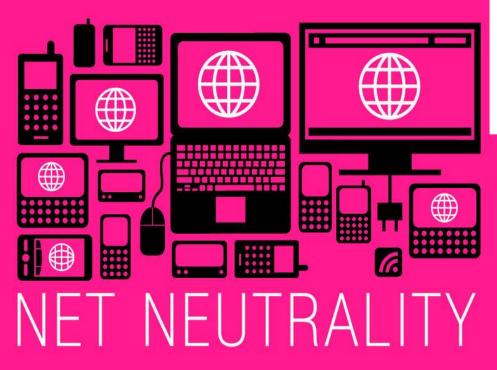
CS 681: Seminar



Presented by:

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Internet

- The internet is the interconnection network of computers and interconnecting devices across the world.
- There are organizations that determine the Internet's structure and how it works, but they don't have any ownership over the Internet itself. No government can lay claim to owning the Internet, nor can any company.
- But, several large corporations provide the routers and cable that make up the Internet backbone.

UUNET Level 3 Verizon AT & T Qwest Sprint IBM etc.

They are the upstream or top level ISPs (Internet Service Providers). In a sense they have a major claim over the internet infrastructure.

What is the principle of Net-Neutrality?

Net Neutrality means that data packets on the Internet should be treated impartially, without regard to content, destination or source. The Net Neutrality principle holds that wired and wireless internet service is a utility like gas, water, electricity and hence it should be available to everyone and subject to government regulation.

Which means all traffic on the Internet should be treated equally or 'neutrally' by Internet Service Providers (ISPs) without blocking, throttling or discriminating against a competitor's content or services. Resulting in the users having unhampered access to any legal content they want.

Net neutrality requires that the Internet be maintained as an open platform, on which network providers treat all content, applications and services equally, without discrimination regardless of the underlying technology used to transmit signals.

Why net neutrality is important?

- The Internet has become an indispensable tool for users around the globe and a fundamental facilitator of innovation and economic growth.
- Demand for Internet connections with greater bandwidth is unlikely to subside.

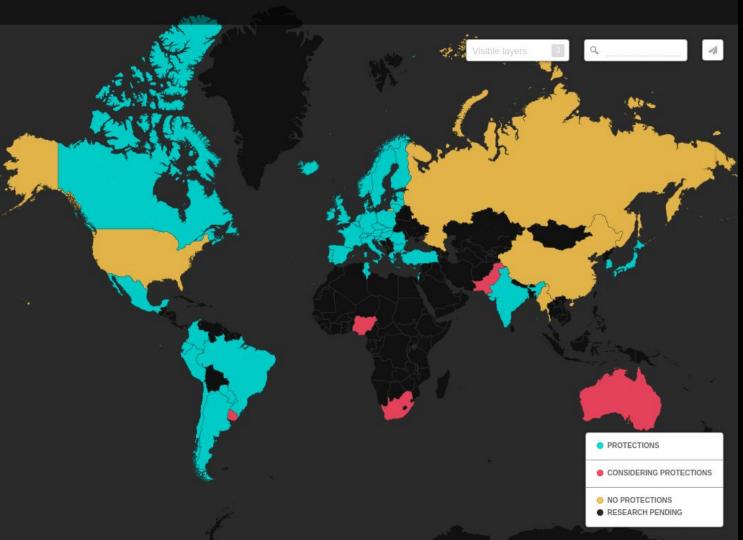
Today, this open Internet is endangered by powerful service providers seeking to become gatekeepers who decide how users can access parts of the Internet.

INDIA

At first thought it is obvious that the net is neutral.

But then it isn't...

- not everywhere



INDIA

LAW

Yes

ENFORCEMENT

Yes

BILL

No

OTHER REGULATION Yes

- In February 2016, the Telecom Regulatory Authority of India (TRAI) issued binding rules that went into immediate effect that protected strong Net Neutrality and prohibited zero-rating services. India is now a leader in protecting Net Neutrality worldwide.
- ❖ TRAI has the authority to make recommendations on issues such as efficient management of spectrum and terms and conditions for the license agreements. The agency may call for information in writing, conduct inquiries, issue guidance, and punish violations. In providing recommendations, TRAI follows a process of holding open public consultations in which comments and counter-comments are invited.
- Organized by the SavetheInternet.in coalition in India, nearly **2.5 million people** provided public comments to TRAI to help guide its rulemaking process on Net Neutrality, a record.

Specifically, TRAI's 2016 regulations:

- Prohibit telecom service providers from offering discriminatory data tariffs or from entering into arrangements with others to provide such programs. Content-based differential data pricing is not allowed.
- Provide for an exemption for emergency services or for grave public emergencies, but subject to reporting to TRAI and possibility of subsequent adjudication by it.
- Allow for enforcement: TRAI can order telcos to comply and the regulations provide for financial penalties on service providers for violations.
 - TRAI Will be reviewed by the GLOBAL NET NEUTRALITY COALITION in 2018.

Meanwhile in USA



FCC adopts net neutrality rules to focus on maintaining an open internet away from business interests.

U.S. Appleas Court upholds Obama's net neutrality rules against cases filed by ISPs.



FCC Chairman proposes to repeal net neutrality.

Senate overturns Obama's Consumer protections. It signaled the FCC's new approach to let businesses make money off consumers in new ways.

23rd Mar'17



Challenges

Some network operators have to use **congestion-management** and **traffic-shaping** techniques to keep their networks running smoothly. As a result, network operators are technically able to use traffic-management practices to give preferred treatment to certain data streams.

There are differences in opinion about which network-management practices constitute routine and acceptable network-management activities and which are overreaching and may result in harmful discrimination to both users and content providers ultimately jeopardizing the open and transparent principles of the Internet...

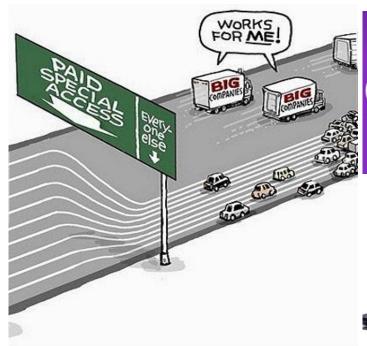
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WORST CASE SCENARIO

What exactly the can/will happen in absence of net neutrality?

5 Specific Challenges

- **01** | Blocking and filtering
- 02 | Internet fast lanes
- 03 | Throttling
- 04 | Zero-rated services
- 05 | Market competition







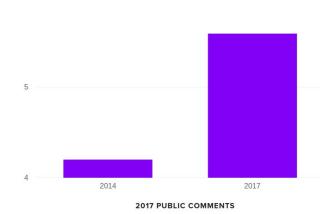
2014 VS. 2017

Net Neutrality Awareness

Burger King Prank

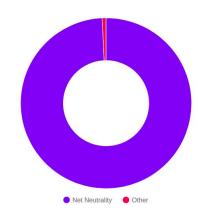
MBPS = Making Burgers Per Second







Net Neutrality vs. Other FCC Issues



Exceptions to Net Neutrality

In accordance with the Network Neutrality principle, Internet service providers shall refrain from discriminating, restricting, or otherwise interfering with the transmission of Internet traffic, unless such interference is strictly necessary and proportionate to:

- Give effect to a legislative provision or court order.
- Preserve the integrity and security of the network, services and the Internet users' terminal equipment.
- Prevent the transmission of unsolicited communications for direct marketing purposes to Internet users who have given their prior consent to such restrictive measures.
- Comply with an explicit request from the subscriber, provided that this request is given freely and is not incentivised by the Internet service provider or its commercial partner.
- Mitigate the effects of temporary and exceptional network congestion, primarily by means of application-agnostic measures or, when these measures do not prove efficient, by means of application-specific measures.

