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# *The ‘Net Neutrality’ Debate*

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**Framing the issues from a software/services company perspective**

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# What is “Net Neutrality” ?

An issue with several dimensions:

- Technical
- Economic
- Business Model / Value Chain
- Legal
- Political\*
- Rhetorical\*

\* *The last two will be largely omitted from today's discussion*

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# The Technical Dimension (IANA)

- Internet Architecture
    - “Backbone” v. “Last Mile”
    - “End-to-End” Principle (a principle, not a rule)
    - “Best Efforts” delivery of IP datagrams
    - The Internet as a Platform
  - Quality of Service
    - Latency (delay) and “Jitter” (variation in delay)
    - Guaranteed throughput (e.g., 5 mbps, guaranteed)
    - Instantaneous throughput (e.g., 15 mbps for 5 minutes in order to download an HD movie)
    - Impacts on certain services (voice/video) ?
    - Can QoS be delivered? Is it needed ?
  - IP Multimedia Subsystems and Network Mgmt
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# The Economic Dimension

- Antique problems of network rate design
    - High fixed (sunk) costs, low incremental costs
    - Is cost recovery only from subscribers sufficient?
    - Two-sided markets (think: singles bar)
    - Relative inelasticities of demand / Ramsey pricing
  - Efficiency and Consumer Welfare
    - Allocative Efficiency – rationing based on demand
    - Value of Enhanced Connectivity Options (FTTx)
    - Value of Online Innovation and Consumer Surplus
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# The Economic Dimension

FAQ: where's the market failure (that warrants net neutrality rules?)

- Answer #1: A vertically integrated network operator may find that it earns higher margins on upstream content and services than it can charge the end user for the simple Internet connectivity.
  - It may therefore have an incentive to restrict competition by unaffiliated upstream content and services.\*
  - Also, it is easier to switch online service providers than to switch access providers (click of a mouse v. install package (or truck roll))
- At the same time, platform providers do have incentives to maximize choice on their platform, to add value by increasing applications, content, etc.\*\*
- While anti-competitive acts of this type should be addressed, this may not be the main concern that net neutrality rules should be available to deal with.

\* See "Statement of Jerry Hausman and Greg Sidak on behalf of GTE, in opposition to AT&T/Media One merger." (1999) <http://www.criterioneconomics.com/docs/gteat.PDF>

\*\* See Farrell and Weiser <http://jolt.law.harvard.edu/articles/pdf/v17/17HarvJLTech085.pdf>

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# The Economic Dimension

- Answer #2: A common networking issue: terminating bottlenecks.
- Once a given consumer has chosen to subscribe to a particular carrier, an online service provider (“OSP”) has no or few alternative ways to reach that consumer, other than the consumer’s carrier.
  - Creates the ability of terminating carriers to charge unaffiliated firms for access, potentially at “excessive” or discriminatory rates
  - One can debate whether this is good (allocative efficiency/Ramsey pricing) or whether it is bad (“excessive” charges to someone else’s consumer)
  - One can also debate whether consumers would “revolt” if OSPs are charged.
- In any event, regulators have always intervened in these cases: IXC access charges, wireless call termination (calling party pays).
  - Cable program access is another, related, example
- In the case of the Internet, it could lead internet access providers to seek to collect tolls or other charges from Internet content providers as a condition of packets flowing to the consumer.\*
- Could lead to lower consumer surplus: higher prices/reduced choice
- Real “net neutrality” Q is how to intervene as little as possible, but not less

\*See “Videotron lobbying for Internet ‘transmission tariff’

<http://www.theglobeandmail.com/servlet/story/RTGAM.20061101.gtvideotron01/BNStory/Technology>

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# Business Model / Value Chain Dimension

- Traditional telco business models (both ILEC and CLEC)
    - Earn higher margin on termination to subsidize origination/access
    - More recently, compete for access subscriptions and origination
  - Traditional cable business models
    - Create “walled garden” of interesting and attractive content
    - Bear responsibility for content distributed (violence, sex)
    - Earn fees or equity stakes; seek exclusivity for sports events
  - Internet business models
    - Internet access sold similar to telephone service (flat-rate)
    - Online advertising a major driver of investment in services
    - Value of access interdependent with content / services available
    - Content/services built in garages, pizza parlors, dorm rooms...
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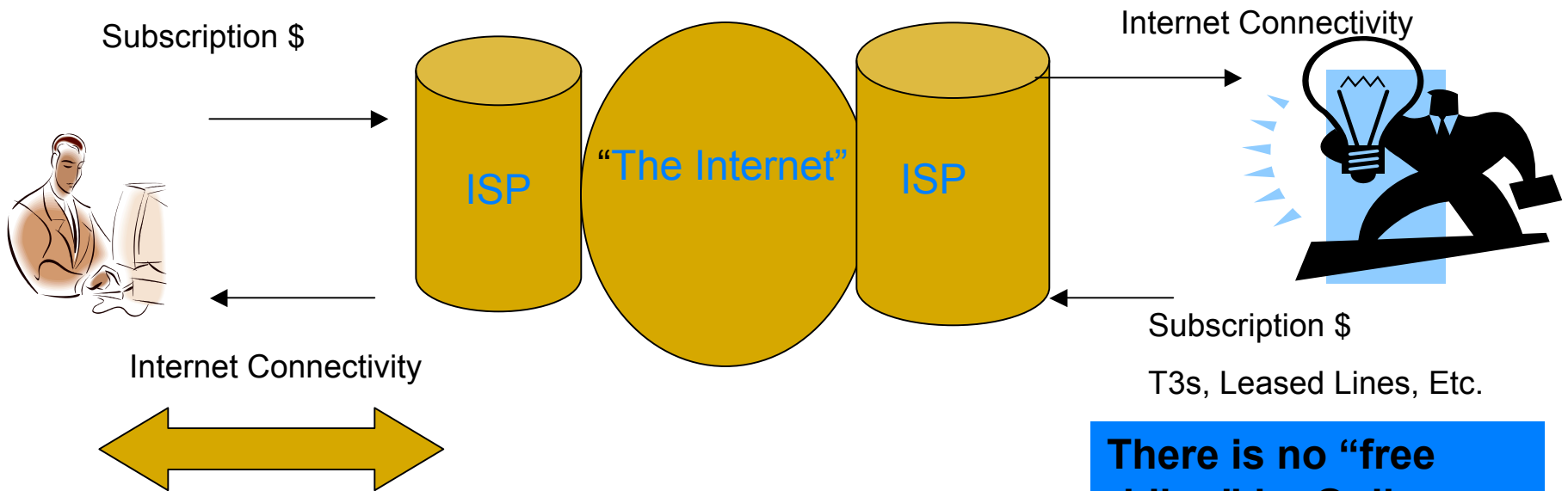
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## Business Model / Value Chain Dimension

### Technology and Economics Suggest New Models

- “Walled gardens” for IP services
    - Mobile network operators pioneering this approach
    - Regulatory pressure for responsibility over content
    - Can be offered alongside access to open Internet
  - QoS Enhancements over the Last Mile
    - Netop can offer a service level agreement (SLA) to an online service provider for QoS guarantees
    - Creates two-sided market for internet access
    - Could be positive; drive returns on new investment
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# This is Net Neutrality (more or less)



The "Last Mile" to The Consumer

- Can Netops offer the Online Service Provider an SLA for Preferential QoS over the Last Mile?
- Should law prohibit? (No)
- Should law prescribe boundaries? (Yes)

**There is no "free riding" by Online Service Providers !**

*N.B: Market for SLAs is different market than that for retail subscriptions (cable v. telco v. BPL, etc.)*

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# Legal Dimension – United States

- *Computer Inquiry (1966-?)*
    - US FCC creates rules to ensure competitive access to transmission by data processors.
    - Unwieldy and intrusive regulation results
  
  - Madison River case (March 2005)
    - Case settled b/c Madison has pending matters at the FCC
    - Q of whether FCC has jurisdiction over ISP unresolved
  
  - Wireline Internet access classified as “information service” alongside cable modem (September 2005)
  
  - FCC Policy Statement
    - Embodies four key “connectivity principles”
    - Concepts are broadly accepted (High Tech BB Coalition)
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# Legal Dimension

## **FCC Policy Statement / Connectivity Principles:**

Consumers are entitled to:

- Access lawful Internet content of their choice;
- Run applications of their choice, subject to law enforcement needs;
- Connect their choice of legal devices that do not harm the network (citation to Hush-a-Phone)
- Competition among network providers, application/service providers and content providers

The High Tech Broadband Coalition, of which Microsoft is a member, proposed right of the consumer to information about their service plans as the 4<sup>th</sup> principle.

FCC's jurisdiction to enforce these principles exists under Title I, though questions remain. Title I jurisdiction is "ancillary" jurisdiction – must relate to some other designated function.

## **Legal Considerations Overseas:**

- Europe generally considers NN rights such as the above to be protected by existing law
    - Examining NN in the context of telecoms framework review
    - The issue also considered important to growing the EU online content market
  - Japan is examining the issues in the context of competition law
  - NN issues arising in Korea (Hana TV) and elsewhere
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# So What Is Net Neutrality Again?

Some novel formulations :

- Tim Berners-Lee: *I pay to connect to the net with a given quality of service, and you pay to connect to the net with the same or higher quality of service, then you and I can communicate across the net, with that quality of service.*“
  - Symmetrical SLAs: Where a network operator offers QoS enhancements to online service providers for enhancements over its network, it must offer the consumer a symmetrical (pro rata) arrangement
  - Where network operators offer QoS enhancements to online providers, they may not restrict resale thereof.
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