CS 4873: Computing, Society & Professionalism

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Week 8: Net Neutrality
February 26, 2020

Midterm Exercises

- Material through today (Feb 24, Algorithmic Surveillance)
- http://www.munmund.net/courses/spring2020/Midterm_review_exercises.pdf

Quiz 3

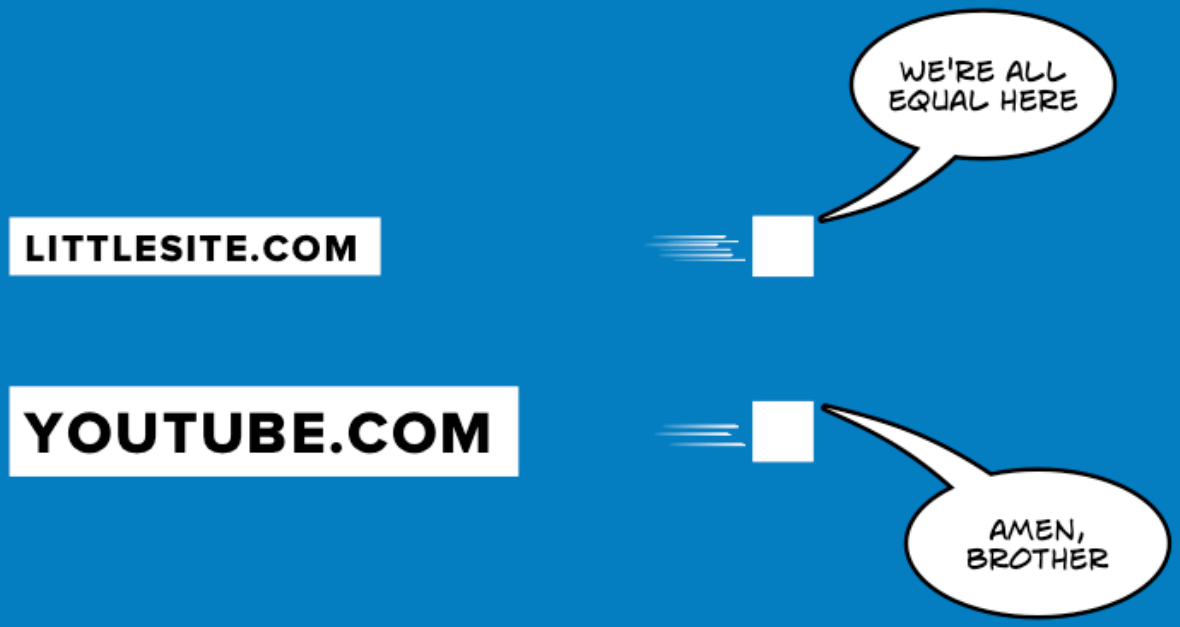
No matter where it started, it's got the same 'speed limit' and audience access as any other chunk.

LITTLESITE.COM

YOUTUBE.COM

Slides by Ian Lurie

In other words, data sent by my little teeny-weenie site can go just as fast as, and reach the same people as, data sent by a giant like YouTube.



Slides by Ian Lurie

All things being equal, you, the consumer, will see no difference in load times. And you can access all content. No one's filtering it.

LITTLESITE.COM

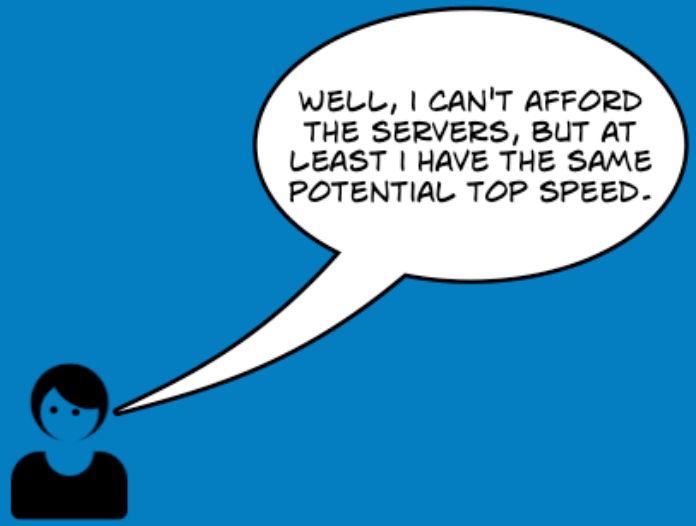
YOUTUBE.COM

Slides by Ian Lurie

All things being equal, you, the web site owner, can deliver content just as fast, to the same people, as YouTube.

LITTLESITE.COM

YOUTUBE.COM



Slides by Ian Lurie

That state of equal-ness, and/or the philosophy that drives it, is called **Net Neutrality***.

* Tim Wu, a Columbia Law professor, coined the term back in 2003.

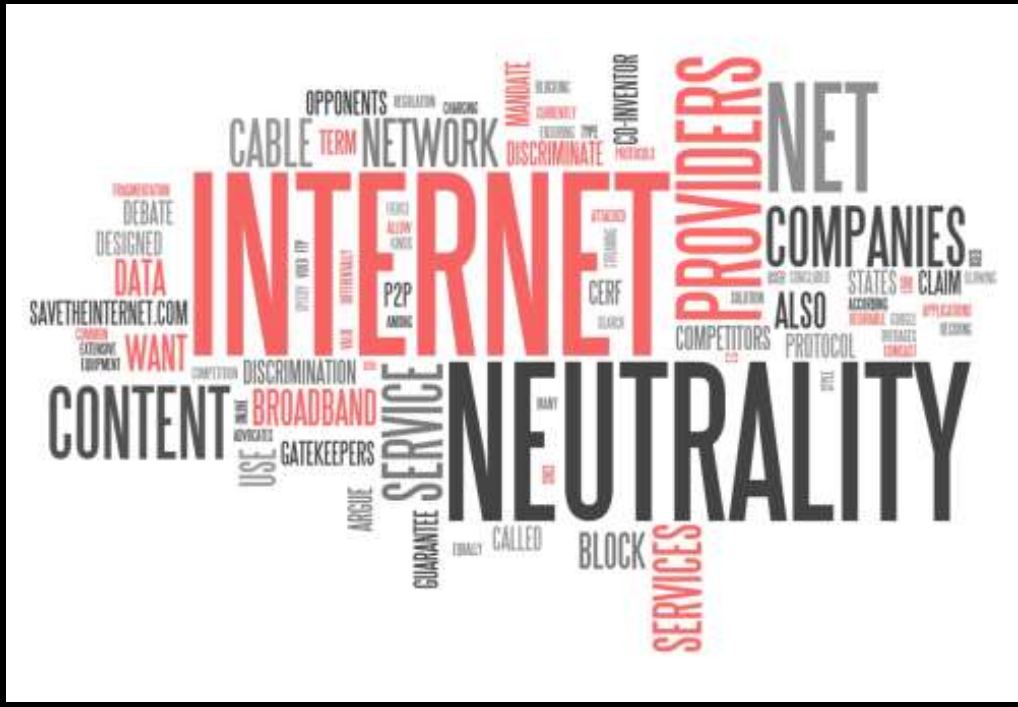
Slides by Ian Lurie

What is "Net Neutrality"?

- **Net neutrality** is the principle, that internet service providers and governments should treat all the data on the internet equally without discriminating or charging the users on the basis of the content, site, platform, application, type of attached equipment, or mode of communication.
- This term was first coined by Columbia university media law professor **Tim Wu** in 2003, as an extension of the longstanding concept of a common carrier.

Net neutrality is the name of the movement to keep the Internet "free and open".

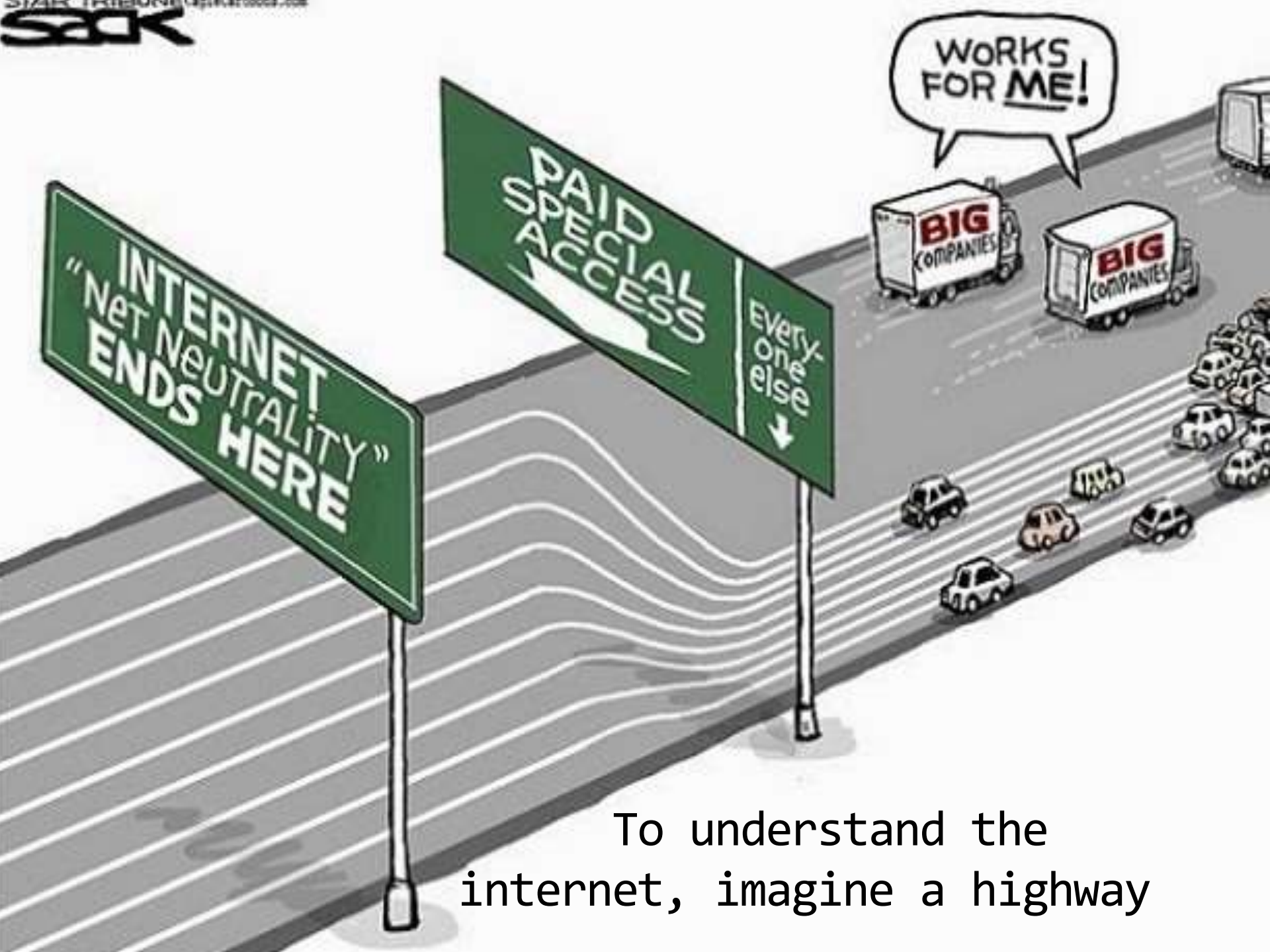
- The concept of an "Open" Internet
- Equal representation for all content providers (websites)
- Transferring information without bias



- It has basically been this way since the inception of the internet
- Sounds good, right?

** So…Why is this a problem?

- People are using more internet now than ever before
- Netflix accounts for ~30% of internet capacity at peak hours
- ISPs (Time Warner, Comcast) want to charge content providers (Netflix, Youtube) for using so much of the internet
- ISPs have to work harder now more than ever to sustain their network infrastructure.
- Which side are you on?



To understand the internet, imagine a highway

Companies started making money using the internet, but the internet providers weren't getting a piece of the pie

ISPs Reasons against Net Neutrality

- Internet service providers are advocates for free enterprise (NO REGULATION)
  - the government should not micro-manage internet providers' business.
- Some data is more important than other data and should be prioritized.
- FedEx & Amazon example

ISP Arguments

- Infrastructure Needs Development
- Need Funding for Innovation
- Freedom of Business

**

Verizon sued the FCC

If Net Neutrality loses…

Effect 1:

If the FCC rules in the ISPs' favor, they'll be permitted to completely block data from one source.*

That's just plain scary.

*http://www.fcc.gov/openinternet

Slides by Ian Lurie

If Net Neutrality loses…

Effect 2:

If the FCC rules in their favor, ISPs may also limit bandwidth, and provide 'full speed' for a fee.

Slides by Ian Lurie

Some sites will pay, and get faster.
Others won't, and get slower.

LITTLESITE.COM

YOUTUBE.COM

Slides by Ian Lurie

In the long run, this will probably work itself out. It's happened in other communications media.

But it won't be pretty. Those who can't afford to pay the 'fast lane' fee will be at a competitive disadvantage.

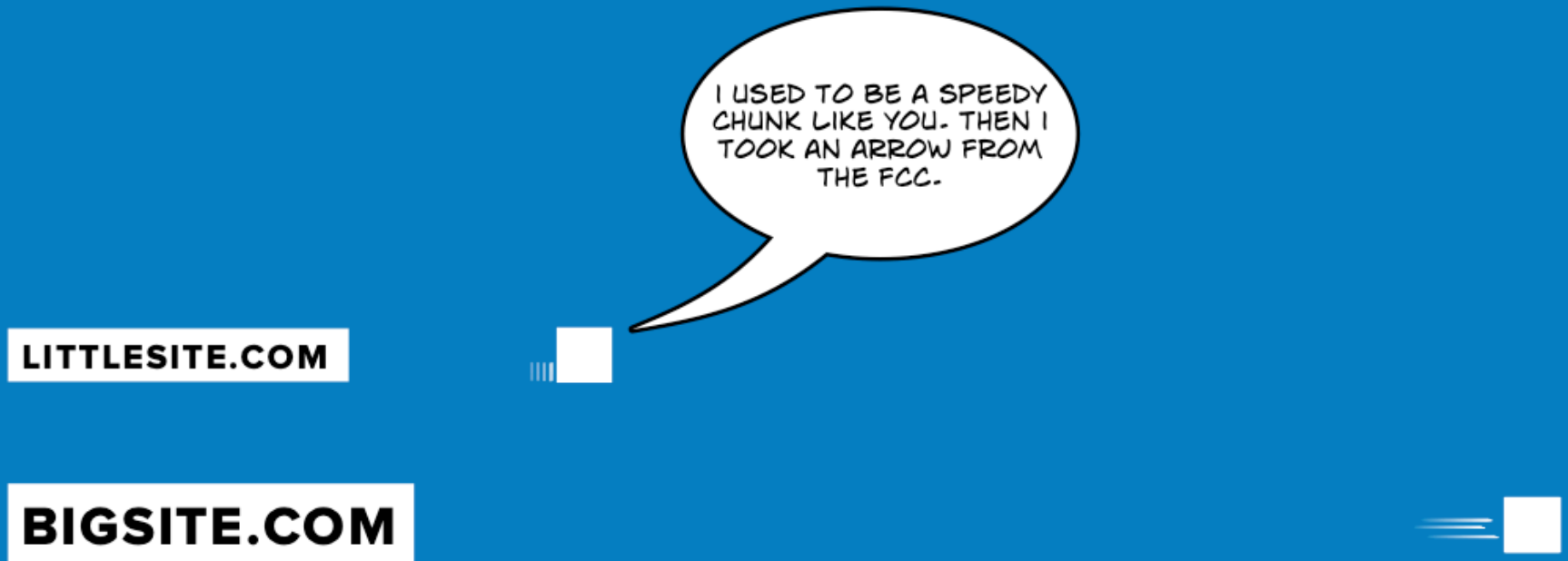
Some sites will pay, and get faster.
Smaller sites won't, and get slower.

LITTLESITE.COM

BIGSITE.COM

Slides by Ian Lurie

Smaller web sites will get left in the dust.



Slides by Ian Lurie

Consumer Exploitation

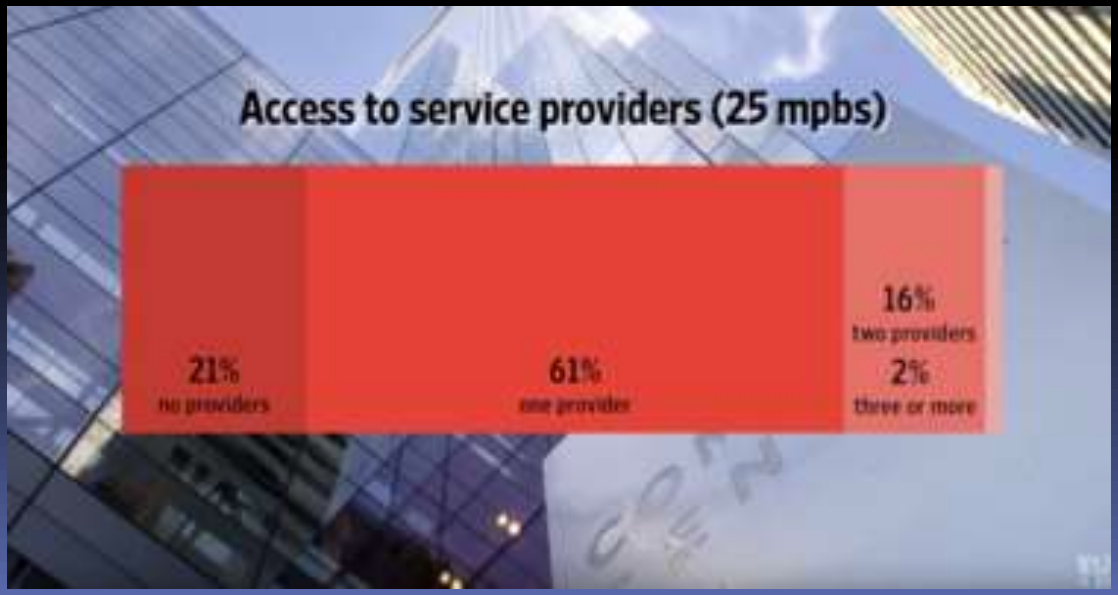
- Force to Use Certain Services
- Block all Peer to Peer Technologies
- “Exclusive" Deals with Content Providers
- Monitor all Online Activity

FCC Ruling

- In February 16, 2015 the FCC voted 3-2 on party lines to approve strong rules to protect net neutrality, a landmark decision that was widely supported by the American public.
- Tom Wheeler

Reasons For Net Neutrality

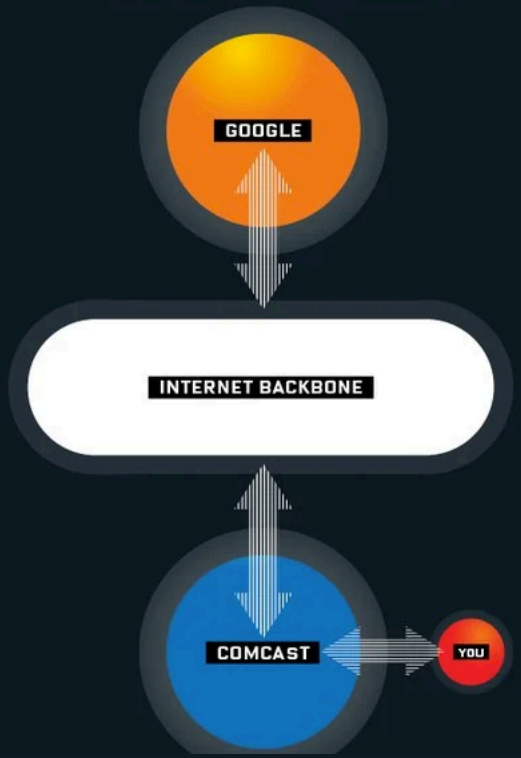
- Advocates claim "we risk loss of the free flow and exchange of ideas central to our democracy"
- Internet providers shouldn't be the ones to distinguish between acceptable and unacceptable content; their role is simply to transfer information without bias.



What Everyone Gets Wrong in the Debate Over Net Neutrality

What you think the Internet looks like

If you think at all about how Google and other web services arrive at your home, you probably think that Google sends stuff into a massive "internet backbone" of cables and data centers, before it streams into your living room through Comcast or Verizon or some other home internet service provider. But it's more complicated than that.

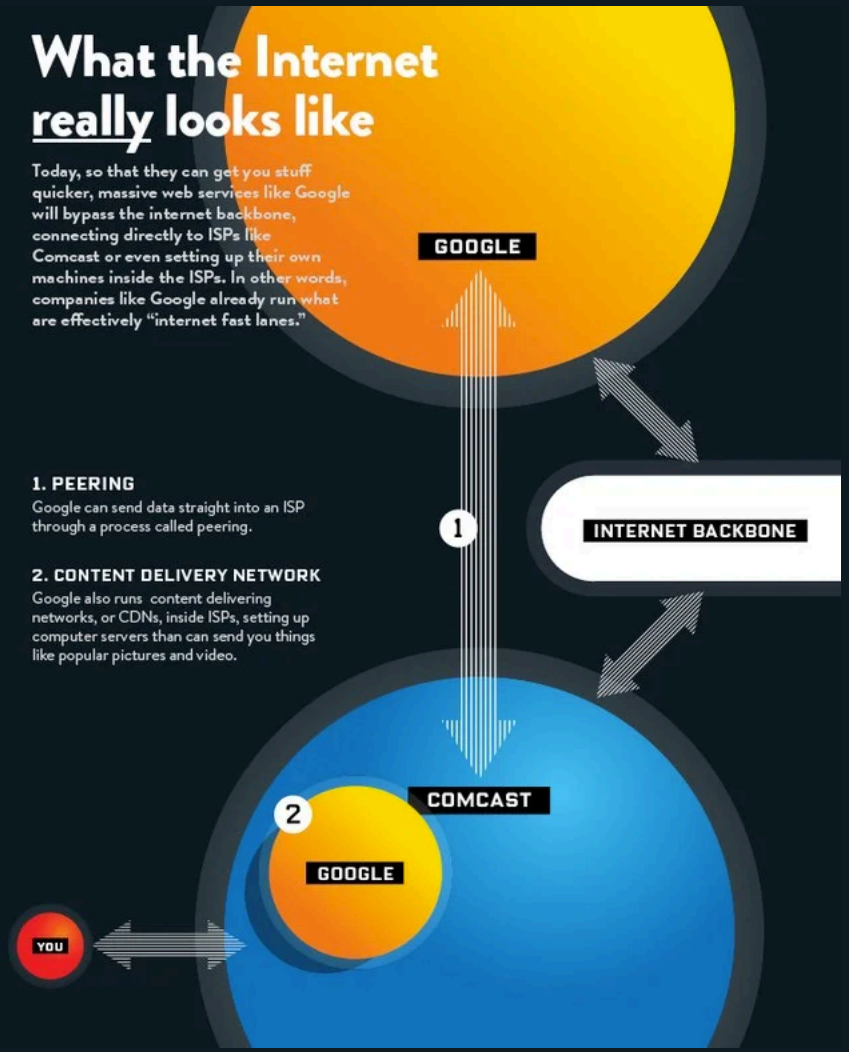


What the Internet really looks like

Today, so that they can get you stuff quicker, massive web services like Google will bypass the internet backbone, connecting directly to ISPs like Comcast or even setting up their own machines inside the ISPs. In other words, companies like Google already run what are effectively "internet fast lanes."

1. PEERING
Google can send data straight into an ISP through a process called peering.

2. CONTENT DELIVERY NETWORK
Google also runs content delivering networks, or CDNs, inside ISPs, setting up computer servers than can send you things like popular pictures and video.



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Positions Opposing Net Neutrality

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