

ETNO response to the Commission consultation on the Open Internet and Net Neutrality



September 2010

I. Executive Summary

ETNO welcomes the European Commission's public consultation on the open internet and net neutrality. We believe that a common European position on internet openness and the evolution of the internet's economic model can have a significant positive impact on EU citizens and the European information and communications technology (ICT) sector.

1. The economic context of the open internet debate

Encouraging continued investment in high-speed fixed and mobile broadband networks.

- The European ICT sector requires major investment in next generation fixed and mobile high-speed networks in the coming years. The European Commission's Digital Agenda sets ambitious targets for the availability of high-speed broadband by 2020.
- Commissioner Kroes has repeatedly stressed the need for a regulatory framework which promotes private investment in next generation networks characterised by both high speed and high quality. Investment in these smart broadband networks in Europe crucially depends upon network operators' freedom to innovate and develop new business models in the market in line with EU competition and consumer protection rules.

Need for a level playing field among all actors in the internet value chain governed by principles of openness, transparency and competition.

- Starting from strong market positions in other areas of the internet, internet-based content and service providers increasingly operate in electronic communications services (ECS) markets. Openness and

quality of internet-based services in many cases depend on both network operators' and internet players' behaviour.

- Any analysis of internet openness therefore has to take into view the internet economy as a whole, not just isolated parts of it. Otherwise, EU policy risks aggravating distortions of competition caused by the application of different regulatory regimes to electronic communications network operators on the one hand and internet content and application providers on the other. This is particularly the case in the field of *ex-ante* market regulation, consumer protection and data protection.

2. Summary of responses

ETNO shares the Commission's objective of internet openness.

- ETNO members are committed to an open internet where consumers and business customers are able to access the content, applications and services of their choice in line with their individual preferences.
- To date the European approach to the open internet and net neutrality has put competition and effective consumer choice at the heart of the debate.
- ETNO encourages the Commission to maintain this fact-based and future-proof approach to the open internet and, at the same time, to extend its analysis to the economic model of the internet as a whole.

Openness is best served by competition, transparency and consumer choice, based on the revised EU regulatory framework for electronic communications.

- Fixed and mobile broadband markets in the EU are highly competitive, providing effective choice for end users. In line with the revised EU regulatory framework, ETNO members are committed to providing transparent and meaningful information regarding any limitations of the internet access service offered to end users, further strengthening consumer choice in this field.
- The EU *ex-ante* regulatory regime for ECS, while overly rigid in some aspects, underpins competition by providing for access and non-discrimination obligations for dominant network operators, constraining market power in internet access markets. Such *ex-ante* safeguards are unknown for other parts of the internet as well as for broadband markets in the United States, where net neutrality is most hotly debated.
- Internet openness also implies that end users should be able to benefit from differentiated offers for internet access in line with their individual preferences, and operators should be free to develop such offers similar to undertakings in any other area of the internet. Any

anti-competitive practices by a market dominant undertaking should be addressed by the competent authorities, whether at the network layer or other layers of the internet value chain.

Network management is indispensable to prevent network congestion and allows new offers tailored to individual customer needs.

- Network management is an indispensable tool to control network congestion in view of rapidly increasing IP data traffic volumes. Network management is for example used to prioritise quality-sensitive applications over other, less demanding applications. This is done without looking into the actual content that is transmitted and does not affect citizens' fundamental rights such as the freedom of expression.
- Network management allows service differentiation in the form of offers for specified quality. Economic incentives for a more efficient use of network capacity are urgently required to ensure the long-term sustainability of the internet. Differentiated tariffs, based on capacity and/or quality of service (QoS) responding to individual customer needs, can create such incentives.
- In addition, economic arrangements for the transport of IP traffic should better reflect its value, encouraging a more efficient use of the network, especially as concerns those applications which generate the bulk of internet traffic.

The ability of network operators to provide managed services is key to preserve broadband as a platform for innovation.

- Operators' managed services have a positive impact on the development of the internet access service. They drive take-up of high-speed broadband by consumers and the deployment of fast and very fast broadband networks, which in turn provide faster access to the internet.
- In the future, innovative services which require a managed QoS-environment, such as distant healthcare applications, cloud computing or 3D television will complement the internet access offer for consumers or business users. The ability to provide such services should not be limited by regulatory constraints other than those foreseen in the SMP-regime of the EU electronic communications framework and competition law.

A competitive market for internet access ensures quality of service for end users.

- The imposition of minimum quality of service requirements by national regulatory authorities (NRAs) should be considered as an

ultima ratio intervention under the revised EU framework. End users are protected by competition from any significant degradation of 'best effort' internet quality.

- Imposing minimum quality of service on a network of networks such as the best effort internet appears inherently difficult and is likely to distort competition. ETNO concurs with the initial finding by some NRAs not to consider minimum QoS intervention before having explored existing competition tools and consumer transparency.

Policies towards the internet should favour freedom of expression, collaboration and civic engagement.

- ETNO Members do not exercise control over the actual content transmitted and will not engage in any censorship or favour or disfavour any type or form of communication on the internet because of the views expressed therein.
- In view of maintaining an internet environment that fosters free speech, collaboration and civic engagement, the EU should maintain current policies towards internet intermediaries and not attribute network operators a controlling role with respect to the content of electronic communications.

II. Responses to the questionnaire

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?

The openness of the internet is one of its fundamental strengths. ETNO supports the EU approach to the open internet and net neutrality which to date puts the consumer and his or her informed choice at the heart of the debate and recognises the need for major investment in broadband network for the further development of the internet.

In line with the main observations in the consultation document, ETNO does not see internet openness at risk in Europe. We advocate a holistic view of internet openness, covering several dimensions:

- Users should be able to access any lawful content on the internet and access services and applications of their choice;
- Users should be able to benefit from differentiated offers in line with their individual preferences;
- The principles of openness, transparency and competition should be adhered to by all players in the internet value chain and not be limited to operators of electronic communications networks.

In the following response, we will briefly comment on each of these dimensions.

Internet openness and competition

The first dimension of openness, reflected in the objectives of the revised regulatory framework, is that internet end users themselves should determine which content, services and applications they wish to access on the internet.

This objective is best served by competition. Broadband markets in the EU are highly competitive, providing effective choice for end users. Past experience has shown that offers by network operators limited to specific content and services, or so-called “walled gardens,” have not been successful with customers, who have instead opted for offers that also allow access to the broad range of content and services available on the internet. This dynamic

can be observed in both fixed and mobile markets.¹ Internet users are generally very attentive as regards restrictions on their access to internet services, and many declare that they would switch providers in case of such restrictions.²

Transparency requirements as introduced in the revised regulatory framework will further strengthen the positive effects of competition with regard to internet access services (see below Q5). ETNO members are committed to providing comprehensive and meaningful information to consumers on their access to internet services, applications and content. Since quality of service for best effort internet services does not solely depend on the internet access provider, it would be beneficial for consumers to extend such transparency principles to the overall internet value chain.

Empowering users through increased choice

A second dimension of an open and dynamic internet is that consumers should be provided with the broadest possible range of options for accessing and using the internet to respond to their individual demand and needs. Actors on all levels of the internet value chain should be able to make differentiated offers - according to price, quality and/or different customer groups. While this is taken for granted for other companies active in the internet, some contributions to the open internet debate appear to question the right to such differentiation for network operators.

Product differentiation in internet access services is already a reality with regards to bandwidth (for example connections at 2 or 10 MB) or to data bundles allowing for different volumes of usage over time (for example 1GB/month). Such tariff schemes which “put the bill where it belongs”³ - in this case with those customers who make the most heavy use of the network - are, however, only a first step in addressing the economic problem of network usage (s. response to Q 4, 10).

In addition, product differentiation may increasingly extend to quality of service, where end users are offered superior quality of service for access to certain applications and/or at certain times of the day. Tailored solutions reflecting the preferences of consumers are generally beneficial as only those who have an interest in superior quality will contribute to the associated costs.

One form of quality differentiation of access services are managed services which are characterised by guaranteed quality of service and high reliability

¹ VoIP over mobile, once a nascent service which few end users requested, is now provided by at least one player the market in most EU Member States, against remuneration or as part of a data bundle. Operators like “3” in the UK offer the service in partnership with a VoIP provider as a distinctive feature of their retail offer.

² Cf. survey by Synovate, “Consumer expectations of the Internet”, February 2009, p. 18: an internet service provider restricting or limiting the use of internet services or applications would lose between a quarter and a third of its customers to competitors with either the same or higher prices.

³ Ad Scheepbouwer, CEO of KPN, in *Financial Times* 27.7.2010, p.2 “Heavy users of mobile data face higher fees”.

and which will be key drivers of future innovation. Examples of managed services which require pre-defined network quality or security features include distant healthcare applications or cloud computing. Managed services, which are offered by network operators along side internet access, such as IP TV, in principle do not fall into the scope of the open internet provisions of the EU framework (s. response to Q 8).

We believe that regulatory rules which would distort the functioning of the market in responding to individual demand and thereby restrict choice and innovation would be contrary to an open, dynamic internet.

Openness in other parts of the value chain

For the end user to fully benefit from an open internet environment, the debate on internet openness should not be limited to network operators active on the 'network layer' in the internet. Key elements for users' unrestricted access to information, content and services and the exercise of their freedom of expression are situated on other layers of the internet value chain. These include internet search, a highly concentrated market, which is characterised by differentiation of search results on commercial grounds, or content and service platforms. In these areas complaints over alleged anti-competitive behaviour have been raised in the recent past.

Against this background, regulatory principles to ensure openness, such as competition, consumer protection and transparency rules, should as far as possible be applied symmetrically and equally across the players in the internet value chain. We call upon the European Commission to give further attention to the issue of how to ensure comparable standards of openness in the internet as a whole and establish and enforce a level playing field for players active on different parts of the internet value chain (s. response to Q 10).

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

The EU already has a sound framework for ensuring internet openness. The revised EU framework for electronic communications, which resulted from an in-depth debate among European institutions and stakeholders, fully responds to net neutrality concerns as regards electronic communications, i.e., in particular the 'network layer', while allowing continued innovation in networks, services and business models.

Fierce competition in fixed and mobile broadband markets in the EU is underpinned by EU competition rules and an *ex-ante* regulatory regime which, unlike in other jurisdictions, such as the one in the United States

imposes far-reaching access, non-discrimination and price control obligations on network operators with significant market power.⁴

The revised EU regulatory framework has introduced transparency requirements regarding access to internet content, services and applications which will strengthen competition in relation to these specific features of internet access. Moreover, competition law applies to any anti-competitive behavior of dominant undertakings, be it at the network layer or in other internet markets.

Vice President Kroes' recently concluded,

*"The EU's revised telecoms rules will be complemented by our forthcoming NGA Recommendation and Spectrum Policy, both of which will foster investment in efficient and open networks. Together this provides a good framework to deal with net neutrality issues."*⁵

As the new framework is currently in the transposition phase and given that no persistent competition or consumer issues regarding network management are observed, a discussion on the EU legislative framework should in our view not be on the agenda.

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?

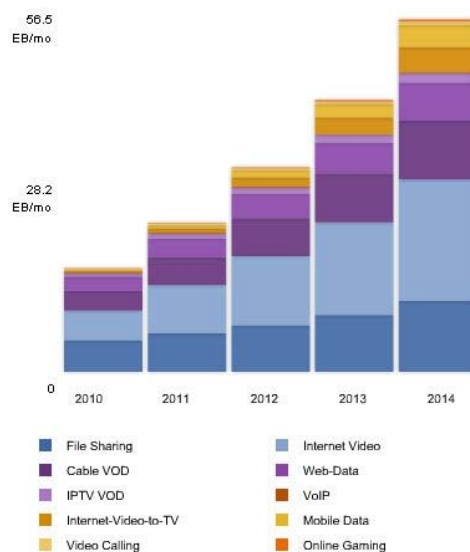
Firstly, network management is needed in the context of network congestion. Congestion is a real and serious concern already today for mobile networks and will increasingly become relevant also in fixed networks. It occurs at peak hours in some fixed networks and in case of a 'cell overload' due to many users in a given cell (area covered by a mobile antenna) in mobile.

Latest estimates predict a continuing surge in IP data traffic volumes over the next years, especially due to the growing demand for video:

⁴ For ETNO's position on *ex-ante* access regulation s. ETNO's website www.etno.be with further references; for a position on the 2009 draft Commission NGA Recommendation s. <http://www.etno.be/Default.aspx?tabid=2174>

⁵ Neelie Kroes, "Net neutrality in Europe", speech at Arcep, 13.04.2010

Figure 1



*Cisco VNI June 2010

This total traffic growth is expected to be matched by a similar or even higher growth in peak bandwidth requirement and therefore network capacity requirements. Against this background, growth of IP traffic can no longer be economically supported by additional roll-out and upgrades of infrastructure, i.e., additional network capacity alone. To ensure consumers and businesses can continue to access the content and services of their choice with a quality of service which meets their expectations, it is essential that network operators manage their networks in an adequate manner. While network operators will continue to invest and improve performance of the network, network management helps to mitigate the need for inefficient and extremely costly bandwidth expansion to handle, for example, peaks of traffic at certain times of the day

Technically, traffic management can involve the differentiated treatment of different types of internet traffic. It ensures first and foremost that the network operator can maintain an appropriate level of quality of service for the large majority of internet services and for a large majority of users during periods of peak internet usage. It also ensures that an improper use of the net does not prevent other customers from using normally the internet.

In the backbone network traffic management is carried out via routers which can process prioritized traffic according to predefined classifications (for example peer-to-peer traffic, email, web browsing etc.) and that can prioritise certain types of internet traffic over others during periods of peak demand. For example, certain non-time sensitive applications may be de-prioritised relative to a time-critical application, such as voice, to ensure an adequate delivery of, in this case, the voice service. It is important to note that for this purpose there is no need to look into the actual content that is transported.

Secondly, traffic management is important as a means for product and service differentiation. It can be employed to create new services which depend on a guaranteed or improved quality of service and to offer differentiated internet access services which help to limit congestion by setting economic incentives for a more efficient use of the network by end users and/or internet content and application providers generating large amounts of IP traffic (s. below, Q5, Q10).

We appreciate the European Commission's acknowledgement of the need for network management. However, ETNO cautions against trying to categorise types of network management which can *per se* be deemed unjustified.

In a fast evolving sector it would seem equally inappropriate if not impossible to define *ex-ante* what would be "*reasonable traffic management*" as the consultation document seems to suggest. A cautious approach as championed by Vice President Kroes and proposed by Ofcom in the United Kingdom in its own consultation is preferable. As Ofcom states, "*In a period of considerable change, there are substantial dangers from premature regulatory intervention to support one part of the sector over another*"⁶.

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?

ETNO agrees that transparent consumer information should be a key building block of an open internet. Transparency can address most of the concerns about openness and competition in the internet while empowering consumers and businesses to make choices according to their individual preferences. Moreover we believe that transparency over any restrictions to access to services and to 'openness' should apply to all actors in the internet value chain.

The question distinguishes between information regarding managed services and regarding the 'best effort' internet. Managed services, for which the network operator pre-defines a certain quality of service on its network, will often be part of the offer made to the end user, as is for example the case today for the TV offer of the network operator. The terms and conditions for, as well as the technical features of, these offers will be part of the information provided to end users.

Transparency also extends to the characteristics of the connection to the public internet that the end user accesses on a best effort basis. Transparency requirements under the revised Universal Service Directive extend to traffic management and limitations to access to services and applications (Art. 21 (3) lit. c and d Directive 2002/22/EC). This implies that in addition to managed services offered to the end user, traffic management may be carried out to

⁶ Ofcom, 'Net Neutrality and traffic management, a discussion document, 24 June 2010, pt. 3.28

ensure service provisioning in the face of congestion or to offer differentiated packages regarding quality of access to certain services and applications and/or at certain times of the day.

The information provided should be meaningful, i.e. strike the right balance between providing comprehensive information to end users so they can fully exercise their choice and the risk of an overload of complex information that would create the opposite effect.⁷

ETNO is prepared to contribute to a meaningful and consistent application of the transparency obligations of the revised framework. A dialogue between industry and NRAs and the Commission could also extend to related aspects, for example on how to measure the quality of service of access connections as an element of transparency.

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

The EU regulatory framework for electronic communications does not distinguish between fixed and mobile networks. The provisions of the revised framework, such as the provisions on transparency over restrictions to internet access, apply regardless of the network technology used. General competition rules equally apply to both fixed and mobile network operators. ETNO believes that no further network-neutral or network-specific rules are required to safeguard the open internet. The existing set of rules and principles should apply to all networks.

Nonetheless, mobile and fixed networks do have different characteristics. Due to the shared spectrum of individual mobile cells, mobile networks today tend to face more severe capacity restrictions. As a general principle, the competent authorities should apply existing rules in a proportionate manner, taking into account the relevant technical and other characteristics of the network concerned.

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?

Already today, many internet content and application providers enter into commercial agreements with third parties to benefit from better delivery of their services. Content delivery networks (CDNs) run by companies, such as Akamai and level3 who own a large number of servers around the world, offer to store internet content at points in the network close to the end user, thereby improving content delivery for the content provider. Similarly, large internet content and application providers, such as Google and Yahoo, operate own content delivery networks to bring their content as close as possible to the end user.

⁷ An instructive discussion of this point is provided in Ofcom, traffic management and 'net neutrality', a discussion document, 24. June 2010, pt.5.23 ff.

Even if content delivery networks do not provide for guaranteed end-to-end quality of service, they offer a delivery of content of better quality to the end user for remuneration, i.e., on a commercial basis. Content delivery on the internet therefore is not 'neutral', as it is often claimed in the net neutrality debate, and entry barriers for firms setting up an internet business exist already today. A CDN provider quotes an executive of Adobe on its website:

"We considered a do-it-yourself approach for delivering [an interactive media content]. But the Internet is inherently a difficult environment. The go-it-alone approach to content delivery would be difficult and costly, and would leave us with a great deal of risk".⁸

Quality of service-based offers by network operators⁹ to internet-based businesses would increase the options for content delivery available to content and applications providers and increase choice and competition, effectively lowering barriers to entry in this field. Against this background, claims by large, established internet companies that quality of service offers by network operators would allegedly impede the "next Google" from succeeding are unconvincing.

To give examples from other parts of the value chain, internet search is by its nature a prioritisation process. To pre-install specific applications on an end-user device and user interface is also an explicit way of prioritising.

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?

The consultation document does not give a precise definition of a 'managed service'. Network operators' IP-TV, distant healthcare applications and cloud computing are cited as examples of such services.

Quality of service-based offers can take different forms in the market and may differ in their characteristics depending on the access technology used.

We argue that service differentiation based on quality of service can be beneficial both in the field of services currently provided over the internet as well as for services which do not form part of the internet today ('managed services' in a narrower sense of the term such as business services over a virtual private network (VPN) or network operators' IPTV).

⁸ <http://www.akamai.com/html/customers/testimonials/adobe.html>

⁹ It should be noted that from a technical perspective, today's public Internet does not generally feature the possibility to differentiate modes of delivery. This is due to the fact that guaranteed Quality of Service (QoS) can be implemented on-net but is not yet realized across networks on the public internet.

Differentiated service offers for quality of service

Differentiated commercial offers should in principle be allowed in the internet as in other areas of the economy. Quality and price differentiation in most markets and circumstances enlarges consumer choice and increases consumer welfare.

There is no case for *per se* banning discrimination by operators providing access to the internet. Under the EU framework for electronic communications, ex-ante non-discrimination obligations are already generally applied to SMP-operators - and can be imposed symmetrically on all electronic communications operators - regarding access by other electronic communications service providers. Such network access helps to ensure effective competition for internet access services (s. response to Q 3).

In addition, any anti-competitive discrimination in the relations between internet content and application providers and network operators should be addressed by the competent authorities, whether it occurs at the network layer or other layers of the internet value chain.

ETNO encourages the Commission to state clearly that the question whether enhanced quality of service offers “might have negative effects on other providers” (p. 6 of the consultation document) is one of competition law and should be dealt with on a fact-based case-by-case basis. So far, no problematic issues around quality of service-based offers have arisen in communications markets, clearly indicating the absence of a market failure.

It is worth recalling that discussions on a non-discrimination principle in the United States start from a different basis, as there is no non-discrimination rule for network access in place. Arguments regarding possible restrictions on paid-for service differentiation from the US debate should therefore be treated with utmost caution.¹⁰

Managed services as a driver for internet development

The ability of network operators to provide managed services is a key element of a successful business model for developing the internet and the underlying broadband infrastructure as a platform for innovation.¹¹ Operators should be able to market managed services both to end users and internet content and application providers, in accordance with competition law and sector specific regulation.¹²

¹⁰ Cf. the ‘non-discrimination’ requirement in the Verizon-Google Legislative Framework Proposal, <http://www.scribd.com/doc/35599242/Verizon-Google-Legislative-Framework-Proposal>

¹¹ Joint statement by Google and Verizon to their Legislative Framework Proposal; <http://policyblog.verizon.com/BlogPost/742/JointPolicyProposalforanOpenInternet.aspx>, pt. 5.

¹² This is recognised as a policy ‘direction’ by Arcep, Discussion points and initial policy guidelines on Internet and network neutrality, May 2010, p. 21

Managed services have a positive impact on the development of the internet access service. They are an important driver for the take-up of high-speed broadband connections and a key generator of revenues for operators, enabling the deployment of fast and very fast broadband networks. These in turn provide superior internet access bandwidth, benefiting internet-based services and applications.

For example, the recent extraordinary development of the mobile internet has been possible thanks to the development of mobile infrastructure and technologies, which in turn have been made possible by the popularity of mobile voice telephony services. Innovation in the operators' networks carried out for their own managed services such as IPTV leads to infrastructure roll-out and bandwidth increases, fuelling innovation in internet services and applications.

As regards future offers for pre-defined quality of service offered to third party content and online service providers, individual arrangements with third parties may exist alongside offers which are open to all interested parties. Where operators are able to enter commercial arrangements for pre-defined quality of service at wholesale level, this creates positive commercial incentives to widely offer the service to increase revenues.

The open internet provisions of the framework do not extend to managed services, such as the IPTV platform of the network operator. Regulation of such a platform would fall under the SMP-regime of the EU regulatory framework, where a defined market were to warrant for *ex-ante* regulation and regulatory measures were deemed to be proportionate, - or be governed by competition law.

Any unwarranted restrictions regarding the provision of existing or future managed services by network operators going beyond the application of competition rules would risk significantly slowing down broadband investment and take-up in Europe.

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?

As argued above, a *per se* ban on discrimination is neither warranted from an economic perspective nor adequate under the EU legal framework. With regard to Question 9, ETNO would like to underline, however, that a non-discrimination obligation in all jurisdictions and economic sectors is not an objective in itself, but rather a means to achieve an objective. Therefore, instruments such as industry codes of conduct should, if and where appropriate, be discussed in the context of achieving an open and sustainable internet model, not specifically in the context of non-discrimination.

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?

ETNO welcomes that the debate on the open internet takes into view the economics of the wider internet value chain and the sustainability of the current economic model of the internet.

The internet has the characteristics of a two-sided market -- with end users on one side and the providers of content, applications and services on the other side making use of the net as a 'platform' to enter into transactions.

Historically, there have been two main types of commercial agreement to pay for the internet traffic flows between different networks: IP-transit (mainly to pay to so-called "Tier 1" operators and when there is a great imbalance in traffic flows between the networks); and peering (when the traffic exchange between networks is more balanced or among the Tier 1 operators themselves). To date these agreements have contributed to the successful development of internet. However, the emergence in recent years of extremely successful players providing popular applications and content (especially based on video) is resulting in an increasing imbalance in traffic flows (upstream and downstream flows) for which peering agreements are no longer adequate.

Currently, network operators bear the entire burden of network capacity expansion and upgrades in the face of exponentially increasing traffic flows. They recoup network costs mostly from one side, namely end users with a price structure mainly based on flat rates. In view of the described traffic growth, this market structure suffers from inefficiencies:

- First, internet content and applications providers have very limited incentives to use the network in an efficient way since their cost structure is largely unrelated to traffic.
- Secondly, access costs are only paid by end users who do not have sufficient knowledge to fully control traffic. Users receive part of their traffic without an initiative from their part, and where they initiate the transaction they often do not choose the download format. In the presence of flat rates, end users clearly have no incentive to control their traffic. But even usage-based prices alone would not create sufficient incentives for efficient network usage as users do not fully control the amount of traffic generated.

These inefficiencies could ultimately put at risk the sustainability of the entire internet. The expected efficiency improvements in backbone and aggregation transmission technologies might not be able to follow the expected growth in traffic and current technologies in the access networks are not capable to cope with higher traffic volumes without significant investments. The resulting need for major investments coincides with stagnating revenues for network operators.

Therefore, economic incentives on the side of the market where the bulk of the internet traffic originates are needed for a more efficient use of network capacity. Otherwise, any new capacity risks being used 'in a snapshot' by additional data flows.

Against this background, flexibility to test new business models - on both sides of the market - is essential to maintain a healthy internet ecosystem, including new models of payments between internet content and application providers and network operators which create incentives for investment and for a more efficient use of network resources and improve overall welfare.¹³

To allow for balanced outcomes of negotiations between market players, policy makers and regulators should as far as possible aim for a level playing field for all actors in the internet value chain. Players on all layers of the value chain should be subject to comparable standards of data protection, consumer protection and transparency, and policy makers should act where this is not the case. A level playing field also implies that potentially anti-competitive behavior of undertakings with market power on other layers of the value chain than the network/connectivity layer is adequately addressed (different from the electronic communications sector, other areas of the internet are not subject to an *ex ante* regulatory regime).

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?

Minimum QoS requirements should be an *ultima ratio* intervention

The revised regulatory framework introduces in Article 22 (3) of the Universal Service Directive a competence for NRAs to apply minimum quality of service requirements to services provided by an undertaking or undertakings.

This possible imposition of minimum quality of service requirements should, however, be subsidiary to the implementation of rules on transparency and competition by NRAs and other competent authorities.

¹³ A recent study by members of Columbia University and the MIT suggests that "access fees - payments by [content providers] to ISPs in order to access consumers—could positively impact investment incentives leading to upgrades of existing network infrastructure. Moreover, in contrast to some results in the literature [...], we find that social welfare is generally superior in [a] non-neutral regime"; Investment in two sided markets and the net neutrality debate, P. Njoroge, A. Ozdaglar, N. Stier-Moses, G. Weintraub, July 2010, p. 24

The provision requires a number of conditions to be fulfilled, in particular a degradation of service or slowing down of traffic. As 'best effort' service provision is characterised by a frequent temporary slowing of traffic due to the nature of the public internet, such degradation would have to be significant and not only temporary to justify intervention.

In a competitive market place, the imposition of minimum quality of service (QoS) requirements is likely to distort the efficient functioning of the market. Therefore, in addition to a degradation of service, NRAs should identify a specific market failure which the minimum QoS requirements are intended to address and, before considering the imposition of QoS requirements, evaluate the sufficiency of less distortive measures such as transparency or, potentially, the elaboration of industry standards.

ETNO supports the preliminary view of Ofcom (U.K. Office of Communications) that minimum QoS standards are a rather prescriptive policy option and that it would be advisable to explore existing competition tools and consumer transparency options before considering minimum QoS requirements.¹⁴

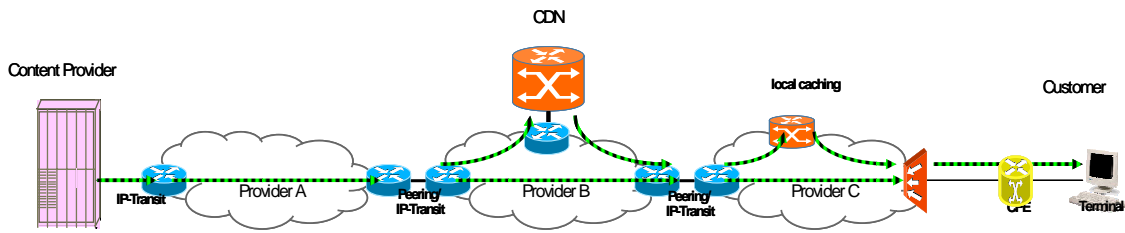
Imposing minimum QoS requirements under best effort is inherently difficult

Regarding any possible intervention on minimum QoS and the form it should take, it is important to be conscious of the complexity of defining and measuring quality parameters for internet access. E.g., in mobile networks quality depends on the number of users in a given cell, the customer position in the cell, or the signal strength.

The user experience in a best effort environment depends on several factors, not all under the control of the access network operator, such as the number of subscribers online and accessing a particular website at any one time, as well as the quality of transport over other networks used by the provider of online content or applications. Best effort service provision is characterised by frequent but often extremely short delays, jitter and packet loss, which may significantly reduce the quality of certain applications. Figure 2 on the next page illustrates the number of actors that may be involved in online service provision. Each of these, for example, could be responsible for a delay in transmission.

¹⁴ Ofcom, *idem*, pt 1.12, 1.19

Figure 2



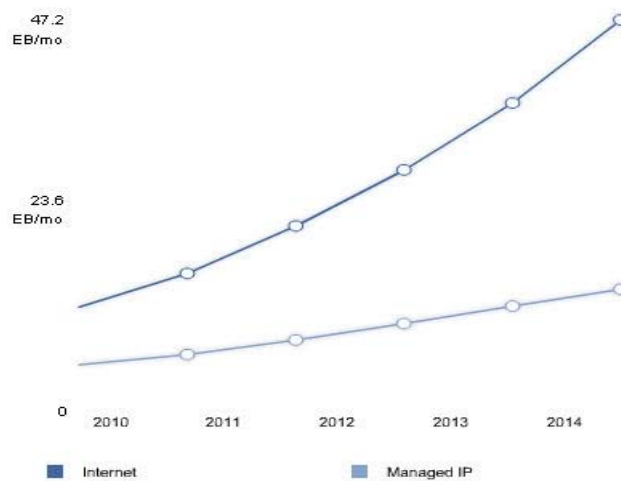
Are minimum QoS requirements needed to preserve best effort internet?

A concern often raised in the context of quality of service is that best effort internet provision would be degraded by operators who promote managed services, leaving users who do not subscribe to such services to a 'slow lane'. However, competition in internet access provision would sanction any operator attempting such a strategy.

Willingness to pay for higher quality services is uncertain and the majority of customers will continue to subscribe to a best effort internet access offer (currently these are 100% of customers). A commercial strategy that would damage an operator's main broadband product would be highly detrimental in the short-term, given the high level of competition in broadband markets, and cause long-term damage to the operator's reputation for high service quality, impacting on its other products, including premium products.

According to latest projections of internet traffic, managed IP traffic will grow slower than internet traffic overall.

Figure 3



*Cisco VNI June 2010

Against this background, a scenario in which managed services will 'crowd out' best effort internet services appears highly unrealistic.

In the face of competition, it is important for network operators to offer customers internet access which provides a satisfactory user-experience for access to internet content and applications. To support this objective, arrangements and new business models that increase efficiency of IP traffic transmission on the internet should be facilitated (s. response to Q 10).

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

See the response to Question 5 above: the transparency requirements of the revised regulatory framework will be implemented by NRAs from end-May 2011. Once in place, any obligations will guarantee that a set of specific information on their internet connection will be given to end users.

ETNO and its members will actively contribute to the implementation of the framework's transparency requirements. As highlighted by Ofcom in its consultation document¹⁵, in applying the new rules a balance will have to be struck between technical detail, for example on the parameters for traffic management, and the need to give meaningful information for the consumer. *Inter alia*, customers are entitled to a clear and understandable explanation of how their connection will be managed to deal with congestion and of the quality of the end user experience. Operators will also clearly outline in their terms and conditions whether and to which extent access to services and applications may be limited.

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?

ETNO Members do not exercise control over the actual content transmitted and will not engage in any censorship or favour or disfavour any type or form of communication on the internet because of the views expressed therein.

The global internet has become a vibrant and essential platform for human development, civic engagement and economic growth. The internet and the new technologies have amplified the ability of individuals to express and access information in unprecedented ways, increasing the capacity of individuals to fully participate in all aspects of social, political, and economic life.

¹⁵ *Idem*, section 5

Any decision in other policy areas concerning the way in which the internet functions must be framed keeping this basic premise very firmly in mind. It is critical to the continued growth improvement and success of the internet as a democratic platform not to create burdensome barriers to the development and management of the internet by the relevant stakeholders. In this context, it is essential not to undermine longstanding policies toward internet intermediaries.

The approach followed to date, which has allowed users to express themselves and ISPs to focus on empowering communications by and among users without playing a controlling role with respect to the content of such communications, has yielded significant benefits, contributing to an internet environment that fosters a tremendous amount of innovation, free speech, collaboration, civic engagement and economic growth.

On the contrary, initiatives that contemplate wider obligations for intermediaries, such as imposing the suspension or termination of alleged infringers' internet access, or those mandating automatic filtering policies, which call on ISPs to identify and block transmissions of content, in particular copyrighted material, should be cautiously examined to fully understand their twofold impact, on users' freedom of expression and on network operator' willingness to develop innovative services.

It is important to stress that there is an inherent inconsistency between the openness of the internet (i.e. that customers should be able to access lawful content, applications and services of their choice, irrespective of the technology used, in ways that provide all of them with the best possible experiences and services) and those initiatives that would limit the freedom of expression and media pluralism on the internet.

Solutions as the contemplated suspension of internet access, raise serious constitutional concerns regarding privacy, proportionality, due process, and also free speech. Internet access has in fact become such an essential part of everyday life that disconnection cannot be considered a fair sanction for every kind of illegal activities carried out on the web, in particular for small scale copyright infringement, where the customer is not necessarily aware of the unlawful character of his activity.

An obligation to monitor or to readily identify users pursuing certain activities on the internet would go directly against the recommendations of the Digital Agenda¹⁶, which states on its chapter on "Trust and Security" that:

"The right to privacy and to the protection of personal data are fundamental rights in the EU which must be – also online - effectively enforced using the widest range of means: from the wide application of the principle of "Privacy by Design" in the relevant ICT technologies, to dissuasive sanctions wherever necessary".

¹⁶ COM (2010) 245, 19.05.2010,

Monitoring and privacy by design are rather incompatible concepts.

As far as filtering policies are concerned – beyond the possibly extremely high costs of implementation which would render the measures heavily disproportionate, their application can likely lead to the blocking of lawful content, due to their automatic nature. By doing so, it violates the fundamental right of expression applicable – nowadays – in particular through the internet (this is also recognised by Directive 140/2009 (Art.1, par.1 b)).

In this context there are and will, of course, be some legal obligations based on courts' or other legal authorities' decisions to block access to certain sites in Europe if a given site hosts forms of content found unlawful by the legal authorities. However, such obligations still need to be in line with basic open internet principles, i.e., they should be drafted in a way which does not affect consumer's right to access otherwise lawful content.

Equally important is that customers can access lawful content in a way which is undisturbed by technical monitoring other than what is necessary to provide a secure and safe network in the case of congestion or attack, as also reflected in the Directive 2009/136/EC:

“(30) Directive 2002/22/EC (Universal Service Directive) does not require providers to monitor information transmitted over their networks or to bring legal proceedings against their customers on grounds of such information, nor does it make providers liable for that information.”

Also relevant are the provisions protecting intermediaries from liability for the actions of third parties. These provisions providing for a limitation of intermediaries liability allow for a huger online expression, encourage innovation in the development of new services, and better promote the internet as a platform for a wide range of beneficial activities.

If held liable for third party content, intermediaries' willingness to host any content created by others will in fact be greatly reduced and they would tend towards blocking more content than justified and self-censor, especially where definitions of illegal content are vague and overly broad. Imposing strong and disproportionate liability on private intermediaries may therefore create concerns and discourage them from allowing users to disseminate content. This could have negative effects on the freedom of speech and on the full benefits of the Information Society. Policies aimed at eradicating all infringement and at holding intermediaries broadly liable for user content will harm free expression and online innovation.

ETNO therefore suggests that as the debate continues, an important dimension to be considered by the European Commission is that the principle of openness of the internet must also be taken into account in the discussion on content and copyright. Any measures to monitor or limit access to content beyond what is required for network management purposes can only be based on clear legal decisions by the relevant authorities, and giving due consideration to all fundamental principles.