APPENDIX 3

Wholesale access to NGN facilities: a key requirement for competition in Canadian wireline telecom markets

Comments on Bell-Telus petitions – DGTP-004-09

Report presented to

MTS Allstream Inc.

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Figures and Tables

1. Introduction

This Report was prepared for MTS Allstream as part of its comments on Industry Canada notice DGTP-004-09 with respect to the March 11, 2009 petitions of Bell and Telus requesting that the GIC vary Telecom Decision CRTC 2008-117 and rescind Telecom Order CRTC 2009-111 (referred to herein as the "Bell/Telus petitions").

Both of these CRTC matters surround Cybersurf's application relating to the "matching speed requirement" for wholesale ADSL services provided by Bell and Telus.

Separately MTS Allstream Inc. petitioned the GIC to vary Telecom Decision CRTC 2008-118, *MTS Allstream Inc. – Application to review and vary certain determinations in Telecom Decision 2008-17 regarding the classification of wholesale Ethernet services* and Telecom Regulatory Policy 2009-34, *Requests to review and vary directives in Telecom Decision 2008-17 related to the provision of central-office-based wholesale ADSL access service and aggregated ADSL access service.* Alternatively, MTS Allstream requested that the decisions in question be referred back to the CRTC with specific instructions regarding the variance of the classification of the relevant services.

Key observations:

- What Bell and Telus are asking for is regulatory relief, at the expense of their competitors, to help them compete with cable companies in residential markets within the confines of their former-monopoly incumbent local exchange company ("ILEC") territories. This will not serve to increase investment or competition nationally in broadband networks. On the contrary, it will only reinforce a

duopoly, supported by prior CRTC decisions, of cable-telco access services to the home. MTS Allstream's petition relates to broadband access for businesses across Canada. A major bottleneck to providing broadly-based broadband services to Canadian businesses is Ethernet access service with speeds of 10, 100 or 1000 Mbps bandwidth and these are often subject to monopoly supply by Bell or Telus.

- Bell and Telus are suggesting that investment in next generation network ("NGN") infrastructure hinges on the regulatory regime and removal of wholesale obligations. This contradicts their actions in the marketplace. Residential competition between telcos and cablecos is hardly a recent phenomenon and it is likely an "idle" threat from Bell and Telus to suggest that they will stop investing. Bell and Telus disclose information to investors on their network strategies. Regulatory rulings or changes to the regulatory regime are not mentioned as prerequisites to NGN investment nor is regulatory relief identified as the driving force behind it. Business strategy imperatives are the drivers, i.e. competitive pressures, improved margins, greater customer satisfaction, higher revenues, faster growth, etc. Bell and Telus see their business imperative as investing in residential networks to compete with cable companies, less so to invest to serve businesses where there is less competition.

- In terms of wireline network competition, ensuring that competitors can access the Bell and Telus networks on a wholesale basis in their respective ILEC territories would be a stimulator for investment – for each other as well as competitors. *A propos*, there is no mention in the Bell/Telus petitions of them investing out-of-territory for wireline networks. There is no mention of them competing with each other. And they do not identify any new initiatives to address broadband services for business markets. Planned investments in wireline

networks are only in-territory and only in key areas to ward off residential competition from cable television companies.

- Telus states that comparing older technology to NGN's is "like saying a stagecoach and a jetliner are more or less the same service in the same market because they both have wheels and take people from one place to another". On the contrary, "NGN" is not a sea change, just the next step in the natural evolution of improving technology, which began over 20 years ago when Bell and Telus began deploying fibre infrastructure. But in any case, the Telus stagecoach-jetliner analogy may actually strengthen the case for mandated access of NGN's. Owners of high-capacity jetliners are no doubt far more interested in reselling excess capacity than are owners of small and slow-moving stagecoaches.

- Regulation of wholesale access is important for the development of competition. Bell (or Telus) is often in a monopoly position as sole provider of access services to business in their respective incumbent operating territories. This should be reflected in the regulatory treatment of Ethernet access services, as discussed in the MTS Allstream petition. If competing service providers cannot get broadband access services from incumbents on reasonable terms and conditions, they cannot compete and make investments in order to grow their business. Granting the MTS Allstream, while denying the Bell/Telus petitions, would be consistent in terms of supporting the development of competitive alternatives for business access and countering the trend towards a duopoly of telco-cable in residential markets.

These observations are discussed in more detail in the following sections.

2. Bell/Telus petitions focus only on competition in in-territory residential markets

The Bell/Telus petitions focus exclusively on residential markets and in fact are only concerned with residential markets that are within their respective incumbent local exchange company ("ILEC") operating areas.

> Bell: "The pace, speed and location of significant, planned Internet investments by the Companies in their ***residential*** networks to enable the delivery of higher speed Internet service will have to be reviewed…" and… Bell's business case for investing in NGN facilities is based on "winning the broadband ***home***". Bell's petition is clearly only concerned with homes in ***Ontario, Quebec and Atlantic Canada***.[1] Ontario, Quebec and Atlantic Canada are Bell Canada's main ILEC operating territories.[2]
>
> Telus: "Canadian broadband networks must be upgraded if Canadian ***consumers*** are to enjoy the full benefits of our digital age."[3] Telus does not identify geography in its petition, but elsewhere makes it clear… "Telus' broadband wireline investment plan will expand the reach of our high-speed Internet and digital Telus TV service in ***B.C. and Alberta***".[4] And Telus "continued to invest in increasing the speed and coverage of its broadband infrastructure in ***B.C.,***

[1] Bell petition, paragraphs 4, 18 and 29, emphasis added.
[2] Including Bell Canada and Bell Aliant. Bell Canada also operates in the Territories via its subsidiary Northwestel.
[3] Telus petition paragraph 33, emphasis added.
[4] Telus press release, March 17, 2009, emphasis added.

Alberta, and Eastern Quebec."[5] B.C., Alberta and Eastern Quebec are Telus' ILEC operating areas.

What Bell and Telus are really asking for is regulatory relief, at the expense of their competitors, to help them compete with cable companies in residential markets within the confines of their former-monopoly ILEC territories.

This will not serve to increase investment or competition nationally in broadband networks. On the contrary it will only reinforce an increasing duopoly, supported by the CRTC, of cable-telco access services to the home.

The idea that competition is defined by a cable-telco duopoly has been an underlying view of the CRTC for many years. In 1994 when the Stentor group of companies (which included Bell and Telus) created its Beacon initiative to invest in broadband to the home, the CRTC stated that "it may take many years to roll out Beacon to most parts of the country. This should provide cable companies with sufficient time to develop competitive strategies and adopt new technologies."[6] Competition policy on this basis was only focused on residential markets and only narrowly on cable vs. telco as the competitors.

In the mobile industry, where there were already three national facilities-based providers, the Canadian government took steps to increase competition and investment by ensuring that there would be entry by new carriers resulting from the 2008 auction of AWS licenses.

One key element of the AWS licensing process was the requirement that incumbents provide new entrant carriers with roaming services – i.e. allowing entrants' subscribers to

[5] Telus Annual Report, 2008, Management's discussion and analysis, page 14

make use of incumbent networks on a wholesale basis in areas where they have not yet built their own networks.[7]

Even though both Bell and Telus argued strenuously against mandated roaming in the context of public consultations by Industry Canada, they recently (post-AWS auction) chose to increase their level of investment to become stronger competitors to Rogers, to obtain the cost benefits of HSPA and to compete with the new mobile licensees, at the same time as they hope to provide them with wholesale access to their networks. It is thus expected that competition will be much increased in Canada by this new investment and that consumers will reap major benefits over the coming years.[8]

In terms of wireline network competition, ensuring that competitors can access the Bell and Telus networks on a wholesale basis in their respective ILEC territories would be a stimulator for investment – for each other as well as competitors.

A propos, there is no mention in the Bell/Telus petitions of them investing out-of-territory for wireline networks. There is no mention of them competing with each other. And they do not identify any new initiatives to address broadband services for business markets. Planned investments in wireline networks are only in-territory and only in key areas to ward off residential competition from cable television companies.

Irrespective of any conclusions with respect to Bell/Telus in residential markets, the issues relating to this are distinct from the national business market. Bell/Telus make no

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[6] "Competition and Culture on Canada's Information Highway", CRTC, 19 May 1995, Section 3

[7] The question of pricing for mandated roaming was not addressed, but left to an arbitration process. Service resale was not made a condition of license.

[8] "Next Generation Network Access: A Canadian and international perspective on why wholesale services should be regulated as essential facilities", Report prepared for MTS Allstream Inc. by Lemay-Yates

case with respect to business access services, in a sense "sinning by omission" since competitive broadband access for businesses is a key element of enabling increased broadband and ICT investment, which Bell/Telus purport to be promoting.

By glossing over the question of broadband access for business, Bell/Telus are perhaps hoping that whatever relief is obtained with respect to competing with cable companies would also apply by default to business access markets, where there is even less competition.

A major bottleneck to providing broadly-based broadband services to Canadian businesses is Ethernet access service with speeds of 10, 100 or 1000 Mbps bandwidth and these are often subject to monopoly supply by Bell or Telus.

This is the focus of the petition of MTS Allstream; broadband access and development of competitive alternatives for businesses across Canada.

The word "Ethernet" does not appear at all in either of the Bell/Telus petitions even though Ethernet access service is the bandwidth "pipe" needed to provide high speed data connectivity to enable enterprise applications and networks now and in the foreseeable future.

Associates Inc., March 11, 2009 ("LYA Report", filed with the MTS Allstream petition, Appendix 4), pages 76-77

2.1 MTS Allstream's petition concerns a key enabler – competitive broadband access for businesses

MTS Allstream competes with Bell and Telus in business markets nationally and its petition is focused on this key enabler for productivity and employment growth – competitive broadband access to ***businesses*** across Canada.

Contrary to the situation with residential markets, access facilities to business locations are often only available from the local ILEC. This is evidenced in a number of ways:[9]

- Cablecos largely do not connect business locations and in fact are disinvesting from this market; the common thread among the business telecommunications operations of Rogers, Videotron and Shaw is that building fibre optic facilities to reach business locations across Canada is not a priority for any of them.

- Municipal electric utilities have invested in business access facilities in selected markets, notably in Ontario and Quebec. However, the coverage of these facilities is very limited – e.g. in Toronto Cogeco Data Services (formerly Toronto Hydro Telecom) has spent 10 years to build up a network serving only 514 business locations. This is a small proportion of the total business locations in Toronto – schools and libraries alone account for some 850 locations.[10]

[9] LYA Report, *ibid.*
[10] Toronto District School Board has 550 schools, the Toronto Catholic District School Board consists of 168 elementary, 31 secondary and 2 combined elementary/secondary schools and there are 99 library branches, per the web sites of these organizations.

- Bell and Telus have been providing services to business markets in each other's ILEC territories since 2000. However, investment in these ventures is very small and has declined. For 2009, Telus has stated that of its $2 billion capital spending projected for 2009 – only 5% is for out-of-territory competitive wireline infrastructure.[11] Bell has not disclosed figures but clearly stated it is "not putting a lot of capital" into its out-of-territory wireline operations.[12] The difficulty of operating out of territory is also evidenced by Telus' difficulty in fulfilling its obligations in its contract with Public Works because incumbent suppliers are in a virtual monopoly situation.

The situation with respect to business access services is very different from that of residential.

[11] Telus investor conference as reported by the National Post, March 16, 2009
[12] "We are not putting a lot of capital into what's known as the CLEC or Bell West", BCE 2009 Analyst Meeting transcript, February 11, 2009, page 37

3. Bell/Telus are seeking relief in order to help them compete with cable companies

The main premise underlying the Bell/Telus petitions is that investment in next generation network ("NGN") infrastructure hinges on the regulatory regime and removal of wholesale obligations, which will allow them to offer high speed Internet and notably television services in competition with cable.

> Bell states at paragraph 6 of its petition: "Being mandated to provide wholesale access to the NGNs to all competitors on rates and terms imposed by the CRTC will seriously undermine the Companies' ability to deliver television services in competition with cable companies."
>
> Telus states at paragraph 25 of its petition: "Unless companies like TELUS are able to provide comparable services through next generation networks, the lead already enjoyed by cable providers will only grow."

This contradicts their actions in the marketplace and misstates or overlooks the clear fact that Bell and Telus (and indeed all of Canada's major ILECs) already compete with cable television companies for high speed Internet and other services and in particular have been providing digital television services for a number of years.

Competition between telcos and cablecos is hardly a recent phenomenon and Bell and Telus have been investing in digital and fibre optic technology for more than 20 years and for at least the last 10 years in high speed Internet infrastructure in order to compete with offerings from the cable companies, as is illustrated by their various announcements

over the years, summarized in Appendices 1 and 2. It is clearly an "idle" threat for Bell and Telus to suggest that they will stop investing.

In the case of Bell Canada, competition with cable for high-speed Internet service began in earnest in 1999 with the introduction of Sympatico High-Speed Edition and the expectation of accelerated roll-out of high speed technology.[13] This has continued through to today… Bell stating it is now "greatly accelerating" the rollout of our high-speed Fibre to the Node (FTTN) network.[14]

In the case of Telus, it claims to have led Canadian telcos in rollout of high-speed Internet in 1999, obtained BDU licenses to compete with cable in 2003 and has continued to the present. "TELUS advanced its Future Friendly Home strategy in 2008, expanding your company's broadband infrastructure and bringing a wider range of services to more customers."[15]

Digital TV and HDTV services are now being offered by the ILECs across Canada, per the web sites of the various companies:

- BC and Alberta: "Telus TV is an all-digital Internet protocol television service (IPTV), delivered over Telus High Speed Internet access line". Telus offers over 200 digital channels, including HDTV and video-on-demand and pay-per-view.

- Saskatchewan: Sasktel offers "Max Entertainment Services", a "full-featured digital television service" offering over 180 channels, including 34 HDTV channels, video-on-demand and pay-per-view.

[13] BCE Annual Report 1999, pages 12 and 30
[14] BCE Annual Report 2008, page 11
[15] Telus Annual Report 2008, Business Review page 15

- Manitoba: MTS offers "MTS HDTV", which has 28 channel package options including over 250 digital channels and 30 HDTV channels, personal video recorder option and video-on-demand.

- Nova Scotia: Aliant TV is available in the Halifax area providing 70 digital television channels and 8 HDTV channels.[16]

- New Brunswick: Aliant TV is not yet offered, but planned however a service "TV on my PC" provides Aliant customers with 10 live broadcast channels. The service is offered exclusively to Aliant High Speed Internet customers.

- Territories: Northwestel, the ILEC and cable operator in the Territories, provides a digital television service including 61 digital television channels and 14 HDTV channels.[17]

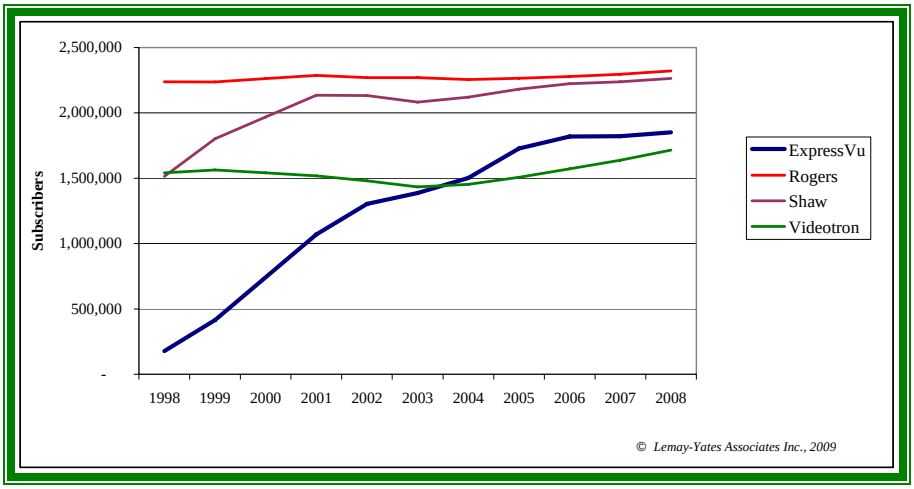
The conspicuous absence of Canada's two largest Provinces – Ontario and Quebec – from this list is no doubt not coincidental to the fact that these Provinces represent the bulk of Bell Canada's ILEC operating territory.

Bell is in fact a major player in television distribution nationally, not via an IPTV service, but rather via its ExpressVu satellite direct-to-home service, now marketed as Bell TV.

[16] Aliant is part of the Bell Canada "family" of companies
[17] Northwestel is owned by Bell Canada

Bell has been quite successful in building up its television distribution business over the past 10 years, as is illustrated below showing the evolution of ExpressVu subscribers relative to those of Rogers, Shaw and Videotron since 1998.

Figure 1 – Evolution of Bell TV subscribers relative to Rogers, Shaw and Videotron



With 1.8 million subscribers Bell TV (ExpressVu) has grown to be the third largest broadcast distribution undertaking (BDU) in Canada, smaller than Rogers Cable or Shaw Cable but larger than Videotron. Bell strongly positions its Bell TV service in its "Bell Bundle", which allows residential customers to take bundles of home phone, Internet, wireless and television services.

While now the third largest BDU overall, Bell TV is the self-proclaimed "number one" in digital television delivery…

> Over the past 10 years, ExpressVu Digital TV from Bell has delivered a number of Canadian television industry firsts, including regular national High Definition (HD) broadcasts, the first Personal Video Recorder (PVR), the first PVR to feed

> more than one TV and the first national interactive TV (iTV). Bell remains Canada's number one digital television provider with more than 500 channels and customizable programming that features 21 theme packs, more than 50 pay-per-view channels, more than 50 HD channels, advanced interactive functionality, and a broad range international content. Bell also delivers an array of FreeVu! content that includes its HD Concert Series, exclusive specialty programming and sports broadcasts from around the planet.[18]

If Bell were to introduce an IPTV service, the competitive impact on its own ExpressVu service could be at least as great as it would on either of its in-territory cable rivals, Rogers and Videotron.

Bell's lack of an IPTV service offering in Ontario and Quebec, and its on-again, off-again fibre investment, likely has more to do with ExpressVu than any supposed regulatory uncertainty surrounding NGNs. And blocking wholesale access to NGNs would further support ExpressVu by impeding the development of competing IPTV offerings.

Bell had begun investing in IPTV in 2006, but then in late 2007 apparently put the project on hold.[19] In addition to avoiding competition with its own ExpressVu service, this and other initiatives were likely casualties of the BCE privatization plan, announced in June 2007.

[18] BCE press release, September 17, 2007
[19] TeleGeography's CommsUpdate, 29 October 2007

As part of the privatization plan, BCE reduced cash outlays for capital equipment and dividends. Once the privatization plan collapsed in late 2008, BCE reinstated its dividend and now finds it timely to "accelerate our fibre-to-the-node build by a year".[20]

If Bell is one year behind in deployment of new technology in its wireline network, this is due to its own business imperatives, the degree of competitive pressure it is actually seeing, internal processes and privatization plans and not to any regulatory issues with respect to competition with cable.

Put another way, Bell as well as all of Canada's major ILECs already compete, and have been competing for many years, in the television delivery services business. Bell does it via ExpressVu and the others via IPTV or other offerings. NGN investment, as the name implies, is the "next" step in their evolution, the next generation of investment and not a sea change in their networks or services.

Regulatory relief for ILECs, at the expense of its competitors, will only serve to reinforce a cable-telco duopoly for residential access and not stimulate broad investment initiatives.

In any case, Bell and Telus in particular are continuing to invest, making no mention of regulatory impediments in their recent pronouncements regarding NGN network build. For example:

> Bell: "…where we've done fibre-to-the-node … customer satisfaction is 50% higher, our churn's 25% lower, and our ARPU is higher. And our high ARPU clients are clearly in that segment, and that's why the acceleration of the footprint

[20] BCE 2009 Analyst Meeting transcript, *op.cit.*, page 18

has to take place." … "And so if we ever launch, or when we launch—probably a better term—IPTV, then we will have a very ubiquitous footprint to launch it with. And then I think there's a bit of a hand-in-glove fit with our satellite TV business."[21]

Telus: "We will continue to expand our broadband infrastructure in our incumbent territories to advance our future friendly home strategy" … "our broadband wireline activities within our ILEC franchises to ensure that, as it relates to the wireline side of our business not only do we project (sic) the margin inherent in our legacy services, but we pursue grow fast (sic) from HSIA to the TV service that we have inaugurated that is doing very well for this organization.[22]

Regulatory rulings or changes to the regulatory regime are not mentioned as prerequisites to and are not the driving force behind ILEC NGN investment. Business strategy imperatives are the drivers, i.e. competitive pressures, improved margins, greater customer satisfaction, higher revenues, faster growth, etc.

4. Wholesale access should be more important for NGNs than for legacy networks

Telus states that comparing older technology to NGN's is "like saying a stagecoach and a jetliner are more or less the same service in the same market because they both have wheels and take people from one place to another".

[21] Ibid, page 30
[22] Telus 4Q08 investor conference call transcript, February 13, 2009, pages 9 and15

This analogy is promoting an overly simplistic view of next generation access, a view not held in other countries. For example in Europe: "How we treat next generation access is … the single most important policy question in the telecoms sector today. We have to create incentives for investment whilst making sure that no-one (and I insist on this no-one), can be in a position to foreclose the market.[23]

It is precisely because the investments are important that the owners of the jetliners cannot be allowed to restrict access to them and limit competition, not the contrary.

In any case, the Telus analogy exaggerates the difference between the present telecom networks and NGNs, which are not as radically different as stagecoaches are from jetliners. An NGN is not a stagecoach-to-jetliner change, but in fact simply a continuation of investments in always newer telecom technology.

In the 1970s telcos began replacing analog switches and transmission lines with digital systems. In the 1980s they deployed digital switch remotes and DMS-1U line concentrators at "node" locations, often connected using fibre "feeder" cables. In the 1990's they built metro fibre networks with IP backbones and high speed access using DSL technology and fibre directly into buildings in many areas.

By 1990 – now almost 20 years ago – Bell Canada had begun installing "access fibre rings" to connect customer locations directly to Bell switching centers, the first of which was in Toronto. It had also begun deploying DMS-1U's in many areas including

[23] Viviane Reding, Member of the European Commission, responsible for Information Society and Media, cited in LYA Report, *op. cit.*, page 56-57

suburban/rural locations such as Lac Beauport, Quebec, and also had 2.4 Gbps fibre backbone systems in place in Montreal.[24]

In mid-1994, the Stentor group of companies (of which both Bell and Telus were members) announced the Beacon Initiative in early April 1994, focused on deploying fibre to support development of broadband access. "Valued at an estimated $8 to $10 billion, Beacon is the most ambitious private investment program in telecommunications infrastructure anywhere in the world."[25]

In retrospect, Beacon would be better considered as overly-ambitious. However its objective of deploying fibre to support broadband access was the same as that of current NGN initiatives. The network evolved differently than had been anticipated in Beacon – exploiting existing copper plant to provide broadband access using DSL technology – but the concept of deploying broadband technology to compete with cable is far from new.

In the 2000's, instead of building fibre directly to the home, DSL systems were continuously upgraded to higher speeds while fibre was "pushed" closer to the subscriber. "NGN" is just the next step in this natural evolution of improving technology. This is the same approach used by cablecos in deploying fibre in their local distribution networks to enhance their Internet and television offerings.

But in any case, the Telus stagecoach-jetliner analogy may actually strengthen the case for mandated access to NGN's.

[24] Mussio, Lawrence B., "Becoming Bell – The remarkable story of a Canadian enterprise", BCE Inc., 2005, pages 103-107

[25] Ostiguy, Elizabeth M. (Stentor Telecom Policy Inc.), "The Benefits of More Choice in Distribution Channels for Cultural Programming", Canadian Journal of Communications, Vol. 20, No. 3 (1995)

It would make little sense to promote mandated wholesale access to limited-capacity and slow-moving stagecoaches. On the other hand, high-capacity and faster jetliners provide a much better opportunity for wholesale access. Owners of jetliners are no doubt far more interested in reselling excess capacity than are owners of stagecoaches.

The greater fill of a jetliner afforded by reselling excess capacity enhances the ownership of the jetliner. Offering wholesale access to jetliners stimulates investment since the passenger fill is increased, improving profitability.

In the context of NGN investment, as Bell points out at paragraph 37 of its petition: “the Companies envision partnering with some competitors to resell their NGN access service on commercial terms” and “wholesale business makes a valuable contribution to the Companies' business”.

However, Bell (or Telus) is often in a monopoly position as sole provider of access services to business. This should be reflected in the regulatory treatment of Ethernet access services, as discussed in the MTS Allstream petition.

The importance of regulating wholesale access in order to support development of competitive alternatives is reinforced by the European view: “Regulatory restraint as a carte blanche for incumbents to re-monopolise markets where the buds of competition are flourishing is not a policy option if we want competitive markets”.[26]

Left to their own devices, holders of market power will be able to foreclose the market by limiting or denying access to customer locations.

[26] LYA Report, *op. cit.*, page 57

5. High Speed Internet access is heading towards a duopoly

Regulatory uncertainty has long hampered development of Canadian ISPs. The industry serving residential markets is moving to a duopoly of cableco and ILEC services.

The CRTC has often it seems blindly promoted facilities-based competition at the expense of other forms of competition. However the CRTC decisions that are subject of the Bell-Telus petitions were actually a step in the direction of supporting development of competitive alternatives and the growth of high speed Internet provision.

As the Internet service industry has migrated from low speed dial-up services to high speed broadband, the non-telco, non-cableco segment of the industry – i.e. "resellers" such as Cybersurf – has declined in importance from representing over 60% of the market 10 years ago, in terms of residential subscribers, to being below 8%.[27] This appears to represent a substantial decrease in competition in these markets that has already occurred.

Table 1 – Residential Internet subscriber share 1998-2007

	1998	2007
Telco	710	3,971
Cable	241	4,590
Other ISPs	1,678	729
Total Canada	2,629	9,290
% Other ISPs	**64%**	**8%**

Subscribers in 000's; Source: CRTC

There are multiple and inter-related issues surrounding this evolution of ISP's in Canada. While there has been wholesale access to ADSL services available from the ILECs, the pricing has always been too high to support a viable business case, and at the same time, access to broadband cable facilities via third-party Internet access is expensive as well as difficult to obtain.

If competing service providers cannot get broadband access services from incumbents based on reasonable terms and conditions, they cannot compete and make investments in order to grow their business. The end result is likely to be a continued evolution of a duopoly of telco-cable in residential markets, and a virtual telco monopoly in many areas for business access.

[27] CRTC Communications Monitoring Report 2008, Table 5.3.2 and the CRTC Report to the Governor in Council 2003, Table 4.27

6. Appendices

6.1 Appendix 1 – Bell Canada HS Internet and Broadband deployment 1999-2008

1999

In its first year, Sympatico High-Speed Edition, based on Nortel Networks' 1-Meg Modem, attracted 50,000 subscribers. We expect to accelerate the roll-out of our high-speed technology and increase our market share in this segment.[28] And competitors are identifying as including "cable companies (e.g. Rogers/Videotron)".[29]

2000

"Anticipating the growing demand for high-speed connections to the Internet, we invested aggressively to make high-speed Sympatico available to the vast majority of our customers."

"By transforming Bell Canada into a full-service communications player, yesterday's phone company now offers wireline, wireless, Internet access, broadband and satellite TV connections, under one trusted brand.[30]

2001

Bell's "billions of dollars of investment in high-speed Internet access extended broadband's reach to over 70 percent of the company's residential and business customers".[31]

[28] BCE Annual Report 1999, page 12
[29] Ibid, page 30
[30] BCE Annual Report 2000, page 6
[31] Mussio, *op. cit.*, page 114

2002 (emphasis added)

"We have made significant capital investments over the past few years, including:

- acquiring and completing a national broadband IP network
- building a next-generation wireless network and expanding PCS coverage
- acquiring regional spectrum licences
- **expanding high-speed Internet coverage in our service territories**
- developing a national satellite television business
- expanding into Western Canada
- enhancing our billing system capabilities.[32]

2003

Our goal is to expand Bell Canada's consumer segment by providing the Broadband Home and offering our customers the advantages of "one-company, one brand and one point of contact." Next-generation services will provide growth opportunities and will include video services...[33]

2004

"We began our pioneering rollout of Fibre-to-the-Node (FTTN). This will eventually allow Bell to deliver all our services—voice, data, video—over a single high-speed broadband network eight times faster than today's current DSL connections.

…A network that will reach almost 85 per cent of all households in the Québec City to Windsor corridor.[34]

[32] BCE Annual Report 2002, page 41
[33] BCE Annual Report 2003, page 33
[34] BCE Annual Report 2004, page 6

2005 (emphasis added)

"Our key strategic investments this year included:

• **expanding our FTTN footprint to deliver higher speed broadband access**
• launching our Bell Digital Voice service
• implementing an EVDO wireless data network in certain markets
• **expanding our DSL footprint through the deployment of new high-density remotes**
• investing in our IPTV platform and IT efficiency projects to achieve cost savings."[35]

2006

We will continue to invest in advanced network enhancements, such as the continued rollout of fibre-to-the-node (FTTN) technology, in order to expand the reach and speed of our DSL Internet service and to enable IPTV services.[36]

2007

"We will continue to invest in advanced network enhancements, such as the continued deployment of fibre-to-the-node (FTTN) technology, in order to meet increased usage demands in a multi-media rich environment and to improve DSL network performance… Our objective is to migrate high-speed Internet customers to FTTN based on demand and willingness to pay for more speed."[37]

2008

We are greatly accelerating the rollout of our high-speed Fibre to the Node (FTTN) network, with about 2.4 million homes covered today and 5 million expected to be passed by 2012.[38]

[35] BCE Annual Report 2005, page 14
[36] BCE Annual Report 2006, page 7
[37] BCE Annual Report 2007, page 11
[38] BCE Annual Report 2008, page 11

6.2 Appendix 2 – Telus HS Internet and Broadband deployment 1999-2008

1999

We led Canadian telcos with our aggressive rollout of high-speed Internet by doubling our original capital spending.[39]

2000

Telus Committed $500 million over five years to invest in ADSL capacity, accelerating the rollout of high-speed Internet in British Columbia and Alberta[40]

2001

On the consumer front, in Alberta and B.C., we are speeding up our high-speed Internet rollout plan by two years.

TELUS Velocity ADSL Internet service will be available to virtually every (more than 95 per cent) home and workplace in 38 key communities by the end of 2003.[41]

2002

Delivered… 195,000 high-speed Internet subscriber net additions, surpassing our cable-TV competitor with the majority of net additions"[42]

[39] Telus Annual Report 1999, page 34
[40] Telus Annual Report 2000, page 16
[41] Telus Annual Report 2001, page 19
[42] Telus Annual Report 2002, page 5

2003 (emphasis added)

TELUS received a broadcasting distribution licence from the Canadian Radio-television and Telecommunications Commission (CRTC) in the fall of 2003 to offer digital television service in select communities across Alberta and B.C., as well as a licence to offer commercial video-on-demand (VOD) services.

Using TELUS' existing high-speed infrastructure, **these licences could enable the Company to compete with cable companies and satellite service providers for TV entertainment services**.[43]

2004 (emphasis added)

"…investments in wireline data networks have been made to extend high-speed Internet coverage **in our incumbent territories in British Columbia, Alberta and Eastern Quebec**".[44]

2005

"We began a targeted launch of our innovative all-digital television service in Calgary and Edmonton, Alberta. Further expansion of TELUS TV service is planned for 2006 through a phased neighbourhood roll-out.[45]

2006 (emphasis added)

We announced a $600 million three-year investment to enhance our broadband network in **B.C., Alberta and Eastern Quebec**, to facilitate increased high-speed Internet sales and prepare for additional Future Friendly Home services such as high-definition TELUS TV.[46]

[43] Telus Annual Report 2003, page 13
[44] Telus Annual Report 2004, page 12
[45] Telus Annual Report 2005, Business Review page 18
[46] Telus Annual Report 2006, Business Review page 19

2007

Telus "delivered by… Continuing to invest in the speed and coverage of our broadband infrastructure" accelerating the rollout of Telus TV to compete against the "near-monopoly power of Shaw".[47]

2008 (emphasis added)

"TELUS advanced its Future Friendly Home strategy in 2008, expanding your company's broadband infrastructure and bringing a wider range of services to more customers. For example, TELUS TV gained **increased traction in our incumbent markets of British Columbia, Alberta and Quebec**, particularly when marketed with local, long distance and high-speed Internet services. TELUS is capitalizing on this momentum by expanding its broadband network to more households in its traditional territories.[48]

[47] Telus Annual Report 2007, Business Review pages 7 and 21
[48] Telus Annual Report 2008, Business Review page 15