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

Questionnaire

General information

Question 1: I answer as: -single choice reply-(compulsory)	a) Consumer or user association

Question 2:

a) Please provide the full name and a brief description of your organisation and describe your interest in open Internet issues. -open reply-(compulsory)

IT-Political Association of Denmark (IT-Politisk Forening, itpol.dk) is an NGO working with digital rights and IT Politics. Our members are mostly IT professionals, but there are also a lot of members with other backgrounds. We are completely independent of both companies and government, both organisationally and economically. Our funding comes exclusively from member fees. However, we are a member of EDRi. Our interest in open Internet issues is based in both our technical knowledge, our understanding of the Internet, in our members' professional and commercial interests, and in consumer rights.

b) If your organisation is registered in the Transparency Register, please indicate your Register ID number. -open reply-(optional)	

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. -open reply-(compulsory)

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

Denmark

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

1. Traffic management

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. -open reply-(optional)

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

Question 4:

Congestion management is one of the reasons for applying traffic management measures.
a) Please describe **briefly** how congestion management normally works.
-open reply-(optional)

Most congestion management is based on queueing: When too many packets are to be sent through the same connection, all packets are put in a queue, hoping that they can be sent later on when there is less traffic. The difference in traffic management is how you decide which packet should leave the queue first. So each packet is assigned a priority based on several factors, e.g. * Type of service * Sender address * Destination address * Customer service level or usage history * Attributes on the packet (e.g. QoS value) * Agreements with internet peers, content providers etc. Depending on the priority, packets can be delayed or even dropped. It is also possible for an ISP to actively sabotage certain types of traffic by delaying or dropping packets, or deliberately forwarding them in the wrong order, thus giving the consumer the impression that there is simply a bad connection.

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.
-open reply-(optional)

The only genuine, necessary measure is blocking packets from attackers, e.g during a DDoS attack, or spammers. But it is imperative that this is only done at the individual end user's explicit and individual request.

Does your answer to this question (a or b) contain confidential information? -single choice reply-(compulsory)	No
Question 5: 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) -single choice reply-(optional)	problematic

Please explain your response
-open reply-(compulsory)

By giving higher priority to some services, other services will suffer. The ISP should not make decisions on which service is the most important on their users' behalf.

b) taking into account the sensitivity of the service to delay or packet loss -single choice reply-(optional)	problematic

Please explain your response
-open reply-(compulsory)

Even if the most time-sensitive services (e.g. VoIP) are given highest priority, it may greatly harm the experience for users of other services (e.g. competing VoIP technologies).

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 -single choice reply-(optional)	problematic

Please explain your response
-open reply-(compulsory)

User accept is only meaningful if the user has a real choice. No user would enter freely into an agreement that restricts their access. Either the user must have economical reasons (e.g the unrestricted service being much more expensive), cultural reasons (e.g. family or

neighbours asking "why do you use a service that does not block X?), legal reasons (e.g. "we will inform IFPI about who does not use the P2P-restricted service), or there may be no choice at all (i.e. no ISP offer an unrestricted servoce).	
d) targeting types/classes of traffic contributing most to congestion -single choice reply-(optional)	problematic
Please explain your response -open reply-(compulsory)	
That a certain type of traffic contributes more to congestion may simply mean that it is more popular. It would be impractical if e.g. video conferencing would be limited if it became too popular.	
e) targeting heavy users whose use is excessive to the extent that it impacts on other users -single choice reply-(optional)	problematic
Please explain your response -open reply-(compulsory)	
If the ISP does not have enough bandwidth for heavy users, it should not offer a service aimed at heavy users. When a consumer buys a service, it should be clear from the advertisement material and the contract what bandwidth and traffic amount he can expect.	
f) applied during busy times and places, when and where congestion occurs -single choice reply-(optional)	problematic
Please explain your response -open reply-(compulsory)	
If congestion occurs at specific times and places, all consumers should be treated equally.	
g) affecting all applications/content providers in the same way (application-agnostic) -single choice reply-(optional)	necessary
Please explain your response -open reply-(compulsory)	
By giving special treatment to certain applications/content providers, they gain an advantage over their competitors. Is this becomes common practice, application and content providers must be prepared to pay not to have their traffic treated worse than their competitors'. This will make it hard for new businesses and not-for-profit organisations to enter the market.	
h) affecting (similar) applications/content providers of the same category in the same way -single choice reply-(optional)	problematic
Please explain your response -open reply-(compulsory)	
If higher priority is given to certain classes of applications/content providers, other classes will get less priority. This may hinder the development of new classes of applications or content. Also, the choice made by the ISP may not correspond with the wishes of the individual user.	
i) used, without other grounds, against services competing with the ISP's own services -single choice reply-(optional)	problematic
Please explain your response -open reply-(compulsory)	
This is obviously anti-competitional.	
j) implemented at the full discretion of the ISP	problematic

-single choice reply-(optional)

Please explain your response
-open reply-(compulsory)

If the ISP can implement traffic management at its own discretion, it will likely target competing technologies (e.g. VoIP) or content services. Also, it will be impossible for the consumer to know what product he or she is really getting.

k) other differentiation criteria (please specify)
-open reply-(optional)

Please explain your response.
-open reply-(compulsory)

-

Does your answer to this question (a, b, c, d, e, f, g, h, i, j or k) contain confidential information? -single choice reply-(compulsory)	No

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.
-open reply-(optional)

Some argue that traffic management will benefit the users who will get a better overall experience. But the problem is that by giving higher priority to some packets, all other packets will get lower priority. While it can be a good idea for an individual user to manage his own traffic according to his own wishes, it can be a very bad idea to have other (i.e. the ISP) to impose priorities based on their interests - even if they follow what the majority of users want.

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.
-open reply-(optional)

It is techically possible to offer separate capacity. The simplest example would be to build a complete separate network for managed services. This is the current situation with the Internet vs. the public switched telephone network. The main problem with this approach is the lack of competition on the managed networks, just as we see it with phone systems: They are much more expensive to use than comparative services on the Internet.

Does your answer to this question (a or b) contain confidential information? -single choice reply-(compulsory)	No

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:
-open reply-(optional)

(ii) Content providers (on the basis of agreements with ISPs):
-open reply-(optional)

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.
-open reply-(optional)

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?

-open reply-(optional)

Does your answer to this question (a, b or c) contain confidential information? -single choice reply-(compulsory)	No

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.

-open reply-(optional)

One example of a negative effect is that internet traffic will be paid for at least twice - both by the consumer and by the content provider. There are already companies that offer differentiated services to their customers - e.g. "free traffic to Facebook". While this might be seen as a good offer for consumers of Facebook, it will harm competing content providers. Either they will have to pay the ISP's for a similar offer for their service, or their users will suffer a poor experience with the service. So in the end, content providers will end up paying for the same traffic that the consumer has already paid for. Not only will this yield extra costs for internet usage, it will also make it extremely hard for new service providers to enter the market.

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

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?

-open reply-(optional)

For many services, it can be done on the transport or network layer. But for many services, it must be done on the application level. For example, prioritising web sites must be done on the HTTP level, because several sites can share the same IP address. If DPI becomes a widespread technology, it is likely that users will use encrypted protocols, VPNs/tunnels, proxies, anonymisation services and darknets to circumvent it.

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

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?

-open reply-(optional)

If the ISP uses DPI, they may have reason to log information. At the very least, employees at the ISP will have the opportunity to retrieve information about the users. Even worse, the ISP may want to block encrypted traffic, which will greatly impair the user's Internet security.

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.

-open reply-(optional)

Does your answer to this question (a or b) contain confidential information? -single choice reply-(compulsory)	No

Question 11:
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.
-open reply-(optional)

The problem with user consent is that the telecom industry has a lot of de-facto monopolies. Typically, there are only a few network operators in each country. Even though their products are re-sold by virtual operators, but their rules are usually determined by the network operator. Because of this, it is easy for network operators to coordinate their rules. Consumers will then have no alternative than to give their "consent" to various measures, because all ISP's basically demands the same consent to be given.

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

2. Transparency and switching (consumer choice)

2.1 Transparency and general characteristics of the Internet access offer

Question 12: 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) -single choice reply-(optional)	important

Please provide reasons for your answer:
-open reply-(optional)

b) Traffic management policy applied to prioritise certain traffic in specific circumstances -single choice reply-(optional)	important

Please provide reasons for your answer:
-open reply-(optional)

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) -multiple choices reply-(optional)	important

Please provide reasons for your answer:
-open reply-(optional)

d) Other restrictions, please specify: -open reply-(optional)	
Payment differentiation of different types of services or content provider.	
e) Data allowances (caps), download limits -single choice reply-(optional)	important
Please provide reasons for your answer: -open reply-(optional)	
It is a common practise for ISPs to advertise products with "free traffic" or "no limits". When reading the small print, it turns out there is actually a cap.	
f) What these data allowances enable customers to do in practice (download x hours of video; upload y photos etc.) -single choice reply-(optional)	less important
Please provide reasons for your answer: -open reply-(optional)	
While it sounds like a good idea, it gives no real information. The "x hours of video" depend on the quality and size of the video. In order to give any meaning, it must be qualified. But the qualification will be impossible to understand by anyone who actually needs it.	
Elements related to speed and quality: a) Average speed, typical speed ranges and speed at peak times (upload and download) -multiple choices reply-(optional)	important - measuring technically feasible (fixed) - measuring technically feasible (mobile) - currently measured (fixed) - currently measured (mobile)
Please provide reasons for your answer: -open reply-(optional)	
Many ISP's advertise products with "up to n Mb/s". It is next to impossible for the customer to be sure what he gets - and very hard to complain about.	
b) Respect of guaranteed minimum speed (if applicable) -multiple choices reply-(optional)	less important - measuring technically feasible (fixed) - measuring technically feasible (mobile) - currently measured (fixed) - currently measured (mobile)
Please provide reasons for your answer: -open reply-(optional)	
With most technologies, it is next to impossible to guarantee a minimum speed. By enforcing information about minimum speed, many providers will have to write "minimum 0b/s guaranteed".	
c) What these speeds allow customers to do in practice (video-streaming, audio-download, video-conferences etc.) -single choice reply-(optional)	less important
Please provide reasons for your answer: -open reply-(optional)	
Please see our answer to question 12f) above.	
d) Latency/network responsiveness (a measure of traffic delay) and which services would be affected	important - measuring technically feasible (fixed) - measuring technically feasible (mobile) - currently measured (fixed) - currently measured (mobile)

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) -multiple choices reply-(optional)	
Please provide reasons for your answer: -open reply-(optional)	
e) Jitter (a measure of the variability over time of latency) and which services would be affected thereby (e.g. echoing in VoIP calls) -multiple choices reply-(optional)	less important - measuring technically feasible (fixed) - measuring technically feasible (mobile) - currently measured (fixed) - currently measured (mobile)
Please provide reasons for your answer: -open reply-(optional)	
f) Packet loss rate (share of packets lost in the network) and which services would be affected thereby (e.g. VoIP) -multiple choices reply-(optional)	important - measuring technically feasible (fixed) - measuring technically feasible (mobile) - currently measured (fixed) - currently measured (mobile)
Please provide reasons for your answer: -open reply-(optional)	
Many services are greatly affected by dropped packets, not only real-time protocols (e.g. VoIP). Deliberate packet drops can be an effective way of slowing down a TCP service.	
g) Reliability of the service (network accessibility and retainability), i.e. measure for successful start and completion of data sessions -multiple choices reply-(optional)	important - measuring technically feasible (fixed) - measuring technically feasible (mobile) - currently measured (fixed) - currently measured (mobile)
Please provide reasons for your answer: -open reply-(optional)	
h) Quality parameters for (mobile) voice telephony (call setup success rate, dropped calls, speech quality, other) -multiple choices reply-(optional)	less important - measuring technically feasible (fixed) - measuring technically feasible (mobile) - currently measured (fixed) - currently measured (mobile)
Please provide reasons for your answer: -open reply-(optional)	
Normally, this is not a problem, except on special occasions (festivals, New Year etc). Most people expect high quality in this area, so it is a necessity for operators to provide it.	
i) Other, please specify: -open reply-(optional)	
Does your answer to question 12 (or to any of its sub-questions) contain confidential information? -single choice reply-(compulsory)	No
Question 13:	Yes

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? -single choice reply-(optional)	
Please provide reasons for your answer. -open reply-(compulsory)	
At least, a consumer will notice when the cap kicks in, and can adjust his usage or choice of service accordingly. Also, the consumer has a chance of predicting loss in connectivity. But most of all, caps are set limits that can be measured in case of disagreements. On the other hand, discretionary fair use clauses are notoriously vague, and are impossible to predict and measure. Basically, the consumer does not know what he or she is buying.	
Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No
Question 14: a) When should the elements of information referred to in question 12 be provided to the consumer by the ISP? -multiple choices reply-(optional)	before signing the contract - during the contract period if changes occur - other
Please specify: -open reply-(compulsory)	
Publicised on their web page.	
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? -open reply-(optional)	
Both in contracts and in separate information for each product. It would be great if there were a common, machine-readable format for it.	
Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No
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. -open reply-(optional)	
Most of the information is already collected an aggregated by ISP for their own purposes, such as finding bottlenecks in their network. We cannot estimate the cost for communicating to customers, as that would greatly depend on the level of information needed.	
Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No
Question 16: 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	No

collected and published by NRAs or another independent organisation? -single choice reply-(optional)	

Please explain your response. -open reply-(compulsory)

While it would be a great service for consumers, it should be enough that ISPs make the information publicly available. That would also ensure that such information is always up-to-date. As suggested above, it would be advantageous if there was a common machine-readable format for such information. That would enable anyone to compile lists with different metrics.

Do you think this information should be broken down by geographic areas or different data plans? -open reply-(optional)

Yes. Especially for mobile services and services that are affected by e.g. distance from the nearest hub.

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. -open reply-(optional)

Please refer to our answer for question 16a) above.

Does your answer to this question (a or b) contain confidential information? -single choice reply-(compulsory)	No
Question 17: 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? -single choice reply-(optional)	Yes

Please reason your answer. -open reply-(compulsory)

It would be very difficult for consumers to compare products with different restrictions, and to realise what implications they have for the individual consumer. Also, if all kinds of restricted products could be sold as "internet access", there is a risk that no unrestricted products are offered at all.

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

None.

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. -open reply-(optional)

Does your answer to this question (a, b or c) contain confidential information? -single choice reply-(compulsory)	No

2.2 Switching

Question 18:
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.) -open reply-(optional)

Some ISPs bundle their network services with content services. One example is TDC in Denmark, whose network services are bundled with a music service. Network and phone customers have access to a large music collection. By switching ISP, the customers no longer have access to "their" music. But more importantly, there is a real monopoly on copper cables. Anyone in Denmark who wants a DSL connection, has to use TDC's network. Is is possible to buy the DSL connection through another company, but it is still TDC's staff that services the line. This is primarily a problem because TDC also acts as ISP. Even though government has imposed regulation on TDC, customers of reseller companies frequently experience that TDC's customer receives better service on their lines and faster response times on malfunctions, establishing new lines etc. In the broader perspective (i.e. both copper, fiber and mobile), there is some competition on price, but when a reseller company becomes too successful, it is usually bought by one of the few network operators. There is no real competition on service terms, as all reseller companies basically have the same rules as their network operator. Also, there are only a few network operators, and they tend to have more or less the same rules.

b) How should an ISP inform consumers of changes to their packages?
-open reply-(optional)

By email.

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?
-open reply-(optional)

Any new restriction, lower bandwidth, or higher priority to others' traffic.

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

Please explain your response.
-open reply-(optional)

Ideally, all offers should be unrestricted. However, if restricted offers are made, they should be completely optional, and not much more expensive than an unrestricted offer.

If yes, how could this be facilitated?
-open reply-(optional)

By demanding that all ISPs should offer an unrestricted product, and setting a limit on its costs as a percentage of the restricted products.

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? -single choice reply-(optional)	Yes

Please provide reasons for your response.
-open reply-(compulsory)

It should always be possible for the consumer to get an unrestricted offer.

Does your answer to this question (a, b, c, d or e) contain confidential information? -single choice reply-(compulsory)	No
Question 19: While there may be valid (technical) reasons why consumers do not always get the advertised service	Yes

speed or quality, should there be a limit on the discrepancy between advertised and actual service parameters (e.g. speed)? -single choice reply-(optional)	

Please explain your response. -open reply-(compulsory)

Most ISPs only advertise the theoretical limit on their products. The actual speed is typically much lower, but it is very hard for consumers to compare the offerings from different ISPs. Many ISPs deliberately oversell their capacity. The first customers may initially experience a decent service speed, but as more customers sign up, everybody's available bandwidth decreases. With the current state of affairs, there is no incitement for ISPs to offer better actual speeds, as they would not be able to advertise it: It will always be lower than the competitor's theoretical speed.

If you consider that there should be a limit on the discrepancy, how should this limit be defined? -open reply-(optional)

As a percentage on both the average and minimum speed.

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

Question 20:

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.

-open reply-(optional)

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

Question 21:

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?

-open reply-(optional)

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No
Question 22: a) How important would be the benefits for end-users of improved transparency and facilitated switching? -single choice reply-(optional)	important

Please explain your response.

-open reply-(compulsory)

Without transparency and the possibility of switching, there will be no real competition on these parameters. On the other hand, if all ISPs offer the same, restricted services, transparency will not help in itself.

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?

-open reply-(optional)

Does your answer to this question (a or	No

b) contain confidential information? -single choice reply-(compulsory)	
Question 23: Would the facilitation of switching for consumers trigger any (administrative) costs for ISPs? -single choice reply-(optional)	
Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

3. IP interconnection issues

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? -single choice reply-(optional)	Yes

Please explain your response. -open reply-(optional)

Different operators on a route may enforce different priorities. Imagine a user A who wants to listen to an Internet radio show at server B. Meanwhile, a user C wants to make a phone call to user D. Both A and C uses ISP1, while B and D uses ISP2.
A----ISP1---------ISP2--------B C-----+ +---------D If ISP1 prioritises phone higher than radio, but ISP2 prioritises radio higher than phone, then all involved parties will be worse off than if no prioritising had been done. Also, any high priority given to one type of traffic will mean that other types of traffic gets lower priority. If some services, content providers etc. gets an advantageous priority based on payment or special arrangements, it will be harder to offer new, competing services or not-for-profit services.

b) Are there any specific issues related to the vertical integration of ISPs and transit providers? -single choice reply-(optional)	

Please explain your response. -open reply-(optional)

Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No

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?
-open reply-(optional)

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

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? -single choice reply-(optional)	Yes

Please explain and describe possible solutions to such issues.
-open reply-(optional)

There are many new technologies that are not wide-spread yet, but could alleviate network congestion. A current example is IPv6 which should offer better performance for some services, and eliminate the need for NAT. But many ISPs do not even offer IPv6 to their customers, even when they ask for it. A possible solution to this could be that all governmental sites in EU and its member states could begin offering IPv6 based services (i.e. web sites on both IPv4 and IPv6), demanding IPv6 from their respective ISPs, and only buy IPv6-ready equipment. There could also be done a lot of work in routing protocols for multicasting. In the regulatory area, some monopolies could be removed simply by offering more frequency licenses and offering more license-free frequencies, thus allowing for more competition and development in the market. Patents (especially software patents) also prevent small businesses, universities and private citizens from developing tools for reducing network congestion.

Does your answer to this question (a, b or c) contain confidential information? -single choice reply-(compulsory)	No

4. Process

Question 26: a) Do you consider that intervention by public authorities is necessary at this stage? -single choice reply-(optional)	Yes

If so, what would be the appropriate level of such intervention? -open reply-(optional)

b) What would be the consequences of divergent interventions by public authorities in the EU Member States?
-open reply-(optional)

Does your answer to this question (a or b) contain confidential information? -single choice reply-(compulsory)	No
Question 27: a) Have you made use of the dispute resolution powers under the Framework Directive**[1]** in relation to a dispute about traffic management practices? **[1]** 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. -single choice reply-(optional)	No
b) Have you also made use of these dispute resolution powers also in relation to disputes between an ISP and a content provider?	No

-single choice reply-(optional)	
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? -open reply-(optional)	
Does your answer to this question (a, b or c) contain confidential information? -single choice reply-(compulsory)	No
Question 28: Do you consider that regulators should monitor interconnection agreements between providers? -single choice reply-(optional)	Yes
Please explain your view. -open reply-(optional)	
The telecom business has a lot of both real and de-facto monopolies. This limits free competition, as we have seen it with GSM roaming prices. As long as these monopolies exist, regulation and monitoring is needed.	
Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No
Question 29: 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 MemberStateno 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? -single choice reply-(optional)	Yes
Please explain your response. -open reply-(compulsory)	
Every consumer should have the opportunity to use unrestricted services. Internet bandwidth is not a depletable resource. Network congestion can be alleviated by more and better network equipment and new cables. Especially backbone infrastructure is relatively cheap. While the "last mile technology" may impose technical limitation (especially on wireless technologies), many of the network congestion measures are aimed at the backbone infrastructure. The main reason for imposing restrictions on consumers is not technical but economical: By restricting competing services or charging extra for "premium services", the ISPs can make extra money on "value-added services", content, and payment from content providers.	
Does your answer to this question contain confidential information? -single choice reply-(compulsory)	No