

Net Neutrality in Congested Spectrum: **Getting Underneath the Headlines**

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Contents

1. Starting Points
2. Headlines

Underneath:

3. **What** are we talking about?
4. **Why** does this keep coming back?

net neutrality:

promise of permissionless innovation

role of intermediaries

efficient & fair sharing of limited resources

1. Starting Points

- Mozilla Foundation: “Internet health”

The Internet is an ecosystem. A living entity that billions of people depend on for knowledge, livelihood, self-expression, love.... The health of this system relies on – and influences – everyone it touches. Signs of poor health in any part impacts the whole. We’re all connected.

How healthy is our Internet? How might we understand and diagnose it? We believe this is a timely and necessary conversation, and we hope you’ll join in.

Our individual actions shape the health of the Internet ecosystem. Only by recognizing where the system is healthy can we take positive steps to make it stronger. Only by understanding where it’s at risk can we avoid actions that weaken it.

1. Starting Points

- Mozilla Foundation: “Internet health”
- five themes:
 1. **open innovation**: how open is it?
 2. **digital inclusion**: who is welcome?
 3. **decentralization**: who controls the Internet?
 4. **privacy & security**: is it safe and secure?
 5. **Web literacy**: who can succeed online?

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- Mozilla Foundation: “Internet health”
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1. Starting Points

- Mozilla Foundation: “Internet health”
- five themes:
 - **digital inclusion: who is welcome?**



- disaster connectivity
- underserved areas

1. Starting Points

- Citizen Lab(*): “**information controls**” & mixed methods
(* Munk School of Global Affairs, University of Toronto)
- key themes:
 1. **targeted threats**: digital espionage against civil society (*spying*)
 2. **free expression online**: network filtering & interference (*blocking*)
 3. **transparency & accountability** mechanisms:
governance mechanisms for personal information
 4. **app privacy & controls**: actual handling of personal information

1. Starting Points

- Citizen Lab(*): “**information controls**” & mixed methods
(* Munk School of Global Affairs, University of Toronto)
- key themes:
 - **free expression online: network filtering & interference** (*blocking*)
 - **Egypt & Turkey:** DPI equipment used improperly to redirect downloads of some Windows software to state-security-services-linked spyware
 - **Jordan:** blocking access to Internet Archive (archive.org) through DNS poisoning & IP blocking
 - hand-in-hand with **entry regulation** ensuring access or transit networks well-coordinated with state

1. Starting Points

- “congested spectrum”
- network management considerations:
 - lightly-licensed spectrum; success & neighbour factors
 - access link congestion
 - backhaul congestion
- quality of experience—“up-to” speeds at peak hours
- quality of service is 2nd-most-frequent Internet issue (CCTS)

Contents

- ~~1. Starting Points~~
2. Headlines

Underneath:

3. **What** are we talking about?
4. **Why** does this keep coming back?

net neutrality:

promise of permissionless innovation

role of intermediaries

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2. Headlines



2. Headlines

Tim Wu, Canadian-U.S. law professor, writes a paper (2003).

- “conflicts between the private interests of broadband providers and the public’s interest in a competitive innovation environment centered on the Internet”
- wants to “forbid broadband operators, absent a showing of harm, from restricting what users do with their Internet connection”

2. Headlines

FCC chair's 2003 speech adopted in 2005 as "principles":
Internet users should be able to

- a) Access the lawful content of their choice.
- b) Run applications and services of their choice.
- c) Connect their choice of legal devices that do not harm the network.
- d) Access competition among network, application and content providers.

2. Headlines

Madison River case:

- A North Carolina LEC/ISP blocks VoIP.
- Vonage complains to the FCC.
- Madison River & FCC settle for \$15,000.

FCC chair: “The industry must adhere to certain consumer protection norms if the Internet is to remain an open platform for innovation.”

2. Headlines

From 2007-2014, FCC & courts play ping-pong:

- Comcast/Bittorrent, FCC rebukes
- court says no authority
- FCC adopts Open Internet Order (2010)

- Verizon challenges, court says no authority (2014)
- John Oliver goes viral, Obama asks for stronger approach
- FCC reclassifies as “common carriers” (2015) after >3.7 million comments

2. Headlines

In Trump era, back to ping pong:

- new FCC chair vows to repeal
- common-carrier classification as heavy-handed
- >1 million comments, many fake
- FCC adopts another order
- states begin challenging & adopting
- third parties, including Mozilla, file suits

Contents

- ~~1. Starting Points~~
- ~~2. Headlines~~

Underneath:

3. **What** are we talking about?
4. **Why** does this keep coming back?

net neutrality:

promise of permissionless innovation

role of intermediaries

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3. What are we talking about?

The principle that,

to the extent feasible,

ISPs should provide access to
all content and applications

without blocking or discriminating as to
source, destination, application, content, or device.

3. What are we talking about?

Twelve episodes undergird the whole thing:

- a) TELUS-TWU labour dispute
- b) Cleanfeed Canada
- c) VoIP framework
- d) hate speech application
- e) TPR Report
- f) wholesale throttling
- g) Bell RAP
- h) mobile TV (Videotron, Bell)
- i) Rogers Centre Ice
- j) unlimited music (Videotron)
- k) Loto-Québec
- l) FairPlay Canada

3. What are we talking about?

a) TELUS-TWU labour dispute (2005):

- TWU site allegedly advocated violence, property damage
- TELUS blocks Internet Protocol address
- overblocking; section 36
- injunction later sought on broad matters

3. What are we talking about?

b) Cleanfeed Canada (2005) :

- Cybertip.ca receives complaints from Canadians
- list created for Cleanfeed Canada
- distributed securely to ISPs, which filter
- no "human" intervention by participating ISPs

3. What are we talking about?

c) VoIP framework (TD 2005-28):

- Yak submitted that the Commission should take specific measures to guard against anti-competitive activity by the ILECs and cable carriers, in their capacity as the underlying Internet access providers, by imposing a VoIP access condition
- The Commission considers that it can rely on subsection 27(2) of the Act, where appropriate, to prohibit a Canadian carrier from restricting its broadband customers from dealing with an alternative service provider of the customer's choice. This issue can therefore be addressed by the Commission ... case-by-case

3. What are we talking about?

d) hate speech application (2006)

- to require ISPs to block two websites re: hatred and genocide
- The Commission notes that section 36 of the Act would not allow it to require Canadian carriers to block the web sites; rather ... the Commission has the power to permit Canadian carriers to control the content or influence the meaning or purpose of telecommunications it carries for the public. The scope of this power has yet to be explored."

3. What are we talking about?

e) TPR Report (2006)

- The Telecommunications Act should be amended to confirm the right of Canadian consumers to access publicly available Internet applications and content of their choice by means of all public telecommunications networks providing access to the Internet. This amendment should

3. What are we talking about?

e) TPR Report

- (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.

3. What are we talking about?

f) wholesale throttling

- The Commission considers that the nature of the changes resulting from the implementation of traffic-shaping practices should oblige Bell Canada to provide prior notification to its GAS customers.... The Commission considers that the notification period should be at least 30 days. The Commission further considers that, at a minimum, the notification of changes should provide clear and meaningful information describing what the changes are, what traffic can be affected, under what conditions, and for how long.

3. What are we talking about?

g) Bell Relevant Advertising Program

OPC 015-001 (Relevant Advertising Program):

“Telecommunications service providers, like Bell, act as “trusted agents”. They provide customers with access to Internet, mobile and landline phone services, and are in effect the pipeline through which all customers' mobile, telephone and internet communications, however sensitive, must flow. Customers entrust their private communications to their telecommunications service provider with the expectation that they will be delivered safely and securely, and that they will generally not be monitored unless it is for a purpose directly related to the provision of the service.”

3. What are we talking about?

Twelve episodes undergird the whole thing:

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Contents

- ~~1. Starting Points~~
- ~~2. Headlines~~

Underneath:

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4. Why does this keep coming back?

Recall:

- The principle that, to the extent feasible, Internet access providers (“ISPs”) should provide access to all content and applications without blocking or discriminating as to source, destination, application, content, or device.

4. Why does this keep coming back?

Network neutrality's core proposition is that Internet access providers ought to **remain neutral** “as between competing content and applications” and **interfere as little as possible** with how their users interface with third parties also connected to networks participating in the “Internet” cloud.”

4. Why does this keep coming back?

Shorthand for the view that:

- **Notwithstanding** important real-world network management requirements,
- the communications ecosystem is **immeasurably richer** when it tends towards an “Internet” that is a **general-purpose network**
- federating **dumb-edge-pipe networks mindful of the end-to-end principle.**

4. Why does this keep coming back?

Permissionless innovation as frame:

- Promise of permissionless innovation:
not “locked in” by a telco. Over-the-top competition.
- Role of intermediaries:
don’t tell me what I can do--don’t control my Internet activity
- Efficient & fair sharing of limited resources:
traffic management.

4. Why does this keep coming back?

Telecommunications Act:

27(2): No Canadian carrier shall,
in relation to the provision of a telecommunications service or the
charging of a rate for it,
unjustly discriminate or give an undue or unreasonable preference
toward any person, including itself,
or subject any person to an undue or unreasonable disadvantage.

4. Why does this keep coming back?

Telecommunications Act:

36:

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

Net neutrality regulation in Canada

TRP 2009-657 (Internet Traffic Management Practices):

- a) **Rationally connected and narrowly tailored:** Can the ISP demonstrate that the impugned ITMP is designed to address the need and achieve the purpose and effect in question, and nothing else?
- b) **Least restrictive means:** Can the ISP establish that the impugned ITMP results in discrimination or preference as little as reasonably possible?
- c) **Least harmful means:** Can the ISP demonstrate that any harm to a secondary ISP, end-user, or any other person is as little as reasonably possible?
- d) **Necessary:** Can the ISP explain why, in the case of a technical ITMP, network investment or economic approaches alone would not reasonably address the need and effectively achieve the same purpose as the ITMP?

Net neutrality regulation in Canada

TRP 2009-657 (Internet Traffic Management Practices):

Retail disclosures, at least 30 days prior:

- pricing information about economic ITMPs, and
- whether technical ITMPs in use and, if so, with what effect.

Net neutrality regulation in Canada

TRP 2009-657 (Internet Traffic Management Practices):

Retail disclosures, at least 30 days prior, for technical ITMPs:

- why the ITMP is being introduced,
- who is affected by the ITMP,
- when the ISP will apply the ITMP,
- what type of Internet traffic is subject to the ITMP, and
- how the ITMP will affect a user's experience—including specific effect on speeds.

(Algorithmic transparency?)

Net neutrality regulation in Canada

TRP 2017-104 (Differential Pricing Practices):

Test to be applied:

- a) degree to which the treatment of data is agnostic (i.e. data is treated equally regardless of its source or nature);
- b) whether offering is exclusive to certain customers or certain content providers;
- c) impact on Internet openness and innovation;
- d) whether financial compensation involved; and
- e) whether exceptional circumstances demonstrate clear benefits to the public interest and/or minimal harm associated with a differential pricing practice

Contents

- ~~1. Starting Points~~
- ~~2. Headlines~~

Underneath:

- ~~3. **What** are we talking about?~~
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Espionage to filtering: Manila Principles

- Manila Principles on Intermediary Liability
 - civil society framework (2005), much bandied-about
1. Shield intermediaries from liability for third-party content.
 2. No required content restriction by intermediaries without court order.
 3. Content restriction orders: clear, unambiguous, follow due process
 4. Mandated content restriction must be necessary & proportional.
 5. Mandated content restriction must respect due process.
 6. Transparency and accountability must be built into any content restriction requirements.

Constrained resources & platform politics

- telcos as common carriers: different than info intermediaries,
- migrate to another one at a click
- telco bandwidth may genuinely be limited

- but what cements us to a Facebook or to a Twitter?
- switching costs, network effects, market permeability
- scarcity: attention?

Contents

- ~~1. Orientation~~
- ~~2. Permissionless innovation as frame: in-house practice~~
- ~~3. Privacy and not being spied on~~
- ~~4. From espionage to filtering~~
- ~~5. Constrained resources & platform politics~~

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Thanks.

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