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Time for EU-Wide Net Neutrality Regulation

Response to the European Commission's questionnaire on Net neutrality.

About La Quadrature du Net

La Quadrature du Net is a France-based **advocacy group that promotes the rights and freedoms of citizens on the Internet**. More specifically, it advocates for the adaptation of French and European legislations to respect the founding principles of the Internet, most notably the free circulation of knowledge. As such, La Quadrature du Net engages in public-policy debates concerning, for instance, freedom of speech, copyright, regulation of telecommunications and online privacy.

In addition to its advocacy work, the group also aims to foster a better understanding of legislative processes among citizens. Through specific and pertinent information and tools, La Quadrature du Net hopes to encourage citizens' participation in the public debate on rights and freedoms in the digital age.

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Executive Summary

La Quadrature du Net welcomes the European Commission's questionnaire on Net neutrality. As an advocacy group involved in the debate over the 2009 Telecoms Package, we greatly appreciate Commissioner Kroes' commitment to safeguarding network neutrality, as well as the ongoing consultation process, which we hope will result in the adoption of a EU-wide framework for protecting this founding principle of the Internet.

Our contribution addresses most of the points raised in the questionnaire. After underlining the positive externalities generated by the network neutrality, we underline that this principle is currently very much at risk in Europe and give concrete examples of the different commercial strategies which motivate these illegitimate discriminatory traffic management practices. These examples tend to show that the current regulatory framework, which only relies on transparency and competition, will fail to guarantee the neutral nature the Internet's physical infrastructure.

Through our answers to the following questions, we suggest different elements that should be included in any EU-wide Net neutrality legislation. More specifically, we take the view that all Internet access should abide by the principle of Net neutrality, and the exceptions to this principles respect an assessment framework guaranteeing that any traffic management practice actually benefits the freedom of communication of end-users that they affect. We also stress that the development of “so-called managed services” is not in contradiction with the protection of an open communications infrastructure, but that public authorities will have to design regulatory tools to ensure that these do not unsettle the Internet ecosystem. We conclude with further remarks on other issues that are structurally similar to Net neutrality.

We trust that our input will answer to your questions and remain at your disposal for any further inquiry you may have.

Preliminary comments: Why network neutrality fosters socio-economic progress.

At the core of the debate on network neutrality is the protection of the architectural design of the Internet, and more specifically the end-to-end principle, which asserts that the the **control over Internet communications should happen at its endpoints**. In this architecture, the interconnected networks that form physical infrastructure of the global Internet impose very little constraint on the behaviors of end-users and therefore maximizes their freedom of communication. The "transmission pipe" **does not discriminate against the source, destination or actual content of the data** transmitted over the network. In that sense, the networks are said to be neutral, and treat equitably all IP compatible communications.

The importance of network neutrality – or Net neutrality – is best understood by looking at the social and economic benefits that result from it. As every citizen or business-oriented organization can now rely on the openness of the Internet to perform their activities, the production and the circulation of information, knowledge and culture are being democratized. The barriers to entry are sufficiently lowered for people to participate more fully into the social, economical and political life. A neutral, non-discriminatory communications network preserves users' ability to engage in a vast array of strategies, **producing and distributing either market and non-market informational goods**. It is this inclusiveness that explains the incredible socio-economic benefits brought about by the Internet.

Net neutrality benefits citizens. Contrary to older traditional means of communications such as radio or television, producing and circulating information on the Internet does not require significant money. Thus, the ability to produce information and knowledge on the Internet is much more equally distributed in society, and results in positive effects on democracy as a whole. Net neutrality ensures that the ability to voice opinions on the Internet does not depend on your financial capacities or social status. It gives people the freedom to express themselves as they wish, and to access the information they want without risking to be put at disadvantage by the few actors who operate the network.

In its decision against the HADOPI law implementing "three strikes" policy against file-sharing[1], the French Constitutional Council outlined the importance of the Internet for citizenship. Finding that the law disrespected the 1789 "Declaration of the Rights of Man and of the Citizen", the Council stressed that free access to the Internet has become essential for the proper exercise of the freedom of expression and communication. By doing so, the constitutional judges implicitly recognized that an open Internet provides us with the opportunity to deepen people's freedom and autonomy, and therefore improves democratic processes.

For all that, this freedom and autonomy are very much under threat. Media corporations, which have been continuously merging with the telecommunications industries for the past 30 years[2], would like to re-establish the control they have on traditional media on the Internet. Hence, if Net neutrality was abandoned or even weakened in Europe, the control of the new, networked public sphere would be handed out to private actors, who could use discriminatory traffic management as a way of achieving control on the Internet ecosystem. It could turn the Internet into yet another predominantly commercial media.

Net neutrality benefits innovators. Studies[3] show that Net neutrality facilitates innovation and competition, as economic actors take advantage of the level-playing field in communication networks to launch new services. The concept of "innovation without a permit", where new entrants compete fairly with the incumbent giants is at the root of the development of the Internet as we know it. Entrepreneurs of the Internet have become the linchpin of the emergent knowledge economy. Google, Wikipedia, Skype, eBay, Bittorrent, Twitter and so many other essential parts of the Internet took advantage of an open network and became widely used all over the world only a few months after being created, because it was relatively cheap to produce and distribute their innovative services.

1 Decision rendered on June 10th, 2009: *www.conseil-constitutionnel.fr/conseil-constitutionnel/root/bank/download/2009-580DC-2009_580dc.pdf*

2 See: Bernd W. Wirtz, *Reconfiguration of Value Chains in Converging Media and Communications Markets*. Long Range Planning, Volume 34, Issue 4, August 2001

3 A thorough overview of the way new networked technologies transform markets is offered in *The Wealth of networks*, by Yochai Benkler: *http://cyber.law.harvard.edu/wealth_of_networks/Download_PDFs_of_the_book*

However, when a service provider breaks the neutrality of the network, new entrants become vulnerable to unfair competition, given that their access to the Internet infrastructure can be restricted. Obviously, powerful actors in the telecom industries have an interest in imposing their control over information and communication networks. They do so by, for instance, banning innovative VOIP applications from mobile telecommunications services[4]. Anti-Net neutrality practices are thus fundamentally anti-competitive and harm consumers as well as economic growth. They discourage innovation and result in rent-seeking behaviors from established players. They put barriers to entry which prevent the emergence of the "next Skype" or "next Google". It follows that an open and equitable access to the communications infrastructure is the foundation of social and economic benefits and needs to be preserved.

1. Net neutrality is undermined, and so is freedom of communication.

Question 1: *Is there currently a problem of net neutrality and the openness of the internet in Europe? If so, illustrate with concrete examples. Where are the bottlenecks, if any? Is the problem such that it cannot be solved by the existing degree of competition in fixed and mobile access markets?*

Although commercially-motivated traffic discrimination practices have not been as aggressive as in the United States, **violations of the network neutrality principle are gaining ground in the European Union**. Since the apparition of traffic inspection technologies – usually referred too as Deep Packet Inspection – an increasing number of European Internet access providers (IAPs) implement network management practices that clearly breach this founding principle, both on wireless and land-line networks. Generally speaking, and as the following examples outline, we can distinguish between three types of anti-Net neutrality practices that are currently implemented in the EU:

➔ **Throttling bandwidth-intensive protocols:** Internet access providers are tempted to throttle certain class of traffic in order to limit their infrastructure costs. Peer-to-peer traffic has been the main victim of such discriminatory practices whereby an operator chooses slow down traffic to ensure that other protocols will enjoy better quality of service. For instance, Dutch operator UPC announced in August 2009 that it would throttle all protocols other than HTTP (Web traffic) between noon and midnight everyday.[5] Other European IAPs are also said to engage in similar practices.
Even more worrying is the fact that some IAPs are seeking to monetize the under-capacity of their infrastructure. In the United Kingdom, British Telecom throttles all peer-to-peer traffic but sells premium subscriptions allowing customers to avoid such discrimination by paying a higher fee. In this way, operators are in position to benefit from the scarcity of their network's bandwidth, as consumers are compelled to pay a higher price to communicate certain classes of data in normal conditions. The direct effect of such practices is to disincentivize investments in more network capacities, even through the price of bandwidth is rapidly decreasing.
Beyond protocol-based discrimination practices, IAPs are also interested in proposing premium offers that would prioritize the traffic coming from or going to "first-rate" subscribers. In November 2009, Vodafone announced that it would launch such an offer in Spain: a few subscribers would get priority at the expense of all the others during congestion periods of Vodafone's 3G wireless network.[6]

➔ **Inhibiting competing services:** Another obvious breach of Net neutrality is the blocking of certain protocols or applications by IAPs as a way to undermine competition. In some instances, the use of these services is subject to extra fees. The most oft-cited example of

4 Such strategy is being pursued by telecom operators like Orange and O2 in Europe or AT&T in the United States. These companies have unilaterally decided to disable the use of the Skype iPhone application over their 3G networks: http://www.intomobile.com/2009/04/06/skype-for-iphone-banned-by-carriers-in-us-europe.html

5 Nate Anderson, 25 august 2009, « Dutch ISP builds dike around 'Net, throttles non-HTTP traffic », *Ars Technica*.
Address : http://arstechnica.com/tech-policy/news/2009/08/dutch-isp-builds-dike-around-net-throttles-non-http-traffic.ars

6 *Digital World,* 20 November 2009, « L'abonnement 3G prioritaire de Vodafone indigne UFC-Que Choisir ».
Address : http://www.digitalworld.fr/un-projet-abonnement-3g-prioritaire-de-vodafone,9724,a.html

such discriminatory practices is that of the voice-over-IP (VOIP) application Skype. Although the blocking of VOIP on wireless networks has been abandoned by a few IAPs in recent months, many of them still engage in this kind of anti-competitive behaviors and will continue to do so in the future for other innovative services in the absence of Net neutrality regulation.

➔ **Billing online service providers for prioritized access to consumers:** A third category of anti-Net neutrality practices not actually put in practice but increasingly contemplated by some IAPs is the establishment of "tolls", whereby online service providers would have to pay IAPs in order to benefit from a normal quality of service on their networks. In early-2010, the CEO of Telefonica declared that "*Internet search engines use our Net without paying anything at all, which is good for them but bad for us. It is obvious that this situation must change, our strategy is to change this*".[7] Such language indicates that some IAPs are considering developing new business models by monetizing online service provider's access to their subscribers, which would profoundly undermine the Internet ecosystem.

Competition alone will not safeguard the Internet's open architecture. Even though *ex ante* regulation has allowed for sufficient levels of competition in most European markets, many European consumers – especially in rural areas – depend on one or two Internet providers. In such conditions, a regulatory statu quo would be unable to safeguard the common-good nature of the Internet, and many of the positive externalities resulting for network neutrality would be lost. In the view of such risks, it would be a great mistake on the part of European institutions to adopt a "laissez-faire" policy letting IAPs free to develop new business models based on traffic discrimination.

2. The current regulatory framework will fail to eradicate commercially-motivated violations of network neutrality.

Question 3: *Is the regulatory framework capable of dealing with the issues identified, including in relation to monitoring/assessment and subsequent enforcement?*

The directives of the Telecoms Package adopted in late-2009 contains provisions which the European Commission said were useful to protect network neutrality. According to the Commission, **transparency** regarding traffic discrimination practices and **competition** between IAPs so that subscribers can switch providers if they are dissatisfied can help alleviate anti-Net neutrality practices. But in the light of the growing number of violations of this crucial principle, **this first European "Net neutrality doctrine" is inappropriate and needs to be completed**.

The current regulatory framework, relying on both transparency and competition, ensues from the Commission's will to apply at the European level the policies developed by the British national regulatory authority, Ofcom. As early as 2006, Ofcom had to deal with discriminatory practices on the part of British ISPs. It first favored rules governing the transparency of these practices, so that consumers were informed of their IAP's policies. Ofcom then realized that switching to another IAPs who did not engage in discriminatory practices was very difficult for consumers. Concerned with the fact that captive markets might be emerging, the regulator then tried – without much success – to facilitate migration from one IAP to another.[8]

But the effect of these policies on network neutrality is very dubious. First, transparency does not prevent all the IAPs in a given market to adopt anti-network neutrality practices. Second, even if neutral Internet access offers were to subsist in the absence of

7 *eitb.com,* 6 February 2010, « Spanish Telefónica to charge Google, Yahoo, Bing ».
Address : http://www.eitb.com/news/technology/detail/350113/spanish-telefonica-to-charge-google-yahoo-bing/

8 Chris Marsden. "Neutrality 'Lite': Regulatory Responses to Broadband Internet Discrimination," 2009. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1330747&rec=1&srcabs=463041.

regulation, the transactions costs of switching IAP remain so high that many users would feel discouraged to do so. The United Kingdom remains one of the EU countries in which network neutrality is most jeopardized, which clearly demonstrate that **this two-legged policy regarding traffic management has failed**.

With the Telecoms Package, the European Commission chose to expand this minimalist approach to the issue of network neutrality to the rest of the EU. Even though nothing prevents national regulators to go further than this minimum standard, network neutrality is so important for the future of our economies and societies that it should be resolutely protected across all of the European Union (see below).

Question 4: *To what extent is traffic management necessary from an operators' point of view? How is it carried out in practice? What technologies are used to carry out such traffic management?*

Of course, the principle of Net neutrality does not prevent an operator to engage in traffic management practices. One of the goals of EU-wide network neutrality safeguards should be to provide a consistent and enforceable framework to assess whether traffic management practices are reasonable – i.e. whether they actually seek to protect the freedom of communication of end-users – and when they are not. In the view of many stakeholders, there are two situations in which such practices are legitimate:

Unforeseeable and temporary congestion: When a wireless or land-line network goes through a period of unforeseen congestion (e.g. in the case of equipment failure), network operators are entitled to temporarily implement discriminatory traffic management practices in order to ensure to fluidity of data streams. But every time, operators must be able to prove to the regulatory authority that such congestion of its network was not foreseeable and that it took necessary steps to correct it. If the deployment of very high broadband networks takes longer than expected and operators face a durable saturation of their network, then the available bandwidth should be shared equally between all the subscribers and all service providers, until operators invest to upgrade their infrastructure.

Security threat on the network: In case of an sudden attack or all other event undermining the proper operation of the network, discriminatory practices are also legitimate. But they should be circumscribed to temporary traffic hazards. Malicious actions aiming at altering the global operation of the network, whether intentional or accidental, should be considered as attacks. Traffic hazards needs to be addressed through temporary measures, either manually – when irregular traffic is detected – or automatically – when such traffic hazards are already well-known. The duration of these measures should not exceed that of the attack. They should be made transparent in order to foster collaboration among the community of network operators and allow for both a sound diagnosis of security threats and for the adoption of the most adequate methods to deal with them.

3. Protecting network neutrality through ad hoc regulations.

Question 5: *To what extent will net neutrality concerns be allayed by the provision of transparent information to end users, which distinguishes between managed services on the one hand and services offering access to the public internet on a 'best efforts' basis, on the other?*

The question seems to acknowledge that the “best-effort” Internet is necessarily neutral. But what is at stake in the current debate over network neutrality is precisely the definition of this principle, of its application and enforcement. To do so, a EU-wide regulation (as opposed to a mere code of conduct) should be adopted to:

- **Define the principle of network neutrality:** First, the specific architectural principles of the Internet should be recognized in the regulatory framework through the definition of the Internet as a public electronic communications network abiding by the principle of Net neutrality.[9] This principle would rule out any discrimination based on the source, destination or actual content of the data transmitted over the network . IAPs would be compelled to respect this principle by guaranteeing final users the freedom to 1) send and receive the services of their choice; 2) use or run the application and services of their choice; 3) connect to the network and run any program of their choice, as long as they do not harm the network.

- **Provide a framework for reasonable network management practices:** Exceptions to the network neutrality principle should be possible in exceptional circumstances , such as in the case of unforeseeable congestion or in the event of a security threat on the network. The French NRA recommends that these "reasonable" traffic management practices respect the the principles of relevance of the motives (congestion or security threat – see question 4), proportionality, efficiency, transparency and non-discrimination[10]. To the extent that they clearly exclude commercially-motivated violations of network neutrality, these principles seem appropriate since they are flexible enough to accommodate any future legitimate need for traffic management practices while preventing abuses.

- **Create sanctions to punish any illegal violation of network neutrality:** A third important component of a regulatory framework aimed at protecting network neutrality is the creation of appropriate sanctions. National regulatory authorities must be able to sanction IAPs when they violate Net neutrality rules, for instance through monetary fines (which should be persuasive enough). In the event of very serious and/or deliberate interferences with the freedom of communications of end-users, the judiciary authority should be competent to sanction IAPs.

Question 6: *Should the principles governing traffic management be the same for fixed and mobile networks?*

The **same principle should apply to both wireless and fixed-line networks**. But in practice, most stakeholders agree that network neutrality should apply differently to these two types of networks. In particular, congestion is more of an issue on wireless networks, given the physical scarcity of the radio-electric spectrum. Considering the different technological environments, the framework for assessing the "reasonable nature" of all traffic management practices (mentioned above) should lead to **practical differences in its implementation**. For instance, regulators might deem proportionate and necessary to throttle specific bandwidth-intensive applications or protocols on congested wireless networks. However, these Internet traffic management practices should never consist in banning or blocking such applications or protocols, nor should they lead to disincentivize investments in increased network capacity in the medium term.

On the long term however, regulators should build on the success of WIFI technologies and consider **reforming the European spectrum policy to authorize new unlicensed uses of the spectrum**. As the United-States moves towards opening "so-called" white-spaces to unlicensed uses,[11] Europe risks lagging behind if it fails to do the same thing. The advent of smart wireless technologies also allows for the construction of meshed networks, providing a shared Internet infrastructure of first and last resort to all citizens and businesses.[12]

9 Arcep provides a useful definition, which distinguishes the Internet from other managed online services. An Internet access is a "*service that consists of providing the public with access to online communication services. This service provides the public with the ability to send and receive data by using the IP communication protocol, from all or virtually all points, designated by a public Internet address, from all of the interconnected public and private networks around the world that make up the Internet*". p. 7 Arcep's document dated May 20th, 2010, entitled "Discussion points and initial policy directions on Internet and network neutrality ". Available at www.arcep.fr/uploads/tx_gspublication/consult-net-neutralite-200510-ENG.pdf

10 See page 18 of Arcep's above-mentioned document.

11 Ryan Kim, "Get Ready to Innovate! FCC Approves White Spaces Rules." *The New York Times*, September 23, 2010, sec. Technology. http://www.nytimes.com/external/gigaom/2010/09/23/23gigaom-get-ready-to-innovate-fcc-approves-white-spaces-r-20057.html?partner=rss&emc=rss.

12 For a discussion of innovative spectrum policy, see Yochai *Benkler*, Overcoming. *Agoraphobia*: Building the Commons of the Digitally Networked Environment, 11 HARV. J.L. & TECH. 287, 293 (1998). See also: http://www.openspectrum.eu

Question 8-14: General remarks on managed services, quality of service requirements, and the protection of the Internet.

Both the Internet and managed services should be defined in the regulatory framework and steps taken to **ensure that the development of managed services will not occur at the expense of the Internet**. According to the French national regulatory authority (Arcep), managed services are acceptable as long as they "*respect competition laws and sector- specific regulation, and provided that the managed service does not degrade the quality of Internet access*". Such degradation would occur if, for instance, an operator decided to allocate the vast majority of its bandwidth to managed services, thereby depriving the Internet access from sufficient network capacities.

To ensure that managed services will not undermine the attractiveness of Internet access offers, Arcep proposes that the **quality of service requirements** included in the Telecoms Package be construed in the context of the neutral Internet to protect the latter against degradation "*Given the shared social interest in having an Internet connectivity that operates in a satisfactory way for the maximum number of users, it seems necessary to encourage the service to be of satisfactory quality. An ISP's responsibility in this matter is naturally central"*.[13]

To preserve the attractiveness of Internet access, managed services should also respect specific conditions. In particular, it seems that any managed service should only give access to one specific type of application or a limited package of services (whether these are HD video, videoconferencing, e-Health, etc). Otherwise, one managed service could absorb most of the applications that the Internet has to offer and unfairly compete with this open and neutral communications architecture.

4. Further remarks.

Question 2: *How might problems arise in future? Could these emerge in other parts of the internet value chain? What would the causes be?*
Question 7: *What other forms of prioritisation are taking place? Do content and application providers also try to prioritise their services? If so, how – and how does this prioritisation affect other players in the value chain?*

Other parts of the Internet value chain that see the **emergence of bottlenecks** which do or could hinder innovation and freedom of communication. Indeed, all the technical architectures that form part of the Internet ecosystem can be more or less open to innovation and uses that were not originally foreseen (i.e. the concept of "generativity", elaborated by Jonathan Zittrain[14]). Networks, connected devices as well as applications, services and content flowing from one device to the other through the network all form part of the same Internet ecosystem, in which innovation is best served when users retain the freedom to use them as they wish.

If their goal is to promote fair competition and innovation in the device, content and application marketplaces, European institutions should be wary of business-models aimed at bundling devices to networks, or applications or content to devices.

Question 15: *Besides the traffic management issues discussed above, are there any other concerns affecting freedom of expression, media pluralism and cultural diversity on the internet? If so, what further measures would be needed to safeguard those values?*

They are of course direct implications of network neutrality violations on freedom of

13 See page 19 and 22 of Arcep's document.
14 Jonathan Zittrain. *The Future of the Internet — And How to Stop It*. Yale University Press, 2008. http://futureoftheinternet.org/

expression, media pluralism, and cultural diversity, but these should all be safeguarded if the EU regulatory framework is updated to include strong protection against illegitimate traffic management practices.

One related key aspect is to recognize that site or domain-wide filtering is an extremely serious measure impacting freedom of information and communication. Obviously, any attempt to mandate such measures without a prior judiciary decision under a fair and equitable trial is in contradiction to fundamental rights. Even judicially ordered filtering raises serious issues as it unavoidably risks to prevent access to other contents than the offending one. As it is also an inefficient measure, it should be discouraged.

Independently of how non-market exchanges between individuals will be recognized in copyright and related rights law, the technological means of file sharing must be protected as constituting an essential part of the Internet. For instance, attacks against or intentional pollution of P2P networks (used for all types of contents and purposes) should be prosecuted.