica. The deal is expected to bring in £500 m in revenues.[7]

However, these Broadband services will no longer be offered over Post Office mobile phones. The PO announced it would shut down its mobile phone network on August 8, 2016. The short experiment was ended after little over a year.

"Since June 2015 Post Office has offered a "Pay As You Go" mobile service online and in 263 of its 11,600 branches, but has now decided to conclude the trial as the results did not give us sufficient confidence that mobile will contribute to our goal of commercial sustainability. The money needed to invest further in the mobile could not be justified at a time that Post Office is investing in modernising our branches."[8]

France

In France, La Poste offers Internet services through La Poste Telecom's Poste Mobile brand. Poste Telecom is 51% owned by the Groupe la Poste and 49% by SFR. SFR, one of France's largest private telecom companies, as of December 2015, has 21.9 million customers in France for mobile services, and 6.35 million households with high-speed internet access.[9] Poste Telecom does not own a network but uses SFR's. Poste Telecom has gained over 500,000 new clients in 2014 and now has some 1.25 million clients at the end of 2015.

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[6] UK Post Office Annual Reports 2014-15 and 2015-16 http://corporate.postoffice.co.uk/sites/default/files/Annual%20Report_201415.pdf and http://corporate.postoffice.co.uk/sites/default/files/AnnualReport1516.pdf

[7] http://www.techweekeurope.co.uk/workspace/fujitsu-post-office-deal-79986#CPXERe4VKYh7AdAd.99

[8] "Post Office Mobile Closure", http://mobile.postoffice.co.uk/we-are-closing?awc=6375_1469717899_71067af632045a2968371b423c261faa#undefined

[9] Numericable-SFR regagne enfin des clients sur le marché mobile http://www.nextinpact.com/news/99052-numericable-sfr-regagne-enfin-clients-sur-marche-mobile.htm

La Poste also offers *digiposte* which is an electronic safe to store documents. There are 1.5 million electronic safes open with 20 million documents stored and this service is used also by 300 companies.

Mediapost also offers digital targeting of potential customers through an email, telephone, web and regular mail.

La Poste has also introduced and is piloting in the South of France the sale and servicing of a tablet called ***Ardoiz*** designed especially for seniors but could be used by anyone. A Post Office employee even comes to your home to set it up. The cost is only 5.99 euro per month to use it at home or more for mobile connections. [10]

La Poste also had, in 2015, 36 000 subscriptions of their package « Quatro » which offers four services (TV, internet, land line and mobile).

Sales products for the Internet in La Poste office. Photo Christopher Schwartz

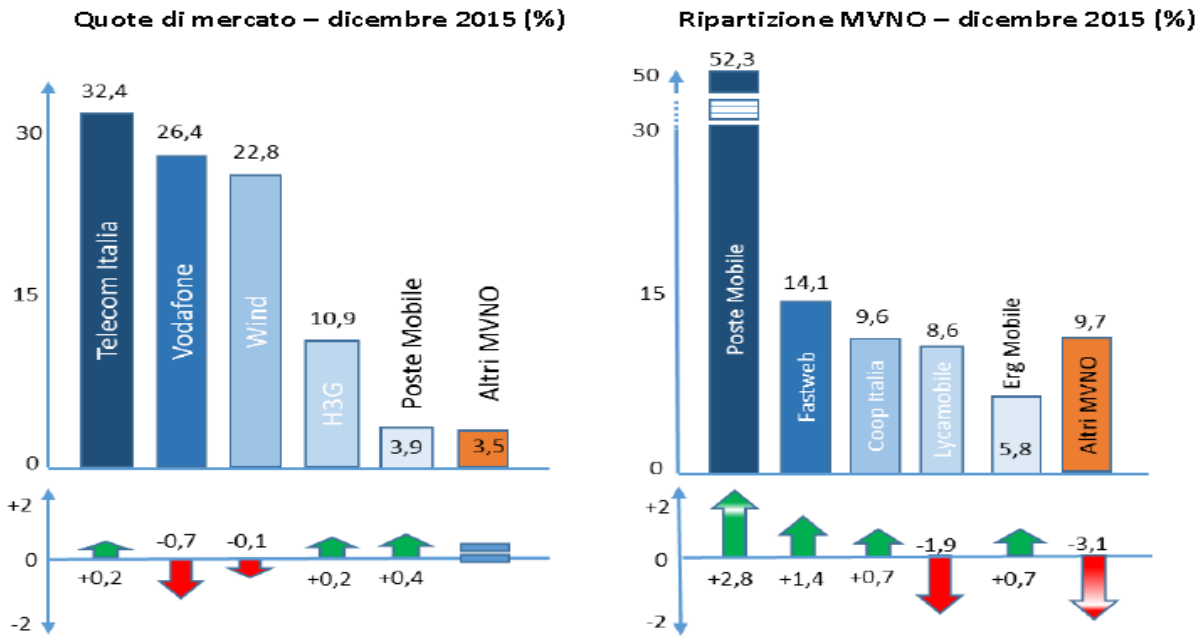
Italy

The subsidiary of Poste Italia, Poste Mobile, offers Internet services both on mobile phones and tablets and through computers, now through the WIND network. WIND is one of the largest mobile phone services in Italy with 22.8 million customers. Poste Mobile has 3.9 million lines as of December 2015.[11] Like the French LaPoste, Poste Mobile does not have its own network but uses that of WIND and is part of the MVNO, mobile virtual network operators, in

[10] http://www.ardoiz.com/offres-ardoiz.html
[11] http://www.mvnonews.com/2016/03/30/agcom-al-31-dicembre-2015-mvno-all8-quota-mercato/

Italy. Poste Mobile is now the largest MVNO in Italy but still much smaller than the stand alone mobile phone networks.

Poste Mobile counter in Italian post office. Photo Christopher Schwartz



Source: AGCOM at December 31, 2015 MVNO 8% market share. Growing almost all "virtual"
March 30, 2016 **http://www.mvnonews.com/2016/03/30/agcom-al-31-dicembre-2015-mvno-all8-quota-mercato/**

Poste Mobile sold some 333,530,000 euros of services and made over 18 million euros in profit in 2015. There is no separation of phone and Internet services, revenues or profits.

What is important to note about all three of these examples is that all three involve a partnership deal with major private sector companies who already provide these services. There has been no attempt to build a separate Post Office Broadband network in any of these countries. But, in all of these examples, the Post Offices have signed contracts for a limited period of time. In some cases, the Post Office has changed the original service partner provider to a new one when the first contract expired.

3. Who has access to high quality Internet and who does not in Canada

While Canada is thought of by many as a highly developed society technologically, and has been since the partial invention of the telephone here in the 19th century by Alexander Graham Bell, Canada is not one of the leaders in the provision of Broadband. A recent study by the International Telecommunications Union, "Measuring the Information Society Report 2015", listed Canada, in provision of Broadband fixed services, as #25, far behind the USA as #3 and other countries such as United Kingdom, Japan, and France etc.

Many people in rural Canada do not even have access to quality Internet. Indigenous peoples in rural and remote Canada are particularly underserved. As well low income people are also underserved as we shall demonstrate.

Table 4.4: Fixed-broadband sub-basket, 2014

Fixed-broadband sub-basket							
Rank	Economy	as % of GNI p.c.	USD	PPP$	Speed in Mbit/s	Cap per month in GB	GNI p.c., USD, 2014*
1	Kuwait	0.29	11.25	17.33	1	Unlimited	46'046
2	Macao, China	0.32	17.28	23.37	4	Unlimited	64'639
3	United States	0.37	16.32	16.32	2	Unlimited	53'417
4	United Kingdom	0.47	16.45	12.68	17	10	41'638
5	Switzerland	0.49	37.11	22.06	5	Unlimited	90'589
6	Japan	0.53	20.59	19.46	12	900	46'284
7	Austria	0.61	25.41	22.06	8	Unlimited	50'340
8	Andorra	0.61	20.80		0.5	2	40'974
9	Norway	0.61	52.21	33.10	6	Unlimited	102'597
10	Luxembourg	0.66	38.48	29.48	8	2	69'810
11	Ireland	0.67	23.88	18.51	100	30	43'047
12	Hong Kong, China	0.68	21.67	27.85	200	Unlimited	38'382
13	Russian Federation	0.68	7.82	17.94	15	100	13'836
14	Singapore	0.70	31.49	32.97	100	Unlimited	53'986
15	France	0.77	27.86	23.60		Unlimited	43'476
16	Iceland	0.84	32.46	26.15	12	5	46'244
17	Sweden	0.85	43.58	32.42	10	Unlimited	61'648
18	Belgium	0.88	33.83	28.41	30	100	46'294
19	Finland	0.88	35.69	26.96	10	Unlimited	48'771
20	Iran (I.R.)	0.88	4.24	12.84	0.26	2	5'774
21	Qatar	0.89	64.01	86.99	1	Unlimited	86'703
22	Denmark	0.90	46.15	30.75	25	Unlimited	61'608
23	Trinidad & Tobago	0.94	12.33	15.41	0.25	Unlimited	15'744
24	Italy	0.98	29.06	26.20	7	Unlimited	35'584
25	Canada	1.00	43.35	37.09	5	40	52'158
26	Cyprus	1.01	21.28	21.67	2	Unlimited	25'185
27	Netherlands	1.01	43.12	36.10	10	Unlimited	51'009
28	Czech Republic	1.06	16.81	24.12	2	Unlimited	18'951
29	Uruguay	1.08	13.64	17.03		5	15'165
30	Kazakhstan	1.12	10.77	21.49	1	10	11'538

Source: Measuring the Information Society Report 2015, International Telecommunications Union
http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf

One of the reasons Canada has fallen behind many other countries is the low country-wide goals in terms of access to basic Internet services such as setting very low download and upload speeds. In 2011, the CRTC set a target speed for broadband Internet access across Canada (Telecom Regulatory Policy CRTC 2011-291). By the end of 2015, the CRTC expected all Canadians to have access to broadband speeds of at least:

- 5 Mbps for downloads (data that consumers are receiving from the Internet, including files, web sites, pictures, music, and movies)
- 1 Mbps for uploads (data that consumers are sending to the Internet)[12]

However, this goal was not realized and the date has now been set as 2017 to achieve near 100% access.

As we will discuss later, these 5/1 speeds are very low by international standards and no longer are adequate for doing many tasks of business and for the home such as watching many of the newest online downloadable video or playing the latest video games, or allowing many users in the same household to use the Internet for these purposes at the same time.

In 2013, the CRTC estimated 95% of Canadians had access to these relatively low Broadband speeds of 5 Mbps or higher. This has now risen in 2015 to 96%, but only 77% of households actually subscribe to services offering this speed.[13] 94% of Canadians can access these speeds through either landline or fixed-wireless facilities, and an additional 1.5% may have access via satellite.

[12] http://www.crtc.gc.ca/eng/internet/performance.htm
[13] CRTC, Communications Monitoring Report 2015,
http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2015/cmr2.htm

The cost for communications access is also now very high in Canada. The average cost for 2014 is $203.04 per month per household for all their communications services, an increase of $11.92 from 2013, with Internet now at an average of $38.91 per month and wireline telephone services at $31.10.[14] According to the CRTC, Canadian households currently spend even more on wireless $79.08 and BDU (television) services $53.95.[15] More and more Canadians now also own a smartphone and get their Internet services through their mobile phone. "In 2014, 66% of Canadians 18 years of age and older owned a smartphone compared to 62% in 2013 and 24% in 2010."[16] The cost of mobile Internet services in Canada was ranked 45th in terms of costs, a very high rate. [17] A new report commissioned by the CRTC. "2016 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions" noted that while landline costs were amongst the lowest in comparison to other countries, Broadband costs were amongst the highest (see Appendix One for 5 tables showing differences in costs with other countries.[18] Using costs at different levels of download speeds and data amounts, the Report found: "In the Fixed Broadband Internet category, Canada ranked third highest in pricing in the Level 1(basic level) and Level 3 service baskets, fourth in the Level 2 service basket and second in the Level 4 and Level 5 service baskets."

An interesting finding in costs of Internet was that the costs were significantly lower when the user purchased from a reseller that is to say a company which was buying its Internet at wholesale from one of the big four such as Rogers, Bell, Telus or Videotron. "For example, there was a differential of 36% for Level 1, 41% for Level 2, 29% for Level 3 and only 16% for Level 4. This implies that resellers were not as competitive in higher-level baskets"[19]

What is particularly interesting in all this data here is that 23% of households representing over 3 million households do not even have the very low standard of 5 Mbps.

4. Why do many Canadians still not have decent Internet service?

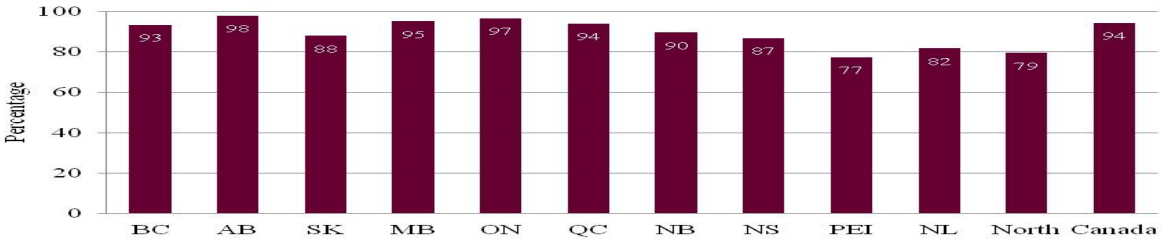
A) First there is the issue of Internet not being available by place of residence even if you can afford it and want it.

There were 13,320,610 households in Canada in 2011 and 4% do not have access to what is called "high speed" Internet (but is in reality now a relatively low speed). This would mean some 532,824 households, at least, do not have access.

[14] Ibid
[15] Ibid
[16] Ibid
[17] ITU, Measuring the Information Society, 2015 http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf
[18] CRTC, 2016 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions, Prepared for the Canadian Radio-television and Telecommunications Commission (CRTC)by NGL Nordicity Group Ltd. (Nordicity), 2016 , http://www.crtc.gc.ca/eng/publications/reports/compar/compar2016.htm#5.3
[19] Ibid

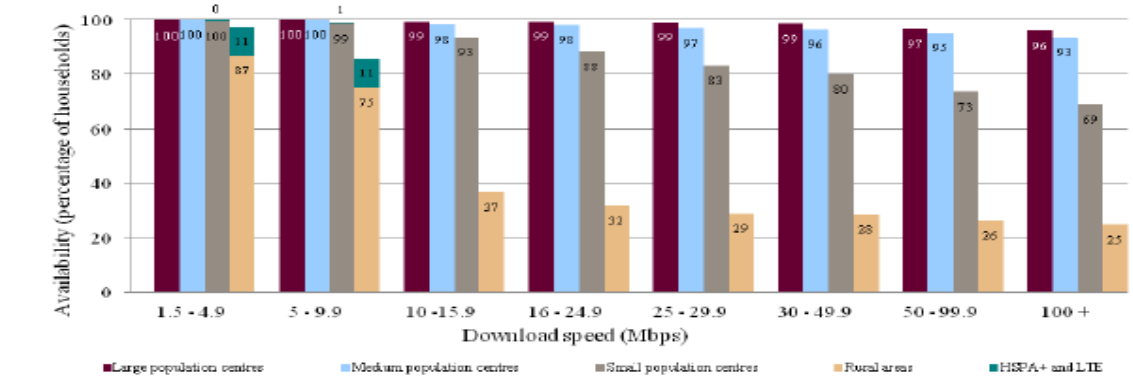
Provinces and territories, let alone regions, have a very uneven availability of 5 Mbps Internet, ranging from a high of access at 98% in Alberta to a low of 77% in PEI. But even an access rate of 94% in Québec means roughly 6% of the population, which is about 500,000 people, have no access to basic quality Internet.

Access to 5 Mbps by Province and Territories



Access to Internet by speed in Urban and Rural Areas

Figure 5.3.17 Broadband availability – Urban vs. rural (percentage of households), 2014



Sources: Industry Canada and CRTC data collection

Source: Residential broadband availability by province at 5 Mbps or higher and urban versus rural. Industry Canada and CRTC http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2015/cmr2.htm

Rural areas have much less access to Internet particularly at higher speeds. As the chart above shows, at 50 Mbps the access is only 25% in rural Canada compared to 96% in large urban areas.

Bell has argued that the cost of bringing access to the 4% (mainly in rural areas) who do not get 5/1 access "would cost approximately $1.2 to $1.7 billion to extend broadband connectivity to these remaining households." They said this could be done through government subsidies and using subsidies allocated for other purposes.[20]

[20] Bell, CRTC Review of Telecommunications, Final Submission Of Bell Canada and its Affiliates, May 2016

B) Cost of Internet prevents many from getting access

A second major problem why many do not have Internet is the high cost. In Ottawa, high speed Internet at the rate of 30 Mbps costs $67.99 plus HST from Rogers with limited downloads. Bell Internet costs $69.95 for 25 Mbps plus HST. If you are a single person on welfare receiving about $650 a month or earning minimum wage at $393 a week in Ontario for 35 hours, the above prices for Internet are just too expensive for a service that is now essential for work, education and entertainment.

Penetration of Various Services by Household Income

	Wireline	Mobile Wireless	Wireline and/or Mobile Wireless	Wireline only	Mobile Wireless only	Internet at Home
Current StatsCan Publications						
All Households	83.5%	81.4%	99.2%	17.8%	15.7%	
Second 20%	80.3%	75.1%	99.5%	24.4%	19.2%	
Bottom 20%	74.6%	61.7%	97.4%	35.7%	22.8%	
All Households						82.5%
Second 25%						80.1%
Bottom 25%						58.0%
Bottom 10%	68.6%	63.4%	96.5%	33.1%	27.9%	50.3%

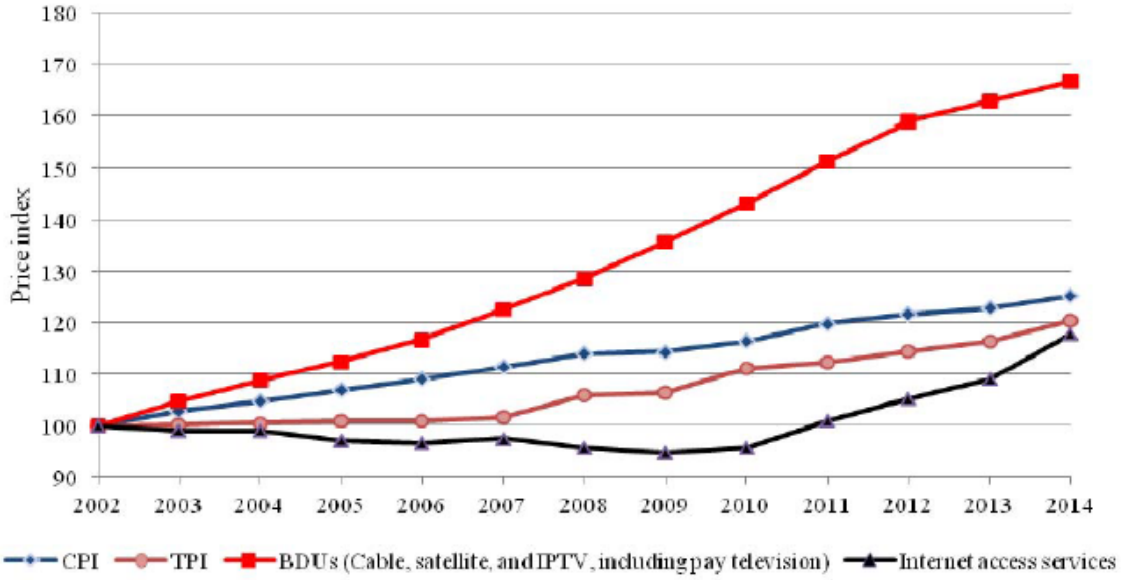
Source: The "Affordable Access Coalition", Phase 1 Intervention, Telecom Notice of Consultation CRTC 2015-134, Review of basic telecommunications services, 14 July 2015

The above chart shows that only 10% of the lowest 10% of income household had Internet access at home and then only 58.0% of the bottom 25%.

The price of communications services has risen dramatically and has outpaced overall consumer prices. Between 2013 and 2014, overall consumer prices jumped by 2.0%, while prices for some communications services increased as follows: 3.4% for home telephone, 2.3% for cable, direct-to-home satellite and Internet Protocol Television (IPTV), and 8.0% for Internet." [21] Note that by far the highest increase was for Internet. The CRTC also showed how in 2014 the price of 5 Mbps Internet service was generally higher in rural communities than in urban centres, except in New Brunswick.[22]

[21] CRTC, Communications Monitoring Report 2015, http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2015/cmr.pdf
[22] ibid

Figure 2.0.2 **Price indices for telephone services, broadcasting distribution servi (cable, DTH satellite, IPTV and pay television) and Internet service compared to the CPI**



Source: Statistics Canada

Table 2.0.8 **Home computers and Internet use from home per 100 households, by income quintile**

	Year	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile	Average for all quintiles
Home Computer	2012	62.1	76.3	90.5	93.9	97.4	84.0
	2013	64.4	80.6	89.8	95.4	97.9	85.6
	Growth (%)	*3.7*	*5.6*	*-0.8*	*1.6*	*0.5*	*1.9*
Internet Use From Home	2012	55.9	72.4	87.6	93.1	98.5	81.5
	2013	59.7	77.6	89.0	94.9	98.4	83.9
	Growth (%)	*6.8*	*7.2*	*1.6*	*1.9*	*-0.1*	*2.9*

Source: Statistics Canada

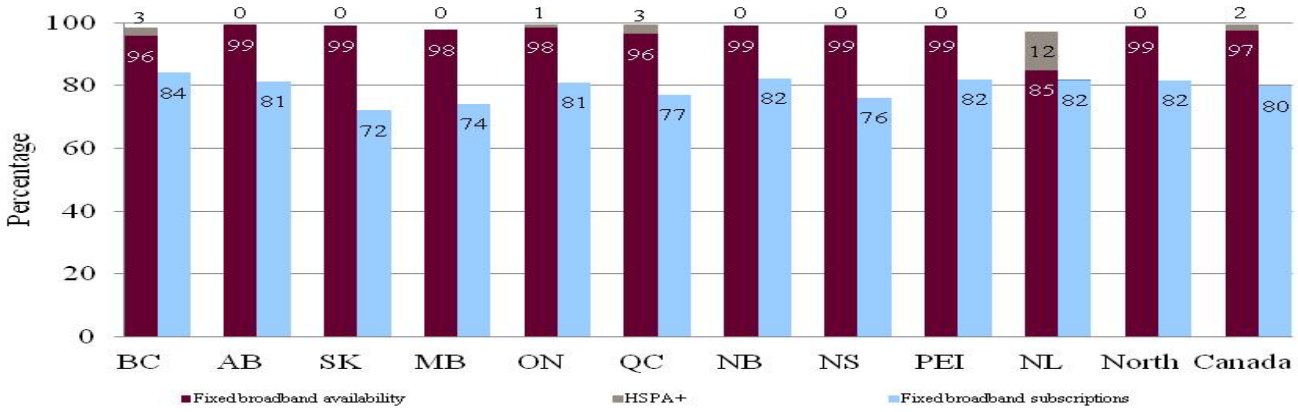
Sources: CRTC, 2015 Policy Monitoring
http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2015/cmr5.htm

While Canadian Internet prices were similar to other International prices at the low end < 3 (Level 1) and 4-15 Mbps (Level 2), at the higher end 16-40 Mbps (Level 3)and >40 Mbps(Level 4), the Canadian prices generally compare poorly as being too high except with the USA. In 2015, the Wall Report noted that "Canadian wireline service baskets prices have increased significantly. The Level 1, 2 and 3 service basket prices increased 4%, 9% and 8%, respectively, relative to last year. These increases are consistent with the historical trends in wireline service

prices over the last five years which has seen Level 1 and 2 basket prices increase at average annual rates of 6% and 5%, respectively, whereas Level 3 basket prices have increased more slowly at 2% per year on average (i.e., at roughly the rate of inflation)."

In international comparisons, "Canada's Level 1 and 2 wireline service basket price rankings relative to the seven (international) surveyed jurisdictions included in the study have slipped from being in the middle to now residing at the higher-end of the group. On the other hand, in the case of the Level 3 (higher-usage) basket, the Canadian average price continues to sit in the mid-range of wireline prices measured for the group of surveyed countries."[23]

Availability and cost means that many are still not subscribed to Broadband on level 1-4 . This means that according to the CRTC only 80% of Canadians who have access actually subscribe to Broadband. And this ranges from a low of 72% in Saskatchewan to a high of 84% in BC.



Source: CRTC, 2015 Policy Monitoring, Figure 5.3.14 Broadband availability vs. broadband subscriptions by province/territory, 2014 http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2015/cmr5.htm

Indigenous regions often have poor service. Nunavut has no land connections. Internet plans there limit downloads to 10 GB per month Canadians download as much as 66.5 GBs per month. [24] Internet is delivered by satellite and costs for a business can range up to $1000 per month for a bad service.[25] Quebec's Nunavik region is exploring undersea cable as a way of connecting communities.[26]

[23] "Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions 2015 Edition" March 30, 2015, Prepared for the Canadian Radio-television and Telecommunications Commission and Industry Canada, Wall Communications Inc. http://www.wallcom.ca/pdfs/price-comp-report_2015edition_final_CRTC.pdf

[24] Kieran Oudshoorn, "Will Nunavut's satellite internet service upgrades make enough of a difference?" CBC News, Jan 20, 2016 http://www.cbc.ca/news/canada/north/nunavut-internet-speed-upgrade-1.3410938

[25] Karen McColl, "Bare minimum' $1,000-a-month Internet services hobble Nunavut businesses" The Globe and Mail, April 25, 2016 http://www.theglobeandmail.com/report-on-business/small-business/sb-managing/bare-minimum-1000-a-month-internet-services-hobble-nunavut-businesses/article29745729/

[26] "Submarine Cable Route Study for Nunavik" http://subseaworldnews.com/2016/08/08/submarine-cable-route-study-for-nunavik/

5. Solutions for unserved and underserved areas and for low income users

So what can be done to secure access for unserved and underserved areas and for low income users?

A) Public Policy

The "Affordable Access Coalition" or "AAC made up of

- The Association of Community Organizations for Reform Now, Canada ("ACORN Canada");
- The Consumers' Association of Canada ("CAC");
- The Council of Senior Citizens Organizations of British Columbia ("COSCO");
- The National Pensioners Federation ("NPF"); and
- The Public Interest Advocacy Centre ("PIAC")

presented a brief [27] to the CRTC hearings, Telecom Notice of Consultation CRTC 2015-134, Review of basic telecommunications services, which called for both a "baseline" Affordability Funding Mechanism which would provide a monthly subsidy of $11 available to approximately 1.34 million households, for an annual capped cost of $70 million, and an "ambitious" version which would provide a $22 subsidy to approximately 2.61 million households for an annual capped cost of $410 million.[28]

The AAC argued that, "The Commission should also set a goal of all Canadian households being able to access 25 Mbps broadband home Internet service by 2020 (the "25 Mbps by 2020" goal), subject to annual updates to the definition of "basic" broadband."

The AAC also concluded that:

> "To support the "25 Mbps by 2020" goal, the Commission should establish a new funding mechanism, financed through the existing but modified National Contribution Fund, to supplement the current residential local wireline subsidy regime, which would continue to operate as is. The new Broadband Deployment Funding Mechanism would be to support broadband deployment. Funding, which would be capped annually, could be achieved through broadening the contribution-eligible "tax base" by including retail Internet and paging service revenues, and by returning the contribution rate to historic (2001-14) levels. The Broadband Deployment Funding Mechanism could be implemented beginning 2017"

ACORN Canada, a national organization of low- and moderate-income families, has asked the Canadian Radio-television and Telecommunications Commission (CRTC) to "mandate a $10-per-month high-speed home Internet product for all families and individuals living below

[27] The "Affordable Access Coalition", Phase 1 Intervention, Telecom Notice of Consultation CRTC 2015-134 Review of basic telecommunications services, July 14, 2015
[28] ibid

Statistics Canada's low income measure. In 2013, the LIM was $20,933 for an individual and $41,866 for a family of four, after taxes."[29]

"An ACORN survey of 400 members last year found that almost 84 per cent said the cost of Internet services was "extremely expensive" and that almost 59 per cent of those skimped on food, recreation and rent to pay for it."[30]

Ipsos-Reid found 91 per cent of Canadians have home Internet service but only 70 per cent for households with an annual income of less than $25,000.

OpenMedia another public lobby group also "supports proposals for an industry-funded mechanism at the Commission to contribute to rural network infrastructure development, as well as targeted demand-side subsidies for vulnerable groups."[31]

Open Media argues that "Given that dominant operators such as Bell and Telus are allowing those with basic packages to purchase unlimited data for a price of around $15 (with bundle) and $30 (standalone) per month, ...the bundled discount price of $15 per month represents a just and reasonable price for variable data charges, including a reasonable rate of return for the operators. Adding this variable charge for data to the $10 a month access charge of serving a customer on legacy DSL/FTTN or cable networks deployed many years ago allows us to conclude that a mandated package of between 5 and 15 Mbps download, with about 1 Mbps upload advertised speeds should cost around $25 per month."

The Federation of Canadian Municipalities has asked for the CRTC to:

"Expand the basic service objective to include universal access to affordable high-speed Broadband Internet at speeds that reflect present realities and guarantee long-term, reliable connectivity;
Continually re-evaluate its broadband speed targets to reflect technological advancements, changes in user needs, traffic, and network capacity; and
Adopt a national, comprehensive and long-term funding mechanism for basic broadband access to complement the current mix of targeted government programs and public-private partnerships"[32]

B) Private Sector Moves

Rogers has taken one path towards a solution which could be made available to all low income households. On April 7, 2016, Rogers expanded its low-cost $9.99 Internet service for tenants in Toronto public housing, which it introduced in 2013, to all 150, 000 social housing households across Ontario, New Brunswick and Newfoundland, the provinces where Rogers

[29] Laurie Monsebraaten, "Rogers to expand low-cost Internet to social housing tenants" April 7, 2016 https://www.thestar.com/news/gta/2016/04/07/rogers-to-expand-low-cost-internet-to-social-housing-tenants.html
[30] ibid
[31] Open Media, Submitted to the CRTC, Re: Telecom Notice of Consultation 2015-134 Review of Basic Telecommunications Services, Final Submission, May 25, 2016
[32] Federation of Canadian Municipalities, Intervention – Telecom Notice of Hearing CRTC 2015-134-5, Review of basic telecommunications services, May 25, 2016

operates.[33] Rogers started off the new expansion in Ottawa, in partnership with Centretown Citizens Ottawa Corporation and other non-profit housing agencies. The service has speeds of up to 10 Mbps download and up to 1 Mbps upload.

However "Connected for Success" as the program is called had only 9,000 active participants in Toronto by 2016 or only 17 percent of eligible households in social housing. This means that even $10 a month is high for many low income families on top of TV and phones and that many may not have a modern computer or tablet able to connect to the service. Other reasons for this lack of participation may be lack of training in computer skills and low levels of basic literacy.[34]

6. How internet upload speeds in Canada lag behind other countries

While the U.S. telecommunications regulator, the Federal Communications Commission, announced last year that, in order to meet its new "broadband benchmark," an internet service now has to be able to support downloads of 25 megabits per second (Mbps) and uploads of 3 Mbps, Canada trails far behind.[35] The targets for Canada now, as we noted, are only having 98% at 5 Mbps download by 2017, although they will be hopefully adjusted upwards when the CRTC announces its decisions on basic telecom in December 2016**.** These are woefully low compared to most other countries of similar income and industrial levels.

Peer Countries' Broadband Access Goals		
Who?	**What?**	**By When?**
U.S.A.	10 Mbps (rural/underserved communities) 100 Mbps to 100 million households	(no fixed date) 2020
European Union	30 Mbps to 100%	2020
Australia	50 Mbps to 90% of fixed line premises 25 Mbps to 100%	2019 2021
U.K.	2 Mbps to 100% 24 Mbps to 95%	2016 2017
France	3-4 Mbps to 100% Fibre-to-the-home to 100%	2017 2022
Germany	50 Mbps to 100%	2018

Source: Affordable Access Coalition, Presentation to CRTC. July 2015

If we look at our international rankings for download speeds, Canada is, in 2015, far behind the top countries and even the USA. For example, Canada is ranked global 24th in average download speeds with about half the average speeds of #1 South Korea and about 2/3 that of

[33] Rogers, "Rogers bridging the digital divide for up to 150,000 Canadians", April 7, 2016
http://rogers.mediaroom.com/2016-04-07-Rogers-bridging-the-digital-divide-for-up-to-150-000-Canadians
[34] Rogers, Telecom Notice of Consultation CRTC 2015-134, 2015-134-1, 2015-134-2, 2015-134-3, 2015-134-4, Review of Basic Telecommunications Services, Oral Presentation, April 21, 2016
[35] FCC's new broadband internet target leaves Canada behind
U.S. says broadband internet downloads must hit 25 Mbps, while Canada still aims for 5 Mbps
By Emily Chung, CBC News Posted: Jan 30, 2015 5:32 PM ET Last Updated: Jan 30, 2015 5:32 PM ET
http://www.cbc.ca/news/technology/fcc-s-new-broadband-internet-target-leaves-canada-behind-1.2938440

#2 Norway.[36] Canada is 21sr at only 32% in percentage with access to download speeds above 15 Mbps. The number one country, South Korea, had 69% with access to these speeds. For peak download speeds, we were 33rd and had an average of 40% of the speeds of the number one country, Singapore or 60% of the number 3 country Indonesia.

Average Connection Speed

Country	Rank	Avg. Mbps
United States	16	15.3
Canada	24	14.3
South Korea	1	29
Norway	2	21.3
Sweden	3	20.6
Hong Kong	4	19.9
Switzerland	5	18.7

Average Peak Connection Speed

Country	Rank	Avg. Mps
United States	22	67.8
Canada	33	59.6
Singapore	1	146.9
Hong Kong	2	110.3
Indonesia	3	110.2
South Korea	4	83.1
Qatar	5	89.2

Percentage users above 15 Mbps

Country	Rank	% above 15 Mbps
Canada	21	32%
United States	18	35%
South Korea	1	69%
Norway	2	50%
Hong Kong	3	48%
Sweden	4	46%
Switzerland	5	44%

Source for tables: akamai's [state of the internet] Q1 2016 report
https://www.akamai.com/us/en/multimedia/documents/state-of-the-internet/akamai-state-of-the-internet-report-q1-2016.pdf

This is why many stakeholders, including AAC, Open Media and others, have argued for an increase to 25 Mbps as the new rate standard.

[36] https://www.akamai.com/us/en/multimedia/documents/report/q4-2015-soti-connectivity-final.pdf

7. What is being spent by governments to improve the situation?

In 2014, the Harper Government promised $305 million over five years (2014-2019) to "bring high-speed Internet to 280,000 Canadian households currently without Internet or with slower access. Between now and 2017, the Government will invest up to $305 million to extend access to broadband Internet at speeds of 5 megabits per second (Mbps) to 98 percent of Canadian households, mainly in rural and remote communities."[37] This contribution was judged too little and too late. In Budget 2016 the new Liberal government proposed to increase high-speed broadband coverage by investing up to $500 million over five years, starting in 2016–17, for a new program to extend and enhance broadband service in rural and remote communities.[38]

This money, while allowing the funding of many positive projects, is insufficient to meet the needs of assuring proper access to all those without it now.

As one of the better known IT analysts in Canada, Michael Geist, said of this initiative, "Moreover, the $500 million commitment is heavily back-loaded with only $6 million promised for 2016-17 and $81 million for 2017-18. In other words, most of the broadband money won't be spent until 2018-19 at the earliest, leaving some Canadians without affordable Internet access for years. Given the government's emphasis on infrastructure spending, $6 million on broadband – the essential digital infrastructure – is embarrassing."[39]

These initiatives by the federal government are, of course, complemented by many provinces which are also contributing to Broadband expansion.

The Federal government also included monies for Indigenous Internet development but the Investing in Community Infrastructure package of only $255 million over two years, starting in 2016–17, includes a wide range of infrastructure such as "roads and bridges, energy systems, broadband connectivity, physical infrastructure to mitigate the effects of natural disasters and fire protection services." How much of the package will go to broadband connectivity is not stated.[40]

A National Broadband or a National Digital Strategy

The Chairperson of the CRTC, Jean-Pierre Blais, called in April 2106, at the hearings into basic telecom services for the development of "coherent national broadband strategy." He expressed disappointment that the Liberals' recent budget "doesn't appear to be tied to a clear policy on broadband and its deployment in Canada." Compared to other countries such as the USA, the European Union and Australia, Canada has no overall plan and very small new

[37] "Harper Government launches program to bring high-speed Internet to an additional 280,000 Canadian households" July 22, 2014, http://news.gc.ca/web/article-en.do?nid=869539
[38] Budget 2016 http://www.budget.gc.ca/2016/docs/plan/budget2016-en.pdf
[39] Michael Geist, "Budget 2016: Is It The End of a Canadian Digital Strategy?"March 23, 2016 http://www.michaelgeist.ca/2016/03/budget-2016-is-it-the-end-of-a-canadian-digital-strategy/
[40] Budget 2016, Chapter 3 - A Better Future for Indigenous Peoples, http://www.budget.gc.ca/2016/docs/plan/ch3-en.html

funding for increased services.[41] A broadband strategy has to include how access at increasing speeds will be delivered to people in all regions and at all income levels.

Others have said that what we need is a national **digital** strategy as Internet use now goes way beyond traditional Broadband use of email, web searching, games and videos to building the Internet of Things. [42] What is meant by this is using the Internet more for business purposes such as in logistics, parcel delivery as well as in supplying goods and services to customers. For citizens, this means using the Internet to control and manage everything from cars, to home heating and lighting to appliances and of course to the delivery of television and video to the home and to mobile devices. Canada Post can have a special role in the development of these other uses starting of course with the logistics of delivery. Deutsche Poste[43] and Swiss Post[44] both are developing plans for these new uses for the Internet.

[41] Christine Dobby, "CRTC chair makes strong call for national broadband strategy", The Globe and Mail, April 18, 2016 http://www.theglobeandmail.com/report-on-business/crtc-chair-makes-strong-call-for-national-broadband-strategy/article29671174/

Open Media, Submitted to the CRTC, Re: Telecom Notice of Consultation 2015-134
Review of Basic Telecommunications Services, Final Submission, May 25, 2016[42]

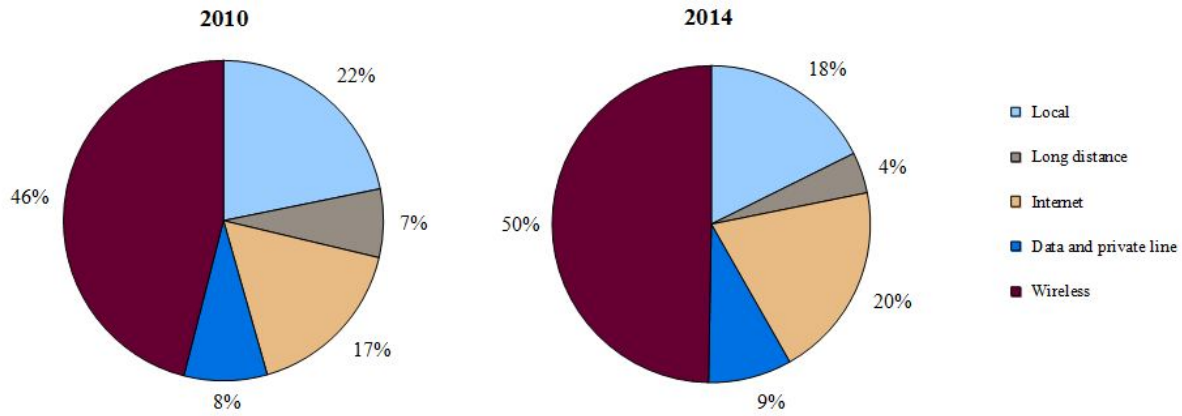
[43] "Internet of Things will deliver $ 1.9 trillion boost to supply chain and logistics operations", 04/15/2015, http://www.dpdhl.com/en/media_relations/press_releases/2015/dhl_and_cisco_trend_report_internet_of_things.html

[44] "Swiss Post is developing an Internet of Things", 02.03.2016, https://www.post.ch/en/about-us/company/media/press-releases/2016/swiss-post-is-developing-an-internet-of-things

8. How could Canada Post offer Broadband Services?

Today in Canada, Internet services are very profitable and are growing in sales revenues. Revenues in 2014 for Internet Service Providers increased 8.6% from 2013, from $7.7 to $8.4 billion. 80% of these revenues were from residential sources and 20% were from business sources.[45] There are now over 525 ISPs in Canada and, while the top 5 control 74% of the market, in 2014 that was a decline from 75% in 2013. About 242 companies provide services solely through the use of resale. [46]

Distribution of telecommunications retail revenues, by market sector



Source: CRTC 2015 Communications Monitoring Report 2015: Telecommunications sector overview
http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2015/cmr5.htm

This means there could be an opening for Canada Post. Here are some possible options.

1. Building a broadband infrastructure alone

The first option would be to build a dedicated Canada Post Broadband infrastructure which would cost a very large sum of money. For example, the Alberta SuperNet, which connects 429 communities in both urban and rural Alberta through over 13,000 kilometers of trenched fibre optic cables and 2,000 kilometers of high-speed wireless links, cost hundreds of millions of dollars (the exact total cost is not known but the initial cost of the project begun in 2001 was $193 million from the province and $102 million from Bell.). One part is owned by Bell and covers the 27 major cities. The other part owned by the Alberta government covers 402 communities in rural Alberta and is operated by Axia SuperNet Ltd. The Supernet connects 1425 government locations, 516 health-care facilities, 2,203 schools, 333 libraries, 244

[45] CRTC, Communications Monitoring Report 2015,
http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2015/cmr.pdf
[46] Ibid

municipalities, First Nations of Treaty 6, 7 and 8, Métis settlements, 157 education facilities, 95 schools and 44 federal health care facilities.[47]

But the Alberta network does not connect directly to residences in most communities. This is left to private ISPs. One community, Olds, Alberta has taken the radical step of building its own high speed Internet O-Net. Olds now has one of the fastest Internet services in Canada.[48]

To make this kind of new investment across Canada would require major sums of capital and would require many partnerships, at the very least with provinces, territories, municipal governments and Indigenous governments. This way forward would only be possible if the federal government were to directly intervene and use Canada Post as a way of building the backbone of a new high speed network.

2. Partnerships with the private sector

The option of partnership with existing Broadband companies would allow Canada Post to sign a deal with one or more of the major players to assure that Broadband service was rolled out across Canada through the Post Office. This could also be done on a regional basis as some companies have very strong networks in only some regions, such as Telus in BC and Alberta, and Videotron in Quebec, and there are even some very strong local services.

Also any partnerships probably need to take into consideration the use of satellite and microwave transmission in certain rural or northern areas where fibre to home is not feasible at the present time.

As has been pointed out in the paper the prices offered by resellers of Internet services are below that of the major providers such as Bell, Rogers, Telus, and Shaw etc. The CRTC has ruled that these large providers must offer wholesale prices to independent Internet service providers including reselling new fibre Internet services. This decision was appealed by Bell but recently upheld by the federal government.[49]

These kinds of partnerships between Canada Post and the private sector could be modeled on the kind of deal signed by the UK Post Office with the Bank of Ireland to deliver financial services. This would entail a call for tenders process and then a contract for a limited period of time. This way control of the process remains in the hands of Canada Post.

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[47] https://www.akamai.com/us/en/multimedia/documents/content/state-of-the-internet/q4-2015-state-of-the-internet-connectivity-report-us.pdf

[48] Emily Chung, "mall Alberta town gets massive 1,000 Mbps broadband boost
Rural community of Olds builds its own fibre network and starts its own ISP"
CBC News, July 18, 2013 http://www.cbc.ca/news/technology/small-alberta-town-gets-massive-1-000-mbps-broadband-boost-1.1382428

[49] Josh Tabish, "Open Media, "Huge win for Canadians, as Minister Bains rejects Bell Canada's attempt to block small providers from ultra-fast Fibre Internet", May 11, 2016, https://openmedia.org/en/huge-win-canadians-minister-bains-rejects-bell-canadas-attempt-block-small-providers-ultra-fast

3. Public public partnerships

There are a significant and growing number of regional and local community owned Internet Broadband services such as Olds, Alberta[50], Coquitlam[51] and New Westminster, BC[52], Chebucto in Nova Scotia[53] as well as in regions such as Eastern Ontario (EORN)[54]. Canada Post could partner with these kinds of initiatives, as well as existing free nets. However, while these initiatives are important they only cover a very small part of Canada, Canada Post probably would need to have multiple kinds of partnerships to cover the Canadian territory.

What a Canada Post Broadband service could look like

1) Offering package deals on Internet services which could include
    - special packages to all low income citizens such as Rogers now offers to all Social Housing residents in its areas of operations
    - special services to rural residents at fair rates
    - special services targeted to Indigenous communities which now receive poor service
    - services to small businesses below a certain income threshold
    - VOIP phone services as well as TV packages

2) Installing public access to very high speed Internet in all post offices on desk top computers and making some post offices community access centres as many libraries do
3) Making all Post Offices hot spots that could offer wireless Internet to all those in a surrounding area
4) Selling tablets, smart cell phones and computers in all post office locations. (If Loblaw's and Shopper's Drug Mart can do it so can Canada Post!)
5) Offering special business services such as developing Internet services and sending out combined mail and email targeting
6) Offering special document storage facilities for all citizens and business to store key documents and images in secure cloud storage

[50] O-NET, "In 2011, the construction of a state-of-the-art fibre-optic to the premises municipally owned network began." http://o-net.ca/about-us/

[51] QNet (a municipal owned company) has 60 km of fibre cable in that city http://www.qnetbc.net/about-us/overview

[52] Randy Shore, "New Westminster to build city-owned fibreoptic network", June 20, 2016 http://vancouversun.com/business/local-business/new-westminster-to-build-city-owned-fibreoptic-network

[53] Chebucto Community Net https://www.chebucto.ns.ca/ "On June 7, 2013 we completed the first phase of our Manors Project, a bold plan to provide highspeed wireless Internet access to public-run low-income seniors housing. Joseph Howe Manor and H.P. MacKeen Manor became the first examples of non-profit home highspeed Internet access in Eastern Canada and the first multi-dwelling residences in the Maritimes with full ubiquitous wifi access."

[54] "EORN includes: A 5,500-km network of new and existing fibre optic cable, with 160 new access points for Internet Service Providers." https://www.eorn.ca/en/news/Changing-Internet-Access-in-Eastern-Ontario.asp

7) Offering help in accessing Federal and other Government services on Post Office store computers

How to roll out such a process

Canada Post could establish a Broadband Digital Strategy committee and have as members: management, unions, as well as Internet advocacy and access experts from Canada and from other Postal systems which already offer Internet services.

The first task would be to look at how best to offer the services across Canada. All but point one in the above list could be begun very quickly.

Point one would require more study and then negotiations with partners once possible partnerships have been chosen.

Canada Post could begin with a pilot program in one or two regions of the country and then expand offerings to all regions.

Recommendations:

- That Canada Post offer a broadband service
- That Canada Post establish a Broadband Digital Strategy committee to begin the process and have as members: management, unions, as well as Internet advocacy and access experts from Canada and from other Postal systems which already offer Internet services.

Appendix One

The following charts are sourced from "2016 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions". prepared for: The Canadian Radio-television and Telecommunications Commission (CRTC)by: NGL Nordicity Group Ltd. (Nordicity) http://www.crtc.gc.ca/eng/publications/reports/compar/compar2016.htm#5.3

They note the comparative cost of Broadband services at different levels.

Level 1: Speed: 'basic' Internet service with advertised download speeds of 3 to 9 Mbps

Data usage per month: 10 GB.

Level 2: Speed: 'average' (Canadian) high-speed Internet service with advertised download speeds of 10 to 15 Mbps

Data usage per month: 50 GB.

Level 3: Speed: high-speed Internet service with advertised download speeds of 16 to 40 Mbps

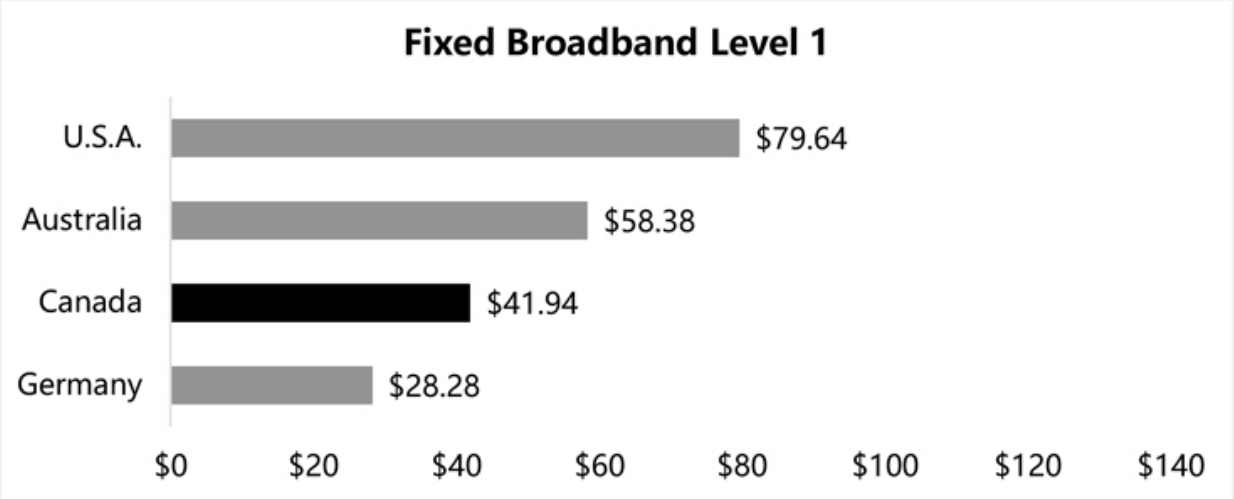
Data usage per month: 100 GB.

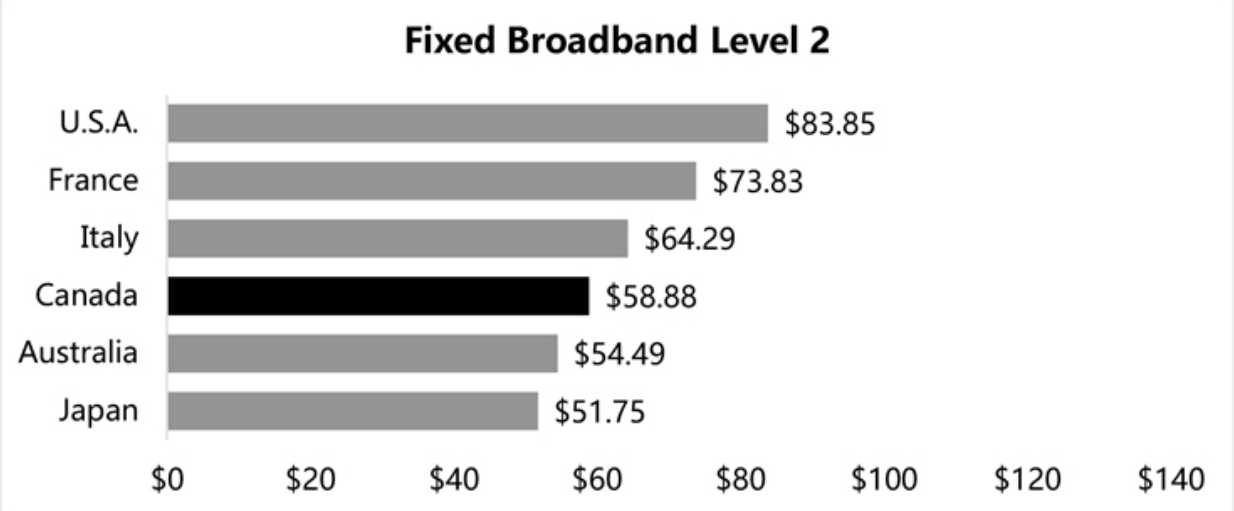
Level 4: Speed: high-speed Internet service with advertised download speeds of 41 to 100 Mbps range.

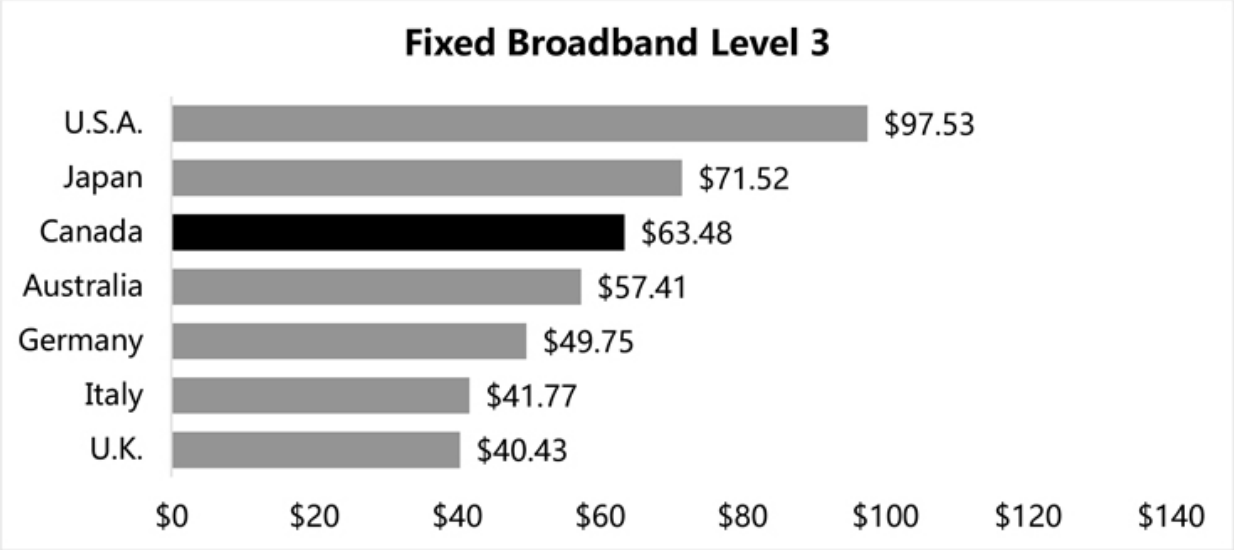
Data usage per month: 150 GB.

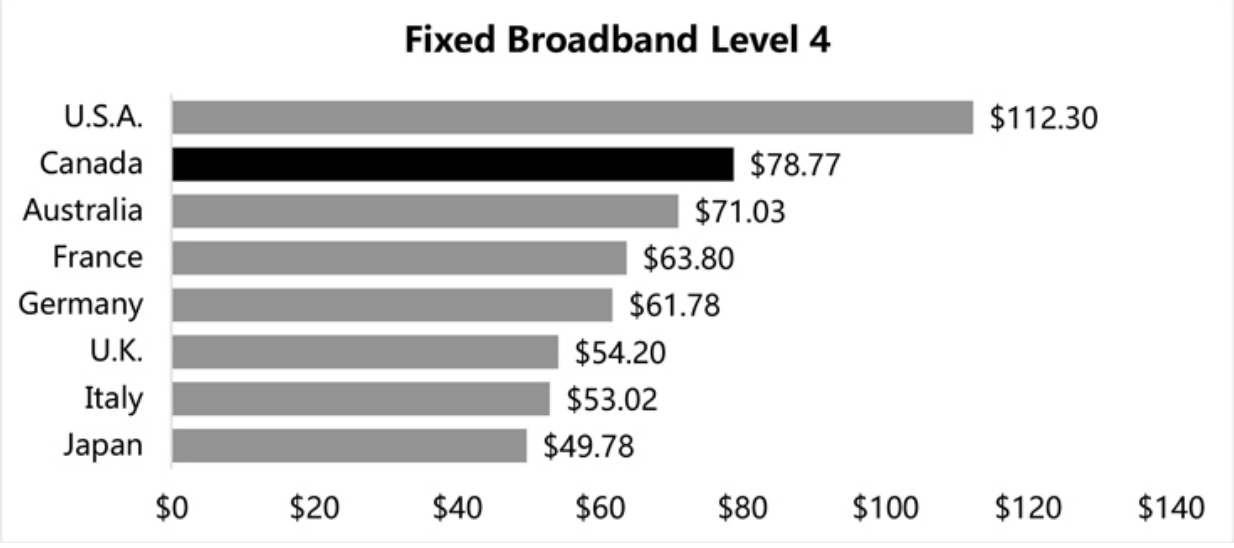
Level 5: Speed: high-speed Internet service with advertised download speeds of over 100 Mbps (targeted speed in the 100-1,000 Mbps range).

Data usage per month: 500 GB.




Fixed Broadband Level 2
U.S.A.
France
Italy
Canada
Australia
Japan
$83.85
$73.83
$64.29
$58.88
$54.49
$51.75
$0
$20
$40
$60
$80
$100
$120
$140


Fixed Broadband Level 3
U.S.A.
Japan
Canada
Australia
Germany
Italy
U.K.
$97.53
$71.52
$63.48
$57.41
$49.75
$41.77
$40.43
$0
$20
$40
$60
$80
$100
$120
$140


Fixed Broadband Level 4
U.S.A.
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France
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U.K.
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Japan
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$63.80
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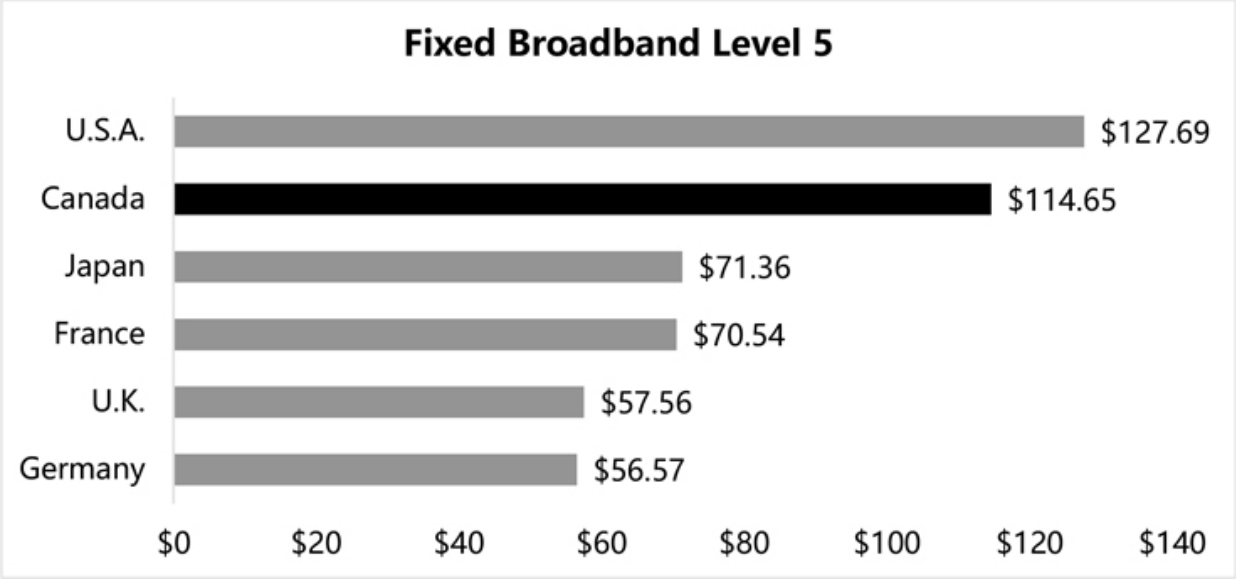
$100
$120
$140


Fixed Broadband Level 5
U.S.A.
$127.69
Canada
$114.65
Japan
$71.36
France
$70.54
U.K.
$57.56
Germany
$56.57
$0
$20
$40
$60
$80
$100
$120
$140