



TELECOMMUNICATIONS POLICY REVIEW PANEL

*“Regulating from Yes”: Some Considerations for the
Regulation of the Canadian Telecommunications Industry*

Submitted by Office of the Chief Information Officer
for the Province of British Columbia

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EXECUTIVE SUMMARY

The review of federal telecommunications and related policies by the Telecommunications Policy Review Panel ("Panel") provides an opportunity for the Government of British Columbia to highlight the importance of policy reform to British Columbia and Canada. Significant policy shifts are needed which recognize new competitive realities and provide Canadians with the tools to attain their economic potential.

British Columbia is pleased to respond to the Panel's Consultation Paper. While it is not possible to respond to all of the Panel's questions contained in the Consultation Paper at this time, we look forward to providing additional comments in September.

Information and Communications Technology (ICT) is an important enabler of economic development in British Columbia and across Canada. Indeed, as the province makes the transition from a resource-based economy to a knowledge-based economy, its success will depend to a large extent on the ability to promote and develop intellectual capital. In large measure, this can only be accomplished by fostering an environment that supports vigorous competition in some markets while at the same time ensuring that citizens in remote communities have access to low-cost broadband services. In addition, it is British Columbia's view that Canada's regulatory practices of the past may no longer be appropriate in the future given rapid changes in technology and the emergence of new competitors into the telecommunications marketplace. Therefore, a full review of Canada's telecommunications related legislation and regulations is both necessary and timely.

In the following submission, British Columbia raises a number of issues and suggested actions for the Panel's consideration, including the following:

- The questions posed in the Consultation Paper pay insufficient attention to the "digital divide" that continues to exist in Canada. British Columbia is concerned that service providers (e.g., cable and telecommunications companies) will focus their attention on densely populated urban centres to protect market-share. However, rural and First Nations communities, for example, are part of Canada's economic engine and need affordable broadband connectivity. The Government of Canada committed in 2000 to provide broadband connectivity to every community by the end of 2005. The Telecommunications Policy Review Panel should advocate for these communities and urge the Government of Canada to reaffirm and fulfill its commitment.
- Due to the vast changes that have occurred since the enactment of the *Telecommunications Act* and the *Radiocommunication Act*, and the way that communications and broadcasting are converging, thus affecting the *Broadcasting Act*, a complete and comprehensive review of these three pieces of legislation should be undertaken with the goal of ensuring that federal legislation reflects, and is sufficiently flexible for, the changing telecommunications environment.

- The current form of regulation is methodical but time consuming. Even given recent efforts to improve tariff approvals, the Government of British Columbia is concerned that exceedingly thorough regulatory scrutiny could delay competition and stifle innovation and investment. Targeted deregulation will foster increased competition and innovation, and generate more choice for consumers. A more moderate approach to regulation, such as adopting the policy of "regulate from yes", would reduce some of the regulatory burden faced by the industry and allow innovative technologies more rapid introduction into the marketplace.
- Administrative tools should be developed that allow for escalating sanctions rather than requiring parties to resort to quasi-criminal prosecution. While the Canadian Radio-television and Telecommunications Commission (CRTC) has broad powers under section 55 of the *Telecommunications Act*, a separate supervisory body should be established that has the authority to impose administrative, escalating sanctions. This would allow for the separation of the role of the "rule maker" from that of the "rule enforcer".
- Questions are raised in the Consultation Paper regarding the authority of the CRTC over matters such as access to power support structure and private property. The Government of British Columbia considers access to power support structure to be a matter within provincial jurisdiction and should remain so.
- Many communities in Canada, including in British Columbia, have attempted to or are in the process of installing their own municipal fibre systems. These are not experienced telecommunications companies but rather are municipalities or, in some cases, not-for-profit organizations. Some need to obtain access to carrier facilities such as pole lines or, in some cases, central offices. However, in some instances they face onerous tariff requirements and processing delays. The Panel should recommend a process that would encourage small local entrepreneurs and not for profit networks to deliver services in rural regions by significantly relaxing the regulatory burden they currently face.
- The Panel should encourage the Government of Canada to more closely collaborate with the provinces and territories in the delivery of ICT throughout Canada. We encourage the federal government and the provinces and territories to find ways to use ICT and new modes of communications to improve the delivery of health care services throughout Canada. The Government of British Columbia views ICT, and communications in particular, as an important instrument in the growth of Canada's economy and suggests that the provincial governments be included in the development of communications policy in Canada. British Columbia is prepared to work with the federal government to do this.

British Columbia appreciates the opportunity to discuss these issues with the Telecommunications Policy Review Panel.

1.0 INTRODUCTION

1. This paper presents two major themes. First, the adoption of ICT is an important enabler of economic development in Canada. British Columbia is transitioning from a resource-based economy to a knowledge-based economy by developing and promoting our intellectual capital. In large measure, this can only be accomplished by fostering an environment that supports vigorous communications competition in some markets while at the same time ensuring that citizens in remote communities also have access to low cost broadband services. This leads to our second theme: that Canada's regulatory practices of the past may no longer be appropriate in the future given rapid changes in technology and the emergence of new competitors into the telecom marketplace. This call for regulatory review is therefore both necessary and timely.
2. This is a "staff paper" developed by NetWork BC¹ (NWBC) in collaboration with the Ministry of Labour and Citizens' Services, the Ministry of Economic Development (Trade and Competitiveness Branch, Infrastructure Development Branch and the Economic Analysis Branch), the Ministry of Small Business and Revenue (Regulatory Reform Branch and the Small Business Development Branch). Our thanks also goes to the Intergovernmental Relations Secretariat (Economic Policy and Initiatives), the Ministry of Transportation and the Ministry of Public Safety and Solicitor General.
3. British Columbia notes the Organization for Economic Cooperation and Development report entitled "Regulatory Reform in Canada – From Transition to New Regulation Challenges"² and agrees that while Canada has demonstrated a number of strengths in regulating its telecommunications industry, there do exist areas that can be improved that, if implemented, will enhance Canada's future global competitiveness. British Columbia is therefore pleased that the Honourable David Emerson, Minister of Industry, has appointed a Telecommunications Policy Review Panel to review and develop recommendations that, if acted upon, will better position Canada and its telecommunications industry for the future.
4. Regulatory reform is no stranger to the citizens of British Columbia. Prior to his election in 2001, the Honourable Gordon Campbell, Premier, announced 201 "New Era Commitments" intended to revitalize the economy of this province. The purpose of the New Era Commitments was to identify specific areas where

¹ For more information about NetWork BC, the reader is directed to www.network.gov.bc.ca. NetWork BC is a department that reports to the Chief Information Officer for the province of British Columbia.

² Regulatory Reform in the Telecommunications Industry, Organisation for Economic Co-operation and Development (OECD), 2002.

government could make substantive changes that would improve the business climate in British Columbia.³

5. One of the New Era commitments identified was a commitment to a “New Era of Prosperity.” Included in that commitment was a promise to “cut red tape,” an initiative that has been closely linked to productivity improvement, the stimulation of economic growth and job creation. By implementing this commitment, the government of British Columbia has eliminated approximately 145,000 regulatory requirements resulting in a net 37% reduction in regulations in British Columbia.⁴

6. The views expressed in this submission are presented in the spirit of suggesting improvements to the telecommunications regulatory foundation established in Canada over the past one hundred and ten years. Also, there are three hyperlinks to some short “vignettes” that emphasize some of the messages delivered in this submission. We would ask that the readers take the opportunity to review and consider the vignettes as part of this submission. These vignettes were produced via a partnership with Industry Canada. Finally, British Columbia hopes that in making its recommendations the Telecom Review Panel will encourage Industry Canada to take a leadership role in “Regulating from Yes” by proposing legislative changes that will foster an environment conducive to the rapid and diverse technological changes that are emerging in the global communications industry

³ New Era Review, April 2005

http://www.gov.bc.ca/bcgov/content/docs/@235G1_0YQtuW/New_Era_Review.pdf

⁴ New Era Review, April 2005

2.0 PART A: The Changing Telecommunications Environment

Forces Shaping the Future

A. 1 *Comment on the technological developments described above and provide your view on how telecommunications and ICT will change over the next ten years.*

7. Changes in technology and customer expectations have significantly impacted players within the telecommunications industry. No longer do telcos compete only with each other but now and in the future they will have to contend with competition from other industry sectors such as the cable, power and the wireless industries. Further, through technological advances service providers will not be restricted in what they will be able to offer. Cable companies are already offering voice services. Telcos are starting to offer entertainment services and some power companies are starting to offer services that compete with both the cable companies and the telcos. While it is perhaps a bit too early to determine how extensive competition will become, it appears that some urban marketplaces will see significant competition for the consumer's business.
8. Currently, telcos are moving away from the traditional copper based wire-line networks and are investing in fibre based IP capable networks, the so-called "next generation networks" ("NGN"). The key to the NGN is the IP layer, an interconnection of networks that facilitates the provision of universal connectivity between end-point devices.⁵ While telcos will have to continue investing in the maintenance and the strategic expansion of their legacy network infrastructure, they will also have to invest in their NGNs in order to serve and attract existing and future customers. However, telcos are not the only ones capable of owning and operating a NGN. There are others that also own fibre assets that could be used and assembled to create an alternate communications network.
9. For example, owners of private networks (such as railway companies, power utilities and municipalities) are and will start to provide customer-specific solutions to select customer groups. Some railway companies already have fibre installed within their right of ways and with indefeasible right of use ("IRUs") swaps, railway companies could expand their communications footprint throughout all of North America. It would not take much for them to commercialize their excess fibre capacity and develop an extensive transport network. As well, some hydro utilities, such as Toronto Hydro Telecom, are already offering telecom services. Others could follow suit. In addition, several municipalities in British Columbia are building their own fibre distribution networks with the expectation that this will not only reduce their communications costs but will also boost their local economies and make them more competitive.

⁵ The writer recognizes and thanks Peter Watkins, Executive Director, Technical Planning and Standards, and Roman Mateyko, P. Eng., for their comments, contributions and review of this submission.

10. With the potential emergence of network alternatives, such as those that are and could be offered by railway companies, power utility companies and municipalities, if properly encouraged, the introduction of ICT could be expedited and offered by a variety of service providers, not just telcos and cablecos.
11. With emerging new carriage technologies such as wireless, broadband over power line (“BPL”) and technological convergence, carriers will no longer be competing with their old adversaries (other telcos) but will see increasing competition from entirely different sectors such as electrical utilities, owners of private networks and non-network service providers (e.g., Microsoft, Primus, Vonage and Skype) enter the marketplace.
12. Originally, the “intelligence” of telecommunications networks was located in the central office. As technology advanced, some of the “brains” moved to the customer premises in the form of key systems and PBXs. That shifted again with the move to Centrex services, services that could be entirely replaced in the future by voice over Internet protocol (“VoIP”). In the case of VoIP, the required application can reside almost anywhere in the network and does not have to be “owned” by the customer or the telco. The VoIP service provider does not have to own network facilities but can ride on top of someone else’s network. Future network services will not be confined just to the carriers.
13. So, if you take privately owned network assets and add to that licensed radio spectrum previously granted that has never been commercialized, BPL as an alternate way of delivering broadband, Wifi and WiMax and put these all together, a non-traditional, non-telco owner/operator could provide an alternate IP network that could compete with traditional carriers and cablecos.
14. An important question arises as to the impact that regulation could have on the development of such a network. Take for example BPL. What impact will future regulations have on the introduction of BPL? Should electrical power companies become telecom regulated if they merely provide access to their support structure and/or power lines to non-facilities based service providers that provide broadband services using BPL? If regulated, what would the effect be on BPL as an emerging technology? Would power companies make their infrastructure available to others if they came to be faced with yet another regulator? What could be a promising technology could take longer to be introduced while the regulatory issues are addressed and the power utilities assess the implications of those regulations on their operations.
15. In the near future, traditional telco and cableco networks will continue to exist. However, an entirely alternate network comprised of power-line, WiFi, WiMax, satellite spectrum and fibre optical networks owned by others could be organized in a way that could provide a secure, alternate, technologically agnostic network available to a variety of service providers. This could be

characterized as a virtual “one pipe” IP network, a mesh of disparate elements that conforms to standards that would allow any permitted user to connect at any point in the network (not necessarily in Canada) to provide a variety of applications and managed services to end-users not necessarily located in Canada. In developing and suggesting a new regulatory regime for Canada, the TRP should consider recommending legislative provisions that will encourage the growth and development of alternate networks because, by encouraging the introduction of alternate IP networks, there will be more available vehicles for the early introduction of ICT in Canada.

- A. 2 *Comment on the potential for different networks (i.e., wire-line telephone and cable networks, terrestrial wireless, satellite and hybrid networks) to carry existing and new ICT applications. Provide any relevant information on the infrastructure costs, bandwidth, security, reliability and other features of such networks.*
16. There appears to be no doubt that wire-line and cablecos will play a continuing role in the carriage of existing and future ICT applications. After all, wire-line networks have supported telephony for over one hundred years and will likely do so for some time into the future. Add to this the potential offered by distributing broadband over power-line and one might have thought that there might be sufficient infrastructure solutions available to address all of Canada’s future communications requirements. However, there remain some challenges.
17. For example, Canada’s geography is extremely diverse. From the northern most part of Canada (where the population is sparse but clustered, yet separated by great distances) to provinces like British Columbia where the physical geography is extremely challenging (lending itself more to wire-line and satellite solutions due to the mountainous terrain) to heavily populated areas where citizens are densely clustered, there will be no single ubiquitous solution. So, the problem will continue to be ones of transmission, distribution and the overall sufficiency of bandwidth to support future ICT applications.
18. From the transmission point of view, future legacy networks will continue to play a large role supporting ICT applications. Optical networks will support this, particularly as they become more pervasive. However, optical networks are not widely available in remote regions and certainly may never become widely available in the far north. Even if fibre optic networks were to be installed in remote regions in Canada, the cost of installation and the required return on invested capital (both in terms of investment recovery and the leveraging of invested capital) might never make such installations viable for the carriers. Therefore, one must look to alternate forms of carriage such as continued use of microwave (still very costly), wireless and an increasing use of satellite spectrum. The vexing question in the future (as has always been the case) will be: how do we satisfy an ever-expanding appetite for affordable bandwidth?

19. Transmission is only one part of the picture. Distribution or last mile solutions also remain a significant issue, particularly for citizens not living within urban communities. Let's divide this into two parts: intra-community distribution and distribution to citizens living outside of community clusters. In the case of "intra-community" distribution, telecom infrastructure may be reaching its limits and, unless there are some new technological breakthroughs, will not be able support high bandwidth demanding applications. In addition, the cost to install network upgrades is significant and is sometimes difficult to justify from a business case point of view. The answer, at least in part, may be to encourage the development of alternate technologies such as WiMax, Wifi, perhaps satellite and possibly BPL. All of these offer great promise but are in the early stages of introduction. Costs, reliability, customer confidence and acceptance all remain issues.
20. BPL is a technology, in early development that shows initial promise. At present none of the major power companies appear to be offering BPL but it is being researched. Indeed, the Sault Ste. Marie power company is actually using this technology. While BPL appears to offer considerable potential, particularly for last mile solutions in remote areas, further research, development and investment may have to be encouraged. Also, making electrical distribution lines available to communications service providers across Canada could require considerable deftness because power is provincially regulated and is therefore subject to different legislation and regulators throughout Canada. Though one might predict that using the North American power grid to transport communications could be done, one wonders whether or not the diverse regulatory matrix that exists could ever be successfully addressed. The Commission is certainly proactively reviewing the situation but it remains to be seen what will actually happen with BPL as a commercial offering.⁶ The longer it takes for a definitive decision on the issue, the longer that it will take for the power companies to make the informed decisions that they will have to make before permitting BPL to be used on their facilities.
21. This issue of ICT adoption in the context of a one pipe network is a difficult one. As will be discussed later, if one pipe really consists of a variety of IP enabled network elements the combination of which serves to provide overall broadband access one must add to this applications or attributes (such as QoS and security) so that the concept of one pipe is not merely one of carriage but includes issues related to QoS, content and security. A reliable, robust, low cost infrastructure is the keystone to the further introduction of ICTs.

⁶ Consultation Paper on Broadband over Power Line (BPL) Communications Systems. Issued by Industry Canada as SMSE 005-5, July 2005.

- A. 3 *Are “one pipe, multiple applications” networks likely to become the primary means for ICT applications to be provided to Canadians? If not, why not?*
22. It is difficult to imagine how a true “one pipe” system, where individual service providers share a single connection to homes and businesses, will evolve given the current nature of the telecommunications marketplace. Isolated examples of one pipe systems may develop as new subdivisions that feature fibre to the home are built or as municipal networks reach out in mid-sized communities but it is unlikely that Canadian telecos, cable companies and others suppliers offering such services as video on demand, alarm services or gaming services will share a single pipe in the near future without a massive - and likely unpalatable - intervention in the market place by the federal government through regulation.
23. At some point in the future the competition between cable companies and telecos may result in one technology becoming dominant and result in single companies connecting the majority of homes and businesses on a regional basis. This will still not be a one pipe system according to the popular definition as the owner of that system can be expected to maintain a decided advantage in offering services over that network. The alternative being non discriminatory or open-access generally considered as part of this model.
24. There is another view on how “one pipe” networks could evolve. Theoretically, there should be no reason why a “one pipe” network could not be created over time using alternative suppliers via wireless, municipal fibre or broadband over powerline. This network could then be opened to applications providers. But, this network model would be new to Canada and would have significant difficulty penetrating the hold that existing suppliers have on the customer. In addition to exploiting existing facilities this model would require significant new construction and there will still be significant gaps. For example, there are large regions of British Columbia where the only fibre access is controlled by the incumbent.
25. The problem, as we see it, is whether or not there would be enough incentive for any entity to step up to the mark and take a leadership role in developing what would amount to an alternate, ubiquitous openly accessible network that would support multiple applications. If this is a desirable result, then any future legislation will have to be developed in a way that would support this result.
- A. 4 *Are there likely to be multiple IP network providers offering service to the home, business and public sector? If so, how many and which types of network providers are likely to be providing services to each market? If not, which types of network providers are likely to service each market and with which technologies?*

26. While telco and cableco industries will likely have far better market intelligence on who is and who will be providing what services and in what market places in the foreseeable and distant future, British Columbia would like to make a few observations.
27. While it is possible that businesses and the public sector may have a choice of IP service providers (providers of applications) in the future, the nature of IP networks is such that once you choose a service provider, be it for business or a definable public sector, you more or less become committed to that specific provider - depending on scale and scope it may be technically difficult and sub-optimal to provision a single autonomous system using multiple providers. In the case of businesses, once the choice is made, the customer generally stays with that service provider for a long period of time because it is simply too disruptive to change service providers every few years. Unlike long distance service providers, it's technically difficult to quickly change IP network providers.
28. From a residential point of view, while the customer may have a choice of service providers, there are some problems with having multiple service providers. For example e-mail addresses are not portable so if you have a telco supplied mail service, you can't move that to another service provider. People tend to want to keep their e-mail addresses, particularly if they have them for a long time. Second, high-speed Internet service is somewhat bundled to your telco service. That is, if you don't want cable high-speed services, but want to get that service your choice is either a wireless service provider or a telco service that requires you to obtain local basic services from the same telco. Third, there are pricing incentives to purchasing service bundles from any of the service providers. The more services that you purchase, the better the discount. So, while there may be many IP network providers in the market place, the service is "sticky". Once you choose a service provider it is likely best to stay with that provider for the whole spectrum of services.
29. Where it is unlikely that there will be multiple suppliers in some regions, in fact where there has been some difficulty attracting any suppliers, is in rural and remote regions. Recognizing the existence of a "digital divide in British Columbia,"⁷ the provincial government set out to find a solution to connect all of its communities⁸ before the end of 2006 without any capital investment by government. On March 23, 2005, government announced that it had signed a Connecting Communities Agreement (the "CCA") with Telus. This agreement will fulfill the commitment by the provincial government to bring high-speed Internet to the 366 provincial communities with public schools, libraries or healthcare facilities. TELUS agreed to provide low-cost, high-speed Internet connections (10Mbps+) to 119 of these communities. The average population

⁷ Premier's Technology Council, First Quarterly Report, November 22, 2001.

⁸ A "community" was defined by the Premier's Technology Council to mean anywhere in British Columbia with a place name and either a public school, a library, or a health care facility.

- of each of those communities is 310 people. In addition, there are approximately 340,000 people who live outside of the 366 communities, including 70 First Nations. It is difficult to imagine how these additional citizens will be connected without a concerted effort by provincial and federal governments.
30. Government faced some very difficult challenges because the communities were very small, the cost to upgrade network facilities to deliver broadband services was very high and in many cases, it was difficult to interest local community champions (i.e., ISPs) to provide the required investment to serve the customers. Were it not for the initiative of British Columbia and TELUS' proactive support, a solution to this particular problem would not have been achievable.
 31. It is extremely important for the TRP to understand and clearly communicate to Industry Canada the concern that in developing any future policy or legislative regime, that Canada's economic and regional diversity must be fully addressed. The questions and issues are far more complex than whether or not multiple service providers will, in the future, serve homes and businesses. For urban areas, this is already occurring and will probably continue to be the case. However, the question that must also be addressed is whether or not all Canadian communities will receive adequate, affordable broadband services in the future absent significant ongoing financial and other support by all levels of government. This is not a regional issue. This is a Canadian issue that impacts each region differently.
 32. British Columbia feels that the question posed is really asking for answers that focus on larger urban centres. While this is certainly important, supplementary and equally important questions are:
 - i. What will be done to make certain that all parts of Canada receive the broadband services promised to them by the federal government in 2000? The federal government seems to have abandoned this commitment.
 - ii. What will be done to ensure that once those services are provided, that the recipients will continue to receive the quality of affordable services required to support ICTs?
 33. These questions should also be addressed in the context of this review and recommendations made to Industry Canada by the TRP. British Columbia therefore requests that the TRP raise and address these issues as part of its review and include a recommendation that the government of Canada deliver on its previous commitment to ensure that every Canadian is provided with broadband connectivity by the end of 2005.
 34. As to the issue of the types of networks that will be employed, service providers that provide Internet services within small communities tend to use the most

cost-effective mode of distribution available, usually some form of wireless technology. While network security is important, cost-effective access is essential. The answer to the question, at least insofar as small communities are concerned, is that until equipment and network access costs drop precipitously, consumer take-up and populations rise dramatically, it is unlikely that there will be multiple IP network providers in small communities. Clearly, in communities of less than 300 people, there is a very low upper limit to potential demand. In fact, British Columbia has found it necessary to actively promote the CCA by establishing a fund to attract service providers to some of the communities served through the CCA. These communities may not really need multiple service providers, just one reliable service provider that is able to provide “postage stamp” priced services. Physical location should not be an impediment to affordable broadband connectivity.

- A. 5 *Is the Canadian competitive environment in telecommunications likely to evolve into a form of duopoly (i.e., incumbent local exchange carriers (ILECs) versus cable companies)? If so, what would be the implications for the telecommunications and ICT markets? What would be the implications for the regulatory framework?*
35. The early signs are that this current competition will evolve from telco to telco competition to the cable industry, wireless service providers and possibly power utility companies taking direct aim at selected targets within the telecommunications industry. Shaw is starting to offer VoIP services in TELUS’ serving territory. TELUS is proposing to offer high definition entertainment services in Shaw’s territory. Shaw, through its affiliate Big Pipe, is offering a highly competitive inter-city data access service in some marketplaces. Bell has also recently entered into the market with its acquisition of Cable VDN Inc. of Montreal.⁹ Sasktel and Manitoba Tel have both been offering television service over their copper loops for some time. Telus has announced the introduction of television services in the near future. Toronto Hydro Telecom is offering telecom services and Sault Ste. Marie is offering a BPL service. It is still a bit early to determine whether the introduction of new technologies such as BPL will bring additional players offering competitive IP services to the market place. There could be multiple service providers that could compete for some of the same customers though not necessarily in respect to all service segments. The key could be whether or not applications emerge that allow them to compete.
36. The key to this may be the applications that are being developed. For example, Microsoft is working on an IPTV application that could enable the telcos to compete more effectively with the cablecos. As noted in a recent *Globe and Mail* article, “recent technology improvements and an emerging battle between the telecom and cable industries have created a huge opportunity for Microsoft

⁹ McLean, Catherine. *Globe and Mail*, August 2, 2005.

to pitch software as the standard platform for a new type of TV coming to the mass market over Internet-based networks.”¹⁰

37. The key, at least according to a recent article in *The Economist*, is to lure customers with a “triple-play bundle” of TV, broadband and telephony services.”¹¹ However, “it would be a nightmare for them to invest huge amounts of capital into infrastructure upgrades and customers simply sign up to their huge bandwidth and then use it not to buy the services touted by the telecom firms but instead to buy independent or web-based services such as Skype for making calls or (when the service is launched) Netflix for downloading movies.”¹²
 38. The implication for ICT and the telecommunications industry is that there will remain considerable uncertainty, at least for the foreseeable future. Telcos must keep their core customers intact, preserve their existing legacy networks, expand their wireless networks, develop their next generation networks and watch the horizon for the competition while trying to respond to disruptive technologies and customer demands.
 39. From a regulatory point of view, the eventual framework must be responsive enough so as not to dampen the introduction of alternate services and networks. Some network owners may not qualify as “Canadian carriers” due to their ownership. If access to alternate networks is something that is desirable, then the issue of foreign ownership may have to be addressed.
- A. 6 *Is vigorous inter-regional competition by ILECs and cable companies likely? Please explain the basis for your views.*
40. At present, it is difficult to determine the extent to which ILEC/cable company inter-regional competition will occur. Shaw has begun to introduce VoIP within TELUS’ territory, but it remains to be seen how successful that offering will be. Initial reports seem to be encouraging. Bell is also moving into British Columbia, but it has limited its efforts to leveraging its Group Telecom/360 Network assets in the British Columbia business marketplace and to supporting the efforts of Shaw to introduce residential phone service.
 41. It may be a bit too early to reliably predict how much more intense inter-regional competition will become until the telcos have had some time to actually introduce their entertainment offerings. As noted above, the key may be how well IPTV applications work and whether or not telcos can obtain access to low cost entertainment content. On the other side of the fence, cablecos could offer VoIP at aggressive prices in some marketplaces. So, it

¹⁰ Avery, Simon. “Drop That Remote: Microsoft wants it,” *Globe and Mail*, August 7, 2005.

¹¹ “The War of the Wires,” *The Economist*, July 28, 2005.

¹² *The Economist*.

appears that some marketplaces are becoming well positioned for competition, but there are still a few parts of the puzzle required to complete the picture. Finally, what works in one province may not work somewhere else. What may become clear is that trying to create a “one size fits all” regulatory solution for Canada may not be the answer.

- A. 7 *Assuming a “one pipe, multiple applications” environment does evolve, describe the effect of this environment on the market position of existing service providers (e.g., ILECs, cable companies, wireless service providers, Internet Service providers, etc.) and any new entrants. Provide market share projections, if possible.*
42. British Columbia is not able to accurately predict future market share projections and will leave this to carriers and cablecos to comment upon.
- A. 8 *Comment on the need for ongoing financing of advanced and legacy network infrastructure in Canada and on how such funding should be obtained by network providers in a “one pipe, multiple applications” environment. Since VoIP and other advanced ICT services may be provided separately from access networks, how should network infrastructure be financed in the future?*
43. British Columbia offers no comment on these questions other than to suggest that any future regulatory framework should be flexible enough to encourage the introduction of new networks into the marketplace. For example, if an operator (not necessarily qualifying as a Canadian controlled company) took the initiative of assembling network elements such as available optical network capacity (secured from a variety of sources), wireless spectrum and, perhaps, power-line access managed by that operator, we would hope that such operator would be encouraged to operate and not be faced with undue regulatory constraints. If this “operator” is not a traditional carrier and is able to generate enough interest to utilize its network, should it not be encouraged to do so even if its costs are based on different economic considerations than those of existing carriers? Wouldn’t this be enough to discipline the marketplace? If this form of competition would be desirable, then the regulatory regime would have to be able to accommodate this option.
- A. 9 *Provide any other comments on the implications of IP and other new technologies for the Canadian telecommunications and ICT sector that the Panel should take into account in developing its recommendations.*
44. Though we know that there are many important issues that bear consideration, British Columbia would like to draw the TRP’s attention to the following issues

that have been identified by the British Columbia Government Information Policy and Privacy Branch¹³.

- How will the privacy and security of individuals continue to be protected as new technologies and applications are introduced?
 - Are changes required to the Criminal Code to address issues such as eavesdropping or wiretapping voice over IP communications?
 - Are there instances eavesdropping or wiretapping should be permitted without judicial oversight (such as in cases of national security) and if so, what will the safeguards be?
 - Should more severe sanctions be imposed to discourage identity theft, spyware, viruses, phishing, pharming, spam, etc.?
 - What role, if any, should the carriers and other application service providers have in “policing” inappropriate Internet activity?
 - How will consumer confidence in electronic media be maintained?
 - Should the regulator impose or require standardized identity credentials for individuals and businesses to ensure that transactions are legitimate?
 - How does/will the U.S. *Patriot Act* impact the Canadian telecommunications industry? In particular, what are the implications of this *Patriot Act* on Canadians that receive communications services from American-controlled companies? What about the preservation of personal information and the implications for national security?
45. These are serious issues and questions that should be addressed by the TRP in its report.
46. British Columbia also suggests that the TRP address the importance of technology in preserving and enhancing Canada’s multicultural fabric. For example, many of our First Nations citizens live in remote parts of Canada. As their elders pass on and their children relocate, they risk losing linkages to their languages and heritage. Canada has always valued its multicultural character and can certainly use ICT as a tool to preserve cultural identity and diversity while at the same time allowing individuals to relocate. For a case in point, British Columbia directs the reader to www.network.gov.bc.ca/communities/movies.htm (click on e-education). Listen to what Don Maki, Director of Language Resources–Ktunaxa/Kinbasket Tribal Council, has to say about the essential role that broadband technology is playing in the preservation of the Ktunaxa language. British Columbia therefore requests that the TRP specifically identify the importance of ICT as an important tool in preserving and protecting Canada’s multicultural identity.

¹³ The writer also thanks the Information Policy and Privacy Branch, Strategic Planning and Policy, Office of the Chief Information Officer and the Solicitor General for their input on these questions.

A. 10 *Comment on the development of wireless services in Canada over the next 10 years and the implications for Canadian productivity, competitiveness and social benefits.*

47. In researching this issue, British Columbia found a convenient summary of the status of fixed wireless broadband in the Evidence of the Commissioner of Competition filed with the CRTC on June 22, 2005, as follows.¹⁴

In Canada there are several frequency bands already available for wireless broadband and Industry Canada has announced its intent open up additional spectrum in the near future.

The 2500 MHz band is currently licensed for Multipoint Distribution System (MDS) broadcasting and for wireless Internet Multipoint Communication System (MCS) services. In November 2001, the Minister of Industry announced that mobile and fixed allocations would be made throughout the band.

A public consultation process was also announced on opening the 3500 MHz band for Fixed Wireless Access (FWA) and Wireless Communications Services (WCS) currently operating in the 2300 MHz range. The Department indicated that up to 200 MHz for FWA and 30 MHz for WCS could be opened in the 3500 MHz band.

Other wireless broadband spectrum suitable for high capacity point-to-multipoint can be found at the 24 GHz and 38 GHz bands where 1200 MHz of spectrum was auctioned for this purpose in 1999. It should also be noted that 1000 MHz of spectrum designated for Local Multipoint Communications Systems (LMCS) in the 28 GHz band was licensed through a comparative licensing process in 1996. That licence was recently returned to the Department and plans to re-assign this spectrum have not yet been announced.

Finally, Industry Canada is currently undertaking a comprehensive review of the use of spectrum in the 3 to 30 GHz range. As a result of this review, additional spectrum could be designated for wireless broadband access.

Terrestrial wireless networks are often categorized by the extent of their coverage area. A Local Area Network (LAN) can typically serve an area of 5 km in a point-to-multipoint point configuration. Wireless LANs include IEEE's 802.11, 802.11b, 802.11a, and 802.11g compliant and extended devices.¹⁵ These networks also include Wi-Fi designated

¹⁴ Telecom Public Notice CRTC 2005-2, Evidence of the Commissioner of Competition filed June 22, 2005, paras. 96-113.

¹⁵ http://broadband.ic.gc.ca/pub/technologies/tech_factsheets/wireless/wirelessbb/contents.html

802.11 devices which offer the advantage of inter-operability with each other, regardless of manufacturer.¹⁶

Wireless LANs are typically used in homes or office buildings but are also gaining wide acceptance for broadband "hotspot" service; e.g., pay per use broadband wireless access in cafés, airports, and hotels. In addition, 802.11/Wi-Fi systems can provide broadband data services to small communities. These systems can only accommodate a limited number of subscribers and operate at a reduced data transfer rate between the hub and subscribers, typically 128 kbps to 500 kbps.

Metropolitan Area Networks (MANs) usually provide much higher capacity and cover a greater area (up to 10 km) than LANs. In areas of high usage, wireless MAN operators can install additional hubs with each covering a smaller area but effectively increasing the total capacity available to customers.

Although the IEEE has just recently developed and released the 802.16 standard for MANs,¹⁷ most existing metropolitan area networks have been deployed using devices based on proprietary technologies. Although these proprietary technologies are similar to those used for 802.11, devices that belong to different manufacturers will generally not operate with one another.

Wide area networks (WANs) are designed to provide high capacity data network access over large areas. First generation wireless WANs required antennas at both the hub and subscriber location to have a clear line-of-sight (LOS). Subscriber antennas were usually mounted on towers to ensure a clear LOS to the hub. As a result, the cost of first generation equipment was high and the installation somewhat inconvenient.

New non-line of sight (NLOS) technologies have been developed that rely on the radio being able to decode a usable signal in the presence of multiple reflected signals. However the coverage area of NLOS systems is limited when compared with LOS radio systems (e.g., typically 5 km or less), which makes them less suitable for WANs.

Several factors can affect the coverage and operation of a radio system. For example, radio coverage typically decreases as frequency increases. Since the wavelength of a radio signal decreases with frequency, radio

¹⁶ The Wi-Fi Alliance is an international association which certifies interoperability of wireless LAN products based on the IEEE 802.11 standard; 802.11b and 802.11g devices operate in the frequency range 2400-2483.5 MHz, whereas 802.11a devices operate in the frequency range 5725-5825 MHz. These devices do not require radio licence but must be certified for use in Canada.

¹⁷ www.wirelessman.org. This may lead to greater inter-operability between devices from various manufacturers.

signals at higher frequencies are affected more by obstructions (such as trees, buildings, etc.) and atmospheric conditions (changes to humidity and temperature can effectively cause radio waves to bend; rain, snow, and fog can weaken radio signals at frequencies above 5 GHz).

Antenna characteristics (including design, height and size) and transmitter power will affect coverage area while changes in atmospheric conditions can have a significant effect on radio signals. Interference can also occur between two or more systems or devices that are operating on the same, or nearby, frequencies, within close proximity of each other.

Despite some technical challenges, the use of wireless technology for broadband is well underway in Canada. Numerous companies offer a wireless broadband service in both rural and urban areas. These include Inukshuk,¹⁸ ICA Wireless, TeraGo Networks Inc.,¹⁹ Bell Canada²⁰ and many other regional and local providers.

It is of interest to note that Bell Canada has also recently joined with US based Clearwire Corporation to become Clearwire's exclusive strategic partner for VoIP and certain other value-added IP services and applications in the United States.

Clearwire's core offering is a non line-of-sight (NLOS) wireless broadband data service (up to 1.5 Mbps) that uses technology provided by NextNet, a Clearwire subsidiary. As Clearwire's VoIP partner, Bell Canada will manage the deployment and operation of Clearwire's US VoIP offering.

Fixed wireless networks that can provide VoIP are still in the early development stage. It is also unclear at this point whether such facilities will be primarily owed by new entrants or by players already in the market (e.g., Rogers' ownership of Inukshuk and Bell Canada's wireless broadband network in Alberta).

¹⁸ Inukshuk Internet Inc. is a wholly owned subsidiary of Microcell Telecommunications Inc. (TSX: MT), a Canadian provider of Personal Communications Services (PCS) under the Fido® brand name. Microcell was recently purchased by Rogers Communications Inc. Inukshuk Internet was granted licences from Industry Canada for Multipoint Communications Services (MCS) spectrum in the 2500 to 2596 MHz frequency band, to build a "last mile" broadband wireless access network. The licences cover a population of some 30 million people, comprising all the provinces and territories of Canada, with the exception of Manitoba and Saskatchewan.

¹⁹ TeraGo Networks holds 70 frequency licenses in the 24 and 38 GHz bands, which allows the company to operate in British Columbia, Alberta, Manitoba, and Ontario. TeraGo is backed by institutional investors and venture capital firms such as Dolphin Equity Partners, Dynamic Ventures Opportunities Fund, Ontario Municipal Employees Retirement System (OMERS) and CIT Group. TeraGo's corporate headquarters are based in Toronto, with operations & IT based in Calgary.

²⁰ Bell Canada has announced that it is deploying DragonWave's AirPair Flex product for use over its fixed wireless broadband network in Alberta.

Broadband can also be delivered over satellite and recent announcements indicate that service is now entering the market.²¹ However, the practical usability of satellite broadband for VoIP is questionable given the signal delay of satellite.

48. Will wireless, as a way of connecting to the Internet, improve Canadian productivity, competitiveness and have social benefits? Let's see what some of British Columbia's rural business operators have to say about the importance of the Internet to them at www.network.gov.bc.ca/communities/movies.htm (click on e-business). From the log house fabricator to the organic farmer to the First Nations native arts craftsman, access to the Internet using wireless broadband connections allows these entrepreneurs to market and build their businesses from within their own communities. The comments made by Wilfred Jacobs (who learned to use a computer in his 70s), an elder of the Ktunaxa Nation, about how he has used wireless broadband Internet access to sell his handmade tepees in Tasmania, Sweden, South America, Europe and the Middle East is particularly interesting. You can also visit his website at www.tepee.ca. These are prime examples of the importance of wireless Internet, something that is perhaps lost on those of us who take high-speed Internet service for granted. For many, wireless Internet is an economic life-line.

A. 11 Please add any comments on the evolution of telecommunications networks or the telecommunications industry structure over the next 10 years that the Panel should take into account in developing its recommendations.

49. A trend that has been emerging in British Columbia is for some municipalities to install their own fibre systems. Since municipalities control highways within their jurisdiction and, in some cases, also own or control duct banks, manholes and other utility corridors, it is relatively easy for them to install fibre networks connecting multiple municipal buildings, the cost of which can be partially offset by selling excess fibre capacity in the form of fibre strands, IRUs or managed services to other customers and local service providers.
50. From a cost point of view, this generally reduces the cost of broadband access to the users (the municipality and other third parties) since they no longer have to pay for multiple connections to the Internet. Rather, they merely connect the municipal network to a single external data network connection point provided either by a telco or a cableco. Since the cost of obtaining services through such networks is closer to "cost" and does not require the margin of profit required by commercial service providers, the eventual cost to the user over the life of the agreement can be dramatically reduced.

²¹ See Telesat Press Release, March 25, 2005 announcing the use of their newly launched Ka band satellite for a broadband Internet service.

51. For example, the City of Victoria recently announced that it will construct 20 kilometres of fibre optic network to connect 11 municipal buildings at a project cost of \$500,000.00. This installation will be used to replace a service previously provided by Group Telecom at an annual cost of approximately \$150,000. It is predicted that the project will pay for itself within 5 years.²² Prince George and Penticton have operated fibre plants for several years. Similar projects are now underway in Castlegar, Kamloops, Sparwood and Radium Hot Springs. The Columbia Mountain Open Network (“CMON”) has also recently agreed to supply fibre connections to schools and government offices in the Trail and Castlegar regions. This will result in low-cost broadband access to businesses, municipalities and local ISPs.
52. The point is that municipalities have determined that it makes sense for them to own some of their own facilities and to sell excess capacity to others to offset part of the operational and capital costs of those facilities. Some benefits of encouraging this type of initiative include the following:
- promoting economic development and transitioning local economies by providing access to low-cost fibre in advance of other communities;
 - meeting one’s own perceived, unique communications requirements (capacity and quality of service), rather than merely accepting solutions provided by carriers;
 - investing and installing state of the art technology rather than waiting for others to prepare a business case that must be approved within that entity’s organization as part of its overall capital budgeting process;
 - increasing the “intellectual capital” of the community by introducing and operating new technologies;
 - supporting municipal requirements and user requirements first, thereby enhancing the delivery of municipal services both within and outside the municipality;
 - reducing communications costs in the long term thereby allowing municipalities to use some of their financial resources for other purposes; and
 - potentially bringing additional skilled individuals into the municipalities.
53. Most of these points also have a direct bearing on how the introduction of a privately owned communications networks can have social, economic and other benefits to communities, all indirect benefits of constructing of alternative communications networks. Unfortunately, this strategy only works in communities that have the required critical mass to support such initiatives as it takes skilled individuals, up-front capital and the political will to undertake such projects.

²² Curtis, Malcolm. “City’s own fibre optic network will link buildings,” *Times Colonist* (Victoria), July 19, 2005.

54. Given that some of the objectives of the Commission have included the encouragement of local competition, reduction of consumer costs, provision of customer choice and increased access to affordable bandwidth, British Columbia strongly encourages the TRP to consider the implications of any recommendations that it makes on the entrepreneurs and local governments that are trying to make a difference in smaller communities throughout Canada. These considerations should address potential issues related to allowing municipalities and not for profit organizations to secure timely and cost effective access to support structures owned by carriers as well as eliminating as many barriers as possible to the deployment of the local networks. Municipalities and not for profit organizations are not well-funded commercial operations competing in a world with which they are comfortable or entirely familiar. These are small communities and volunteer, not for profit organizations that are trying to stimulate their local economies and improve the services that they provide to their constituents while at the same time being financially prudent. They should not be frustrated by or required to comply with the same regulatory requirements (including in particular complex tariff requirements related to support structure and central office access) to which the established carriers are accustomed and adept at managing.

3.0 PART B: The Regulatory Framework

Policy Objectives

B. 1 Should the policy objectives set out in section 7 of the Telecommunications Act be changed? If so, what should they be?

55. British Columbia suggests that while some of the current regulatory objectives remain relevant and that while the same could, arguably, benefit from some refinement to reflect the new global communications reality, including technological convergence, British Columbia submits that the way in which Canada regulates its industry is what really bears scrutiny. We will discuss this issue in the context of Part B.2.

B. 2 How detailed should the telecommunications policies set out in the Telecommunications Act be and, conversely, how much discretion should be left to regulators such as the CRTC and Industry Canada?

56. Policy guidelines are just that, they are guidelines. When grappling with difficult issues such as the introduction of local competition or whether or not to regulate VoIP, the Commission generally takes a look at what is or has happened in other market places, it hears from interested parties and then it makes a decision. Clearly, you can't please everyone all the time but it is not the duty or the obligation of the Commission to keep everyone happy, only to do the right thing on the basis of the facts that it has before it. Improving the regulatory process does not depend on providing the Commission with more discretion. The answer rests in ensuring that it has all of the tools and resources available that it requires to make timely and informed decisions.

57. There have been recent calls from Bell and TELUS to open the doors more quickly to competition and to let the market discipline itself. In that respect, TELUS' President and Chief Executive Officer, Darren Entwistle recently commented that:

We need a clear test for forbearance and the roadmap to deregulation – one that includes strong enforcement and compliance measures, so the CRTC can let free market forces regulate in its place with meaningful protection for all players in the industry.²³

58. He further commented that:

²³ 2005 Canadian Telecom Summit, Keynote Address by Darren Entwistle, President and CEO of TELUS.

In a highly competitive marketplace, it is imperative that we move away from imposing generalized rules that restrict everyone, just in case bad behavior “might” take place. We need to replace that with a compliance regime that acts quickly to punish bad apples that actually break the rules, rather than treating the entire barrel as if it was spoiled.²⁴

59. The Competition Commissioner has also expressed the view that the regulatory process should be streamlined:

As discussed above, the Bureau generally favours a minimalist approach to regulation that tailors the regulatory response to the particular problem and weighs the benefits of regulating against the benefits or detriments of not doing so. Competition is rarely perfect and the Commission must guard against trying to micro-manage it. At the same time, if significant barriers to entry are found still to exist in local markets, and if competition is not likely to control the ILECs’ market power in the near future, tailored regulatory responses to address this imbalance may be justified.

However, regulatory efficiency should not be equated with abandonment of regulatory safeguards. It is possible to streamline regulation and make the process more efficient without doing away with regulatory safeguards. The Bureau notes with approval the Commission’s recent steps to streamline the ILECs’ tariff approval process.²⁵ This initiative demonstrates that it is possible to streamline regulation where regulation is required, by carefully shaping the regulatory responses to fit the problems being addressed. The Bureau would anticipate that the Commission shall continue examining opportunities to make the regulatory process more efficient, while at the same time forbearing from regulation in markets where the tests for forbearance are satisfied.²⁶

60. Our suggestion, and it is but a suggestion, is that the Commission be authorized to “regulate from yes”. To do that, the legislation (in particular some of the section 7 objectives and section 25(1)) might have to be revised. Perhaps Commission staff could review plethora of decisions and distill a list of specific criteria that, if met, would enable telecom services to be offered as forborne services without initial regulatory review. We recognize the difficulties that this could pose, but the Commission should be allowed to start with the notion that certain services should be permitted to be offered unless the proposed service fails to meet specified benchmark criteria. Clearly, as in the case of disruptive technologies such as VoIP, it would be desirable to conduct a thorough regulatory review. That is understandable. However, not every new service is

²⁴ Entwistle.

²⁵ Telecom Circular CRTC 2005-6, 25 April, 2005, *Introduction of a Streamlined Process for Retail Tariff Filings*.

²⁶ Competition Commissioner’s Evidence, paras. 326-327.

“disruptive” and not every new service offering necessarily requires that degree of scrutiny or analysis. In those situations, pre-determined guidelines could be developed that would allow industry to introduce a service without first obtaining regulatory approval. This is what we mean by “regulating from yes”.

61. Once offered, the Commission would then be able to supervise the offering to ensure that there is no impropriety. Connected to this would be the need to revise the Commission “sanctioning” powers to ensure that appropriate sanctions, short of prosecution, could be imposed.

Economic Regulation

Questions B.3-B.13

62. British Columbia offers no comment on these questions at this time.

Technical Regulation

Rights-of-Way, Support Structures and Inside Wire

B. 14 Should section 43 of the Telecommunications Act be amended to provide the CRTC with greater jurisdiction over access to rights-of-way and support structures by Canadian carriers?

63. Section 43 of the *Telecommunications Act* addresses four issues: access to highways, to public places, to support structure owned by others and to privately owned property. However, British Columbia will only express its views on support structure, public places and highways under its jurisdiction. Let’s start with section 43(2).
64. Section 43(2) of the *Telecommunications Act* is the general provision that gives Canadian carriers (telcos) and distribution undertakings (cablecos) a qualified right to access highways and public places for the purpose of installing their transmission lines. Section 43(2) says:

... a Canadian carrier or distribution undertaking may enter on and break up any highway or other public place for the purpose of constructing, maintaining or operating its transmission lines and may remain there for as long as is necessary for that purpose, but shall not unduly interfere with the public use and enjoyment of the highway or other public place.
65. The validity of section s. 43(2) has been questioned, but its constitutionality is now settled. As also pointed out by Bastarache J. in *Barrie Public Utilities v. CCTA*,²⁷ at para.108:

²⁷ *Barrie Public Utilities v. Canadian Cable Television Assn.*, [2003] 1 S.C.R. 476.

The validity of federal laws granting access to or rights upon property otherwise regulated under the head of s. 92(13) [of the *Constitution Act*] or the purposes of federal undertakings is long established. ... Indeed, the Federal Court of Appeal recently affirmed the constitutionality of s. 43(4) of the Act, including the power of the CRTC to authorize federal undertakings to enter on and break up municipal highways for their purposes. [section 43(2)]

66. The reason that the authorization is “qualified” is that before entering on to any highway or public place, the Canadian carrier or distribution undertaking must first obtain the “consent of the municipality or other public place authority having jurisdiction over the highway or public place.” (s. 43(3)) The Act goes on to state that if the Canadian carrier or distribution undertaking cannot secure consent on terms acceptable to it, the Canadian carrier or distribution undertaking can then seek recourse from the Commission. (s. 43(4)). This section has been litigated but carriers have regularly been allowed to enter upon highways and public places by the Commission and by the courts when litigated.²⁸
67. This writer asked the BC Ministry of Transportation to provide its views on the issue of access to highways within its jurisdiction and was advised that:

Currently, section 43 sets out an approach balancing the interests between the Ministry and a communications carrier. There exists a dispute mechanism process (CRTC), should the parties not agree on terms. Incidentally, the Ministry of Transportation and the carriers have worked out a relationship that is generally suitable to both parties. In addition, the CRTC has provided guidance through decisions, such as in Ledcor/City of Vancouver, which has laid out a process assigning costs to the carrier for the use of highways.

68. It therefore appears that the BC Ministry of Transportation is satisfied that the current provisions addresses its specific concerns. However, other provinces and municipalities may have different concerns that should be separately considered.
69. In respect to access to “public property” is concerned, the CRTC recently issued a decision authorizing Allstream Corporation²⁹ access to light rapid transit lands in the City of Edmonton. In authorizing that access, the CRTC concluded that:

... the Commission finds that the LRT lands in Edmonton are an “other public place” within the meaning of the Act and that it, therefore, has the

²⁸ See for example *FCM v. AT&T (CA) [2005] 3 F.C. 379* (leave to appeal to the Supreme Court of Canada denied September 15, 2003) a case arising out of request by Ledcor Corporation to access highways in Vancouver.

²⁹ Telecom Decision CRTC 2005-36.

jurisdiction to adjudicate the dispute between MTS Allstream and Edmonton with respect to ongoing access to the LRT lands.³⁰

70. A Notice of Appeal³¹ has been filed with the Federal Court of Appeal so this issue has yet to fully wind its way through the court system but will be resolved in due course. We would suggest that the TRP wait until that matter is finally settled before making any recommendations on this point.

71. In respect to accessing support structure owned by others, a case recently arose involving the Canadian Cable Television Association (the “CCTA”)³² when it attempted to renew its access privileges to electric utility support structure. The municipal power utilities refused to grant new permits for access until new agreements were in place. According to the CRTC:

The cable companies have obtained support structure services from the municipal power utilities for many years pursuant to successive support structure agreements. As noted above, support structure agreements between the cable companies and the PUCs expired on or before 31 December 1996. In anticipation of the expiry of the agreements, negotiations were commenced in the spring of 1996 to conclude new agreements. While the cable companies had serious concerns about many aspects of the MEA’s proposed new model agreement, the key point of disagreement between the parties was the support structure rate. The MEA took the position that the support structure rate should increase from \$10.42 per pole per year to \$40.92 per pole per year.³³

72. So, the central issue in dispute was not whether or not CCTA could obtain access to the support structure, but at what cost. Not being able to secure access to support structure at a cost that the CCTA felt was reasonable (and in line with costs approved by the CRTC in Telecom Decision CRTC 95-13), the CCTA appealed to the CRTC for relief.

73. The CCTA expressed the view that s. 43(5) of the *Telecommunications Act* conferred on the Commission the authority to address and resolve disputes between federal undertakings (the CCTA) and the owners of provincially regulated support structure. This issue found its way to the Supreme Court of Canada which determined that s. 43(5) could not be interpreted in a way that would give to the CRTC the authority to regulate access to electrical power infrastructure within a plain reading of s. 43 of the *Telecommunications Act*.

74. Specifically, the Supreme Court of Canada stated that the CCTA was not entitled to access the “supporting structure of a transmission line” owned by Barrie Hydro Utilities as granted by the CRTC as, in the Supreme Court’s view,

³⁰ Telecom Decision CRTC 2005-36, para. 84.

³¹ *City of Edmonton v. 360 Networks, et al.*, appeal filed July 13, 2005.

³² *Barrie Public Utilities v. Canadian Cable Television Assn.*, [2003] 1 S.C.R. 476.

³³ Telecom Decision, CRTC 99-13, para. 6.

“section 43(5) [could not] bear the broad meaning given to it by the CRTC. The subsection, taken alone, [did] not on its face include Utilities’ power distribution lines.”³⁴ It seems, however, that the Supreme Court left open the issue of whether or not the CRTC’s jurisdictional reach could be extended (presumably by legislative amendment) to include power poles within provincial jurisdiction as the following statement suggests:

As this appeal turns on a straightforward statutory interpretation of s. 43, I decline to address the constitutionality of any similar law purporting to grant the CRTC the authority to grant access rights to, or otherwise regulate, property within provincial jurisdiction, such as electrical poles.³⁵

75. Although the Supreme Court has identified a potential issue regarding CRTC jurisdiction over infrastructure within some provincial jurisdictions, legislation in British Columbia already addresses the issue of “public utility access”³⁶ to certain facilities in section 27 of the *Utilities Commission Act (British Columbia)*. Section 27 specifically provides rules for the joint use “by a public utility of conduits, subways, poles, wires or other equipment belonging to another public utility,”³⁷ and access to “municipal structures”^{38, 39} to the extent not otherwise captured by s. 43 (2) of the *Telecommunications Act*. Access to electricity transmission facilities⁴⁰ may also be secured upon application to the Utilities Commission if access rights cannot otherwise be secured from the utility concerned.
76. While there may well be some sympathy for the contention that attachment rates increased in Ontario, the fact is that the support structure is constructed ultimately at the ratepayers’ cost and that cost must be justified to the provincial regulator. It should therefore not be unreasonable for power utilities to secure a reasonable contribution towards the cost of that structure, particularly where a duly constituted regulator must first approve the charge. Why should any company be able to secure valuable rights at the expense of other ratepayers?
77. Accordingly, British Columbia is of the view that mere dissatisfaction by carriers with the cost of access does not warrant the extension of the Commission’s jurisdiction. Admittedly, section 43(4) is somewhat unclear so perhaps some clarification of the intent of that section would be appropriate.

³⁴ *Barrie Public Utilities*, para. 43.

³⁵ *Barrie Public Utilities*, para. 44.

³⁶ The term “public utility,” as used in the *Utilities Commission Act*, would include Canadian carriers and distribution undertakings.

³⁷ *Utilities Commission Act*, s. 27(1)(a).

³⁸ *Utilities Commission Act*, s. 36.

³⁹ Municipal structures, as defined in the *Utilities Commission Act*, includes highways, bridges, viaducts and subways.

⁴⁰ *Utilities Commission Act*, s. 70.

78. A more difficult issue will have to be addressed if BPL takes hold as a technology. That is, as matters now stand, electrical utilities clearly fall under provincial jurisdiction. The question becomes whether or not a power utility, by merely renting, leasing or permitting access to its “wires”, transport or distribution facilities to other communications service providers should result in it becoming a “Canadian common carrier” within the meaning of the Act. The relevant definitions in the *Telecommunications Act* are as follows:

“telecommunications” means the emission, transmission or reception of intelligence by wire, cable, radio, optical or other electromagnetic system, or by any similar technical system

“telecommunications common carrier” means a person who owns or operates a transmission facility used by that person or another person to provide telecommunications services to the public for compensation

“telecommunications facility” means any facility, apparatus or other thing that is used or is capable of being used for telecommunications or for any operation directly connected with telecommunications, and includes a transmission facility

“telecommunications service” means a service provided by means of telecommunications facilities and includes the provision in whole or in part of telecommunications facilities and any related equipment, whether by sale, lease or otherwise

“transmission facility” means any wire, cable, radio, optical or other similar technical system, for the transmission of intelligence between network termination points, but does not include any exempt transmission apparatus. (underscore added)

79. The issue of regulating BPL is already before Industry Canada so we would suggest that the TRP defer making any recommendations on this specific point until Industry Canada has completed its deliberations.

B. 15 Should the CRTC be granted powers to order access to multi-unit buildings for the purpose of installing or providing access to in-building wire? If so, please describe the nature and extent of such a power, including proposed legislative wording. If not, please explain whether the current situation is acceptable or whether an alternative approach would be preferable.

80. British Columbia expresses no views on this issue.

B. 16 Should any other changes be made to the regulatory framework governing access to rights-of-way and support structures?

81. In order to obtain some insights from local ISPs that often require access to telco facilities, British Columbia requested Jeff Roberts, former president of Columbia Open Mountain Networks to prepare a brief summary of the experiences that he and others that he came to know during his tenure with CMON had when attempting to secure access to telecom and power utility support structures in British Columbia. In his report (attached as Appendix 1), Mr. Roberts comments extensively about the frustrations that CMON experienced when attempting to secure access to telecom and power utility support structures. In addition, Mr. Roberts has proposed some recommendations for consideration by the TRP. British Columbia asks that the TRP review and consider in its report the issues identified by Mr. Roberts.

Questions B.17-B.26

82. British Columbia expresses no views on these questions at this time.

Questions B.27-B.32

Social Regulation

83. British Columbia may provide comments as part of its September 15th response.

4.0 PART C: Regulatory Institutions

The Government Role in Telecommunications Markets

C.1 *Is the allocation of governance and operational functions outlined above (i.e., policy development and law making, regulation and network operation and service provision) appropriate for Canada? If so, is it being properly applied under the current regulatory framework? If not, please describe the preferred allocation of functions.*

84. British Columbia expresses no views on these questions.

C. 2 *Should general competition law principles have a role in the regulation of the telecommunications sector? If so, to what extent should the provisions of the Competition Act apply and to what extent should sector specific regulation continue to be applied?*

85. British Columbia recognizes that competition law is as unique a legal discipline as is the area of telecommunications law. British Columbia is of the view that consumer protection is required, be it by the telecommunications regulator or the Competition Commission therefore suggests that now is an opportune time to resolve and clarify any potential overlaps, gaps or conflicts in jurisdiction between the CRTC and the Competition Commission.

Questions C.4-C.12

86. British Columbia may provide comments to these questions as part of its September 15th response.

Enforcement

C. 13 *Taking into account the status of Bill C-37 (which would give the CRTC power to levy fines or “administrative monetary penalties”), please comment on the need to change the enforcement powers of Canada’s telecommunications regulators, the CRTC and Industry Canada.*

87. Before commenting upon the question posed, let’s take a brief look at the offence section of the existing *Telecommunications Act* (section 73). As matters now stand, persons that contravene certain parts of the *Telecommunications Act* can only be prosecuted by summary conviction (s. 73(1)), with fines up to a maximum of fifty thousand dollars in the case of an individual (s. 73(1)(a) and one million dollars in the case of a corporation (s. 73(1)(b)). In some instances, a prosecution cannot be undertaken without the consent of the Minister of Industry Canada (s. 73(4)) or the consent of the Commission (s. 73(5)). To

date, it appears that no one has ever been prosecuted under the *Telecommunications Act*.

88. The fact that there may never have been an act egregious enough to warrant prosecution does not necessarily mean that the sanction provisions of the *Telecommunications Act* have been effective, only that conduct serious enough to warrant quasi-criminal prosecution has never arisen. However, there could be instances where sanctions, short of quasi-criminal prosecution, might be warranted, particularly if the Commission “regulates from yes”.
89. So, British Columbia supports the introduction of administrative and other penalties. For example, the TRP might consider recommending a series of increasingly severe sanctions starting from an administrative sanction or warning, to a range of monetary penalties, to a requirement that future service offerings (including services that would generally be forborne) could not be offered without submitting a tariff application, would all support the “regulating from yes” concept proposed by British Columbia. A potent range of tools could be developed to ensure that industry complies with regulatory guidelines both in spirit and intent.
90. Any changes to the *Telecommunications Act* could be improved by including a formalized process for administrative hearings that would include the authority to impose penalties consistent with the egregious conduct and sanctions consistent with the nature of the complaint, including the severe sanctions that Darren Entwistle referred to in his speech at the Telecom Summit.⁴¹

C. 14 Should the enforcement function be separated from the rule-making function (e.g., assigned to different institutions – or to independent offices within the same institutions)?

91. In Canada, the general rule is that government (be it federal, provincial or municipal) makes the laws but the laws are interpreted and enforced by others, such as our judiciary. Our “rule of law” has been designed this way to ensure that there is a clear separation between the law-maker and the law-enforcer. While enforcement of laws by “lawmakers” could have some merit, there is always a concern that the lawmaker may not always reflect the required deference. We caution that this is a perception only and not necessarily a reality. If this perception is really a concern, the TRP could consider recommending the appointment of an independent body that would be charged with the responsibility of ensuring that Commission's rules and decisions are followed.

⁴¹ 2005 Telecom Summit.

C. 15 Should there be any other changes to the enforcement for telecommunications rules? If so, what should they be?

92. We express one other matter for consideration. That is, any rules that are developed will have to be flexible because one size does not necessarily fit all. Even though a “rule” could be perfectly appropriate in one region, it might not work well somewhere else. Also, there is sometimes a perception that rules are made and enforced in one part of the country that may not necessarily reflect regional concerns or issues. This is an issue that should be considered by the TRP.

93. Accordingly, the TRP could consider recommending that a “Conduct Review Committee” be established to enforce Commission decisions. The conduct Review Committee would be regionally based and comprised of representatives from Industry Canada, the Competition Commission, possibly the telecom industry and the public. The role of the Conduct Review Committee would be to consider alleged misconduct against established standards. The Conduct Review Committee would have a broad scope of enforcement tools previously mentioned. Establishment of such a committee could go a long way to ensuring that regional concerns are addressed.

Dispute Resolution

C. 16 Should a separate institution or an independent office within an institution be established for dispute resolution and, if so, what should be the extent of its powers?

94. British Columbia has already addressed this question in paragraphs 91 and 92.

C. 17 If the CRTC retains its dispute resolution powers, should it be granted the power to award damages? Alternatively, should the court’s powers to award damages in telecommunications disputes be increased (e.g., punitive damages) to ensure litigation can be an effective alternative to detailed regulation?

95. British Columbia expresses no views on these questions at this time.

C. 19 What measures should be taken to simplify and expedite the process for dispute resolution in the area of telecommunications?

96. British Columbia expresses no views on these questions at this time.

C. 20 Should the current dispute resolution regime for telecommunications matters be modified in any other way? If so, how?

97 British Columbia expresses no views on these questions at this time.

The Implications of Convergence

Enhancing Regulatory Efficiency and Effectiveness

Questions C.21-C.29

98. British Columbia may submit comments on these questions in September.

5.0 PART D: Canada's Connectivity Agenda ⁴²

- D. 1 What is the current status of access to broadband and advanced ICT in Canada? Is this situation likely to improve or deteriorate with the introduction of new technologies? Specifically what emerging technologies will increase or decrease the gap experienced by unserved and underserved communities, and in what time frame?*
99. In British Columbia's case specifically, we have already commented on the Connecting Communities Agreement with TELUS by which TELUS has agreed to provide low cost access to bandwidth to a number of communities by the end of 2006.
100. Although British Columbians enjoy some of the highest rates of broadband connectivity in Canada, the job is far from complete. When the provincial program is fully implemented there will still be in excess of 340,000 citizens who do not have access to high-speed Internet access and will not receive the same as part of the Connecting Communities Agreement. Both TELUS and British Columbia have requested the CRTC to permit TELUS to access its deferral account for the purpose of extending broadband services to areas that will not be served through the Connecting Communities Agreement.⁴³ This matter is still before the CRTC and may not be addressed until sometime in 2006.
101. In addition, British Columbia has 203 First Nation communities, a third of the national total. There are a number of these First Nation communities who will not receive broadband access through the Connecting Communities Agreement. They remain digitally divided, an issue that British Columbia feels should be addressed by the TRP by urging renewed assurances that the federal government will "ensure that broadband networks and services are available to business and residents in every Canadian community by 2005."⁴⁴
102. In addition to TELUS' commitments under the CCA British Columbia, in partnership with Industry Canada, successfully launched the "British Columbia Satellite Network" in May, 2004 when it acquired 12.5MHz of C-band satellite capacity under the National Satellite Initiative (NSI), Round 1. British Columbia has now fully utilized all of that allocated capacity and has filed a "Notification of Interest" with Industry Canada to secure an additional 6.5MHz of C-band capacity under NSI, Round 2. The additional capacity will enable the

⁴² The writer thanks John Webb, Community Liaison and Communications (NWBC) and Maria Fucceneco, Policy Analyst (NWBC) for all of their work on Part D of this submission.

⁴³ Both TELUS and British Columbia have presented extensive submissions to the CRTC in respect to Telecom Public Notice 2004-1, a proceeding related to the disposition of the Deferral Accounts.

⁴⁴ Report of the National Selection Committee Broadband for Rural and Northern Development Pilot Program, page ii.

- province to bring satellite capacity to another 30 communities in British Columbia.
103. So, in our view, by pursuing a number of strategies such as the Connecting Communities Agreement, securing satellite capacity, purchasing communications services from local service providers, providing connectivity through SPAN/BC and encouraging local ISPs to deliver last mile solutions, British Columbia is being reasonably successful in addressing its digital divide challenges. All of these strategies have helped but they are a complex mix of solutions that require persistent and dedicated oversight by British Columbia.
 104. As successful as these programs may have been to date, there are challenges. For example, the Connecting Communities Agreement with TELUS lasts a finite period of time. Bandwidth requirements will in the future become stretched to the limit as more and more applications are delivered over existing satellite systems. Last mile solutions are a challenge now and while new solutions may come to market in the form of wireless or perhaps BPL, capacity demands could again outstrip supply.
 105. Recognizing the importance of bridging the digital divide in British Columbia, this government has expended considerable time and resources to that project. However, having done so, it has become more and more apparent how important it is that success in the long term will depend heavily upon collaboration between all levels of government, industry and the regulator. This is a delicate balancing act that requires a great deal of attention if we are to maintain the momentum achieved to date and build on that foundation.
 106. British Columbia expects that increased access to existing fibre, satellite spectrum allocation, wireless applications and BPL have the most to offer in terms of decreasing the technology gap that unserved and underserved communities now experience. However, one must also add to that future technologies that support a secure, robust and reliable network that has the capacity to deliver customer specific applications to the remotest regions in Canada. For example, one of the foundations of health care in Canada is universality. However, that cost is rapidly increasing. Some of the challenges posed by the delivery of universal health care services to First Nations and remote communities could be addressed through real-time point-to-point video-conferencing⁴⁵ and the asynchronous exchange of patient information.⁴⁶ Similarly, education could benefit from classroom video-conferencing as a means of delivering educational services to remote communities that might not otherwise be able to obtain certain subjects. Distance should not be a

⁴⁵ Real-time point-to-point or multipoint video-conferencing would allow virtual consultations to occur over a distance. It also has the potential to deliver effective real-time education to health care professionals, as well as to the general public. (Premier's Technology Council, Q3 Report, page 8.)

⁴⁶ Asynchronous exchange of patient information allows health professionals to access images, text, audio or video (e.g., x-rays, retinal scans, dermatological images, etc.) that have previously been stored and forwarded from other locations. (PTC Q3 Report, page 8.)

- consideration in the future delivery of health care services or a quality education.
107. Video-conferencing is widely available but the experience is adversely affected by network constraints. So, in British Columbia's view reliable and robust, secure networks are required for expansion of this application into rural and remote regions. British Columbia believes that technology and applications have a lot to offer to remote communities but any obstacles that emerge along the way must be addressed. In that, we include regulatory constraints, the cost of bandwidth and the absence of an accessible network that will support these future requirements.
108. Also missing from this mix is a dedicated effort by the federal government to develop effective programs that would complement provincial efforts to make low-cost broadband connectivity available to every Canadian citizen.
- D. 2 Is government or regulatory intervention required to expand Canada's telecommunications network connectivity – or should this be left to the market? Given the level of competition in broadband access market, as well as the fact that new access and IP technologies are reducing costs for consumers and improving the business case for service providers, is government or regulatory intervention still required?*
109. As mentioned earlier, the government of Canada has made a commitment to provide broadband services to every community by the end of 2005. While several provinces have taken an active role in providing connectivity, British Columbia considers this to be a work in progress that may never be completely finished, particularly in respect to the very remote regions of Canada. Certainly there is a role for all levels of government to contribute such as the provision of funding and the allocation of satellite spectrum, ongoing provincial initiatives such as those of British Columbia and elsewhere and supporting municipalities who wish to build out their own fibre networks. The Commission should be provided all of the tools that it requires to ensure that of the challenges identified in this and the other submissions are available to discharge its future mandate.
110. On the issue of competition in the broadband access market, as previously indicated British Columbia is of the view that competition will only develop in select marketplaces. British Columbia favors a move to pricing in accordance with market forces but feels that this does not readily apply in all regions of Canada. To that extent, British Columbia would support the concept of forbearing from regulation once any particular marketplace become sufficiently competitive, assuming that issues of predatory pricing can be addressed to the satisfaction of the Commission and the Competition Commission. However, every possible effort must be expended to ensure that remote regions also

receive the broadband access that they require. Location should not be a consideration to the level of access.

D. 3 If government or regulatory intervention is warranted, why, and in what types of markets is it required (e.g., what specific types of remote, rural, lower income, aboriginal communities or communities within some proximity to urban centers are currently still unserved)? What types of social and economic benefits justify such methods?

111. British Columbia has already commented on most of these issues. However, it does wish to restate that some financing is potentially available in the form of the deferral account and through the contribution funds. In our view, more could be done to encourage use of and access to those funds. In the case of the deferral account, it is expected that it will be almost two years from the issuance of Public Notice 2004-1 before the decision is issued. That is, indeed, a very long time.

112. British Columbia is of the view that providing affordable broadband services into remote regions will promote economic growth and prosperity. The exploitation of natural resources and the exploration for future natural resources all take place in the remotest regions in Canada. Similarly, offering educational programs to children and adults in remote communities, assisting in the preservation of the cultural identity of First Nations and offering improved health care in remote areas, all using technology as a tool, should be a priority to Canada as a nation.

D.4 How effective have federal government initiatives been to date in improving access to broadband for communities, businesses, citizens, and public institutions?

113. Federal programs have had limited effectiveness in bringing broadband to rural and remote areas of British Columbia. The recent Broadband for Rural and Northern Development Pilot Program (the “Pilot Program”) received 59 applications from communities or regions lacking broadband in British Columbia. Despite the high quality of those applications and the countless hours of preparation that went into meeting the large amount of process required, only 8 were funded. This response left many of the participants frustrated about this particular program and unlikely to participate in similar competitive programs in the future if funding is not in place to support qualifying projects.

114. The projects that were funded in British Columbia have generally made it through a very exhaustive process and have received funding. However, the long time frame between initial application and final approval has meant a changing landscape in many regions resulting in the original applications having

little relevance to the current situation. This has meant that projects have had to rework their applications and seek new approvals on an ongoing basis in an effort to fulfill Ottawa's requirements.

115. Round One of the National Satellite Initiative has been quite successful in British Columbia. By happenstance, the introduction of the program was well timed to coincide with the NetWork BC project and a partnership is now in place that is resulting in high-speed satellite service being extended to approximately 30 communities. Rounds Two and Three of the program are proving to be somewhat more difficult. We understand that applications to Round Two will each require an application to Treasury Board, a very time consuming and complicated process. Applicants have been warned by Industry Canada to “expect a very long and involved process.” British Columbia would hope that Industry Canada, knowing this would attempt to shorten and simplify the process. Round Three, making capacity to the northern beams of the KA band satellite available, has a constraint that will not allow connection to homes and businesses since this program is reserved for institutional use only. This requirement will clearly reduce the utility of this program for northern communities.

116. It is strongly recommended that any subsequent programs not follow the “one size fits all” model that was used for the Pilot Program. For example, British Columbia has established very affordable high-speed backbone links on a regional basis. A federal program that is designed to lower bandwidth costs on a regional basis would have little utility in this province. An alternative would be to deliver the federal funds through partnership programs developed with individual provinces and territories. If the province or territory does not wish to enter into a partnership program a default, national program could be implemented. In the case of British Columbia, we would invite a program that that concentrates on providing last mile funding and capacity development to the community level developed in concert with the existing provincial program.

D. 5 What specific policies and/or fiscal and/or regulatory measures are needed to provide affordable broadband access to all communities? Given the political challenges of obtaining government budget allocations for expansion of telecommunications network connectivity, what other government or regulatory funding initiatives should be considered? For example, should there be a tax subsidy mechanism? An auctions-based mechanism? Should services be subsidized through the CRTC's contribution regime? If so, what would be the extent to which the mechanisms are applied and/or the appropriate level and conditions of subsidy?

117. British Columbia has launched a program where we are bringing low cost broadband to unserved communities by leveraging public sector demand for voice and data services. British Columbia has already described the CCA elsewhere in this paper. British Columbia was attracted to this model because it

- moved the capital contribution requirements to bring bandwidth into communities to the incumbent telecommunications supplier.
118. While the CCA is having the desirable effect of bringing low cost bandwidth into regional communities support is still required for last mile suppliers. British Columbia is of the view that local ISPs and small carriers should be considered as eligible recipients from the contribution fund given that their objective is to provide connectivity in high-cost serving areas. However, some guidelines would be required in order to establish who would be eligible for the subsidy. If the eligibility is restricted to ILECs it would then only make sense if the basic service definition were expanded to include broadband. This idea could be met with strong resistance from cable companies, regional wireless suppliers and community networks that are already providing services in those regions unless the subsidy became available to them as well. However, financial analysis would have to be completed before one could support subsidies from the contribution regime. This may prove practical but the potentially high, ongoing cost required to support broadband into hundreds of small communities if delivered through the traditionally very costly “carrier grade” solutions of the telcos may cost far more than urban contributors to the fund are willing to pay. This ongoing requirement for annual subsidy would, we predict, eventually be abandoned because of the high cost, perhaps leaving communities stranded.
119. Working with regional suppliers and community networks to develop the local capacity to deliver broadband and then helping these fledging networks to develop their networks with a one-time grant is a practical and sustainable route to take if the upstream costs are affordable. We recommend that using the contribution fund to moderate the cost of bandwidth to unconnected communities be investigated as an alternative to providing ongoing subsidy to last mile suppliers.
- D. 6 Should consideration be given to expanding the definition of universal service for regulatory purposes, to include specific broadband connectivity? If so, should other services be added to the definition of regulated universal services? What is “an appropriate level of access to modern telecommunication services” for all Canadians?*
120. While it is both desirable and necessary to ensure that every Canadian community has access to broadband services, as per the federal government broadband commitment, the answer does not lie in expanding the scope of the definition of universality. This is not a “one size fits all” problem that can be simply resolved. Some creativity is required.
121. There are a couple of major problems with merely expanding the definition of universality by requiring ILECs to provide broadband services. First, some communities are extremely remote and cannot easily be provided with

broadband connectivity through traditional means such as ADSL at the end of a fibre infrastructure. To require the ILEC to provide this connectivity would not make economic sense. So, a more customized solution should be developed. This could take the form of motivating local entrepreneurs to provide the services that could be financed through access to funds such as deferral accounts or any contribution funds. Perhaps a non-telco carriage solution such as BPL could be used. In any event, creative solutions, not blanket rules are required to address these challenging problems. Second, in some locations small ISPs, are already providing high-speed connectivity in remote regions. Others will emerge as a result of the CCA. If the ILEC is required to provide broadband services, that could eliminate the local entrepreneurs. Perhaps part of the solution would be to include a stipulation requiring the ILEC to provide universal broadband service but not require them to offer that service in areas that already have a broadband ISP. The ILEC should be the default carrier.

122. The problem with the concept of “an appropriate level of access” is that it ignores the difference between urban and remote requirements. In large cities, service providers will continue to provide communications, entertainment and Internet service because that is where the money is. Remote communities could always be behind due to the high cost of providing advanced services to sparsely populated areas. So, while these areas also require access to advanced services, a different business model must be developed. Our view is that this model should include local ISPs using any available technologies (such as wireless and BPL) being permitted to connect to carrier facilities at extremely low cost and being provided access to a variety of funding sources such as new but simplified federal government programs, contribution and deferral funds.
123. Carriers might express some dissatisfaction over this, but there are some potential benefits to them. First, they would not be burdened with providing a high-cost carrier grade solutions when something else would suffice. Second, this would permit them to focus their attention on the larger urban centres.

D. 7 If policy, fiscal or regulatory changes are required to achieve the goal of expanding the level of advanced access (e.g., broadband to every community), what is the net cost to achieve this goal (i.e., what is the difference between the expected costs and the revenues which would be expected to be generated from the services)?

124. It is possible to operate a small wireless network in many unconnected communities with volunteer labour and, depending on the terrain and the number of end users, the capital cost could be as low as \$30,000 or \$40,000. The one cost that it is hard to minimize is the cost of upstream bandwidth. Without low cost bandwidth it is impossible to develop a sustainable business case. In the British Columbia project we are basing the bandwidth cost on the number of users in the community. A 10Mbps circuit in an unconnected community is \$150 for communities with less than 200 citizens, \$300 for

- communities between 200 and 500 and \$450 per month for communities with more than 500 citizens. Keeping upstream costs down to this level makes the development of a business case possible and the local ISP or community can concentrate on developing and managing a last mile network.
125. Policy changes that could support these small networks could include allowing non-tariff co-locations in unserved communities. The co-location tariffs are often prohibitive for both tower access and COs. These high costs force regional suppliers to put up their own towers or establish a connections point outside of the incumbent CO often making business case development more difficult. It is illogical to establish regulations designed to promote competition in urban areas and then see the same regulations make the development of networks impossible in rural regions where there is no possibility of real competition.
- D.8 What should be the roles of the various stakeholders - the private sector, CRTC, federal and provincial governments, non-profit organizations, and communities themselves – in bridging Canada’s broadband divide?*
126. Private sector:
The private sector should work and collaborate more closely with communities and regions to develop affordable last mile solutions at the local level.
127. CRTC:
The CRTC should establish new rules for unconnected and remote regions so that regulation does not hinder or slow down entities that are trying to provide low-cost broadband connectivity.
128. Federal Government:
The federal government should continue to provide and simplify programs such as the National Satellite Initiative that bring satellite capacity into remote areas of the country. It should ensure that such programs are economically accessible and that the requirements of rural and remote communities are considered in program design. It should also attempt to partner with programs that are developed by the provinces to bring broadband into rural communities. Finally, special emphasis should be placed on connecting First Nations by contributing to the construction of infrastructure, ensuring that adequate bandwidth is available and through assistance in the development of programs that ensure that appropriate technical training is made available to interested First Nation citizens.
129. Provincial Governments:
Provincial governments should be encouraged to partner with communities in the design and operation of broadband programs. They should also be encouraged to develop ways of acquiring low-cost access to bandwidth from telcos for rural and remote regions. They should encourage the development

of non-governmental organizations made up of broadband activists who have the time and energy to help communities develop broadband plans. Provincial governments can contribute to this by funding workshops that assist local entrepreneurs in building capacity at the community level. Finally, provincial governments should be encouraged to work with the federal government to find ways to fund last mile networks at the community level.

D. 9 If policy, fiscal or regulatory changes are required, in what time frame and in what manner should the government achieve this goal?

Fiscal

130. The federal government promised some time ago that every Canadian community would be provided with broadband by 2005. British Columbia recognizes that this will not occur before the end of 2005. Accordingly, a strategy should be developed with each of the provinces and territories to provide the financing required to complete this task by the end of 2006.

Policy/Regulatory Changes

131. The TRP is an important first step to recommending policy and regulatory changes. British Columbia is pleased that the TRP has committed to complete this undertaking by the end of 2005 and hopes that Industry Canada and the federal government will act on the TRP's recommendations in a timely manner. We would suggest that one year from presentation of the TRP's report to Industry Canada would not be an unreasonable period of time.

D. 10 To what extent will the provision of an advanced telecommunications infrastructure drive the adoption of advanced information and communications services by Canadian consumers and businesses? Is there a role for government to play in the adoption of these services and technologies?

132. British Columbia expresses no views on this question at this time.

6.0 PART E: Making the Most of Technology

- E. 1 What is the relationship between investment in ICT and productivity? In particular, in what industries does investment in ICT increase productivity? Under what circumstances does this occur? Can there be negative consequences for productivity as a result of increased investment in and reliance on ICT?*
133. British Columbia suggests that it is now trite to say that there is anything but a direct relationship between investment in ICT and productivity. While this may have been a debatable issue twenty years ago before the advent of the desktop computer, we feel that the issue is now beyond debate. That being the case, let's take a look at what British Columbia's Premier's Technology Council ("PTC") had to say about technology and efficiency. We will focus our comments on British Columbia's experience but feel that this experience may be one of general applicability.
134. Going back to the first PTC Report issued on November 21, 2001, the PTC reported that there were three areas where "government could increase the efficiency and effectiveness of its services, and at the same time make a significant impact on the bottom line:"⁴⁷
- e-health** – On-line delivery of health care services and information is a top priority. Improved access to and sharing of health care records and services will result in improved health care across all regions; more effective use of specialists and retention of professionals, reduced costs for travel and speed in delivering information to all communities in the province.
- e-learning** – Distance should not be considered a barrier to British Columbians who wish to gain a high quality education. E-learning can bring the classroom to students, K-12 through college and support career skills upgrading and effective lifelong learning. As the province evolves from a resource-based economy, e-learning can help stimulate the development of skills which will drive economic diversification necessary to support small communities – and do it in a cost-effective manner.
- e-procurement** – An on-line procurement process can ensure that government purchasing is offered to the widest possible supplier community and that government obtains best value for its dollars. Government, taxpayers, and vendors will benefit from a procurement strategy that uses the Internet to co-ordinate purchasing across all ministries, while speeding delivery and tracking supplier performance.⁴⁸

⁴⁷ PTC, Q-1 Report, page 1.

⁴⁸ PTC, Q-1 Report, pages 4-5.

135. These observations illustrate the relationship between the use of technology and ensuring that governments receive the best value for their money. This, in turn, leaves more money for other critical areas such as health and education.
136. Many British Columbia communities are being forced to migrate from a resource-based economy to a knowledge based economy if they wish to prosper. These communities feel that access to affordable high speed connectivity is crucial to this change. They are depending on all levels of government to help make this happen.
137. Looking at this from a different point of view, Canada has always had a strong natural resource-based economy. While the export of natural resources will always be important to Canada as a nation, Canada must continue investing in technology in order to compete against other nations. Canada's competitive advantage will not only come from the natural resources that it exports but also how well it uses technology to educate its citizens while at the same time maintaining its quality of health care. These attributes will all continue to distinguish Canada as a nation.
138. In British Columbia's view, when looking at the issues of strategic procurement and the use of ICT in education and health care, one sees how these are all woven together to form part of the foundation for a strong economic future. British Columbia is not suggesting that these are the only industries that would benefit from strategic investment but they serve as an example of how investment in one area can influence other areas. It is the leveraging of the resulting intellectual capital that leads to future prosperity, not merely tending past investments.

E. 2 Does the relationship between ICT and productivity justify a government policy supporting increased ICT investment? If so, what government measure would be appropriate

139. British Columbia supports the concept of utilizing policies to support ICT but only if the policies have both tactical and strategic attributes, a model used by the PTC in developing recommendations for the BC government. How would this be done? By way of example, when reviewing various issues facing the citizens of British Columbia, the PTC held preliminary consultation sessions followed by working sessions and symposia that lead to the development of recommendations to government. Government then charged the administration with the task of executing the resulting tactical and strategic recommendations. Adoption of a federal policy to the effect that it will collaborate and consult with the provinces to leverage the use of ICT to achieve mutually advantageous objectives is an area that British Columbia feels warrants consideration. We know that the federal and provincial governments frequently consult with each other, but has this ever led to a strategy to work together by investing in new

technologies designed to improve the delivery of services that we all require? This, perhaps, is an area that warrants further consideration.

140. On another note, the provinces and the federal government should all be encouraged to lead their constituents by example by adopting new ICT. In particular, when the opportunity arose to aggregate the purchasing power of the broader public sector to achieve the result of connecting all unconnected communities, the broader public sector entities were approached, engaged and ultimately worked together to achieve clearly stated objectives. This marked a first for British Columbia, a strategy that had never been attempted before. The lesson learned was that while each of the broader public sector entities had different business objectives and requirements, there was enough commonality to make it worthwhile for them to purchase services together through a single purchasing arrangement. The resulting benefits have included a reduction in the number of contracts, price reductions and improved service delivery. Clearly, we have learned that the members of the group have more bargaining power than do each of the individual members.
141. While perhaps more difficult to execute when dealing with two different levels of government, British Columbia believes that the federal government should consider developing a policy that would require the federal government to collaborate with willing provincial governments in areas of common concern. For example, the delivery of health care and education to First Nations is a matter of federal responsibility. However, provinces such as British Columbia have a distinct interest in this. British Columbia also has an extensive communications network and a number of local ISPs that are emerging as a result of the Connecting Communities Agreement. Would it be so difficult for the federal and provincial governments to collaborate to address issues of local concern such as the delivery of health care to remote communities and First Nation citizens using their collective ICT resources? Challenging perhaps, but unworkable – we don't think so. This is an area that could benefit from a definitive policy statement by the federal government that not only will it collaborate with willing provinces to utilize ICT to address issues of mutual concern, but that it will also develop strategies to do so.

E. 3 Are Canadian businesses and governments under-investing in ICT? On what basis can the Canadian level of ICT investment be assessed to determine if it is appropriate? Is ICT investment by the United States the appropriate comparison point? If not, which jurisdictions should Canada use as a benchmark (e.g., European Union, G7, OECD)?

142. British Columbia has no comment on this point other than to say that more inter-provincial and federal/provincial collaboration could lead to more efficient use of financial resources.

Investment by Telecommunications and Other ICT Companies **ICT in Business**

Questions E.4-E.10

143. British Columbia offers no comments on these questions at this time.

ICT in Government

E. 11 What role, if any, should the Federal Government play as a model user of ICT? Assuming Federal Government has such a role, what measures should it take to improve the manner in which it uses ICT?

144. British Columbia is of the view that governments should all lead by example. For example, the province of British Columbia recognized the need to address the adoption of technology and a variety of related issues facing this province. So, on August 20, 2001, Premier Gordon Campbell announced the formation of the “Premier’s Technology Council” (the “PTC”).⁴⁹ The PTC was comprised of twenty-three leading members of British Columbia’s technology community and academia. Its mandate has been to advise the Premier on all technology-related issues facing British Columbia and its citizens.⁵⁰ It is also important to note that while the PTC obtains input from several government ministries, there are no government representatives on the PTC. Since the Premier chairs the PTC, he receives direct input from some of the most knowledgeable individuals that industry and academia have to offer.

145. British Columbia will not attempt to summarize the vast amount of work that the PTC has undertaken in the past four years other than to say that the PTC started its journey by examining ways to:

- remove the barriers that keep British Columbians from participating in the knowledge based economy and from accessing the educational, social and cultural benefits delivered through broadband networks.
- identify areas where technology can make government more efficient and improve the delivery of government services throughout the province, including education and health care; and

⁴⁹ All seven of their reports are available on the Premier’s web site that can be accessed at: http://www.gov.bc.ca/bvprd/bc/content.do?brwId=%402Ig53%7C0YQtuW&navId=NAV_ID_premier&levelFlag=1&crumb=B.C.+Home*Office+of+the+Premier&crumburl=%2Fhome.do*%2Fhome.do%3Fac tion%3Dpremier

⁵⁰ Premier’s Technology Council, First Quarterly Report November 22, 2001, page 1.

- ensure the growth and development of a vibrant, globally-competitive technology industry in British Columbia.⁵¹

146. The PTC has formed numerous task groups and has investigated these and other issues and, as well, conducted a number of regional workshops. From the information gathered in the workshops, the PTC identified a number of critical issues that it felt warranted consideration by the government. The issues took the form of recommendations that were made to government.
147. In some instances, the well intentioned efforts of similar task forces or councils are received, the contributors congratulated for their efforts and the reports then filed away somewhere, never to be seen or heard about again. However, that has not been the case with the PTC. The PTC has written seven reports to date. Each report reviews previous recommendations and the status of those recommendations. The PTC has not been limited in mandate, scope or duration and is seen as a critical mechanism for ensuring that recommendations that are made by the PTC to government are actually executed. The government of British Columbia recognizes the importance of its role as an enabler of technology in this province and relies on the PTC to help identify technology priorities.
148. While the issues facing the federal government will undoubtedly be different from those in British Columbia, there is a lesson to be learned from the PTC process. That is, one must first establish and give a clear mandate to an expert group of individuals that represent a broad variety of viewpoints. Second, the group must be given the tools required to perform the assigned tasks. Third, their recommendations must be followed in a timely manner. Fourth, one must continue to follow the progress of the recommendations to ensure that they continue to be executed and remain relevant as time progresses. On reading Appendix C of the 7th PTC Report, the reader will find a table that tracks all of the PTC recommendations, whether or not the same have been implemented or are in progress and whether or not the same are still relevant or are no longer required.
149. British Columbia has taken the advice of the PTC in developing strategies related to the adoption of new technologies and would suggest that the federal government consider adopting a similar process.

E. 12 How could government procurement policies be better co-coordinated or otherwise changed to improve the competitiveness of our ICT research and development and manufacturing capacity?

150. Let's use a recent British Columbia experience as an example. In 2002 the PTC held a symposium with industry stakeholders to discuss IT procurement issues

⁵¹ PTC, Q1 Report, page 1.

and challenges facing the industry. In the 7th Report, the PTC made the comment:

...industry stakeholders found that the procurement process was misaligned with modern realities. It was more suited to acquiring commodities or standard products, such as furniture, asphalt or even desktop computers, rather than complex IT solutions.

...in many instances government procurement process discouraged the IT industry from applying its expertise in developing creative and cost-effective solutions to improve government operations and enhance services.⁵²

151. The symposium participants identified five tactical and five strategic challenges. With that input, the PTC developed several recommendations to address the tactical and strategic challenges.⁵³
152. Recognizing the limitations of the procurement process as a vehicle to address the problem posed by the digital divide government “created” NetWork BC for the purpose of developing a strategy to bridge British Columbia’s digital divide.⁵⁴ NWBC’s mandate was to develop a strategic and tactical plan to connect all 366 communities in British Columbia by the end of 2006.
153. British Columbia also followed the recommendation from the PTC⁵⁵ that there could be advantages to aggregating the purchasing power of all of the public sector entities such as BC Hydro, Work Safe BC, all six health authorities, BC Lottery Corporation and the Insurance Corporation of BC. To do that, a Council of CIO’s representing each of those entities was formed and a strategy was developed to renegotiate all of the broader public sector communication service agreements. The end result was an agreement that eliminated duplicated efforts, unnecessary paperwork and redundant processes, thus resulting in significant cost savings to TELUS as the vendor and all of the broader public sector entities.
154. The PTC recently reviewed the project and reported that:

The PTC is pleased to note that through outstanding leadership, creative thinking and public, private and community cooperation, government has signed a strategic partnership agreement that will connect all 366 BC communities to affordable broadband connectivity by the end of 2006. This initiative is clearly an innovative example to emulate.⁵⁶

⁵² PTC, 7th Report, page 16.

⁵³ PTC, 3rd Report, pages 2-5.

⁵⁴ British Columbia calculated the cost to bridge British Columbia’s digital divide to exceed \$100 million to install the required fibre, wireless and last mile solutions.

⁵⁵ PTC Q-2 Report.

⁵⁶ PTC Q-7 Report, page iii.

155. British Columbia suggests that the federal government review the procurement processes developed in British Columbia as reported by the PTC and consider adopting and adapting it to suit federal requirements.

E. 13 What policies or regulatory changes should be adopted to improve the efficiency and competitiveness of Canadian ICT for the delivery of government, health, education and other public services?

156. British Columbia has already directed the reader to hyperlinks that illustrate the importance of ICT development of e-commerce and education. Let's focus on ICT and the delivery of e-health. In that respect, British Columbia directs the readers to www.network.gov.bc.ca/communities/movies.htm (click on e-health).

157. As is clear from the vignette, broadband is yet another tool that can be used to deliver health care services in Canada. We do not restrict this to First Nations or citizens living in remote communities but to all Canadians. As indicated in the vignette, Jean Devries of Smithers concerns about her unborn child were put to rest through the broadband transmission of an ultrasound when local doctors were not able to interpret the results locally. The benefits of this were that:

- Mrs. Devries did not have to leave her family for the procedure (less cost to her);
- her physicians were able to obtain the consulting advice that they required (resulting in a higher quality of local patient care);
- the precious resource of specialists' time was put to better use (better use of scarce financial and professional resources); and
- Mrs. Devries' concerns were quickly put to rest.

158. British Columbia is of the opinion that the federal and provincial governments should be able to collaborate so as to ensure that ICT applications are used to the greatest extent possible, to the ultimate benefit of all Canadians.

E. 14 Are changes necessary in government policies in areas such as immigration, education and health, to improve Canadian competitiveness in the ICT area? If so, how should these policies be changed?

159. British Columbia may comment on this question in its September 15th response submission.

7.0 PART F: Other Issues

160. British Columbia may comment on this question in its September 15th response submission.

8.0 PART G: Implementation

- G. 1 What specific legal or other provisions should be proposed by the Panel to implement the changes discussed in this document?*
161. British Columbia may comment on this question in its September 15th response submission.
- G. 2 Should Canadian telecommunications laws be consolidated into a single law? Could this improve clarity and consistency of enforcement? If so, how?*
162. British Columbia has already commented on this.
- G. 3 What additional changes, if any, should be made to Canadian telecommunications laws to achieve the overall objectives of the Telecommunications Policy Review?*
163. British Columbia has already commented on this.
- G. 4 Would it be appropriate to develop a Policy Direction, pursuant to Section 8 of the Telecommunications Act, to implement the telecommunications policy and regulatory changes discussed in this document? If so, what specifically should such a direction say?*
164. British Columbia may comment on this point in September.
- G. 5 What other measures should be taken to implement telecommunications policy and regulatory changes discussed in this document?*
165. British Columbia may comment on this point in September.
- G. 6 Given the wide range of possible changes that could be made in Canadian telecommunications policy and regulation, what should be the priorities for the Panel's areas of study and recommendation?*
166. British Columbia may comment on this point in September.
- G. 7 Assuming the Panel recommends a phased approach to the implementation of any proposed changes, which areas should be addressed first and what sort of timeline would be appropriate?*

167. British Columbia may comment on this point in September.

APPENDIX 1

Community Network Perspective on Access to Support Structures

B.14 Should section 43 of the Telecommunications Act be amended to provide the CRTC with greater jurisdiction over access to rights-of-way and support structures by Canadian carriers?

B.16 Should any other changes be made to the regulatory framework governing access to rights-of-way and support structures?

Yes, changes should be made to section 43 of the Telecommunications Act to recognize the unique problems of building improved telecommunications infrastructure in rural communities. This submission provides an overview of the problems encountered in constructing advanced telecommunications infrastructure in rural British Columbia. The last section provides recommendations on changes to regulations to improve competition in rural Canada.

Need

Many communities in Canada do not have sufficient population to attract private sector companies to construct competitive networks. Yet, for most of these communities improved telecommunications is a necessity not a luxury. Advanced telecommunications offers rural communities a means to create jobs and diversify their economies. For those communities that desire better telecommunications services their only option is to construct a community network. These communities register as Non-dominant Carriers and seek to use to existing ILEC and Power company support structures for the community network.

Not-for-Profit

A community constructing a network is in a different position from a private sector carrier. The private sector carrier approaches the project only if their capital investment will be repaid through profits generated by the network. Most community networks are constructed because there is not sufficient profit available to attract a private sector supplier. This difference is significant as the community cannot incur cost over-runs but experience has shown it is very difficult to avoid extra costs and disruptions when working with the support structure owners.

The main sources of extra-costs are:

- delays caused by slow response from the owner of the support structures
- excessive charges levied by the owner of the support structures for permits, engineering, and make ready costs
- denials by the support structure owner that require expensive work-arounds
- pursuing dispute resolution processes such as appealing to the CRTC

Before examining the above items in detail it is important to discuss the key role of not-for-profit community networks in bridging the “digital divide” in rural British Columbia and to outline the relationships of the various parties involved in access to support structures.

Rural Communities have Different Needs

One of the problems with the current regulations surrounding access to support structures is the underlying assumption that “one size fits all”. However, there are significant differences between the need for networks and how networks are deployed in large metropolitan areas and in smaller rural areas.

Large metro areas generate sufficient revenue for competing carriers to justify the expense of constructing separate support structures and/or paying significant fees to access a competitor’s support structures. The owner of support structures in a metro area usually has the opportunity to utilize any excess capacity and is justified in denying a competitor access.

In a rural setting the situation is quite different. There are no competing carriers seeking to bring additional services and the existing support structures often have excess capacity. In this situation the rules that make sense in a metro setting do not make sense at all. The ILEC has little motivation to bring advanced services or do network upgrades due to the small market size and lack of competition. Competing carriers have no interest in the small markets either. The best way to encourage competition in these markets is to simplify access to support structures so that new open access networks are constructed.

To illustrate these points this paper will refer to the experience of two community groups, Columbia Mountain Open Network (CMON) and the City of Kamloops in their efforts to construct community networks.

Columbia Mountain Open Network (CMON) is a not-for-profit group working to bring improved telecommunications to communities in South-Eastern British Columbia. In conjunction with the Provincial government and the Premier’s Technology Council CMON undertook the design and construction of a network to connect all of the schools and provincial offices in School District 20 (SD20). The network comprises approximately 60 km of network construction and will connect 22 buildings.

The City of Kamloops has been working to build the Kamloops Community Network (KCN) a fibre optic network connecting 37 public sector facilities.

Support Structure Access

In theory gaining access to support structures should be quite straight forward. The following steps are required:

1. Survey the available support structures in the network area
2. Carry out an engineering analysis of the selected route. The analysis includes assessing the condition of the support structures, determining if capacity is available and performing any loading calculations necessary
3. Determine if the owner of the support structure has plans for the available space
4. Finalize the route taking all of the above into account and determine what make-ready work is required to prepare the structures for the additional cables
5. Grant a permit for access to the structures.

In reality the process follows this outline but all of the power to decide on access lies with the owner or rights holder for the support structure. The standard Support Structure Access Agreement requires the non-dominant carrier to grant the owner or rights holder complete control over access decisions.

The relationship between the non-dominant carrier and the ILEC or power company is quite one-sided. The terms of the Support Structure Access agreements (SSA) are mainly to the benefit of the support structure owner. Unfortunately these agreements include strong non-disclosure clauses so examples cannot be provided of the one-sided nature of these agreements.

The Telecom Review Panel is encouraged to request copies of these agreements from the major carriers and power utilities and review them from the perspective of a not-for-profit community network.

Support Structures

Support structures include wholly-owned utility poles, controlled space on utility poles and underground structures such as conduits, ducts, vaults, manholes. Each of these types of support structures has different rules associated with them and access to one type of structure does not guarantee access to another adjacent structure.

Wholly owned utility poles are those that the ILEC owns and uses to support its own cables. In general these poles will have one or more cables belonging to the ILEC and they may contain one or more cables belonging to a cable TV company or occasionally the power company. Access to these poles is relatively straightforward. An application is made to attach that includes information on the type of cable and the number of pole attachments required. The ILEC then conducts an engineering review to determine if the additional cable can be accommodated. The review evaluates the following:

- Is there currently space available?
- What are the ILEC's plans that might require the available space?

- What is the condition of the pole?
- Can the pole and strand support the weight of the additional cable?
- How many cables are currently on each strand?
- Can the new cable be over-lashed on the existing cables or is a new strand required?

Difficulties arise when the ILEC decides to reserve capacity for its future use and denies the application. It is very difficult for the non-dominant carrier to determine if the ILEC truly has plans to use the capacity in the next 3 to 5 years short of making a complaint to the CRTC. If the non-dominant carrier accepts that the attachment is denied they then face considerable costs to find an alternative route. Either way costs increase and the project is delayed.

The other situation that can arise is the ILEC grants access but assesses significant make-ready costs to the project. The non-dominant carrier must pay the make-ready charges or they will not be allowed to attach. In most cases the make-ready charges are reasonable but instances have occurred where excessive charges were assessed.

The situation can be more complex on poles owned by power companies. The power companies make space available on their poles for telecommunications purposes. In British Columbia the majority of the telecommunications space is granted to TELUS and the remaining space is used by the local cable company leaving no space available to a community network.

This situation effectively leaves the control of all pole space in the hands of TELUS. For example:

CMON was denied attachment to power company poles that TELUS was *not* using on the grounds that TELUS had the right to those poles and CMON should apply to TELUS for those poles. TELUS would not review an application for poles it was not using so CMON was left in a “Catch-22” situation. Eventually the power company agreed to review the attachment request but only after significant delay and considerable lobbying of senior executives.

For regions of BC served by BC Hydro the situation is similar with TELUS co-owning most BC Hydro poles. The result of the co-ownership is that TELUS controls access to these poles providing it with near monopoly control over support structures.

Cable Companies

It should be noted that Shaw Cable has gained access to both TELUS and Fortis support structures in the CMON SD20 project area. In doing so Shaw occupies space on the support structures that could be used by another non-dominant carrier. Despite the acrimonious history between the cable companies and the ILEC, Shaw did not prove to be a willing partner in the SD20 project. Shaw refused to allow CMON to over-lash the Shaw cable and even refused access to Fortis poles that Shaw was not using.

Underground Structures

Underground structures such as conduits and manholes are more difficult for the non-dominant carrier to access. As these structures are effectively hidden from view, and records of where they go and what they are currently used for either do not exist or are not available, the non-dominant carrier cannot perform their own assessment of capacity or even determine if routes are available. Telus sent Kamloops a letter indicating that even opening a Telus manhole in a public right-of-way would be considered by Telus as trespass. The difficulty in determining routes effectively gives the support structure owner complete control in the case of underground routes. The experience of KCN was quite revealing in this regard.

Building Entrances

One often overlooked area is building entrances. In order to connect a customer the cable has to go into their premises and once again access is controlled by TELUS.

In the SD20 project building entrances were problematic. Initially it appeared most would be denied but after considerable discussion TELUS agreed to sub-duct most of the building entrances. Without the pressure from the Province it is questionable whether CMON would have gained access to the building entrances. It is important to recognize that building entrances are typically paid for by the building owner but then they must be turned over to TELUS in order to be connected to the TELUS network. In many cases there were empty 4 inch ducts going into the buildings but access was denied as these ducts were allocated for “future expansion”. TELUS stated in a meeting that it was policy for 2 ¼ empty ducts to be reserved for their expansion.

In the KCN case, Telus even attempted to deny access to the plywood mounting panels inside buildings, even those owned by the City of Kamloops!

Permits and Permit Processes

In general the process of constructing a network involves obtaining permits from a wide variety of authorities. In the SD20 network the following permits were required:

- TELUS – permits to attach to TELUS owned or controlled Support Structures
- Fortis BC – permits to attach to Fortis BC owned Support Structures
- CP Rail – each rail crossing requires a permit
- Dept of Fisheries and Oceans – permits for river crossings
- BC Dept of Highways – permits to use highway rights of way

Each permit has a fee or charge associated with it and in some cases the permits are of questionable value.

For example all of the applications to CP Rail and to DFO were to request the right to add an additional cable to an existing crossing. It is difficult to justify the costs of preparing these applications and the fees associated when the crossing in question already exists. Clearly a new crossing would require a separate application but the costs and time delays associated with existing crossings are unnecessary expenses. The

requirement for these permits are due to federal regulation not company policy. Rail crossing permits are mandated by the Department of Transport.

Examples of Difficulties Gaining Access to Support Structures

Delays

CMON made its P408 applications for the SD20 project on June 30, 2003. An initial response was received 122 days later on October 30, 2003. Questions concerning that response were not answered until at a meeting in January 2004 when TELUS committed to deal with the questions and outstanding issues.

A new team of TELUS staff were assigned to the project in January 2004 and the first usable response was received 03 March 2004. This response dealt with one segment of the network. It took an additional 16 months for responses that covered 80% of the planned build to be received. At the time of writing there are still P408's outstanding on this project.

Since the new staff was placed on the project they have proceeded in an orderly and professional manner. However, when the new staff reviewed the previous work they found many errors and had to rescind permissions that had been granted in the initial response. Errors included assigning CMON a position on Shaw's infrastructure and other similar mistakes.

All of the work performed by TELUS was at CMON's expense and was charged at full commercial rates. At no time was CMON able to get a project schedule or budget in order to assist with its planning. TELUS will only perform P408 evaluations on an open schedule "blank cheque" basis.

The **KCN** project experience was very similar though the time frame is even longer due to delays introduced by KCN's appealing to the CRTC for assistance.

KCN made its P408 applications to TELUS in early October 2002 (Oct. 4th and 10th). TELUS's initial response was received on January 8th, 2003 (90 days) but the make-ready charges exceeded the total project budget! The estimated make ready charges were \$817,991 and the total project budget was \$750,000. Negotiations to reduce the make-ready costs were begun immediately. TELUS responded on 10 April 2003 (182 days) with a proposal that reduced costs to approximately \$510,000.

At this point KCN, having tried to negotiate with TELUS, chose to take the matter to the CRTC and filed a Part VII complaint. The Part VII complaint took a year for the CRTC to rule on (Complete details are available at http://www.crtc.gc.ca/PartVII/eng/2003/8690/c121_200306127.htm). Even with the ruling in hand there continue to be disputes over the interpretation of the ruling.

Finally on July 7, 2005, 1,001 days after the initial application, the disputes were resolved to the point that KCN was able to inform TELUS and BC Hydro they are ready to begin construction.

On July 15, 2005 TELUS informed KCN that their P408's have expired and a "nominal fee" will be necessary to renew the permissions.

These examples illustrate the delays involved in dealing with the ILEC and the power companies.

Summary:

CMON – 122 days to initial response from TELUS

CMON – 743 days to useable response on 80% of network from TELUS

KCN – 1001 days to negotiate satisfactory terms with TELUS

KCN – 366 days to receive decision on complaint to CRTC

Costs

There are two types of costs that affect network construction; engineering costs and make-ready costs.

Engineering Costs

Engineering costs are charged by the ILEC and the power company to assess the application to use the support structures. These fees are entirely justified provided they are fair and reasonable. In several instances the fees charged were excessive and no justification was provided for why the fees were so high. Similar work performed by private sector telecommunications engineering firms typically costs half of the charges levied by TELUS.

Examples:

On a project in the Crowsnest Pass region of southern BC the TELUS representative stayed in a hotel 125 km away charging the project for 2.5 to 3 hours per day in unnecessary travel time. A large choice of accommodation is available 30 km from the project site. The costs for this work were disputed and TELUS eventually agreed to a lower amount. TELUS refused to provide justification (timesheets, expense accounts) for the invoice.

CMON was assessed \$75,000 for engineering work that had to be redone in its entirety. The team placed on the project had little or no experience and they were replaced by a more experienced team. The initial team granted permission to attach on infrastructure that did not belong to TELUS (it was Shaw Cable's) and CMON had to revise its plans extensively when the permission was taken away. CMON requested justification for the charges but TELUS refused to provide any documentation.

KCN was charged \$87,242 by TELUS for engineering work. Again there was no back-up provided to justify these charges. Back-up is eventually provided and the matter is settled with the assistance of a CRTC mediator for 66% of the original invoiced amount.

Make-ready Charges

Make-ready charges are decided by the owner of the support structures and there is no simple means to appeal them. The only option is to appeal to the CRTC if the charges are assessed by a telecommunications company. If the charges are assessed by a power company the only option is to request a review by the utilities commission.

The challenge in deciding to appeal is the costs of an appeal to the CRTC and the delay involved in obtaining a decision. For a community in BC to appeal to the CRTC in Ottawa is an expensive proposition. TELUS has a department dedicated to regulatory issues and is more adept at working with the CRTC than a community. The availability of experienced staff and budgets provides the ILEC with a significant benefit over a small community.

Examples of questionable make-ready charges:

Elk Valley

A P408 application to attach a fibre cable to TELUS and BC Hydro support structures in the Elk Valley region of southern British Columbia requested attachment on 284 poles.

TELUS's response indicated that 65 of the poles (23%) would require replacement as the poles were unserviceable and "rotten". TELUS indicated they would share the cost of replacement with the applicant by providing the poles and the applicant could pay the cost of installation.

An analysis of TELUS's proposed costs for replacing the poles indicates that the average cost of installing a pole was \$1,663. Assuming the pole cost was \$500 (which is a generous assumption) the total cost to replace each pole would be \$2,163. The applicant would be responsible for 77% of this amount with TELUS paying the remaining 23%.

Given that these poles were at the end of their useful life and TELUS has received the benefit of their use it is unreasonable for the applicant to pay the majority of the cost of replacement. If the amounts were reversed with the applicant paying the smaller amount the situation would be more understandable. In this case the applicant was faced with the option of making a formal complaint to the CRTC or of finding an alternative route. The anticipated costs and delays of a CRTC complaint made that option unattractive. An alternative underground route was selected for the project adding unnecessary costs.

SD20

Average make-ready charges on the SD20 are over 6 times higher than similar networks in Quebec and Ontario. To date make-ready costs on TELUS infrastructure are approximately \$6,000 per km and on Fortis support structures about \$5,500 per km. XIT Telecom has constructed several thousand km of network and their experience is that make-ready charges are typically \$900 per km. These charges place total network construction costs in British Columbia 60% higher than in Quebec.

In the case of KCN, as previously described, the make-ready charges exceeded the entire project budget. Attempts to remedy the situation by negotiation and CRTC complaint were somewhat successful but the project was delayed by over 2 years.

Another example of inappropriate costs is when the applicant is assessed the costs of removing obsolete infrastructure. In a number of cases in SD20 CMON was assessed the costs of removing infrastructure that TELUS no longer required in order to free up space for CMON's use. In cases such as this there must be a mechanism to share these costs.

Denials

The ILEC or power company can deny access to support structures without having to prove their reasoning. The only option the applicant has is to make a complaint to the CRTC and, as discussed below, this is not a simple process.

In both the SD20 and KCN examples access to underground structures was denied as the available empty ducts were designated for "future" capacity. Such a refusal may make sense in the context of the downtown area of a large city but in a small rural community it is unlikely the available capacity will be exhausted.

In the SD20 network applications were made to both TELUS and SHAW to purchase existing, unused fibre optic cable that was in the equipment rooms of customer buildings. In all cases the companies refused to sell any of this fibre forcing CMON to construct new fibre. Once the CMON fibre was in place the existing fibre remained unused.

In the SD20 project FORTIS denied CMON access to poles that were not being used by TELUS or SHAW on the basis that existing agreements gave these companies control over the poles whether they were using them or not. FORTIS's legal counsel was of the opinion that the agreements between FORTIS and TELUS and FORTIS and SHAW granted them exclusive use of the space on the poles regardless of whether they were using the pole or making a payment for the pole. This example illustrates the problems that arise due to power poles not being regulated in the same way as telecommunications support structures. The problem is exacerbated by the fact that the agreements governing power company support structures are over 50 years old and are no longer relevant.

Denials for reasons of future capacity are difficult to prove without making a complaint to the CRTC. TELUS is not inclined to share its plans with a competitive network unless compelled to do so. There is also no mechanism to follow-up and audit if the future plans were carried out. Only with a publicly accessible registry of support structures and plans will community networks be able to plan without being unduly at the mercy of the ILEC.

Disputes

As has already been mentioned dispute resolution is a very time intensive process. The KCN's complaint to the CRTC took a year to resolve. This fact alone discouraged CMON from complaining to the CRTC about the problems dealing with TELUS. In many cases the expected cost of the complaint in both time and money led CMON to accept the delays or additional costs. It was not feasible to delay the project further.

The CRTC is difficult to access from British Columbia. It is beyond the means of most small communities to travel to Ottawa to visit the commission or to attend hearings. Similarly not-for-profit groups cannot afford to engage legal or engineering consultants solely for the purpose of making a complaint to the CRTC. TELUS, on the other hand, has staff dedicated to regulatory matters and are able to professionally respond to any complaints.

KCN worked with a consultant on their complaint and incurred expense of \$10,500 not including staff time. Costs of this magnitude are significant to small communities and are a further impediment to improving access to support structures.

Conclusions

Access to support structures is vital to the construction of competitive networks. In rural communities it is even more important that access to support structures be straight forward and equitable. Today's situation is anything but fair and equitable with community networks suffering massive delays, excessive costs and facing an onerous complaint process. The situation is summed up well by Frank Mayhood the Manger of Information Technology for the City of Kamloops. Frank writes:

- 1. The design of community networks using existing support structures is severely hampered by lack of information on the location, capacity and current utilization of support structures. TELUS probably does not have the records systems necessary to determine whether spare capacity exists without a physical inspection. BC Hydro is in a similar position. Neither is willing or able to share this information with network designers outside their own organizations.*
- 2. It is very expensive and time consuming to design a network using the P408 application process to determine the availability of support structures for a large project, and impossible to construct the network in the timeframes specified in the tariff for expiry of permission to use the support structures..*
- 3. Verification of "lack of capacity" claims by Telus is difficult to obtain.*
- 4. The CRTC Part VII appeal process takes too long to be of much use in settling anything but policy issues.*

Recommendations

Support structures in rural areas should be treated as basic public infrastructure. As such they should be managed cooperatively for the benefit of the residents of the region. The rights of the owners of the support structures must be respected but the greater public good must take precedence over private sector control

Standards must be created for support structures and for attachment to support structures such that a common set of rules exists for using support structures. The rules would allow any qualified engineering company can carry out make-ready assessments. A clear set of rules would relieve the ILEC and power company from the responsibility to carry our make ready assessments allowing them to focus on more profitable areas of their business.

In addition to the standards for access, a registry should be established where the ILEC and other carriers would file their plans for additions to existing structures or the construction of new support structures. This information would be available to all registered carriers to determine what capacity is available. Regulations requiring the sharing of positions in support structures should be established to promote sharing of fibre strands in a common sheath. Sharing would reduce the costs for the sharing parties and preserve space on the support structures.

Should the current inefficient and expensive system be retained regulations must be modified to establish maximum response times for information requests, P408 requests and make-ready work regardless of the number of structures in the request. The costs of processing these requests must be tied to the cost of the same work carried out by a competent private sector firm.

A simple, low-cost, dispute resolution process accessible regionally (not just in Ottawa) must be developed to provide not-for-profit networks a level playing field with the ILECs. The dispute resolution process must function quickly so as to not tie up projects for months or years. A public advocate should be established to represent community networks in these hearings. The public advocate would provide support to communities similar to that enjoyed by the large telecommunications companies through their regulatory departments.

The use of power company support structures for telecommunications purpose should be regulated by the CRTC to ensure a common set of regulations.

Regulations governing rail crossings and river crossings should be reviewed with the intent to simplify them particularly in regard to adding cables to existing crossings.

APPENDIX 2

List of Contributors

Ministry of Labour and Citizens' Services

Office of the Chief Information Officer

Ministry of Economic Development

Trade and Competitiveness Branch

Infrastructure Development Branch

Economic Analysis Branch

Ministry of Small Business and Revenue

Regulatory Reform Branch

Small Business Development Branch

Ministry of Transportation

Ministry of Public Safety and Solicitor General

APPENDIX 3

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APPENDIX 4

Acronyms

ADSL – Asymmetric digital subscriber line, a technology that allows more data to be sent over existing copper telephone lines

ASP – Application service provider, a third-party entity that manages and distributes software-based services and solutions to customers across a wide area network from a central data center.

ATM – Asynchronous Transmission Mode

BCUC – British Columbia Utilities Commission

BDU – Broadcast Distribution Undertaking

BPL - Broadband over power line

CCA – Connecting Communities Agreement

CCTA – Canadian Cable Television Association

CIO – Chief Information Officer

CLEC – Competitive Local Exchange Carrier

CMON – Columbia Mountain Open Network

CO – Central Offices

ICT – Information and Communications Technology

ILECs – Incumbent Local Exchange Carriers

IP – Internet Protocol

IRUs – Indefeasible Rights of Use

ISDN – Integrated System Digital Network

ISP – Internet Service Provider

IT – Information Technology

LAN – Local Area Network

LEC – Local Exchange Carrier

LMCS – Local Multipoint Communications System

MANs – Metropolitan Area Networks

Mbps – Megabytes per second

MDU – Single occupant owned building such as a house, single tenant commercial premises or a commercial multi-tenant property

NLOS – Non-Line of Sight

NSI – National Satellite Initiative

NWBC – NetWork BC

OECD – Organization for Economic Cooperation and Development

PBX – Private Branch Exchange

PCS – Personal Communications Services

PN – Public Notice
PTC – Premier’s Technology Council

QoS – Quality of Service

TRP – Telecom Review Panel

VoIP – Voice Over Internet Protocol

VPN – Virtual Private Networking

WAN – Wide Area Network

WCS – Wireless Communications Services

Wifi – Wireless Fidelity

WiMax – A wireless industry coalition whose members organized to advance IEEE 802.16 standards for broadband wireless access (BWA) networks

WSP – Wireless Service Provider