

CANADIANS ONLINE - CREATORS NOT CONSUMERS:

**A critique from a community networking perspective
of the Telecommunications Policy Review Panel's Report.**

**Commissioned and accepted by Telecommunities Canada
as background for discussion of public policy issues
related to the uses of the Internet for Canadian development.**

**Garth Graham
June 21, 2006**

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Telecommunities Canada, June 21, 2006.

Just watch a kid with a new video game. The last thing they do is read the manual. Instead they pick up the controller and start mashing the button to see what happens. This isn't a random process; it's the essence of scientific method. Through trial and error, players build a model of the underlying game based on empirical evidence collected through play. As the players refine this model, they begin to master the game world. It's a rapid cycle of hypothesis, experiment and analysis. And it's a fundamentally different take on problem-solving than the linear, read-the-manual-first approach of their parents. In an era of structured education and standardized testing, this generational difference might not yet be evident. **But the gamer's mindset – the fact that they are learning in a totally new way – means they'll treat the world as a place for creation, not consumption.**

Will Wright. Dream machines. Wired 04/2006. 111

Citizen Summary

A story is sometimes told about two worlds of policy debate that exist inside Industry Canada – one inhabited by the Telecom People and the other by the Internet People. The story is that the Telecom People are still winning the debate. The Report of the Telecommunications Policy Review Panel (TPRP) must be considered as evidence that the story is true.

All of us need the Internet. In fact, the telecommunications industry relies on the Internet. But we must not equate the telecommunications industries and the Internet as the same thing. Instead of revising and converging the Telecommunications and Broadcasting Acts and regulatory institutions, Canadians need to begin advocating for an Internet Act.

The Panel is to be congratulated on their perception that Internet Protocol (IP) is the key driver of socio-economic change, and therefore a fundamental concern for public policy. But, in keeping with their mandate, they limited their exploration of its impact to the telecommunications industry. Telecommunities Canada (TC), not bound by that mandate, can address IP's impact at the correct level – society overall.

In United States, under such headings as net neutrality, two-tiered Internet, bundled service, and public thoroughfare, there is a very public and politicized debate among the defenders and attackers of a free and open Internet. In Canada, despite our proudly avowed connectedness, it is most curious that a similar public policy debate has not yet emerged. Politicians do not pay attention to silence. Because there is as yet no strong public concern expressed for the sustaining the benefits of daily life online, Canada faces failure at all levels of government to embrace the Internet as a key component of public infrastructure.

For an organization like TC, the key questions in response to the TPRP Report then become:

- What will act as catalysts to bring issues of Internet Governance out of the shadows and into the light?
- What will facilitate a change in public policy from a telecommunications perspective to an “Internet” perspective?
- Who decides how we use the Internet for development in Canada, and where and how do we hold that conversation?

In general, TC could support the Panel’s recommendations to deregulate the telecommunications sector in favour of market-based approaches to achieving public policy goals. However, there are five substantive areas where TC’s approach to the details of implementation must be different from the recommendations of the TPRP Report:

1. Socio-economic development policy not technology policy

What the TPRP Report gives the Minister of Industry is exactly what was asked for – a blueprint of how to reform public policy and regulation to make the telecommunications industry “more efficient and productive,” at least in the short term. But it’s the unexamined limits of that mandate that’s the problem. Ask an industry question and you get an industry answer. What the Minister doesn’t have is a blueprint for how, in a knowledge-based society, the uses of information and communications technologies can be made to serve Canada’s socio-economic development.

2. Knowledge society

What does it feel like to live in a knowledge society? What happens when growing bandwidth and descending costs assist Internet Protocol to penetrate ubiquitously into every aspect of daily life? Because the Panel frequently evokes the specter of significant change, a casual reading of the Report might lead to the assumption it represents a future oriented view. But the Panel assiduously avoids any characterization of what makes the acts of connecting and knowing different in a knowledge society.

3. Monopoly

Regardless of the Panel’s re-arrangements with the deck chairs of the telecom policy, there is no guarantee that monopoly does not still float submerged somewhere in the telecommunications sector. In a knowledge society, the danger

becomes that the consequences of a monopoly in telecommunications negatively affects the entire society.

4. Internet Protocol

Greater than the dangers of anti-competitive behaviour is the danger that unregulated prime carriers will seek to restrict the impact of Internet Protocol (IP). Because it's the way we govern ourselves online, we need IP. At no point does the Panel convince us that reliance on market rather than regulation does not threaten Internet use in Canada. They have not defined the Internet as a public utility. They merely refer to the sector as providing telecommunications "services." We expect our Governments to mitigate their recommendations where they seek to support the telecommunications industry in putting the Internet genie back in the bottle.

5. Community-based / community-owned Internet backbone

In a knowledge society, it is essential for local governments as "autonomous agents" to be able to control the infrastructure of the local Internet loop on which their capacity to make development choices depend. In working to achieve that objective, it seems more likely that intervention in provincial policy and program development will be more effective than efforts at the national level.

The TPRP Report is what it says it is – a strategy for the development of an industry. It seeks to protect the advantage of a handful of key telecommunications players in what it defines as an industrial "sector." To attempt an industrial strategy in a knowledge-based economy seems a strange thing to do. The telecommunications industry's competitive instincts to dominate new markets will not serve to facilitate adaptation to the differences inherent in an economy networked by IP.

What the Panel should have done is seek the best means to proliferate and network as many new Internet users as possible. In economic terms, they should have favoured demand over supply. If they had done that, they would have discovered how community development online has become central to the structure of a knowledge society. In policy terms, they should have placed the Internet at the center of their thinking about the changed nature of the public interest.

In the long term, it is not the contribution of the telecommunications industry to Canada's "productivity agenda" that will lead to global success. It will be because we all paid attention to the interactive capacity of every one of us to think, to know, to inform and to collaborate. It will be because we have begun to understand and to apply more effectively the Internet's strengths.

Socio-economic development policy, not technology policy

Nor is the fundamental question about whether or not to unleash market forces. These are already at work in our telecom markets. The real issue – the tough issue – is about channeling the power of markets in a way that balances the interests of all Canadian individuals and enterprises.

Charles Dalfen, CRTC Chairman. **Regulation is as much an art as a science.**
Globe and Mail, April 26/06, A17.

Michael Sabia, BCE's chief executive, said the Conservative government is to be applauded for its decision. "This is welcome recognition of the extent of change in the telecom sector and of the need for a regulatory environment that reflects that change." Sabia added the Montreal-based company would also launch an appeal to cabinet over the CRTC's recent ruling on local phone deregulation, which the company has called "economically illiterate."

Paul Vieira, CanWest News Service.
Ottawa orders CRTC to revisit Internet phone decision.
Times Colonist, May 06, 2006. D10.

What the TPRP Report gives the Minister of Industry is exactly what was asked for – a blueprint of how to reform public policy and regulation to make the telecommunications industry “more efficient and productive,” at least in the short term. But it’s the unexamined limits of that mandate that’s the problem. Ask an industry question and you get an industry answer. What the Minister doesn’t have is a blueprint for how, in a knowledge-based society, the uses of information and communications technologies (ICTs) can be made to serve Canada’s socio-economic development.

The Panel identifies “three particularly important trends: the shift to Internet Protocol, open network architectures, and the convergence of industries.”¹ Then they identify what sounds like a response to a need but is actually the identification of a problem – government.

It is time for the regulatory framework to provide clear guidance regarding the primacy of market forces and to clarify the more limited circumstances in which regulation or other forms of **government intervention** should be applied.²

The Panel believes that the chief impediment to the “productivity and efficiency” of the telecommunications industry is improper government regulation. Whereas TC can express a different view about the problem to be fixed. TC can state that the industry is ineffective in supporting Canadian goals for the uses of ICTs for development because it has limited capacity

¹ TPRP Report. The Need for Change 1-24

² TPRP Report. Policy Objectives and Regulation 2-12

to adapt to the differences inherent in a networked knowledge-based economy. By so stating, TC can then point to a negative consequence that will result from implementing the Panel's recommendations for getting government off the backs of the telecommunications industry. Without placing the industry in the context of broader socio-economic development goals, Canada's position on the world list of connected nations will continue to decline.

As a nation, we've been known to lecture other countries on the need to improve their capacity to think about the uses of ICTs for development – a policy capacity that we ourselves have never had. We continue to ask the wrong people the wrong questions. Any strategy for the uses of ICTs for development would of necessity encompass far more dimensions of Canadian society and governmental responsibility than technology policy.

In the interest of “clarifying” the objectives stated in the Telecommunications Act, the Panel takes an axe to them. The existing Act says:

Excerpt from the Telecommunications Act, 1993
Canadian Telecommunications Policy

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;³

But, in Recommendation 2-2, the Panel says that Section 7 of the Telecommunications Act should be removed and replaced with the following:

7. (c) to enhance the social well-being of Canadians and the inclusiveness of Canadian society by:

- (i) facilitating access to telecommunications by persons with disabilities;
- (ii) maintaining public safety and security;
- (iii) contributing to the protection of personal privacy; and
- (iv) limiting public nuisance through telecommunications.⁴

The existing Section 7(a) defines telecommunications policy as development policy that serves goals larger than itself. It quite clearly states that the Government of Canada intends its telecommunications system to serve broader purposes than efficiency and productivity in a market. If you leave those objectives in, then you can ask – has the telecommunications system met those tests? A means of measuring and answering for results then exists. In effect, by taking that clear statement of an intended public good out of the Act, the Panel is recommending that some aspects of the Federal Government's capacity in the area of socio-economic development to make policy, and to enable or regulate, be abandoned. That would be a huge mistake.

³ TPRP Report. Policy Objectives and Regulation 2-3

⁴ TPRP Report. Policy Objectives and Regulation 2-9

There is much more inherent in the implications of IP for well-being and inclusiveness than this narrow catalogue of problems. The Panel sees social regulation as a negative question of welfare in a condition of disadvantage, rather than a positive identification of national development goals. If this was a discussion about national health policy, a list like this would be following the “sickness” model, rather than a model of preventative “wellness.”

The achievement of social goals must be measured at the societal level as effectiveness, as results. Efficiency and productivity are corporate level objectives. The efficiency of service providers is not an end in itself.

“Economic Regulation” is the dragon the Panel must slay in order to unshackle the telecommunications industry from the chains of government intervention. To make the case for deregulation in favour of markets, the Panel focuses on what the government should not do – economic regulation – rather than what it should do. Governments have more than the power or forbid or deny. They can also enable.

The ultimate goal of **economic regulation**, as with other forms of government intervention in the economy, should be to improve Canadians’ quality of life by facilitating economic activity and increasing living standards. These objectives are **not radically different** from the core objectives that Canadian regulators and policy makers have taken into account in the past, either explicitly or implicitly.⁵

The claim that their re-statement of core objectives is not radically different is not so, but is explained by their negative view of the content of social regulation. In the knowledge-based economy and society the means by which we know, the ways by which the act of knowing is supported, is a public good.

The Panel believes telecommunications policy should continue to focus on the **core objective** of promoting affordable access to telecommunications services in all regions of Canada. However, a forward-looking policy should **go well beyond** that. It should:

- ensure that telecommunications markets can operate effectively
- reflect the fact (of) vigorously competitive telecommunications markets, and anticipate completion of the transition away from the monopolistic telecommunications environment .
- provide a framework that promotes a telecommunications infrastructure that will advance not only Canada’s social welfare, but also its economic prosperity.⁶

The rhetoric of that “go well beyond” and the cherry picking of that “core objective” of affordable access disguises what is actually a narrowing of responsibility for the public interest. It implies that the existing regulatory regime did not intend to advance Canada’s “economic prosperity,” in spite of the Act’s existing references to serving the interests of identity, sovereignty, and safeguarding, enriching and strengthening the social and economic fabric. TC should submit that, “to place greater emphasis on market forces as a means to achieve policy

⁵ TPRP Report. Economic Regulation 3-3

⁶ TPRP Report. Policy Objectives and Regulation 2-4

objectives,”⁷ does more than “clarify” the Act’s objectives. It changes their intent completely.

It is not necessarily anti-market to ask the question – does the telecommunications system safeguard, enrich and strengthen the social and economic fabric? When the question is continuously there for the asking, it makes both governments and businesses accountable for a clearly stated intention.

Development of policies that maximize social and economic welfare of Canadians requires a good understanding of the economics and technologies of the Canadian ICT sector. Such policies should not be based on political or social policy intuition but, wherever possible, on empirical data, research and **a good understanding of regulatory best practices** from Canada and other jurisdictions.⁸

On first reading, that sounds quite broad. But it really limits the Government’s role to looking inward to “understanding of the regulatory best practices “in the ICT and telecommunications sector.” It’s not, as it must be, about understanding socio-economic impact and the fit of results or consequences to stated policy intentions. It’s not about understanding Canada. As they say, “The Panel’s vision is to see Canada become a global leader in telecommunications regulatory practice — developing and adapting international **best practices to support** the development of world leading communications **markets**.”⁹

Governments must enable the emergent reality that the cost of the converging physical and transport layers is descending towards zero. Government intervention needs to encompass how it comes to be that IP sustains informing and learning in a completely different way. The telecommunications corporations already know these things are happening. We need them to want them to happen. The Panel trusts that they do, but we should not. These are the people who are still saying, “You can have any flavour of Internet you want, as long as it’s ADSL.” These are then people who are saying, “We can deliver video over IP, but that doesn’t make it Internet.”

Canadians need to ask - what is the net benefit to Canada if its telecommunications system becomes more efficient and productive? The measurement of the results of that system does not lie within it, but rather within the wider socio-economic system of which it is a part. The real question is – are we efficient in maximizing profits or are we effective in achieving socio-economic goals? By uncoupling profit and societal goals, TPRP is putting profits first. The private sector must put profits first. For Canadians online, the first priority of the Government of Canada remains peace, order and good government. But IP is changing the way that things are done to address that priority.

Sector or society?

TC should agree with the conclusion that the present telecommunications sector in Canada is no

⁷ TPRP Report. Policy Objectives and Regulations 2-4

⁸ TPRP Report. Policy-making and Regulatory Institutions 9-9

⁹ TPRP Report. Policy-making and Regulatory Institutions 9-20

longer adapting successfully with changes in technologies and markets. It should agree with the conclusion that the existing “partnership” among governments and corporations, which characterizes the operational world of that sector, does not work. But it should not agree with the Panel that markets should preempt politics to the degree they recommend. It should not agree that market forces alone will succeed where politics is failing.

Because of their concern for the link to productivity and the need for a “sustained business investment,” the Panel places the question of a “national ICT adoption strategy” under the heading of Information and Communications Technology Policy. Whereas TC has always advocated for a national strategy for the uses of ICTs in development as key component of socio-economic development policy. The difference is significant because of the way in which each policy perspective then views the national objective of, “achieving ubiquitous access to broadband networks and services.”¹⁰

In Canada and throughout the world, information and communications technologies (ICTs) have emerged as significant drivers of economic and social change. ... ICTs are enabling general purpose technologies. ... **The Internet is increasingly the dominant ICT technology platform.** ... Statistics Canada defines the ICT goods and services producing sector as “the combination of manufacturing and services industries, which electronically capture, transmit and display data and information. ... Telecommunications networks provide the infrastructure for linking ICTs and enabling these changes. ... These trends are challenging policy makers to ensure that all Canadians have access to ICTs, and that the interests of citizens and consumers are protected in the rapidly transforming telecommunications environment.”¹¹

So, is telecommunications in the ICT sector, or how do telecommunications technologies and information and communications technologies inter-relate? The Panel never really clarifies the relationships, except to clearly separate their call for a national ICT adoption strategy into a separate chapter on “Information and Communications Technology Policy.” To act on the full implications of their recognition that “the Internet is increasingly the dominant ICT platform” would be to accept that the Internet is replacing telecommunications technologies. If they did that, they then would have elevated the national ICT adoption strategy to become the keystone of the arch of national policies. To do so would displace or alter much of their perspectives on telecommunications.

The Panel believes Canada should focus its strategy on **using ICTs to help achieve the overall goals of telecommunications policy.**¹²

That is very clear. The Panel sees national ICT adoption strategy in a secondary position that serves the needs of telecommunications policy. Whereas TC should submit that, first comes a national ICT use strategy that defines broad socio-economic goals. Then, secondarily, the telecommunications sector will be used as a means to achieve those socio-economic goals. The Panel has it backwards.

¹⁰ TPRP Report. Information and Communications Technology Policy 7-20

¹¹ TPRP Report. Information and Communications Technology Policy 7-3

¹² TPRP Report. Information and Communications Technology Policy 7-20

The telecommunications sector is a means to the end of Canada's socio-economic development and not an end in itself. Someone somewhere has to state the sector's developmental intentions and consequences in relation to national goals in way that makes results measurable. When it comes to the Internet and its impact on our society, government should not be counseled to abandon governing. The practices of ICT use are now so central to learning and change in Canada's socio economic development that reflection on the changing nature of governance needs to go far deeper than the Panel has attempted. Government intervention, altered to anticipate the Internet's impact on structure, remains essential.

Although they do say ...

Looking beyond the telecommunications industry to the ICT sector as a whole, the Panel notes that many developed countries and the emerging giants of the developing world have adopted policies that identify the ICT sector as a whole, including the telecommunications industry, as **a foundation for their national strategies for promoting economic growth and more efficient government as well as achieving certain social development goals.**

... in comparing what the federal government is currently doing in the area of ICT policy with the initiatives that have been taken in many other countries, the Panel concludes that the Canadian government is not currently focusing sufficiently on ICT policy — an area that is critical to Canada's economic prosperity and social well being. **The Panel believes it is essential for the federal government to recognize the vital role that telecommunications and ICTs now play in every area of public policy, and to re-establish ICT policy as a national priority.**¹³

... they never really abandon that idea of ICTs as a “sector,” even though they use such words as foundational and as “playing a vital role in every area.” But it's not sector policy. It's development policy.

The Panel brought an astonishing degree of experience and understanding into their analysis of two national systems – the telecommunications system, and the system of telecommunications regulation. But within that strength lurks a weakness. The problem is that the telecommunications system is only a part, and a dangerously dysfunctional part, of the national overall “system” of ICT use. To improve Canada economically and socially, it's the absent national capacity to analyze the impact of ICT use on the whole system that needs to be addressed.

In recommending the creation of a national ICT adoption strategy it might seem that the Panel has spotted this need. However, they view the issue of a national ICT adoption strategy as a component of industrial development strategy and something parallel to telecommunications regulatory reform. Without a fully horizontal national strategy for the uses of ICTs in development, there is a huge risk that the telecommunications system will be “fixed” to achieve the wrong ends.

¹³ TPRP Report. The Need for Change 1-23

The very last sentence of the Report says:

(Maintaining a unified policy vision)... will help Canada regain and retain its position as a leader in the development and use of telecommunications to improve economic and social welfare.

That sentence does put telecommunications into the service of socio-economic development. If they'd have put that sentence first, and believed it, they'd have written the report differently. They would have focused on IP as a public utility.

In speaking to the history of public utility regulation of telephone services (1906–1969), the Panel notes:

... there was an implicit bargain that telephone companies would provide affordable service to customers and to make it available throughout their territory, in return for the privilege of operating on a monopoly basis.¹⁴

So – after deregulation, what then becomes the implicit bargain? The consequence of abandoning a government role to regulate, except in the circumstance of anti-competitive behaviour, is also the promise that the government will not press the telecommunications sector to perform as a public utility. In future, we shall know them only as “telecommunications service providers.”

In spite of the fact that Canada has one of the most competitive telecommunications markets in the world, we continue to have one of the most detailed, prescriptive and costly regulatory frameworks. This framework is particularly burdensome for Canada's major **telecommunications service providers**, who now face stronger competition in a number of market segments from well-established facilities-based rivals as well as from new entrants. The Panel believes the Canadian telecommunications industry has evolved to the point where market forces can largely be relied on to achieve economic and social benefits for Canadians, and where detailed, prescriptive regulation is no longer needed in many areas.¹⁵

And yet they do note:

ICTs have become essential “general purpose technologies” that contribute to many aspects of Canada's economic prosperity and social well-being.¹⁶

That's correct, but it must then lead to a conclusion that ICTs are not just “services” and that questions of policy related to their use are more properly socio-economic development policy, rather than merely technology policies to advance the interests of a particular “industrial” sector. They never move anywhere near that conclusion.

¹⁴ TPRP Report. The Need for Change 1-8

¹⁵ TPRP Report. The Need for Change 1-22

¹⁶ TPRP Report. Executive Summary 3

The Panel is clear and consistent in describing what their view encompasses – “sector-specific telecommunications regulation.” Within that view they note:

Many of Canada's major trading partners have taken steps to place much greater reliance on conventional competition theory in their telecommunications legislation, rather than continuing to rely on “public utility policy” or “common carrier regulation.” Canada's current regime is becoming more of an exception to the norm applied by its major trading partners. ... The CRTC's long history of economic regulation based on the jurisprudence of public utility and common carrier regulation makes it hard for the CRTC to make the shift away from a presumption of regulation to an approach more oriented toward competition law. ... Its approach has been to engage in a “**balancing of interests**,” rather than an economic analysis of market power. This results in a tendency to micro-manage competitive market behaviour in order to influence competitive outcomes, rather than to seek less intrusive remedies.¹⁷

But the Internet, or more particularly IP, is a public utility. Where's the capacity to understand IP's impact on socio-economic development? In effect, just because the telecommunications industry doesn't trust it is no reason abandon the CRTC. Whereas a sector-specific tribunal of “telecommunications experts,” that was populated by their kind of people, would definitely be “less intrusive.” It is not apparent how achieving less “balancing of interests” serves the public interest. This fear is strengthened when the Panel contrasts the CRTC's “open and transparent process” with the new tribunal's capacity to act administratively and “expeditiously” in reaching agreement on sector-specific issues.

Do those bland terms mask an intention to operate in secret and behind closed doors? There is absolutely no doubt that the industry would prefer to relate to government in this manner.

Clearly the prime telecom carriers like the TPRP recommendations. Even the telecommunications corporations themselves were surprised by how far the Panel's recommendations go in removing the burden of government regulation on their overhead costs:

“The call for significant change is something we've always said needed to be done,” said Lawson Hunter, BCE's chief corporate officer. He added that the recommendations exceeded his expectations. “If the report were implemented it would make a fundamental change to the way we're regulated.”¹⁸

“This really rejects micromanaging competitive outcomes in the market. The report is quite impressive.”¹⁹

Given the affected industry's reaction, it seems fair to caution that uncritical acceptance and

¹⁷ TPRP Report. Telecommunications Competition Tribunal 4-12/13

¹⁸ Catherine McLean. “**Panel calls for 'fundamental' change to telecom regulation.**” Globe and Mail, March 23/06. B1.

¹⁹ Willie Grieve, Telus Regulatory Affairs, quoted in Eric Reguly. “**It's time for a new game at the CRTC.**” Globe and Mail, March 23/06, B2.

implementation of the report could come to represent a whole new approach to programs for federal corporate assistance.

Say “YES” to a new department

The most important imperative at national and sub-national levels therefore is to see the core ICTD opportunity and activity-space as distinct from that of ICTs for markets and economic growth. The locus of development of policy and action for ICTD needs to move out of IT and telecom ministries into core development sectors. A new focal point within governments that is oriented exclusively to the development aspects of ICTs and geared to developing an ICT based development infrastructure in collaboration with other departments dealing with developmental issues is an important and urgent requirement for most developing countries. The major mandate of this Information Society or ICTD focal point -which should be at the level of a full-fledged ministry- must be to systematically evaluate the IS opportunities in context of national priorities, and take up necessary activities to achieve them.

Anita Gurumurthy and Parminder Jeet Singh .

Political Economy of the Information Society: A Southern View.

Instituto del Tercer Mundo (ITeM). December 2005.

http://wsispapers.choike.org/papers/eng/itfc_political_economy_is.pdf

The need for a more horizontal understanding of the Internet’s impact should call into question our continued reliance on Industry Canada to play the dominant coordinating role in federal policies and programmes for a “connected” Canada. The Panel is actually quite ambiguous on this question. In the first part of the Report they call for Industry Canada to play the central role. To “facilitate” the implementation of their recommended policy and regulatory framework, the Panel recommends, “changes should be made to the structure and process of Canada’s federal policy-making and regulatory institutions.” The changes include:

- drawing a clearer line between policy making and regulation, and improving the effectiveness of the institutions performing those functions
- **enhancing Industry Canada’s policy making capabilities** to provide more timely and in-depth advice to the Minister of Industry on legislation, policy directions and reviews of telecommunications and ICT policy, And establishing a policy research program to provide better Canadian research and data in support of informed policy making in the telecommunications and ICT sectors.²⁰

... the Panel believes the federal government must transform its policy frameworks in each of the areas we were asked to review — telecommunications regulation, ICT policy and broadband connectivity. The Panel also believes it is essential to see these three areas as parts of a unified information and communications policy field, rather than as

²⁰ TPRP Report. Executive Summary 12

three separate challenges. ... **A new electronic communications sector** is being created. ... the Panel believes it is important to ensure consistency and strengthen the connections between these different policy areas in the new economic and social spaces being created in the electronic communications sector.²¹

In the middle of the Report, they flesh out Industry Canada's expanded role as follows:

Developing and implementing a strategy to achieve these objectives is a complex challenge. It requires the active engagement of the federal government, provinces and territories, the private sector, teachers and researchers, consumer representatives and **community-based organizations**. ... Leadership must come from the highest level of the federal government. To provide the necessary leadership, the Panel calls on the Prime Minister **to mandate the Minister of Industry to:**

- lead the development of a national ICT adoption strategy
- establish a high-level, independent National ICT Advisory Council with membership broadly representative of Canadian society and drawn from all regions of the country
- establish a National ICT Adoption Centre to support the work of the Advisory Council and the development of the national ICT adoption strategy.²²

As an aside, note that, in 392 pages, this is one of precisely three references to “community-based organizations.”

But all of this advice assumes the “telecommunications sector” as a given and then looks inward into its parts to determine a policy agenda. This is wrong if it's socio-economic policy, not technology policy. If the proper focus is on the impact of the telecommunications sector on Canada's socio-economy development, and not on the productivity of the sector as an end in itself, then the role is far broader than “Industry Canada” can encompass. There needs to be a broader and horizontal representation of a number of points of view.

If we are setting public policy for society, not for a sector, then we are wrong about relying on Industry Canada (or indeed any other existing single agency) to continue coordinating an effective response to a horizontal and all-embracing responsibility for socio-economic development strategy. Something new is required. And, oddly enough, at the end of their Report when they discuss the necessary convergence of broadcast and telecommunications policy capacity, the Panel reverses its Industry Canada support;

Complete separation of policy-making functions for broadcasting and telecommunications does not seem to be best suited to advancing the broader Canadian objective of becoming leaders in all areas of ICTs ... **Given the importance of ICTs to the future of Canadian prosperity and culture, consideration should be given to assigning this converged policy-making role to a separate new “Department of Information and Communications Technologies.”** Such a department could become the unified centre, within the Government of Canada, for all major policy making and programs related to

²¹ TPRP Report. The Need for Change 1-32

²² TPRP Report. Information and Communications Technology Policy 7-5

building and maintaining Canada's leadership in ICTs.²³

Except to note that it's about the uses of ICTs for development, not "technologies," TC should agree with this afterthought.

²³ TPRP Report. Afterword 11-11/12

What's to know in a knowledge society?

But now, the phone companies are lobbying Washington to kill off what's left of "common carrier" policy. They wish to operate their Internet services as fully "private" networks. Phone and cable companies claim that the government shouldn't play a role in broadband regulation: Instead of the free and open network that offers equal access to all, they want to reduce the Internet to a series of business decisions between consumers and providers.

Jeff Chester. **The End of the Internet?** The Nation, posted online on February 1, 2006. <http://www.thenation.com/doc/20060213/chester>

What does it feel like to live in a knowledge society? What happens when growing bandwidth and descending costs assist Internet Protocol to penetrate ubiquitously into every aspect of daily life? The abandonment of accountability for the uses of the Internet in socio-economic development masks an even larger and more complex failure – a failure of necessary anticipation.

Because the Panel frequently evokes the specter of significant change, a casual reading of their Report might lead to the assumption it represents a future oriented view. But the Panel assiduously avoids any characterization of what makes the acts of connecting and knowing different in a knowledge society. They do say things that, on first reading, appear farsighted:

The telecommunications industry has been transformed from being characterized by a series of monopoly providers of basic telephone and cable TV services to a highly competitive industry building Internet Protocol (IP) platforms to roll out a constantly evolving mix of advanced wireline and wireless services. ... **With telecommunications assuming ever-increasing importance as an enabler of social and economic well-being**, Canada must ensure that its policy and regulatory frameworks are conducive to the attainment of our social and economic goals and are not an impediment to them.²⁴

To provide Canadian citizens and businesses with a full range of innovative applications and services in this new, merging and emerging ICT environment, Canada's next-generation telecommunications networks must be fully **interoperable**. Moreover, they must support the requirements of increasingly **interdependent** applications and transactional processes. As businesses and other organizations are recognizing the productivity gains brought about by adopting ICTs and re-engineering their business structures, they are also recognizing a new need to coordinate their new **networked** information technology infrastructures and business processes across organizational boundaries.²⁵

The telecommunications services sector ... provides a **fundamental infrastructure** for

²⁴ TPRP Report. Implementation 10-3/4

²⁵ TPRP Report. Information and Communications Technology Policy 7-41

the private enterprises and public services that use ICTs to design, develop and distribute their products, serve their customers and operate their businesses.²⁶

Those phrases about fundamental infrastructure, becoming interoperable, and interdependent and networked certainly sound all encompassing. And then they say that:

The greatest impact of telecommunications in a modern knowledge-based economy is its role as an enabler of efficiency, productivity and innovation — in all industry sectors and public services and **in all forms of economic and social activity**.²⁷

From those statements, you would think that they'd spend time unpacking the determinants of a "modern knowledge-based economy."²⁸ But they never venture into that unknown land. They merely assume benefits from a telecommunications industry "improved" by deregulation, by being given what it has been asking for. The focus of the Report is really only the industry itself and not its service to socio-economic development.

Here's the telling clue. In the whole TPRP Report that phrase "knowledge-based economy" is only used once. Such consistent avoidance of an admittedly risky but obvious topic – what future do we foresee for Canada? - can only be the product of a conscious editorial choice.

This is particularly important in today's competitive markets, where reliance on market forces is often regarded as the best means of achieving **some key objectives for Canada's telecommunications sector, such as affordability and access to telecommunications services**.²⁹

Defining access linked to affordability as a key objective for Canada's "telecommunication sector" does not automatically qualify it as Canada's key objective. In fact, Telecommunities Canada and other public interest organizations have often argued that the most important qualifier of access is effective use.

Canada needs to define an alternate and stronger form of government intervention to counterbalance deregulation. It needs this because, as the Panel itself notes, the role of ICT use is becoming so very central to Canada's socio-economic development.

The Panel was given a **mandate** to review the current telecommunications framework and to recommend a modern telecommunications policy and regulatory framework that would ensure Canada continues to have a strong, internationally competitive telecommunications industry that delivers world-class products and services at affordable prices for the **economic and social benefit of all Canadians**.³⁰

And therein lies the main problem. That mandate limits the Panel to an "industry" perspective.

²⁶ TPRP Report The Need for Change 1-4

²⁷ TPRP Report The Need for Change 1-4

²⁸ TPRP Report The Need for Change 1-4

²⁹ TPRP Report. Policy Objectives and Regulation 2-5

³⁰ TPRP Report The Need for Change 1-3

What's going to be good for BCE will be good for Canada. So, like foxes in a hen house, industry insiders find that an improved industry is the answer to the problems that industry creates.

The questions we ask shape the answers we get. Primarily, the Panel was asked, "to ensure that Canada has a strong, internationally competitive telecommunications industry." But, if what we need is good public policy for a knowledge society, that's the wrong question. Thinking about new policies and institutions that might guide Canada's use of ICTs for development requires addressing questions of socio-economic and political change in such a broad and different way that no existing federal agency could address them on its own.

The industrial society was based on a particular assumption about design. It was engineered as if it were a machine. You could reverse engineer it. If you took its systems apart, even its social systems, when you put them back together you assumed they would still work.

A knowledge society is not based on that assumption. In a knowledge society, systems are dynamically related through self-organization into networks. Because they can learn, those networks are not mechanistic. They are dynamically complex. You can grasp the principles that allow them to self-organize. You can follow the story of how they were informed and what they did as a consequence. But you cannot predict in advance what they will do.

Dynamic networks are the only form of organization that learns. It is important to embrace and trust that characteristic. As a consequence, private sector productivity and effective social programming become interdependent elements of a networked economy, not separate things. And the Internet allows anyone to participate in the feedback loops, the conversations, about what works in the balancing of that interdependence. Doc Searls describes the nature of that interdependence in this way:

Information ... is derived from the verb inform, which is related to the verb form. To inform is not to "deliver information", but rather to form the other party. If you tell me something I didn't know before, I am changed by that. If I believe you, and value what you say, I have granted you authority. Meaning, I have given you the right to author what I know. Therefore, we are all authors of each other. This is a profoundly human condition in any case, but it is an especially important aspect of the open source value system. By forming each other, as we also form useful software, we are making the world. Not merely changing it.³¹

As a social function, telecommunications is complexly and inextricably interconnected with all of the other essential functions of a knowledge society. Millions of people are quite well aware that we live in a knowledge society and behave accordingly. It seems to be that the very last area of human endeavor to make the shift is going to be politics and public policy.

On balance, the Panel took apart the black box of telecom policy and re-assembled it in a different way. By reverse engineering a solution they are actually looking backward. Where

³¹ Doc Searls. **Making a New World**. March 13, 2005.
<<http://www.searls.com/doc/os2/docchapter.html>>

their report gets interesting is when parts of their story of reverse engineering don't work, even for themselves.

Both their mandate and their professional expertise constrained them to focus on their industry inward, and not outward to the knowledge society context in which it now finds itself. The Panel has evoked a politics of technocratic detail to mask what is, in essence, merely a historical and economic point of view.

So far, not just in Canada but everywhere, public policy has been misinterpreting what the Internet actually does. The Internet does not incorporate the human into the machine. It incorporates the machine into the human. In the symbolic space between zero and one we have imparted a language into the machine that then allows it to "speak" with us. This directly socializes our tools in a way that we have never done before. The Internet is an artifact that we have humanized.

There are people who attempt to use the Internet to de-humanize their relationships with others. That distortion of its intended use stands out. Both spammers and telephone companies are more likely than not to find this out.

The Panel did what it was asked. But, in so doing, it took a narrow, sector-based, view of telecommunications as an industry. The story they then tell is about the impact of existing policy and regulatory practices on that industry, and about what that industry believes should be done about them. The mode of their story speaks to a kind of technocratic incrementalism. But the story that needs to be told is about the impact of the Internet on Canada as a knowledge society and the role that public policy can play in helping us benefit from that impact.

The very general language of some of the current objectives provides little operational guidance on how objectives should be achieved. For example, in practice it is difficult to apply the current paragraph 7(a) objective that the telecommunications system should serve "to safeguard, enrich and strengthen the social and economic fabric of Canada." Instead of being stated in such general terms, the Panel believes key social objectives should be specifically identified.³²

While the Panel leaves the question "how?" alone, they actually quite clear as to the "what?" The Panel is very clear that the prime reason for identifying social objectives specifically is to contain their achievement to means that do not impede the deregulation of markets. But we should be suspicious of this particular means of clarification. However, there is a need to state real social objectives for a knowledge society. These would be different from theirs, citizen-based, rather than "consumer" oriented. TC, in its second submission to the Telecommunications Policy Review, has already stated what these might look like:³³

There are common themes in the submissions of many of the public interest groups that express a commitment to community development online. These themes are significant to

³² TPRP Report. Policy Objectives and Regulation 2-6

³³ **Home truths for citizens online.** Telecommunities Canada's second round submission to the Telecommunications Policy Review, September 15, 2005. < http://tc.ca/home_truths.pdf>

any national strategy for the uses of ICTs for development. But they are almost entirely absent from the industry/government submissions. Since the groups in question do have direct experience of what daily life in a fully connected Canada might feel like, perhaps the subtitle of these themes should be, "key policy issues for citizens of a knowledge society."

We need:

1. Symmetrical peer-to-peer broadband as a basic service, because, online, everyone is a producer. But striving to achieve universal access to that service must maintain multiplicity and local involvement
2. Community-based open networks
3. A need for a technologically neutral definition of broadband oriented to use, (but it certainly isn't DSL)
4. A shift to a revenue/services model as central to an understanding of markets in a networked economy. This requires a clear separation of infrastructure providers (the physical layer) from services providers (the applications layer)
5. A government role in defending Internet Protocol in the sense of a commons
6. A government role in leveraging procurement by specifying community-based open access in the purchase of network support
7. Continued Federal involvement in programs that support local engagement and choice in transition
8. Acknowledgement of the need for municipalities to address policies for ICT use
9. A vision of public policy grounded, not in the current conflicts over market ownership, but in the experience that Canadians now have of daily life online.
10. Awareness that the price of universal access to technologies is not the primary social issue. Because Internet Protocol affects relationships, participation in and effective use of changed social institutions and forms is the primary social issue.

The outsourcing of the skills training role to communities, the continuous reference to citizens as merely passive consumers, the top-down nature of policy control, all of these concepts raised by the Panel evoke a paternalism that is the essence of the worst approaches to community development. But then just occasionally, we get glimmers of something else:

In the age of globally connected networks, distance no longer poses the kinds of obstacles to economic and social participation that it did in the past. Individuals and communities not only are consumers, but also are becoming producers of information products and services. Creativity and control are shifting from the centre toward the edge — in networks, in corporations, in communities and in countries.³⁴

³⁴ TPRP Report. Connectivity: Completing the Job 8-5. Here are two other examples of forethought:

Occasionally, an awareness of something other than change driven by unfettered telecommunications markets does peek through. But these statements are so out of character with the main message that it makes you wonder if the editor of what had to be multiple authors let those slight speculations on the nature of a knowledge society slip through by accident.

The Panel makes observations that should serve to remind us to expect that, in a deregulated market, the telecommunications industry will let bloom a thousand experiments in local measured service. The Panel is quite clear that they believe this to be a good idea.

There have been other examples of regulatory measures that distorted economic efficiency to achieve social goals. These include freezing the price of pay telephone service for several decades (in the 1960s and 1970s and again in the 1980s and 1990s), **discouraging experiments with local measured service** (in the 1970s) and requiring uniform prices across a broad class of customers, even though costs of service vary greatly within the class (a continuing regulatory practice).³⁵

The current regulatory framework still assumes that charging different prices to different customers for the same service is a form of unjust discrimination, unless there are demonstrable cost differences or similar justification. ... **Charging different prices to different customers, or “differential pricing, is a normal business practice.....**, CRTC prohibitions on differential pricing extend beyond anti-competitive concerns and seem to be based on “fairness” principles. Unfortunately, in this case, fairness conflicts with normal business practice and indeed can lead to a significant loss of efficiency. ... This type of targeted pricing takes place in most competitive markets. There is no good policy reason to prevent it, unless it constitutes anti-competitive conduct.³⁶

After all, **intense price rivalry is an objective of competition policy.**³⁷

The U.S. Federal Communications Commission (FCC) recently adopted a policy statement outlining a number of principles intended “to encourage broadband deployment and preserve and promote the open and interconnected nature of [the] public Internet.” ... The statement also indicated that all of the enunciated principles were subject to reasonable network management considerations. ... The Panel believes Canada’s telecommunications policy and regulatory framework should include provisions

“The fivefold increase in broadband speed that took place between 2000 and 2005 is the beginning of the broadband story, not the end.” (TPRP Report. Connectivity: Completing the Job 8-6)

“A network effect is a type of externality whereby the value of a good or service depends on the number of persons already owning that good or using that service. For example, as more and more persons are connected to the Internet, the value of the Internet to society increases as it becomes a more effective communications tool.” (TPRP Report. Information and Communications Technology Policy 7-36)

³⁵ TPRP Report. Economic Regulation 3-7

³⁶ TPRP Report. Economic Regulation 3-19/20

³⁷ TPRP Report. Economic Regulation 3-22

that confirm and protect the right of Canadian consumers to access publicly available Internet applications and content of their choice by means of public telecommunications networks that provide access to the Internet. (However), in some cases, **there may be sound business reasons for blocking access to applications and content or degrading service.**³⁸

In other words, market-based “business” decisions, taken in the context of normal commercial business practices and traffic management, take precedence over “network neutrality” and the operational effectiveness of the Internet. This is a key view in that it circumscribes the user to the role of consumer, and makes a social objective of serving effective use in peer-to-peer interaction very difficult to achieve. That right is bi-directional and they are ignoring a right to supply not just receive. A citizen interacting with governing institutions online is not a consumer. Unfortunately, metered use of the Internet is a complete misunderstanding of the nature of the medium.³⁹

Reed Hundt, former FCC Chairman, has noted that the telecommunications industry has a property interest in a private Internet. He points to the Web as “the greatest creator of public property in these 30 years of privatization,” and underlines the importance of protecting citizen access to that public property:

I cannot overcome a suspicion that deregulation really means re-regulation to avoid or contain open networks. Of course this cannot and must not be. We cannot adopt a closed network model. ... Access network builders are neither the creators nor the proprietors of the Web. They are only the creators of the pathways to that public property. Do we want low cost very robust, high speed access to public property, or do we want a very expensive limited toll booth to get to the public park – the Internet? If the open network has been a huge contributor to economic growth, would a closed network be better? I don't know.⁴⁰

But he does believe that, “The government ought to create by regulation a public thoroughfare to the Internet that continuously improves ... a thoroughfare that is for everyone, everywhere, all the time, that gets us to a public space and that space is the Web.” Far more than productivity and efficiency, it is exactly in that space that Canadian identity will be defined and where our humanity will find its expression.

There is nothing in the TPRP Report that allows us to overcome suspicions that de-regulation actually means re-regulation to avoid or contain open networks in the manner that Hundt declares. Of course, in aspiring to be a knowledge society, Canada too cannot and must not adopt a closed network model.

³⁸ TPRP Report. Social Regulation 6-15 to 18

³⁹ Technical management of loads specifically to ensure fairness among peers under conditions of limited bandwidth capacity is an entirely different manner

⁴⁰ Reed Hundt. Speaking at F2C: Freedom to Connect Conference, Washington, April 3/4, 2006 (<http://www.isen.com/audio/Hundt-F2C2006.mp3>).

There are two things about the Internet that are difficult for governments to face. First, the Internet's emergence as the driving force in socio-economic change signals that communications have ceased to be an instrument of control. Second, is that the locus of investment for increased productivity has switched from corporate entities to individuals. Governments should explore policies that let individuals invest in Internet use.

Government itself, that ultimate control freak, will have to open up to the views of its web-empowered citizens. In the same way that Wikipedia presumes "collaboration among users will improve articles over time," government should learn to accept that collaboration among citizens can change things for the better.⁴¹

When a source as middle of the road as the Globe and Mail presumes to lecture the Government of Canada on governance reform through the use of collaborative open source methods, you can safely assume that a significant change in public policy process, related to an understanding of the knowledge society, is at last underway.

As a window on the game of telecommunications regulation in Canada, the Panel's report is rock solid. There has never been a better manual to the present workings of that peculiar world. And, as a set of "beliefs" (a word they often use to preface recommendations) for how that isolated policy world could change its behaviour, the Panel is relentlessly consistent in its faith in "the market." Their beliefs accurately reflect the current telecommunication sector's loss of faith in the power of governments. But the Panel never risks guessing what might actually be the inherent differences in the changed society they invoke.

When (or maybe where?) will those whose identity is grounded in "Internet Culture" start to speak more directly to the positive qualities of a knowledge society that they know from experience to improve daily life? And how will those whose identity is not grounded in Internet Culture hear what they say? The necessary public conversations are also going to be about values, more than they are about technologies. The necessary conversations are also going to be about accepting where we are going, not defending where we have been.

⁴¹ **Wikipedia's world and where it points us.** Editorial. Globe and Mail, May 1/06, A12.

Monopoly is not dead, it only sleeps

Regardless of the Panel's re-arrangements with the deck chairs of the telecom policy, there is no guarantee that monopoly does not still float submerged somewhere in the telecommunications sector. In a knowledge society, the danger becomes that the consequences of a monopoly in telecommunications negatively affects the entire society.

Here is a very good summary of what the Panel intends as the outcome from implementing their recommendations:

As the regulatory framework transitions from an historic approach that seeks to protect consumers from **monopoly** pricing to one that relies on competitive market forces to discipline pricing, the focus of economic regulation shifts toward ensuring that competition is not thwarted or significantly diminished as a result of anti-competitive conduct by those who might possess **significant market power (SMP)**. In this environment, there is greater reliance on competition law principles, rather than on **traditional public utility regulation**, to assess whether barriers to entry exist, whether SMP exists and whether there has been abuse of such SMP that has resulted — or is likely to result — in a significant lessening or prevention of competition in the market.⁴²

The Panel states a belief that “the transition from monopoly to competition” is over and that the risk is confined to “significant market power” in “specific telecommunications markets.” But there are some hints that they express that belief more from a position of consistency with their primary market recommendation that the complete absence of doubt. For example:

The Panel has also considered the concerns expressed by some parties that liberalization will constrain Canada's ability to achieve other policy objectives and protect the public interest in a number of other respects. These concerns have often focused on the significant place that Canada's largest telecommunications carriers occupy in the Canadian telecommunications and broadcasting markets. Two companies, BCE Inc. and TELUS Corp., account for 80 percent of all revenues in the telecommunications segment, and two other companies, Rogers communications Inc. and Shaw Communications Inc., account for approximately 70 percent of cable telecommunications segment revenues in Canada. Three of the same four firms, BCE, TELUS and Rogers, account for 92 percent of the mobile wireless market in terms of subscribers (85 percent in terms of revenues).⁴³

... the Panel recommends establishing a Telecommunications Competition Tribunal (TCT ... (to) facilitate the application of conventional competition policy to the specific circumstances of telecommunications service markets. ... (and to) become the single authority responsible for telecommunications merger reviews.⁴⁴

What the Panel doesn't say in that recommendation, but flags clearly through their recommended

⁴² TPRP Report. Telecommunications Competition Tribunal 4-3

⁴³ TPRP Report. Afterword 11-21

⁴⁴ TPRP Report. Executive Summary 6

mechanisms to contain SMP, is that they know the danger of monopoly isn't going to go away. In a sector dominated by only 4 prime players, and with foreign ownership restrictions removed, it is not difficult to imagine a scenario where four becomes one.

Prior to recommending the TCT, the Panel first posed its possibility with what is to them a rhetorical question. They knew they were going to find that the CRTC is failing in its task to move telecommunications regulation towards a market-based approach:

As this shift in regulatory focus occurs, it is important to consider the most appropriate institutional framework to define markets, assess market power, determine whether there has been an abuse of such SMP when it is found to exist, and determine whether such conduct has resulted in a significant lessening or prevention of competition. The question that arises is whether the existing sector-specific regulator — the Canadian Radio-television and Telecommunications Commission (CRTC) — the competition law authorities — the Commissioner of Competition, the Competition Tribunal and the courts — **or some new institution** would be the most appropriate and effective body to assume this role.⁴⁵

To agree with their call for the Tribunal as a new institution, it would be necessary to agree that:

- The CRTC lacks experience.
- “In-depth understanding” is other than putting foxes in charge of the chicken house.
- The need for “traditional public utility regulation” has gone.
- Monopoly is no longer a risk.

There is no need to agree with any of those assertions.

In a climate of mergers and convergence, do we believe the risk of monopoly has disappeared? When they express a property interest in a private Internet, should we trust the prime telecommunications carriers to protect the Internet as a public good? Do we believe that the prime carriers will sustain open access local area networks as public utilities that are essential to community development? Never forget that it is because the prime telecommunications carriers face competition that they are demanding changes in regulation. And then, when they are not facing competition, they seek the protection of regulation:

In regions with very low population density and fewer opportunities to realize economies of scale, telecommunications markets may well be what economists refer to as **natural monopolies**; that is, markets where costs are based on the scale of output and hence where a single firm can serve the market at a lower cost than several competitive firms. In such situations, regulation may need to continue for the foreseeable future.⁴⁶

This assumes that the “market” is for the “services” of the physical and transport layers of their open network architecture model. In their effort to leave the door open for a natural monopolist, they are in this case ignoring that the real service (utility) supplied is IP. The minute the connection turns on, the “region” becomes interconnected in global markets. Thousands of firms

⁴⁵ TPRP Report. Telecommunications Competition Tribunal 4-3

⁴⁶ TPRP Report. Economic Regulation 3-6

will then “serve” the market (all layers of the model), unless, of course, the monopoly connector succeeds in protecting its advantage with bundled service.

The Panel has not demonstrated, and has not even sought to demonstrate, that the result of deregulation won't be monopoly. The lengths to which they've gone to define and address the problem of “significant market power” (SMP) reveal that they are well aware the threat of monopoly has not disappeared.

The TCT will be a transitional regulatory mechanism designed for the specific purpose of guiding the telecommunications industry through the next stage of its evolution from sector-specific economic regulation, characterized by less ex ante price regulation and greater reliance on competition law principles, to regulation that is subject to the laws of general application including the Competition Act. The Telecommunications Act should include a sunset provision terminating the TCT at the end of five years, unless there continues to be significant market power in a substantial number of telecommunications markets.⁴⁷

It can be predicted that:

- (a). After five years of consolidation (i.e. mergers and acquisitions) in the industry, it is guaranteed that the TCT will find that the general threat of SMP has continued to exist.
- (b). After five years of reviewing mergers, the TCT will not have found any of them to increase the risk of monopoly.
- (c). What this disguises is that it's actually the CRTC that's being set up to sunset.

They then discuss at some length the “proper scope of mandated access” and its impacts on investment in networking infrastructure (presumably the “physical layer?”):

The CRTC recognized the potential dangers of mandating wholesale access to more than essential facilities, noting that, if the scope of access was too broad, new entrants “...**may not have sufficient incentives to invest in their own facilities**, and would enter and remain in the market primarily as resellers.” ... (R)equiring incumbents to make near-essential facilities available during the early stages of competition would **make it easier for entrants to establish their networks** and “acquire the critical mass of customers necessary to make entry and expansion of their own networks economic.” Thus, mandating provision of near-essential facilities was intended to provide entrants with a “stepping-stone” toward greater reliance on their own facilities, thereby **facilitating the construction of entrant networks**.

There is no evidence in Canada that the CRTC's “stepping-stone” strategy has provided an effective transition to greater reliance by entrants on their own facilities. There is, on the other hand, reason to believe these policies have distorted the behaviour and incentives of new entrants in Canadian telecommunications markets.⁴⁸

⁴⁷ TPRP Report. Telecommunications Competition Tribunal 4-16

⁴⁸ TPRP Report. Economic Regulation 3-33/34/35

This is where fears for the attempt to “control” IP should grow greatest. If the CRTC’s role has blocked investment, why is there so much unused dark fibre in Canada? Why are so many new wireless networks planning for open access at no cost?

In most of populated Canada there is unused fibre everywhere you look. Municipalities and school districts now find it far cheaper to build their own fibre-based networks than to buy them as a “service.” The cost is not in the technology of networking, which is descending on a curve of increasing returns. It’s in the artificial and political manipulation of rights of way.

In a fully de-regulated market, all that dark fibre is going to suddenly surface. And, therefore, in the competitive explosion that occurs, the incumbents with the fastest pipes and the deepest capital war chests will seek to drive all of the other competitors out of the market ...except for one thing. Because it’s IP, the descent of bandwidth costs toward zero will accelerate, thus forcing the switch from an access or “transport” market in the bottom two layers to a “services-based” market at the top.

Or at least that’s the way it should be. But re-regulation to protect the wrong markets, disguised as de-regulation, can block the kind of competition in open networks that is essential to progressive structural change.

Internet Protocol as social contract

Somehow, the perception that the internet is a machine constructed out of tangible hardware and binary software code has led to a view that it can be regulated by a machine. But the real internet, the one that matters, is as interesting as society itself. It could no more be governed by a centralized authority than could a good conversation.

Susan Crawford. **Shortness of Vision: Regulatory Ambition in the Digital Age.** Working Paper No. 102. New York, Benjamin N Cardozo School of Law, 2005. p. 62. <http://ssrn.com/abstract=681409>

So far, the phone companies are taking a cautious approach towards VOIP. To defend their turf, they need to offer a VOIP service to customers who are poised to switch to a competitor. However, the carriers acknowledge VOIP services will cannibalize their existing phone subscriber base.

Catherine McLean. **Telus pondering prime time to kick off its VOIP service.** Globe and Mail, April 11/06, B5.

Greater than the dangers of anti-competitive behaviour is the danger that unregulated prime carriers will seek to restrict the impact of Internet Protocol (IP). Because it's the way we govern ourselves online, we need IP. At no point does the Panel convince us that reliance on market rather than regulation does not threaten Internet use in Canada. They have not defined the Internet as a public utility. They merely refer to the sector as providing telecommunications "services." We expect our Governments to mitigate their recommendations where they serve to support the telecommunications industry in putting the Internet genie back in the bottle.

What the telecommunications "sector" views as the source of all its problems, and what the practitioners of community networking view as the potential for a different approach to development, is the same thing – IP.

IP is the key driver of socio-economic change, and the Panel clearly recognizes it as a key driver:

As it rapidly becomes the de facto standard for all kinds of communications, IP is creating a converged communications space in which all types of telecommunications media (voice, data or video) can be coded and carried, either exclusively or simultaneously, over a common underlying facility, or through the "network of networks" that make up the Internet.⁴⁹

Telecommunications markets are being revolutionized by the rapid adoption of Internet Protocol (IP)-based networks, broadband and wireless technologies and by the convergence of previously distinct information and communications technologies (ICTs).⁵⁰

⁴⁹ TPRP Report. The Need for Change 1-25

⁵⁰ TPRP Report. Executive Summary 3.

We should argue that, “in an increasingly market-driven environment,”⁵¹ there is a far greater need to protect the public interest. But we can also be specific about where that public interest now resides. In a knowledge-based and networked economy, utterly dependent on the Internet for its most basic functionality, the one ignored element that most needs safeguarding, enriching and strengthening is Internet Protocol. Leaving that task to the telecommunications industry is not the best of ideas. For example:

... few policy makers had foreseen the disruptive effects that would result from technological developments such as the Internet and other Internet Protocol (IP) platforms, broadband and wireless networks, nor the potential for services enabled by such developments, such as VOIP (voice over IP) and IP television, **to undermine the dominant positions** of telephone and cable television companies in their respective core markets.⁵²

The problem for the Panel, constrained by their telecommunications sector mandate, is that the impact of IP on market structure is the one element that the 4 prime communications carriers who dominate 80% of that market-driven environment want to mitigate. Out of the Panel’s many references to the role of IP, here are three that illustrate their view that the issue is really competition, and not the impact of IP on structural change:

- Competition is increasing as IP reduces and in some cases almost eliminates economic barriers to entry in selected telecommunications market segments. This trend is clearly visible in the marketplace, as cable operators begin to offer local telephone services and as telecommunications network operators begin to offer video services on their broadband infrastructure. In addition to this facilities-based competition, companies like Primus and Vonage have entered both local and long distance telephone markets in competition with incumbent telephone and cable companies, **without having to build their own facilities**.⁵³

... the widespread adoption of Internet Protocol technology is leading to an increasing separation between the applications and content layers of telecommunications services, as well as between these layers and the underlying network layers that provide physical connections and transport services. The result of this trend has been a fundamental change in the structure of the telecommunications industry. Content providers do not need to be applications or network providers and applications providers no longer need to be network providers.⁵⁴

The continuing convergence of Canada’s communications industries, with former “cable TV” companies and “telephone companies” both offering a similar range of voice, data and video services on broadband Internet Protocol (IP) platforms, will significantly increase competition between the telecommunications and broadcasting industries. The entry of wireless companies into the video distribution business will intensify this competition.⁵⁵

⁵¹ TPRP Report. Policy Objectives and Regulation 2-4

⁵² TPRP Report. Policy Objectives and Regulation 2-5

⁵³ TPRP Report. The Need for Change 1-28

⁵⁴ TPRP Report. Social Regulation 6-15

⁵⁵ TPRP Report. Afterword 11-3

The Panel never really acknowledges very much about the consequences of what it is that IP drives. One of its major impacts is that the “market” they identify as central to the achievement of public policy is in the process of becoming something the telecommunications sector cannot control, although they can wreck havoc by trying. The “market is not in carriage, not in the “transport layer” of “open network architecture.” The market is in the use of applications, services and content that the transport utility provides. For example, the following statement about IP impact is purely a prime carrier point of view.

... a key development associated with the shift to IP-based networks is the increasing separation of applications and content from network infrastructure. ... As a result of the shift to IP and the decoupling of applications from underlying infrastructure, new service providers can enter the voice services market without first having to build an access network.⁵⁶

Because the signal transmitted is now IP based, the distinction that statement makes between the application layer and the content layer is largely meaningless. What they want to cling to, for their understanding of the market to prevail, is to a product or “content” that is static. But anything IP- based is interactive. That means every consumer is also a producer. In reality the four-layer model of network architecture is collapsing into two. The Panel sees this as an “opening up of network architectures” rather than another form of convergence, and they describe its consequences for the telecommunications industry as follows:

As the provision of voice services becomes decoupled from the provision of network access and is eventually offered to consumers at very little or no cost, traditional telecommunications service providers will have to **develop new business models that replace lost voice revenue with new sources of income, and attract the investments that will be required to deploy IP-based, broadband, next-generation networks.** In this respect, the Panel notes that there is an ongoing international debate involving, on the one hand, the benefits and costs associated with policies designed to facilitate the opening up of network architectures so that they are available to all application developers and content providers on a non-discriminatory basis and, on the other hand, the benefits and **costs associated with policies designed to encourage the investments that will be required to build NGNs.**⁵⁷

In effect, are they are arguing that the telecommunications industry must be deregulated to let them find answers to their problem? Or are they arguing that investment in next generation networks takes precedence over the impacts of IP on communications infrastructure – especially where that might mean “closing” the Internet?

In the IP camp, the current buzz calls this an issue of “net neutrality.” In the telecommunications camp, they speak of things like “two-tiered pricing” and “bandwidth management. The Panel would probably view themselves as objective about these opposing perspectives, but it is difficult to interpret the Panel on this question. They clearly see the issues in

⁵⁶ TPRP Report. The Need for Change 1-28/29

⁵⁷ TPRP Report. The Need for Change 1-29

telecommunications terms. Some statements are encouraging. For example:

The Panel believes telecommunications service providers in most cases have little or no incentive to interfere with customer access. However, **the principle of open access to the Internet is sufficiently important that it justifies a new regulatory provision to ensure that it is maintained.**⁵⁸

We get it. It's about markets. But in which economy? An industrial economy of sectors, that happens to include a telecommunications sector? Or a networked economy, structured by Internet Protocol? Again and again, the Panel comes up to the edge of the Internet and then stops. They never make the leap of examining directly how the Internet might change the unexamined assumptions of industrial development policy.

For example, the Panel makes a distinction between “basic” (telephone and data) and “discretionary” (features such as call forward and voice mail) transmission services, noting that basic services should not require economic regulation and that discretionary services should only be regulated in conditions of SMP. Then they define “transmission” in terms of three types of “path,” one of which is packet-switched:

A basic transmission service can be defined as a service that provides a transmission path between two points, along with any functionality required for the path to be used. The path may be:

- packet-switched, whereby the communication is divided into packets and routed via one or more paths, from origin to destination.⁵⁹

In effect, this defines discretionary services as those that interrupt the path of transmission for some purpose, such as routing or temporary storage. It also defines “services” as only related to the act of transmission and not to what is transmitted. Clearly these are meaningful distinctions in the circuit-switched world that even the telecommunications industry has abandoned. But, once things become packet-switched (that is to say Internet-based and governed by IP), they don't make any sense. Yet telephony still guides their definitions.

In a peer-to-peer network, with the smarts at the edge (which is each of us!), we don't need your

⁵⁸ TPRP Report. Executive Summary 10. Here are two similar encouraging comments:

The servers that provide applications at the edge of IP-based networks can be located anywhere in the world. The **distance insensitivity of these networks will expand competition** on a global basis and bring new competitors into the telecommunications industry. (TPRP Report. The Need for Change 1-29)

... the open network architectures associated with IP will give consumers much greater opportunities to define their product and service needs, to choose a mix of suppliers, and even to create their own applications. In the future, the telecommunications marketplace will increasingly shift from one where applications are “pushed” to consumers by network providers, to one where there are greater opportunities for consumers to “pull” the applications, services and content of their choice. (TPRP Report. The Need for Change 1-29)

⁵⁹ TPRP Report. Economic Regulation 3-13

“discretionary “service.” Just let the packets “put” the “transmission’ on my server please! In effect, everything becomes a basic transmission service. In IP-based open networks everyone is a service provider, not just a customer. The “service” that a prime carrier now “provides” us to, for example, store email until we download it, is actually a disservice, blocking the emergence of the full potential of peer-to-peer networking.

Their treatment of negotiated “interconnection” provides further examples of the use of telephony terms of definition:

Interconnection services permit communication between customers of different networks. Interconnection arrangements are required even in those situations in which the service providers rely entirely on their own facilities in provisioning their networks. Interconnection services thus differ from services provided under mandated wholesale arrangements in that both incumbents and entrants require interconnection services.

Interconnection has always been considered in terms of traditional telecommunications operations. However, what is happening in the Internet is also in many ways the same as interconnection. Internet access providers also must arrange for customers on their network to reach nodes on other providers’ networks. Providers usually enter into commercial or “peering” arrangements.⁶⁰

Interconnection between the many different types of public telecommunications networks operating in Canada today is essential to their functioning. The proliferation of technologies based on Internet Protocols (IP) will likely increase the need for network interconnection, in order to provide Canadians with access to the wide range of new applications that can be delivered over IP-based platforms.⁶¹

To say, “What is happening in the Internet is also in many ways the same as interconnection,” is just not so. The Internet and IP are, in essence, the same thing. As the Internet replaces the telecommunications system, the ability to impose the negotiation of peering arrangements simply disappears. You either use IP or you don’t. An IP-based network is “interactive” at all scales of connection. It is not “interconnected” in the telecommunications sense of the word. The systemic and networking assumptions underlying IP reflect a completely different way of viewing how things get done.

They are ignoring the effects of IP and Moore’s Law, and the fact that the advertising slogan, “It’s the network that’s the computer,” is actually true. They are undismayed by the prospect of the networks of the telecommunications system moving towards closed systems, and they shouldn’t be.

Evidence from the US debate on two-tier networks and net neutrality suggests the telecommunications service providers themselves have a huge incentive to contain bandwidth use to the infrastructure channels they are prepared to provide. In the world of Canada as a knowledge society, it is much more likely that the monster called telecommunications sector will

⁶⁰ TPRP Report. Economic Regulation 3-31

⁶¹ TPRP Report. Technical Regulation 5-15

destroy IP, than it is that the monster called government regulation will destroy the telecommunications sector.

When the Panel identified IP as the cause of their industry's transitional difficulties, they were correct. But they never really follow up on their own acknowledgement that IP affects everything, individual relations, social institutions, economics, and governments, not just that particular industry.

The Panel is therefore recommending that the telecommunications sector get a ticket to be a free rider on a public good – IP– and allowing the Government of Canada to forget that it has both the power and the responsibility to ensure the provision of that public good. There is no free rider problem now because the telecommunications sector does not own IP. It is not what economists now like to call a common property resource (Because the use of the word commons makes them feel itchy?). Since IP is neither property nor finite, they cannot ‘deplete’ it, like a commons. But, by recommending that the market prevail without reference to overarching socio-economic objectives the Panel is recommending that the telecommunications sector be set free to make the attempt.

IP Rules

People do not expect to use anyone's “pipes” for free. People don't do that now. But Internet Protocol is not a pipe. It's a set of rules for codes about how various digital communications capacities will work. No one owns IP. IP, and the effects that it has, are in the public domain. To constrain IP, is to seek to enclose a common. It is the role of governments to guarantee that the IP common remains open.

Whatever resources IP presents, they are not finite. IP is not common-like in the sense that can be depleted. But it can be “walled off.” It can be enclosed by so many boundary-crossing qualifications that universal access is rendered meaningless.

If, as the Panel correctly says, IP is the key driver of change within the telecommunications system, then we are really only going to discover the impact of systemic change by asking different questions than the Panel asks:

- What is the role of IP within a changing Canadian society and how can that society best benefit from whatever it is that IP does?
- In a world governed by IP, what can the Government of Canada overall do to ensure that our adaptation to that world is successful?

IP challenges most of our assumptions about the structural nature of relationships. All it does is move packets of bits across routers acting as reciprocating peers. But the programmers of IP were assuming that the packets were heading towards individuals who would act in the same

way as the routers. Out of the simplicity of that assumption arises something wondrous and new in the experience of social networks.

To paraphrase Clifford Geertz⁶², we are animals suspended in webs of significance we have spun ourselves. The power of Internet Protocol comes from the capacity it gives us to spin webs of significance through the choices we make about links. The idea of “content” (of the texts) is a complete distraction. What really matter are the connections among and between the texts. For new meanings, new perceptions to emerge and survive, it is essential that our decisions about connecting remain self-determined.

There is nothing material about the Internet. It does not “transport” information” as if information was an object. The Internet’s being emerges only in the dynamic flow created by Internet Protocol and has nothing to do with the physical structure of the “pipes” through which that flow occurs. At any one moment, the constituent bits that make up that flow are the result of millions of decisions to connect that occur at its edges. Therefore John Parry Barlow was correct to say, “Only connect. Never separate.”

In IP, the choice to connect is an individual choice, not corporate. In a knowledge society, the social structures are inherently relational (and the Internet Protocol mirrors that capacity to connect). They are not involved in the separation of individuals as parts. In order to sustain the self-organization of networks, the Internet enhances the autonomy of the individual to relate to other individuals without reference to authority or to structures that purport to legitimize or “represent” their choices. The growth and evolution of Internet use continues because more people like the autonomy it gives them than do not.

Individual autonomy (self determination), rather than anonymity or privacy, is the key driving factor governing social relationship in a knowledge society. In the urbanized world we are all busy creating, the easiest primary vehicle of social control is likely to be fear. Those who resort to a politics of fear will naturally seek to contain the Internet’s impact. By defining the way in which relation occurs as “open,” the Internet opposes rule by fear. It does this, in large part, by supporting the way in which networks re-define the determinants of identity.

The “protocol” in Internet Protocol can usefully be thought of as encoding a particular kind of social contract. As the code that expresses the Internet’s functions evolves, it is important that its design assumptions continue to take the implications of that contract into account. The informing that occurs will only be “authentic” to the degree that the encoding of identity ensures the teller of my story is myself.

⁶² Clifford Geertz, **Emphasizing Interpretation** From *The Interpretation of Cultures*, 1973. (pp. 4-5). “The concept of culture I espouse. . . is essentially a semiotic one. Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretative one in search of meaning. It is explication I am after. . . .”

Either there is IP or there is not. And when IP is there, then we are subject to the routing and connecting powers that its nature as protocol coerces. On balance, we would want there to be IP for the protections it gives us against the misrouting or blocking of others despite its simplistic governing of our reciprocating behaviors. Online, the assertion of individual authority before the fact, rather than demonstration of authenticity after the fact, is always the enemy of collaboration.

To state that it forms a contract is not to claim that the Internet somehow renders the role of government redundant. The rule of law and the rule of IP “govern” different modes of interaction. Law inherently balances (regulates) the effects of competition for scarce resources in the context of zero sum games. IP inherently balances cooperative relationships in the context of non-zero sum games. Both modes operate concurrently to create a dynamic equilibrium in any ecology of human relationships.

IP is a contract about collaborative relationships. The self-organizing networks that IP was designed to sustain are networks of people. When we are talking about Internet Governance with politicians, we have to begin telling them that we are not talking about governance “of” the Internet. We are talking about governance “by” the Internet. We have to begin telling them that the distributed structure of a society that is online and an economy that is networked is a structure of communities.

In such a society, each and every one of us are the URLs – the “Universal Resource Locators.” A society that allows businesses to block our capacity to decide what and where to place our “hot buttons,” our live links among each other, will not survive. When a market is informed by peer-to-peer relationships then everyone in it is a member. In a networked economy, every market is a community that informs its decisions. There are no more customers. To imagine consumers as passive receptacles of goods and services is to ignore the interactive roles we all play in networked systems of demand and supply.

A global economy is a networked economy in which IP is everything and everywhere. The Internet on its own renders markets more effective by making them approximate perfect information about price. IP-based networks do not bring new competitors into the telecommunications industry as if that industry were all encompassing. IP-based networks merely bring the telecommunications industry into open competition with other modes of production and distribution.

In the Amory Lovins equation of end use – least cost, IP is the only mechanism specifically designed to favour the effective operation of end-use. That’s what it does – it pushes functions to the edge of the network.

Understanding the central role of IP in socio-economic change is not a question of industrial or technological policy. It is more fundamentally a question a socio-economic development policy. Replacing one kind of technocratic micro-management of a particular sector with a different form of micro-management will not accomplish anything in relation to the larger goal. IP is not a private good that can be commonly provided in the market. No IP, no Internet, and the telecommunication sector’s existence now depends on the Internet, not the reverse.

IP changes everything. In a knowledge society and economy, IP networks everything. In the interconnection of networks, the basic relationships of individuals to each other, and to social and economic institutions and mechanisms, is altered. At the society level, to abandon responsibility to resolve complex issues to “markets” is therefore to abrogate a basic responsibility to govern. What they are counseling is correct only for corporate welfare and therefore it is important to understand the limitations and implications of their advice. While deregulated markets will certainly be good for Telus and BCE, what’s good for Telus and BCE isn’t necessarily good for Canada.

The way forward in such a society is to place community development at the head of your strategy. But where are we now? If we began asking our national governments what they are doing to defend IP from the attacks of telecommunications corporations, what would they say?

The World Summit on the Information Society proved governments are now alert to, and threatened by, the changes in patterns of governance that are made real by relational networks based on peer-to-peer, end-to-end and edge-to-edge. It seems likely that nation states will be slow to advocate strongly for what is after all a phase change in the nature of control that has radical consequences for current assumptions about the nature of governance.

The forums appropriate for participation in dialogue about the implications and benefits of this change are neither international, nor national, nor even "multi-stakeholder" (in the sense of outsourcing the public good to "non-governmental" agencies). If an Information society is a network of networks, and a nation within it is a network of networks, then the appropriate forums are going to be local. It is becoming clear that the necessary defense of Internet Protocol is the responsibility of local governments. If we ask local governments what they are doing to defend IP, we will find there are some that understand the question.

Local ownership of community-based open networks allows for Internet Protocol to live and breath. It causes the effects of markets as distributed communities to emerge. What IP does is define relationships, in the most basic sense of the word, as peer-to-peer.

The e2e principle assumes that the network itself performs no function beyond transmitting data packets efficiently. All additional functionality, from authentication to processing is to be done by the end points, i.e. the devices that connect to the network. This differs fundamentally from other communication networks, such as that of the telephone, where the network performs most functions while the telephones remain relatively “stupid” at the end-points.

In suggesting that the role of the network is simply to transport data packets on their way from sender to recipient, the e2e principle also implicitly restricts the functions of the network. The network, for example, is not supposed to filter certain data packets based on their content, nor is it supposed to authenticate them, track them, or alter them. It only ought to pass them on.⁶³

⁶³ Viktor Mayer-Schoenberger and Malte Ziewitz . **Jefferson Rebuffed - The United States and the Future of Internet Governance.** John F. Kennedy School of Government, Harvard University, May

What part of “peer” don’t they get? They can own all the fibre, backbone, or spectrum they want. But they do not own IP. We all own IP – and we must not let them take it away

In Canada, major corporations engaging in closed-door dialogue with the Government of Canada have always decided public telecom policy. Currently that dialogue is based on certain assumptions:

- Suppose you had billions in your war chest.
- Suppose you believed that bundling online video with other IP-based services was the key to capturing customers and your economic survival.
- Suppose that IP rendered that business plan as nonsense.

What would you do? You would attack IP. They are doing that now, and we have to say “No!”

IP is a common, a public good that corporate interests can appropriate, exploit and enclose for their own ends. They do NOT own IP. IP belongs to no one and to everyone all at once. Corporations will attempt to “close” open network architecture. Corporations will seek to channel the collaborative distribution of functions in the names of “services.” In order to contain those instincts to control, governments must act to safe guard IP in the public interest.

Community-owned Internet backbone

The internet is itself a complex system, made up of many interacting agents (including many non-state communities) whose dynamic engagements produce elaborate permeable membranes regulating information flow. A complex adaptive system, such as the internet, economies, weather, and social organizations, is based on the actions of **autonomous agents** that act to maximize their "fitness" (or success as measured against a particular landscape) over time. These agents also communicate with their neighbors. This structure produces responses that are neither predictable nor linear: Interactions among these agents lead to emergent properties of the system (properties that could not be explained by traditional analysis) that are not properties of the agents themselves. And the actions of these agents distort or deform the "fitness landscape" that provides the system's environment, making it a very rugged landscape indeed.

Susan Crawford. **Shortness of Vision: Regulatory Ambition in the Digital Age.** Working Paper No. 102. New York, Benjamin N Cardozo School of Law, 2005. p. 55. <http://ssrn.com/abstract=681409>

In a knowledge society, it is essential for local governments as “autonomous agents” to be able to control the infrastructure of the local Internet loop on which their capacity to make development choices depend. In working to achieve that objective, it seems more likely that intervention in provincial policy and program development will be more effective than efforts at the national level.

Policy makers are suspicious that abstract concepts like “community” evoke such a myriad of definitions and vague values that they are not fit subjects for analysis. Their suspicions ignore the Internet’s impact on structure. In an online world, a municipality can be concretely understood as a community of practice about the governance of a particular place. Its authority to govern the web of distributed functions and connections it must manage comes from Internet Protocol, and is not delegated from senior governments. The Internet’s support of networked relationships erodes the constitutional assumption of the downward delegation of powers.

When the TPRP Report was released, we looked for something (anything!) that would encourage a "community-based" approach to local network ownership. What we found instead was this:

The Panel notes there are communities where local broadband access has been provided by municipal government, and some areas where local organizations or public authorities such as municipalities also own backhaul facilities. In addition, there are areas where there is a broadband point of presence but no local access network, because there is no business case for building one. In such areas, public ownership may be an option. On the other hand, there are also cases in which publicly owned or subsidized networks have duplicated existing or planned private sector network builds. **In line with the general principle that the objectives of Canadian telecommunications policy should be achieved primarily through market forces, the Panel believes existing or planned privately owned networks should not be duplicated using public subsidies.** At the

same time, however, the Panel would not discourage public ownership or subsidies in areas where no such networks exist and where a business case for expansion of broadband networks is unlikely to emerge.

Recommendation 8-10. The U-CAN program should not promote the duplication of existing or planned network facilities with networks that are **subsidized by municipal, provincial or federal government funds**. However, **investment and subsidies by public bodies such as municipalities** should not be discouraged in areas where the market fails to provide broadband access.⁶⁴

With those phrases, the Panel denies or precludes a debate on local government ownership of open-access networks in Canada before it even begins. Our own arguments in support of local ownership will stand or fall on the strength by which we render less credible the “belief” that market forces are all that’s needed.

Why is it that every municipality that looks into the economics of this opts to build its own network? There are many areas of Canada that have multiple strands of dark fibre running absolutely everywhere. Why is it that those areas do not even begin to deliver real broadband to municipalities as a market-based service? By declaring that public ownership is a subsidy in competition with private networks, the Panel ensures that the prime telecommunications carriers will continue to supply less than broadband at the community and municipal level.

The Telecommunications prime carriers hate the thought of municipal ownership of open-access broadband networks. TC, on the other hand, should state that now is the time for municipalities to accept responsibility for ensuring that a particular public good, Internet Protocol, continues to exist. Now is the time to recognize the Internet as critical local infrastructure. In the 21st century, moving bits is just as fundamental as moving people and cars. But the Internet is different from other critical infrastructure, because of the essential cooperative dimensions of Internet Protocol as code that need to be protected in the public interest. Getting that protection in place begins at the community level.

Consultation is not control of development decisions

Social production and exchange comprises a third system of production, a class of solutions to production problems that is separate from, and can complement or substitute for, the two more commonly studied systems: markets—through both the price system and the firm—and the state. We observe in many contexts policy choices and design impulses that take assumptions appropriate to the capital requirements of industrial economies and try to force behavior in the networked information economy into the social and market behavioral patterns that were appropriate for that technological stage and capital structure, rather than for the one we live in today. **We must learn instead how to adjust our expectations, assumptions, and, ultimately, policy prescriptions to accommodate the emerging importance of social relations in general, and sharing in particular, as a modality of economic production.**

⁶⁴ TPRP Report. Connectivity: Completing the Job 8-14

Yochai Benkler. **Sharing nicely: on shareable goods
and the emergence of sharing as a modality of economic production.**
The Yale Law Journal, 2004 [Vol. 114: 273]. 273-358,

There is no common definition of broadband or the characteristics of broadband. It's a moving target. In effect, the word "broadband" is merely a public relations way of saying "Internet" in its current disguise.

We need to base our own definition of broadband in capacity to change technologies, not in specific technical solutions. We cannot yet see the upper limits of network capacity to connect. But, if our local network infrastructures can scale in parallel to growths in data transfer rates and the complexity of networked applications, then we have broadband.

However, the Panel defines broadband far too narrowly as follows:

High-speed access via DSL or cable modem, also known as "broadband," now is the dominant means of accessing the Internet in Canada.⁶⁵

The Panel is aware that broadband is not a "basic service objective" as defined by the CRTC:

In 1999 the CRTC set out the following basic service objective for local exchange carriers:

- individual line local service with touch-tone dialing, provided by a digital switch with capability to connect via **low-speed data transmission to the Internet** at local rates

In making this determination, the CRTC noted that the basic service objective may change over time as service expectations evolve. However, there have been no changes to date.⁶⁶

The Panel does include broadband under the scope of what they mean by affordable access. Both the Panel and practitioners of community networking agree that broadband needs to become a basic objective in enabling the uses of ICTs for socio-economic development:

As in the past, "affordable access" should continue to be a central objective of Canadian telecommunications policy, since affordable access to telecommunications services is required for full participation in Canadian society and economic activity. The affordable access objective also recognizes that in some areas, particularly rural and remote ones, the costs of providing telecommunications service are so high that market forces alone are unlikely to be able to provide affordable access without government intervention.

In Chapter 8, **the Panel concludes that broadband telecommunications access will be an essential enabler of the economic and social welfare of individual Canadians,**

⁶⁵ TPRP Report The Need for Change 1-6

⁶⁶ TPRP Report. Social Regulation 6-5

regardless of where they live, and that the market will fail to achieve the goal of ubiquitous broadband access by 2010, particularly in rural and remote areas.⁶⁷

The Panel is off-handedly dismissive of existing government programmes for increasing “connectedness:”

Since 1993, it has been the policy of the federal government and most provinces to increase the level of electronic “**connectedness**” of Canadian **consumers** and businesses to each other and to the world. Over the past decade, the federal government has made investments of close to \$600 million toward advancing the connectivity agenda.⁶⁸

They then refer to the examples of SchoolNet, CAP, and BRAND, but only in the past tense. Although elsewhere they do note that BRAND was targeted at “residents,” that reference to the beneficiaries of these programmes as “consumers,” rather than addressing quite specific social policy objectives, is dismissive and revealing. They then continue:

While these public sector investments were important, **market forces played an even more significant role in making Canada a global leader in broadband deployment.**⁶⁹

There is no sense that the learning that occurred at the community level in these programmes has any relevance for public policy, nor any recommendation that they be continued. In fact, quite the opposite. While they do acknowledge that “the Panel believes the smart adoption of ICTs is essential toproviding opportunities for all Canadians to participate in and contribute to our society.” (8-4), this is prefaced by:

The impressive growth of broadband in Canada over the past five years is mainly the result of the expansion of competitive commercial **markets.**⁷⁰

Fundamental principlesparticularly relevant to the challenge of achieving ubiquitous broadband access:

- Rely primarily on **market forces** to achieve telecommunications policy objectives
- Use well-targeted government measures in cases where the market has failed
- Ensure that government measures are efficient and proportionate to their objectives.

In considering how to apply these principles **one should first determine how much competitive telecommunications markets can do on their own.** In this regard, the Panel notes that decreases in the price of access technologies combined with the development of new wireless technologies like WiMAX and higher-capacity satellite services will allow previously uneconomic areas to be served by the market.

In seeking to apply its general policy principles to the challenge of achieving ubiquitous

⁶⁷ TPRP Report. Policy Objectives and Regulation 2-8

⁶⁸ TPRP Report. Connectivity: Completing the Job 8-3

⁶⁹ TPRP Report. Connectivity: Completing the Job 8-3

⁷⁰ TPRP Report. Connectivity: Completing the Job 8-4

broadband access, the Panel faces two key questions:

- Can **market forces** alone be relied on to meet this objective?
- If not, what kind of government action would be needed? ⁷¹

Ever consistent to their market-based approach, the critical questions of addressing increased broadband access is phrased in terms of market failure, and in finding out what is the least that governments can do.

The Panel conducted its own study to assist in estimating whether market forces alone can achieve the objective of achieving ubiquitous broadband availability by the end of this decade. ... It identified areas where a viable business case might exist if least-cost technologies were used to extend broadband networks to these areas and to provide access within them. It also identified areas where some form of subsidy likely would be required to make broadband available on a basis that would be sustainable, scalable and upgradeable as markets grow and technology evolves.

.... The Panel's analysis further suggests that there is a potentially positive business case for providing broadband access to a significant number of currently unserved Canadians by using low-cost wireless technologies, **assuming that the private sector chooses to make such an investment**. Nevertheless, the study finds that there is not a viable business case in all areas and that, without some form of government intervention, a significant number of Canadians will remain without broadband access. approximately 1.5 million people — about 5 percent of Canada's population — will remain unserved.⁷²

Recommendation 8-4. A specific, targeted government subsidy program, the Ubiquitous Canadian Access Network/ Ubiquité Canada or U-CAN program, should be established **to ensure that broadband access is made available to Canadians in areas where commercial operators are not providing service and are unlikely to do so for economic reasons.**⁷³

Note they assume that the investment decisions remain in the private sector. There is not the slightest hint that communities and local governments could also decide to make that investment. Their recommendation on the use of the CRTC contribution fund is revealing of the degree to which they distrust the “subsidy” of local involvement:

The CRTC-regulated contribution fund is a more direct form of subsidy that continues to play an important role in supporting universal access to basic telecommunications services today. The Panel supports the continuing use of the contribution fund for this purpose. (However) ... The Panel has concluded that **the CRTC contribution fund should not be used to finance expansion of broadband access.**⁷⁴

NetworkBC and BC3 have indicated to the CRTC that the contribution fund should be used exactly for this purpose in unserved communities in BC. And, in fact, it makes no sense to just

⁷¹ TPRP Report. Connectivity: Completing the Job 8-7

⁷² TPRP Report. Connectivity: Completing the Job 8-8

⁷³ TPRP Report. Connectivity: Completing the Job 8-10

⁷⁴ TPRP Report. Connectivity: Completing the Job 8-9/10

go into unserved communities with just POTS and modem-based Internet as “basic” service. It is hard to square the Panel’s rejection of use of the contribution fund to subsidize rural and remote broadband with their conclusion “that broadband telecommunications access will be an essential enabler of the economic and social welfare of individual Canadians.”

Where the Panel sees a role for communities they limit it to the delivery of training programmes for the skills they believe communities lack:

ICT Adoption for Improved Community Development. Physical access to ICTs at the community level, together with improved broadband network connectivity, is a prime means for spreading the social and economic benefits of information technology. A new generation of ICT applications allows communities to adapt ICTs to their own situations, develop local content, and access and use content created by others. However, **none of this will happen in the absence of e-literacy and technology skills at the community level.**

The Panel believes a vibrant ICT private sector not only is important for creating opportunities throughout the economy, but also is an engine for building e-literacy and ICT technology skills at the community level. In addition, the Canadian Research Alliance for Community Innovation and Networking noted in its submission to the Panel that community networks and other community-based organizations provide both technological and social infrastructures for ICT access, adoption and use. Community networks also act as important sources of local economic development and innovation. **Through training programs, for example, they help ensure that all Canadians, particularly those most at risk of being left behind, have the necessary skills to participate in the networked economy.**⁷⁵

Note that this is not a Panel recommendation as such. It is, rather, an “issue” set out that the Advisory Council and Minister “may wish to consider.” Reading between the lines, they ignore CRACIN’s observations and relegate community networking to a role as outsourced delivery of government skills training programs, rather than as core actors in the context of their local economic development roles. That is not and can never be an effective partnership. To be effective in using the distributed systems of a networked economy, it is going to be essential to recognize and sustain the autonomy and centrality of community-based networks in all aspects of Internet use.

Although the Panel references “consultation” with community groups, it appears as if the only agencies capable of bidding on their recommended broadband subsidy would be prime carriers.

U-CAN Program Guidelines Using Market-based Mechanisms.

The first step in developing the U-CAN program will be to identify areas unlikely to be served by market forces alone by 2010. ...This exercise should be completed in consultation with private sector service providers, relevant federal and provincial government organizations and **community representatives**. ...The Panel believes the best approach to fund expansion of broadband access networks in each of these

⁷⁵ TPRP Report. Information and Communications Technology Policy 7-43

unserved areas is to hold least-cost subsidy auctions.

Under this approach, private sector service providers, including incumbents and new entrants as well as interested community-based groups, could submit proposals to provide broadband service in a defined area. **The subsidy funding should be awarded to the proposal that requires the smallest subsidy, provided that it demonstrates it has the technical, financial and managerial capacity to construct and operate the necessary broadband network infrastructure.** ...Unlike BRAND, it would not require communities to organize themselves in order to aggregate demand, develop business plans and compete for funding, except in those cases where communities choose to do so.

.... Contracts between the U-CAN program and successful bidders to provide backhaul and access services should specify **that subsidies and licensed spectrum will be forfeited if service providers do not comply with contractual provisions** concerning time frames for introducing service and providing open access.⁷⁶

That's really quite hopeless for community groups. Only prime carriers could bid on this.

.... unlike BRAND, the proposed U-CAN program should run a series of least-cost subsidy auctions **to select financially and technically qualified service providers able to complete the jobs of providing backhaul network capacity and local access networks to uneconomic areas.** The auctions should be competitively neutral, and bidders should be invited to propose the most efficient and effective technologies available to meet regional requirements.⁷⁷

Given the Bell Canada / SECOR Report, it is likely that Bell would bid on all of this. In fact, given Recommendation 8-18 to the effect that ...

Recipients of U-CAN broadband access subsidies who fail to provide service on time and in accordance with U-CAN contract specifications should **forfeit the subsidy and any spectrum assigned to them, and should be subject to contractual penalties.**

... it is quite clear that no community-based approaches could afford to take that risk of “penalties, and therefore would not bid. It is quite likely that only Bell will bid on it and that what the recommendation really masks is a subsidy of BCE.

The Panel believes that capacity to be “broadband ready” is limited in underserved communities

Flexible Implementation ... In some areas, a one-time capital subsidy may be enough to provide broadband access on a sustainable basis. In other areas, operational expenses may also need to be subsidized for a period of time until a break-even point is reached. In still other cases, providing broadband access may never be economically viable without ongoing subsidy. ... Some service providers have the skills and other capacities needed to build and operate broadband access networks, and to develop local applications and

⁷⁶ TPRP Report. Connectivity: Completing the Job 8-16/17

⁷⁷ TPRP Report. Executive Summary 12

services. **Others need assistance in becoming broadband ready.**⁷⁸

This shouldn't be our meaning of the word "flexible." This is a we're-doing-it-for-you kind of approach, and therefore very bad community development. It is however consistent with the limits of their markets for telecommunications services point of view. If the public good is to be served through dynamic networks that learn, not market efficiency and productivity, then this is wrong. They even assert that the purpose of public consultation should only be the "avoidance of duplication of public and private sector efforts,"⁷⁹ not identification of community needs and capacities. For example, in Recommendation 8-9, after noting, "community involvement is essential for a successful program," they say:

The U-CAN program administrators should develop broadband expansion initiatives in consultation with community members and organizations who can help define community **access** needs.⁸⁰

But it's not limited consultation about "access" needs that's required. It's the application of open and participatory design methods about "use" needs. But then they continue with:

In order to reap the full potential benefits of broadband access, communities need much more than access to technology. They also need access to the tools that will **help them improve** their broadband readiness and **help their members not only learn** how to use technology, but also develop applications and services tailored to their needs.⁸¹

This acknowledgement of local capacity to create isn't quite as it appears. However good (and anomalous in relation to the rest of this Report) that reference to "tailored to their needs" sounds, it misses the point that real learning of those skills will only come from full participation in the design, operation and ownership of the required open-access broadband networks.

In carrying out these responsibilities, the National ICT Adoption Centre should ensure that residents of rural and remote communities included in U-CAN have access to federal and provincial government programs that **help build capacity to use ICTs at the local level**, for example, through online training and skills development.⁸²

Hi! I'm from the government, and I'm coming to teach you all those things you don't know.

The Panel believes a program designed to achieve ubiquitous broadband availability should not be focused on individual "communities" that develop business plans and compete with each other for funds. The program should be aimed at broader coverage than selected communities. At the same time, the design of the program should be flexible enough to meet the access requirements of a wide range of communities and regions, since Canada's diverse geography clearly means "**one size does not fit all.**"

⁷⁸ TPRP Report. Connectivity: Completing the Job 8-12

⁷⁹ TPRP Report. Connectivity: Completing the Job 8-12

⁸⁰ TPRP Report. Connectivity: Completing the Job 8-13

⁸¹ TPRP Report. Connectivity: Completing the Job 8-13

⁸² TPRP Report. Connectivity: Completing the Job 8-14

Finally, taking into account the fact that different areas of the country have different levels of deployment, the Panel considers that subsidies should be made available based on actual requirements to complete the job, rather than on per capita or other formulas.⁸³

They appropriate and completely distort the phrase “one size does not fit all.” It means that, to be effective, community-based broadband solutions must be designed and owned from the bottom up. They see the prime carriers getting subsidized as the only means available to get the “access” job done. If on the other hand, we believe that community development online is the critical missing element in a national strategy related to effective use, then this “regionalized” recommendation is also wrong.

When the river of bits gets deep and wide

Here then are some of the elements of the "case" for local ownership of Internet backbone:

1. The Internet is a public good.
2. Like other utilities, local governments must now sustain the Internet as a public good.
3. The emerging economic lessons from broadband use are making it very clear that local access and ownership is a critical driver of economic development.
4. Public – private partnerships are possible, even desirable, in the creation and operation of essential local Internet infrastructure. Public ownership of a network can be structured to foster the growth of both local private enterprise and public use of the Internet for development.
5. The prime carriers have not, are not and will not deliver real broadband. To get BB into the hands of the citizens of Canada there is a need for public policy beyond "market-based." There is a need for policy to demonstrate some understandings of how a networked economy actually works. In other words, that Canada, to survive the transition to a networked economy, must become a mosaic of effective and autonomous (local) economic zones.
6. Municipalities (all municipalities - not just rural and remote) now need to consider that public policy for local access to broadband infrastructure has become their responsibility, and that the development local markets, not just federal support of national corporations, is going to be the engine of increased Canadian productivity.

As bandwidth capacity increases and bandwidth costs descend, a national policy that depends on economies of scale and large corporations is ignoring the realities of development in a networked economy. Because control of your own network (of the means by which IP affects the place where you live) is inextricably bound up with capacity for socio-economic development,

⁸³ TPRP Report. Connectivity: Completing the Job 8-11

communities and municipalities cannot afford to wait on the whims of external suppliers of their basic connectivity. The “market” is not going to give them the IP network flexibility they need to keep moving forward.

In an online world, our successes depend on cooperative linkages, and on the way our community uses the Internet to link to outside producers and consumers that are important to us. If we own our network, then our chances of making the interactive development choices we face are better than if we don’t.

Economic development thinking is changing. It now highlights how misguided development policies at the national level can dislocate the quality of urban and rural life:

“Although the most powerful mechanism for reducing extreme poverty is to encourage overall economic growth, a rising tide does not necessarily lift all boats. Average income can rise, but if income is distribute unevenly the poor may benefit little, and pockets of extreme poverty may persist (especially in geographically disadvantaged regions). Moreover, growth is not simply a free-market phenomenon. It requires basic government services: infrastructure, health, education, and scientific and technological innovation. **Thus, many of the recommendations of the past two decades emanating from Washington – that governments in low income countries should cut back on their spending to make room for the private sector- miss the point. Government spending, directed at investment is critical areas, is a vital spur to growth, especially if its effects are to reach the poorest of the poor.**”⁸⁴

Canada is supposed to be a leader in Third World development. Why then wouldn’t it apply the lessons it has learned from granting foreign aid to its own development? In an interconnected world, Jeffrey Sachs rules for development don’t only apply to developing countries. Good development theory applies to us all.

We now know that targeted “clinical” investment started from the bottom up works better than top down. We now know that “telecom” isn’t just a “services sector.” It’s infrastructure that is inextricably bound up with capacity for socio-economic development. A policy recommendation that results in reliance on Telus and BCE as our saviours is clearly top down.

A rising tide of individual productivity will eventually float even the largest stranded corporate bloats. But we already know that a rising tide of corporate growth will not float all individuals out of poverty.

By abandoning the capacity for framing public policies on Internet use in socio-economic development to the market (i.e. to the prime telecommunications carriers), Canada enhances the industry’s ability to resist change rather than to adapt to it. Safeguarding IP and effective use in IP enabled networks really are the core issues “required for full participation in Canadian society and economic activity.” But, since a market-based approach to regulation is the operative core

⁸⁴ Jeffrey Sachs. **Can extreme poverty be eliminated?** Scientific American Special Issue: Crossroads for Planet Earth, September 2005, 56-65, p 59.

issue for the Panel and the telecommunications industry, we too know that the market will fail. It will fail because of the attempt to restrain or contain demand for growth in bandwidth. It will fail to deliver real broadband everywhere across all of Canada, not just, as the Panel predicts, to "high cost" rural and remote areas.

Public policy needs to focus much more than it does on the implications of living in a political economy of networks. Rather than get hung up on dichotomies of urban versus rural, or centralized versus decentralized, public policy could then sustain communities of practice that are free to distribute functions through self-organization, and to scale according to the situations and settings they experience. Left alone to be "governed" by their own choices, local networked economies can and will develop effectively. And the non-zero sum of their efforts will cause a "nation as a network of networks" to emerge, transformed in a way that works better than it now does.

Finding common ground for open debate on the uses of the Internet for development

With major changes in technology that cause deep structural adjustments, the policy structure always becomes seriously maladjusted to the requirements of the new technology. Old policies need to be altered or scrapped, and until this is done, existing policies inhibit needed changes. New policies need to be established. All of this takes place in yet another conflict-ridden situation; those with vested interests in old laws, rules, and regulations resist change, while others press for it.

Richard G. Lipsey.

Economic Growth, Technological Change, and Canadian Economic Policy
C.D. Howe Institute Benefactors Lecture, Vancouver, November 6, 1996. p28.
<http://www.cdhowe.org/pdf/lipsey.pdf>

We are in the midst of a technological, economic and organizational transformation that allows us to renegotiate the terms of freedom, justice and productivity in the information society. How we shall live in this new environment will in some significant measure depend on policy choices we make over the next decade or so. To be able to understand these choices, to be able to make them well, we must recognize that they are part of what is fundamentally a social and political choice – a choice about how to be free, equal, productive human beings under a new set of technological and economic conditions. As economic policy, allowing yesterday's winners to dictate the terms of tomorrow's economic competition would be disastrous.. As social policy, missing an opportunity to enrich democracy, freedom and justice in our society while maintaining or even enhancing our productivity would be unforgivable.

Yochai Benkler. The wealth of networks. Yale University Press, 2006. 27-28.

There is an enormous challenge facing anyone who sounds the alarm about the Internet's future. People then immediately ask, "But what does that mean to me?" It is apparent from the current network neutrality debate in the United States that, as of yet, nobody has an adequate response to that simple question. Even among those most closely involved in sustaining and evolving the functions that create the Internet, there is no useful set of metaphors, no common vocabulary for describing what it is that the Internet does. As we begin to talk about this, we must expect to find it as confusing as it would be if we were learning a new language.

Since 1992, Canadian community networks have been living and speaking about the evolving practices of community online and their relevance to public policy. They feel like they have been speaking into a vacuum. The contrast between the content of the TPRP Report and what is said in this critique starkly underlines the degree to which our message about the role of community in the structure of a knowledge society doesn't travel. However there is common ground on which conversations might be initiated.

In the short term, our task is difficult because the telecommunications industry still dominates the language of discourse in Canadian public policy debate. They are acting effectively in a political vacuum to preserve their advantage. The best means available to us to affect the lock

that the prime telecommunications carriers have on Federal policy may be to act at the municipal and provincial level to advocate for community-based approaches to the uses of the Internet for socio-economic development.

In the long term, we should take hope from the fact that being online now shapes the complexities of daily life for a majority of Canadians. It seems likely that a vocabulary of debate and an altered political practice will emerge directly from within their experience of Internet use. What can we do then, in the mid term, to alter the language of discourse about the impact of the Internet on Canada? Who decides how we use the Internet for development, and where and how do we hold that conversation?

We must continue to negotiate for a community-based approach to community development online as a key element of national public policy.

Instead of revising and converging the Telecommunications and Broadcasting Acts and regulatory institutions, we need to begin encouraging Canadians to advocate for an Internet Act.

A basis for further negotiation may reside in the areas of agreement that we can find in the TPRP recommendations. We could agree with them that:

- IP is the key driver of change within the telecommunications system.
- Although market forces alone will not succeed where politics is failing, there is a need for further deregulation of markets for IP based or dependent services.
- The principle of open access to the Internet is sufficiently important that it justifies government action to ensure that it is maintained.
- Broadband is a key to development and needs to be defined as a basic service
- Except it's about the uses of ICTs for development, not "technologies," a "new department" is a necessary step in increasing national capacity to shape and apply policies and regulations appropriate for daily life online. Protection of the function of IP should be the major focus of the new department's role.
- In order to realize the full potential of broadband services in Canada, there is a need to examine the separation or "asymmetry between the broadcasting and telecommunications regulatory frameworks."

In the long term, it is not the contribution of the telecommunications industry to Canada's "productivity agenda" that will lead to global success. It will be because we all paid attention to the interactive capacity of every one of us to think, to know, to inform and to collaborate. It will be because we have begun to understand and to apply more effectively the Internet's strengths.