Telecommunications Policy Review

Consultation Paper

June 6, 2005

Telecommunications Policy Review Panel
280 Albert Street,
Ottawa, Canada K1A 0C8

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Cat. No. Iu4-70/2005E-HTML
0-662-40703-2
54306E

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Foreword

The Telecommunications Policy Review Panel was appointed by the Honourable David L. Emerson, Minister of Industry, on April 11, 2005 to conduct a review of Canada's telecommunications policy and regulatory framework. The Panel was asked to make recommendations on how to move Canada toward a modern telecommunications framework in a manner that benefits Canadian industry and consumers. The Panel's Terms of Reference are set out in Appendix A of this paper.

The Panel has established a Web site (www.telecomreview.ca) which provides information on our mandate, as well as background materials. On May 14, 2005, the Panel issued a notice in the *Canada Gazette* inviting parties who wish to make submissions to the Panel to register on our Web site.

The Panel has a very short time to complete our review of the wide-ranging issues raised by our mandate. Therefore, we plan to rely heavily on submissions from interested parties to assist us in developing our recommendations. In this consultation paper, we invite the public to provide comments on a variety of issues relating to our mandate. The process for making submissions is described at the end of this paper.

We anticipate that parties will have a wide range of different perspectives on telecommunications policy and regulation. We have therefore developed this paper to assist in focusing comments on the broad areas we have been asked to review – namely those that relate to the telecommunications regulatory framework, access and ICT (information and communications technologies) adoption. The paper describes what we currently view to be some major issues to be considered in developing a forward-looking policy and regulatory framework.

The Panel's Terms of Reference are very broad. Rather than attempt to narrow the focus of our study at the outset, we have decided to invite comments on as wide a range of issues as possible. In this way, we hope not to prejudge or prematurely eliminate areas of interest and potential reform.

Over the coming months, we expect to develop our views on what are the major issues and priorities for telecommunications policy and regulatory reform, and what recommendations we should make on those issues. We specifically invite parties to make submissions on any issues not addressed in the paper (see Section F). However, if you intend to comment on the issues raised in the paper, we ask you to help us do our job efficiently by addressing your submissions to the specific numbered issues set out in the paper.

In each section of this paper, we provide some background on the areas under review, and then raise questions relevant to those areas. We invite members of the public to respond to any or all issues in accordance with their interests and expertise. We especially invite submissions that

provide facts, analyses, concrete action items and other specific suggestions that would assist the Panel in developing our recommendations. We also invite you to raise issues which you believe we have overlooked or to which we have devoted insufficient attention.

Given the wide range of issues raised by our mandate, we invite parties to identify those issues which they believe should take priority in the Panel's recommendations. Our report may suggest that our recommendations be implemented in phases. Some may be achievable in the short term. Others, such as those which require legislative change, may take longer. We welcome suggestions on how best to proceed with different recommendations (i.e. when and how) in the context of a phased implementation scheme.

Canada has generally been well served by the policy and regulatory framework that evolved over the last century. That framework is rooted in the principles of public utility regulation set out in the 1906 *Railway Act*. The framework was modified in the 1970s, with the creation of the Canadian Radio-television and Telecommunications Commission (CRTC) as a unified regulator of our telecommunications and broadcasting industries. The framework was also modified by the 1993 *Telecommunications Act* and the 1994 *Radiocommunication Act*, but some of its basic principles have survived since 1906.

Under this framework, Canada's telecommunications industries have developed some of the most advanced, ubiquitous and affordable telecommunications networks and services in the world. By many measures, Canada has been a leader in telecommunications developments.

However, while the policy and regulatory framework has remained relatively constant, Canada's telecommunications industries have moved from the era of telegraph, telephone and cable TV monopolies to the era of competitive and converging Internet, wireless and broadband access service providers. Some of the major issues facing our Panel relate to these technological and market transformations. These will continue, and perhaps accelerate, over the next decade.

Therefore, while we see it as our role to ask: *Are there problems with the current framework that need to be fixed?* – that is not the only question. To properly discharge our mandate, we must also ask: *Should changes be made to the policy and regulatory framework to better equip Canada to reap future benefits from developments in telecommunications and ICT as these become more powerful enablers of our social and economic lives?*

We wish to thank, in advance, those of you who will assist us in meeting our challenging objective: to develop recommendations for a forward-looking policy and regulatory framework that will best serve Canada's requirements.

Hank Intven	**Dr. Gerri Sinclair**	**André Tremblay**
Telecommunications Policy Review Panel		

Introduction

The continued development of advanced telecommunications networks and services is of critical importance to Canadian society. Canadians are increasingly dependent on telecommunications for a wide range of personal, business and government activities – from telephone calls, e-mail, e-commerce and e-government services to on-line gaming and other entertainment activities. These activities, and more, rely on the capabilities of advanced telecommunications networks and services.

The telecommunications industry is a significant driver of the Canadian economy. Telecommunications companies employ over 114 000 people across the country and directly contribute more than $24.8 billion annually to Canada's economy.[1] In addition to these direct benefits, telecommunications is widely recognized to be an important enabler of economic activity in other sectors, including retail, financial services, training, and many other activities.

Canada has been at, or near, the forefront of telecommunications developments for many years. It has been known worldwide for its leading edge telecommunications systems, services and products. It is essential for Canada's future competitiveness that our telecommunications networks and services are as advanced and reliable as any in the world, and that the Canadian telecommunications industry remains a leader in the development and supply of telecommunications services and products.

The government's objective in establishing the Telecommunications Policy Review Panel is to ensure that Canada has an up-to-date regulatory framework, fostering an environment that improves access for all sectors of the economy, and encourages the adoption of advanced applications and services. The Panel plans to examine the current industry and regulatory environment, as well as anticipated developments, over the next 10 years, and to make recommendations as to the future policy framework which the government should adopt. This consultation paper has been prepared in order to invite – and to help focus – comments from the public in a manner that will assist the Panel in its task.

The consultation paper is divided into seven major parts. The first three parts deal with government involvement in telecommunications markets, particularly through regulation. The final four parts focus on access, ICT adoption, other issues and implementation.

The first part of the paper provides a brief description of the current state of telecommunications technologies and markets and discusses current trends and future developments. This section is intended to provide some background perspective and to seek comments on whether that perspective is accurate, as well as general comments on where the telecommunications industry is headed over the next 10 years.

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[1] Statistics Canada, *Survey of Employment, Payroll and Hours (March 2005) and Gross Domestic Product by Industry (February 2005).*

The second part re-examines the basic questions of why governments intervene to regulate telecommunications markets, which policy objectives should apply to such government intervention, and which types of economic, technical and social regulation may be required.

The third part moves from asking why and how governments should regulate, to which government institutions are best equipped to do it, particularly in light of current changes in the telecommunications environment. This part focuses on the tasks of different government bodies, including regulators, tasks such as policy development, rule making, authorization, dispute resolution, enforcement and appeals.

The fourth part deals with access by Canadians to broadband services and advanced ICT. It reviews recent initiatives to expand broadband access and asks when and how the government should take steps to ensure that more Canadians have access to broadband and other advanced technologies.

The fifth part looks at whether Canada is making the most of communications technologies in business, government and at home.

The sixth part invites comments on other issues, not identified in the preceding parts.

The final part examines questions related to the implementation of policy and regulatory changes that may be considered by the Panel, including the question of introducing such changes in different phases.

A. The Changing Telecommunications Environment

A good understanding of current and future developments is an essential prerequisite to developing sound policy objectives and an appropriate regulatory framework. The Panel invites comments from industry participants and others on current trends and predicted developments over the next 10 years in the telecommunications sector and, more broadly, in the area of ICT.

This part is divided into two sections. The first section looks at where we are now and how we got here. The second section identifies some areas the Panel believes may give rise to pressures for government intervention as the industry evolves.

1 Changing Markets and Technologies

Twenty-five years ago the world's telecommunications markets shared several common features that have almost disappeared. Telecommunications services were generally provided on a monopoly basis – either by a government agency or by a private sector company regulated by government. These services were developed and priced to achieve two central goals of telecommunications policy: universality of access; and affordability of services. In industrialized countries, such as the OECD (Organisation for Economic Co-operation and Development) members, these goals were largely achieved.

The government or private sector monopoly providers were generally similar. They were vertically integrated, in the sense that they provided most local, long distance and international services and equipment. Despite the fact that some standards were required for both domestic and international interconnection, telecommunications services were essentially delivered by means of closed, proprietary network systems. Telecommunications equipment manufacturers developed the facilities used to build these proprietary systems in close concert with their customers, the network operators. In addition, the telecommunications services delivered were similar in most countries. They included local voice services, long distance and international voice services and a limited set of data services. Pricing for these services was defined by regulatory regimes which balanced the needs for capital investment, investor return, and operational funding of the service provider, with the public goals of universality and affordability.

These monopoly arrangements continued until technology transformed the industry. The advent of microwave transmission and, then, fibre optics, changed the economics of long distance transmission, contributing to the rise of competition. The introduction of fax machines and mobile wireless services broadened consumer appreciation of the utility of telecommunications. And, most importantly, the development of the microprocessor, the fall in the prices of semiconductors and the subsequent shift of telecommunications from analog to digital transmission, initiated a revolution in communications technology.

The digital revolution started in the late 1970s with the first digital central offices and continued in the early 1980s with digital PBXs (private branch exchanges) and microwave transmission

systems. Subsequently packet data networks, such as X.25, gained ground and acceptance. The focus on data services expanded as computers became more important to business and government. By the 1990s, digital technologies were widespread in interexchange networks, common in local exchange networks and making inroads into wireless networks.

By the end of the 1990s, optical fibre technology had increased performance and lowered transmission costs dramatically. Bandwidth, once a resource to be conserved, was now abundant – if not in the last mile of the access network, at least certainly in the core network. At the same time, personal computers, mobile phones and network devices were all getting smarter and more connected. The demand for telecommunications connectivity was burgeoning.

Over the past decade, Internet Protocol (IP) networks have been a fundamental driver of innovation and demand for connectivity. Other technological developments such as Ethernet (especially Gigabit Ethernet), SONET and single-mode fibre have added momentum. The ubiquity of IP networks, and "open standards" for protocols and hardware, pushed the adoption of IP equipment by enterprises, government and individuals.

Increased broadband access, a major development of the post-2000 era, is increasing the functionality of IP networks. High-speed access networks have become multi-service platforms – providing voice, data and video services on one "pipe." They are becoming the backbone of a new networked economy.

Canadian Developments

Over the past 20 years, Canada's industry and telecommunications regulators have managed a migration from a monopoly service delivery model to a more consumer-driven competitive market. In general, this transition has been very successful, from the perspective of Canadian consumers and business. Major accomplishments include:

- the development of competitive markets for long distance, wireless, and high-speed Internet services, which provide among the lowest prices and the best quality of service in the world; and

- the availability of high-speed Internet access to over 86 percent of Canadian homes[2] – with most Canadians having a choice of more than one service provider.

While consumers might benefit from more competition, especially in the local exchange market, there can be no doubt that the Canadian telecommunications sector – both the industry and the government – can justly be proud of the achievements of the past decades. And, there is reason to be optimistic about increased competition in the local exchange market. There is every indication that Voice over IP (VoIP) and entry by the cable telecommunications carriers will significantly increase competition in the local market.

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[2] CRTC, *Report to the Governor in Council: Status of Competition in Canadian Telecommunications Markets (November 2004).*

2 Forces Shaping the Future

In order to determine the policy and regulatory framework that will serve Canada best over the next 10 years, the Panel wants to understand how the telecommunications industry will evolve over this period.

Three major technological developments are influencing the current state of the telecommunications industry and are likely to remain important drivers for the foreseeable future:

- the shift to IP-based technologies;
- the pervasive deployment of fibre optic technology; and
- the increasing prevalence and importance of wireless technologies.

Each of these factors is discussed, in turn, below.

The Shift to IP

The shift to IP-based technologies has two major implications: the first relates to the structure and cost of networks; the second to the opportunity for innovation and competition in applications.

Estimates vary as to the magnitude of the efficiencies provided by IP networks, but it is generally agreed that they are significant. IP networks permit many types of applications to be distributed efficiently over a single network. There will no longer be such a thing as a voice or data network. As IP becomes fully integrated into networks, they will in all likelihood be capable of handling every kind of application (i.e. voice, data, audio, and video).

This increased flexibility and efficiency of IP networks will lead to decreased costs, increased competition and enhanced opportunities for both new entrants and established players. In the longer term, no single network will be able to claim primacy or be able to control a particular market. Copper, coaxial cable, optical fibre and wireless networks will all carry the full range of services and, hence, will all compete with each other, primarily on the basis of price and inherent network characteristics (e.g. mobility, transmission capacity, reliability).

On the applications side, the shift to IP-based technologies means that applications providers will no longer need to rely on a specialized network to offer their services to end users. On the contrary, since every network will theoretically be capable of supporting every type of application, new service providers should be able to enter existing markets or create entirely new markets simply by connecting to one or more of the available IP networks. And, customers will have a much greater say in determining which applications are developed, offered to the public and achieve success in the market.

The implications of this open entry environment for innovation, consumer choice and competition are significant. The telecommunications market will increasingly shift from one where applications are "pushed" at consumers by network providers, to one where there are greater opportunities for consumers to "pull" those applications they want and leave the rest to wither at the far end of the network.

It is important to acknowledge that this scenario where "a thousand applications bloom" is premised on an open access, open standards approach to IP networks. Applications providers, Canadian businesses and consumers will all have an interest in ensuring that network providers facilitate – rather than limit – access to innovative new technologies and services. And network providers will equally have an interest in achieving a return on their investments in advanced infrastructure.

What remains less clear is the extent to which some applications may need to rely more closely on integration with the underlying network, for example for reasons of quality of service or security. If network intelligence (i.e. information processing capacity) is enhanced and, as a result, applications development requires coordination with this network intelligence, this may have the practical effect of limiting the number of applications available over any one network. In this type of network environment, regulation may be required to maintain open access for applications providers.

Telescoping Distance with Optical Fibre

In the late 1990s and early 2000s, fibre optic technology was installed in long distance networks throughout North America and across the globe. These fibre networks provide immense transmission capacity of the highest quality and have radically changed the economics of long distance transmission. What once was painfully expensive is now relatively cheap.

In addition, the routing of packets on IP networks has rendered it impractical to attempt to charge for transmission on the basis of the distance between the points of origination and termination of a signal.

In short, fibre optic technology and IP networks are combining to reduce distance as a consideration when designing and pricing applications. E-mail pays no attention to distance. SMS (Short Message Service) messaging pays no attention to distance. Voice, data and all other applications are also rapidly evolving to a distance insensitive model. Given the reliance on distance-based charges in many existing services, this shift will affect existing service providers as they are forced to find new sources of revenues and to restructure their service offerings.

The Wireless Revolution

Over the past two decades, mobile wireless telecommunications has moved from being a marginal service used by sales personnel and travellers in distress to a mainstream service that many believe to be the defining edge of telecommunications. With the move from analog to digital and the increase in transmission capacity achieved through enhanced compression

techniques, wireless networks can now challenge wireline networks on almost every front. Voice, data, video are all available over wireless networks. Plus, they have the added benefit of mobility and flexibility which personalizes telecommunications in a way never before seen. The ability to take a complete communications system with you wherever you go is revolutionizing not only how people communicate, but how they work, socialize and entertain themselves.

The proliferation of wireless devices using the 802.11 standard (WiFi) may already be having an impact on the revenues of the licensed wireless providers, in particular on data revenues. As fixed wireless access technologies (including WiMAX when available) become widely deployed, their impact on wireless providers may intensify. These technologies also have the potential of competing with wireline access in every market and particularly in suburban, rural and remote areas.

As the innovations continue to be rolled out into the wireless market, the "pull" paradigm for telecommunications services is a trend that will in all likelihood persist into the future. Customers will continue to demand a diversity of applications and they will want the ability to choose to use only those that interest them.

Issues

A.1 *Comment on the technological developments described above and provide your views on how telecommunications and ICT technologies will change over the next 10 years.*

A.2 *Comment on the potential for different networks (i.e. wireline 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.*

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?*

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 service to each market? If not, which types of network providers are likely to serve each market and with which technologies?*

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?*

A.6 *Is vigorous inter-regional competition by ILECs and cable companies likely? Please explain the basis for your views.*

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) and any new entrants. Provide market share projections, if possible.

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?

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.

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.

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.

B. The Regulatory Framework

This part of the paper questions the goals and reasons for government intervention in the telecommunications sector. Section 1 considers the basic policy objectives that should guide government regulation by the CRTC, Industry Canada or other government institutions. Sections 2, 3 and 4 ask what specific types of economic, technical and social regulation would best enable Canada to deal with the evolving telecommunications environment. The following part of this paper (Part C) deals with the functions of the regulatory institutions that implement such regulation.

1 Policy Objectives

Given the importance of telecommunications to Canada's future, it is important to review Canada's basic telecommunications policies.

The main legislative telecommunications policy objectives have been established by Parliament in section 7 of the *Telecommunications Act* which reads as follows:

Section 7. It is hereby affirmed that telecommunications performs an essential role in the maintenance of Canada's identity and sovereignty and that the Canadian telecommunications policy has as its objectives:

(a) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;

(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;

(c) to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;

(d) to promote the ownership and control of Canadian carriers by Canadians;

(e) to promote the use of Canadian transmission facilities for telecommunications within Canada and between Canada and points outside Canada;

(f) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective;

(g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;

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

(i) to contribute to the protection of the privacy of persons.

These nine policy objectives guide the exercise of statutory powers under both the *Telecommunications Act* and the *Radiocommunication Act.*

Three governmental bodies are involved in developing more specific telecommunications policies: the Governor in Council (federal Cabinet), the Minister of Industry and the Canadian Radio-television and Telecommunications Commission (CRTC). These policies are developed through a variety of mechanisms (e.g. internal study, task forces, and public proceedings) and are then promulgated through policy statements, policy directions, decisions, notices or other measures.

Under section 8 of the *Telecommunications Act*, the Governor in Council can issue policy directions to the CRTC. This power has been in place since 1993, but has never been used. Under section 12 of the Act, the Governor in Council can also review and vary a CRTC decision or require the CRTC to reconsider the decision. Although primarily a form of appeal, this power can also be viewed as having a significant policy-making component since applications under

section 12 are almost always based on policy issues. Finally, the Governor in Council can also require the CRTC to report on any matter within its jurisdiction (*Telecommunications Act*, section 14). Such reports can then be used in further policy development. The CRTC's annual report on the state of competition is an example of such a reporting requirement.

Significant policy development occurs under the direction of the Minister of Industry and may take the form of such initiatives as the National Broadband Task Force, the Task Force on SPAM and the Department's current review of spectrum policy. These policy initiatives are based on the Minister's powers under the *Telecommunications Act*, the *Radiocommunication Act* and The *Department of Industry Act*. In addition, under section 15 of the *Telecommunications Act*, the Minister of Industry can establish standards in respect of the technical aspects of telecommunications if the Minister considers this appropriate to further the Canadian telecommunications policy objectives set out in section 7 of the Act. This power has a significant policy aspect, since it permits the Minister to directly influence technological development and adoption.

Issues

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

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.*[3]

Types of Regulation

Telecommunications regulation can be divided into three broad types: economic, technical and social. Among other things, economic regulation governs market behaviour, including prices and other terms and conditions under which telecommunications services may be provided by service providers. What we classify as technical regulation governs standards for equipment, radio spectrum usage and radiocommunication facilities, interconnection standards and other technical matters. The broad topic of social regulation covers such matters as consumer protection, promoting universal service and affordable access and facilitating access for all members of society, including persons with disabilities.

It is important to recognize that these are not mutually exclusive regulatory categories. Some aspects of economic regulation have technical and social elements. Technical standards can have economic and social implications. And, social regulations can require technical measures, as well as impose economic costs on service providers.

The next section reviews the Canadian approach to economic regulation, while the two subsequent sections deal with technical and social regulation.

[3] Please note that more issues related to the institutional framework for regulation are raised in Part C of this paper.

2 Economic Regulation

Under the *Telecommunications Act*, the CRTC is empowered to regulate the rates, terms and conditions of telecommunications services provided by Canadian telecommunications carriers (i.e. telecommunication service providers which own and/or operate transmission facilities). The Act grants the CRTC a broad and flexible mandate for such regulation. The primary guidelines set out in the Act are that rates should be "just and reasonable" and that there should be "no unjust discrimination" in relation to the provision of a service.

In theory, economic regulation is intended to provide a substitute for competitive market forces where there are market failures. Such market failures may include outright monopolies, or, more commonly situations where markets forces are weak and "dominant suppliers" have market power and abuse it, to the detriment of customers and of actual or potential competitors. Market power usually denotes a position of economic strength, enabling a service provider to set prices or conditions of service, independent of the actions of competitors or customers. In practice, market power is often defined as the ability to implement a significant price increase for a significant time period.

Economic regulation addresses a large number of issues and includes a variety of regulatory approaches. Most of the CRTC's economic regulation measures have been focused on the former "telephone companies" – now usually referred to as ILECs – which have held market power in the provision of local exchange services. The main types of CRTC economic regulation can be considered under four main headings.

First, CRTC economic regulation is aimed at protecting retail customers from being charged prices that are too high by suppliers with market power. For many years, the CRTC applied a form of "rate base rate of return" regulation under which the ILECs' rates were set at levels which provided them an opportunity to earn a fair rate of return – but no more. These rates were reviewed periodically and, if necessary, adjusted to accommodate changes in the ILECs' costs and preserve the opportunity for the carrier to earn a fair return. They were also adjusted to reflect policy objectives such as promoting universal service. Since 1998, this approach has been replaced by "price cap" regulation for the larger ILECs. Price cap regulation sets ceilings on prices that are adjusted yearly based on experienced inflation and productivity targets. Price cap regulation has also been phased in for most smaller ILECs.

Second, economic regulation is intended to prevent anti-competitive practices by suppliers with market power. Traditionally, a major concern has been the possibility of predatory pricing. To address this concern, the CRTC has established price floors for most regulated ILEC services. More recently, the CRTC has required ILECs to provide competitors with access to what it classifies as "essential" and "near-essential" facilities and services, such as local loops, priced at incremental cost plus a CRTC-approved markup. The CRTC has also placed restrictions on certain marketing practices of ILECs, e.g., contacting and trying to win back customers switching to a competitor. The CRTC's broad objectives for these types of regulation have been to prevent potentially anti-competitive practices and to promote competition.

Third, CRTC economic regulation is aimed at protection against undue price discrimination. The CRTC requires that tariffed services be available to all persons wanting these services, that price discounts and differentials have reasonable justification, and that rates for regulated services be subject to broad price averaging.

Fourth, CRTC economic regulation attempts to ensure widespread availability of services. The CRTC also monitors the quality of service for certain services whose prices are regulated, so that suppliers do not increase the effective price by lowering the quality. The ILECs are generally required to provide their regulated services to any potential customer on demand, subject to limited exceptions. Non-ILECs are not subject to this type of "obligation to serve" requirement. The CRTC has also regulated rates in such a way as to ensure that basic telephone service is affordable in all regions, including high cost areas. In order to achieve this goal, the CRTC has established a central fund, administered by a third party, which collects "contribution payments" from Canadian telecommunications service providers in the form of a percentage of revenue from telecommunications services and uses the proceeds to subsidize the cost of providing basic service in high cost areas.

The default rule under the *Telecommunications Act* is that economic regulation applies to telecommunications carriers. However, there are three important situations where it does not.

First, the CRTC does not have direct regulatory authority over resellers or other service providers which do not own or operate transmission facilities.[4] However, some conditions are imposed indirectly on these service providers by setting terms and conditions on the services provided to them by Canadian carriers.

Second, the CRTC has the power, under section 9 of the *Telecommunications Act*, to exempt any class of carriers from the application of the Act, provided that the exemption is consistent with telecommunications policy objectives.

Third, the CRTC has the power, under section 34 of the *Telecommunications Act*, to forbear from regulating a service or class of services provided by a Canadian carrier, where competition is sufficient to protect users, or where forbearance would otherwise be consistent with telecommunications policy objectives. The CRTC has exercised its forbearance powers with respect to retail services offered by non-dominant carriers, wireless services, Internet access, as well as for many retail services offered by the ILECs (e.g. long distance voice services, some data services, and certain private line services). The CRTC has recently commenced a proceeding to determine its approach to forbearance of the ILECs' services in local telecommunications markets.

Both exemption and forbearance orders can be unconditional, or they can be subject to ongoing conditions.

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[4] There is one exception – as discussed below, international telecommunications service providers are subject to licensing by the CRTC under the *Telecommunications Act*. The CRTC may impose conditions of licence which affect the rates, terms and conditions under which a licensed service provider offers services to the public.

The *Telecommunications Act* establishes an *ex ante* (i.e. prior approval) regime under which a Canadian carrier must normally obtain CRTC approval before providing a regulated service to customers or changing the price or conditions of offering an existing service. This is a relatively onerous form of regulation and contrasts with the approach in some jurisdictions where regulatory scrutiny occurs on an *ex post* basis (e.g. scrutiny is triggered only in the event of complaints). Other possibilities include negative disallowance regimes, where a regulated company must notify the regulator of pricing changes, but where the price change may automatically go into effect after a specified time period, unless the filing is suspended by the regulator.

While the exemption and forbearance powers provide flexibility and can lessen the regulatory burden on both the CRTC and Canadian carriers, they also raise regulatory complexities and the possibility of overlapping regulation. As the CRTC ceases to regulate markets, the *Competition Act* becomes applicable. This situation becomes complicated if the CRTC imposes conditions on an exemption or forbearance order. There are also transitional issues in the event the CRTC revokes an exemption or a forbearance order.

Regulatory certainty is an important objective, particularly in a competitive environment, and the relationship between regulation under the *Telecommunications Act* and the *Competition Act* may require clarification. It is also important that competitors be treated equitably under the two laws.

It is also an open question whether the regulatory tools available to the CRTC are sufficiently flexible to permit it to deal equitably and efficiently with a new competitive environment which embraces an expanding and unforeseen diversity of services and service providers. This raises the question of the continuing relevance of the traditional public utility regulation standards (i.e. "just and reasonable rates" and "no unjust discrimination") to some or all of the markets subject to CRTC economic regulation.

In addition to the specific issues of economic regulation canvassed below, the public is invited to comment on how, and by whom, the rules for economic regulation of the industry should be developed and promulgated. Such rules may be implemented by changes in the *Telecommunications Act*, by policy direction, or, as presently, by the regulator acting under the general guidance of the law and regulatory precedents. These issues of how and by whom the basic rules of economic regulation should be established are dealt with later in Part C.

Issues

B.3 *What should be the overall objectives of economic regulation?*

B.4 *Are the two main principles of economic regulation set out in the* Telecommunications Act*, namely "just and reasonable rates" and "no unjust discrimination", still appropriate? If yes, should they be further clarified in legislation or in other statements of regulatory policy? If not, how should they be modified or replaced?*

B.5 *Is the regulatory framework developed by the CRTC appropriate in areas of economic regulation such as protection of retail customers, prevention of anti-competitive practices, prevention of undue price discrimination, and availability and quality of service? If not, what changes should be made? Should other areas be subject to economic regulation?*

B.6 *Should economic regulation ever be re-imposed on carriers or services that have been deregulated? If so, what principles, and tests should be used to come to such a determination?*

B.7 *If economic regulation of telecommunications markets remains necessary, what form should it take? Is the present mix of price cap regulation, service-specific cost-plus-markup regulation, and other CRTC approaches appropriate? Would other regulatory mechanisms be preferable?*

B.8 *If a service is sufficiently competitive at the retail level (i.e. in the market for end users) to warrant deregulation, is there a continuing need to regulate the wholesale services and facilities underlying the service? If so, under what circumstances would such regulation be required, and what form should it take?*

B.9 *If a service is not sufficiently competitive at the retail level to warrant deregulation, to what extent can regulation of the underlying wholesale services and facilities be relied upon as a substitute for direct regulation of the retail service?*

B.10 *When should telecommunications markets be subject to* ex ante *(before the fact) and when to* ex post *(after the fact) regulatory intervention? What criteria should be used to determine the choice of method of regulation?*

B.11 *Are changes required to the present regulatory regime to provide economic incentives for ILECs, cable companies, wireless service providers and others to expand, upgrade and maintain the capabilities of Canada's basic access networks? If so, what specific changes should be introduced?*

B.12 *Should the ILECs continue to be required to provide their regulated services to any potential customer on demand? If so, is a new regulatory framework required to finance this obligation to serve?*

B.13 *Are changes required to the contribution regime or other aspects of the regulatory framework that subsidize delivery of telecommunications services in high cost areas?*

3 Technical regulation

In this paper, we use the term "technical regulation" rather broadly, to deal with several important types of regulation related to the physical facilities and other resources required by telecommunications service providers to operate telecommunications networks. These types of

regulation have a direct effect on who may provide telecommunications services and on the efficiency and competitiveness of those services. Specifically, we are seeking comments on the regulatory framework that deals with the following types of issues:

- terms for access to rights-of-way, support structures and in-building wire;
- terms of network interconnection and access to facilities of dominant carriers;
- licensing spectrum and licensing the installation of radiocommunication transmitters;
- setting standards for and certifying equipment and devices;
- regulating and managing numbering resources.

Each of these areas is examined, in turn, below.

Rights-of-way, Support Structures and Inside Wire

Wireline and wireless carriers both require access to rights-of-way and support structures (e.g. poles, towers, conduit) in order to build and maintain their networks. In addition, wireline carriers generally require access to in-building wiring in multi-unit buildings in order to supply services to end customers. If access to any of these infrastructure elements is denied or is subject to onerous or restrictive conditions, competition will be impaired and customers may be denied a full choice of service providers and services. Denial or delays in obtaining such access have, in the past, led to delays in the construction of networks and the provision of services. Consequently, access issues have assumed an increased importance in a competitive environment.

The CRTC has the authority under the *Telecommunications Act* to grant Canadian carriers access to public rights-of-way to construct transmission lines and to make regulations setting standards for the height of transmission lines (sections 43, 67). The CRTC also has the power to order a Canadian carrier that has support structures to grant access to those structures to another service provider (*Telecommunications Act*, section 43(5)). The CRTC does not have any direct authority over access to buildings. However, the CRTC has imposed conditions on access to in-building wire by means of rules applicable to the carriers which either own or use such wiring.

In some circumstances, a service provider may have to apply to another authority (e.g. the Canadian Transportation Agency or a provincial public utility board) to obtain a right of access to rights-of-way or support structures. Service providers must generally negotiate terms of access to a building with the building owner.

Issues

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.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.

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

Network Interconnection and Access to Facilities of Dominant Carriers

Interconnection is essential to the functioning of the many different types of national and international networks operating in Canada today. The proliferation of IP-based technologies will, if anything, increase the need for network interconnection, if Canadians are to have access to the wide range of new applications that can be delivered over IP platforms.

The CRTC has the power to regulate the terms of interconnection and access to the facilities of Canadian carriers under sections 29, 40 and 42 of the *Telecommunications Act*. The CRTC has established the CRTC Interconnection Steering Committee (CISC) to assist in the development of interconnection standards and arrangements. CISC is an industry working group which includes carriers, service providers, equipment manufacturers and other interested members of the public. Upon the request of the CRTC or of participants, CISC studies specific interconnection-related issues and reports back to the CRTC with recommendations.

In addition to CISC, the Terminal Attachment and Policy Advisory Committee (TAPAC) which is coordinated by Industry Canada plays an indirect role in interconnection issues. TAPAC is discussed later in this paper, under the heading: "Telecommunications Equipment."

In some cases, the CRTC requires Canadian carriers to provide advance notice of proposed changes to network interconnection standards so that competitors will not be disadvantaged and network enhancements may be implemented smoothly.

Issues

B.17 Should any changes be made to the regulatory framework for interconnection?

B.18 Is CISC an efficient mechanism for developing interconnection standards? Should any changes be made to CISC's mandate and process?

Spectrum

As noted above, spectrum policy is established by the Minister of Industry pursuant to the Minister's powers under the *Radiocommunication Act* and *The Department of Industry Act*. The Minister not only sets domestic spectrum policy, subject to the policy objectives set out in the *Telecommunications Act*, but also interacts with the governments of other countries and international bodies with respect to the coordination of spectrum usage and radiocommunication standards.

In addition to developing policy, the Minister of Industry acts as a regulator in spectrum-related matters. Under the *Radiocommunication Act*, the Minister of Industry licenses satellite and terrestrial spectrum (section 5). The Minister also regulates the establishment and construction of earth stations and other radiocommunication transmitters (e.g. microwave towers, cellular sites) under the same section of the *Radiocommunication Act*. Unlike Canada, in many countries spectrum regulation is handled by the same regulator that is responsible for other telecommunications regulatory functions. This is the case in the United States. It has also recently become the case in the United Kingdom, where a previously separate spectrum regulator was merged with four other regulatory agencies into a single new communications regulator – Ofcom.

On May 13, 2005, Industry Canada initiated a review of Canada's spectrum policy. Accordingly, the Panel will focus primarily on the institutional framework for spectrum regulation, and not on the policy issues raised in the Industry Canada review.

<u>*Issues*</u>

B.19 What steps, if any, should be taken to enhance the effectiveness of Canada's participation in international spectrum and standards organizations?

B.20 Given the inevitable implications for Canada, should the federal government and industry groups participate more in United States' spectrum and standards policy and regulatory processes?

B.21 Should regulation of spectrum, technical standards, interconnection, numbering and other technical matters be unified under a single regulatory authority? If so, which authority, and under what conditions?

Telecommunications Equipment

The Governor in Council, the Minister of Industry and the CRTC each play a role in the regulation of telecommunications equipment and devices.

The Governor in Council can make regulations setting standards for telecommunications apparatus under section 69.4 of the *Telecommunications Act* and for radiocommunication equipment and devices under the section 6 of the *Radiocommunication Act*. In practice, Industry

Canada acts as the regulatory agency responsible for developing such standards. The Minister of Industry also has the power to grant technical acceptance certificates for telecommunications apparatus under section 69.3 of the *Telecommunications Act* and to set technical requirements and standards for radiocommunication equipment and devices, and issue licences and technical acceptance certificates in respect of such apparatus under section 5 of the *Radiocommunication Act* .

TAPAC, which is coordinated by Industry Canada, permits public participation in the development of network protection standards for terminal equipment. Those standards can affect, directly or indirectly, the manner in which interconnected networks may operate. TAPAC has set guidelines for disclosure of changes to the network protection standards.

With increased globalization of telecommunications equipment markets, Canada has entered into a number of Mutual Recognition Agreements to eliminate duplication in the testing and certification of telecommunications in different national markets.

The CRTC plays an ancillary role in the regulation of telecommunications equipment and devices via its regulation of telecommunications service providers and services. For example, the CRTC has specified that public pay telephones must have certain characteristics so as to make them accessible to persons with disabilities. The Commission can also regulate on matters related to telecommunications equipment as part of its jurisdiction over network interconnection.

Issues

B.22 Should regulation of telecommunications equipment and devices be consolidated under one regulatory authority? If so, which authority should be granted jurisdiction over this aspect of technical regulation and why?

B.23 Does TAPAC still serve a useful role? If so, should any changes be made in its mandate or process?

B.24 Should any other changes be made to the current regime in respect of the technical regulation of equipment and devices?

Numbering

With the proliferation of wireline and wireless telephones and similar devices, telephone numbers have increasingly become a scarce resource. The problems related to scarcity have not yet been solved, and additional regulatory issues related to numbering have now arisen. The introduction of VoIP and other IP-based services raises the possibility that alterative addressing schemes based on Internet addresses may eventually supplant traditional telephone numbers.

The CRTC has responsibility under the *Telecommunications Act* for the administration of numbering resources in Canada. While the CRTC has delegated the administration of numbering resources to a third party, the CRTC continues to maintain control over the terms on which

numbers are issued. In particular, the CRTC requires that only Local Exchange Carriers (LECs) may be assigned numbering resources for local exchange services.[5] A VoIP service provider which is not a LEC must make arrangements with a LEC in order to obtain numbers for use with the service provider's VoIP offering. This raises issues related to the fairness, efficiency and transparency of the allocation of numbering resources.

Issues

B.25 Should the regulatory framework for numbering be changed? If so, how and by whom should telephone numbers be administered?

B.26 Over the next 10 years, is there likely to be a new method of assigning addresses to telecommunications devices which would replace traditional numbering? If so, what might that method be, who should administer it, and how?

4 Social regulation

In this paper, the term social regulation refers to regulation intended to address a range of issues related to social values, such as protection of privacy, access by disabled consumers, public safety and basic consumer protection measures such as clarity in billing, reasonable terms of payment and prior consent to transfer of service.

The CRTC, the Minister of Industry, the Privacy Commissioner of Canada and other regulatory authorities have implemented measures related to what can be considered "social regulation" of telecommunications service providers.

The CRTC's social regulation measures are authorized by its powers under the *Telecommunications Act.* On many issues, what can be considered "social regulation" also has economic regulatory aspects. Some of these issues, such as the ILECs' general obligation to serve all customers on demand, and the contribution regime to fund service in high cost areas, are discussed earlier in this paper, under the section on economic regulation.

The CRTC's quality of service regime is aimed at ensuring that certain services provided by the ILECs do not fall below a minimum standard. The CRTC has also imposed obligations on all Canadian carriers which require them to take certain steps to accommodate the needs of persons with disabilities. These obligations include the provision of Message Relay Service for the deaf and alternative billing for the blind. The ILECs have also been required to upgrade their pay telephone services to provide better accessibility to the deaf.

Emergency services are another area where the CRTC has imposed regulatory requirements to promote a key social goal – public safety. Both wireline and wireless carriers are required to

[5] Other numbering resources are available to non-LECs. For example, wireless service providers have access to numbering resources, but not for the purpose of providing local exchange services unless they register as a LEC.

provide 9-1-1 service to their customers. Earlier this year, the CRTC indicated that VoIP service providers must offer 9-1-1 calling as part of their service.

The CRTC also has a mandate to ensure that the privacy of telecommunications users is protected. Accordingly, the CRTC has imposed obligations on Canadian carriers and resellers with respect to the confidentiality of customer information. The CRTC also requires all LECs and resellers of LEC services to provide end users with calling features which enhance personal privacy. Finally, the CRTC has imposed restrictions on telemarketing for many years. Legislation currently before Parliament would increase the ability of the CRTC to regulate this area effectively.

Issues

B.27 What policies should be adopted to ensure the maintenance of basic telecommunications services to remote areas? Are additional policies needed to ensure affordability?

B.28 Should additional measures be taken to ensure provision of services for the full range of Canadian consumers, including disabled consumers, that are suitable in terms of price, quality of service and selection? If so, how should these be funded?

B.29 Are other measures required to protect consumers in light of technology and industry changes to deal with quality of service, fair contract conditions, effective redress and access to accurate and comparable marketplace information?

B.30 What should be the roles of the CRTC, Industry Canada, the Competition Bureau and consumer protection agencies in dealing with consumer protection and other social regulation issues?

B.31 Are changes required to the regulatory approach to the protection of privacy in relation to telecommunications services, as it is currently administered by the CRTC and the Privacy Commissioner?

B.32 Are other changes in the Canadian telecommunications policy and regulatory framework warranted in order to protect the interests of Canadian consumers?

C. Regulatory Institutions

A variety of federal government institutions play a role in the current policy-making and regulatory framework, including Parliament, Industry Canada and the Minister of Industry, the Competition Bureau, the Competition Tribunal, the CRTC and the courts. In addition, industry organizations can play an important role in developing regulatory approaches, for example through CISC.

This part of the paper raises questions about whether the current institutional framework for policy making and regulation should be modified to improve its efficiency, effectiveness and ability to adapt to a changing technological landscape.

This part first sets out a normative model for the role of the different players in the telecommunications sector, addresses the different functions government agencies play in the telecommunications sector and seeks comments on what is the best type of government institution for each function. Second, it looks at the effect of convergence on telecommunications regulation, particularly in light of the changes associated with the introduction of IP-based networks. A third section deals with improving regulatory efficiency and effectiveness.

1 The Government Role in Telecommunications Markets

Around the world today, it is generally accepted that the best approach to allocating governance and operating functions within the telecommunications sector is as follows:

- Governments, including ministries and cabinets, develop telecommunications and ICT policies and implement them through laws, fiscal measures and government programs.

- Regulators implement the policies and laws, acting in an objective professional and transparent manner, independent of the interests of any specific service provider.

- Network operators and service providers (which are generally non-government companies) build and operate networks and provide services, within the policy and regulatory framework.

Different jurisdictions have organized their telecommunications policy-making and regulatory frameworks in very different ways. For example, New Zealand had no telecommunications regulator for some time, and relied solely on competition laws of general application to govern its telecommunications sector. Australia divides telecommunications regulation between its competition authority and a sector-specific regulator that deals with technical regulation. The United Kingdom has recently merged five separate regulatory authorities into Ofcom, to create a unified regulator of telecommunications, spectrum and broadcasting matters. Ofcom applies the general competition laws to the telecommunications sector and its decisions are subject to appeal to the Competition Commission, which is responsible for considering all appeals related to competition cases, regardless of sector.

In Canada, telecommunications markets are evolving toward sustainable competition. This fact raises the question whether competition law principles should assume a more central role in the regulatory framework applicable to the sector. Indeed, it is an open question whether greater reliance should be placed on the *Competition Act* and the Competition Bureau in that regulatory framework.

The Telecommunications Policy Review provides a good opportunity to ask whether the current Canadian institutional arrangements provide the best model to deal with future developments in the telecommunications sector.

Issues

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.*

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?* [6]

C.3 *Taking into account the experience of other jurisdictions, what is the best regulatory framework for the application of competition law principles to the telecommunications sector?*

In considering the Canadian regulatory framework, this part focuses on six main functions performed by government institutions with respect to telecommunications activity:

- policy making;
- rule making;
- authorization;
- enforcement of rules;
- dispute resolution; and
- appeals.

Each of these functions is discussed briefly below.

Policy making

Responsibility for telecommunications policy making is distributed among Parliament, the Governor in Council, Industry Canada, the CRTC, and to a lesser extent other federal institutions. As discussed in Part B, the *Telecommunications Act* provides very high level policy objectives, and the Governor in Council has never used its power to issue more detailed policy

[6] Parties should note that the Competition Bureau is reviewing its guidelines on the Regulated Conduct Defence.

directions granted in that Act. As a practical matter, the government has delegated much responsibility over telecommunications policy making to the CRTC in the wireline area and to Industry Canada in the wireless area.

In addition to the development of policy by government institutions, it is common in many jurisdictions for industry, academic or policy/research organizations to research and develop policy alternatives and to comment on government and regulatory policies. Such non-governmental policy development organizations are less well developed in Canada than in some other countries.

Federal government institutions derive their policy-making and regulatory functions from a variety of different statutes[7].

The current distribution of responsibility for federal telecommunications policy making raises questions about the ability of the Canadian government to develop and implement telecommunications policies in a timely and effective manner that meets the requirements of increasingly dynamic telecommunications markets.

Issues

C.4 How should policy-making powers be distributed among federal government institutions?

C.5 Should steps be taken to make Canadian telecommunications policy more explicit, transparent and accessible? If so, how? Alternatively, is it better to retain the flexible and ad hoc policy-making mechanisms currently in place.

C.6 Should the federal Cabinet retain both the power to issue policy directions to the CRTC and the power to review CRTC decisions? Should changes be made to either power?

C.7 Should the government take measures to encourage independent telecommunications policy research and analysis in Canada? If so, what measures would be appropriate?

C.8 Should there be mandatory periodic reviews of Canadian telecommunications policy and regulation? If so, by whom, how often and how should such reviews be conducted?

C.9 Should there be any other changes to the telecommunications policy-making process in Canada?

[7] Telecommunications Act, Radiocommunication Act (R.S., 1985, c. R-2, s. 1; 1989, c. 17, s. 2.), Canadian Radio-television and Telecommunications Commission Act (1974-75-76, c. 49, s. 1.), Broadcasting Act, Department of Industry Act, Competition Act (R.S., 1985, c. C-34, s. 1: R.S., 1985, c. 19 (2nd Supp.), s. 19.).

Rule making

Rule making can be considered as a mix of "subsidiary policy making" and detailed regulation. It involves the development of legally binding rules which must be followed by participants in the telecommunications sector. Clear, consistent rules permit service providers to plan with a reasonable degree of certainty regarding their rights and obligations. Good rules also ensure that customers are aware of their rights and of the remedies available to them in the event of problems.

In the current Canadian regulatory framework, rule making can take the form of regulations, technical standards, conditions of spectrum and licences, CRTC decisions and orders, and conditions of exemption or forbearance from regulation. Rules governing telecommunications activities are made by the federal Cabinet, the Minister of Industry and the CRTC.

In a competitive environment, regulatory certainty and clarity become more important. In addition, given the rapid rate of technological change and market developments, it is critical that rules remain up-to-date and focused. At the same time, it is important to ensure industry and other stakeholders have sufficient opportunity to provide submissions on proposed rules that will affect them.

The allocation of rule-making powers to four or more separate institutions raises concerns in such an environment.

Issues

C.10 How should rule-making powers for the telecommunications sector be distributed among federal government institutions?

C.11 Should there be any other changes to telecommunications rule making in Canada?

Authorization

A variety of authorizations may be required by a telecommunications service provider to operate in Canada. These authorizations may include certificates of approval for telecommunications apparatus and radio apparatus, spectrum licenses, licences for radiocommunication facilities (e.g. earth stations, microwave facilities, cell sites), licences for international submarine cables, international telecommunications service provider licences, approval of interconnection agreements, and approvals for access to rights-of-way and support structures (e.g. utility poles, towers, conduit).

These authorizations are primarily available from the Minister of Industry and the CRTC under the *Radiocommunication Act* and the *Telecommunications Act.* In the case of access to rights-of-way or support structures, a service provider may require the approval of the Canadian Transportation Agency, provincial or municipal authorities.

The variety of authorizations listed above and the fact that they must be obtained from different institutions suggests that simplification of the regime for authorizations should be considered by the Panel.

Issues

C.12 Are there problems with the current authorization regime? If so, please provide suggestions on whether and how it would be possible to reduce the number and type of authorizations required to enter telecommunications businesses and expand telecommunications infrastructure.

Enforcement

The integrity of a regulatory regime depends on efficient and effective enforcement. In addition, efficient enforcement mechanisms can permit a shift from *ex ante* to *ex post* scrutiny, greater deregulation and other reforms which would lighten the burden of regulation on the regulator and the industry.

Three aspects to enforcement are relevant: 1) monitoring and investigation; 2) prosecution and 3) adjudication. Where punitive sanctions are involved, it is often considered important to separate these functions, so as to ensure impartiality, fairness and efficiency of enforcement. On the other hand, there may be valid reasons for combining two or more of these functions.

Under the current Canadian telecommunications regime there are two distinct approaches to enforcement. Offences under the *Telecommunications Act* and the *Radiocommunication Act* are generally investigated, prosecuted and adjudicated in the same manner as other criminal offences. That is, the RCMP or provincial police investigate complaints and lay charges if deemed appropriate. Those charges are then prosecuted in the courts. The main exceptions to this situation are: 1) the ability of the CRTC and the Minister of Industry to appoint inspectors to ensure compliance with the *Telecommunications Act* and the *Radiocommunication Act*; and, 2) the requirement of CRTC or Minister of Industry consent to the prosecution of certain offences under the *Telecommunications Act.*

The second approach involves enforcement of rules by the CRTC. Under the *Telecommunications Act*, the CRTC may investigate a complaint, initiate a proceeding to consider the matter, and then act as both prosecutor and judge. However, the CRTC has limited remedial powers and, in particular, does not have a fining power, although legislation currently before Parliament would grant it this power. The CRTC can, however, register an order with the Federal Court, after which the order may be enforced as an order of that court.

Issues

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.

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)?

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

Dispute Resolution

In a monopoly environment, disputes are limited to disagreements between customers and the monopoly telecommunications carrier. With the introduction of competition, this situation has changed. While there continue to be disputes between customers and service providers, major disputes have also arisen between two or more telecommunications service providers.

In Canada, telecommunications disputes can be taken to a number of different institutions for resolution. Depending on the type of dispute and the remedies sought, a dispute may go the CRTC, the Competition authorities, the Privacy Commissioner, the Human Rights Commission or the courts. Each of these institutions has a different jurisdictional scope, as well as different remedial powers. Consequently, a person who wishes to pursue a dispute has to consider a range of matters when deciding where to seek relief, including the cost and complexity of the dispute resolution process, as well as the remedies available.

For example, the CRTC does not have the authority to award damages in the event that it finds a complainant has suffered injury as a result of actions contrary to the *Telecommunications Act*. However, the Act does create a right of civil action in the courts in such a case. This statutory arrangement requires a person to first seek a decision from the CRTC as to whether the alleged wrong is in fact contrary to the law, and then seek damages in the courts. This process can be time consuming and expensive.

There may also be circumstances (e.g. where the CRTC has exempted a class of carriers conditionally or has forborne from regulating certain services subject to conditions) where there is uncertainty as to whether the CRTC has retained jurisdiction to resolve disputes or whether such disputes should be handled by the Competition authorities or the courts. In such a case, a person may choose to seek relief in more than one forum at a time as a precautionary measure. The increased costs and potential delays associated with this type of uncertainty are clear.

Issues

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?

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?

C.18 What measures should be taken to clarify the jurisdiction of the various institutions with dispute resolution powers in the area of telecommunications?

C.19 What measures should be taken to simplify and expedite the process for dispute resolution at the CRTC or at Industry Canada?

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

Appeals

Under the current regime, a CRTC decision can be appealed in three ways: 1) a dissatisfied party can ask the CRTC to review its own decision; 2) the person can seek leave to appeal the decision to the Federal Court of Appeal on a question of law or jurisdiction; or, 3) the person can petition the Governor in Council to review and vary the decision. The process for reviewing regulatory decisions made by Industry Canada is less transparent and more political.

The three-pronged approach to challenging CRTC decisions can be costly and inefficient. In addition, in a competitive environment where there is a need for finality in decision making, it is an open question whether the CRTC should continue to have the right to review and vary its own decisions. In a related vein, the opportunity to petition the Governor in Council introduces a political dimension which may be considered inappropriate in a competitive environment where rules should be applied on an impartial and objective basis. The same concerns apply to the review of Industry Canada regulatory decisions.

Issues

C.21 Should any changes be made to the appeal and review mechanisms for CRTC decisions or for Industry Canada regulatory decisions?

2 The Implications of Convergence

As networks evolve, the distinctions between computing, telecommunications, "new media" and broadcasting continue to fade. Proliferation of packet technologies will generally challenge the usefulness of the distinction between voice, data, text, video and audio services. This, in turn, has created a grey middle ground where broadcasting and telecommunications services are beginning to incorporate similar interactive and content elements. (e.g. interactive TV, on-demand video and music over the Internet, mobile phones and handsets).

In what can be considered an example of legislative foresight, the Canadian communications regime has been "converged" since 1976 when the CRTC was given jurisdiction over both telecommunications and broadcasting. The challenge posed by the renewed form of convergence

is not, therefore, an institutional one. Instead, the challenge relates to maintaining a coherent and meaningful distinction between two fundamentally different regulatory approaches – those of the *Telecommunications Act* and the *Broadcasting Act* – in an environment where technological integration makes the classification of services extremely difficult and enforcement of distinct regimes even more so.

Issues

C.22 Please provide comments on the nature and extent of convergence as a technological and industry trend and propose any changes to Canadian telecommunications regulatory framework that should be made to ensure this framework can cope adequately with technological changes.

C.23 Please comment on any specific legislative or regulatory measures that would enhance the ability of the federal government policy makers and regulators to address the issues arising from convergence.

3 Enhancing Regulatory Efficiency & Effectiveness

The cost of regulation – in time and resources – is a perennial source of concern in many industries where regulation takes place. These concerns increase in competitive industries, where regulation of some players, but not others, can create the appearance of "regulatory handicapping." Concerns also increase as technological and other changes increase the dynamism of an industry, but where regulators cannot adapt to such changes quickly.

There is generally a trade-off between cost and quality in regulation, although in some cases, "smarter" regulation can decrease costs and increase quality simultaneously. In any case, regulation should only take place where the benefits exceed the costs.

The procedures and speed of decision making of the Canadian telecommunications regulators (especially the CRTC, but also Industry Canada) have been subject to a great deal of industry criticism in recent years. While the *Telecommunications Act* sets a 45 business day time limit for the CRTC to respond to tariff applications, currently the CRTC's average processing time for tariffs is in excess of 55 business days.[8] The CRTC has recently taken steps to improve the speed and responsiveness of its regulatory decision making. However, it is an open question whether changes to internal procedures are sufficient or whether more fundamental changes are required to the regulatory framework.

Issues

C.24 What steps, if any, should be taken to improve the efficiency and timeliness of CRTC and Industry Canada regulatory processes? Please identify specific measures which should

[8] *Introduction of a streamlined process for retail tariff filings*, Telecom Circular CRTC 2005-6 25 April 2005.

apply to each type of regulatory process, such as tariff applications, carrier disputes, spectrum-related regulation, customer complaints, etc.

C.25 Should the issue of regulatory efficiency and timeliness be left to the internal management of the regulators, or should specific rules be set out in telecom policy or laws? If the latter, what should those rules be?

C.26 Should structural or operation changes be made in the CRTC to improve the effectiveness and efficiency of its regulatory process? For example, would a reduction in the number of Commissioners at the CRTC help to streamline regulatory decision making? Should there be changes in the appointment process for CRTC Commissioners? Should the CRTC's policy- and rule-making functions be separated from its enforcement and dispute resolution functions?

C.27 Would the outsourcing of specific tasks by the CRTC (e.g. alternative dispute resolution) or Industry Canada (e.g. spectrum monitoring and management) improve efficiency? If so, which tasks should be outsourced? How would the outsourced tasks be funded?

C.28 Do the current circumstances of telecommunications regulation warrant different approaches to employing human resources to more effectively regulate the industry? Should the CRTC budget be increased? Should it be treated like a special operating agency, and thus separate from Public Service Commission of Canada policies?

C.29 Do the CRTC and Industry Canada require further legal powers to regulate more effectively? If so, what specific powers should be granted?

D. Canada's Connectivity Agenda

The Panel's mandate states that:

> A key objective of Canada's telecommunication policy is the provision of reliable and affordable telecommunications for Canadians in all parts of the country and in all sectors of the economy. Great success has been achieved in providing basic telephone service thanks in large part to internally generated cross subsidies. However, the increasingly competitive nature of the industry substantially limits the ability to cross subsidize. At the same time, consumer expectations have grown. Access beyond traditional voice services to advanced telecommunications connectivity and high speed networks is now expected. Challenges remain, not only in closing the existing service and accessibility gaps, but also in ensuring that Canada keeps pace with ever-changing technology and consumer demand.

The mandate goes on to ask the Panel to recommend mechanisms that will ensure that all Canadians continue to have an appropriate level of access to modern telecommunications services.

Since 1993, it has been the policy of the Government of Canada and most provinces to increase the level of electronic "connectedness" of Canadian consumers and businesses to each other and to the world. Indeed, over the past decade the federal government has made substantial investments towards advancing the connectivity agenda. As a result of these investments, Canada was among the first countries to recognize the power of ICT to transform and enrich economic and social life. Through Industry Canada's SchoolNet program, Canada became the first country in the world to connect all of its schools and libraries and has now become a model for comparable initiatives in over 60 countries. The Community Access Program (CAP) has provided Internet access to some 5 million Canadians, connected 11 000 volunteer organizations and provided training to 17 000 community volunteers through its cross-Canada network of public Internet sites. The Computers for Schools program has refurbished more than 600 000 computers for use in Canada's schools. Investments have also been made in the university research network of CA*net, a rapid gigabit backbone network connecting Canadian universities in large cities in all provinces, and in CANARIE, the advanced research network for applications development.[9]

In July 2001, following the report of the National Broadband Task Force, the Government of Canada set a critical new goal towards realizing its connectivity agenda: ensuring that broadband networks and services would be available to businesses and residents in every Canadian community. This goal recognized that in the 21st century, access to broadband is necessary to create and maintain jobs, provide quality health care and education, and promote Canada's cultural diversity. Since that time, $282.5 million has been invested in Canadian communities for high-speed Internet services through the Broadband for Rural and Northern Development Pilot Program (BRAND), the National Satellite Initiative, the Canada Strategic Infrastructure Fund, as well as through the regional development agencies. The BRAND Program, for example, will bring broadband access to nearly 900 communities, including over 100 First Nations reserves by the end of 2006. Complementing federal investments in connectivity, the provinces have invested over $700 million in capital expenses for broadband connectivity – connecting schools, hospitals and government buildings, as well as leveraging services to businesses and consumers.[10]

Several studies have shown that broadband availability and ICT adoption have a significant impact on the economy on a local and global scale. [11]

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[9] Source: Industry Canada.

[10] Source: Industry Canada.

[11] For example, in its 2001 report, the Yankee Group predicted US$233 billion in cost savings annually to industry with universally available broadband in the United States. In the same year, the Brookings Institute estimated the economic benefits of national broadband deployment to the United States' economy could approach US$500 billion

Today the collective efforts of governments, industry, regional development groups, and a competitive market have enabled many Canadians to benefit from the significant economic and social opportunities afforded by broadband applications such as Government On-Line, e-Health and e-Learning. However, there is more work to do. According to the CRTC's November 2004 *Report to the Governor in Council: Status of Competition in Canadian Telecommunications Markets*, 95 percent of households in urban markets have access to high-speed or broadband services, while 63 percent of Canadians in rural areas have access.

Although Canada has been widely acknowledged to be one of the most connected countries in the world, it has had to continually reassess and adjust its policy objectives to reflect the realities of rapidly evolving communications technologies and other economic and social impacts. In the 1990s connecting all Canadian schools through dial-up modem was an innovative and pioneering objective, but today this objective is no longer sufficient. Indeed, the accelerating speed of technological change may be affecting Canada's global competitiveness. Without responding to the accelerating speed of technological change by continually strengthening its communications and information infrastructure, Canada runs the risk of compromising its competitive position as one of the leaders of innovation in the 21st century global network economy. The most recent OECD data clearly exposes this threat. Compared to being second in 2003 among OECD countries in number of subscribers to high-speed internet services per 100 inhabitants, Canada has now dropped to fifth place as of December 2004, with an adoption rate of 17.8 percent behind first-placed South Korea, the Netherlands, Denmark, and Iceland. Further to this, the World Economic Forum's *Network Readiness Index 2004* ranks Canada sixth in terms of ICT environment, readiness and usage. Canada's loss of ground is being attributed to – among other factors – weaker broadband penetration and lagging ICT adoption by consumers and businesses.

Like electricity, water, roads, and highways, broadband Internet networks are becoming an essential infrastructure for the economic and social well-being of all communities. In face of rapidly changing technology and increasing consumer demand for greater broadband access and new IP-based services, the Panel has been asked to make recommendations to ensure that all Canadians continue to have access to modern telecommunications infrastructure and services.

Issues

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?

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 the broadband access market, as well as the fact that new access

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annually within the next 25 years. In Canada, studies such as the 2003 Strategic Networks Group study of South Dundas, Ontario, predicted a $25 million increase in the economic output of this small municipality over the next two to four years after the installation of broadband services.

and IP technologies are reducing costs for consumers and improving the business case for service providers, is government or regulatory intervention still required?

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 centres that are currently still unserved). What types of social and economic benefits justify such methods?*

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

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?*

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 telecommunications services" for all Canadians?*

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)?*

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?*

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

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?*

E. Making the Most of Technology

In the 2005 Budget, the Minister of Finance recognized the critical importance a modern telecommunications sector and policy framework has for Canada's long-term competitiveness. In announcing that a panel would be appointed to review Canada's telecommunications framework, it was also noted that the panel would be asked to make recommendations on measures to promote the development, adoption and expanded use of advanced telecommunications services across the economy and in particular, to report on the appropriateness of Canada's current levels of investment in ICT.

It is generally accepted that there are linkages between ICT investment, productivity, and standard of living, although the exact nature and extent of those linkages are not fully understood. For example, statistics indicate that, from 1981 to 2000, productivity grew faster in the service sector in Canada than in the United States, despite a lower ICT investment by Canadian businesses in this sector.[12] However, overall, Canada lags behind the United States in productivity growth and invests significantly less in ICT. Recent data shows that Canada invested 3 percent of GDP in ICT in 2003, as compared with 3.6 percent for the United States.[13] Likewise, Canadian ICT investment as a share of total investment was 18 percent in 2003, whereas in the United States it was 32 percent.[14]

Given the generally acknowledged link between ICT investment and productivity – and the importance of both of these factors to the standard of living of Canadians and the competitiveness of Canadian industry – it is essential that the federal government have a solid understanding of trends in ICT adoption and the implications of those trends for Canada's future.

Issues

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?

[12] Source: Rao, Sharpe, and Tang. *Centre for the Study of Living Standards*, "Productivity Growth in Service Industries: A Canadian Success Story", February 2004, Tables 10 & 11.

[13] Source: Statistics Canada (calculated as the sum of business investment in computer and other office equipment, software, and telecommunications equipment (current prices) divided by total GDP (constant 1997 dollars), and Bureau of Economic Analysis (BEA) (calculated as the sum of business investment in computers and peripheral equipment, software and communications equipment divided by total GDP in constant 1996 dollars).

[14] Source: Statistics Canada (calculated as the sum of business investment in computer and other office equipment, software, and telecommunications equipment (current prices) divided by non-residential investment), and BEA (calculated as the sum of business investment in computers and peripheral equipment, software, and communications equipment divided by total investment in private non-residential fixed assets).

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

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)?

1 Investment by Telecommunications and other ICT Companies

As noted above, Canada lags behind the United States in terms of ICT investment from the perspective of the overall economy. Canada also lags behind the United States in total capital investment by ICT firms (i.e. investment by telecommunications and computer services and equipment firms). In 2003, per capita investment by ICT firms in the United States was US$324, compared with US$260 in Canada[15]. Total investment by telecommunications firms is important since the quality and scope of telecommunications networks have important implications for productivity and competitiveness. Indeed, the rate of investment in the telecommunications sector is likely to affect Canada's international competitiveness. Unfortunately, Canada lags behind many OECD countries in telecommunications sector investment. Between 1993 and 2001, investment per capita by Canadian telecommunication firms averaged US$127, compared with US$142 in OECD countries, and was 44 percent less than U.S. firms. The most recent figures indicate that the gap with the U.S. has narrowed to 15 percent.[16]

The significant difference in telecommunications sector investment over the past decade raises questions about the state of Canada's telecommunications networks. There has been little progress on the development of competition in the local exchange market. While IP-based services over cable networks may address this issue to a considerable extent, it is an open question whether a third competitor, such as fixed wireless, will come into the market.

It is also important to recall that there is significantly lower wireless penetration in Canada than in many European and Asian countries. Canada is also lagging in the introduction of third generation (3G) wireless services. This raises the question as to whether industry consolidation and the resulting limits on competition may be partially responsible for Canada's delayed uptake of new technologies in the wireless sector. This, in turn, raises the question of whether Canada's foreign investment restrictions in telecommunications may ultimately have contributed to the lower level of investment in Canada's telecommunications networks.

[15] Source: U.S. Census Bureau, Annual Capital Expenditures Survey, 2003, Table 4a (found at http://www.census.gov/csd/ace/ace-pdf.html). Population estimates from OECD, *Communications Outlook, 2005 Edition*, (preliminary version (November 2004). Canadian figures have been converted to PPP US$ using the OECD's PPP database.

[16] Source: OECD, *Communications Outlook 2005 Edition* (preliminary version, November 2004).

Canada maintains more restrictive foreign investment rules than many other OECD countries. It is an open question whether removing these restrictions would have a positive effect on ICT investment in Canadian telecommunications networks and whether there might be counterbalancing negative effects (e.g. the shifting of management decision making and jobs to another country).

Issues

E.4 Is Canada "under-investing" in telecommunications or are other countries just "over-investing"?

E.5 How much impact have the foreign investment restrictions had on overall Canadian telecommunications investment?

E.6 Should the foreign investment restrictions be removed? What would be the implications of this for future telecommunications investment, as well as ICT investment as a whole? What other effects would the removal of such restrictions have?

E.7 Would partial removal of the foreign investment restrictions (e.g. for new entrants only) address possible concerns about foreign control of major Canadian telecommunications networks? Are there any additional measures that the government could take to mitigate any undesirable effects of liberalizing foreign investment restrictions?

2 ICT in Business

ICT adoption is generally viewed as an important factor in improving productivity and enhancing competitiveness. While ICT investment by Canadian businesses has been respectable, it has generally lagged behind ICT investment in the United States, sometimes by a very significant margin.

For example, in service industries, ICT investment, as a percentage of total investment, was 19 percent in Canada and 32.2 percent in the United States in 2000. The comparable figures for the construction sector were 5.5 percent for Canada and 13.7 percent for the United States; for manufacturing they were 6.3 percent for Canada and 18.5 percent for the United States. In almost every sector of the economy, Canadian business has invested significantly less in ICT, as a percentage of total investment, than is the case in the United States.[17]

On an aggregate basis, Canadian productivity has also consistently lagged behind productivity in the United States.[18] Over the period 1993 to 2004, productivity in the business sector in Canada

[17] ICT investment defined as ICT capital input as a percentage of total capital input. Capital input or service equals capital stock multiplied by its user cost. Total capital includes M&E, structure, land and inventories. Source: The KLEMS database from Ho, Rao and Tang (2003).

[18] As noted above, Canada has led the United States in productivity growth in the services sector – an area of considerable importance to future economic growth.

increased by 1.9 percent annually, compared with 2.7 percent in the United States. This differential in productivity improvement is generally viewed as being responsible for much of the current 26 percent differential in standard of living between the two countries.[19]

Issues

E.8 Is Canadian business under-investing in ICT? If so, what might be the reason for this and what measures could the federal government take to encourage greater levels of ICT investment?

E.9 The federal government's research and development tax credit program has been an important element in the government's efforts to encourage research and development in the ICT industry. How well is this program working? Should changes be made to this or other tax measures to improve the competitiveness of Canada's ICT research and development capabilities?

E.10 Should other federal government incentive programs be developed to improve the level or quality of Canadian ICT research and development and manufacturing?

3 ICT in Government

The various levels of government in Canada are the largest group of ICT users in the country, investing over $6 billion on ICT goods each year, representing 20 percent of both total government investment and of total ICT investment.[20] As such, governments are in a position to influence the rate of ICT adoption and, by example alone, to set standards for ICT usage.

Reliance on ICT, especially the Internet, has assumed much greater importance in the delivery of government services over the past decade. Canadians can find almost everything they need to know about federal and provincial laws, regulations, policies and programs over the Internet. According to a 2004-2005 EKOS survey, 90 percent of Canadian Internet users and 38 percent of non-users expect to use the Internet to access government services in the future.[21] According to the same survey, 81 percent of users of Government of Canada services on the Internet report that they were either satisfied or extremely satisfied with the service.

Governments have also invested in ICT for service delivery in a wide range of other areas, including such critical sectors as health and education. Governments are also major users of ICT and telecommunications and can, through their procurement policies, affect the evolution of ICT markets.

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[19] Source: Centre for the Study of Living Standards, "The Puzzling Behaviour of Recent Labour Productivity Growth in Canada", 2005. Paper prepared for the Hearings of the Senate committee on Banking, Trade, Commerce on Canada's Productivity.

[20] Source: Statistics Canada (calculated as the sum of government spending on computer and other office equipment, software, and telecommunications equipment, current prices, 2004).

[21] Source: 2004-2005 EKOS Survey on Trends in Internet Usage and Access.

Issues

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

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

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?

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?

4 ICT in the Home

Canadians have been early adopters of many new technologies as they have become available. As mentioned in Part D, Canada has been a world leader in high-speed Internet penetration for many years. A recent 2004-2005 EKOS survey indicates that 78 percent of Canadians had used the Internet in the previous three months and that 72 percent of Canadians had Internet access at home.[22]

Not only do the great majority of Canadians use the Internet, but a significant percentage is comfortable using it for banking and making on-line purchases. According to the same EKOS survey, 64 percent of Internet users are comfortable submitting personal income tax information to the Canada Revenue Agency over the Internet.

Despite these encouraging statistics, there remains a section of the population that, for one reason or another, is reluctant or unable to embrace the world of the Internet and new technologies. For a number of Canadians, the benefits of e-mail, e-government, Internet-based information, on-line entertainment and commerce have not yet entered into their daily experience. As the vast majority of Canadians move forward into an ICT-enriched world, there is a danger that these members of our society may be marginalized.

Issues

E.15 How can consumer concerns about privacy, network dependability, security and fraud be addressed to facilitate the adoption of ICT?

[22] Source: 2004-2005 EKOS Survey on Trends in Internet Usage and Access.

E.16 What measures, if any, should the federal government take to increase the usage of the Internet and adoption of ICT by consumers?

F. Other Issues

The Panel's terms of reference encourage us to study and report on any other issues that, in our opinion, are essential to creating a modern telecommunications framework.

We are in the early days of our review. We are very open to receiving submissions from parties about other issues that should be considered in this regard.

In particular, we note that Canadians may be less active than they once were in developing, promoting and providing telecommunications services and equipment internationally. Major Canadian foreign investors, such as Bell Canada International, Teleglobe and Telesystem International have withdrawn from international markets recently. Consistent with its mandate, the Panel wishes to consider what policy and regulatory measures, if any, it should recommend to enhance the competitiveness of Canadian companies in global markets.

Issues

F.1 What other issues should the Panel take into account in making its recommendations? Please provide specific facts, analysis and suggestions that you think are relevant to the Panel's recommendations?

G. Implementation

The preceding sections cover a wide range of topics and issues relating to telecommunications policy and regulation. The Panel has been asked to make concrete proposals for change. Accordingly, the Panel seeks specific proposals for change, including proposed legislative wording where appropriate.

Issues

G.1 What specific legal or other provisions should be proposed by the Panel to implement the changes discussed in this document?

G.2 Should Canadian telecommunications laws be consolidated into a single law? Could this improve clarity and consistency of enforcement? If so, how?

G.3 What additional changes, if any, should be made to Canadian telecommunications laws to achieve the overall objectives of the Telecommunications Policy Review?

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?*

G.5 *What other measures should be taken to implement the telecommunications policy and regulatory changes discussed in this document?*

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?*

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?*

Request for comments

The Panel invites comments on any or all of the issues canvassed above. In order to assist the Panel in reviewing submissions, please structure your comments on the same basis as the consultation paper. In particular, please provide responses to individual questions, as well as any additional comments you may have. In your comments, please focus on developments that can reasonably be expected to occur over the next 10 years. Also, please provide as much detail and supporting evidence as possible.

In order to gain maximum benefit from this consultation process, the Panel is seeking comments in two rounds. In the first round, we ask parties to make submissions on the issues raised in this consultation paper and on any other issues they consider that the Panel should take into account in its recommendations for Canada's future telecommunications policy and regulatory framework. We ask that parties provide facts and analysis, as well as specific suggestions for the Panel's recommendations.

In the second round, parties are invited to comment on the submissions made by other parties in the first round. In order to facilitate the Panel's work, and in the interest of fairness, we ask that parties file their substantive facts, analysis and suggestions in the first round of submissions – and limit their second round submissions to comments on other parties submissions. Submissions that disregard this request may be ignored by the Panel.

We ask all parties to do their best to assist the Panel in achieving its challenging goal of developing recommendations for the best long-term telecommunications policy and regulatory framework for Canada's future – irrespective of the short-term costs and benefits for various industry players or consumer groups.

First round submissions should be filed no later than August 15, 2005.

First round submissions will be posted on the Panel's Web site (www.telecomreview.ca) as soon as possible after receiving them.

Second round submissions commenting on the first round submissions of other persons should be filed no later than September 15, 2005.

Submissions may be made in either electronic or hard copy form as follows:

Written submissions may be mailed to:

Executive Director
Telecommunications Policy Review Panel Secretariat
280 Albert Street
Room 1031
Ottawa ON K1A 0C8

Electronic submissions should be e-mailed to the Panel's Executive Director at telecomreview@ic.gc.ca.

Appendices

Appendix A – Terms of Reference

The government recognizes the critical importance of the telecommunications sector to Canada's future well-being and the need for a modern policy framework. To ensure that the telecommunications industry continues to support Canada's long-term competitiveness, the government is appointing a panel of eminent Canadians to review Canada's telecommunications framework. The panel is asked to make recommendations on how to move Canada toward a modern telecommunications framework in a manner that benefits Canadian industry and consumers.
— Budget 2005

Objective

The government's objective is to ensure that Canada has a strong, internationally competitive telecommunications industry, which delivers world-class affordable services and products for the economic and social benefit of all Canadians in all regions of Canada.

The panel is asked to make recommendations that will help achieve this objective.

Structure

A panel of three Canadians has been named by the Minister of Industry. It is expected that the panel will:

- receive submissions from interested parties as its primary means of gathering information;
- hold public consultation with the aim of gathering additional information or clarifying submissions; and
- commission a limited number of contextual reports (e.g. an international benchmarking of policy and regulatory frameworks, or an analysis of the applicability of alternative dispute resolution mechanisms).

Timing

The panel is asked to make recommendations to the Minister of Industry before the end of 2005.

Areas of Interest

Creating the right framework for telecommunications involves maintaining an up-to-date regulatory regime, fostering an environment that improves access for all sectors of the economy, and

encouraging the adoption of advanced applications and services. The panel is asked to study and report on three areas that must continue to evolve in order to keep pace with rapid changes in technology, consumer demand and market structure: regulation, access, and information and communications technologies (ICT) adoption.

Regulation

The existing regulatory regime was designed to facilitate the introduction of competition into an industry previously structured around monopolies. The development and deployment of advanced technology, such as Internet Protocol-based services, high-speed Internet access and wireless broadband communications, combined with maturing consumer demand, have had a profound effect on the telecommunication industry and have started to change the shape and structure of the industry. Governments face the challenge of regulating the industry as it exists today and protecting the interests of its users, while at the same time not standing in the way of progress or restricting the benefits and adoption of advanced telecommunications networks and services.

The panel is asked to make recommendations on how to implement an efficient, fair, functional and forward-looking regulatory framework that serves Canadian consumers and businesses, and that can adapt to a changing technological landscape.

Access

A key objective of Canada's telecommunication policy is the provision of reliable and affordable telecommunications for Canadians in all parts of the country, and in all sectors of the economy. Great success has been achieved in providing basic telephone service thanks in large part to internally generated cross subsidies. However, the increasingly competitive nature of the industry substantially limits the ability to cross subsidize. At the same time, consumer expectations have grown. Access beyond traditional voice services to advanced telecommunications connectivity and high-speed networks is now expected. Challenges remain, not only in closing the existing service and accessibility gaps, but also in ensuring that Canada keeps pace with ever-changing technology and consumer demand.

The panel is asked to recommend mechanisms that will ensure t hat all Canadians continue to have an appropriate level of access to modern telecommunications services.

ICT Adoption

A primary principle of Canadian telecommunications policy is that the telecommunications system should safeguard, enrich, and strengthen the social and economic fabric of Canada. Not only is telecommunications an important sector in its own right, it is also a powerful enabler within the economy and society as a whole; a new platform for the delivery of traditional services, such as health care and education, as well as for innovative new services. Research and development efforts

continue to produce innovative ICT. Given the impact ICT has on productivity, Canada must ensure that its levels of technology adoption remain competitive with the world's other leading economies.

The panel is asked to make recommendations on measures to promote the development, adoption and expanded use of advanced telecommunications services across the economy. In this context, the panel is also asked to report on the appropriateness of Canada's current levels of ICT investment.

In addition to these specific areas of interest, the panel is encouraged to study and report on any other issues that, in its opinion, are essential to creating a modern telecommunications framework.

Appendix B – Issues for Comment

A. The Changing Telecommunications Environment

Forces Shaping the Future

A.1 *Comment on the technological developments described above and provide your views on how telecommunications and ICT will change over the next 10 years.*

A.2 *Comment on the potential for different networks (i.e., wireline 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.*

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?*

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 service to each market? If not, which types of network providers are likely to serve each market and with which technologies?*

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?*

A.6 *Is vigorous inter-regional competition by ILECs and cable companies likely? Please explain the basis for your views.*

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, etcetera) and any new entrants. Provide market share projections, if possible.*

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?*

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.*

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.*

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.

B. The Regulatory Framework

1 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?

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.

2 Economic Regulation

B.3 What should be the overall objectives of economic regulation?

B.4 Are the two main principles of economic regulation set out in the Telecommunications Act, namely "just and reasonable rates" and "no unjust discrimination", still appropriate? If yes, should they be further clarified in legislation or in other statements of regulatory policy? If not, how should they be modified or replaced?

B.5 Is the regulatory framework developed by the CRTC appropriate in areas of economic regulation such as protection of retail customers, prevention of anti-competitive practices, prevention of undue price discrimination, and availability and quality of service? If not, what changes should be made? Should other areas be subject to economic regulation?

B.6 Should economic regulation ever be re-imposed on carriers or services that have been deregulated? If so, what principles and tests should be used to come to such a determination?

B.7 If economic regulation of telecommunications markets remains necessary, what form should it take? Is the present mix of price cap regulation, service-specific cost-plus-markup regulation, and other CRTC approaches appropriate? Would other regulatory mechanisms be preferable?

B.8 If a service is sufficiently competitive at the retail level (i.e. in the market for end users) to warrant deregulation, is there a continuing need to regulate the wholesale services and facilities underlying the service? If so, under what circumstances would such regulation be required, and what form should it take?

B.9 If a service is not sufficiently competitive at the retail level to warrant deregulation, to what extent can regulation of the underlying wholesale services and facilities be relied upon as a substitute for direct regulation of the retail service?

B.10 When should telecommunications markets be subject to ex ante and when to ex post regulatory intervention? What criteria should be used to determine the choice of method of regulation?

B.11 Are changes required to the present regulatory regime to provide economic incentives for ILECs, cable companies wireless service providers and others to expand, upgrade and maintain the capabilities of Canada's basic access networks? If so, what specific changes should be introduced?

B.12 Should the ILECs continue to be required to provide their regulated services to any potential customer on demand? If so, is a new regulatory framework required to finance this obligation to serve?

B.13 Are changes required to the contribution regime or other aspects of the regulatory framework that subsidize delivery of telecommunications services in high cost areas?

3 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?

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.

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

Network Interconnection and Access to Facilities of Dominant Carriers

B.17 Should any changes be made to the regulatory framework for interconnection?

B.18 Is CISC an efficient mechanism for developing interconnection standards? Should any changes be made to CISC's mandate and process?

Spectrum

B.19 What steps, if any, should be taken to enhance the effectiveness of Canada's participation in international spectrum and standards organizations?

B.20 Given the inevitable implications for Canada, should the Federal Government and industry groups participate more in the United States' spectrum and standards policy and regulatory processes?

B.21 Should regulation of spectrum, technical standards, interconnection, numbering and other technical matters be unified under a single regulatory authority? If so, which authority, and under what conditions?

Telecommunications Equipment

B.22 Should regulation of telecommunications equipment and devices be consolidated under one regulatory authority? If so, which authority should be granted jurisdiction over this aspect of technical regulation and why?

B.23 Does TAPAC still serve a useful role? If so, should any changes be made in its mandate or process?

B.24 Should any other changes be made to the current regime in respect of the technical regulation of equipment and devices?

Numbering

B.25 Should the regulatory framework for numbering be changed? If so, how and by whom should telephone numbers be administered?

B.26 Over the next ten years, is there likely to be a new method of assigning addresses to telecommunications devices which would replace traditional numbering? If so, what might that method be, who should administer it, and how?

4 Social regulation

B.27 What policies should be adopted to ensure the maintenance of basic telecommunications services to remote areas? Are additional policies needed to ensure affordability?

B.28 Should additional measures be taken to ensure provision of services for the full range of Canadian consumers, including disabled consumers, that are suitable in terms of price, quality of service and selection? If so, how should these be funded?

B.29 Are other measures required to protect consumers in light of technology and industry changes to deal with quality of service, fair contract conditions, effective redress and access to accurate and comparable marketplace information?

B.30 What should be the roles of the CRTC, Industry Canada, the Competition Bureau and consumer protection agencies in dealing with consumer protection and other social regulation issues?

B.31 Are changes required to the regulatory approach to protection of privacy in relation to telecommunications services, as it is currently administered by the CRTC and the Privacy Commissioner?

B.32 Are other changes in the Canadian telecommunications policy and regulatory framework warranted in order to protect the interests of Canadian consumers?

C. Regulatory Institutions

1 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.

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?

C.3 Taking into account the experience of other jurisdictions, what is the best regulatory framework for the application of competition law principles to the telecommunications sector?

Policy making

C.4 How should policy-making powers be distributed among federal government institutions?

C.5 Should steps be taken to make Canadian telecommunications policy more explicit, transparent and accessible? If so, how? Alternatively, is it better to retain the flexible and ad hoc policy-making mechanisms currently in place.

C.6 Should the federal Cabinet retain both the power to issue policy directions to the CRTC and the power to review CRTC decisions? Should changes be made to either power?

C.7 Should the Government take measures to encourage independent telecommunications policy research and analysis in Canada? If so, what measures would be appropriate?

C.8 Should there be mandatory periodic reviews of Canadian telecommunications policy and regulation? If so, by whom, how often and how should such reviews be conducted?

C.9 Should there be any other changes to the telecommunications policy-making process in Canada?

Rule-Making

C.10 How should rule-making powers for the telecommunications sector be distributed among federal government institutions?

C.11 Should there be any other changes to telecommunications rule-making in Canada?

Authorization

C.12 Are there problems with the current authorization regime? If so, please provide suggestions on whether and how it would be possible to reduce the number and type of authorizations required to enter telecommunications businesses and expand telecommunications infrastructure.

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.

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)?

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

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?

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?

C.18 What measures should be taken to clarify the jurisdiction of the various institutions with dispute resolution powers in the area of telecommunications?

C.19 What measures should be taken to simplify and expedite the process for dispute resolution at the CRTC or at Industry Canada?

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

Appeals

C.21 Should any changes be made to the appeal and review mechanisms for CRTC decisions or for Industry Canada regulatory decisions?

2 The Implications of Convergence

C.22 Please provide comments on the nature and extent of convergence as a technological and industry trend and propose any changes to Canadian telecommunications regulatory framework that should be made to ensure this framework can cope adequately with technological changes.

C.23 Please comment on any specific legislative or regulatory measures that would enhance the ability of the federal government policy-makers and regulators to address the issues arising from convergence.

3 Enhancing Regulatory Efficiency & Effectiveness

C.24 What steps, if any, should be taken to improve the efficiency and timeliness of CRTC and Industry Canada regulatory processes? Please identify specific measures which should apply to each type of regulatory process, such as tariff applications, carrier disputes, spectrum-related regulation, customer complaints, etc.

C.25 Should the issue of regulatory efficiency and timeliness be left to the internal management of the regulators, or should specific rules be set out in telecom policy or laws? If the latter, what should those rules be?

C.26 Should structural or operation changes be made in the CRTC to improve the effectiveness and efficiency of its regulatory process? For example, would a reduction in the number of Commissioners at the CRTC help to streamline regulatory decision-making? Should there be changes in the appointment process for CRTC Commissioners? Should the CRTC's policy and rule-making functions be separated from its enforcement and dispute-resolution functions?

C.27 Would the outsourcing of specific tasks by the CRTC (e.g., alternative dispute resolution) or Industry Canada (e.g., spectrum monitoring and management) improve efficiency? If so, which tasks should be outsourced? How would the outsourced tasks be funded?

C.28 Do the current circumstances of telecommunications regulation warrant different approaches to employing human resources to more effectively regulate the industry? Should the CRTC budget be increased? Should it be treated like a special operating agency, and thus separate from Canadian Public Service Commission policies?

C.29 Do the CRTC and Industry Canada require further legal powers to regulate more effectively? If so, what specific powers should be granted?

D. Canada's Connectivity Agenda

D.1 *What is the current status of access to broadband and advanced ICTs 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?*

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 the 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?*

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 that are currently still unserved). What types of social and economic benefits justify such methods?*

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

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?*

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 telecommunications services" for all Canadians?*

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)?*

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?

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

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?

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?

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

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)?

1 Investment by Telecommunications and other ICT Companies

E.4 Is Canada 'under-investing' in telecommunications or are other countries just 'over-investing'?

E.5 How much impact have the foreign investment restrictions had on overall Canadian telecommunications investment?

E.6 Should the foreign investment restrictions be removed? What would be the implications of this for future telecommunications investment as well as ICT investment as a whole? What other effects would the removal of such restrictions have?

E.7 Would partial removal of the foreign investment restrictions (e.g., for new entrants only) address possible concerns about foreign control of most or all of Canadian telecommunications? Are there any additional measures that the Government could take to mitigate any undesirable effects?

2 ICT in Business

E.8 Is Canadian business under investing in ICT? If so, what might be the reason for this and what measures could the Federal Government take to encourage greater levels of ICT investment?

E.9 The Federal Government's research and development tax credit program has been an important element in the Government's efforts to encourage research and development in the ICT industry. How well is this program working? Should changes be made to this or other tax measures to improve the competitiveness of Canada's ICT research and development capabilities?

E.10 Should other Federal Government incentive programs be developed to improve the level or quality of Canadian ICT research and development and manufacturing?

3 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?

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

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?

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?

4 ICT in the Home

E.15 How can consumer concerns about privacy, network dependability, security and fraud be addressed to facilitate the adoption of ICT?

E.16 What measures, if any, should the Federal Government take to increase the usage of the Internet and adoption of ICT by consumers?

F. Other Issues

F.1 What other issues should the Panel take into account in making its recommendations? Please provide specific facts, analysis and suggestions that you think are relevant to the Panel's recommendations?

G. Implementation

G.1 What specific legal or other provisions should be proposed by the Panel to implement the changes discussed in this document?

G.2 Should Canadian telecommunications laws be consolidated into a single law? Could this improve clarity and consistency of enforcement? If so, how?

G.3 What additional changes, if any, should be made to Canadian telecommunications laws to achieve the overall objectives of the Telecommunications Policy Review?

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?

G.5 What other measures should be taken to implement the telecommunications policy and regulatory changes discussed in this document?

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?

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?