

Net Neutrality

A Public Discussion on the Future of the Internet in Canada

6 February 2007, 7 pm, Ottawa Public Library Auditorium

Moderated by **Pippa Lawson**

Panelists: **Ren Bucholz**

Andrew Clement

Michael Geist

(Bill St. Arnaud absent)

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Sabina Iseli-Otto: My name is Sabina Iseli-Otto, I'm one of the co-organizers of this event. The other is Danielle Dennie; could you please stand up, Danielle?

So, we put this together, started planning it a couple of months ago, looking around at all the net neutrality stuff that was going on in the United States and realizing that there was a huge gap in coverage here in Canada. We thought we'd try and do something to rectify that situation. So here we are, and thank-you all so much for coming on another cold Ottawa night. I know it must have been hard to get out but I'm glad you're all here.

The format tonight, we're going to have the three speakers speak. One of them, Bill St-Arnaud is stuck at the airport in Chicago so he will unfortunately not be with us tonight. So the three speakers will speak and then we'll have a lot of time leftover at the end for some public discussion and questions. We don't have a mic so please when that time comes, so that we can capture it on the videotape. We are going to be putting this video up online so if you're interested in that, please talk to either Danielle or me to find out where that's going to be available. We haven't quite sorted that out yet, but if you're interested, do let us know.

As another point of interest, we've put up some Net Neutrality Sign-Up sheets at the back (they're not "sign-in" sheets) but if you're interested in getting updates on net neutrality and helping organize other events around net neutrality, please sign up, give us your name and your contact information and we'll let you know when the next things happen and try to work with you to keep this ball rolling.

So our moderator today is Pippa Lawson, who is the Director of the Canadian Internet Policy and Public Interest Clinic (CIPPIC) at the University of Ottawa. Before that she was a lawyer for twelve years, a lawyer and consumer advocate with the Public Interest Advocacy Centre in Ottawa, where she led consumer interventions in all major telecommunications regulations proceedings from 1991 to 2003, so she is well-versed in these issues. She collaborated with other public public interest groups to the Telecommunications Review Panel. She has also been incredibly supportive of this event, so please welcome her. Thank-you.

Pippa Lawson: Thanks, and thanks for that, Sabina. And thanks everyone for coming out tonight. It's really my pleasure to be part of this event and to introduce this panel of truly public-interest minded experts on this issue, from academics, activists... we had an engineer on the panel but unfortunately he's stuck in Chicago as you heard. I also want to [?] and commend Sabina and Danielle for organizing this because I think there's a real need and a real appetite for informed public discussion of this issue. I think a lot of us have sensed that there's something really important out there we risk losing if the government, particularly, doesn't take the right actions here and we want to understand it better and then we want to take the actions, as citizens, that we should to pressure the government to put in place the right policies.

Before introducing the panel members, and what I propose to do, each panelist is going to speak for fifteen, maybe twenty minutes and I'll introduce each just before they speak. But I just want to take a few minutes to introduce the issue itself and I hope I'm not stealing thunder from anyone here. Net neutrality means different things to different people. I've noticed some people use the term to, for example, to stand for "network neutrality" which really implies a kind of a broad-sense neutrality applicable to all telecommunications networks. Others use it to mean "Internet neutrality" specifically, and in fact they get very specific, "we're just talking about broadband Internet and that's all." And that seems to be where the focus has been in the United States, I think. But certainly the issue, or the term, covers a number of different issues, from discrimination on the basis of content, to discrimination based on how much money you have, and I think it's important to pull apart these different issues and be clear about what we're talking about. Since Bill's not here, I'm just going to steal a bit from his presentation; I thought he had a nice definition of the term and he uses "network neutrality". And he defines it as "the desire to prevent broadband providers from offering differential service to selected customers or limiting access to services or websites by their customers."

Another sort of issue I've had with, or a problem I've had with the issue, is I think that a lot of people understand network neutrality at a very superficial level; I think often we know that there's this sort of fast-lane/slow-lane analogy that's used and I think it's a good one. It's commonly used to describe the outcome if we don't protect net neutrality but I'm really hoping that we can get beyond that level of rhetoric tonight and talk about the nuts and bolts of the issue in terms that we all understand but don't oversimplify it. So that's

my plea to you and to the panelists tonight: let's try to pull apart the issues, address them fairly -- and I guess that's the other point: we don't have, and maybe we do in the audience, but we don't have up here on the panel tonight any people from telecom service providers and carriers from the other side of the issue, so to speak. So I think it's even more important that we really address these issues fairly.

I've just a little bit of background here that Bill had in a presentation he gave on this issue a while ago that network neutrality, it's over 200 years old. This is not a new issue, at least one aspect of it. Canal operators in England wanted to charge differential pricing for different types of cargo. Coal from mines owned by the canal operators would get higher priority and lower prices. In the 1800's, railways were the big transportation. Railways demanded differential pricing based on the type of cargo that they were carrying, so they were suggesting wheat farmers would pay more per weight and volume than iron ore. Then in the early 1900's, telegram companies wanted to give higher priority to newswire companies with whom they had a special business relationship. And the result of all this, were laws which we still have today on the books, based on the concept of "common carriage" and "eminent domain". The concept there is if you're a carrier, then you just focus on carrying that traffic, and do not interfere with content.

Section 36 of the Telecommunications Act actually sets that out that carriers are not to interfere with content, and Section 27 sub.2 of the Telecommunications Act prohibits unjust discrimination by carriers. They're not allowed to give preference to themselves or two other parties in a way that is unfair and unjust. Some of the issues we're going to talk about tonight have come before the CRTC and, I think, more will be coming before the CRTC to decide on the basis of those provisions, the question being: is this unjust discrimination? I think that's really what we're talking about here: net neutrality versus unjust discrimination.

Before I turn it over, I'd like to point out that I think there are, in terms of pulling apart the issues, I've seen at least four quite distinct practices or policies in Canada that have been criticized as breaching the principle of net neutrality. And one very distinct one is the issue of access to content. The classic case was Telus blocking the union website and in so doing inadvertently blocking 766 other websites (or whatever). So that we, as users, could not access that content and the parties whose websites those were could not get the word out to the public. At that many of us agree, and while Telus may not have said so publicly, I get the sense that they're kind of ashamed about what they did. I mean, that's clearly breaching a fundamental principle of interfering with content.

Another, totally different aspect of net neutrality, which is the one where most of the attention has been focused, is this fast-lane/slow-lane one. That is about, basically, this proposal, that we hear the companies, Videotron in Canada and Verizon in the States, saying they want to charge wealthy content-providers like Google and Yahoo money and get some of that rent, basically, in order to pay for the expensive facilities that they're going to construct. This is a totally new idea, because right now on the Internet, if you're putting up a website, if you're putting up content, you just pay for your Internet access the

way end-users do. You don't pay extra, the producers aren't paying extra for a certain level of service. We, as end-users, can pay higher for faster service and less for crummier service, or whatever, but as producers -- those websites that are going up, and the content that is going up, gets out to everyone on an equal basis, on the same lane on the highway. And we're looking at that potentially changing.

A third -- and I think again, completely separate -- issue that falls under this rubric of net neutrality is the practice that Rogers is engaging in right now. They call it traffic-shaping, it's basically throttling the high-speed services used by heavy-users, so Rogers is saying, "We can't just let all this traffic go. In order for all our subscribers to have decent quality, we're going to have to hold back sometimes on those few heavy users." It's basically slowing down certain kinds of traffic, the few heavy users, in order to facilitate or ensure a better quality of service for everyone else. And there are huge issues around that. As far as I know, that hasn't yet gone to the CRTC or decision-makers about whether that constitutes unjust discrimination.

Finally, there is an issue, a fourth one, that has gone before the CRTC, that is about carriers like Shaw or Telus or whomever, charging customers more for competitors' services than for their own services and, say, offering a quality of service upgrade automatically to their customers for voice-over Internet service but then charging \$10 more to customers of other companies to get that same quality of service if they're getting their voice-over Internet from another company. Sorry if that wasn't very clear - all to say, I think there are some very distinct issues here under this kind of umbrella of net neutrality and let's when we're talking about it and asking questions, let's be clear about what the issue is that we're talking about and see where we can get. So I'm really interested to hear from our panelists and won't hog the microphone anymore.

I'll start by introducing our first panelists, who is Ren Bucholz, at the far end of the table there. Ren is from Toronto. He is the EFF's (Electronic Frontier Foundation) Policy Coordinator for the Americas. His primary focus is Canada and South America, but he does a lot of work at the international level as well, I know in Europe and WIPO and all over the place. Before he joined EFF, Ren managed a non-commercial radio station and worked for one of the first Internet broadcasters. He also helped start a political action committee that works on many of EFF's issues and a monthly social night for Copy Fighters. Ren has a degree in journalism from the University of Colorado and he once won an important wager by correctly defining the word "narcolepsy". So I'll turn it over to Ren.

Ren Bucholz: Thanks very much for that very nice introduction, both to me and the issue. I just want to mention that I'm based in Toronto, but because EFF is based in the States, and because most of our [?] about net neutrality comes from that context, I'm going to basically focus on how that debate emerged in the US and on the terms of that debate there and the terms of the unique problems that we face defending net neutrality before some of our other speakers speak more specifically to Canada. And also -- thanks

to the organizers of this panel; it's fantastic that they've gotten at least two interesting speakers over here [waving hand to indicate Clement and Geist] and also such a great turn-out on such a cold night.

As Pippa mentioned, my name is Ren Bucholz and I work for the Electronic Frontier Foundation, which is a US-based nonprofit with offices in San Francisco, Washington DC, Toronto, and, as of yesterday, Brussels. We've been around for 16 years and we work at the intersection of technology and civil liberties.

In other words, we work on things like free speech on the Internet, fighting government surveillance, and encouraging the spread of new technologies that strengthen democracy.

Even though we launched before the web took off, our founders started EFF because they were impressed by the potential of the Internet. Specifically, they were excited by the *equality* embodied by the Net: with access to a computer and a connection, your ideas are accessible anywhere in the world, because of the Internet. Even better, anyone with those two things - a computer and a connection - can build tools that help people use the network more effectively, and speak more effectively.

Most importantly, all of this expressing and inventing happens without asking anyone's permission. In geeky terms, or geek parlance, this activity happens at the "edges" of the network, or the "ends." Instead of waiting for a central network operator like the phone company to invent some new application or approve the carriage of a particular viewpoint, anybody who is on the network is free to do that kind of invention and that kind of speaking.

And that's not an accident - it's a design principle that's the heart of what makes the Internet so powerful. It's also, basically, what we now talk about as "network neutrality". I'm going to do a little bit of the munging of definitions that Pippa's warned us against, so bear with me for a moment. Tim Wu, one of the preeminent scholars on Net Neutrality in the United States, refers to it as:

"The idea is that a maximally useful public information network aspires to treat all content, sites, and platforms equally. This allows the network to carry every form of information and support every kind of application. The principle suggests that information networks are often more valuable when they are less specialized."

Now this design choice has produced untold innovation and economic growth, and if you look at the way that the Internet has progressed over the last fifteen years, I think that it's self-evident that there's been a huge explosion of expression, of different kinds of technologies, lots of investment and lots of commercial activity. Lowering barriers to entry and creating a level playing field for technological development has allowed for technologies like email, the Web, IM, peer-to-peer file-sharing, and Voice-over-IP. And the great thing is that these things were created without first asking the network operators whether or not these services could be offered by them. Instead, basically, these things

were floated in the marketplace, and judged almost meritocratically: if users used them and liked them, they were able to adopt them and spread them, et cetera.

The same goes for online speech, which doesn't face the same barriers of old media and traditional gatekeepers when we do it online. Myriad innovations have made it cheap and easy to communicate with others and because the platform is non-discriminatory, your blog, or, say, Michael's blog can be accessed just as easily as the New York Times. This allows for a huge diversity of viewpoints.

So if this is the background for how the Internet has been constructed and kind of a description of how it works today, why are we worrying about net neutrality, and where did the recent threats to it come from?

I think that Pippa's right, that basically that impulses to regulate networks goes back a long, long time. But recently, what we're seeing in the United States anyway, is a case of what you could call "monopolistic recidivism", or basically monopolies that have previously been broken up, and previously been behaving badly, have gone back to their old ways. And I think that standpoint is really well encapsulated by this statement in the November 2005 issue of BusinessWeek, where AT&T CEO Ed Whitacre had this to say about companies like Google, MSN, and Vonage. And, you know, I don't know if he speaks with a Southern accent but I'm going to [Ren's voice drowned out by people laughing]. He says, quote: "Now, what they would like to do is use my pipes for free, but I ain't going to let them do that because we have spent this capital and we have to have a return on it. So there's going to have to be some mechanism for these people who use these pipes to pay for the portion they're using. Why should they be allowed to use my pipes?" This is that attitude of monopoly ascendant: the idea that even though you may have stockholders, you are providing a public service, but the idea that you have complete and utter control over that network is something that is very particular to monopolies. And make no mistake about it: telephone companies in the United States are monopolies.

Today they are more powerful than they have been at any point since 1984, when the federal communication commission broke up Ma Bell into the Baby Bells. Whitacre, who used to be the CEO of SBC Communications before the big merger with AT&T, recently oversaw the \$85 billion merger of AT&T and Bellsouth, which largely recreates the contours and the topography of the network that the FCC broke up about 20 years ago.

At the same time, the cable industry has been trending towards centralization for the last 20 years.

These two industries on their own provide different kinds of services, but together, provide the bulk of America's broadband Internet service. According to recent FCC data, 94% of users had no more than two accessible providers, which are almost universally cable and/or DSL service. In fact, in the United States, cable and DSL make up 98% of the broadband market. In other words, users have little meaningful choice in the current

broadband market. So while you may hear about how the market will correct for any kinds of nefarious genes that are mutated by the duopoly, I think it's really important to understand that that's actually not the case, and even where you have different brand names in different markets, once you go up a level, that leaves a huge concentration of ownership.

What's more, Internet service providers have unique incentives to stifle certain innovations -- it's not just that they have the capability but they also have incentives to do that. For instance, VoIP threatens traditional telephone services. In a world where discrimination was normal on the Internet, they might quite simply not have allowed that kind of technology to develop in the first place. If they started to today, they might simply discriminate against companies that they don't have a stake in -- so, for instance, AT&T could discriminate against [?] from Vonage while keeping its own service at a nice, steady level. Similarly, cable companies may wish to favor their own video content over upstart sites like YouTube. So, I guess, the idea is that there is a lot of concentrated power and there are a lot of incentives to fight against these new services which are essentially drains on the revenue of the telephone and cable companies.

Most defenses of this behavior rely on some linguistic judo. Instead of discrimination, cable and telephone companies talk about creating "fast lanes" for new services. To be fair, there *are* new services that don't play in very well with the current Internet. would benefit from networks with higher reliability, lower latency, and greater quality of service than today's Internet. Things like telemedicine and high definition video, require very fast, very fat, very reliable pipes to get those services to the end user.

However, I think that bringing those services into the debate about net neutrality is a canard for a couple of reasons. First, the difference between a fast lane and discrimination is purely semantic. As Tim Wu says, "given limited room on the network, whoever isn't prioritized is by implication degraded." In other words, there is only so much room on the network, and so if you're going to create a fast lane, it leaves a much smaller amount of bandwidth for other, non-favoured applications.

Second, I think that it's important to point out that if you're going to talk about things like telemedicine and high-definition video, that it's important to recognize that part of that tiering, or discrimination, isn't the only way -- or isn't even the best way -- to provide those kind of services. In fact, the Internet2 project considered implementing prioritization technologies into the network, said before Congress, that, "[A]ll of our research and practical experience supported the conclusion that it was far more cost effective to simply provide more bandwidth." So instead of taking the pipe that's allotted and then cutting deals or different slices from it into pieces, they found that simply running more fibre, providing more infrastructure, was always more cost-effective in the long term.

Some people point to new technologies like WiMAX and broadband over powerline and a range of new or emerging kinds of broadband technology, and say, "look, we may have

a duopoly today, but maybe tomorrow we'll have a functioning market, who knows?" I think that this is overstating the case for sure, currently because the market is so concentrated in the hands of this duopoly, I think it's unrealistic to assume that, in the short term, that those problems are going to fix themselves. So basically, there's no reason to think that the companies behind -- and also, as I say, there's no reason to think that the companies behind WiMAX or behind powerline broadband would have any reason to act differently than the current incumbent telephone companies.

In sum, in the near term, duopoly exists, vigorous competition is unlikely, and consumers can't simply vote for non-discrimination with their dollars because they have nowhere to turn. Which is kind of a dire picture -- it makes you think you should go out and subscribe to a community wireless set-up like we have in Montreal or now Toronto.

Audience 1: We have one in Ottawa, too.

Ren Bucholz: In Ottawa, too?

Audience 2: A small one, a small one.

Ren Bucholz: We'll talk a little bit about that later, but I see some people in the audience who are involved with community wireless stuff. We'll talk about that.

So this begs the question: what do we do about it?

The first thing to do, I think, is to distinguish between the principle of net neutrality and proposals meant to defend it. I think as I understand it, as we've discussed it today, and as it's generally understood by the public, the principle of network neutrality is pretty unassailable. To me, the arguments put forward by the telephone companies or cable companies are not terribly persuasive. But I think that it's important to separate that out so that the regulatory proposals that have been floated in an effort to defend network neutrality. And with those proposals, as with all policy, the devil is in the details. First and foremost, what exactly constitutes a violation of "neutrality" versus a legitimate network management decision? For instance today, there are decisions made all the time about what kind of traffic gets prioritized on the public Internet, and those things generally have a non-political or apolitical [?]; they're not made because they're coming from a particular IP block. It's more a situation where they want to maintain a good network environment generally.

So basically, because that distinction between legitimate and discriminatory network management decisions is so difficult to define, I think that puts us in unique regulatory perils.

Also, most US net neutrality proposals put faith in the FCC to perform this line-drawing appropriately. Here's where my kind of experience with the US situation comes through. Of course in Canada you don't have the FCC, you have the CRTC, which are two cousins; they are related but they are no means the same entity. So a lot of what I'm saying here about problems with the handing over of this control of the Internet to the FCC is specific to the FCC and I'm excited to hear some more about the CRTC and how they may play [?] as well.

Under a lot of these proposals, the FCC would be given the power to determine when and how it's acceptable to: restrict running servers, block ports to deal with spam or security threats, shape traffic of bandwidth-hungry software, and so on. These regulations will likely be over- and underinclusive as well as difficult to enforce. The regulatory process may systematically disfavor the interests of start-up innovators, emerging ISPs, and the general public.

Moreover, large, established tech companies and ISPs are likely to have undue influence over these regulatory decisions -- which may not be a bad thing. When I say that, I'm imagining a [?] world where you have big bad telephone companies and cable companies on one side, but then you also have the high-minded content providers (like Google and Yahoo) on the other side. The idea is that it would be great if the interests of content providers aligned perfectly with the interests of the public and they produced sound policy. But I think that is kind of "pie in the sky," and it's probably not likely to happen, especially not in all cases. What I'm saying if there are no plausible alternatives, then regulation certainly is better than letting a duopoly run amok. It's better, I think, than allowing a non-existent market to sort itself out. But I think you have to look very hard at other kinds of solutions as well, which we'll talk about at the end.

On the other hand, history (and the FCC) teaches us that the large incumbent groups might be ineffective proxies or, worse, they might influence regulation in ways that intentionally harm smaller actors and the public interest. Major tech companies cannot be counted on to fight vigilantly on behalf of start-up competitors at the FCC. So while their interest may align with the public, they may not align with the start-ups. The public's needs might occasionally align with sufficiently strong corporate interests, but there is no guarantee that average citizens and consumers will have a strong and equal voice at the table when important when there are important decisions to be made about network neutrality.

Another reason to be wary of mandates for net neutrality is that they will be technically difficult to enforce because the effects of neutrality violations and legitimate network management can sometimes appear indistinguishable. Consider the following hypothetical described by computer scientist Ed Felten. When a network provider is experiencing heavy traffic, certain packets are often delayed so that others may be sent first -- this is a process that is commonly known as a "jitter." This is inherent to [?] networks, but it's particularly damaging to real-time applications like This jitter is a

particular problem for real-time communication services like VoIP or high-definition video. Imagine that a broadband provider's network creates jitter for a competitor's VoIP service, but not for their own. One reason may be that the provider is intentionally delaying its competitor's traffic, but another may be that the provider's network topology produces jitter as an accidental side-effect.

The forensics involved in determining whether or not there is ill intent there (or just an accident) is substantial because in order to bring a claim against a network provider, you have to do a lot of research, you have to -- and the FCC at the end of the day, how are they actually going to determine whether or not the network operator was acting with bad intentions?

Incumbent telcos will be in prime position to game the system with this sort of soft discrimination. That sort of soft discrimination is the sort of thing that makes it difficult for independent ISPs to connect with a large ISP, even though they may have a regulatory order to do so -- which was the case in the United States and which was partly the case in Canada. If you talk to any small ISPs, they'll tell you that it's actually very difficult to manage their relationship and to get good service from the Bells and the Verizons.

As Felten points out in describing the hypothetical jitter example, the "most challenging possibility, from a policy standpoint, is that [the broadband provider] didn't take any obvious steps to cause the problem but is happy that it exists, and is subtly managing its network in a way that fosters jitter." In a way, net neutrality regulation would not entirely remove the incentive to discriminate; rather, it would create an incentive to discriminate covertly. I point that out not to be defeatist about this, but just to say that if we're putting all of our energy into pushing towards regulation, that there are going to be some serious hurdles in the work of enforcing that regulation and it may undermine the efficacy of those pushes. So we have to think about: is regulation the best place to put our energy or should we be pushing for different kinds of regulation or other kinds of technical solutions?

All that said, it is worth emphasizing that I don't think regulation is *per se* bad, but it simply needs to have more examination. I think that at the end of the day (and I'm getting pretty close to the end of the speech here) what I was hoping to do here was describe the contours of the problem, especially as how it emerged from America, and use it as a jumping-off point to talk about what would you do to protect network neutrality?

But, at the end of the day, we have to decide where our energy is best spent. I still think that competition is the best place to spend our energy to find ways to encourage large telecommunications companies to share their networks effectively with local providers -- I think that's a more elegant way to defend network neutrality.

There are also new technologies that may mature in time to provide viable alternatives to the telcos and cable operators. Finally, I think it's important to keep experimenting with alternative business models for the provision of service. I use "business model" very

loosely here, because I include in that municipal WiFi experiments cropping up of all different stripes. Some of them are free services, some of them are pay services, some of them are run with volunteers, some of them are run by municipalities, some of them are run by corporations that provide the service for free -- and I think that by continuing to experiment in that world, we will be able to potentially seek out and discover models that provide actual competition for incumbents.

While the solutions aren't clear, our mandate is. The Internet has had profoundly democratizing effects on our society, and we can't let incumbent monopolies break it. And that's why I'm so glad that we're starting to have this conversation.

Thanks very much.

Pippa Lawson: Thanks a lot, Ren. Our next speaker is Andrew Clement, who is a professor at the University of Toronto, Faculty of Information Studies, where he coordinates the Information Policy Research Program and directs the collaborative graduate program in Knowledge Media Design. His research, teaching, and consulting interests are in the social implications of information technology and human-centred systems development. He has a computer science background, I should say, too. He's written papers and co-edited books in such areas as computer-supported co-operative work, participatory design, workplace surveillance, end-user computing, and the information society more generally. His recent research has focused on public information policy, Internet use in everyday life, digital identity constructions, public participation in information communications infrastructure development (which is what I think this is about tonight), and community networking. So, over to you, Andrew.

Andrew Clement: Thanks, Pippa, and thank-you all for coming here tonight and particularly, I see that people have come from Montréal, so it's great to see you. I think this is a very interesting and important occasion because the debate in Canada about net neutrality is, I guess, characterized by its invisibility, its quietness. I want to thank Ren for giving us a bit of a flavour for the debate in the United States where it has been somewhat more lively, in fact, there has been a very active grassroots mobilization, there've been millions of e-mails sent to Congressmen. It's been a matter of very vigorous engagement and debate in Congress and a few weeks ago, the FCC, in agreeing to the merger of AT&T and BellSouth actually built in to that agreement a provision about net neutrality that the net neutrality advocates are claiming as a kind of a victory (it only lasts for two years, and there are all kinds of problems with it) but I'd be interested to hear from Ren and Michael about that discussion.

But at least in the United States there has been a very vigorous, active, and in some ways, arguably effective debate. Whereas in Canada, it's been quiet and we may think that that's because the situation here is better, that we're not as driven by monopolies, perhaps, or we don't have such powerful incumbents, but I will argue, in fact, just the

opposite. I'll argue that the situation in Canada is worse in two major respects: first, the telecom and cable industry here is more highly concentrated and more vertically integrated than it is in the United States and that poses the threat of the exploitation of the control over the networks to favour or block content or services. Secondly, another weakness in Canada, is that we lack the policy capacity at the present time to grapple with this issue and that's also why it's been quite compared to the United States. That there is no present sort of countervailing force in Canada that is taking on the telecos and the cablecos and actually making this an issue that they have to defend themselves – they're getting a free ride. So, I think this even tonight is important because it does give us an opportunity to engage in raising those issues and revealing a little more about what's happening here and why Canadians should be concerned about what in some ways is a rather arcane and complicated issue.

What I'd like to do here is to talk a bit about the structure of the Internet and ownership structure in Canada, and why that's a problem; look at the policy discussion here and point out what I think are some of the problematic aspects; and then pose the question, of course: what is to be done given that we can't take despair as the only alternative.

So first of all, Pippa gave a very nice survey of the notions of net neutrality and I will just take a sort of a simple version from here and obviously can expand out but I think net neutrality is in essence the principle that all Internet traffic be treated equally regardless of origin, destination, and content type. That doesn't necessarily preclude various forms of network management for efficiency and through-put and so on that Ren was talking about. It does mean that there can't be discrimination on the basis of who the users are. There may be some differential treatment for purposes of effective network management. There are various variations on this. This matters because the Internet clearly has become an essential infrastructure in contemporary society that has implications for our economic, our social, our cultural, our political life. Increasingly, the various media, that we've previously treated as separate, are getting folded into Internet through packet switching. So whoever rules the Internet in many ways has extraordinary power over contemporary life and in a democratic society we at least think that should be accountable to intentions -- to our public and collective intentions. Al Gore very recently, commenting on the limits to executive power, had this to say: "Freedom of communication is an essential prerequisite for the restoration of the health of our democracy," he's talking about the American democracy, "It is particularly important that the freedom of the Internet be protected against either the encroachment of the government or the efforts at control by large media conglomerates. The future of our democracy depends on it." I think that strikes at the heart of some of these issues that we need to deal with. Of course, it's very complicated technically but I think that if we can look inside the box of it, and see what's going on, then we can see how those issues come to the fore.

At this point, the technical and the organizational structures of the Internet are becoming solidified in ways that previously they were more in flux. This is a critical time now where the long-term shape of the Internet [?] will be more or less settled. In ten or fifteen years it will be much harder to fix things if we've got it wrong. So here we have an

opportunity to have a say and [?] a closing window. A little primer on a very simplistic but I think useful analytic view of the Internet and how it works -- and I'll distinguish between two main parts of it: one is the, what might be called, the local loop, the last mile, and including the sort of metro, or middle mile or back haul. But basically, if you're thinking from a sort of domestic or residential user, from your own equipment, whether it's a telephone line or a cable, to the point where it connects to the broader Internet. And then there's the large, amorphous Internet which is treated as an area of magic that delivers or collects packets from other users or providers that are scattered around the edge. In the middle, there's the core, or the backbone. This wire, whether it's the coaxial cable in cablevision or in twisted pair in DSL, that is the critical chokepoint that determines what you are able to do and experience on the Internet. So, the control over that -- who regulates that, or who can shape that, is vital. In the United States, the debate has been about that sort of last mile section and not very much about the Internet core.

If we look at that first mile in Canada, who owns or controls those carriage facilities? Well, they're the familiar characters of Rogers, Bell, Shaw, Videotron, and Telus. Between them -- the telecos and the cablecos -- they control 84% of all of the Internet connections domestically, just those five companies. Furthermore, particularly the larger ones like Bell and Rogers are highly vertically integrated in the sense that they are providing both the wires, the carriage capacity, the storage, and also a wide and expanding array of content services, things that they want to sell to you in various ways. So they have an interest in turning their investment, as Ren was saying, in the local infrastructure and the wider Internet, into a way that will leverage their other assets. And they clearly have an interest in not allowing others to have the same kind of access. Compared to the United States, that concentration, both vertically and in terms of the reduced number of owners, I would argue, is more serious than it is in the United States. Now, in the United States the concern has not been about the backbone or the core of the Internet and in part, as people like Tim Wu (who was mentioned earlier) says, there is *de facto* neutrality in that backbone because it's guaranteed by the various peering arrangements that the backbone providers have to make with each other to pass off a packet. So this is done in a very dynamic and flexible way, so they have a sort of general agreement and it's very hard for one actor there to change that without making that aware of others. Of course, we don't know what those peering agreements are and it would be interesting to make those peering agreements public knowledge in a way that they aren't now. But I will argue that in Canada, we can't assume that relatively benign picture because of the way that the backbone in Canada, the ownership of that is highly concentrated. I'll just show you a couple of slides to illustrate that and I've got a little handout here because it's a little hard to read (I brought thirty of these but we've got a rather larger audience).

[Referring to slides] That paw print there, you'll see where that comes from. It's very difficult to see that but that is the core of the Internet in North America. There are 134 000 routers there. It doesn't have the edges; it's just the core of the Internet. This was done earlier, well, in 2006. That traces out 134 000 routers and they're colour-coded by who owns them. So blue is AT&T, red is Verizon. Those are the two major backbone providers in the United States. There's a bit of yellow in there for Quest. Green are other major

backbone providers. You may be able to see only the large green blobs. There are four here like that, a paw print, there's another one up on the right. Well, I was astonished when I looked at this to discover that those green blobs are Bell Canada. So, although Canada is roughly about 10% of the United States, in terms of North American Internet, Bell has a very prominent position. Within Canada, I looked hard for the other providers, Rogers, Shaw and so on -- and they are minuscule in comparison. There's only a very few and they're scattered. What that tells you, also, just by the concentration of the way in which those are represented, it's not geographic (there's no North and South and East and West and so on) so you can't collate it in that way because it's done by the topography of the connections. What that map illustrates is that within Canada, and within Bell Canada, there is not a lot of connection outside of itself that rather it is a closed, a relatively closed, system. So the assurances that the American net neutrality advocates find in the peering arrangements in their part of the Internet as guaranteeing the *de facto* neutrality are not present in Canada, and I think we need to be aware of that, as well. Basically, Bell Canada owns the Internet backbone in Canada and I think that should be a matter of concern, if that then becomes a matter of their control over what's done on this vital infrastructure

So that's the primer on Internet ownership and [?] structure. What about the claims for how there have been abuses of that position and at this point there are relatively few of them but each of those major actors -- Telus, Shaw, Verizon (not Verizon, sorry, that's the American one), Videotron, Bell, and [Rogers], for each of those there have been a number of complaints raised about the way in which they have used their position. Pippa talked about four different ways; I'll just distinguish between what we might call "censorship", or "content-blocking", where particular content that carriers found objectionable, they've taken it down without legal authority. This is legal content, they've decided on it on their own, Telus' case is well known, Videotron has done that as well. The other area is what we might call "economic discrimination" where they're providing preferential treatment to their own services and Rogers is being accused of doing this, Shaw, and Bell particularly with its partnership in the VoIP area (voice-over IP) with Clearwire. Just commenting on net neutrality, taking Bell as an example, spokeswoman Jacqueline Michelis said, "Our position on net diversity/neutrality is that it should be determined by market forces, not regulation." I mean, this is in some ways an unremarkable statement because it is standard fare in this area. But I find it extraordinary in a couple of respects. First of all, that if there is a key issue about democratic control over vital media, then leaving it simply up to vital market forces is often not seen as an adequate response, and she could have said, "Yes, indeed, Bell does not discriminate in this fashion," but simply have [?] for themselves. And also, the idea that Bell reflects a market force in a wide market is a convenient fiction here, it's sort of laughable that here this largest dominant carrier can claim that this is market forces at work. So I think we need to be very skeptical about this. So that's the first part of why I think the problem in Canada is worse; it's because of the high degree of concentration and vertical integration.

The second part is about the policy-setting arena in Canada. We've heard a little bit about the carriers' position on this; I'd like to look at some of the other recent activities and

actors, and particularly focus on the role that the Telecom Policy Review Panel played, which, in the last year of the Liberal government, was initiated by the Industry Minister to examine the Telecom Act and to propose changes to that. The results of that is a long report; I won't go into it in detail. But the bottom line was that they were promoting market forces not simply as a means for achieving ends, but also as an objective of telecom itself. There were some changes to Section 7 of the Telecom Act in terms of the- [lights turned up, then back down for rest of the slides] I just want to draw your attention to these - those are the Bell ones and if you look closely, you can see the router names, the role that Bell plays. [lights back up]

So they had over the last year or so the Telecom Review Panel. While it did provide market forces as a guiding principle, it also had some other measures to balance that and mitigate that in some ways. We've had some problems with that (those of us who've been following it) but it did attempt to strike a balance. What's happened since then with the new government is that Industry Canada, particularly the Minister of Industry Maxime Bernier, has given a directive to the CRTC that takes only the market forces, the maximizing market forces, as an objective and as the guiding role, and there's been no mention about taking up other parts of the Telecom Policy Review Panel's report. So we see considerable imbalance in this situation. If we were to look in Canada at where are the other actors who might contribute to this debate, there are a number of us who have taken what we might call a "community and user perspective" and we've attempted in various ways to contribute to that discussion by submitting briefs to the original panel and taking part in an open forum. I have to say that about half the number of people in Canada who've been active are in the room today. CIPPIC has been a leader in this, EFF, a number of the groups who were supported by Industry Canada in the early stages -- the Community Access Program -- have contributed, but it was very much on the margin. That directive, or the report itself, largely ignored these other wider social aspects of Telecom and its role in Canada. So we were voices from the outside, and this is where I think there's a serious weakness in Canada compared to the United States where there's a much more vigorous debate and there's much more open [?] and much more mobilization.

So, what's to be done, then? How can we address this situation of concentrated ownership and relatively weak policy discussion? First of all, obviously, there's making net neutrality and the related visions and possibilities of the Internet, and telecommunications more broadly, a real issue in Canada, and that's why I think this event is so interesting and important. We can look for other allies in this struggle. In the United States, they've created a very wide coalition and it's made for some strange bedfellows in the sense of the political spectrum that's reflected -- from the very far-right to the very far-left. It's also, and I think this can happen in Canada, too, can enroll many of the business actors who are not well-served by a highly-concentrated telecom industry, which are the small telecom providers and many of the businesses which depend on telecom crucially and are paying higher prices and have less flexibility and are basically dependent on the existing providers and have little bargaining power.

I think we need to expose the myth of market forces; this is almost a religious belief in

the way in which, sort of magically, social benefits will come from what is basically an oligopolistic situation, where a few actors control so much and they're not susceptible to competition. They don't try to compete with each other on price, because it would be damaging to them, so they create an artificial market and then defend it very strongly. I think Industry Canada has an important role to play here, as a potential mediator of the public interest. It seems that they are taking a very narrow view of their mandate.

The CRTC continues to have a role here. The plans for it are basically to be treated as an extension or connected to the competition bureau, where it's looking at only the market competition aspects and not at the other social roles that the telecommunications can provide in Canada. I think that needs to be reinvigorated in Canada and given a mandate that's appropriate to a contemporary digital society, and not have to rely simply on the division between the Telecom and the Broadcasting Act.

We could pressure the telcos and the cable companies to declare themselves on net neutrality, and make themselves accountable by being more open. In particular, a separation of the carriage facilities, the shipping and transmitting of the packets from the content, which is a long-standing tradition in telecom regulation and in other areas -- that could be reinvigorated. That is not an obsolete idea, but one which is ever more vital.

We could also think about building our own infrastructures as many cities are thinking of doing, through wireless networks and their own fiber cables. That is probably the best source of new initiative in terms of providing an alternative in telecommunications because cities have such a strong interest in maintaining good telecom infrastructure and where their densities would allow for that to be done efficiently.

Then, also, I want to remind you of the deferral account, which is \$650 million that the CRTC is currently holding, that belongs to the telecom users of Canada and might be best used as a way of serving their own rights here rather than turning it back as a cheque to each individual in a small amount or allowing the telcos to build more of their own infrastructure.

So I hope that's given some thoughts on where we might be going, and I'd be very interested to discuss that. Thank-you.

Pippa Lawson: Thanks a lot Andrew. That has given us a lot to think about. Our next speaker and the final one on the panel tonight is Michael Geist who is the Canada Research Chair of Internet and E-Commerce Law at the University of Ottawa. He's written numerous academic articles and government reports on the Internet, law. He's a columnist, as many of you know, on technology law issues and regularly appears in media outlets on five continents. His work has been recognized with several important awards and grants (which I won't list); he serves on the directory boards and advisory boards of several Internet and IT law organizations (I won't go into details). He's widely quoted in the media on Internet law issues, and he's one of the few Canadians to write and

speak publicly on the issue of net neutrality.

Michael Geist: Thanks Pippa, and thanks to the organizers for the invitation, as well. I have to admit that when I knew I was going to speak third, and knowing who I was going to follow, I wasn't quite sure that I'd have anything new to say. And particularly after listening to the last two speakers, I know that had something that happened this afternoon not happened, I think I frankly wouldn't have had a lot to say. But something did, and so I have something to say. So this is different from the usual kinds of presentations that I give: there's no powerpoint and in fact I'm going to read a lot more than I would normally be comfortable doing. But I think what I'm going to read is worthwhile.

So at about five or six hours ago, I was contacted by a reporter at Canadian Press who said they had just obtained an access to information request from Industry Canada, in which they obtained question period cards (so these are the documents that are prepared by government personnel) for Minister Bernier on the issue of net neutrality. How about that for timing? So, about an hour and a half ago, the story broke on the wires talking about what the government actually says about net neutrality, at least what they planned to say had the question come up at [?] question period before the House of Commons, and certainly the kinds of things that Minister Bernier has been advised by his policymakers. So I thought this might make some worthwhile reading. I should note that the question period documentation (I didn't come up with this, as I said, the reporter sent it to me), the question period documentation came up as part of the Videotron episode.

Videotron was, of course, one of the incidents that Pippa noted and others have noted as well. If you recall that last November, Robert DePatie, who's the president of Videotron, was quoted in the media as speculating about the prospect for new terror for the carriage of content that Videotron might engage in, and so it would appear that people within government thought that might raise the prospect of questions within the House of Commons.

First, then, the question period card. The more interesting, though frankly afterward, the background documentation and a proposed Q&A that was also prepared for the minister. So the question that government authorities thought might come up is, "Does the minister intend to allow telecommunications companies to determine the content that its customers can or cannot access by imposing special rates, undermining net neutrality?" That's the issue. The departmental response (I'll just give you a [?]), is, "The Internet is not regulated in Canada. There is no regulation of the relationship between Internet service providers and the providers of Internet content. There is currently considerable discussion in the industry about the implications of telecommunications companies who provide network and Internet service taking a greater role in determining how Internet content will be delivered and at what cost, if any. The Telecommunications Policy Review Panel reviewed this issue in its March 2006 report. My department is continuing to examine and assess the recommendations, including the issue of net neutrality, that were made in this report." Your standard House of Commons response that says not-a-

whole-lot.

The background that's included in the question period card says the following, "Canadian telecommunications companies, like Bell and TELUS, are increasingly determined to play a greater role in how Internet content is delivered. As the carriers of the content, they believe should be gatekeepers of the content, with the freedom to impose fees for their role." This is a minister who has been briefed precisely about what this issue might be about. The card notes that, "There is considerable debate in the U.S. about the relationship between content providers and Internet service providers. Last summer, telecom companies were successful in gutting a net neutrality law specifying that providers of physical infrastructure could not have any say over the content and services flowing over their networks. Congress is currently reviewing that decision. The question raises complex issues of the interests and benefits to consumers, and businesses. It would be premature at this time to draw any conclusions." So even within the question period, there's no question but that the minister is being briefed quite clearly about potentially what some of the intentions are with respect to players such as Telus and Bell.

I think more interesting are two other documents: a briefing document that is titled "The Net Neutrality Debate", and a question and answer document that was given to the minister that I'll come to in a minute. First off, "The Net Neutrality Debate", which I must say, contains (at least in my view) some discouraging news, I suppose, in terms of how this is being framed, certainly by some within government. The document purports to provide what I would have thought would be an even or balanced approach to what the debate is all about and it includes several headlines: "Net neutrality from a public policy perspective", "ISP and carrier perspective", "Advocates of net neutrality perspective", then gives the Telecom Policy Review Panel's position, then "Recommendations and next steps." I actually think that it is the "Net neutrality from a public policy perspective" that is most telling because it is here where one would expect a full panoply of views from a policy perspective might come to the fore. I'll read this one paragraph to you and I think it becomes readily apparent that's not the case. It says, "It has been argued that regulating the Internet to maintain equity in data transmission may come at the cost of impeding competitive market outcomes. If consumer preferences are demanding Internet applications that require higher quality data transmissions along with greater reliability, rigid net neutrality legislation may prevent such innovation. As well, content suppliers may wish to negotiate arrangements with carriers in order to ensure that appropriate bandwidth is made available for specific applications that they may wish to offer (e.g., medical applications, HDTV).

The other side is that the prioritization of content risks discrimination against small content producers and creates a tiered Internet. Note also that previous business models that attempted to limit consumer access to content (e.g., AOL, Compuserve, otherwise known as 'walled gardens'), have failed, so ISPs have little incentive to do so. Finally, the debate raises the topic of business models for network infrastructure investment. Some argue that, without differentiated treatment, there may be no incentive to pay for the actual costs, resulting in under investment." This is not coming under the headlines of

what the carriers [...change battery in video camera.] ...presented as. Yet clearly, this is something that would be quite comfortable within the ISP and carrier perspective discussion. Indeed, just below that there is a discussion of the ISP and carrier perspective, as well as after that, what advocates of net neutrality are saying -- but both of them saying not anything that would be of particular surprise, other than the fact, with the exception of the Telus incident, there is not a single other incident that Pippa has highlighted and that others have highlighted, that were brought to the minister's attention on this topic. So Telus is raised as one example of content discrimination; there is nothing here about application discrimination, nothing here about economic discrimination, nothing here about the other range of issues.

Indeed, there is a note, then, about the Telecom Policy Review Panel's position and it quotes directly from that panel's position, and I think it's worth quoting from (we've had reference to it but haven't actually said specifically what they recommended): "The Telecommunications Act should be amended to their choice by means of all public telecommunications networks providing access to the Internet. This amendment should [and there are some provisos] (a) authorize the CRTC to administer and enforce these consumer access rights, (b) take into account any reasonable technical constraints and efficiency considerations related to providing such access, and (c) be subject to legal constraints on such access, such as those established in criminal, copyright and broadcasting laws."

Finally, the recommendations and next steps: "It's premature to adopt a position on net neutrality, or even on how it is defined at this time. We should simply continue to monitor domestic and international developments. The Internet is moving so fast that caution is warranted for any intervention. As with other things related to Internet policy, the first principle should be to do no harm." There is second a reference to the fact that the government is developing a paper that will look at a range of the possible issues and the various scenarios that are [?]. That's part of the background document.

Perhaps most telling, though, is a Net Neutrality Questions and Answers document dated November 16 [2006]. There are four questions; I think we'll read three of the four. The first off, "Do you intend to allow [and this is directly out of the Videotron issue] telecommunications companies to determine the content that its customers can or cannot access by imposing special rates undermining net neutrality?" The answer there is precisely the same one that was raised in the question period card that I read a moment ago, so I won't repeat it. The other three, I think, are interesting.

"How do you respond to comments from ISPs, such as those by Videotron's Robert Depatie, arguing that the ability to control, prioritize or block specific data transmissions is necessary in order to ensure quality of service, and to encourage investment in broadband networks and content deployment?" The response, provided to the minister, is as follows, "Currently, there is a wide range of contractual arrangements between ISPs and on-line service providers, and a range of technical measures have been put in place by ISPs which affect traffic patterns on the Internet. Some of these technical measures

ensure that heavy use by some users does not unduly limit access by others. Other measures ensure that appropriate capacity is available to handle video and other applications which place high demands on network infrastructure. In many respects, these measures respond to marketplace demand. The government is following the ongoing discussion within the industry about network neutrality. It would not be appropriate to comment on one company's views."

"Is this consistent [or at least the actions of Videotron] with the recommendations made by the Telecommunications Policy Review Panel?" The response, "The Telecommunications Policy Review Panel reviewed this issue in its March 2006 report. It recommended in favour of ensuring consumers are able to access publicly available Internet applications and content of their choice by means of all public telecommunications networks providing access to the Internet. My department is continuing to examine and assess the recommendations, including the issue of net neutrality, that were made in this report."

Well, "What is your position on net neutrality?" (the last question and the last one I'll read), they finally get to the issue. "There is a lot of discussion about network neutrality, but no agreement on what this really means, whether there is a need for any government action, and if so, what form that action should take. Market forces have served Canadians well when it comes to the Internet. Public policy must consider a number of aspects of this broad issue, including: (a) consumer protection and choice, and (b) enabling market forces to continue to shape the evolution of the Internet infrastructure, investment and innovation to the greatest extent feasible. At this point it is premature to adopt a position on net neutrality [frankly, it sounded like they just did!]. The Internet is moving so fast that caution is warranted before interfering with market forces."

That's the government documentation that this ATIP turned up and from my perspective, when we talk about what we ought to do, part of now the calculus must I think be that the position of this minister and I think, frankly, the position of some within government, is that we ought not to move in this area. Well, I think that if that is the position of Canada's new government, we ought to be thinking a little bit about, and be ready with some very direct responses. Pippa noted that this is not a balanced panel. It seems to me that when one sees what's happening within government, this is not a balanced government on this issue and that this is not a balanced debate and we ought not to apologize for panels that may or may not represent all the views of all the stakeholders. It seems to me fairly apparent that there is a certain group of stakeholders that has succeeded quite well in ensuring that their views have been presented before the government and, indeed, are reflected on internal government policy.

With respect to the Minister's views about "waiting and seeing": there's clearly no need at this stage for that. There is, and mindful of what Ren had to say, a need to consider what is most appropriate in terms of the best course of action. But "waiting and seeing" is to deny what Pippa and Andrew and others have outlined already this evening. It was very clear from the incidents, there are more incidents in this country, frankly, than there

are in the United States.

I'd also argue that there is an opportunity to act now, in spite of what I just read. If one takes a look at the AT&T/BellSouth merger and the fact that the FCC was able to extract certain net neutrality conditions, even when one thinks they are relatively weak and are time-limited. The reality is that from AT&T's perspective, a multi-billion dollar merger was not going to be held up by net neutrality provisions. Think about what is happening now in this current government, where we have an industry minister who is singularly focused on telecom reform, or perhaps more accurately described as telecom deregulation. This is the brass ring if you are Telus or Bell. The opportunity to gain that level of deregulation, I would argue, is not about to be derailed by the prospect of some sort of net neutrality provision. The opportunity to build in that kind of provision was never greater, given that we are going to deregulate now, and frankly, it was never more important because once we deregulate now, the opportunity for that that kind of provision will likely have been lost.

The arguments that markets will solve this issue, I think, were perfectly dealt with by Andrew in showing there is no real competition, but you don't even need those really great graphs to realize that; we all know that. For those that have Rogers as their provider – in the last couple of weeks, you, too received notification that prices are going up again, for the second time in this past year, for those who have high-speed access. In fact, this reflects exactly what Rogers told an investment conference and a series of investor experts just over a year ago – that there was a great deal of “price elasticity” such that they could increase prices without too much difficulty here and that's precisely what they've done.

One thing that we haven't talked about today, though, is beyond just competition, too, is the woeful lack of transparency, which to me is almost as important as the lack of competition. I'm a Rogers subscriber and I don't know if they package-shape (or I do know that they package shape) but I wouldn't necessarily know based on the kind of documentation that they provide. Indeed, for a very long time, Rogers denied that they engaged in any such activity and it was only after a considerable period of time that they finally acknowledged that practice was happening. Now, if they're going to advertise about the great high speeds and extreme service that I receive, surely there ought to be requirements with respect to transparency, in terms of disclosing precisely what the limitations on the kind of service that we get, that we are provided with.

Finally, this notion that we can't define “net neutrality” is simply not the case. We've already heard a couple of net neutrality definitions and while they vary somewhat, the Telecom Review Panel provided another; the AT&T conditions provided another – there's where “AT&T/BellSouth also commits that it will maintain a neutral network and neutral routing in its wireline broadband Internet access service. This commitment shall be satisfied by AT&T/BellSouth's agreement not to provide or to sell to Internet content, application, or service providers, including those affiliated with AT&T/BellSouth, any service that privileges, degrades or prioritizes any packet transmitted over

AT&T/BellSouth's wireline broadband Internet access service based on its source, ownership or destination." There are definitions that we can work with. There are concerns that exist right now, as we have heard, and it would appear that we have a government that is not listening.

But it is time, I would submit, for the community to begin to speak out so that it does start to listen – and if not Canada's new government, then at a minimum, Canada's opposition parties who perhaps, one day, might form Canada's new government (or Canada's old government, depending on what slogan they adopt). Thanks very much.

Pippa Lawson: Thanks for that rousing call to action, Michael. And I'm just looking around in the audience and I can see there are a number of people here that could easily be up speaking to the audience with the rest of us today, with a lot of expertise and knowledge, and who've done a lot of thinking on this issue. I want to open the floor – do we have a mic? Just this one? Okay, well here we go.

Yes, Russell.

Audience 3: I'll be loud enough without the microphone. Three very quick questions that'll have longer answers. Bill [St. Arnaud] isn't here, so I'm hoping that one or all three of you can talk about some of the things that Bill might have. There are a lot of conversations about the "last mile", and he talks a lot about "fibre to the home", about "condo build", and most recently, this whole concept of "green broadbands." So if it's possible to talk about that, those are all neat ideas.

Whenever there are alternatives that come forward, whether it's municipal wireless, automatically you have the telecommunications giants trying to sue the municipalities saying that "you can't compete with the private sector." So you either have the monopolies or any alternatives being sued, so how are we going to deal with that whole lawsuit problem?

And I'm curious who the authors of the briefing note from Industry Canada were, because it would be nice to know the names of those people so we can find out what part of Industry Canada [?] that they came from.

Pippa Lawson: Bill did send a little e-mail that I can read out. Bill St. Arnaud was supposed to be our fourth speaker tonight, and he is senior director of Advanced Networks for CANARIE, which many of you know is Canada's advanced Internet development organization. He's responsible there for the coordination and implementation of Canada's next generation optical Internet initiative, called CA Net 4. He's an engineer and is an internationally renowned expert. The reason he couldn't come tonight is because he's stuck in Chicago, and was speaking at some conference down

there.

So if you want, I'll read what he had to say, and Russell is right, it's too bad he's not here because he has some really neat ideas and some that are actually being put into operation in Ottawa right now.

“What is the real issue behind network neutrality?”

It is how to build and pay for the next generation last mile network -- generally assumed to be FTTh [Fibre to the home]. Carriers claim they need regulatory relief so they can justify the business case for building out these kinds of networks. Principally they hope to earn additional revenue by offering non-neutral premium services, either by themselves or by charging third parties.

Lots of people question whether this is a viable business case (regardless of whether there is network neutrality legislation). Several Wall Street analysts have said that carriers should forget about trying to make money from premium services. Their shareholders will get a better return if carriers focus on being regulated common carriers. But the hubris of telecom managers knows no bounds. But shareholders generally carry more clout than any regulator or government agency.

To my mind the challenge is to find new business models that encourage private sector to build next generation last mile networks that are open and unencumbered by silly teleco services and ‘features’.

We have proposed a couple models. These may not be the right answer. But the important thing is governments and regulators facilitate new entrants to explore new business models. We have proposed 2 possible models: customer owned last mile and Green broadband [that Russell was referring to] -- where the last mile infrastructure is bundled with your gas/electric bill [and, I guess, done in such a way that you can say it's environmentally friendly somehow in getting it {?}]. We are proposing to pilot these concepts in Ottawa and we are looking for support and interest from the community. This would be a first in the world, and make Ottawa a world leader in these developments.”

So that's Bill St. Arnaud from CANARIE and maybe there are people in the audience who could speak to this in more detail, and answer Russell's question in more detail. Panelists, any further response to Russell?

Andrew Clement: It is too bad that Bill isn't here because he is a terrific expert in this and has long been promoting the idea of what's referred to as “condominium fibre” which is to, for instance in a city, would be to provide fibre to the schools and other public facilities, and because of the enormous capacities of fibre, and because it would be passing by, a good portion of the population, relatively inexpensively, be able to provide

an alternative of very high capacity backbone that would last for decades and would really advance things. The green broadband notion, and I only can draw upon having read his slides, which I think are available, although I think that those – I think they're on the CANARIE site.

Pippa Lawson: He has his own website. If you Google “Bill St. Arnaud” you get his website and he's got all his presentations up there.

Andrew Clement: So just briefly, my understanding is that because he's given up on the telcos, but the other utility providers, particularly gas or hydro, because they have the crews and because they have to get to each of the houses, could lay fibre and build it into the existing bills (payments, not Bill Arnauts). He has some crazy scheme about arbitraging the future prices of energy and sort of [?] the marginal cost of the fibre build in that, but I think also, particularly in Ontario, because of the Smart program that's mandated by the provincial government, by 2010 all household electrical meters have to be smart-metered, which is recording the energy consumption by the time of day. One of the ways of handling that is through various kinds of backhaul, effectively, that could also provide the basis of laying this fibre. Of course, it's much more than what you would need for reading a meter, but it would be available there. He thinks that it's a very complicated thing; they haven't figured it out yet, and he may well be right. I think there are a number of options here and city governments and municipalities are major players who have an interest in this and if there's a lot they could do. Unlike the United States where there are legal prohibitions in some states about municipal building, particularly wireless, in Canada there isn't such (at least) legal restrictions but the lawyers are still there. Some brave cities like Fredericton have done this, and they have succeeded in many ways.

Michael Geist: [Video cassette change; Geist basically says it's not important to know who wrote the briefing notes] ...policy analysts and work its way up. But I will say the documents themselves come from the Telecommunications Policy department in Industry Canada.

Ren Bucholz: I believe the second question about what do we do about telcos or ISPs suing municipalities that are rolling out their own municipal WiFi. It does really depend on the kind of roll-out that we're talking about. It depends on the particular legal claims and the jurisdiction that we're talking about. You're right, in Canada, we don't have the same kinds of barriers but in the States, it does depend on whether it's the municipality itself, you know, rolling out a competing service, or if it's a community group, for instance, rolling it out to compete with telcos. But I think the answer to how you combat that is largely going to be a battle of public perception. It looks bad for telcos to do this because it looks like, you know, it looks like what it is – it looks like a naked attempt to defend a monopoly. So I think that if people [rest of words cut off].

Pippa Lawson: Next question.

Audience 4: I do work for Industry Canada (and you can read anything into that which you like). I just want to reinforce that last point. In Canada, we do have national jurisdiction, as opposed to the two-tier regulation in the United States, so a province like Ontario or Quebec cannot pass a law which forbids a municipality from doing this (at least that's my understanding). I've heard of no such suit in Canada. The issue that may arise, down the line, and this has been debated, is that if a municipality, or a utility like a gas company, or an electric company, does go into this business, does it take into account facilities [?] telecommunications companies (as defined under the Telecommunications Act) and does it need to be regulated as such? Now, if this is too esoteric for this audience, I would be happy to take this issue offline. I don't know what the correct answer is, thankfully it hasn't arisen so far. Michael, you might want to comment.

Pippa Lawson: We may have an answer in the back, actually.

Audience 5: The answer is yes. [audience laughs] But what they've done is they've actually set out separate companies to operate their telecommunications operations.

Audience 4: But the CRTC can chose to forbear.

Audience 5: They have.

Audience 4: It can always do that.

Audience 5. Yeah, they have already.

Pippa Lawson: There's a question behind Russell?

Audience 6: I didn't hear any mention of National Capital Freenet and I know they're small but the more assistance they can give, it would seem, the better you would have the possibility of an alternative to the big corporations. I, like you, was a subscriber to Rogers at \$49 for my Internet service, I'm down to about \$31 for National Capital Freenet, so the more they can be plugged the better.

Pippa Lawson: And pretty decent speeds, I understand, too... [audience members say yes] Anyone want to give details about what you can get from NCF?

Audience 3: It's just the Bell line, though, they're reseller of the same Bell lines, it's still Bell/Rogers/you know, Ottawa telecom.

Audience 5: I just have an observation and then actually a question. The observation was earlier on, was why don't we have the debate in Canada. I mean, I think one reason we don't have the debate in Canada is because Google's not here arguing the point, and Microsoft's not here arguing the point. We need to be realistic as to who the players are and who has what at stake. Here in Canada, those large content, you know, people who have an interest in the net neutrality side of things, they're just not a presence. So it comes down to other people who have a strong interest to make the case; we don't have these huge corporate interests making them.

The other point, though, while clearly I believe net neutrality is an extremely important one, I'd be interested in opinions or views on the fact that the focus is not being on the infrastructure but on the Internet. I mean, it is partially on the infrastructure but I'm thinking of in terms of this is when Shaw offers a telephone service that uses voice-over Internet protocol (it's a VoIP telephone service), it doesn't touch the Internet. When Rogers does that, it doesn't touch the Internet. These companies are offering things based on IP, but they're not using the Internet. So in many ways, they are not competing with Vonage in the sense of they're not competing with an Internet-based service. The other aspect about that is also with respect to their infrastructure, when Rogers offers a VOD service, it's not doing that over the Internet. When Rogers offers its cable service, it's not doing that over the Internet. So it's important I think to understand that what we're looking at is, we're looking at infrastructures that are subdivided and only part of the capacity is dedicated to the Internet. And a larger question then becomes, given that the infrastructure owner has the right to do that (they are doing that), we need to look at: is there going to be a solution to some of these issues by means of regulating net neutrality or is a more fundamental approach required, which comes back, I think, to diversity of infrastructures? What we really need are more infrastructures and in that regard, I think we need to look at who owns the spectrum? Who's buying up all the spectrum that might possibly compete with the wireline stuff? I think we all know the answer to that: it's not some new third player. [pause] I guess that's a question. [audience laughs]

Andrew Clement: Just on that last point about buying up spectrum -- a number of municipalities are complaining that when they try to provide municipally-based Internet services, even for public safety and their own operations, they are not able to get that because the telcos have basically bought up all of the available WiMAX spectrum and they are not offering services over all of that. In a way, they are engaging in what is

referred to as "spectrum squatting" because if they were to develop it undermines their own business, but they want to keep other people, you know, out of it. This is another thing that Industry Canada might well look at because Industry Canada regulates those and certainly, by opening up more spectrum and making sure that those who own spectrum use it in effective ways, that would go a long way to help building those other aspects of infrastructure. I think your point is well taken, that it's not just the Internet *per se* that we need to be looking at, but the whole range of strands of that infrastructure and they need to be seen in some ways together, as something that we have a vital public interest in seeing what's happening with that.

Michael Geist: Actually, I just wanted to echo your first point. When that point was mentioned about the lack of policy infrastructure, I made a note to myself that I thought it extended well beyond just the policy capacity to the fact that many of those companies that you mentioned that have been active on this issue in the United States do not have an active presence in Canada -- which presents a significant problem not just frankly on net neutrality but on copyright, another area where some of the consumer electronics companies that are very active in the United States on copyright are far less active here. In a sense, it sucks to be us. We don't have these companies here that are all that active. Yet at the same time, if one takes a look at the net neutrality coalitions in the United States, while certainly Google plays a key role in funding some of this, they're not alone, and library associations and others have been active. So I think that it's important for the associations in Canada that are here to begin to speak out because I think there some that should have a vested interest in this issue and do have some capacity to try to take this issue on. My sense in having conversations with a number of the larger US players about the prospect that they might enter the Canadian market is that there is an openness to do so, particularly if there is a prospect of trying to advance that policy agenda in this country, if only to set the example that might be followed in other jurisdictions. So, I think, to borrow the line from the movie: "If we build it, I think they'll come." But I think we have to start building it first.

Ren Bucholz: I was just going to say, also, that we've been talking a lot about the corporate interests, the content providers on one side and the network or the infrastructure owners on the other side and to give a more full-bodied picture of the way the activism has worked in the United States over the last year or two -- I think it's really important to note that there is a large grassroots component that does have a lot of funding, a lot of energy behind it. So while we may not have as many domestic corporate content-holders, we do have the resources to put together groups that would mirror the FreePresses or the MoveOns or the other kinds of NGOs and political organizations in the States that have been very active on bringing this to a kind of populist level. So I would just point that out -- that we have the seeds of that sort of thing in rooms like this.

Pippa Lawson: Maybe I can just repeat Sabina's point from the beginning, that there are

some sheets at the back so if there are people in this room tonight that are interested in working on the issue from the public perspective, if you sign that, some of us here will try to gather those names and contact information and maybe try to get something going.

Andrew Clement: I forgot in my remarks to say a bit more about the Alternative Telecom Policy Forum that we conducted. My colleague, Marita Moll, who actually was the convenor of that session (a number of you here were at it) reviewed the Telecom Policy Review Panel's recommendations and we came up with some of our own. Today we've sent a letter to the Minister of Industry and we have some copies here, I understand, so that if you would like to hand those out, Marita, or would you like to address this?

Marita Moll: I thought maybe I would just put them on the table at the back and people can pick them up when they go out. It's a letter to Bernier about the recommendations from the Alternative Telecom Policy Forum and it does contain recommendations on the net neutrality issue.

Audience 7: Just a couple of things: if you're really worried about consumer access to content of your choice, it seems to me that the biggest barrier in Canada is not the telcos or the cable companies but the CRTC. Because the CRTC tells us what we can watch and what we can't watch by putting limits on content. So if you think that market forces is going to block access, you should see what regulation does. Second (I've got two more very quick points), I've heard over and over again that innovation is on the edges of the network, not in the network itself. For the last 25 years, if you look at the major innovations -- you look at digitization, you look at optical fibre (and multiplexing of that fibre), you look at mobile and the use of wireless band -- these are all things that are happening in the network. We don't know where the innovation's going to be tomorrow, it might be on the edges, it might be in the network -- don't assume it's going to be on the edges. It might very well be in the network. And very quickly, the third point is that Pippa, you invoked the common-carrier model, and over the years, the common-carrier model was marked by price discrimination, by discriminatory treatment of shippers and users. That was the only way to recover fixed costs. Railways had a freight classification. You paid vastly different amounts according to what you were shipping. Both the railway companies and the regulator looked very carefully at what was inside those cars. And if you look at the past of telecommunications companies, discrimination in rural, urban, business, residence, still here today for the same service. You name it, it's there. If you think that by getting regulation you're going to eliminate discrimination, I think you're wrong because you're going to go the other way.

Michael Geist: I just want to respond to the CRTC point. The CRTC makes for a good bogey-man but I think it's the wrong target in this instance. Particularly where we're talking about Internet content, the New Media decision served us, I think, quite well. It's

worth taking a look at the broadcasting report that the CRTC released in late December in response to Bev Oda's requirement that they look at broadcasting. In fact, what you find when you take a look at the various submissions is that there is an enormous amount of pressure on the CRTC to rethink the New Media decision coming on the one hand from groups like SOCAN and others who would like to find ways to regulate the amount of content that comes through the pipe in Canada, and on the other hand, the broadcasters themselves who would also like to rethink this because they are increasingly concerned about the streaming of US-based television into Canada and what that will mean for their ability to buy that licensed content and replace it with Canadian commercials. So I actually think that the CRTC over the last number of years has done us quite well in terms of treating that content that comes through the Internet in an equal fashion without putting in the kinds of requirements that we see in some other media. But it's worth noting that that decision is under pressure from a number of different parties.

Ren Bucholz: I just wanted to respond really briefly to the idea of where innovation takes place. I should have been more specific in my comments earlier. I didn't mean to paint the interior of large companies as a creative wasteland. That's obviously not the case and there's a lot of good stuff that happens there. I think that it would have been more accurate to say that a new kind, and a new scale of innovation and inventiveness is made possible when you give the tools of creation to people at the edge of the network. Instead of having planned innovation, or kind of staged and kind of rolled-out innovation that takes place in the marketing department or the R&D department out, and ripples out, that having innovation that takes place from a panoply of sources is a powerful, useful, and valuable thing that we should maintain in whatever kind of net regulation we do. Thanks for the clarification.

Audience 8: Just two points: first, I utterly, fully agree that everything everyone in this room instinctually knows when you consider the World Wide Web and Google on top of it, the really important innovations have changed how knowledge is disseminated, gathered, and distributed have not come from network organizations. I think George and I will have to fight to the end of time on that one. The other thing, just as a point of fact, is just to note that the department will be, this spring, investigating auctions of radio spectrum. I think this is another opportunity --

Pippa Lawson: Industry Canada?

Audience 8: Yeah. So we need to be aware then, I think, of what kind of policy -- these could be quite progressive, these could be just opportunities for the carriers to buy up more. So it's something to watch out for, in terms of possibilities for rivalrous infrastructure.

Ren Bucholz: There's a question back there or George do you want to respond?

Audience 7: I never said it was the carriers who were invading in the network, it's not. It's the equipment manufacturers, but it's through the network rather than through the edges. That was my whole point.

Ren Bucholz: I see, yes.

Audience 6: I never did say it was the carriers.

Ren Bucholz: I understand. Okay. So you've been waiting for a while at the back.

Audience 9: My name is Stéphane Couture. I'm from Montréal, UQAM. The way I understand the network neutrality campaign in the US, I think it was kind of a key issue where many actors regrouped together and so it was a central issue that succeeded in bringing people together. I feel in Canada, from what I understood, that there are many kinds of issues but the main issue is like the concentrated ownership, and the vertical alignment of telecommunication companies, and the lack of mobilization around policy issues. What I understand, also, is there are other issues that network neutrality -- for instance, there are copyright issues, there's all this stuff. So my question for everybody, it's more kind of strategic question, should we concentrate on the issue or the metaphor of network neutrality at this point? If we want to have concentrated work? Or should we stay more at the larger level and think more about the DPRP report and all this?

Ren Bucholz: That's a great question. Basically, strategically, how do you conduct activism on these issues because there's a range of different issues and they border one another and kind of -- I guess the question is what do you focus on. I'll just briefly say that EFF, my organization, in the states, has a pretty well-developed activism network that started from nothing basically, that started from people who were interested in a range of different issues kind of getting information from EFF. We eventually rolled out tools that allowed them to write to Congress, that allowed them to kind of become informed on a regular basis with material these kind of technical and legal matters that was digestible from the [?] standpoint. We're just starting to do that with the help of CIPPIC here in Canada, but if you go to onlinerights.ca -- this was basically a site that we put together in preparation for the copyright fight over Bill C60 in 2005 and the beginning of 2006. It has a lot of those same kind of tools and we're planning to make it much more active as we are facing issues like net neutrality and issues like copyright reform as new legislation is supposed to drop this year. So if you go to onlinerights.ca

and sign up for our mailing list, we'll be informing people about these kinds of issues and I think that the sort of short answer to your question is that you don't necessarily have to choose. I think you're right that these issues are related and I think that the more accessible information and the more organized we are, the more we can take on so it's not an either-or situation.

Michael Geist: My own view is that we would do better in Canada by talking about this as the two-tier Internet rather than net neutrality. I say that just because, you know, the notion of the two tiers within the healthcare debate is well known amongst Canadians (because everyone [meaning the audience] nods their head, I mean, obviously). Whereas net neutrality, which I think has worked well in the States in part because of some of the general considerations in the States about the need to be fair and neutral. Here in Canada painting this as a two-tier Internet -- one for some players and the rest of it for everybody else -- is one that might well resonate better, I think, amongst many Canadians because this remains a tough issue for a lot of people to get. But that's one that I think is easy to visualize even though it's not really anything visual. [audience laughs] Nevertheless, I think there are opportunities to do [?].

Audience 4: A comment and a question. A comment for those that do not know Dr. George Haritan, is that he served as Executive Director of Research for the Canadian Transport Commission and also as a consultant to the Telecom Policy Review Panel, so he knows what he's talking about. The question now. The concepts of discrimination and differentiation are extremely relevant to it, in common-carrier regulation. If you want network service providers and ISPs to be regulated as common carriers, how would you argue against service discrimination and carriage based on differentiated service? I mean, after all, you fly first-class versus economy in planes and in India we used to have five classes on the railways. They were all regulated as common carriers. By the way, George wrote a paper many, many years ago giving a very famous example. There was a time when all seats on a trans-Canada airlines flight from Toronto to Vancouver were charged exactly the same rate, and he looked forward to a time when every seat would be priced differentially, because that's what computerized reservation systems do. We may be approaching that.

Pippa Lawson: Thank-you. We all have to be out of here by 9 o'clock so is there a quick response to that? And then someone [pointing] is dying to ask a question; I'm really sorry we didn't get to everyone else and then we'll make some closing remarks.

Ren Bucholz: I think, just very briefly, the difference between a situation where you're charged the economically-optimal amount for a particular seat, for instance, is a very different situation than the one where a service provider decides whether or not you can even get on the train. Or whether or not you can visit a particular destination. Or whether

or not other sorts of services that are generally available to you but for the decision of the network operator. I think that's kind of the difference. But I agree with you that there are lots of opportunities to use this technology to come up with economically accurate models *per se* for paying for content but I think that's a different issue from discriminating or differentiating based on the services that are made available for that network.

Audience 9: I'm really discouraged by the whole WiMAX thing and how it's happened. If someone could explain to me how we can trust the CRTC after -- and this spectrum has ended up in the two of the larger buyers; I don't understand the issue well enough but I'd love to hear more about that, and about how it's being held.

Pippa Lawson: Is there anyone in the audience who can speak to that?

Audience 5: They have the most money. [audience laughs]

Audience 9: That's what I was worried about. And then just to underline, also, what Andrew was saying: people who were at the Municipal Wireless conference a couple of weeks ago in Toronto, and municipalities might be emerging as a force, as Andrew said, to push for this idea of -- Mayors sort of understand that telecom infrastructure is vital for them and I know we're all going to be meeting again to talk about this again so I wonder if looking at them as an ally, because they have increasing political power. And then Pradir was talking about the train. It's a wonderful example, I think that if you want regulation you here about where you want to go... market forces? Market forces are great to serve a goal and I don't think we have clear what is our goal for Canada in terms of broadband penetration. I'm not clear if there is one here, we've seen that we met the last objective and we've done all this stuff and [?] so for market regulation to play a force in that, great, and then we can keep track of whether or not market forces are getting us toward that goal.

Ren Bucholz: Well said.

Pippa Lawson: I just want to point out that I think this has been a really good discussion. I'm sorry we didn't have more time. I'm going to turn it over to Sabina to wrap up. I'm particularly sorry we didn't get to the issue of libraries, the role of libraries.

Sabina Iseli-Otto: I only have a couple of things to say. One, thank-you so much to our sponsors: the Canadian Association of Research Libraries (CARL), the Ontario Library Association, the Ottawa Public Library, and the Canadian Centre for Policy Alternatives

who made this happen. And also, our speakers are basically our sponsors as well because they came as volunteers. So thank-you all very much. I invite you all to the Parliament Pub, if you know where that is, and we can continue the discussion there. Thank-you all SO much for coming. And oh - one more thing. If you want a copy of the video, we probably won't have time to hang out here so I can tell you where it's going to be, but you can e-mail me: sabina at alumni.uwo.ca. If you missed that, come talk to me. Thank-you all so much for coming.

The End.