EUROPEAN COMMISSION
Directorate-General for Communications Networks, Content and Technology

Electronic Communications Networks & Services

Public Consultation

on specific aspects of transparency, traffic management and switching in an Open Internet

Questionnaire

Questions 1, 2, 5, 11-14, 16-22, 26 and 29 are addressed **to all respondents**, including private individuals. The other questions aim at gathering detailed, often technical, information. Private individuals are therefore not requested to reply to those questions. If you consider that you can provide useful factual contributions also to those questions, you are invited to answer them.

If your answer contains confidential information, please provide a non-confidential version as well.

General information

Question 1: *(all respondents)*

I answer as:

a) Private individual

b) Consumer or user association

c) Organisation providing service information to consumers (e.g. comparison website)

d) Internet network or service provider

e) Association of Internet network or service providers

f) Internet content and applications provider

g) Association of Internet content and applications providers

h) Public administration

i) Other

Question 2: *(all respondents)*

a) Please provide a brief description of your organisation and of your interest in open Internet issues.

b) If your organisation is registered in the Transparency Register, please indicate your Register ID number.

c) Please provide the postal and e-mail address of your organisation and, if you wish, the name of a contact person (including telephone number and e-mail address) for any questions on your contribution.

d) In which Member State(s) are you established and where do you perform your activity?

1. Traffic management

Traffic management is the term used to describe a wide range of technical practices undertaken to manage traffic across networks, which includes prioritization, slowing down, throttling or blocking of certain data packets. There seems to be consensus that traffic management is a legitimate tool to effectively protect the security and integrity of

networks, to restrict the transmission to end-users of unsolicited communication (e.g. spam) or to give effect to a legislative provision or court order.

It is also widely understood that certain traffic management techniques are involved in the provision of "managed/specialised services"[1] (that provide a generally guaranteed quality of service and a strict admission control). This questionnaire focuses on cases where traffic management is applied by ISPs for such purposes, or for other contractual or operational purposes such as congestion management, the enforcement of contractual restrictions etc. Furthermore, BEREC's traffic management investigation showed that a number of traffic management techniques are actually applied by ISPs.

For instance, ISPs commonly apply certain traffic management practices in order to avoid or manage traffic congestion in a network. Traffic management is also sometimes deployed to provide a guaranteed quality of service for "managed services", for example IP-TV, video on demand (VoD), etc. Another issue is that traffic management often involves monitoring practices that may raise privacy concerns. The following questions ask for additional information regarding these traffic management techniques.

1.1 Traffic management and differentiation

Question 3:

Please explain **briefly** which traffic management techniques are usually applied by network operators or ISPs and how they are technically implemented.

Question 4:

Congestion management is one of the reasons for applying traffic management measures.

a) Please describe **briefly** how congestion management normally works.

b) If possible, please provide a **definition** and **examples** of genuine congestion management measures, i.e. measures which are **necessary** to avoid or tackle network congestion, as opposed to measures which may be called congestion management but actually pursue other purposes.

Question 5: *(all respondents)*

Please provide your views on the following ways/situations where traffic management may be applied by ISPs.

Are traffic management measures:

a) applied to deliver managed services (e.g. to ensure a guaranteed quality of service for a specific content/applications)

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

b) taking into account the sensitivity of the service to delay or packet loss

☐ necessary ☐ appropriate ☐ problematic

[1] "Managed services" are sometimes also called "specialised services". For the purposes of this public consultation both terms shall be deemed to be synonyms.

Please explain your response

c) used to implement or manage compliance with the explicit contractual restrictions (e.g. on P2P or VoIP) of the Internet access product accepted by the user

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

d) targeting types/classes of traffic contributing most to congestion

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

e) targeting heavy users whose use is excessive to the extent that it impacts on other users

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

f) applied during busy times and places, when and where congestion occurs

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

g) affecting all applications/content providers in the same way (application-agnostic)

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

h) affecting (similar) applications/content providers of the same category in the same way

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

i) used, without other grounds, against services competing with the ISP's own services

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

j) implemented at the full discretion of the ISP

☐ necessary ☐ appropriate ☐ problematic

Please explain your response

k) other differentiation criteria (please specify)

Please explain your response.

Question 6:

The use of managed services may affect the Internet access service in some cases, due to the sharing of access resources.

a) Please explain the impact of managed services on the standard Internet access service ("best effort") in terms of available bandwidth and quality of service.

b) Please explain whether it is possible to offer separate capacity for managed services and the standard Internet access service. If yes, please provide information on the circumstances (costs, technologies) of separating them.

Question 7:

a) Please give examples of "new business models" which could be developed on the basis of managed services by

(i) Network operators/ISPs:

(ii) Content providers (on the basis of agreements with ISPs):

b) How important are these innovative business models likely to become in the next three years? Please substantiate your view by means of available forecasts or studies.

c) What would be the expected benefits in terms of innovation and investment through new businesses (content or applications) benefitting from guaranteed levels of quality of delivery through managed services?

Question 8:

What are likely positive and negative effects of certain traffic management practices on the Internet ecosystem, in particular on innovation and investment, by (i) network operators/ISPs and (ii) content providers? Please explain your view and, if appropriate, distinguish between different traffic management practices.

1.2. Traffic management and privacy issues

Question 9:

It appears that the implementation of traffic management measures requires ISPs to analyse certain information about individual data packets, for instance by deep packet inspection (DPI) techniques. Please explain which type of information needs to be read by ISPs to implement the different traffic management measures. In which layer can this information normally be found?

Question 10:

a) Are there any privacy risks arising from the use of DPI for traffic management purposes, and, if so, what are the implications for transparency and consumer protection?

b) Are there alternative techniques for traffic management that do not involve deep packet inspection? Please provide examples and explain your response. Please compare those alternative techniques with deep packet inspection, in particular in terms of their effectiveness, potential impact on privacy and costs for operators.

Question 11: *(all respondents)*

Where the user's consent is required for traffic management measures, particularly where such measures might entail access to and analysis of certain personal data by ISPs, please explain how (e.g. in which format) this consent should be sought by the ISP, what prior

information needs to be provided by the ISP to the user, and how the user consent should be given, in order to optimise user awareness and user convenience.

2. Transparency and switching (consumer choice)

Transparency is a key tool in the EU electronic communications framework to protect users and to ensure competition. Transparency enables consumers to optimise their informed choices and thus benefit fully from competition, in particular at a time when ISPs are developing new business models.

The BEREC investigation has revealed that many consumers have Internet access subscriptions with a number of restrictions. Moreover, the development of new business models is likely to lead to a broad range of offers which may contain different traffic management restrictions. These may address the needs or interests of specific consumers at prices which might not otherwise be available. It is, however, not clear whether ISPs are sufficiently transparent about such restrictions allowing consumers to make a deliberate choice. Customers, therefore, need clear, meaningful and comparable information on any limitations of their subscriptions comprehensible to all.

These requirements raise the question whether a restricted Internet access product may still be described, without qualification, as "Internet access" or whether the unqualified label "Internet access" should be reserved to (largely) unrestricted access offers. This debate has already been opened in some Member States and this public consultation seeks also views on this issue. Another aspect of transparency concerns broadband speed, and in particular possible discrepancies between advertised speeds and actual speeds.

Transparency should be complemented with measures aimed at ensuring easy switching from one provider to another, and from one offer to another offer of the same service provider, to empower consumers to choose the service which best matches their individual needs. The electronic communications framework facilitates switching of operators by imposing the obligation to implement number portability within one day, by limiting the initial commitment period in contracts with consumers or by specifying that the conditions and procedures for contract termination shall not act as a disincentive against changing service provider. It further specifies that subscribers have a right to withdraw from their contract without penalty upon notice of modification to the contractual conditions. It is also important to ensure that barriers do not arise as a result of the growing trend towards bundled services. This may require that switching processes and contractual arrangements are consistent between services offered in bundled packages, e.g. the most common "triple play" package of fixed voice, broadband and pay-TV.

2.1. Transparency and general characteristics of the Internet access offer

Question 12: *(all respondents)*

In order to allow consumers to make informed choices, on the basis of clear, meaningful, and comparable information, which elements should be communicated to consumers?

- Elements related to traffic management practices:

a) Contractual restrictions (blocking, throttling, other restrictions on application use)

☐ important ☐ less important

Please provide reasons for your answer:

b) Traffic management policy applied to prioritise certain traffic in specific circumstances

☐ important ☐ less important

Please provide reasons for your answer:

c) Whether and to what extent managed services may affect the quality of the best effort Internet (e.g. the possibility of the Internet connection being affected when watching IP-TV or when using other managed services)

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

d) Other restrictions, please specify:

e) Data allowances (caps), download limits

☐ important ☐ less important

Please provide reasons for your answer:

f) What these data allowances enable customers to do in practice (download x hours of video; upload y photos etc.)

☐ important ☐ less important

Please provide reasons for your answer:

Elements related to speed and quality:

a) Average speed, typical speed ranges and speed at peak times (upload and download)

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

b) Respect of guaranteed minimum speed (if applicable)

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

c) What these speeds allow customers to do in practice (video-streaming, audio-download, video-conferences etc.)

☐ important ☐ less important

Please provide reasons for your answer:

d) Latency/network responsiveness (a measure of traffic delay) and which services would be affected thereby (e.g. certain applications such as IP-TV or videoconferencing would be more seriously impacted by higher traffic delays in the network of the provider)

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

e) Jitter (a measure of the variability over time of latency) and which services would be affected thereby (e.g. echoing in VoIP calls)

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

f) Packet loss rate (share of packets lost in the network) and which services would be affected thereby (e.g. VoIP)

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

g) Reliability of the service (network accessibility and retainability), i.e. measure for successful start and completion of data sessions

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

h) Quality parameters for (mobile) voice telephony (call setup success rate, dropped calls, speech quality, other)

☐ important ☐ less important

☐ measuring technically feasible (fixed) ☐ measuring technically feasible (mobile)

☐ currently measured (fixed) ☐ currently measured (mobile)

Please provide reasons for your answer:

i) Other, please specify:

Question 13: *(all respondents)*

Some ISPs currently apply 'fair use policies', which give them wide discretion to apply restrictions on traffic generated by users whose usage they consider excessive. Do you consider that, in case of contractual restrictions of data consumption, quantified data allowances (e.g. monthly caps of x MB or GB) are more transparent for consumers than discretionary fair use clauses?

☐ yes ☐ no

Please provide reasons for your answer.

Question 14: *(all respondents)*

a) When should the elements of information referred to in question 12 be provided to the consumer by the ISP?

☐ before signing the contract

☐ regularly updated during the contract period

☐ during the contract period if changes occur

☐ other, please specify:

b) Which format (e.g. contract, general terms and conditions, separate and specific information, other (please specify)) do you consider appropriate to communicate this information to consumers?

Question 15:

What would be the (additional) costs for ISPs to (i) collect the various data mentioned in the table in question 12 (e.g. measuring of average speed, jitter, delay etc.) and (ii) communicate the information to their customers. Please provide an estimate of the above costs for your own company or an ISP of your choice explaining your assumptions and methodology, and details about the technical tools used to collect the various data. If possible, please provide a breakdown of the costs.

Question 16: *(all respondents)*

a) In order to promote transparency and consumer choice, do you consider it necessary that comparable data on the Internet access provided by ISPs is collected and published by NRAs or another independent organisation?

☐ Yes ☐ No

Please explain your response.

Do you think this information should be broken down by geographic areas or different data plans?

b) What are the advantages and corresponding costs of this data collection and publication being undertaken by NRAs or by another type of organisation (please specify which one). Please provide an estimate at EU-level or for an EU Member State of your choice.

Question 17: *(all respondents)*

a) Do you consider it necessary to regulate the labelling as "Internet access" of subscriptions that restrict access to some Internet services, content or applications?

☐ Yes ☐ No

Please reason your answer.

b) If yes, which restrictions would be acceptable before a subscription could no longer be marketed, without qualification, as an “Internet access” product”?

c) What would be the consequences (including the cost) for ISPs if they were not allowed to market as 'Internet access' an offer with certain restrictions, or if such marketing was subject to mandatory qualification? Please provide quantification for your own company or an ISP of your choice explaining your assumptions and methodology.

2.2 Switching:

Question 18: *(all respondents)*

a) Please explain what barriers to switching ISPs still exist (if any) and how they can be overcome. Please mention in your reply all direct and indirect factors dissuading consumers from switching (e.g. obstacles linked to the terminal equipment, burden of proof regarding a possible breach of contract, etc.)

b) How should an ISP inform consumers of changes to their packages?

c) What actions by an ISP would constitute a breach of contract or modifications to the contractual conditions which would enable a consumer to be released from a contract?

d) Should customers be able to easily opt out from certain contractual restrictions (up to a completely unrestricted offer) by the same operator?

☐ Yes ☐ No

Please explain your response.

If yes, how could this be facilitated?

e) Do you think that a customer should be allowed to switch **to another operator** within a reduced contract termination period in case his/her current operator does not at all offer an unrestricted Internet access product or does not allow switching to such unrestricted offer?

☐ Yes ☐ No

Please provide reasons for your response.

Question 19: *(all respondents)*

While there may be valid (technical) reasons why consumers do not always get the advertised service speed or quality, should there be a limit on the discrepancy between advertised and actual service parameters (e.g. speed)?

☐ Yes ☐ No

Please explain your response. If you consider that there should be a limit on the discrepancy, how should this limit be defined?

Question 20: *(all respondents)*

Pursuant to Article 30 (6) of the Universal Service Directive conditions and procedures for contract termination shall not act as a disincentive against changing service providers. How could changing of operators be facilitated? Please provide examples and explain your response.

Question 21: *(all respondents)*

How could the transparency of bundles (packages including telephony, Internet, TV) be improved for consumers and how could switching be facilitated in the presence of bundles?

Question 22: *(all respondents)*

a) How important would be the benefits for end-users of improved transparency and facilitated switching?

☐ very important ☐ important ☐ slightly important ☐ not important

Please explain your response.

b) What would be the expected benefits in terms of innovation by new businesses (content or applications) as a consequence of improved consumer choice and increased competition between ISPs?

Question 23:

Would the facilitation of switching for consumers trigger any (administrative) costs for ISPs?

☐ Yes ☐ No

If so, please quantify them.

3. IP interconnection issues

Interconnection arrangements between networks take the form of transit and peering agreements. They have traditionally been based on the "best effort" principle. Disruptions of interconnection or deterioration of interconnection service quality at the wholesale level could lead to a situation where end-users and content providers cannot reach all destinations on the Internet. IP interconnection is therefore relevant for this consultation.

Question 24:

a) In your view, are there any problems regarding IP interconnection arrangements (between network operators, ISPs, transit providers and/or content providers) that could have an impact on the quality of the best effort Internet?

☐ Yes ☐ No

Please explain your response.

b) Are there any specific issues related to the vertical integration of ISPs and transit providers?

☐ Yes ☐ No

Please explain your response.

Question 25:

Direct peering, Content Delivery Networks (CDN) or Quality of Service Interconnection (between ISPs and content providers) are being developed to propose an enhanced quality of service for content providers and end users.

a) What role can they play in reducing the risk of network congestion?

b) What opportunities and threats do they constitute for:
(i) ISPs,
(ii) content providers,
(iii) transit providers and
(iv) end users?

c) Are there any barriers of a regulatory, technical or business nature that prevent market players other than ISPs from playing a more important role in reducing the risk of network congestion?

☐ Yes ☐ No

Please explain and describe possible solutions to such issues.

4. Process

Question 26: *(all respondents)*

a) Do you consider that intervention by public authorities is necessary at this stage?

☐ Yes ☐ No

If so, what would be the appropriate level of such intervention?

b) What would be the consequences of divergent interventions by public authorities in the EU Member States?

Question 27:

a) Have you made use of the dispute resolution powers under the Framework Directive[2] in relation to a dispute about traffic management practices?

☐ Yes ☐ No

b) Have you also made use of these dispute resolution powers also in relation to disputes between an ISP and a content provider?

☐ Yes ☐ No

c) If you have made use, please explain under which circumstances. If you have not made use, please explain whether you consider that these dispute resolution powers would be an appropriate tool for such Internet traffic management disputes?

[2] See in particular Article 20 of Directive 2002/21/EC (Framework Directive) which allows either party to request a binding decision by the NRA to resolve a dispute within the shortest possible time frame and normally within four months.

Question 28:

Do you consider that regulators should monitor interconnection agreements between providers?

☐ Yes ☐ No

Please explain your view.

Question 29: *(all respondents)*

Under article 22(3) USD NRAs have the power to set minimum quality of service requirements on undertakings providing public communications networks. In a scenario where in a given Member State no unrestricted offer is available (for instance because all operators actually block VoIP), do you consider that the "minimum quality of service tool" should be applied by the NRA to require operators to provide certain unrestricted offers?

☐ Yes ☐ No

Please explain your response.

Your response must reach the Commission by 15 October 2012!