**Sent via email to advqos@trai.gov.in**

15 March 2017

Mr. Asit Kadayan
Advisor (QoS)
Telecom Regulatory Authority of India (TRAI)
Mahanagar Door Sanchar Bhawan
J.L. Nehru Marg, Old Minto Road
New Delhi – 110002, India

Subject: TRAI Consultation Paper on Net Neutrality, released 4 January 2017

Dear Sir,

In reference to the above-mentioned Consultation Paper on Net Neutrality, enclosed please find Akamai's response for your kind consideration.

Sincerely yours,

Lauren Van Wazer, Vice President, Global Public Policy
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Akamai Technologies, Inc.

## Akamai's Response to TRAI's Consultation Paper on Net Neutrality

### Introduction

Akamai Technologies, Inc. (Akamai) welcomes this opportunity to participate in TRAI's discussions on net neutrality. Akamai also offered its views in TRAI's *Pre-Consultation Paper on Net Neutrality* issued in May 2016.[1] Encouraged by TRAI's commitment to further engage stakeholders on this important matter, Akamai respectfully submits the following comments on TRAI's current *Consultation Paper on Net Neutrality*.[2] As an Internet pioneer whose industry-leading technology innovations have afforded Internet content and application service providers the needed system for their own innovation, Akamai continues to value open Internet principles that support ongoing innovation.

Akamai offers content delivery network (CDN) services worldwide using its extensive distributed architecture. Currently, Akamai has deployed more than 225,000 servers in over 120 countries. The Internet content, applications, and services provided by Akamai's customers (websites, web application providers, and enterprises) are thus distributed across more than 1,500 networks around the world, and consumer requests for particular content or applications are processed in the most geographically efficient location. Akamai does this by applying specialized mathematical algorithms and by primarily using a virtual, rather than a physical, network, which enables it to facilitate the delivery of content to end users faster, more reliably and more securely, while using fewer physical resources. This results in a better-performing and more cost-effective Internet for everyone, whether or not the content they are accessing utilizes Akamai services.

Akamai's services benefit consumers, content providers and Internet service providers (ISPs). First, Akamai is able to offer consumers better performance and a higher-quality end user experience by locating Internet content, applications and services close to consumers. Second, content providers are able to have their content delivered to consumers more quickly, which may be especially important for smaller content providers seeing growing demand for their services. Third, Akamai services benefit ISPs in several ways. For example, CDNs, like Akamai, identify the least-congested path for Internet traffic so

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[1] TRAI, Pre-Consultation Paper on Net Neutrality, 30 May 2016,: http://www.trai.gov.in/sites/default/files/Net_Neutality_Preconsultation_30_may_2016.pdf

[2] TRAI, Consultation Paper on Net Neutrality, 4 January 2017, http://trai.gov.in/sites/default/files/CP_NetNeutrality2017_01_04.pdf.

as to reduce network congestion. They also alleviate network capacity limits of the "middle mile" by caching content close to end users, so that content does not need to transit and re-transit the entire ISP network with each individual request. Additionally, CDNs improve network security (for example, Akamai mitigates cybersecurity attacks closer to the attacker at the edge of the Internet and further away from the content providers' origin servers, and provides protections across all pathways to data centers).

The use of CDNs to relieve capacity constraints is important in the wireless Internet services market, the predominance of which TRAI identifies as a factor to consider in developing an approach to net neutrality best suited to the Indian context.[3] At the end of September 2015 there were approximately 305.35 million wireless Internet subscriptions, representing 94 percent of all Internet subscribers.[4] In just one year, wireless Internet subscriptions increased by more than 13 percent to 346.22 million, still representing 94 percent of all Internet subscribers.[5] This rate of growth reflects a tremendous demand for wireless Internet services as well as substantial consumer benefits as more and more consumers are able to access the Internet. As TRAI has already noted, however, wireless ISPs face numerous hurdles to providing reliable and robust Internet services, including unpredictable traffic demand patterns, spectrum constraints, physical obstructions, and challenges to densification, such as limited availability of electricity or limited access to rights of way.[6] By using CDNs such as Akamai's, Indian ISPs can reduce the load on their networks; customer requests for particular content that is cached on Akamai's network will be processed in the most geographically efficient location and avoiding points of congestion

Finally, Akamai's congestion-management and capacity-enhancement practices benefit not only Akamai's customers, but also other content providers and carriers, which gain in general from networks with reduced congestion and increased available capacity. Taken together, Akamai's services create efficiencies that ripple through the Internet ecosystem for the benefit of all.

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[3] See paras. 2.2.2 and 2.3.1 of the Consultation Paper.

[4] TRAI, The Indian Telecom Services Performance Indicators, July – September, 2015, TRAI, at page 28, Table 1.24, http://www.trai.gov.in/sites/default/files/Indicator_Reports.pdf.

[5] The Indian Telecom Services Performance Indicators, July – September, 2016, TRAI, at page 28, Table 1.24, http://www.trai.nic.in/WriteReadData/WhatsNew/Documents/Indicator_Reports_Ending_Sep_30122016.pdf.

[6] See paras. 2.2.2(iii-v) and 3.1.3 of the Consultation Paper.

To encourage these efficiencies and innovation, Akamai advocates a flexible regulatory environment for the Internet ecosystem, including a light-touch, principles-based approach to net neutrality. As addressed below, Akamai urges TRAI to specify that CDN services are outside the scope of any proposed net neutrality framework, and should not be subject to net neutrality regulation. To this end, we also urge TRAI to clarify that, based on the technological nature of the CDN service, CDN service providers are not capable of engaging in discriminatory practices that would be prohibited under the core principles of net neutrality. Additionally, TRAI should allow for ISPs' ability to differentiate among CDN providers, such as by offering network access to some CDNs but not others. If ISPs were unable to differentiate among CDNs in this way, it could potentially mean that ISPs would not allow any CDNs network access because they would be unable to find the physical space to accommodate all CDNs, which would slow Internet performance and work to the detriment of Internet users. Since CDNs utilize different technologies to provide their services, they require different things from ISPs, and ISPs should have the flexibility to accommodate these different needs. Further, we encourage TRAI to advocate for a more flexible and principles-based approach to net neutrality as the best method of achieving TRAI's aim of promoting innovation and investment in broadband infrastructure.

Set forth below are Akamai's specific responses to the first three questions posed by TRAI in the current net neutrality consultation. Because Akamai does not offer Internet access service that would be subject to net neutrality rules, nor is Akamai an online service provider, we find that the remaining questions, which focus on detailed traffic management issues, transparency, and implementation, may be better addressed by operators, content providers, and other relevant stakeholders that would be directly affected.

**Q.1 How should "Internet traffic" and providers of "Internet services" be understood in the NN context?**

Akamai believes that the term "Internet service" should be defined consistently with international practices. As TRAI notes in the Consultation, India has not explicitly defined the term. However, there are two key elements among countries that have defined the term within their net neutrality rules. The first element is that the service must be offered to the public, generally on a retail basis. The second element is that the service must provide access to the Internet, enabling the transmission and communication of data to and from substantially or virtually all Internet endpoints. The following table offers examples of how Brazil, the European Union (EU), Singapore, and the United States have incorporated these elements.

| Country | Definitions of Internet service in the net neutrality context |
|---|---|
| Brazil | A "system consisting of the set of logical protocols, structured on a global scale for public and unrestricted use, in order to enable the communication of data between terminals through different networks."[7] |
| European Union | A "publicly available electronic communications service that provides access to the Internet, and thereby connectivity to virtually all end points of the Internet, irrespective of the network technology and terminal equipment used."[8] |
| Singapore | The "net neutrality policy and prohibition of blocking of legitimate Internet content applies to fixed-line, wireless and mobile Internet services."[9] Internet services, in turn, refer to any "public Internet access facility or system for the provision of public Internet access services in Singapore."[10] |
| United States | A "mass-market retail service by wire or radio that provides the capability to transmit data to and receive data from all or substantially all Internet endpoints, including any capabilities that are incidental to and enable the operation of the communications service, but excluding dial-up Internet access service."[11] |

While exact definitions vary from one jurisdiction to the next, Akamai recommends that these common elements be incorporated into the definition of "Internet service" in India's net neutrality context. That is, any net neutrality principles or rules adopted in India should apply only to Internet access service, which should refer to a publicly available electronic communications service provided by a telecommunications service provider (TSP) in India that is offered to end users on a retail basis and that provides connectivity to all or substantially all Internet endpoints. CDNs like Akamai are not considered to be providing an Internet access service in any of the jurisdictions discussed above.

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[7] Brazil, Marco Civil da Internet, Law No 12.965, Article 5, 23 April 2014, http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2014/lei/l12965.htm.

[8] European Union, Regulation 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access, Article 2, http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32015R2120&from=EN.

[9] Info-Communications Media Development Authority, Decision on Net Neutrality, p. 8, 16 June 2011, https://www.imda.gov.sg/~/media/imda/files/inner/pcdg/consultations/20101111_neteutrality/netneutralityexplanatorymemo.pdf.

[10] Info-Communications Media Development Authority, Guidelines for Submission of Application for Services-Based Operations Licence, p. 3, 17 November 2016, https://www.imda.gov.sg/~/media/imda/files/regulation%20licensing%20and%20consultations/licensing/licenses/sboguide.pdf?la=en.

[11] Federal Communications Commission, Open Internet Order, p. 283, 12 March 2015, https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.pdf. See 47 C.F.R. § 8.2.

**(a) Should certain types of specialized services, enterprise solutions, Internet of Things, etc. be excluded from its scope? How should such terms be defined?**

The international norm that has developed over the last several years shows that only Internet access service is subject to net neutrality obligations. That is, net neutrality rules do not apply to services that do not provide the user with access to all or substantially all Internet endpoints, such as specialized services (also referred to as managed services), virtual private networks (VPNs), or closed electronic communications networks.

There are two different approaches to exempting specialized services and other types of non-Internet access services from net neutrality rules. One approach is to exclude them from discussion and focus solely on addressing the applicability of net neutrality rules to Internet access service. Canada's net neutrality framework, for example, addresses (and applies to) ISPs only, and does not mention specialized or managed services, or other types of services that do not involve transmitting or receiving data over the Internet. Because of this, services that are not an Internet access service are treated as outside the scope of net neutrality rules. Other countries that have taken this approach include Colombia, Japan, and Korea (Rep.).[12]

The second approach is to identify these types of services, and explicitly exclude them or make clear that they do fall within the class of services subject to net neutrality regulation. Brazil, the EU, Peru, Singapore, and the United States are examples of jurisdictions that have taken this approach.[13] In the current Consultation, TRAI discusses the EU and U.S. examples in which specialized services are specifically addressed—and excluded from net neutrality regulation.[14] We further note that Singapore's net neutrality framework clarifies that "ISPs or network operators can offer specialized or customized

[12] For Canada, see Canadian Radio-television and Telecommunications Commission, Review of the Internet traffic management practices of Internet service providers, Telecom Regulatory Policy CRTC 2009-657, 21 October 2009, http://www.crtc.gc.ca/eng/archive/2009/2009-657.htm. For Colombia, see Law 1450/2011 National Development Plan for 2011-2014, 2011 and Comisión de Regulación de Comunicaciones, Resolution 3502/2011, Net Neutrality Regulation, 2011. For Japan, see Ministry of Internal Affairs and Communications, Report on Network Neutrality, 2007. For Korea (Rep.), see Korea Communications Commission, Net Neutrality and Internet Traffic Management Guidelines, 2011 (link not available).

[13] For Brazil, see Decreto Nº 8.771, 2016. For the EU, Regulation 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access, 2015. For Peru, see Informe No. 00400-GPRC/2016, 2016. For the United States, see FCC, Open Internet Order, 2015.

[14] See pp. 18-19 of TRAI's Consultation on Net Neutrality.

Internet content, applications and services based on commercially negotiated arrangements or specialized terms and conditions."[15]

In addition, Brazil's Regulatory Decree issued in May 2016 states that the net neutrality rules do not apply to specialized services, which are defined as "services optimized for assured quality of service, security or speed; even if they use TCP/IP or equivalent protocols, provided that: a) they don't constitute a substitute to the internet in its public and unrestricted character and (b) they are intended for specific groups of users with strict admission control."[16] Similarly, Peru's telecommunications regulator, Organismo Supervisor de Inversión Privada en Telecomuncaciones (OSIPTEL), specifically excluded any service that does not provide direct or indirect access to the Internet from the net neutrality regulations, such as specialized services, *i.e.*, IP telephony, IP television, and VoLTE, as well as Virtual Private Networks (VPNs) not used to offer Internet access services, among others.[17]

TRAI has already adopted this second approach in the *Prohibition of Discriminatory Tariffs for Data Services Regulations* (Regulations), wherein TRAI carves out an explicit exemption for data services provided over "closed electronic communications networks."[18] In the Regulations, TRAI defines this term as "a communications network where data is neither received nor transmitted over the Internet," and clarifies that "this regulation does not apply to tariffs for data services over closed electronic communications networks, unless such tariffs are offered or charged by the service provider for the purpose of evading the prohibition of this regulation."[19]

**(b) How should services provided by content delivery networks and direct interconnection arrangements be treated?**

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[15] Info-Communications Media Development Authority, Decision on Net Neutrality, p. 10, 16 June 2011, https://www.imda.gov.sg/~/media/imda/files/inner/pcdg/consultations/20101111_neteutrality/netneutralityexplanatorymemo.pdf.

[16] Brazil, Decreto Nº 8.771, Article 2, 11 May 2016, http://www.planalto.gov.br/ccivil_03/_Ato2015-2018/2016/Decreto/D8771.htm.

[17] Peru, Informe No. 00400-GPRC/2016, page 145, 24 November 2016, https://www.osiptel.gob.pe/repositorioaps/data/1/1/1/PAR/res165-2016-cd/Res165-2016-CD_Inf400-GPRC-2016.pdf, Support Document, page 16, https://www.osiptel.gob.pe/repositorioaps/data/1/1/1/PAR/res165-2016-cd/Res165-2016-CD_ExpoMotivos.pdf, and Net Neutrality Regulation, Article 2, 1 January 2017, https://www.osiptel.gob.pe/repositorioaps/data/1/1/1/PAR/res165-2016-cd/Res165-2016-CD_Reglamento-anexos.pdf.

[18] TRAI, Prohibition of Discriminatory Tariffs for Data Services Regulations, 8 February 2016, http://trai.gov.in/sites/default/files/Regulation_Data_Service.pdf.

[19] TRAI, Prohibition of Discriminatory Tariffs for Data Services Regulations, pp. 1 and 3, 8 February 2016, http://trai.gov.in/sites/default/files/Regulation_Data_Service.pdf

CDNs should not be subject to net neutrality rules—or any other telecommunications licensing or regulatory obligations—because they are not a telecommunications service or Internet access service, and do not provide Internet access service to end users. CDNs like Akamai have not been subject to net neutrality rules in any jurisdiction that has adopted such rules to date.

> *"Generically, a Content Delivery Network (CDN) is a system of servers, deployed at the edge of (or within) the terminating ISPs network, that CAPs [Content and Application Providers] can use to distribute their content. CDNs do not interfere with the network layer of the ISPs. They do not provide connectivity but operate on top of the network layer on upper layers and, in that sense, can be qualified as a CAP (such as caching, server load balancing) on the Internet."*
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> BEREC, An assessment of IP interconnection in the context of Net Neutrality, p. 15, 2012.

Whereas telecommunications service providers (TSPs) and ISPs operate "last mile" infrastructure that provides Internet access service to end users, CDNs are "middle mile" architecture and are part of the facilities between the core telecommunications networks and the local network plant. CDNs have no relationship with end users. Instead, a CDN's customers are online service providers, and CDNs rely on ISPs to host the online service providers' content and deliver it to end users. Since CDNs, as a standalone service, do not provide Internet access service, they are not technically capable of engaging in practices such as blocking, throttling or prioritizing traffic on the ISP's network, the banning of which encompasses the core principles of net neutrality.

Not imposing net neutrality regulations on CDNs is in line with international practices. Peru recently followed this approach and explicitly excluded CDNs from its net neutrality regulations stating that Internet access service providers who contract CDN services are responsible for complying with net neutrality regulations, *i.e.*, CDNs like Akamai are not subject to net neutrality rules.[20] As TRAI notes in the Consultation, U.S. regulations explicitly state that CDNs are not subject to net neutrality rules. In the United States, the Federal Communications Commission (FCC) clarified that CDNs do not offer broadband Internet access service. Because the FCC's net neutrality rules apply only to broadband Internet access services, CDN services are therefore outside the scope of the net neutrality rules.[21] In

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[20] Peru Net Neutrality Regulation, Article 16 and 21, 1 January 2017, https://www.osiptel.gob.pe/repositorioaps/data/1/1/1/PAR/res165-2016-cd/Res165-2016-CD_Reglamento-anexos.pdf, and Informe No. 00400-GPRC/2016, page 151, 24 November 2016, https://www.osiptel.gob.pe/repositorioaps/data/1/1/1/PAR/res165-2016-cd/Res165-2016-CD_Inf400-GPRC-2016.pdf.

[21] See para. 190 of the FCC's Open Internet Order, 2015, which states that "…broadband Internet access service does not include virtual private network (VPN) services, content delivery networks (CDNs), hosting or data storage

this Consultation, TRAI also recognizes that, under FCC rules, CDNs are outside the scope of net neutrality obligations because "they do not provide the capability to exchange data with all Internet endpoints."[22]

Akamai would also like to point to the report, *An assessment of IP interconnection in the context of Net Neutrality*, issued by the Body of European Regulators for Electronic Communications (BEREC) in 2012.[23] In its report, BEREC notes that interconnection between CDNs and ISPs "takes place at the backbone segment of the ISP's infrastructure" and is "independent of traffic variations of individual end user accesses."[24] Therefore, any potential net neutrality violations, such as blocking and throttling of traffic, occur in the ISP's Internet access network, and are not reflected in Internet interconnection.[25]

A separate but related issue concerns interconnection. BEREC further addressed the direct Internet interconnection arrangements that occur between CDNs and ISPs or between content providers and ISPs, stating that the Internet interconnection "market has developed very well so far without any significant regulatory intervention."[26] Although interconnection disputes with ISPs may arise, BEREC found that "such instances have been few and have to date been solved in a relatively short time without regulatory intervention – also due to the competitive pressure of end-users at the retail level."[27] Because the Internet interconnection market is subject to sufficient competitive pressure, BEREC concludes the report by cautioning regulators against imposing any regulatory measures as they "could

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services, or Internet backbone services (to the extent those services are separate from broadband Internet access service)."

[22] TRAI, Consultation Paper on Net Neutrality, p. 19, 4 January 2017, available at http://trai.gov.in/sites/default/files/CP_NetNeutrality2017_01_04.pdf.

[23] BEREC, An assessment of IP interconnection in the context of Net Neutrality, BoR (12) 130, 6 December 2012, http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1130-an-assessment-of-ip-interconnection-in-t_0.pdf.

[24] BEREC, An assessment of IP interconnection in the context of Net Neutrality, BoR (12) 130, p. 29, 6 December 2012, http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1130-an-assessment-of-ip-interconnection-in-t_0.pdf.

[25] BEREC, An assessment of IP interconnection in the context of Net Neutrality, BoR (12) 130, p. 33, 6 December 2012, http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1130-an-assessment-of-ip-interconnection-in-t_0.pdf.

[26] BEREC, An assessment of IP interconnection in the context of Net Neutrality, BoR (12) 130, p. 61, 6 December 2012, http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1130-an-assessment-of-ip-interconnection-in-t_0.pdf.

[27] BEREC, An assessment of IP interconnection in the context of Net Neutrality, BoR (12) 130, p. 61, 6 December 2012, http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1130-an-assessment-of-ip-interconnection-in-t_0.pdf.

potentially be harmful."[28] Since BEREC's report, the Internet interconnection market has become even more competitive. Easy market entry means that more players have entered the field, including upticks in "do it yourself" participation by Internet content, application, and service providers.[29]

Voluntary and commercially negotiated Internet interconnection arrangements bring tremendous value to the Internet ecosystem, resulting in lower retail prices and greater efficiencies throughout the Internet value chain. Importantly, these arrangements have become such standard commercial practice that they are often agreed upon without formal contracts. For example, a survey by the Organization for Economic Co-operation and Development (OECD) reviewed 142,000 Internet interconnection agreements and found that "the terms and conditions of the Internet interconnection model are so generally agreed upon that 99.5% of interconnection agreements are concluded without a written contract."[30] As the OECD also noted, the Internet interconnection model operates "in a highly competitive environment, largely without regulation or central organization," which "has produced low prices, promoted efficiency and innovation, and attracted the investment necessary to keep pace with demand."[31] Thus, regulatory intervention is not only unwarranted, but would undermine the market efficiencies that have developed over the last decade.

> *"That these 'rules of the game' are so ubiquitous and serviceable indicates a degree of public unanimity that an external regulator would be hard-pressed to create. The parties to these agreements include not only Internet backbone, access, and content distribution networks, but also universities, NGOs, branches of government, individuals, businesses and enterprises of all sorts—a universality of the constituents of the Internet that extends far beyond the reach of any regulatory body's influence."*
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> OECD, Internet Traffic Exchange: Market Developments and Policy Challenges, p. 3, 2013.

[28] BEREC, An assessment of IP interconnection in the context of Net Neutrality, BoR (12) 130, p. 61, 6 December 2012, http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1130-an-assessment-of-ip-interconnection-in-t_0.pdf.

[29] In its Q3 Earnings Call, Akamai noted that Amazon, Apple, Facebook, Google, Microsoft, and Netflix entered into or expanded their own CDN operations. Whereas in Q3 2015, these six online platforms represented 17% of Akamai's revenues, in Q3 2016, they collectively accounted for only 10% of Akamai's revenues. See Akamai, Q3 2016 Earnings Call Transcript, 25 October 2016, http://www.nasdaq.com/aspx/call-transcript.aspx?StoryId=4014927&Title=akamai-technologies-akam-q3-2016-results-earnings-call-transcript.

[30] Weller, D. and B. Woodcock (2013), Internet Traffic Exchange: Market Developments and Policy Challenges, OECD Digital Economy Papers, No. 207, p. 3, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k918gpt130q-en.

[31] Weller, D. and B. Woodcock (2013), Internet Traffic Exchange: Market Developments and Policy Challenges, OECD Digital Economy Papers, No. 207, p. 6, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k918gpt130q-en

These views are also consistent with the recommendations put forward by the committee formed by the Department of Telecommunications (DoT Committee) in 2015 to review net neutrality in the context of India.[32] In August 2015, the DoT Committee submitted a report of its findings to the DoT, which the DoT will use—along with inputs from TRAI—to establish India's net neutrality framework. As part of its review, the DoT Committee examined the role of CDNs and Internet interconnection arrangements. The DoT Committee concluded that CDNs are beneficial and serve as an effective arrangement for the management of content, and ultimately found that CDNs should not be subject to net neutrality rules. The DoT Committee concluded that it is of the opinion that a CDN service is an arrangement for management of content as a business strategy.[33] Among its recommendations is that the DoT should leave CDNs outside the scope of net neutrality or other *ex ante* regulation. In particular, the DoT Committee identified the following Recommendation 14: *"CDN is an arrangement of management of content as a business strategy and does not interfere with others business. Making available one provider's CDN to others on commercial terms is a normal commercial activity. It should at best be covered under law related to unfair trade practice."*

Rather than impose *ex ante* regulation on the Internet interconnection market (such as net neutrality rules), Akamai agrees with the DoT Committee recommendation that "[d]iscrimination in access or adoption of anti-competitive practices by [ISPs] is best left to be covered under the law related to unfair trade practices."[34] Similarly, the FCC excluded interconnection arrangements from its net neutrality rules but left open the opportunity to address individual disputes regarding interconnection with ISPs on a case-by-case basis.[35] Consistent with these actions, rather than adopt prescriptive rules, Internet interconnection should be addressed according to *ex post* competition law where there is evidence of abuse of dominance or other anti-competitive behavior.

For the above reasons, Akamai urges TRAI to continue supporting innovation in the "middle mile" by specifying that CDNs should not be subject to net neutrality rules. Akamai further recommends that TRAI adopt the views taken by the OECD, BEREC, and the FCC, which support the longstanding

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[32] DoT Committee, Net Neutrality Report, May 2015, https://www.mygov.in/sites/default/files/master_image/Net_Neutrality_Committee_report.pdf.

[33] DoT Committee, Net Neutrality Report, section 11.6, May 2015, https://www.mygov.in/sites/default/files/master_image/Net_Neutrality_Committee_report.pdf.

[34] DoT Committee, Net Neutrality Report, section 11.6, May 2015, https://www.mygov.in/sites/default/files/master_image/Net_Neutrality_Committee_report.pdf

[35] See para. 205 of the FCC's Open Internet Order, 2015.

practice that Internet interconnection agreements are best left to commercial negotiation. Rather than be subject to net neutrality or other regulatory measures, the flexibility to differentiate among CDNs should not be considered unreasonable discrimination, and ISPs should therefore be permitted to agree to provide network access to some CDNs but not others.

This would benefit not only Akamai's customers, but also other content providers and carriers, which gain in general from networks with reduced congestion and increased available capacity, creating a better-performing and more cost-effective Internet for all people throughout India.

**Q.2 In the Indian context, which of the following regulatory approaches would be preferable:**

**(a) Defining what constitutes reasonable TMPs (the broad approach), or**

**(b) Identifying a negative list of non reasonable TMPs (the narrow approach).**

Akamai strongly believes that the remarkable investment in and innovation resulting from the Internet ecosystem is due to a flexible, principles-based approach to regulation. Akamai advocates for protecting fundamental Internet freedoms, which includes ensuring that: (1) end users can access and use any lawful Internet content, applications and services of their choice; (2) end users can use any non-harmful and compatible device of their choice; and (3) ISPs are transparent regarding traffic management practices.

Regardless of whether a broad or narrow approach is adopted, Akamai believes that any net neutrality framework should be narrowly tailored, and only impose the minimum obligations necessary to promote consumer and economic welfare, as well as encourage competition, innovation, and the growth of broadband networks. Akamai thus supports an open Internet framework that fosters Internet access service to support the fast, reliable, and scalable Internet capabilities that the public demands. Doing so will help drive the continued development of innovative online applications and services of both the most nascent providers to the largest enterprises.

**Q.3 If a broad regulatory approach, as suggested in Q2, is to be followed:**

**(a) What should be regarded as reasonable TMPs?**

**(b) Whether and how should different categories of traffic be objectively defined from a technical point of view for this purpose?**

**(c) Should application-specific discrimination within a category of traffic be viewed more strictly than discrimination between categories?**

**(d) How should preferential treatment of particular content, activated by a user's choice and without any arrangement between a TSP and content provider, be treated?**

Akamai supports TRAI's view that "TSPs must have the flexibility to manage their networks in an efficient and reasonable manner."[36] As TRAI notes, all stakeholders seem to be in agreement with this view.[37] This flexibility is especially important for mobile ISPs, which TRAI notes provide the overwhelming majority of connections to the Internet in India.[38] Consumer demand for access to the Internet over mobile devices is growing very quickly yet wireless providers must operate with a finite quantity of radio spectrum and other physical limitations. Flexibility is essential, as overly prescriptive rules could have the unintended consequence of reducing service quality or investment in mobile services.

## Conclusion

Akamai supports policies that protect and promote an open Internet. Thus, Akamai strongly supports excluding CDNs from the scope of net neutrality regulation, and encourages TRAI to advocate a flexible, light-touch approach to net neutrality for ISPs that focuses on enhancing competition, innovation, and efficiency.

[36] See para. 3.2.1 of the Consultation Paper.

[37] See para. 3.2.1 of the Consultation Paper.

[38] See para. 2.2.2(v) of the Consultation Paper.