

# ISPs and Net Neutrality

How ISPs vie for more USD

# ISPs

**verizon**<sup>v</sup>




**at&t**

**comcast**<sup>®</sup>  
**xfinity**<sup>™</sup>

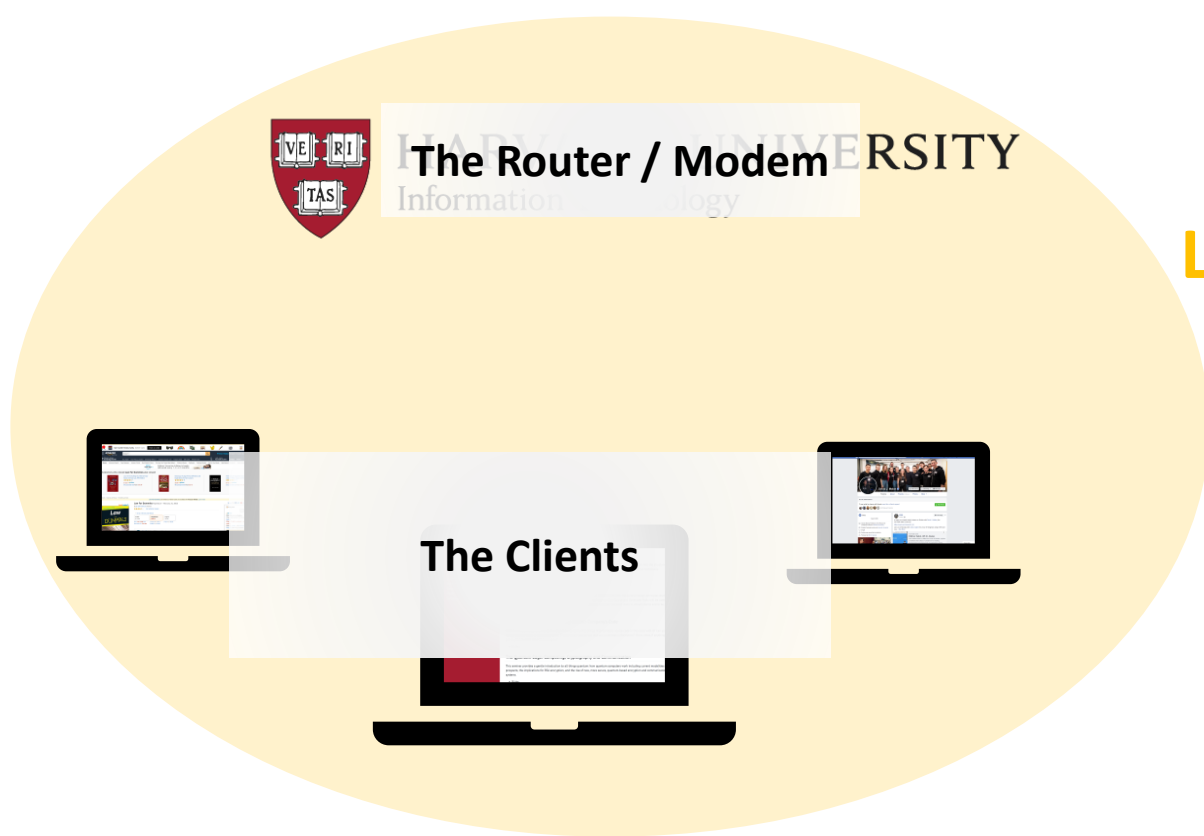
**MATTHEW** The IXP  
ONE SUMMER STREET

**verizon** The ISP

 The ISP **att&t**

 **HARVARD UNIVERSITY**  
The Router / Modem  
Information Technology

**L.A.N.**



 The Content Provider

**MARKLEY**  
ONE SUMMER STREET

**verizon**<sup>✓</sup>



**at&t**



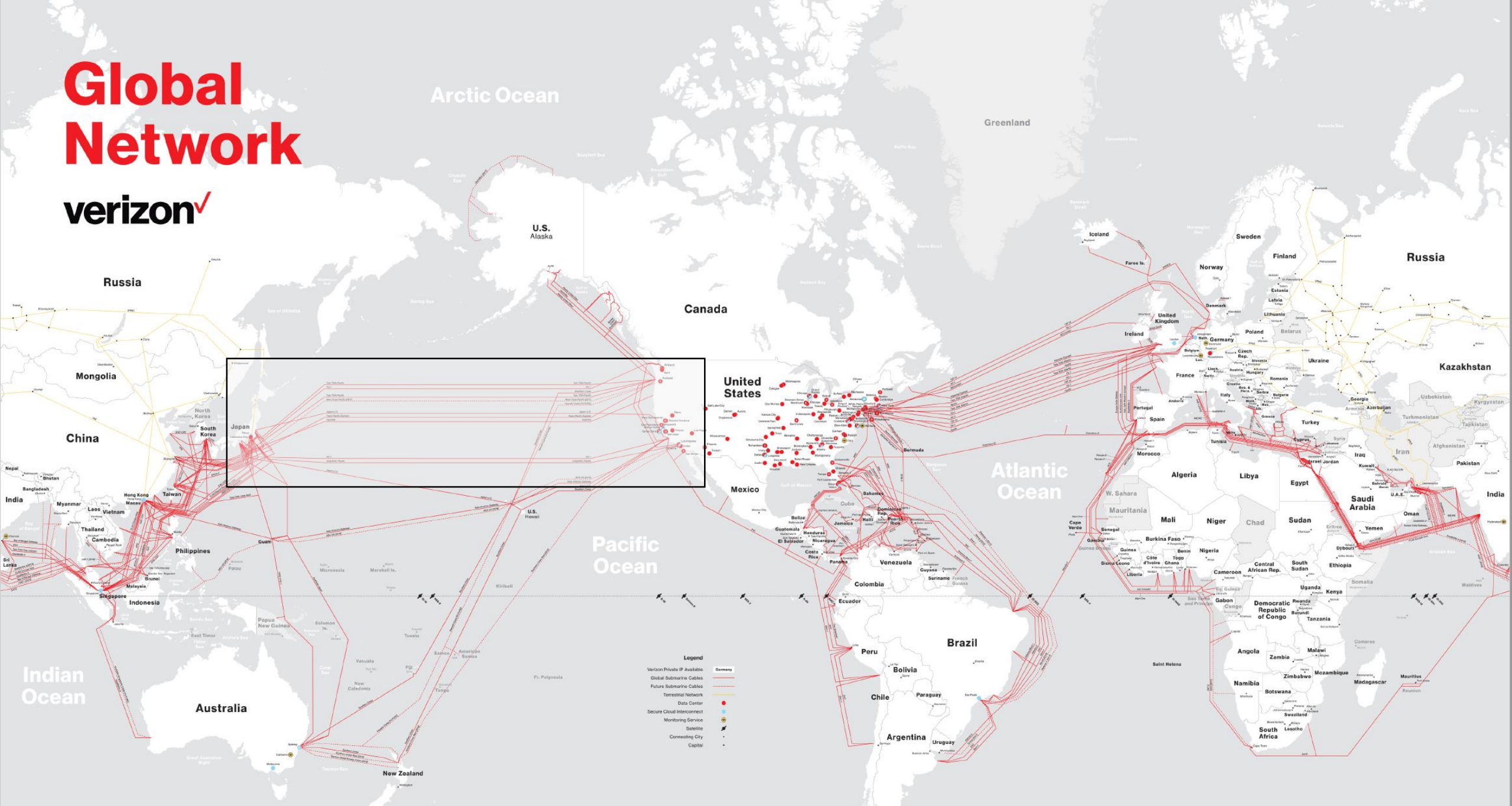
**HARVARD UNIVERSITY**  
Information Technology

**L.A.N.**



**amazon**

# Global Network



# Terminology

## ISP

Internet Service Provider connects cables / sat links to all customers and owns the linking infrastructure. ISPs are registered as information services and may provide domain name registration, internet exchanging, and web hosting on top of standard internet access. ISPs profit from charging usage fees to users and their business expenses come from maintaining lines and transferring data on their lines. ISPs have vastly different scales.

## IXP / IX

Internet Exchange Points are an evolved privatized versions of NAPs (Network Access Points) where ISPs can transfer data to other ISPs to complete request for data outside of their own network. ISPs agree either peering agreements (free) or transit agreements (paid) between themselves to control the flow of data between their networks over IXPs. ISPs either jointly pay for the upkeep of IXPs or pay a service charge to privately owned IXPs.

# Tension between ISPs and Content Providers

**verizon**<sup>v</sup>

**NETFLIX**

## Netflix-Comcast Deal Marks The End Of Net Neutrality

Average Netflix connection speeds on Comcast's broadband network





# NETFLIX

72%



**The Verizon network is crowded right now.**  
Adjusting video for smoother playback...

COMMUNICATIONS ACT OF 1934

P.L. 73-416

48 Stat. 1064

June 19, 1934

VOLUME I

1. Public Law No. 416, 73rd Congress, as approved June 19, 1934.
2. Letter from the President, dated January 23, 1934, to the Chairman of the Committee on Commerce of the Senate, transmitting memorandum from the Secretary of Commerce with a report relative to a study of communications made by an interdepartmental committee.
3. Senate Report 781 to accompany S. 3285.
4. House Report 1850 to accompany S. 3825.
5. Conference Committee Print--Page proof of the proposed conference report (Senate form).
6. Conference Report--House Report 1918, June 8, 1934.
7. Confidential Committee Print (January \_\_, 1934). This print is a revision of a page proof of a committee print prepared on April 21, 1930, for Senator Couzens, which latter print was simply a page proof of S. 6 of the 71st Congress with name and number left blank.
8. Confidential Committee Print No. 1 (January 11, 1934). Page proof revision of No. 7, above.

VOLUME II

9. Confidential Committee Print No. 1 (January 30, 1934). Page proof revision of No. 8, above, with pencil notations of changes to be made in later revision.
10. Committee Print (February 27, 1934). Print of bill as proposed to be introduced in the House.
11. H.R. 8301 as introduced House, February 27, 1934.



**Communications Act of 1934**

forbearance will promote competition among providers of telecommunications services, that determination may be the basis for a Commission finding that forbearance is in the public interest.

(c) PETITION FOR FORBEARANCE.--Any telecommunications carrier, or class of telecommunications carriers, may submit a petition to the Commission requesting that the Commission exercise the authority granted under this section with respect to that carrier or those carriers, or any service offered by that carrier or carriers. Any such petition shall be deemed granted if the Commission does not deny the petition for failure to meet the requirements for forbearance under subsection (a) within one year after the Commission receives it, unless the one-year period is extended by the Commission. The Commission may extend the initial one-year period by an additional 90 days if the Commission finds that an extension is necessary to meet the requirements of subsection (a). The Commission may grant or deny a petition in whole or in part and shall explain its decision in writing.

(d) LIMITATION.--Except as provided in section 251(f), the Commission may not forbear from applying the requirements of section 251(c) or 271 under subsection (a) of this section until it determines that those requirements have been fully implemented.

(e) STATE ENFORCEMENT AFTER COMMISSION FORBEARANCE.--A State commission may not continue to apply or enforce any provision of this Act that the Commission has determined to forbear from applying under subsection (a).

**SEC. 11. [47 U.S.C. 161] REGULATORY REFORM.**

(a) BIENNIAL REVIEW OF REGULATIONS.--In every even-numbered year (beginning with 1998), the Commission--

(1) shall review all regulations issued under this Act in effect at the time of the review that apply to the operations or activities of any provider of telecommunications service; and

(2) shall determine whether any such regulation is no longer necessary in the public interest as the result of meaningful economic competition between providers of such service.

(b) EFFECT OF DETERMINATION.--The Commission shall repeal or modify any regulation it determines to be no longer necessary in the public interest.

**TITLE II--COMMON CARRIERS**

**PART I--COMMON CARRIER REGULATION**

**SEC. 201. [47 U.S.C. 201] SERVICE AND CHARGES.**

(a) It shall be the duty of every common carrier engaged in interstate or foreign communication by wire or radio to furnish such communication service

1934

1996

2002

2005

2010

2015

2018

sea to newspapers of general circulation, either at a nominal charge or without charge, provided the name of such common carrier is displayed along with such ship position reports. The Commissioner may prescribe such rules and regulations as may be necessary in the public interest to carry out the provisions of this Act.

**SEC. 202. [47 U.S.C. 202] DISCRIMINATION AND PREFERENCES.**

(a) It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities, or services for or in connection with like communication service, directly or indirectly, by any means or device, or to make or give any undue or unreasonable preference or advantage to any particular person, class of persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.

(b) Charges or services, whenever referred to in this Act, include charges for, or services in connection with, the use of common carrier lines of communication, whether derived from wire or radio facilities, in chain broadcasting or incidental to radio communication of any kind.

(c) Any carrier who knowingly violates the provisions of this section shall forfeit to the United States the sum of \$6,000 for each such offense and \$300 for each and every day of the continuance of such offense.

**SEC. 203. [47 U.S.C. 203] SCHEDULES OF CHARGES.**

# Title I Service Providers

1934

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(20) INFORMATION SERVICE.--The term "information service" means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.

# Title II Service Providers

1934

1996

(43) TELECOMMUNICATIONS.--The term "telecommunications" means the transmission, between or among points specified by the user, of information of the user's choosing, change in the form or content of the information as sent and received.

2002

(44) TELECOMMUNICATIONS CARRIER.--The term "telecommunications carrier" means any provider of telecommunications services, except that such term does not include aggregators of telecommunications services (as defined in section 226).

2005

telecommunications carrier shall be treated as a common carrier under this Act only to the extent that it is engaged in providing telecommunications services, except that the Commission shall determine whether the provision of fixed and mobile satellite service shall be treated as common carriage.

2010

(45) TELECOMMUNICATIONS EQUIPMENT.--The term "telecommunications equipment" means equipment, other than customer premises equipment, used by a carrier to provide telecommunications services, and includes software integral to such equipment (including upgrades).

2015

2018

(46) TELECOMMUNICATIONS SERVICE.  
the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used

1934

**1996**

2002

2005

2010

2015

2018

# TELECOMMUNICATIONS ACT OF 1996

1934

FOR IMMEDIATE RELEASE:  
March 14, 2002

NEWS MEDIA CONTACT:  
Michelle Russo 202-418-2358  
Email: [mrusso@fcc.gov](mailto:mrusso@fcc.gov)

1996

## **FCC CLASSIFIES CABLE MODEM SERVICE AS “INFORMATION SERVICE”**

### ***Initiates Proceeding to Promote Broadband Deployment and Examine Regulatory Implications of Classification***

2002

Washington, D.C. – Today, the Federal Communications Commission (FCC) adopted another major rulemaking, part of a series of actions, designed to promote widespread deployment of broadband services. The FCC settled a debate over the regulatory classification of cable modem service and launched a proceeding to examine the proper regulatory treatment of this service.

2005

In a *Declaratory Ruling* adopted today, the FCC concluded that cable modem service is properly classified as an interstate information service and is therefore subject to FCC jurisdiction. The FCC determined that cable modem service is not a “cable service” as defined by the Communications Act. The FCC also said that cable modem service does not contain a separate “telecommunications service” offering and therefore is not subject to common carrier regulation.

2010

2015

2018

1934

Syllabus

1996

NOTE: Where it is feasible, a syllabus (headnote) will be released, as is being done in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Timber & Lumber Co.*, 200 U. S. 321, 337.

2002

**SUPREME COURT OF THE UNITED STATES**

2005

Syllabus

2010

**NATIONAL CABLE & TELECOMMUNICATIONS  
ASSOCIATION ET AL. *v.* BRAND X INTERNET  
SERVICES ET AL.**

2015

**CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR  
THE NINTH CIRCUIT**

2018

No. 04–277. Argued March 29, 2005—Decided June 27, 2005\*



1934

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

1996

In the Matter of	)	
	)	
Preserving the Open Internet	)	GN Docket No. 09-191
	)	
Broadband Industry Practices	)	WC Docket No. 07-52

2002

2005

**REPORT AND ORDER**

**Adopted: December 21, 2010**

**Released: December 23, 2010**

2010

By the Commission: Chairman Genachowski issuing a statement; Commissioner Copps concurring and issuing a statement; Commissioner Clyburn approving in part, concurring in part and issuing a statement; Commissioners McDowell and Baker dissenting and issuing separate statements.

2015

2018

United States Court of Appeals  
FOR THE DISTRICT OF COLUMBIA CIRCUIT

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Argued September 9, 2013

Decided January 14, 2014

No. 11-1355

VERIZON,  
APPELLANT

v.

FEDERAL COMMUNICATIONS COMMISSION,  
APPELLEE

INDEPENDENT TELEPHONE & TELECOMMUNICATIONS  
ALLIANCE, ET AL.,  
INTERVENORS

1934

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

1996

In the Matter of )  
 )  
Protecting and Promoting the Open Internet ) GN Docket No. 14-28  
 )

2002

**REPORT AND ORDER ON REMAND, DECLARATORY RULING, AND ORDER**

2005

**Adopted: February 26, 2015** **Released: March 12, 2015**

2010

By the Commission: Chairman Wheeler and Commissioners Clyburn and Rosenworcel issuing separate statements; Commissioners Pai and O’Rielly dissenting and issuing separate statements.

**2015**

"This is no more a plan to regulate the Internet than the First Amendment is a plan to regulate free speech. They both stand for the same concept." – Chairman Wheeler, Feb 15

2018



**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of )  
Restoring Internet Freedom ) WC Docket No. 17-108

**DECLARATORY RULING, REPORT AND ORDER, AND ORDER**

**Adopted: December 14, 2017**

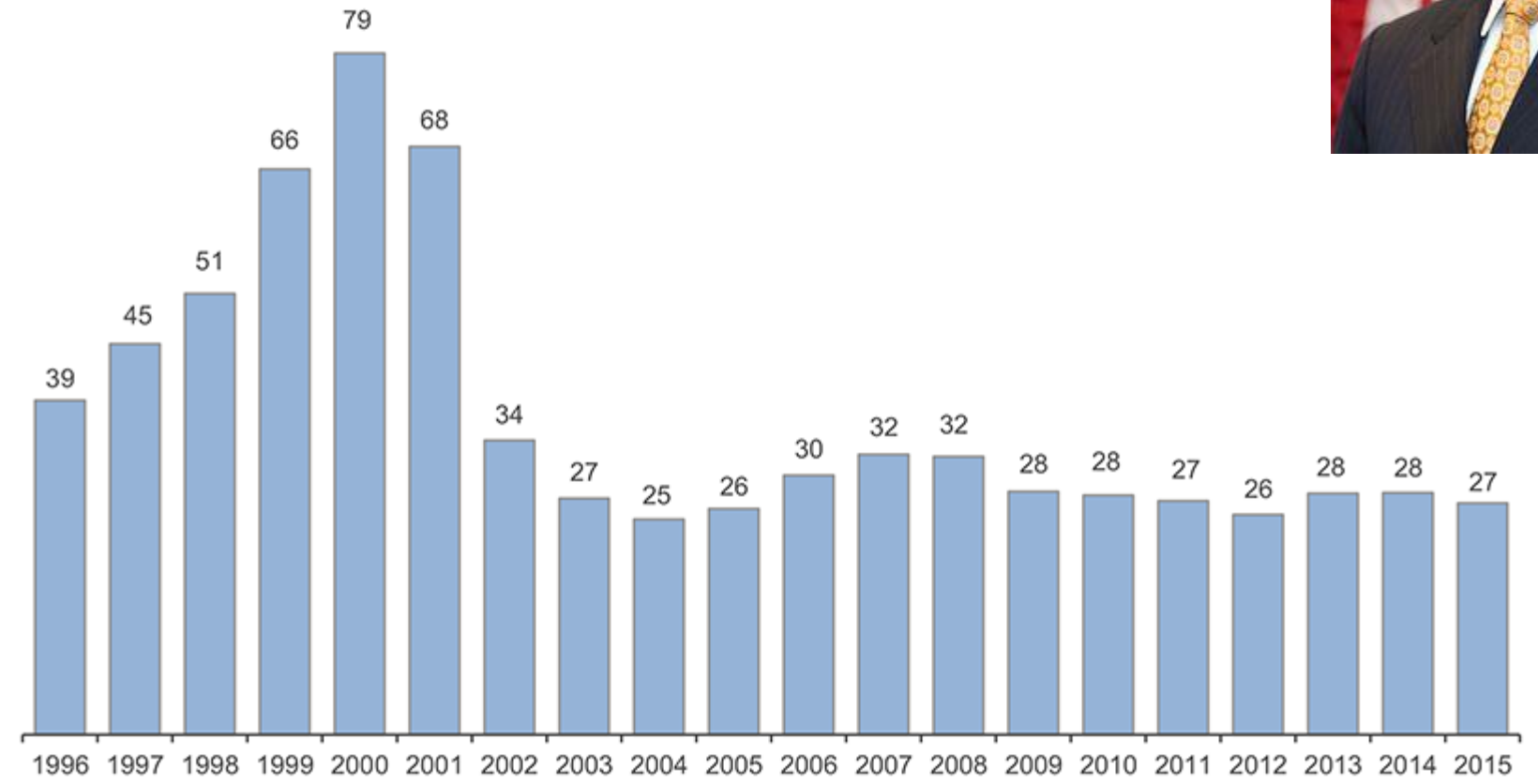
**Released: January 4, 2018**

By the Commission: Chairman Pai and Commissioners O’Rielly and Carr issuing separate statements;  
Commissioners Clyburn and Rosenworcel dissenting and issuing separate statements.



U.S. Wireline Capital Expenditures, 1996-2015 (\$ billions)

1934  
1996  
2002  
2005  
2010  
2015  
2018



Source: USTelecom (1996-present) and Yankee Group (1996-2010).

# Impact of Net Neutrality Rulings: Discussion

## **Title I: Information Service**

- May act as private entity
- May self-regulate content and prices
- May impose BTEs to new entrants
- May interfere with content delivery
- May prioritise certain content providers

## **Title II: Telecommunications Service**

- Must act as common carrier
- May not restrict legal content
- Must withdraw BTEs from market entrants
- Must not interfere with content delivery
- Must not discriminate between content

The Verizon logo, featuring the word "verizon" in a bold, black, lowercase sans-serif font, followed by a red checkmark symbol.The Netflix logo, featuring the word "NETFLIX" in a bold, red, uppercase sans-serif font.

# ISPs and Net Neutrality

How ISPs vie for more USD