EUROPEAN COMMISSION
Information Society and Media Directorate-General

Electronic Communications Policy

QUESTIONNAIRE

FOR THE PUBLIC CONSULTATION ON THE OPEN INTERNET AND NET NEUTRALITY IN EUROPE

Consultation
Publication date: 30 June 2010
Closing Date for Responses: 30 September 2010

This document does not represent an official position of the European Commission, but is intended to stimulate debate on the part of stakeholders and the public. It does not prejudge the form or content of any future proposal by the European Commission.

1. PURPOSE OF THIS DOCUMENT

This questionnaire is intended to contribute to the debate on the open internet and net neutrality in Europe and to feed into the report which the Commission aims to present to the European Parliament and Council before the end of the year in accordance with its Declaration (in Annex I) made in the context of the adoption by the European Parliament and Council of the telecoms reform package in November of last year.

> The Commission invites written comments on the questions raised in this document, to be submitted **by 30 September 2010**.

2. NET NEUTRALITY AND THE OPEN INTERNET

The internet today turns a simple computer or mobile device into a connected world where it is possible to shop for anything, socialise through social networking sites, bank, book holidays, hotels and flights, communicate and consume media, to mention a few examples. Never has it been more central to people's lives.

It empowers citizens and brings a better quality of life through, for example, better health care, safer transport and easier access to public services. It is no longer just a communication tool. It is an engine for creating more growth and jobs. It is a platform for the delivery of public and private services.

The open character of the internet has enabled end users in general to access and distribute information or run applications of their choice. However, the rapid developments in the volumes of traffic passing over the internet and the technological changes taking place have brought the issue of net neutrality and the open internet to the fore.

Net neutrality issues also became a focus for discussion in the negotiations on the telecoms reform package last year, fuelled by reported instances of blocking of sites or applications and slowing of service provision. Concerns have been raised that the openness of the internet, and therefore its benefits to society and the economy, may be undermined if network operators seek to treat traffic differently, for example on the basis of its origin, destination, the type of service or content that is being transmitted, or other criteria.

This questionnaire therefore focuses principally on the behaviour of operators, and in particular how they may manage traffic flowing over their networks (through a set of practices commonly referred to as 'network management' or 'traffic management'), in order to see how this behaviour might impact on the 'net freedoms' of citizens (i.e. their 'ability to access and distribute information or run applications and services of their choice[1]').

This consultation invites views on how best to preserve the open and neutral character of the internet, given the will of the European Institutions to enshrine this goal as a policy objective and regulatory principle to be promoted by national regulatory authorities, and to consider whether further public policy responses are needed.

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[1]   This is a regulatory policy objective enshrined in Article 8 of the amended Framework Directive

3. BACKGROUND

The regulatory framework

The 2002 EU regulatory framework for electronic communications was founded on the principle that competitive market forces should be allowed to ensure the provision to the end user of high quality and reasonably priced communications services.

However, where competition is not effective in certain specified markets with characteristics making them susceptible to *ex ante* regulation (under the 'three criteria test'), then the framework provides that regulatory obligations should be imposed in order to create conditions for effective competition.

Consequently, when one or more operators have been found to have significant market power (SMP) in a relevant market, following a market review by the national regulatory authority, specific obligations (including obligations of non-discrimination), may be imposed to address the market failures in that market. As a result, competitive forces should bring the desired benefits to end users.

Examples of this process which are relevant to the provision of internet-based services, and therefore to the concept of net neutrality, include the unbundling of the local loop and other regulatory measures affecting the local access market (e.g. bitstream access). The degree of competition that exists in the local access market as a result of regulation may be one of the reasons why issues of net neutrality have not arisen more prominently in the EU in the past.

Transparency

Transparency is one of the key tools provided by the EU regulatory framework as a means of ensuring that competition brings benefits to end users and that end users' interests are otherwise protected. In this way consumers and other end users have the ability to make informed choices between competing service providers.

The 2009 reforms to the EU regulatory framework have strengthened these transparency requirements in a way which specifically addresses net neutrality issues. In particular:

➢ Article 20(1)(b) of the Universal Service Directive, governing the content of contracts between consumers (and other end users so requesting) and providers of connections to a public communications network and/or publicly available electronic communications services, stipulates that 'the contract shall specify in a clear, comprehensive and easily accessible form at least' (*inter alia*):

– 'information on any […] conditions limiting access to and/or use of services and applications, where such conditions are permitted under national law in accordance with Community law,

– the minimum service quality levels offered, namely the time for the initial connection and, where appropriate, other quality of service parameters, as defined by the national regulatory authorities,

– information on any procedures put in place by the undertaking to measure and shape traffic so as to avoid filling or overfilling a network link, and on how those procedures could impact on service quality, and

– any restrictions imposed by the provider on the use of terminal equipment supplied.'

➢ Article 21(3)(c) and (d) of the Universal Service Directive provides for the imposition of additional information requirements on operators, by requiring Member States to ensure that NRAs are able to oblige undertakings providing public electronic communications networks and/or publicly available electronic communications services to *inter alia*:

– 'inform subscribers of any change to conditions limiting access to and/or use of services and applications, where such conditions are permitted under national law in accordance with Community law; and

– provide information on any procedures put in place by the provider to measure and shape traffic so as to avoid filling or overfilling a network link, and on how those procedures could impact on service quality'.

Quality of service requirements

The 2009 reforms also strengthened the powers of national regulators to intervene where they consider that the manner in which operators handle the flow of traffic over their networks may put the net neutrality principle at risk, by degrading the quality of service available to subscribers.

Article 22(3) of the Universal Service Directive provides that 'in order to prevent the degradation of service and the hindering or slowing down of traffic over networks, Member States shall ensure that national regulatory authorities are able to set minimum quality of service requirements on an undertaking or undertakings providing public communications networks.'

Article 22(3) also provides for a process of consultation involving the NRAs, the Commission and BEREC where such minimum quality of service requirements are imposed, in order to ensure that they do not adversely affect the functioning of the internal market.

Policy objectives and regulatory principles

Net freedoms are covered by a new provision in Article 8 of the revised Framework Directive, defining the policy objectives and regulatory principles applicable to the work of the NRAs (and BEREC), which requires NRAs to 'promote the interests of the citizens of the European Union by inter alia: … promoting the ability of end users to access and distribute information or run applications and services of their choice' (Article 8(4)(g) of the Framework Directive).

4. MAIN ISSUES FOR CONSULTATION

4.1. The open internet and the end-to-end principle

The end-to-end principle is one of the central design principles of the internet. According to this principle, whenever possible, communications protocol operations should be defined to occur at the end-points of a communications system, or as close as possible to the resource being controlled. In practice, this means that network operators treat packets equally, regardless of origin, content type or destination. It has resulted in 'intelligence' being located at the ends of the network, i.e. in the devices and applications that are connected to the network, rather than centralised in the network's core, as is the case for many traditional

telecommunications networks. This architectural feature is considered by many to have been a key driver of the growth of the internet to date, and to have facilitated an open environment conducive to the spectacular levels of innovation seen in online applications, content and services networks.

In this paradigm, customers and content/service providers at each 'end' pay their ISP for access, and it is up to them to decide what they want to access or provide online (as long as it is legal). So far, 'internet access' has been more or less unrestricted with access to everything the internet has to offer (content, applications – some of them only available for a fee) – as opposed to a selection of content/applications pre-approved by the ISP (sometimes referred to as a 'walled garden'). While in certain circumstances ISPs may be able to exercise some market power, the multi-sided nature of the market means that they still have strong incentives to make available a wide array of content.

Furthermore, the competitive dynamic in Europe has enabled consumers to benefit from different platforms and different pricing models which have fostered an open approach to the internet. This has been underpinned by the degree of competition in the access network.

However, as the volume of traffic passing over communications networks has increased, and new forms of data services have developed which change the business models underpinning the provision of services over those networks, a number of cases have emerged involving the differentiated treatment by network operators of services or traffic which have led some interested parties to question whether the principle of the openness or neutrality of the internet may be at risk.

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?

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

4.2.   Traffic management/discrimination

The amended telecoms framework accepts the principle that traffic/network management can be a legitimate tool for the provision of differentiated services and in the interests of the efficient functioning of networks, provided that the requirements of the framework are adhered to and customers are kept informed, in particular with regard to the minimum service quality they can expect.

There are also constraints on prioritisation of traffic which stem from the nature of the internet as a network of many different networks. This means that prioritisation can work only if all the interconnected networks that link the provider to the consumer of content/services agree on the methodologies and tools to implement such prioritisation. In practice, therefore, up to now prioritisation of particular types of traffic seems to be an option only at a certain level of the internet architecture, when the traffic reaches the network of the internet service provider (ISP) to which a particular content provider or website is connected.

'Quality of service' issues in the context of traffic management practices generally arise in situations where a network starts to experience regular and disruptive congestion (i.e. traffic volumes reaching maximum network capacity and affecting the end user's accessibility to the network) and the network operator is faced with two general options:

– increase the capacity of the network to meet demand;

– differentiate between traffic on the basis of origin, destination or content type, so as to prioritise traffic which is more time-critical and thereby downgrade the transmission of traffic which is less time-critical.

The second option is normally referred to as introducing 'quality of service' parameters into the traffic management practices of the network.

Traffic management can take different forms and have different purposes. Traffic may be managed to ensure a certain quality of service (for voice calls) or to ensure life-critical or real-time services that might otherwise be jeopardised by bandwidth-hungry applications, e.g. for access to emergency numbers. In future, traffic may also be managed to ensure that legal obligations are met in some Member States, particularly for example with regard to illegal content. Traffic could also be managed to ensure for example that heavy users downloading bandwidth-hungry content such as films or software will not degrade the service for other users.

Network operators may offer their customers guaranteed quality of service over and above the quality which would otherwise be available on the network. Such offers may involve guarantees covering a range of aspects of the service, such as bandwidth, packet loss, jitter (variation in timing between data packets), latency (delay of data packets) or network security which are important for the provision of particular types of services. Where services or applications have specific characteristics which require a high level of quality or reliability in order to perform their intended function, then these types of guarantees may be necessary. These types of enhanced service are often referred to as 'managed services' and can be distinguished from services using the normal mode of internet service provision, which involves delivery of internet traffic on a 'best efforts' basis.

Growth in the popularity of services such as IPTV, cloud computing or eHealth applications, which may be provided by third parties independent of the access provider, is likely to lead to an increase in the use of managed services. In addition, network operators may wish to enter into contractual arrangements for the provision of managed services not only with their end user customers, but also with the content providers who may have an interest in ensuring that the guaranteed service levels are met. However, some stakeholders have a concern that, in networks with capacity constraints, this increased focus on managed services might undermine the viability of the 'best efforts' internet model in the longer term. Questions also may arise as to whether the offer of enhanced quality of service conditions on a selective basis, to only some providers of a particular type of content or application, might have negative effects on other providers of similar types of content or application or their end users.

The above concerns relate to offers by network operators of services offering enhanced quality of service. However, concerns that the openness and neutrality of the internet may be at risk have also arisen as a result of specific instances in which restrictions have been placed on end users' ability to access particular applications over their internet connection. Examples

are the slowing of speeds for streaming of video content or for peer-to-peer applications (allowing the downloading of content from one user to another), as well as restrictions imposed by mobile operators on voice over internet protocol (VoIP) services offered by third parties.

In fixed broadband markets, blocking of VoIP providers has not emerged as an issue and anecdotal evidence suggests that the availability of such services may have been a driver for users to shift from narrowband services to broadband services. On the other hand, a number of mobile providers still block VoIP services from third-party providers or charge rates to end users in excess of normal rates for equivalent amounts of data. Mobile operators have sought to justify blocking of VoIP on both technical and commercial grounds.

The terms and conditions of some operators' contracts for mobile broadband services specifically prohibit use of VoIP services and peer-to-peer applications. However, it is unclear at what technical level any such blocking takes place: whether at the level of the operator, which may directly block the service on its network that it has identified as being VoIP or peer-to-peer, or at the level of the terminal equipment manufacturer which, at the request of the operator, has either not pre-installed the software or has configured the equipment in such a way that the software cannot be installed once in service. Nevertheless, recent developments indicate that there is a shift towards allowing such services to develop more freely, particularly for users on specific tariff plans.

The practices and behaviour of network operators and ISPs with regard to internet traffic are difficult to monitor and assess. Particularly as operators start to invest in Next Generation Networks and increased traffic management capabilities, clarity may be needed as to what constitutes 'reasonable traffic management' and what might be considered as unacceptable both by regulators and consumers. It is therefore important to undertake such monitoring/assessment, and that approaches in this area lead to comparable results across Europe.

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?

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?

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

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?

Question 8: In the case of managed services, should the same quality of service conditions and parameters be available to all content/application/online service providers which are in the same situation? May exclusive agreements between network operators and content/application/online service providers create problems for achieving that objective?

> **Question 9:** If the objective referred to in Question 8 is retained, are additional measures needed to achieve it? If so, should such measures have a voluntary nature (such as, for example, an industry code of conduct) or a regulatory one?

4.3.   Market structure

Some concerns over net neutrality arise from the nature of the internet as a two-sided (or multi-sided) market. This can roughly be defined as a market in which one or several platforms enable interactions between end users and try to get the two (or multiple) sides 'on board' by charging each side 'appropriately'.

The internet today has emerged as a complex ecosystem which involves multiple activities and players including traditional content providers, online services, enabling technology and services, connectivity and user interfaces.

All these players are important in the value chain and all need each other to reach and attract consumers. For example, network providers and ISPs need attractive applications and content that encourage users to sign up for their broadband services (including mobile) or upgrade to a better quality of service product. Content providers and online service providers require adequate connectivity to reach customers who in turn want to have connectivity to be able to use their content and services.

At the same time there is a strong incentive for network operators to seek to increase their share of the economic value of the content/services being transmitted over their networks in other ways than merely by charging the end user for access, not least as a means of financing future investment in their networks. These markets and the relationships within them are more complex than those in one-sided markets, and therefore require more analysis in the context of the net neutrality debate.

The arrangements between operators and content/service providers are currently a matter of commercial negotiation.

The flows of traffic over and between the networks that ultimately deliver content to the end user are complex; they sometimes involve peering arrangements that do not involve monetary flows, since traffic is presumed to be balanced. While peering agreements appear to be the norm between internet backbone operators, network operators are also entering into such agreements with internet companies even though traffic flows might be asymmetrical. A second way of getting interconnection is through a transit agreement. Here, the transit provider is paid a transit fee for carrying traffic to the backbone providers.

> **Question 10:** Are the commercial arrangements that currently govern the provision of access to the internet adequate, in order to ensure that the internet remains open and that infrastructure investment is maintained? If not, how should they change?

4.4.   Consumers – quality of service

From the point of view of end users, including domestic consumers, the private sector and public administrations, the core issue is one related to transparency and quality of service.

In a competitive market, the response by consumers to a reduction in the quality of the service they receive may be to switch supplier. In cases where only certain services and applications

appear to be 'slow' however (in comparison with 'prioritised' services), it may not always be clear what is the cause or where the responsibility lies.

In addition, consumers may face costs and breaks in connectivity when they switch operators, particularly now that most services are bundled. Not only may a minimum contract term limit the customer's ability to switch rapidly in response to a change in the quality or nature of the service received, but also in certain areas (mostly rural and less populated) a lack of other internet providers may limit the users' choice.

While it is in the interests of consumers to have a range of differentiated services from internet service providers which they can subscribe to, in the case where there could be limited competition or significant switching costs, transparency as to the nature of the traffic management practices in place might not be sufficient. Nevertheless, national regulatory authorities have the power (under Article 22 of the amended Universal Service Directive) to intervene when they consider that the manner in which operators handle the flow of traffic over their networks may put the principle of net neutrality at risk by degrading the quality of service available to subscribers.

Question 11: What instances could trigger intervention by national regulatory authorities in setting minimum quality of service requirements on an undertaking or undertakings providing public communications services?

Question 12: How should quality of service requirements be determined, and how could they be monitored?

Question 13: In the case where NRAs find it necessary to intervene to impose minimum quality of service requirements, what form should they take, and to what extent should there be co-operation between NRAs to arrive at a common approach?

Question 14: What should transparency for consumers consist of? Should the standards currently applied be further improved?

4.5.   The political, cultural and social dimension

The internet has become a vital platform for the political, cultural, and social participation of European citizens. Any policy decision concerning the way in which the internet functions must be framed keeping this basic premise very firmly in mind.

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?

4.6.   Any other issues

Respondents are invited to raise any other issues relating to net neutrality that they might want to address in this consultation.

4.7.   Responses

Responses to this public consultation should reach the European Commission by 30 September 2010 at infso-netneutrality@ec.europa.eu. See Annex II for further information on submitting your response.

ANNEX I

Telecom Reform 2009: Commission Declaration on Net Neutrality

In the context of the review of the EU regulatory framework for e-communications, a Commission Declaration was attached to the agreed Package. (OJ L 337, 18 December 2009)

"The Commission attaches high importance to preserving the open and neutral character of the Internet, taking full account of the will of the co-legislators now to enshrine net neutrality as a policy objective and regulatory principle to be promoted by national regulatory authorities[1], alongside the strengthening of related transparency requirements[2] and the creation of safeguard powers for national regulatory authorities to prevent the degradation of services and the hindering or slowing down of traffic over public networks[3]. The Commission will monitor closely the implementation of these provisions in the Member States, introducing a particular focus on how the "net freedoms" of European citizens are being safeguarded in its annual Progress Report to the European Parliament and the Council. In the meantime, the Commission will monitor the impact of market and technological developments on "net freedoms" reporting to the European Parliament and Council before the end of 2010 on whether additional guidance is required, and will invoke its existing competition law powers to deal with any anti-competitive practices that may emerge."

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[1]   Article 8(4)(g) Framework Directive.
[2]   Articles 20(1)(b) and 21(3)(c) and (d) of the Universal Service Directive.
[3]   Article 22(3) of the Universal Service Directive.

ANNEX II

Responding to the consultation

The Commission invites written views and comments on the issues raised in this document, to be submitted **by 30 September 2010**.

Contributions, together with the identity of the contributor, may be published on the website of the Directorate-General for Information Society and Media, unless the contributor objects to publication of personal or confidential data on the grounds that such publication would harm his or her legitimate interest. For more details, please see the Commission's general statement on personal data protection[4] as well as the specific privacy statement for this consultation[5].

Please give the name of a contact person in your organisation for any questions on your contribution. Please note that we do not need a hard copy in addition to the electronic version.

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[4]   http://ec.europa.eu/geninfo/legal_notices_en.htm#personaldata
[5]   http://ec.europa.eu/information_society/policy/ecomm/library/public_consult/index_en.htm