

NET NEUTRALITY: AN ARCHITECTURAL PROBLEM IN SEARCH OF A POLITICAL SOLUTION

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Starting back in 1999 with the first edition of *Code*, Professor Lawrence Lessig warned readers that “[w]e can... architect... cyberspace to protect values that we believe are fundamental... [o]r we can... architect... cyberspace to allow those values to disappear”: code demands a choice.¹ Over ten years later, the stakeholders and the stakes on the Internet have increased in step with global Internet penetration.² Yet, the governments of Canada and the U.S. still have not defined fully the fundamental values that might necessitate protection on the Internet, much less developed a logical regulatory framework for doing so.³ Without firm direction, administrative bodies like the Canadian Radio-Television Communications Commission (CRTC) and the U.S. Federal Communications Commission (FCC) are faced with the task of stretching old telecommunications and common carrier legislation to fit dynamic problems unique to the Internet, with varied success.⁴ Recently, “net neutrality” has proven to be just such a difficult issue to resolve for both the CRTC and the FCC.

In this paper, I examine the different network neutrality objectives advanced before the FCC and the CRTC against the backdrop of their respective statutory authority over the Internet. I arrive at a simple observation: these administrative bodies lack sufficient legal tools and political guidance to deal definitively with this problem.⁵ I suggest that

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¹ Lawrence Lessig, *Code Version 2.0* (New York: Basic Books, 2006) at 6 [Lessig, *Code*].

² There has been an estimated 399.3% growth of Internet adoption world-wide between 2000 and 2009, for a total of 1,802,330,457 users out of a global population of 6,767,805,208 as of Dec. 31, 2009. Internet Usage Statistics - The Internet Big Picture: World Internet Users and Population Stats, online: Internet World Stats <<http://www.internetworldstats.com/stats.htm>>.

³ Governments worldwide face net neutrality issues, including the U.K., but space dictates they remain beyond the scope of this paper.

⁴ See discussion below under “Comcast and the FCC” and “CRTC ITMP Policy”.

⁵ CRTC Chairperson Konrad W. von Finckenstein asserted at Minister Tony Clement’s Digital Economy Conference that Canada is “dealing with a digital revolution” that is “just as profound as the industrial revolution”, and it needs an overall strategy to deal with these issues. He contended that there needs to be a Royal Commission for a fundamental framework legislation because the CRTC’s three pieces of legislation impede its decision-making, since in reality all of the

the time is ripe for the U.S. and Canadian governments to provide direction as to which values their citizens want encoded in network architecture. As I demonstrate, the logic and objectives behind the U.S. and Canadian approaches to net neutrality are not identical; thus, it is imperative that each government clearly articulates the principles that they have chosen to govern the issue.

After providing historical background to the net neutrality debate, I look at major ideological and economic bases for net neutrality advanced in the U.S. and Canada, particularly in relation to the ubiquitous net neutrality term “innovation”. Against these bases, I analyze the FCC’s groundbreaking net neutrality decision against Comcast,⁶ as well as the jurisdictional argument Comcast advanced successfully in appeal.⁷ Next, I turn to the CRTC net neutrality hearings and evaluate the rationale behind and the effectiveness of the resulting regulatory policy.⁸ Finally, I conclude by suggesting some possible solutions that may help clarify and meet the goals of net neutrality in Canada.

I. HISTORICAL BACKGROUND TO NET NEUTRALITY

In the beginning, Internet architects like Jerome Saltzer, David Clark, and David P. Reed proposed the idea of an “end-to-end” network design: i.e. the goal of connectivity was best achieved by implementing a dumb core and pushing intelligence to the ends of the network.⁹ Professor Jonathan Zittrain notes that this end-to-end design (e2e) was

objects of the legislation are now digital. Konrad von Finckenstein, (Comment at the “Building a Digital Infrastructure for the Future” Panel at Canada’s Digital Economy Conference, Ottawa, 22 June 2009), online: Canada’s Digital Economy: Moving Forward <http://download.isiglobal.ca/ic_ecom_en/oced2009-viewer-en.html> [Digital Economy Conference].

⁶ *Free Press v. Comcast*, No. 08-183 (F.C.C. 2008), 2008 WL 3862114, online: Federal Communications Commission Daily Digest, Vol. 27 No. 162 <http://www.fcc.gov/Daily_Releases/Daily_Digest/2008/dd080820.html> [Comcast].

⁷ *Comcast Corp. v. Federal Communications Commission, et al.*, 600 F.3d 642 (D.C. Cir. 2010) [Comcast Appeal].

⁸ Canadian Radio-television and Telecommunications Commission, Telecom Regulatory Policy CRTC 2009-657, “Review of the Internet traffic management practices of Internet service providers” (21 October 2009), online: CRTC <<http://www.crtc.gc.ca/eng/archive/2009/2009-657.htm>> [CRTC, “ITMP Policy”].

⁹ Lessig, *Ideas, supra* note 2 at 34, 36; Accord Jonathan Zittrain, *The Future of the Internet – And How to Stop It* (New Haven: Yale University Press, 2008) at 31.

based on two principles: procrastination and trust.¹⁰ The principle of procrastination assumes network problems “can be solved later”: “the network should not be designed to do anything that can be taken care of by its users.”¹¹ The ‘trust-your-neighbour’ principle assumed that network participants are trustworthy and that “they will be participants rather than customers”.¹²

The result was that the network was completely open to outsiders to develop uses for it without anyone’s permission, and “[t]he Internet’s protocols thus assume[d] that all packets of data [were] intended to be delivered with equal urgency”.¹³ Lessig theorizes that the e2e design had at least three “important consequences for innovation”:

- First, because applications run on computers at the edge of the network, innovators with new applications need only connect their computers to the network to let their applications run....
- Second, because the design is not optimized for any particular existing application, the network is open to innovation not originally imagined...
- Third, because the design effects a neutral platform—neutral in the sense that the network owner can’t discriminate against some packets while favoring others—the network *can’t* discriminate against a new innovator’s design.¹⁴

By the late 1990s/early 2000s, network technology had advanced to the point where scholars like Lessig and Tim Wu began to voice concerns that network owners may deploy devices at the core of the network that would impede the e2e principle and silently interfere at the content/application level of the Internet.¹⁵ As phone and cable companies (who controlled the physical layer for some types of Internet service) affiliated with ISPs (who controlled the code or protocol layer of the Internet), net neutrality proponents feared that the potential for vertical integration would tempt these corporations to discriminate amongst Internet traffic to benefit themselves.¹⁶ Net neutrality detractors

¹⁰ Zittrain, *ibid.*

¹¹ *Ibid.*

¹² *Ibid.* at 32.

¹³ *Ibid.* at 33.

¹⁴ Lessig, *Ideas*, *supra* note 2 at 36-37.

¹⁵ See generally, *ibid.*; Accord Tim Wu, “Network Neutrality, Broadband Discrimination” (2003) 2 J. of Telecomm. & High Tech. L. 141 <http://www.jthtl.org/content/articles/V2i1/JTHTLv2i1_Wu.PDF>.

¹⁶ Wu, *ibid.* at 147.

(mainly phone and cable companies) argued there was no evidence of discrimination and proposed that “...network neutrality regulation was a solution in search of a problem.”¹⁷

In 2007, U.S. cable provider/ISP Comcast put an end to the question by demonstrating that there was a definite problem (at least with Comcast—see below).

II. SO, WHAT IS NET NEUTRALITY?

Professor Michael Geist describes net neutrality in Canada as “...the principle that consumers should [get] control of what content, services and applications they use on the public Internet.”¹⁸ As seen from the history above, the danger is that network owners will use developing technologies to make choices in advance about what content/applications users will be able to access or create on their networks. Of particular concern to consumers is when network owners engage in Internet “traffic shaping”, or “reducing the bandwidth of specific applications in order to prioritize others.”¹⁹ Traffic shaping involves using technological means to delay packets, such as by “throttling” bandwidth (i.e. limiting the amount of data flow sent into the network during a defined time period) or by “rate limiting” (i.e. limiting “the maximum rate at which traffic is sent”).²⁰ While ostensibly done to maximize network performance for end users, traffic shaping can have a serious impact when the network slows specific application traffic to the point at which using that particular application becomes unattractive to the end user.²¹

¹⁷ *Comcast*, *supra* note 6 at ii, (Petition for Declaratory Ruling of Free Press at ii), online: FCC

<http://www.fcc.gov/broadband_network_management/fp_et_al_nn_declaratory_ruling.pdf> [Free Press Petition].

¹⁸ Michael Geist, “About Net Neutrality”, online: Net Neutrality: It’s Your Internet <<http://netneutrality.michaelgeist.ca/about-net-neutrality>>.

¹⁹ CRTC, Transcript of Proceedings, *Review of the Internet traffic management practices of Internet Service Providers*, CRTC File No. 8646-C12-200815400 (vols. 1-7, 6-14 July 2009), vol. 1 at ln. 110 (Oral Argument, Sandvine), online: CRTC <<http://www.crtc.gc.ca/eng/transcripts/2009/index.htm>> [*ITMP Hearing Transcripts*]. See also Wikipedia, which defines “traffic shaping” as the control of computer network traffic in order to optimize or guarantee performance, improve latency..., and/or increase usable bandwidth by delaying packets that meet certain criteria”, see “Traffic shaping”, online: Wikipedia <http://en.wikipedia.org/wiki/Traffic_shaping> [Wikipedia].

²⁰ Wikipedia, *ibid*.

²¹ See discussion under “Comcast and the FCC” and “CRTC Net Neutrality Hearings” below.

While simple to follow, Professor Geist's definition of net neutrality does not address the myriad of interests and beliefs that have been advanced under the net neutrality banner.²² Indeed, the net neutrality principle can be advanced on broad economic bases (such as consumer rights, de-regulated market, and competition policies),²³ as well as on more normative/ideological bases (such as freedom of expression, privacy, anti-discrimination/equality, and participatory democracy).²⁴

Sometimes, these bases overlap, as in the case of the value of "innovation," which can be claimed as both a normative interest and an economic interest. Unfortunately, different rationales behind the value of "innovation" may give rise to different results when an administrative body is adjudicating a network neutrality case, as tribunals tend to proceed by analogy to old technologies and decision frameworks.²⁵ Thus, it is important to understand the potential objectives of and beliefs behind network neutrality so that we can make an informed choice about the values we are trying to protect.

III. IDEOLOGICAL/NORMATIVE BASIS: UNCONTROLLED INNOVATION IS THE VALUE²⁶

For authors like Lessig, Wu, and Zittrain, the original e2e Internet design is more than architecture: it's a philosophy.²⁷ The original architects' willingness to give up control over how the network was to be used freed unknown others to connect and contribute to a means of communication now embraced around the globe. Simply, e2e is not primarily about free markets and de-regulation (although the Internet lends itself to these interests as well); it is about a certain kind of

²² Professor Adeyinka identifies a wide variety of goals and reasoning behind net neutrality concerns, including (but not limited to) welfare economics, game theory, property rights, constitutional rights, and anti-trust laws. See Alexander J. Adeyinka, "Avoiding 'Dog in the Manger' Regulation—A Nuanced Approach to Net Neutrality in Canada" (2008-2009) 40 *Ottawa L. Rev.* 1 at 7, n. 12.

²³ *Ibid.* at 2-5.

²⁴ See generally Lessig, *Ideas*, Lessig, *Code*, Zittrain, and Wu, *supra* notes 2, 3, 11, 17 respectively.

²⁵ For example, an economic rationale may put limits on innovation when it becomes too socially costly from a monetary perspective, while a normative interest may view the desired objective to be uncontrolled innovation itself, which would only be limited in specific instances of actual harm to the network.

²⁶ Adeyinka, *supra* note 22 at 4, Adeyinka terms the approach to net neutrality to which this basis gives rise as the "regulatory guarantee approach." He remains unconvinced that a guarantee is necessary and views existing Canadian legislation as demanding a "competitive outcome approach."

²⁷ Lessig, *Ideas*, *supra* note 2 at 39.

generosity and trust in others' willingness to participate and create. Giving away control results in exponential advances in innovation, benefiting everyone. As Lessig writes,

In particular, when the future is uncertain—or more precisely, when future uses of a technology cannot be predicted—then leaving the technology uncontrolled is a better way of helping it find the right sort of innovation. Plasticity—the ability of a system to evolve easily in a number of ways—is optimal in a world of uncertainty.²⁸

Zittrain describes this plasticity principle as “generativity”, which he believes is a value at the core of the open Internet that must be protected and fostered.²⁹ He defines “generativity” as “...a system's capacity to produce unanticipated change through unfiltered contributions from broad and varied audiences.”³⁰ Zittrain explains that generativity gives rise to at least two goods: innovative output and participatory input.³¹ Innovative output results in new, unanticipated things that contribute to people's lives. The good of participatory input is “based on a belief that a life well lived is one in which there is opportunity to connect to other people, to work with them, and to express one's own individuality through creative endeavors.”³² Thus, it is good to invite people to “tinker”.³³

In Zittrain's view, the good of participatory input derived from Internet generativity allows for the possibility of “netizenship” at the content layer: instead of relating to the Internet as passive consumers of information, users are encouraged to contribute to an Internet project that involves other people.³⁴ Therefore, if network owners interfere with Internet traffic such that it affects the content/application layer, that interference risks harming generativity—impeding innovation and netizenship as a result. While he does not rule out the need for network owners to protect and enhance their networks, ultimately Zittrain asserts that “[s]trict loyalty to end-to-end neutrality should give way to a new generativity principle, a rule that asks that any modifications to the Internet's design or to the behavior of ISPs be made where they will do the least harm to generative possibilities.”³⁵

²⁸ *Ibid.*

²⁹ *Supra* note 9 at 70.

³⁰ *Ibid.* [emphasis in original].

³¹ *Ibid.* at 80.

³² *Ibid.*

³³ *Ibid.* at 2.

³⁴ *Ibid.* at 142.

³⁵ *Ibid.* at 165.

Because it will be almost impossible to determine the damage caused to generativity, and thus to innovation and participatory input, by Internet traffic management practices (ITMPs), Zittrain, Lessig, and Wu lean toward establishing set regulatory frameworks that would favour anti-discriminatory best practices and expanding network capacity.³⁶ As demonstrated above, such regulatory guarantees are necessary not only to protect innovation for purely competitive purposes, but also to protect it as an ethos and an opening toward the future. Not having a centralized power determine in advance what will succeed on the Internet has led to unimaginable developments.³⁷ Thus, net neutrality should protect e2e as an ideology because history has shown that we do not know and should not try to control where the tinkerers will take us.

IV. ECONOMIC BASIS—EFFECTIVE COMPETITION IS THE VALUE

In contrast, Canadian lawyer and author Alexander J. Adeyinka contends that most proposals for net neutrality legislation are unnecessary, as their concerns are sufficiently addressed by competition in the marketplace.³⁸ A strong proponent of allowing market forces to drive innovation as unassisted by legislation as possible, Adeyinka asserts that the standard for evaluating ISP behaviour under current Canadian telecommunications legislation is whether the ISP's interference will "substantially impede competition in the content and applications market."³⁹ For Adeyinka, the application of net neutrality principles should not result in any positive rights vested in the consumer/user, but should only proceed on a case-by-case, *ex post* basis to determine if ITMPs have substantially affected competition.⁴⁰

Adeyinka proposes that, just like users at the content level, network owners should have the ability to engage in network innovation to the greatest extent allowable, especially since network investments also provide the impetus for application and content innovation⁴¹. He notes that the CRTC has determined that market forces are sufficiently

³⁶ See Lessig, *Code*, Zittrain and Wu, *supra* notes 2, 11, 17 respectively.

³⁷ In fact, the e2e principle has inspired cyber-fiction authors like Cory Doctorow to envision a future where the current real-world corporate model is turned upside-down, *supra* note 2. In this future, corporations adopt the e2e Internet model by decentralizing control over projects and empowering networks of disparate, self-directed innovators to generate capital.

³⁸ *Supra* note 22 at 5.

³⁹ *Ibid.* at 1.

⁴⁰ *Ibid.* at 5.

⁴¹ *Ibid.* at 38.

strong to justify deregulating the retail high speed Internet services market in Canada.⁴² Therefore, there is no justification for adopting *ex ante* net neutrality rules, especially when there is no real evidence that the impact of ITMPs at the content level has resulted in an actual cost to competition.⁴³ Moreover, Adeyinka contends that there is no clear evidence that the prescriptive rules, for which some network neutrality supporters advocate, will provide any significant benefit above what market forces provide at the access and content/application levels.⁴⁴ As Adeyinka writes,

Broadband operators could face reduced incentives and ability to innovate in their networks if they are handicapped from deploying efficient network management technologies, prohibited from recovering the costs of network investments and restrained from experimenting with efficient revenue models on both sides of the two-sided Internet market.⁴⁵

Therefore, if we adopt Adeyinka's argument, any net neutrality policy can only be justified to the extent that it advances the objective of protecting competition. If evidence indicates that a market failure has occurred that substantially effects competition, regulators may adjudicate that case alone. Following this line of thinking, the values that administrative bodies would be expected to encode in the network are traditional market-focused policies, involving de-regulation to foster competition.

The purpose of the preceding summaries of two major bases for net neutrality was not to assert that one approach should be more attractive than the other. Rather, it was to highlight that the underlying interests in these approaches dovetail to a certain extent, but will ultimately diverge if there is sufficient *prima facie* evidence of competition. At the point of divergence, which path do we take? My point is that administrative tribunals like the FCC and the CRTC (if that is whom we have chosen to govern the internet) need clear government direction about which approach to net neutrality our respective societies have democratically (I hope) chosen. They should not be forced to proceed *ad hoc* when faced with net neutrality issues, making decisions by analogy to old models. As we will find below, such decisions would be vulnerable without sufficient statutory authority and political guidance to give them clarity and enforceability.

⁴² *Ibid.* at 15.

⁴³ *Ibid.* at 69-70.

⁴⁴ *Ibid.* at 1.

⁴⁵ *Ibid.* at 39.

V. COMCAST AND THE FCC

In 2005, the FCC issued a policy statement asserting its jurisdiction to “ensure that providers of telecommunications for Internet access or Internet Protocol-enabled (IP-enabled) services are operated in a neutral manner”⁴⁶ based on, *inter alia*, ss. 154(i),⁴⁷ 230(b),⁴⁸ and 706(a)⁴⁹ of the *Communications Act of 1934*. The FCC adopted four principles to “ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers”:

- *To encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet*, consumers are entitled to access the lawful Internet content of their choice.
- [C]onsumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement.
- [C]onsumers are entitled to connect their choice of legal devices that do not harm the network.
- [C]onsumers are entitled to competition among network providers, application and service providers, and content providers.⁵⁰

⁴⁶ U.S., Federal Communications Commission, Policy Statement FCC 05-151(5 August 2005) at 3, online: FCC <http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-151A1.pdf> [FCC Policy].

⁴⁷ 47 U.S.C. § 154(i) (2009), “The Commission may perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this chapter, as may be necessary in the execution of its functions”.

⁴⁸ *Ibid.*, § 230(b)(1),(2). It is U.S policy “to preserve the vibrant and competitive free market that presently exists for the Internet” and “to promote the continued development of the Internet”.

⁴⁹ *Ibid.*, § 157 nt. (incorporating section 706 of the *Telecommunications Act of 1996*, Pub. L. No. 104-104, § 706, 110 Stat. 153). The FCC is charged with “encourag[ing] the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans”, which the FCC has determined also means broadband.

⁵⁰ *Supra* note 46 at 3. Interestingly, the policy statement first observed that the benefits of the Internet include the “extraordinary advance in the availability of educational and informational resources”; the provision of “a forum for a true diversity of political discourse”; “unique opportunities for cultural development, and myriad avenues for intellectual activity.” The statement went on to indicate the economic benefits of the Internet as an engine for productivity growth and cost savings at 2.

In footnote 15 of the policy statement, the FCC indicated that it was not creating rules at that time and that the adopted principles were “subject to reasonable network management.”⁵¹

Footnote 15 opened the door to the first major net neutrality complaint in the U.S. In 2007, Free Press and other interested citizens groups launched a petition asking the FCC to clarify that an ISP violates the FCC’s Internet policy statement when it intentionally degrades a targeted Internet application, as such actions do not constitute “reasonable network management.”⁵² They also asked for a declaration that it constitutes a deceptive practice to intentionally degrade Internet applications without informing users.⁵³ The petitioners expressed concern that ISPs would block or degrade competing applications, such as cable companies’ targeting applications that would support Internet television.⁵⁴ Specifically, the petitioners were outraged at media reports alleging that Comcast intentionally and surreptitiously degraded lawful peer-to-peer (p2p) traffic, BitTorrent in particular.⁵⁵ Comcast, America’s second-largest broadband service provider, had repeatedly denied interfering with Internet traffic at all, prompting the Associated Press (AP) and the Electronic Frontier Foundation (EFF) to engage in tests to determine if Comcast’s denials were true.⁵⁶

They were not. The AP and the EFF provided evidence that Comcast degraded BitTorrent traffic to the point at which it was essentially blocked, as well as affecting Gnutella and Lotus Notes, a suite of business software. Eventually, Comcast admitted to traffic shaping, but claimed it degraded p2p to alleviate network congestion at peak periods in isolated neighbourhoods experiencing problems.⁵⁷ However, evidence on the record at the FCC hearings demonstrated that, at least

⁵¹ *Ibid.* at 3, n. 15.

⁵² *Free Press Petition*, *supra* note 17 at i. Free Press is a U.S. nonprofit organization that engages in media policy debates. They were joined in the petition by other public interests groups, such as Public Knowledge, as well as professors from Yale, Harvard and Stanford. “Degrade” means to intentionally slow or impair the quality of an application or content using technological means.

⁵³ *Ibid.* at iii.

⁵⁴ *Ibid.* at 5.

⁵⁵ “Peer-to-peer applications are used for sharing content files containing audio, video, data or anything in digital format, as well as realtime data, such as voice-telephone traffic. The term BitTorrent refers to both a company and a protocol. BitTorrent is an open source protocol for cheaply and quickly distributing large files”: *Ibid.* at 7. Essentially, p2p protocols allow users to download information from multiple sources, instead of just one uploader, making the whole process more efficient and less costly.

⁵⁶ *Comcast*, *supra* note 6 at paras. 6-8.

⁵⁷ *Ibid.* at para. 9.

for some customers, Comcast was throttling traffic 24 hours a day, 7 days a week.⁵⁸ Moreover, Comcast would degrade on the basis of the application alone, no matter the size of the file being sent.

The FCC was none too pleased. Twenty thousand Americans had written to demand FCC action against Comcast.⁵⁹ The FCC noted that p2p applications (particularly BitTorrent) had “entered the mainstream”: companies such as Vuze, Inc., CBS, Twentieth Century Fox, and Sports Illustrated were using p2p to distribute their video programming.⁶⁰ Worse, Comcast was degrading p2p by “falsifying network traffic”: when one user’s computer sent a request to another computer using p2p, the network operator would send an exact replica of the request packet, including a “reset” packet, to both parties.⁶¹ Essentially, the reset packets sent out by the network operator masqueraded as packets from the sender and receiver’s computers, telling each computer to stop communicating. Overall, Comcast was lying about sneaky practices that could affect major American corporations.

In its decision, the FCC set a high-threshold test for assessing the reasonableness of an ITMP:⁶² the practice should further a critically important network interest and be narrowly or carefully tailored to serve that interest.⁶³ Assuming without finding that network congestion was a “critically important interest”, the FCC found that Comcast’s ITMPs were not “narrowly... tailored to serve that interest”, as they were both over and under-inclusive.⁶⁴ For an ITMP to be reasonable, “there must be a tight fit between a network operator’s chosen practices and a significant goal.”⁶⁵

The FCC found Comcast’s ITMPs “discriminatory and arbitrary” but declined to issue the general declaration requested by the

⁵⁸ *Ibid.*

⁵⁹ *Ibid.* at para. 10.

⁶⁰ *Ibid.* at para. 4.

⁶¹ *Ibid.* at para. 8.

⁶² When faced with a net neutrality complaint, the initial two factors the FCC would consider in the course of analyzing whether or not an ITMP is reasonable are: (1) “whether the network management practice is intended to distinguish between legal and illegal activity”, and (2) “whether the network service provider adequately disclosed its network management practices”: *ibid.* at 39.

⁶³ *Ibid.* at para. 47.

⁶⁴ *Ibid.* at para. 47-48; Adeyinka observed that the FCC used the same analytical process that it would use under the heightened level of scrutiny test, which is the standard when reviewing whether government action interferes with the rights of individuals (*supra* note 22 at 51).

⁶⁵ *Comcast, ibid.* at para. 47.

petitioners.⁶⁶ Citing a violation of the Internet policy statement, Comcast received 30 days to disclose details of its ITMPs, submit a compliance plan as to how it would stop unreasonable ITMPs by the end of the year, and disclose details as to any acceptable ITMPs it planned to employ instead.⁶⁷

Notably, the FCC chose not to respond to net neutrality complaints by rulemaking, but rather by adjudication on a case-by-case basis. It declined to adopt “prophylactic rules,” theorizing that confining the holdings to a specific set of facts would “provide guidance to consumers” and ISPs without becoming binding should the facts change.⁶⁸ Such an approach was in line with then-FCC Chairman Kevin Martin’s focus on de-regulation of the telecommunications sector balanced with consumer protections.⁶⁹ Unfortunately, the FCC’s reluctance to engage in net neutrality rule-making left the door open for Comcast to challenge the FCC’s jurisdiction to issue a sanction on the basis of pure policy, as well as to allege a failure to provide due process.

VI. COMCAST APPEAL

Although Comcast raised its jurisdictional argument during the FCC’s adjudication of the Free Press complaint, the FCC emphatically asserted its jurisdiction over network operators’ traffic management practices and its history of relying “on adjudications rather than rulemakings... to enforce new federal policy.”⁷⁰ On January 8, 2010, Comcast presented its case before the Federal Court of Appeal, arguing that although the FCC may have jurisdiction over the Internet, its power to create and enforce policy must still be ancillary to some specific statutory scheme.⁷¹ According to Comcast, the FCC created the non-

⁶⁶ *Ibid.* at para. 1.

⁶⁷ *Ibid.* at para. 54.

⁶⁸ *Ibid.* at para. 30.

⁶⁹ Kevin J. Martin, “Balancing Deregulation and Consumer Protection” (Remarks at The Reg-Markets Center of the American Enterprise Institute, 8 January 2009), online: FCC <http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-287777A1.txt>.

⁷⁰ *Supra* note 6 at para. 28. To be precise, the FCC asserted that its jurisdiction was ancillary to §§ 1, 201, 230(b), 256, 257, and 601(4) of the *Communications Act of 1934, as amended* 47 U.S.C., as well as § 706 of the *Telecommunications Act of 1996* Pub. L. No. 104-104, 110 Stat. 56 (1996), *ibid.* at paras. 15-16.

⁷¹ *Supra* note 7 at 645-646. Courts have come to call the authority granted under s. 4(i) the FCC’s “ancillary authority.” A two-part test was developed to determine whether the FCC has ancillary authority over a subject-matter: “(1) the Commission’s general jurisdictional grant under Title I [of the Communications

discrimination mandate and employed the strict scrutiny standard based purely on broad policy directions in the *Communications Act* that gave no notice to Comcast that its ITMPs were subject to FCC regulation.⁷² Comcast asked the Court to vacate the FCC's 2008 order. On April 6, 2010, the Court of Appeal sided with Comcast, based on its decision that "statements of policy... do not create statutorily mandated responsibilities."⁷³ The FCC failed to establish its jurisdiction to regulate ITMPs, and the Court of Appeal vacated its celebrated Comcast order.

So far, the tendency in the U.S. and Canada has been to shy away from directly regulating the Internet; however, just because governments decline to intervene does not mean that the Internet remains unregulated. As Mitch Kapor observed, "Architecture is politics"—ISPs do not hesitate to silently enforce controls within their networks.⁷⁴ The legal dispute between Comcast and the FCC illustrates the dangers of government leaving administrative tribunals to regulate network issues without clear and sufficient legislative authority to support their orders. Due to the oft-stated FCC preference to allow market forces to shape Internet development at every level basically unchecked, it was forced to rely on a policy footnote to correct Comcast's discriminatory behaviour. Then, in contrast to its focus on de-regulation, the FCC crafted a test for reasonable network management practices using the "heightened level of scrutiny" standard, which is usually reserved for reviewing state action against individuals.⁷⁵ What was the FCC attempting to protect: competition in the free market, the vested rights of the end user to use the network uncontrolled, or both? Was the tribunal enshrining e2e as an ideological/normative value or merely making use of free market models? In these circumstances, how can a network operator or a content/application creator know what behaviour might trigger regulatory scrutiny?

Act] covers the regulated subject and (2) the regulations are reasonably ancillary to the Commission's effective performance of its statutorily mandated responsibilities": see *American Library Ass'n v. FCC*, 406 F.3d at 691–92. Comcast conceded (1) that the FCC has general jurisdiction over the Internet, but argued that the FCC failed to demonstrate (2) that the ITMP regulations were ancillary to any statutorily mandated responsibility.

⁷² *Ibid.* at 645.

⁷³ *Ibid.* at 644.

⁷⁴ *Supra* note 2 at 35.

⁷⁵ Adeyinka, *supra* note 22 at 51.

VII. CRTC NET NEUTRALITY HEARINGS

In the shadow of the FCC's Comcast decision, during the summer of 2009, the CRTC held public hearings on Internet retail traffic management practices in Canada in order to develop a general regulatory policy.⁷⁶ It had just rendered its first major net neutrality decision,⁷⁷ deciding that Bell Canada's throttling of p2p traffic through a tariffed wholesale service (thereby affecting secondary ISPs who bought and re-sold network access) did not result in undue discrimination under s. 27(2) of the *Telecommunications Act* (the *Act*).⁷⁸ Although secondary ISPs re-argued their case at the net neutrality hearings, the CRTC primarily sought responses⁷⁹ to questions regarding which, if any, retail ITMPs are acceptable, whether they raise privacy concerns, and whether they should be disclosed to consumers and how.⁸⁰ As well, the CRTC asked for suggestions as to the analytical framework it should adopt in relation to ITMPs and s. 36 of the *Act*.⁸¹

The responses of large incumbent ISPs like Shaw, Rogers, and Bell were predictable:⁸²

⁷⁶ *ITMP Hearing Transcripts*, *supra* note 19.

⁷⁷ *The Canadian Association of Internet Providers' application regarding Bell Canada's traffic shaping of its wholesale Gateway Access Service* (20 November 2008), Telecom Decision CRTC 2008-108, online: CRTC <<http://www.crtc.gc.ca/eng/archive/2008/dt2008-108.htm>>.

⁷⁸ *Ibid.* at para. 47; S.C. 1993, c. 38, s. 27(2),

No Canadian carrier shall, in relation to the provision of a telecommunications service or the charging of a rate for it, unjustly discriminate or give an undue or unreasonable preference toward any person, including itself, or subject any person to an undue or unreasonable disadvantage.

⁷⁹ The CRTC received thousands of responses to the hearing questions via an online forum. See Konrad von Finckenstein, Q.C., Keynote Address (Annual Conference of the International Institute of Communications, Montreal, 27 October 2009), online: CRTC <<http://www.crtc.gc.ca/eng/com200/2009/s091027.htm>> [Finckenstein, Keynote Address].

⁸⁰ *ITMP Hearing Transcripts*, *supra* note 19, (6 July 2009) vol. 1 at paras. 17-23.

⁸¹ *Ibid.* at para. 23; *Act*, *supra* note 78, s. 36,

Except where the Commission approves otherwise, a Canadian carrier shall not control the content or influence the meaning or purpose of telecommunications carried by it for the public.

⁸² *ITMP Hearing Transcripts*, *supra* note 19, (10, 13, 14 July 2009) vols. 5, 6, 7 (Oral Argument, Shaw, Rogers, Bell).

- ITMPs, whether technological or economic, do not require administrative oversight;
- There is enough competition that market forces can keep the Internet open and innovative;
- P2p traffic causes heavy congestion on the networks, and operators have the right to use deep packet inspection (DPI)⁸³ to deal with it;
- ITMPs use aggregate data, so they do not create privacy issues;
- Building network capacity is expensive, and they cannot be expected to increase capacity merely to reduce congestion;
- And requiring specific ITMP disclosure to consumers is unnecessary because, as far as they can tell, consumers are happy with their service and “don’t really care how things work.”⁸⁴

Intriguingly, the ISPs who revealed for the first time that they throttle traffic (p2p in particular) did so inconsistently: for example, Rogers admitted to throttling p2p uploads 24/7 because they do not know when congestion will happen, while Shaw shapes upstream traffic only during periods of congestion.⁸⁵ Bell shapes upstream and downstream, but only during peak hours (which are fairly extensive).⁸⁶

⁸³ Normally, network transmission protocols do not identify the content or type of application packet they are sending along; they just transmit them with equal prioritization. DPI enables the network to gain intelligence about the type of application used (and, arguably, the content of the packets themselves) to allow for prioritization or degradation. See remarks of Anthony Hemond, lawyer for Union des consommateurs, for a good explanation of how DPI technology works: *ITMP Hearing Transcripts*, *supra* note 19(13 July 2009) vol. 6 at lns. 4762.

⁸⁴ A statement by Telus Senior VP Michael Hennessy illustrates the company’s understanding of its consumers:

I would say that I think most customers might have an interest in the Michael Jackson funeral, but I think that we would stick to our guns that most people couldn’t care less about traffic management practices. Even when you actually measure the people who are following this proceeding online or through Twitter, it’s a very insignificant number of the internet universe. I think that is the point we are making. People don’t really care how things work. If you tell them that it’s working in a way that’s not fair, or that is impairing their ability to enjoy something, then they may become frustrated, but they still don’t really care as to what is going on *ibid.* (10 July 2009) vol. 5 at lns. 4192-4195).

⁸⁵ *Ibid.* (13 July 2009) vol. 6. at lns. 4915-4918, 5018-5020, 5034-5049, 5624-5626, 5657-5660 (Oral Argument, Rogers, Shaw).

⁸⁶ *Ibid.* (14 July 2009) vol. 7 at lns. 5988-5991, 6056-6062, 6762-6767 (Oral Argument, Bell).

None of them were very forthcoming about their ITMPs to their customers.

On the other side of the dispute, public interest groups, such as the Public Interest Advocacy Centre (PIAC), the Open Internet Coalition (OIC), and the Canadian Internet Policy and Public Interest Clinic (CIPPIC), generally argued that the use of technological ITMPs against legal content was discriminatory and influenced the content or meaning of Internet traffic, thus infringing the *Act* under ss. 27(2) and 36. Further, they claimed that

- DPI has the capacity to look into the actual content of network packets, leading to privacy concerns and the increased danger of behaviour-targeted advertising;
- Allowing incumbent ISPs to cry network congestion without actual proof creates a business incentive to maintain scarcity rather than building capacity;
- Application-specific ITMPs are bad for innovation because they distort market forces and harm user choice;
- The economy has been driven by innovation at the content/application level, and the open Internet must therefore be protected;⁸⁷
- And finally, ISPs should be required to be transparent about their ITMPs.⁸⁸

⁸⁷ *Ibid.* (6, 7, 9 July 2009) vols. 1, 2, 4. at lns. 737-744, 752, 761-762, 766, 787-788, 799-803, 1002-1015, 1016-1017, 1021-1022, 1027-1032, 1039-1040, 1129-1131, 3314, 3332, 3334, 3338, 3376, 3394, 3397, 3520-3523(Oral Argument, PIAC, OIC, CIPPIC). Markham Erickson of the OIC provided a lucid definition of the “open” Internet:

‘Openness’...is an internet that allows for innovation without permission. It creates an environment where the essential infrastructure of communication can be used both by users, to engage in speech with the worldwide community without having to get permission to engage in such speech, and it allows application providers to have certainty to know that they can develop new technologies and introduce those technologies over the internet, without having to go through a gatekeeper or ask for permission to introduce those technologies to the internet, which allows for users to make decisions about which applications will succeed and which applications will fail, rather than have a gatekeeper make those decisions before those applications are able to reach the worldwide audience (7 July 2009 vol. 2 at ln. 1065 [Erickson]).

⁸⁸ *Ibid.* (6,7,9 July 2009) vols. 1, 2, 4 at lns. 764-765, 793-797, 1037-1038, 1043-1045 3367.

Generally, the public interest groups started from the proposition that employment of technological ITMPs through DPI is a *prima facie* infringement of ss. 36 and s. 27(2), as s. 36 “protects content and transmission from” carrier interference, and s. 27(2) prohibits a carrier from exercising “unjust discrimination” or undue preference in “the provision of a telecommunications service.”⁸⁹ Such infringement cannot be saved by the general policy direction to increase reliance on market forces in s. 7(f) of the *Act*.⁹⁰ Therefore, several groups recommended an *Oakes*-style test to determine whether an ITMP applied to legal content/applications was acceptable under s. 27(2) and s. 36 of the *Act*.⁹¹ Jacob Glick, Google Canada’s Policy Counsel, succinctly set out the proposed test:

- One: Does the traffic management practice in question further a pressing and substantial objective?
- Two: Is the traffic management practice narrowly tailored to address this objective?
- Three: Is the traffic management practice the least restrictive means to reach the objective?⁹²

It appears that the public interest groups advocated for the concept of net neutrality as the vested right in the end user/creator to freely control and choose how to interact with the network, subject only to the network operator’s right to protect the network from manifest harm (such as illegal traffic or proven detrimental congestion that cannot be otherwise alleviated). In choosing an *Oakes*-style balancing test, they implicitly likened network operators’ ITMPs to government infringement of an individual’s guaranteed rights under the *Charter*.⁹³ To enforce this model of net neutrality, users’ rights must be guaranteed by regulation because, just as in the relationship between the state and its citizens, ISPs have extraordinary power to impair the end user’s freedoms (in this case the freedom to choose content/applications and the freedom to innovate). Moreover, as opposed to the state’s power over its citizens, an ISP’s control over the network is invisible and exquisite.⁹⁴ In requesting a

⁸⁹ *Ibid.* (6 July 2009) vol. 1 at lns. 738-740.

⁹⁰ *Ibid.* (6, 9 July 2009) vol. 1, 4 at lns. 753-755, 3370-3372.

⁹¹ *R. v. Oakes*, [1986] 1 S.C.R. 103, 26 D.L.R. (4th) 200.

⁹² *ITMP Hearing Transcripts*, *supra* note 19 (7 July 2009) vol. 2 at lns. 1029-1032.

⁹³ *Canadian Charter of Rights and Freedoms*, Part 1 of The *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (U.K.), 1982, c. 11, s. 1.

⁹⁴ As Jonathan Zittrain contends,

The law as we have known it has had flexible borders. This flexibility derives from prosecutorial and police discretion and from the artifice of the outlaw. When code is law, however, execution is exquisite, and law can be self-enforcing. The

Lessig-style regulatory guarantee of user rights at the content/application layer, the groups were asking for the enforcement of specific ideological and normative beliefs about the way the Internet, as a novel communications phenomenon- works.

In contrast, the ISPs emphasized traditional economic theories about how de-regulated markets foster competition, arguing that there was no need for *ex ante* ITMP oversight—there was nothing competition could not correct.⁹⁵ Implicitly, they were arguing that the unprecedented explosion of innovation at the content/application layer is as much due to the hands-off approach governments have had toward the Internet as to any e2e principle in the network's original design. Therefore, it is important that ISPs be permitted the same freedom to innovate and compete at the network level in the face of traffic challenges wrought by new applications.

During the net neutrality hearings, the CRTC faced not only a complex set of facts but also a decision that could codify beliefs about the relationship between Canadians and the Internet with little government guidance.⁹⁶ At the heart of the problem was how to best

flexibility recedes. Those who control the tethered appliance can control the behavior undertaken with the device in a number of ways: preemption, specific injunction, and surveillance (*supra* note 9 at 107).

⁹⁵ *ITMP Hearing Transcripts, supra* note 19, (10, 13, 14 July 2009) vol. 5, 6, 7., at Ins. 4082-4088, 4131-4136, 4144-4145, 4174, 4901-4902, 4906-4907, 5631, 5643-5644, 5976-5978, 6007 (Oral Argument, Telus, Rogers, Shaw, Bell).

⁹⁶ Government direction as to Internet policy has been limited to a 2006 Telecommunications Policy Review Panel recommendation:

The Panel believes in most cases network operators and ISPs will have little or no incentive to interfere with customer access. However, open access is of such overriding importance that its protection justifies giving the regulator the power to review cases involving blocking access to applications and content and significant, deliberate degradation of service.

Given the complexity of this area, the rapid evolution of technologies and the market dynamics, the Panel believes the regulator here should have more discretion than in other areas of regulation.

Telecommunications Policy Review Panel, *Final Report 2006* by Gerri Sinclair, Hank Intven & André Tremblay (Ottawa: Public Works and Government Services Canada, 2006) Chapter 6, Recommendation 6-5, online: Telecommunications Policy Review Panel <<http://www.telecomreview.ca/eic/site/tprp-gecrt.nsf/eng/rx00060.html>>.

ensure the ability of all parties to freely innovate without knowing in advance the direction such innovation will take.

VIII. THE CRTC ITMP REGULATORY POLICY

On October 21, 2009, the CRTC issued its Telecom Regulatory Policy Decision in regard to ITMPs, believed to be the first comprehensive regulatory approach of its kind.⁹⁷ In the policy, the CRTC purports to adopt a “*principled approach*” to balancing the “*freedom of Canadians to use the Internet for various purposes with the legitimate interests of ISPs to manage the traffic*” on their networks, taking into account the four factors of (1) Transparency; (2) Innovation; (3) Clarity; and (4) Competitive Neutrality.⁹⁸ Under (1), the CRTC established ITMP disclosure requirements that require ISPs to provide 30 days notice to their retail customers on the ISP website containing the *who, what, when, why* and *how* details of the ITMP.⁹⁹ Under (2), the CRTC affirmed that “investment in network capacity” is still the “fundamental tool” for dealing with congestion.¹⁰⁰ Under (3), the CRTC asserted the need to comply with s. 27(2) of the Act.¹⁰¹ Under (4), it established a higher level of scrutiny for wholesale ITMPs: stricter ITMPs for wholesale service providers than incumbent service providers require prior CRTC approval.

In order to advance the policy directives set out in s. 7 of the Act, and after taking into account the “evolving nature” of the Internet, the CRTC eschewed “bright-line rules as to which types of ITMPs are acceptable.”¹⁰² Instead, it created an ITMP framework under s. 27(2), which an ISP must follow once a complainant has met the burden of establishing that the ITMP discriminates or results in a disadvantage:

- Step 1: The ISP must “describe the ITMP”, along with “the need for it and its purpose and effect”. The description should “identify whether or not the ITMP results in discrimination or preference.”
- Step 2: Where an ITMP does result in discrimination or preference, the CRTC will evaluate whether the ITMP is “carefully

⁹⁷ CRTC, “ITMP Policy”, *supra* note 8; Finckenstein, Keynote Address, *supra* note 79.

⁹⁸ CRTC, “ITMP Policy”, *ibid.* 8 [emphasis in original].

⁹⁹ *Ibid.* at paras. 60-61. Note that disclosure requirements are different for primary ISPs to their wholesale customers (secondary ISPs), but the wholesale relationship is beyond the scope of this essay. See paras. 63-66.

¹⁰⁰ *Ibid.* at para. 36.

¹⁰¹ *Ibid.* at para. 50. See also the summary under No. 3.

¹⁰² *Ibid.* at para. 37.

designed and narrowly tailored” to determine whether or not the discrimination or preference is unjust or undue.

- For example, application-specific ITMPs that “degrade or prefer one application, class of application or protocol over another... may... warrant investigation under s. 27(2) of the Act”, whereas economic ITMPs¹⁰³ likely will not.
- Step 3: If the ISP results in any degree of discrimination or preference the ISP must
 - demonstrate that the ITMP is designed to address the need and achieve the purpose and effect in question, and nothing else;
 - establish that the ITMP results in discrimination or preference as little as reasonably possible;
 - demonstrate that any harm to a secondary ISP, end-user, or any other person is as little as reasonably possible; and
 - explain why, in the case of a technical ITMP, network investment or economic approaches alone would not reasonably address the need and effectively achieve the same purpose as the ITMP.

Where an ISP is seeking prior [CRTC] approval in order to implement an ITMP, the ITMP framework will also be applied.¹⁰⁴

Predictably, ITMPs employed to protect users from spam, malware, and to block illegal content would be exempt from the framework.¹⁰⁵ Interestingly, due to the “large number of existing ISPs”, ITMPs used for retail service do not require prior approval, but the CRTC may, “of its own motion or upon... a credible complaint,” review an ITMP according to the framework.¹⁰⁶ Finally, the CRTC found that, as a result of s. 7(i) of the *Act*, the tribunal plays a complementary role to the Privacy Commissioner in respect of the protection of privacy in the Telecom industry.¹⁰⁷ Therefore, “as a condition of providing retail Internet

¹⁰³ Economic ITMPs include practices such as usage-based-billing (UBB), where ISPs no longer charge a flat rate, but rather turn the meter on for a per byte charge or turn the meter on after a certain bandwidth has been consumed. During the hearings, the CRTC favoured economic ITMPs as being more transparent to the consumer and more in-line with traditional competitive practices like price differentiation. To make UBB truly transparent, however, ISPs would have to provide the customer with an accurate way of monitoring usage (see *ibid.* at para. 40).

¹⁰⁴ CRTC, “ITMP Policy”, *supra* note 8 at paras. 38-44.

¹⁰⁵ *Ibid.* at para. 44.

¹⁰⁶ *Ibid.* at para. 46-47.

¹⁰⁷ *Supra* note 78, s. 7(i),

It is hereby affirmed that telecommunications performs an essential role in the maintenance of Canada's identity and

services,” it directed all primary ISPs not to disclose or use “personal information collected for the purposes of traffic management for other purposes.”¹⁰⁸

The CRTC’s ITMP policy is certainly more comprehensive than the FCC’s net neutrality policy (and arguably, not as vulnerable to a jurisdictional challenge because of ss. 27(2) and 30 of the *Act*); however, in creating the ITMP regulatory framework, the CRTC “proceeded without clear government policy guidance.”¹⁰⁹ Therefore, the question remains—what approach to net neutrality did the CRTC encode in its framework? Although the framework resembles the *Oakes*-style test recommended by the public interest groups, by choosing to proceed on a case-by-case basis, it appears that the CRTC did not necessarily enshrine the e2e principle of uncontrolled innovation at the edges of the network. This is not a regulatory guarantee of network neutrality as an ideological principle.

Moreover, although the test puts the onus on the ISPs to demonstrate a tight fit between ITMP purpose and means, it is unclear whether ISPs can meet the “reasonable” criteria by establishing a good business case for why the ITMP in question is the most cost effective, or by simply claiming that there is no other way to effectively relieve traffic due to the architecture of their particular network. At the ITMP hearing, the public interest groups strongly argued that application-based traffic shaping (i.e. targeting p2p) should be considered particularly unacceptable, as there are less intrusive methods of easing congestion (such as by using technology that allows the end user to decide how to prioritize his or her own traffic within a given bandwidth).¹¹⁰ The groups also pointed out that targeting p2p does not address the growing popularity of video traffic, which may hog bandwidth whether or not it is transmitted by p2p.¹¹¹ Finally, the Canadian Association of Internet Service Providers (CAIP) indicated that if users learn to encrypt their p2p

sovereignty and that the Canadian telecommunications policy has as its objectives... (i) to contribute to the protection of the privacy of persons.

¹⁰⁸ *Supra* note 8 at paras. 102-103.

¹⁰⁹ Bram Abramson, Grant Buchanan & Hank Intven, “CRTC Shapes Canadian ‘Net Neutrality’ Rules” (2008-09) 10 I.E.C.L.C. 65 at 66 [Abramson, Buchanan, Intven].

¹¹⁰ *ITMP Hearing Transcripts*, *supra* note 19 (6, 7 July 2009) vols. 1, 2 at lns. 828-829, 971-974, 1180, 1233-1234, 1251-1255 (Oral Argument PIAC, OIC).

¹¹¹ *Ibid.* (9 July 2009) vol. 4, at ln. 3531-3534, 3548-3549 (Oral Argument, CIPPIC).

transmissions, DPI is rendered “impossible”, and the network will be unable to control p2p in any event.¹¹²

Given how inefficient and over and under-inclusive application-based traffic shaping appears, it seems unlikely that the CRTC could ever find application-specific technological ITMPs to be carefully or narrowly tailored, but that does not mean that it would need to find them “unjust” in all circumstances.¹¹³ The test is whether the ITMP results in discrimination and harm “as little as is reasonably possible”.¹¹⁴ Unsurprisingly, what may be “reasonable” in terms of traffic management remains nebulous, especially since we have not been provided with an idea of the level of “congestion” that would justify ITMP intervention under the CRTC guidelines. Ultimately, it is difficult to imagine the CRTC demanding that an ISP change existing network architecture to adopt a less-intrusive technological ITMP if it would result in any significant cost to that ISP.

It is arguable that the CRTC framework is guided by Adeyinka’s competitive outcome approach, with its focus on the economic impacts of the ITMP on competition at all levels of the Internet. Yet, when challenged under the framework and employing a technological ITMP, the ISP must justify why increasing network capacity or using economic ITMPs would not address the congestion problem, which certainly does not follow Adeyinka’s substantial effect on competition test for unacceptable ITMPs.¹¹⁵

With the onus resting on private citizens to engage in the extensive process of preparing review applications to challenge ITMPs and shape net neutrality precedent on a case-by-case basis, it is essential to delineate the rights and values that the framework protects.¹¹⁶ Do we view the Internet as a novel communications technology that requires

¹¹² *Ibid.* (7 July 2009) vol.2, at ln. 1502-1503 (Oral Argument, CAIP).

¹¹³ As Jacob Glick, policy counsel for Google, told the CRTC:

Throttling particular applications will almost never be narrowly tailored. It will almost certainly be both overbroad and underbroad -- overbroad because it throttles uses and users who are not causing congestion, like the user who might use BitTorrent occasionally to download a new version of Linux, and underbroad because other high bandwidth uses will not be captured, like the user who updates her Windows OS during peak times by downloading a larger service pack: (*ibid.* (7 July 2009) vol. 2 at ln. 1039).

¹¹⁴ CRTC, “ITMP Policy”, *supra* note 8 at para. 43.

¹¹⁵ *Ibid.*; *Supra* note 22 at 1.

¹¹⁶ Abramson, Buchanan, Intven, *supra* note 109 at 72.

Zittrain's generativity and the possibility of netizenship to achieve its highest potential? Or do we fall back on viewing users strictly as consumers and use a light-touch approach to regulation, not necessarily to engender "innovation without permission", but to primarily empower the market?¹¹⁷

IX. SUGGESTIONS

These questions need to be answered, or technology will answer them for us. The e2e principle did not spring from the ground: the original Internet architects made a choice to release power to the fringes. Industry Minister Tony Clement has emphasized the goal of making Canada number one worldwide in terms of a digital economy, relying especially on digital media.¹¹⁸ He has recognized that we need to take a whole government approach to these issues and that government departments should not act out of tandem. Allowing an administrative body such as the CRTC to unilaterally develop Canada's approach to net neutrality will most certainly have some effect on the Industry Minister's goals and Canada's digital future. It is time for a political solution spanning all government departments based on democratic participation.

Undoubtedly, the CRTC ITMP policy is a good first effort toward protecting net neutrality—the ITMP disclosure requirements are particularly welcome. However, to render future Internet policies truly effective and to ensure that departments act in tandem on Internet issues, the government should consider creating an administrative body with the requisite technical and legal expertise to specialize in the development of global Internet policies and regulation. Conceivably, such a tribunal could consist of a sub-committee of the CRTC empowered by a new statutory mandate; a mandate that would finally clarify the underlying values a CRTC ITMP analysis should protect.

Ideally, a new government mandate would also contain a strongly-worded commitment to the development of broadband abundance. Although the CRTC's guidelines emphasize building network capacity, it

¹¹⁷ Erickson, *supra* note 87 at ln. 1065.

¹¹⁸ Industry Minister Tony Clement, Welcome and Opening Remarks, at Canada's Digital Economy Conference, Ottawa, 22 June 2009), online: Canada's Digital Economy: Moving Forward <http://download.isiglobal.ca/ic_ecom_en/oecd2009-viewer-en.html>. Minister Clement also noted that "Canada has slipped from 3rd to 13th in the global competitiveness index", "from 2nd to 10th in the OECD's broadband ranking", "from 4th to 13th in the Economist Intelligence Unit's E-readiness Ranking", and from 10th to 13th in the Network Readiness Index . "Business R&D... has declined 20 per cent" over the same period (2001-2007).

remains uncertain whether the “reasonable” standard combined with an onus upon the consumer to launch a complaint provides ISPs with enough incentive to change the way they build networks – to do more than just manage scarcity. Industry Minister Tony Clement’s aim to make Canada the premier digital economy in the world certainly requires that Canada’s network infrastructure be able to bear the unforeseeable results of innovation and increased participation. However, the historical tendency to rely on market forces and maintain a hands-off approach at the Internet infrastructure level could prove insufficient to propel Canada’s digital economy. Ensuring reasonable network service competition in the Canadian market may not adequately ensure aggressive Canadian content/application competition in a global market. There is a danger in viewing net neutrality under the CRTC guidelines solely as a matter of determining detrimental effect to competition *ex post* without an underlying normative basis. It is difficult to assess any negative effect application-specific ITMPs have on Canada’s ability to keep pace with the rest of the world. For example, Rob Hall, chairman of Zip.ca, an internet video distribution business, testified at the ITMP hearings that Zip has not yet moved to delivering movies by Internet because digital delivery is already more expensive than the cost of delivery by mail, due to the high cost of bandwidth in Canada.¹¹⁹ The potential for application-specific ITMPs to affect the quality of video downloading was of great concern to Zip.ca as they ventured into the digital arena.¹²⁰

In order for Canada to become the world’s leading digital economy, Canadian businesses need to be able to trust Internet infrastructure and predict what they will be able to do on their network. Other governments are intervening to ensure that their citizens have access to and can rely on the Internet. For example, Finland recently declared broadband access with a minimum speed of one megabit per second a legal right for its citizens.¹²¹ To some extent, encouraging Canadians to invest in our digital economy should be considered an ideological project: we are being asked to make a leap of faith and put our valuables online. As David Fewer of CIPPIC stated, the result of the ITMP hearings “ought to be a norm-setting exercise. It ought to set bound on permissible ISP behaviour with the objective of providing ISPs with competitive security and Canadian consumers and businesses with confidence that they can

¹¹⁹ *ITMP Hearing Transcripts*, *supra* note 19, (7 July 2009) vol. 2 at lns. 1462-1467 (Oral Argument, Zip.ca).

¹²⁰ *Ibid.* at ln. 1358.

¹²¹ Saeed Ahmed, “Fast Internet access becomes a legal right in Finland” *CNN.com* (15 October 2009), online: *CNN.com* <<http://www.cnn.com/2009/TECH/10/15/finland.internet.rights/index.html>>.

rely on the continuing openness and neutrality of the Canadian internet.”¹²² Yet, it is far from clear that the CRTC guidelines can possibly have a normative effect on either consumer or ISP behaviour.

X. CONCLUSION

The government has multiple tools at its disposal to encourage further broadband development. These include creating tax incentives for ISPs to expand existing networks, while funding research and development into alternate means of creating capacity. However, this does not mean that regulatory net neutrality measures are unnecessary. Nor does it mean that net neutrality policy should be left for the CRTC to develop within the confines of legislation written before growing a digital economy became crucial. While the existing CRTC framework is a laudable first attempt at net neutrality policy, it is time for a political discussion about which underlying bases for net neutrality—traditional free market/competition values, ideological/normative e2e values, or some combination--will provide Canada with its optimal digital future. Only then will the CRTC’s *Oakes*-style guidelines become clear and forceful enough to influence consumer expectations and ISP behaviour. It is imperative that Canadians clearly articulate the values we think are worth protecting on the Internet, or we will lose them.

¹²²*ITMP Hearing Transcripts*, *supra* note 19, (9 July 2009) vol. 4 at ln. 3343 (Oral Argument, CIPPIC).