

Oral Submissions of  
Campaign for Democratic Media



Telecom Public Notice CRTC 2008-19:  
Review of the Internet Traffic Management Practices  
of Internet Service Providers

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## Introduction

1. Thank you, Mr. Chair. And my thanks to the Commission for providing CIPPIC and the Campaign for Democratic Media with this opportunity to appear today.
2. My name is David Fewer. I am the Acting Director of CIPPIC, the Samuelson-Glushko Canadian Internet Policy and Public Interest Clinic, of the Faculty of Law at the University of Ottawa.
3. We act for the Campaign for Democratic Media, a network of public interest organizations and people pushing for media democracy in Canada.
4. I am joined today by Steve Anderson, co-founder of the Campaign for Democratic Media and the SaveOurNet.ca coalition.
5. I am greatly pleased that the following three individuals were willing to provide their time and expertise to our panel and to the Commission: Dr. David Reed, Dr. Andrew Odlyzko, and Mr. Bill St. Arnaud.
6. Dr. Reed is currently Adjunct Professor at the Massachusetts Institute of Technology's Media Laboratory, where he co-chairs the Viral Communications group. Dr. Reed has played a significant role in the development of the underlying architecture of the internet, contributing to the design and development of IP, TCP, and UDP – the protocols central to today's internet. Dr. Reed is co-author of the seminal paper establishing the “end-to-end” networking principle.
7. Dr. Odlyzko is a professor in the University of Minnesota's School of Mathematics. Dr. Odlyzko heads the Minnesota Internet Traffic Studies project, a research project that collects information about internet traffic from a variety of sources that continuously monitor traffic on a variety of networks. The MINTS project is, we submit, one of the leading independent source for rigorous tracking and assessment of global internet traffic patterns.
8. Bill St. Arnaud is the Chief Research Officer for Canada's Advanced Internet Development Organization (CANARIE Inc.) where he has been responsible for the coordination and implementation of Canada's next generation optical internet initiative.
9. We appear before you with one simple objective: to convince you of the value of the open internet – an internet that is neutral as to source, destination, content and protocol.
10. The *Telecommunications Act* provides the Commission with the tools needed to address traffic management practices that undermine the open internet. The tests we have proposed in our Comment permit the Commission to establish a normative and prospective framework that will do two things:

- a. First, this framework will guide ISPs in how to implement acceptable traffic management practices.
  - b. Second, this framework will provide Canadian consumers and businesses – and competitive ISPs, including those in the wholesale market – with trust and certainty that the Canadian internet will continue to serve as a platform that supports innovation and competition.
11. Our submission will proceed as follows:
- a. First, Mr. Anderson will provide social context and a broad citizens’ perspective on the matters raised in this public notice; and
  - b. Second, I will provide brief comments on the manner in which the Commission has framed the relevant issues in its Schedule 2 notice, and provide a substantive response.

## **Part I – Comments of Mr. Anderson**

12. Thank you for having me and for holding this important hearing. I’m thrilled that the CRTC has taken on the issue of traffic management.
13. I’m here as part of the Campaign for Democratic Media, and I’m the coordinator of the SaveOurNet.ca coalition. SaveOurNet.ca is a broad based coalition of citizens, businesses, and public interest groups fighting to protect our internet's level playing field. The coalition has over 115 member organizations as diverse as non-profit organizations like the Canadian Federation of Students and Council of Canadians, to media organizations like Now Public, to businesses like Tucows Inc., to ISPs like Acanac and Teksavvy, to Labour organizations like the National Union of Public and General Employees and CEP.
14. It’s important to acknowledge that this is an issue with a few Internet Service Providers and their partners on one side and nearly everyone else in Canada on the other – businesses, civil society, cultural groups, everyday people, social, cultural, and economic innovation, and consumer choice. The main issue at stake is who will determine the way we use the internet: users or the ISPs? You have received over 11,000 public comments in this hearing: that should tell you where the Canadian people stand. The values inherent in the open internet are values that are attracting widespread citizen support. I’m here as one of those Canadians who supports an open internet.
15. The positions this panel puts forward correspond with what I have read from citizen submissions, and what I heard at the open internet town hall events. As you work for the Canadian people, I hope you will give these submissions due weight. I also encourage you to go through the citizen comments yourself and come up with your own synthesis, which I’m sure will closely match our positions.

16. In this hearing, Canadians are looking to the CRTC to establish guidelines for ISP traffic management practices that will ensure that ISPs do not stifle innovation and that will safeguard emerging technologies.

17. A Canadian citizen named Terrill put it succinctly in his submission and I quote:

“Canada has a long history of internet based innovation. It may not have been possible if it weren't for the open, unbiased, characteristics of the internet.”

18. The Commission's policy objective in this hearing should be to ensure ISPs can manage their networks, reduce congestion, and keep the internet open at the same time. If we fail to create the right balance here, allowing ISPs to determine the access conditions for applications could have “unintended consequences” for free speech, innovation and consumer choice – I would argue those consequences are already being felt.

19. If we adopt Net Neutrality rules, the main way ISPs can compete is by increasing their bandwidth offerings; this is what we want. If we allow ISPs to slow down certain applications as we are now, we actually create an economic incentive for bandwidth scarcity. If you can slow down and control traffic, you can make more money if the resource is scarce. It's like allowing bottled water companies to control public water systems – of course they have an incentive to keep water scarce and expensive, and will use their monopoly access to ensure it stays this way. This is not a good path to take if we want ubiquitous bandwidth and the economic, social and cultural innovation that comes with it.

20. As Canadian citizen Paul aptly put it in his submission:

“allowing traffic shaping creates a disincentive to upgrade networks and provide faster better service”.

21. It's a part of the problem, not the solution.

22. What's more, with the US and others supporting an open internet if we do not move in the right direction, Canada could end up as a backwater of online innovation.

23. In these tough economic times, we can ill afford such a fate.

24. If Americans have permission-less innovation, so must we.

25. As Roland submitted to you and I quote:

“As a small business owner/operator which relies on the internet, I am deeply concerned that a non-neutral internet will harm my ability to compete on a level playing field with larger companies. Net neutrality is WHAT has made my company possible. Please do not allow the internet revolution we have seen in the last decade [to] be stifled by the interests of big business,

especially at a time when the President Obama has declared his intention to defend net neutrality in the United States.”

26. With that I'll let David Fewer and the rest of the panel detail specific recommendations.

27. Thank you for having me.

## **Part II – Preliminary Comments**

28. We offer three preliminary comments.

### **A. Forward-Looking Exercise**

29. First, this hearing ought to establish a forward-looking result. This ought to be a norm setting exercise. It ought to set bounds on permissible ISP behaviour with the objective of providing ISPs with competitive security and Canadian consumers and businesses with confidence that they can rely on the continuing openness and neutrality of the Canadian internet. It ought not merely establish a reactive remedy for violations of the Act.

### **B. The Regulatory Task**

30. Second, contrary to the claims of some of the participants to this proceeding, establishing rules for managing an open and neutral network does not amount to lawyers building the internet instead of engineers.

31. ISPs build their networks further to business decisions, not simply engineering decisions. If the engineers were really in charge, then Dr. Reed would be someone else's witness, not mine.

### **C. Public Good Aspects to the Internet**

32. Third, there are public good aspects to the internet. The Canadian internet is not simply the private property of retail ISPs – it is more than that. It is greater than the sum of its parts.

33. It is a platform that Canadian businesses, innovators, entrepreneurs, and citizens rely on every minute of every day.

34. Canada has made a policy choice early on to rely on the marketplace to facilitate the construction of this crucial resource – but we cannot allow the “private” to trump the “resource”. We may talk of an ISP's facilities, but it is Canada's internet. This is reflected in the *Telecommunications Act*.

## **Part III – Objective, Definition and Assumptions**

35. We have a few short comments with respect to the manner in which the Commission has framed the issues in Schedule 2.

### **A. Objective**

36. We believe that the objective stated is a good one. It shows a willingness on the part of

the Commission to treat this process as a forward looking process instead of simply a reactive one.

37. It acknowledges that the internet is a network for the public good.
38. It recognizes that the internet fosters innovation and creativity.
39. And while it does recognize that there may be legitimate management practices that ISPs can employ, it also limits these practices to protecting legitimate interests.
40. Finally it recognizes that there **are** privacy concerns and legislative constraints that apply to invasive traffic management practices.

## ***B. Definition***

41. We do, however, have some concerns about the stated definitions and assumptions. The definition draws a distinction between the “public” internet and “private” services. We worry about creating regulatory incentives for ISPs to carve out ever-larger chunks of the “public” internet into private services, and provisioning the private at the expense of the public.
42. We recognize that this issue goes beyond the scope of the present hearing, but see it as appropriate subject matter for a future CRTC proceeding.

## ***C. Assumptions***

43. We believe that the assumptions are functional but missing key elements that would assist the Commission in making a decision that better meets its objective.

### **Assumption 1: (unrestricted increases in traffic → Congestion → deterioration in services)**

44. Essentially this assumption is that “unrestricted traffic increases leads to congestion – congestion leads to a deterioration in service”.
45. This is a simple economic truth: when there is an increase in demand without a (matched) increase in supply there will be shortages.
46. However, the assumption as stated completely ignores the supply side of the equation.
47. This assumption would be better worded as “unrestricted increases in internet traffic can lead to congestion in all or part of an ISP’s network if these increases are not met with adequate provisioning.”
48. The ISPs all argue that they are provisioning to the best of their ability and that this provisioning cannot meet the demands of all of the new traffic being created by P2P applications.
49. The evidence suggests differently. When Comcast was required to throttle traffic to meet this “uncontrollable growth in traffic” it found that it was enough throttle less than one percent of users for no more than 15 minutes at a time. This does not seem like an unmanageable level of traffic.

50. Provisioning is directly related to the requirements for traffic management practices. Functional marketplaces meet demand with supply – not by squashing demand.

51. This is how the internet has always worked. Historically, other “bandwidth crises” have been met by building capacity. That is how today’s “crisis” will be overcome. We invite you to speak to Dr. Odlyzko on that point.

### **Assumption 2: (Certain ITMPs may be appropriate)**

52. The second assumption fails to define either “traffic management practice” or the “integrity of the network”.

53. In our Comment, we distinguish between acceptable traffic management practices that respect the open internet and “Traffic Interference” – invasive practices that interfere with end user traffic, such as application-based throttling. Traffic Interference should be permissible only transparently, as a last resort, where finely tailored to target congestion, and where implemented in a manner that minimally impairs the user experience, and is justified by congestion metrics on an appropriately provisioned network.

54. The failure to define “integrity of the network” is troubling because it glosses over the fundamental threshold issue: when may an ISP intervene in traffic?

55. We would argue that Traffic Interference practices are **not** appropriate for ISPs to use in order to maintain the day-to-day integrity of their network. However we agree that in extreme cases – the Obama-moments or mother's day type scenarios – that certain traffic management practices may be appropriate.

### **Assumption 3: (Governed by section 7)**

56. The last written assumption states that in order to grant approval under section 36 the commission is governed by the policy objectives in section 7.

57. While we agree that the policy objectives are important in determining whether or not to grant approval under s.36, we do not agree that the Commission can ignore the content of s.36 itself when deciding whether to approve an infraction under that section or not.

58. The purpose of s.36, which is to prevent any influence by a carrier of content or purpose of telecommunications, should be taken into account. The Commission should also, then, consider the degree to which content is controlled or the meaning or purpose is influenced and whether there is a less intrusive method for the ISP to accomplish its objective.

### **Assumption 4: (The unwritten assumption)**

59. Before we move on to the questions posed by the commission we would like to address the non-inclusion of s.27(2) in any of the assumptions or questions.

60. At the very least, we would like to see a standard developed for determining if a management practice is in violation of s.27(2). This will prevent an overly high hurdle for complaints under section 27(2).

61. Additionally we would ask that s.27(2) be included as part of the criteria for determining which practices are acceptable. We will discuss how it should be included when we

address question 1.

## Part IV – Substantive Comments

62. We will now turn to addressing questions the Commission posed for this hearing. In doing so we will focus our submissions on three key points:

1. P2P-specific traffic management is discriminatory, is a prima facie violation of s. 36, and conflicts with the Policy Objectives;
2. P2P-specific traffic management is *unacceptable*; and
3. The Commission must provide a principled framework to guide ISPs in the future.

The framework CDM proposes here will lead to cost-effective solutions that are also compliant with the Act.

63. Our bottom line is this. Currently, ISPs have no incentives to tailor their practices to the requirements of the Act. Let's say an ISP has two options, each equally capable of achieving the ISP's objectives. Option 1 interferes with telecommunications to a greater extent than Option 2. Currently there is *nothing* to push the ISP to pick Option 2 (the less invasive practice) over Option 1. Perhaps unsurprisingly, Canadian ISPs have chosen to develop and adopt methods that trench on ss.27(2), 36 and 7 excessively and unnecessarily.

64. Our framework will give ISPs guidance so they can find new and innovative ways to meet their legitimate objectives in ways that are sensitive to the requirements of the Act. The effectiveness of this paradigm is evident from the Comcast experience. In response to an FCC ruling forcing Comcast to abandon its application-specific management practices, Sandvine and Comcast were able to create, within a matter of months, a solution that is superior and at the same time cost-effective. In the Canadian context, this solution is far less invasive of ss.27(2), 36 and 7. It also preserves the carrier role of ISPs in that it does not require them to make decisions based on information traditionally not available to them.

65. CDM is confident that, given proper guidance from the Commission, Canadian ISPs will likewise develop solutions that are cost effective, in line with their respective management 'philosophies' and also tailored to the requirements of the Act. As a result of this hearing, there may be some minimal short term costs for some ISPs as they update their practices to comply with the Act. Comcast faced similar costs and did not find it necessary to significantly raise prices to defray related costs. In the future, ISPs and network equipment providers will know, at the development stage, to factor in the statutory requirements of the Act when crafting their network management solutions. Once these factors are accounted for in the planning stage, the costs associated with them will be even lower. The resulting benefit will be a far more innovative, less discriminatory, open network that is more responsive to the needs of Canadians.

### **1. P2P-specific traffic management is discriminatory, violates s.36 prima facie, and conflicts with the policy objectives**

66. P2P-specific traffic management is antithetical to the principle of common carriage generally, and specifically the principles enumerated in ss.27(2) and 36. It also strongly

conflicts with the policy objectives.

67. Application specific throttling is discriminatory. It discriminates against a class of applications. While slowing down a file-transfer application does not necessarily prevent the application from functioning, it does put any such application at a competitive disadvantage relative to a file-transfer application that is not throttled. Proprietary P2P protocols like BitTorrent are also placed at a competitive disadvantage, as application developers will hesitate to rely on these protocols when deciding how to solve their own file transfer issues. It also discriminates against ISP users who wish to use such applications to view content. In these hearings, you have heard from a number of groups who rely on such applications to distribute their content. Finally, it sets up incentives for ISPs to confer undue preferences to their own services, especially with respect to wholesale consumers. This is very problematic but difficult to monitor.
68. Application specific throttling is also a prima facie violation of s.36. It controls the content of the message and, more to the point, it influences the purpose and meaning of the telecommunication. In the case of a P2P file-sharing application, the purpose of the telecommunication is to transmit data as quickly as possible. Slowing down its rate clearly influences the meaning or purpose of that telecommunication. Doing so can easily amount to defeating that purpose altogether, if it causes users to abandon P2P file-sharing applications or the BitTorrent protocol in favour of other forms of file-transfer.
69. Finally, application specific traffic management conflicts with the policy objectives. It detracts from the ability of independent Canadian and other artists to distribute their content. It hinders any future innovation based on the P2P file-sharing system or the BitTorrent protocol. It provides ISPs with strong incentives to rely on traffic management instead of investing in provisioning. This will further degrade Canada's internet infrastructure. It is privacy invasive because it requires ISPs to monitor which applications customers are using – information ISPs traditionally did not have access to.

## **2. P2P-specific traffic management is unacceptable**

70. Since P2P-specific management prima facie violates ss.27(2), 36 and 7, an ISP implementing such methods must justify such a practice. It must:
  - i.) target a legitimate ISP objective;
  - ii.) adopt a practice that is proportional to that objective by being:
    - a. rationally connected to it;
    - b. minimally intrusive of ss.27(2), 36 or 7; and
    - c. provide benefits that outweigh its detrimental impact on ss.27(2), 36 and 7.

P2P-specific management practices fail this test.

71. CDM has stated in its initial submissions, and maintains now, that in the context of traffic management, a 'legitimate' objective is one that targets congestion that cannot be met through provisioning alone such as the Obama-type moments. Throttling to meet normal peak-period traffic is not a legitimate objective. ISPs have claimed that in the near future traffic growth will be so great it cannot be met with provisioning, but that is not yet

occurring and there is no reason to abandon provisioning based on hypothetical projections.

72. Targeting P2P is not a rational response to this legitimate objective. P2P traffic can be addressed through provisioning alone. If it currently produces a disproportionate amount of traffic, this is only due to its popularity as an application and its newly emergent status. Some have said P2P allows 5% of ISP users to generate 50-60% of traffic. It should be noted first that this figure does not directly reflect peak period traffic created by those 5% of users. Only peak period traffic will contribute to congestion. More to the point, penalizing an entire application platform is not a rational response to the practices of a small number of its users.
73. Targeting P2P is *not* tailored to the requirements of the Act. More tailored solutions are available and others can be developed. The Comcast solution and various IETF processes mentioned in our submissions are examples. There are others on the record in this hearing. These do not single out specific classes of applications and so are less discriminatory. Instead it directly targets users actually causing congestion. It is not P2P applications that produce disproportionate traffic, but specific users of P2P applications. Second, these solutions interfere with telecommunications to a lesser extent: they operate only in the presence of actual congestion, and so are less intrusive of s.36. Finally, an application agnostic approach does not impact detrimentally on content distributors, it does not hinder innovation based on targeted applications/protocols, and it raises fewer privacy concerns as it need not track which applications customers are using.
74. Given that P2P specific traffic management is not minimally impairing, its salutary benefits do not outweigh its detrimental impact with respect to ss.27(2), 36 and 7 of the Act.

### **3. The Commission must provide a principled framework to guide ISPs in the future**

75. The justification paradigm we have suggested should be put in place. This will provide a number of benefits. It will give certainty to ISPs and equipment developers. They will have a framework to assess their own practices in the future so they can develop compliant practices from the start. It will also provide an objective, principled method for the Commission to carry out its mandate under the Act and still defer to legitimate ISP objectives and varied management philosophies. It is, CDM submits, the very *least* the Commission can do in order to carry out its obligations under the Act.
76. Some have raised concerns that the proposed justification framework will be too stringent in the context of private companies as it was developed for protection of rights. This is not the case. It *has* been applied in the private context to determine what is just, acceptable or reasonable. It is merely a means of analysis and its stringency is in the application.
77. Others have claimed that the justification framework is overly subjective and will substitute value judgments for those of ISPs or that it would force 'one-size-fits-all' solutions onto ISPs. This misconceives the nature of the minimally intrusive requirement. That requirement is a method for adjudicators to *defer* to the legitimate objectives of others such as ISPs. It allows ISPs to choose from a wide range of options, only requiring

that these be tailored to the legal principles found in the Act. With some guidance from the Commission as to what these principles require, CDM anticipates that most ISPs will from here on in adopt methods that meet this criteria from the start and will have no trouble gaining approval from the Commission under s.36.

78. The proposed paradigm is an ideal method for the Commission to implement its statutory requirements under the Act while respecting the Policy Directive. The test essentially requires the Commission to interfere with an ISP practice only when it is clear that market forces have already failed to ensure the policy objectives, or ss.27(2) and 36 of the Act are accounted for. When an ISP adopts a method that makes no reasonable attempt to minimize discrimination or to influence the purpose of a telecommunication or to hinder innovation or privacy, that signals such a failure. This is what we have been seeing here with application specific throttling. No effort has been made to develop targeted solutions. The incentive to do so comes from the statute and the CRTC must make sure it is respected. Interpreting ss.27(2) and 36 in this manner will, then, be a proportional and minimally intrusive response by the Commission to these types of traffic management practices. The Commission will interfere with ISP practice only when it is necessary to ensure the Act is not ignored. ISP failure to develop and implement an application-agnostic approach is an example of such a situation.

## **Conclusion**

79. Those are our comments. We look forward to your questions.

80. Thank you.