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# NET Neutrality

## DOT Committee Report

# NET NEUTRALITY DOT COMMITTEE REPORT

***Net neutrality is the principle that Internet service providers and governments should treat all data on the Internet equally, not discriminating or charging differentially by user, content, site, platform, application, type of attached equipment, or mode of communication.***

***The Department of Telecom has formed a panel headed by A K Bhargava to examine economic impact of implementation of net-neutrality principle on the sector.***

***The Report has been summarized below:***

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# NET NEUTRALITY DOT COMMITTEE REPORT

## Introduction

The Internet has transformed the world and society like never before. It has provided a platform for new opportunities through innovation. Internet has fostered the supremacy of ideas rather than capital. It is a universal platform that uses the same standards in every country, so that every user can connect to every other user with physical distances becoming irrelevant in the networked world. The Internet is a public resource that has no ownership, but is available to all those who are digitally connected.

In India, tremendous growth in telecommunications and convergence of communication and information technologies has created a unique digital platform for advancing the developmental goals. Digital India programme envisions access to digital infrastructure as a utility to every citizen, thereby making available high speed broadband internet as a core utility for delivery of services to citizens. The program envisions e-governance and services on demand and aims at digital empowerment of citizens.

India has demonstrated to the world its capacity to develop innovative business models in affordable mobile telephony suited to the requirements of a developing country. It has 997 million telecom subscribers and 99.20 million broadband subscribers with an access to internet at speeds higher than 512 kbps. Out of about 300 million subscribers accessing the internet, around 93% subscribers are on wireless media, whereas 7% are on fixed wire line media. Currently, both broadband and internet penetration in India is comparatively low in the global context.

In India, Internet traffic is likely to increase manifold in the next few years. There is a constant pressure for investment in network infrastructure and to expand capacities and increase penetration. Telecom infrastructure, being a capital intensive industry, will require significant investments by operators to meet the network capacity demands brought about by increasing broadband penetration, increasing speeds and increasing data usage. Telecom service providers have also started facing competition from unlicensed application platforms, termed Over-the-Top (OTT) players, in their traditional voice communication field.

With an objective of enhancing revenue streams andto face competition from OTT players, telecom service providers have been exploring new opportunities for generating revenues from users and the content providers. Some of the models attempted by TSPs, such as charging higher data tariffs for VoIP services, charging content application providers and providing the content free to users (called "zero rating" plans), have raised concerns about Net Neutrality. This phenomenon is not unique to India but has been witnessed across the world.

**To understand the concept of net neutrality, it is important to note the four different kinds of stakeholders in the internet space that may be affected by the issue. They are: (i) the consumers of any internet service, (ii) the Telecom Service Providers (TSPs) or Internet Service Providers (ISPs), (iii) the over-the-top (OTT) service providers (those who provide internet access services such as websites and applications), and (iv) the government, who may regulate and define relationships between these players. TRAI is an independent regulator in the telecom sector, which mainly regulates TSPs and their licensing conditions, etc.**

**OTT services and applications are basically online content. These are accessible over the internet and made available on the network offered by TSPs. OTT providers may be hosted by TSPs or ISPs such as Bharti Airtel, Vodafone, Idea, VSNL (government provided), etc. They offer internet access services**

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**such as Skype, Viber, WhatsApp, Facebook, Google and so on. Therefore, OTT services can broadly be of three types: (i) e-commerce, (ii) video or music streaming and, (iii) voice over internet telephony/ protocol services (or VoIP communication services that allow calls and messages). Prior to the recent TRAI regulations prohibiting discriminatory tariffs, there was no specific law or regulation directly concerning the services provided by OTT service providers.**

## Net Neutrality – The Way We Understand

There is no standard definition of Net Neutrality. Net Neutrality is globally understood as a network principle of equal treatment of data packets moving across the IP networks. The concept has been used more broadly to describe the open and non-discriminatory access to the Internet. Attempts have been made by many to define the contours of Net Neutrality.

The **Body of European Regulators for Electronic Communications (BEREC)** has attempted a definition of Net Neutrality. BEREC believes that a literal interpretation of network neutrality, for working purposes, is the principle that all electronic communication passing through a network is treated equally. That all communication is treated equally means that it is treated independent of content, application, service, device, sender's address, and receiver's address. Neutrality towards the sender and receiver address implies that the treatment of data packets is independent of both users – sender and the receiver - at the edges of the network.

On the Net Neutrality continuum, **there are two views on the opposite sides**of the scale.

**On one side of the scale**, the view held is that every user must have equal access, via the internet and, more generally, electronic communications networks (regardless of distribution platform) to all of the content, services and applications carried over these networks, regardless of who is supplyingor using them, and in a transparent and non-discriminatory fashion. Putting this view into practice comes up against a variety of constraints, such as having to protect the networks from attacks, and from problems of traffic, the need to install mechanisms to comply with legal obligations, maintaining acceptable level of QoS for some real time services etc. Therefore, the network has to be managed with traffic management tools. The traffic management practices adopted may or may not be acceptable from the Net Neutrality point of view.

**There are other considerations as well.** Unlike an infinite resource, the bandwidth of the Net is limited. There are users who require a whole lot more bandwidth than, say, someone sending emails. If someone is using Skype or YouTube, he needs a lot of bandwidth and that too on priority without any significant delay, otherwise the service quality suffers. It can be argued that he should pay a higher price because he is using more space and his traffic needs to be sent on priority. But Net Neutrality proponents say that neither he should be given priority, nor he should be charged higher and his traffic should also be treated in the same way as others on best effort basis.

**The concept of "One sizefits all" does not work**and networks are inherently designed to differentiate between different types of data packets so that they can be treated differently. Therefore, the view of Net Neutrality has practical limitations andit does not work in the real world.

In a pure world of data, there will be differentiation between data packets for one reason or the other, technology also permits this and therefore exceptions will have to be made within the overall principles of Net Neutrality. The crux of the debate is about striking a balance between the two views.

Net Neutrality is often misunderstood as akin to the concept of Open Internet, which is a much larger all-encompassing description. Open Internet is the idea that the full resources of the Internet and the means to operate on it are easily accessible to all individuals and businesses. Open Internet is not limited to network operations alone but includes Internet Governance, open standards and protocols, transparency, absence of censorship, and low barriers to entry. Open Internet is expressed as an expectation of decentralised

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technological power equally exercisable across the user community, and is seen by some as closely related to open-source software.

## Innovation, Investment & Entrepreneurship

The principles governing the open internet include the ability of end-usersto discover and access lawful internet-based content or applications of their choice and the ability of content and application providers to access end users "without permission" from network operators. This open internet has yielded profound benefits through innovation in content and applications across a wide range of economic and social activities. Those that are successful are able to scale rapidly and globally in a comparatively inexpensive way – a key benefit of innovation without permission.

The internet openness promotes innovation, investment, competition, andother national broadband goals and the remarkable increase in broadband infrastructure investment and innovation seen in recent years confirms thesame. Both within the network and its edges, investment and innovation is flourishing due to its basic principles. This pattern of a virtuous circle through innovations in relation to network enhancement and internet-based content and applications can be expected to continue.

Open models and interoperable environments drive down the cost of innovation. The lower the costs of entry, the lower the risk to innovators, and more the innovators. An internet based on open standards has proved to be a very effective platform for innovation. This has brought the freedom to innovate to everyone, from the largest multinational to the self-employed. Anyone with an idea can, at least in principle, use the open internet as a vehicle for testing their idea in the market. The result has been an unprecedented explosion in the availability of new content and services to consumers. These have transformed a wide range of economic and social activity, including the way we buy and sell goods, consume content , play games, search for information, participate in social networks, and so on. The innovation in the ICT in India has become an important component in socio-economic development.

Investment in networks is a sine qua non condition for spread of broadbandand through broadband, the growth of the Internet economy. If investment in networks falls then the impact would be felt in terms of access, speed and quality of services. This would affect the spread of Internet and use of the Internet for innovation at the edges of the network. Innovators and potential customers alike must have access to high quality and affordable broadband Internet. The network itself must be resilient to promote investments.There is a symbiotic relationship between expansion of broadband infrastructure through investment (both Government and private) and the opportunities thrown up by an explosion of innovation in Internet content and applications. One cannot survive without the other. Therefore, innovation and infrastructure have both to be promoted simultaneously and neither can spread without the other.

The endeavour in policy approach should be to identify and eliminate actions that inhibit the innovation abilities inherent in an open Internet or severely inhibit investment in infrastructure.

In the world of the future, those who remain unconnected to the Internetmay find themselves excluded from a substantial part of the socio-politicoeconomyof the country. This makes the public policy need to stimulateinvestment in networks and development of country-specific content andapplications all the more necessary.

## Public Policy Perspective of Net Neutrality

Internet has been a medium that has created innovation in technology, business and governance. Internet has thrown up several challenges for public policy but it should not lead to restrictions both on network creators or network users that unnecessarily and unjustifiably stifle experimentation and further innovation intechnologies and business models either in telecom networks or the largereconomic world.

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The open, democratic nature of the Internet has kept information andcontent accessible by the user largely unrestricted. The Internet platform has potential to deliver public services to the citizen, irrespective of their social status, in an effective and efficient manner. This type of electronic delivery of services is viewed as harbinger of good governance, enhancing the ability of governments to reach the unreached and an agent for reinforcing democracy. The extension of broadband services to rural areas and delivery of internet services over it has enormous socioeconomic benefits. It is feared that violation of Net Neutrality may impose another layer of (negative) discrimination against the economically and socially disadvantaged sections of society in the delivery of internet services. Conversely, it has also been argued that governments should retain the power of positive discrimination to enable prioritisation of services to meet developmental and delivery challenges such as education, primary health and emergency services. Public policy approaches should allow flexibility to determine priorities based on the overall vision without affecting the ordinary user's ability to access information platforms and commercial services.

Overarching public interest also requires that in the context of Net Neutrality,exceptions be carved out for specific areas of national benefits such as delivery of emergency services or desirable public or government services.

To conclude, the primary goals of public policy in the context of NetNeutrality should be directed towards achievement of developmentalaims of the country by facilitating "Affordable Broadband", "QualityBroadband" & "Universal Broadband" for its citizens.

The approach accordingly should be

- Expand access to broadband;
- Endeavour through Digital India, to bridge the digital divide, promotesocial inclusion;
- Enable investment, directly or indirectly, to facilitate broadband expansion;
- Ensure the functioning of competitive markets in network, contentand applications by prohibiting and preventing practices that distortcompetitive markets;
- Recognize unbridled right of users to access lawful content of theirchoice without discrimination;
- Support the Investment-Innovation Virtuous Cycle and developmentof applications relevant and customized for users.

## Internet: Freedom of Expression and User Rights

Before the Internet came to occupy the public discussion space, mass media was the main channel of public opinion. The press was seen as the public watch-dog and protection of media freedom was a key area of judicial pronouncements. But mass media was a space where expression of opinions was channelized through editorial supervision. Thereby, there was both a possibility of capture placed side-by-side with self-regulation that kept what society would have considered objectionable or undesirable from coming to the fore.

The Internet, on the other hand, is a public sphere where supervision is a practical impossibility. This character of the Internet can be affected if network operators become "gate keepers" gaining control oftraffic channelized through the network by identification of the data packetsflowing through it. This technology called "deep packet inspection" gives TSPs and ISPs State-like power to control the Internet and can affect constitutional freedoms in case of possible misuse. Therefore, the obligation of the State is to ensure that the even the remote possibility of the continued existence Internet as a free public space being compromised needs to be quashed with explicit mentions of what a network operator can do and

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what it cannot in relation to the traffic carried by it. The obligations and liabilities of TSPs and ISPs need to be clearly stated from the context of Internet freedoms.

The constitutional guarantees on freedom of speech and expression inthe physical space apply equally to such freedoms being exercised overthe Internet. Article 19(2) of the Constitution of India places reasonable restrictions in the exercise of the freedom of speech and expression in the interests of sovereignty and integrity of India, the security of the State, friendly relations with foreign countries, public order, decency or morality, or in relation to contempt of court, defamation or incitement to an offence. Thereby, the exercise of freedoms over the Internet cannot be absolute but has certain limitations on grounds mentioned in the Constitution. However, the limitations over the Internet can be specified and enforced only by Government in an accountable manner.

**The Committee recommends that user rights on the Internet need tobe ensured so that TSPs/ISPs do not restrict the ability of the user tosend, receive, display, use, post any legal content, application or serviceon the Internet, or restrict any kind of lawful Internet activity or use.** The arbiter of what constitutes legality in relation to the content, applicationor service can only be determined by Government with scope for judicialadjudication in case of any dispute.

## Traffic Management & Net Neutrality

With increasing number of users on the internet, their online activities have also changed dramatically. This is leading to the IP transport networks becoming increasingly congested. Service providers i.e. both TSPs and ISPsuse the IP transport network to carry voice, video and internet traffic. To ensure that networks operate efficiently, they restrict or ration traffic on their networks, or give priority to some types of traffic over others generally during peak periods. This is known as 'traffic management' or 'traffic shaping'. Traffic management has often been opposed on Net Neutrality grounds as being injurious to consumers' interests.

An alternative view of traffic management is that it is a way to make the consumer experience more controlled and less subject to the vagaries of Network conditions, especially congestion. By treating different types of data traffic differently, traffic management allows the performance of services to be managed individually so that the most Quality of Service (QoS) sensitive services receive the better QoS from the network. In an unmanaged situation, consumers would not understand and predict the factors that affect their experience, whereas in a traffic managed situation there is potentially more certainty and more transparency, and a better overall quality of experience for the majority of customers.

Due to variety of traffic on the IP transport network, the concept of one size fits all does not work and differentiation becomes an essential function for network management. But many consider the use of traffic management tools as compromising the openness of the internet. There is a delicate balance between ensuring the openness of the Internet and reasonable and responsible use of traffic management by TSPs/ ISPs for legitimate needs.To draw a line between these two objectives is challenging and is the crux of the matter surrounding the Net Neutrality debate. Due to many reasons, network operators differentiate and manage the traffic. Some are essential and some can be avoided not being in tune with Net Neutrality principles.Operators may be prohibited from practices considered as contrary to Net Neutrality principles.

The Committee recommends that legitimate traffic managementpractices may be allowed but should be "tested" against the core principles of Net Neutrality. General criteria against which these practices can be tested are as follows:

(i) TSPs/ISPs should make adequate disclosures to the usersabout their traffic management policies, tools and interventionpractices to maintain transparency and allow users to makeinformed choices.

(ii) Unreasonable traffic management, which is exploitative or anticompetitivein nature, may not be permitted.

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(iii) In general, for legitimate network management, application agnostic control may be used. However, application-specificcontrol within the "Internet traffic" class may not be permitted.

(iv) Traffic management practices like DPI should not be used forunlawful access to the type and contents of an application in anIP packet.

(v) Improper (paid or otherwise) prioritization may not bepermitted.

Traffic management is complex and specialized field and enoughcapacity building needs to be done before undertaking such anexercise. Mechanism to minimize frivolous complaints will be desirable.

**The telecommunications sector in India is regulated through a combination of legislations and licensing conditions. The Indian Telegraph Act, 1885, the Indian Wireless Telegraphy Act, 1933, and the Telecom Regulatory Authority of India (TRAI) Act, 1997 and subordinate legislation enacted there under invest the Central Government with licensing powers and provide the regulatory framework for the telecommunications sector. Licenses granted under section 4 of the Indian Telegraph Act, 1885, stipulate the terms and conditions circumscribing network operations and provision of services by telecommunication service providers. Content regulation follows ex post enforcement mechanisms with offences and punishments prescribed under the Information Technology (IT) Act, 2000.**

**The Committee, therefore, recommends the incorporation of a clause in the license conditions of TSP/ ISPs that will require the licensee to adhere to the principles and conditions of Net Neutrality specified by guidelines issued by the licensor from time to time. The guidelines can describe the principles and conditions of Net Neutrality in detail and provide applicable criteria to test any violation of the principles of Net Neutrality.**

To conclude, the committee suggests the following enforcement process:

- Core principles of Net Neutrality may be made part of Licenseconditions and the Licensor may issue guidelines from time totime as learning process matures.
- Since Net Neutrality related cases would require specialized expertisea cell in the DOT HQ may be set up to deal with such cases.In case of violations, the existing prescribed procedure maybe followed. This would involve two stage process of review andappeal to ensure that decisions are objective, transparent andjust.
- Tariff should be regulated by TRAI as at present. Whenever anew tariff is introduced it should be tested against the principlesof Net Neutrality. Post implementation, complaint regarding atariff violating principle of Net Neutrality may be dealt with byDoT.
- Net Neutrality issues arising out of traffic management wouldhave reporting and auditing requirements, which may beperformed and enforced by DoT.(
- QOS issues fall within the jurisdiction of TRAI. Similarlyreporting related to transparency requirements will need to bedealt with by TRAI. TRAI may take steps as deemed fit.

## Way Forward

Digital connectivity has emerged as a key driver of economic and social developmentin an increasingly knowledge intensive global scenario. India needs to play a leadership role in ushering a new digital age. Governmentof India has initiated the programme of Digital India, which is designed totransform India into a digitally empowered society and knowledge economy.The program envisages digital connectivity to citizens as a public utility.This provides us a guiding benchmark against which to measure the issuesrelated to Internet space.

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Internet has also emerged as a destination for public discourse. In a free,democratic country, the Internet has increasingly become an importantplatform of information dissemination and exchange of opinions and views.Just as India values its constitutional guarantees of freedom of speech andexpression, it also values an Internet that is open. The resulting discourseon Net Neutrality has led to an intense debate that is refreshing, timely andwelcome.

The debate on Net Neutrality is refreshing because it is about future and not about past or present. It is about young and their enterprise. It is also about the success in putting the infrastructure on ground and the ground that we still have to cover. It is about freedom and equality as much as it is about regulation and level playing field. Clearly, the debate on Net Neutrality is multi-dimensional and solution to this cannot therefore be uni-dimensional. The way forward is the quest for these multi-dimensional solutions witha holistic, national outlook to the vexed issue of Net Neutrality.

At the root of our discourse is the recognition that we have different stakeholders with different perspective and sometimes diametrically opposite views and prescriptions. This Committee has tried to assimilate these vastly differing opinions and objectives and arrive at its recommendations. On the Net Neutrality continuum, the Committee has sought to carve itsown path in comparison to international responses. India is the land ofBuddha who preached the Middle Path. Some tenets of His Eightfold Middle Path are important - right understanding, right thought, right speech, right action, right mindfulness and right efforts.

In the context of Net Neutrality, the approach of the Committee has been as follows:

- Right Understanding – Understanding needs of all stakeholders, their views and concerns, participative policy formulation.
- Right Thought – Build and support an open, free, innovative, non discriminatory and inclusive Internet.
- Right Speech – No throttling and blocking of the lawful content onthe net. Support freedom on the Internet with reasonable safeguards within constitutional parameters.
- Right Action – Enshrine core principles of Net Neutrality incurrent operable mechanism. Use well established processes for implementation, enforcement and oversight.
- Right Mindfulness – Provide for reasonable and legitimate traffic management but disallow paid prioritization. Prescribe and ensureright QOS and transparency requirements.
- Right Livelihood – Promote innovation as well as investment. User rights and business models align to deliver progress. Test tariffs against core principles of Net Neutrality.
- Right Concentration – Keep watch on disruptive changes that technology brings and adapt. Level playing issues need level headed approach.
- Right Efforts – Leave infrastructure development and application or content development to those who are best capable of doing it. Regulatory boundaries between the two should be finely calibrated. Build capacity and capability within.

In order to follow this Middle Path, in order to explore the best possible options to create a virtuous cycle, transparency, neutrality, privacy, security and the democratic fabric of the Internet should be maintained.

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