

WIND contribution for the

**Public consultation on the Open Internet  
and Net Neutrality in Europe**

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## **Introduction**

Over the past two years the issue of technological neutrality, better known as net neutrality, has aroused the interest of many and different subjects, from regulatory bodies, opinion movements on freedom of expression, industrial groups, to directly involve national governments (e.g. U.S.A. and its current president).

There is no doubt that the topic is both topical and important at the same time and need to be discussed deeply. For this reason Wind welcomes the opportunity provided by this consultation in order to forward its view on the matter of open internet and net neutrality.

## Executive Summary

An agreed univocal definition of network neutrality doesn't exist. Therefore the term is often used in the press, by politicians and regulators with different connotations, involving quite different concepts, going from the technical management of the communication networks, to the universal principle of freedom of expression.

This unavoidable uncertainty is reflected also in the consultation document that deals with many different issues. As a summary of our position we affirm that Wind totally agrees with the 5 principles advocated by Commissioner Kroes, namely:

1. Freedom of expression;
2. Transparency (regarding practices of operators);
3. Fair competition (i.e. not allowing traffic management principles to discriminate against undesired competition);
4. Promotion of investment in efficient and open networks; and
5. Support for innovation (ensuring opportunities for new efficient business models and innovative businesses).

More specifically we stress that:

- Additional guidance on net neutrality is not necessary; regulation promoting competition in broadband services is the best solution. We are convinced that effective telecoms regulation brings open and competitive markets, which in turn promote investment. Investment in higher-capacity networks will allow us to avoid congestion. Competition among service providers, coupled with transparency, will allow us to solve quality of service (QoS) problems as consumers will have the flexibility to move to the provider that satisfies their requirements and content/service/application providers will have the right-sized QoS to support their services.
- ISPs and Network Operators (NOs) should be free to offer different levels of service to their customers (i.e. final users and content/service/application providers), respectively priced at different/adequate price levels.

In mobile networks the need to share fairly the available bandwidth should allow Mobile Network Operators (MNOs) to inhibit opportunistic behaviors. Moreover in this phase, as winning business models have not yet consolidated, we claim that no further regulation should be introduced which could interfere with the markets development.

## WIND COMMENTS

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

**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?*

Wind believes that no problem are noticeable due to several factors that grant a sufficient degree of competition, such as:

- The presence of a sufficient number of competing ISPs and Network providers.
- The presence of a sufficient number of CPs.

Taking into account these considerations, both sides of the *two sided market*<sup>1</sup> have the possibility to choice which provider has the better offer. Furthermore, from a network provider point of view, all users are allowed to access lawful contents, to use applications, to attach personal devices that do not harm the network and to upload their personal contents or applications.

Moreover nowadays doesn't exist a shared definition of "net neutrality" doesn't exist ,but in principle the core issue that many people, regulators and politicians mean with this term is the way by which network operators and ISPs manage traffic on their own network.

One of the latest version of the net neutrality definition is published with the OFCOM's public consultation document on the traffic management and net neutrality<sup>2</sup>, where it is affirmed that, *the purest version of 'net neutrality' assumes that:*

- *there should be no prioritisation of any type of traffic by network operators; and*
- *those providing content, applications and services via the open internet should not be charged by network operators/ISPs for the distribution of that content to the network operator/ISPs' customer base.*

Wind strongly rejects such a definition that, if assumed as reference, would lead to have a distorted perception of the telecommunication network operators or ISPs as providers of infrastructures for signal transport (the so called dumb pipes).

In this view, there are a couple of important considerations that should be taken into account in order to avoid that such an important debate, that will influence the development of the Internet in the next decade, is reduced to an useless highly ideological battle.

First of all the meaning of the neutrality principle should be clarified, then we could try to discuss how to apply it to *specific* cases.

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<sup>1</sup> *Two sided markets can be described as markets where platforms provide services to two, or more, distinct groups of 'consumers* – Traffic Management and 'net neutrality' a Discussion Document, OFCOM 2009

<sup>2</sup> Traffic management and 'net neutrality' a discussion document - <http://stakeholders.ofcom.org.uk/consultations/net-neutrality/>

Furthermore often it seems that the “network neutrality” principle is confused with the “network freedom” principle. Even the “Commission Declaration on Net Neutrality” quoted in the annex I of the questionnaire, doesn’t make it clear what are the differences between the two concepts, that in our opinion belong to different realms.

In our opinion, following the “network freedom” principle, any European citizen should be free to access any information on the Internet, with no discrimination from the ISP/Network Operator (NO) based on the nature of that information. The legal implications deriving from sharing or accessing a specific piece of information/content regard only the two entities involved in the transaction. This is because an ISP/NO doesn’t have any right neither to watch at the content of a private end to end communication, nor to judge about the nature of that content. Competent Authorities have the power both to ask a provider to supply the information they need in order to fight any sort of illegal behaviours and to order the removal of any illegal content. This has very little to do with the “network neutrality”.

In this view it is necessary to remark that the competition is one of the strongest tools to grant the “network freedom” principle for all costumers. Confusing the concept of network neutrality with the one of network freedom could lead to hamper the competition dynamics of the service, application and network markets and consequently could prevent the willingness of all interested players to invest in services, infrastructures and innovation.

Finally it should be considered that the issues at the roots of the *net neutrality* debate are also strictly related to the effective level of competition among Service/Application Providers. In this respect, EU institution should further speculate on whether a sector inquiry to assess the market power detained by some relevant players (i.e. Google, Apple, Facebook, etc..) is needed.

**Question 2 - How might problems arise in future? Could these emerge in other parts of the internet value chain? What would the causes be?**

Wind believes that as it is perceived today the problem of net neutrality in Europe regarding this public consultation, will likely not arise in the future.

On the contrary it is very important to understand which is the future for NOs, also in relation of this debate. What we mean is that this public consultation and the international debate which are focused principally on operators' behaviours could lead in the future to adopt measures out of proportion on NO's part of the internet value chain. As stated in the previous answer, the meaning of the neutrality principle should be clarified before any further discussion or before any kind of proposal to specific measure.

Moreover in the foreseeable future, as the networks evolution is concerned, two main trends are emerging: the shift toward pervasive Optical Fibre based local loops and the ubiquitous availability of the mobile broadband access with increasing capabilities thanks to the deployment of new technologies (e.g. LTE).

Both factors will increase the quantity of bandwidth available to the users who will ask for more innovative services aimed at using this resource. However both NGAN and LTE need relevant investments, accordingly would be unreasonable and economically inefficient to inhibit emerging of new class of services and revenue streams for the whole market by banning traffic management techniques *per se*. As a matter of fact the possibility for an SP to immediately obtain from network providers a selected QoS when delivering its application/services to final customers is fundamental to enable the emerging of new applications and services based on QoS in a "best effort environment"; such quality eager application will eventually in a later phase drive consumer demand and willing to spend to obtain better access products from NO thereby positively triggering a virtuous circle for market based NGA investments.

Furthermore, about the risk that operators will fragment the internet by erecting new road-blocks or toll booths, Wind strong believes that, as stated in a recent article of "The Economist"<sup>3</sup>, *competition between providers of internet access should prevent this form happening; any broadband provider that tries to block particular sites or services (i.e. Google, Facebook, Youtube, etc.) will quickly lose customers to rival firms.*

On the Fixed Side it is reasonable to imagine a big growth of the request of high quality multimedia services: HD streaming and 3D are obvious examples. Also e-learning and e-medicine will almost certainly increase.

It is too early to understand which business models will prevail between NOs, Content/Service Providers and consumers but in any case it is not the role of EU institutions to indicate at this time that a given business model should not be possible and at the same time invasive ex ante regulation could only alter the reaching of a physiologic competitive equilibrium.

In this context the role of the regulatory bodies is crucial. The main risk for European NOs is to become pure *dumb pipes* providers and to leave the most part of the margins coming from the new services to the big multinational entertainment companies. Such a risk would increase if, on one hand, the burdens decided by regulators on NOs will become too heavy with the imposition of inappropriate roles (e.g. to be responsible of the content accessed or shared by their customer) or, on the other hand, a wrong interpretation of the network

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<sup>3</sup> *The web's new walls*, The Economist - September 4<sup>th</sup> 2010

neutrality principle will be adopted, which in turn will hold back the possibility to recover their investments through new enhanced network services, allowed by NGN developments.

On the mobile side it is even more difficult to predict which behaviours will prevail. This is due both to the fact that the mobile broadband market is younger than its fixed counterpart and that the competitive play ground is more complex. Mobile terminal providers (e.g. Apple) have a role that doesn't exist in the fixed case and they could influence very strongly how the revenues will be shared among stakeholders. This mainly depends on the nature of mobile services, which, for ergonomic reasons, must be tailored to terminal capabilities.

As far as we can experience so far, on one hand, mobile broadband users seem more willing to pay for the services they use, on the other hand, they are looking for services satisfying their specific needs. Mobile payments are an obvious example. This somewhat new scenario will see, as the market matures, more and more third party players trying to carve their own niches and get their share of the revenues generated by new services.

In analogy with the fixed case, MNOs are obviously opposing any attempt to ex ante predetermine how the value should be distributed among the Internet value chain (e.g. network operators to become "dumb pipe" providers leaving all the value deriving from the new services to other parties).

This position not only reflects the legitimate expectation of any company to maximize its economic result, but is further justified by the need for MNOs to justify the huge investments to be made to develop next generation networks.

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

Wind believes that the 2002 regulatory framework is able of dealing with the issues identified in this public consultation and absolutely capable to guarantee an adequate implementation of the network neutrality principle.

However the strengthening of the transparency and quality of service measures raised several concerns on its implementation and needs to be well understood before its adoption to avoid any distortion of the market as it is today.

The strengthening of the transparency measures in the 2009 revised framework, raises some concerns about the amount of information that NRAs will be able to impose on operators. The current framework (2002) guarantees the widest protection for users under the non discrimination and transparency principles and the existing privacy regulation complements the safeguard provided by the framework itself. Indeed, if on one hand a reasonable amount of information could help consumer to better understand services, applications or contents that they would buy, on the other hand an overload of information could confuse the consumer itself and bear upon operator's costs disproportionately.

As regards the quality of service requirements within the 2009 revised framework, there are some strong concerns about both its definition and its scope with reference to fixed and also to mobile networks.

In this respect, for fixed networks, it is a key point to understand that the quality of service offered by operators (especially an alternative operator, which uses the incumbent's network) strongly depends on many factors, including:

- the quality of the existing access network of the incumbent
- the distance from the exchange to the end user's premises
- the number of subscribers that use, at the same time, the bandwidth

Moreover from the point of view of an alternative operator, which uses the incumbent's network to reach its customer base quality of service may strongly depend on the QoS of wholesale products provided by the incumbent.

For mobile networks, it is a key point to understand that in practice it is not applicable a minimum quality of service level since the mobile access is based on a *shared* access modality used by customer in mobility. This should not surprise considering that the cell sizing is based on statistical numbers which vary cell-by-cell, therefore it doesn't allow a *one fit for all* of minimum quality of service level.

For what concerns the issues related to the competitive dynamics between NO/MNO and SP/CP the net neutrality debate should not be focused on imposing regulatory burdens on MNOs/NOs to avoid any possible future anticompetitive behaviours without taking into full account that competitive risks may instead come from Content/Service providers which already detain a considerable market power (e.g. Google, Youtube, Apple, etc.) to the detriment of smaller or newcomers network operators. In fact, a not competitive/pluralistic Service Application market may negatively limit the possibility to access contents and services for the end-user.

## 4.2. Traffic management/discrimination

**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?*

First of all Wind wants express its partial disagreement with the general concept that “*at the heart of the traffic management and net neutrality debate, is a concern that traffic management could be used as a form of anti-competitive discrimination*”<sup>4</sup>

As a matter of fact the scarcity of legal evidences<sup>5</sup> at EU level of this kind of anti-competitive discrimination (e.g. announcements of such behaviours without evidences seems to be not credible) shows that on one hand this concern could be reasonable by a theoretical point of view, but on the other hand, in the common practice, it has no evidences.

On the contrary the traffic management is essentially used by operators to streamline its own networks and avoid any network congestion. It is very important because is the first tool by which NOs can give the opportunity for all customers to use networks and services, assuring the access, improving the quality of services offered and avoiding that a few *bandwidth-hungry* customers (or application/services) use all the bandwidth to the detriment of other customer’s rights.

The original wording of the neutrality principle (i.e. “all bits are equal”) was born when the Internet was a pure data network hosting a small number of services. At that time there were neither real time services, nor mobile broadband networks. Insisting on that definition doesn’t help to understand neither how to guarantee better services to the users, nor how to manage the transition toward NGNs.

A real time service needs a specific QoS. The network must guarantee that some parameters (e.g. bandwidth, jitter, delay, etc.) remain strictly within predefined limits during the communication. In practice, in order to guarantee the desired behaviour, the network must pre-empt the resources needed by a real time service. The main consequence is that those services will have more privileges than the standard (best effort) services (e.g. browsing, FTP, mail, etc.). In other words, they consume more network resources. Another fundamental consequence is that a network which must support real time services is more costly than a pure best effort network.

Furthermore, improvements on quality of service and on consumer’s experience for services offered can be efficiently achieved by NOs with a traffic management technique based on a *multi-level* quality of service. This means that with this tool, at the same time, the network operators will be able to provide to all customers (e.g. users, application providers, etc.) a *best effort* quality of service, as is today, and to give a dedicated/enhanced service for those who will require this *premium* service.

Moreover, if a real time service traverses more networks (i.e. the service is supplied by a provider served by a ISP/NO which is different from that one serving the user), each of them must provide the requested additional resources. This assumptions must be met by any eventual transit network. It is clear that the cost of this service cannot be the same as in a best effort scenario.

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<sup>4</sup> Traffic Management and ‘net neutrality’ a Discussion Document, OFCOM 2009

<sup>5</sup> For instance: “To date Ofcom has received no formal complaints from industry that require investigation” - Traffic Management and ‘net neutrality’ a Discussion Document, OFCOM 2009

In an economic perspective it seems paramount to allow price differentiation between real time services and best effort services. In order to avoid any confusion it should be clear that a user watching a video from a popular service like YouTube with his/her browser is not using any real time service on the contrary of a user that is watching a HD IPTV content. On this point Wind is strongly convinced that the existing framework is completely adequate to manage the present networks and the evolution toward the New Generation Access Networks (NGANs) and that regulatory Authorities should be very careful to introduce further regulatory constraints to MNOs/NOs which could prevent the developments and evolution of new services. In that context the available bandwidth will be in the order of many tens or hundreds of MBit/sec and will be shared among best effort services and new high QoS services like HD and 3D on demand contents delivery, long distance medical assistance, interactive 3D gaming and every other new possible enhanced service.

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

The provision of transparency information is a tricky matter to manage because level and detail of information should be proportionate both for the customers and the operators.

- From the customers point of view this means that the transparency information are necessary to dispose of a clear and easy way to understand terms and conditions to use content, services and applications they may want to access.
- From the operators point of view this means that transparent information are used to improve the consumer experience, in a way to give the possibility to compare/understand the service offered and to avoid an excessive level of information that could be too expensive both in term of time and costs.

Between these interests there is a wide range of solution that can lead to different impacts and is important to avoid any excess both for the customers and operators.

In fact while a reasonable degree of information can be useful to consumers an overload of information has an opposite reaction, namely the customers confusion that could lead to a consequential, and even worse, distrust on operators.

Taking into account these facts and a market context in which the competition is well developed, an operator has strong disincentives to adopt unclear behaviours towards its customer base and Wind believes that one of the strongest tools to avoid the net neutrality concerns remains to assure a fair competition between service and network providers.

Wind also believes that the current way adopted in Italy to assure a reasonable level of transparency towards end users is a good way to allay the net neutrality concerns, that are for example:

- publication on operator's website, in a clear and easily accessible form, information on the restrictions applied.
- information on usage caps and costs of exceeding that usage cap;
- number for technical support helpline.

However what is very important is that the customer is informed about the main characteristics of the services he buys. This holds both for the basic broadband connectivity and for any additional services he/she may buy which has specific QoS requirements. It is important that, in cases where a customer buys a best effort service from a third party different from his ISP/NO (e.g. a streaming service), he knows which are the network requirements of such a service in terms of bandwidth and other network parameters. For those services which will require a predefined QoS, the content provider and the ISP/NO will then reach an agreement in order to guarantee services' functionalities. That's because automatic provisioning protocols are not presently used between different IP networks.

Consumers should also be clearly informed about any banned or anyhow limited service, if any, particularly on mobile networks.

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

Wind strongly believes that the principles governing traffic management cannot be the same for fixed and mobile networks from the fact that they have two *completely* different ways to transmit the signal, that is a dedicated connection (at least for the local loop) for the first whereas a shared connection for the latter.

Moreover, it is also very important to consider that:

1. Mobile networks have intrinsic bandwidth limitations in the radio loop due both to the scarcity of suitable frequencies and to the electromagnetic emissions regulation.
2. Differently from the fixed case, in a mobile network even the "last mile" is shared by many users. There is an obvious interest for users to be protected from other users who overuse the shared resource.
3. In the largest part of Europe, especially in Italy, Fixed networks are managed taking into account the presence of the incumbent operators which strongly influence the degree of control over the competitors' traffic stream

Furthermore it should be considered that mobile broadband networks are still booming and that this may be considered a new emerging market. Given the different ergonomics of mobile terminals, when compared to fixed ones, it is quite possible that the kind of applications and usage patterns that will prevail could be quite different from their fixed counterparts. Some trends are emerging that show for example that mobile users seem to prefer to use *ad hoc* applications in order to get specific information rather than follow the browser based model mainly used from fixed terminals.

We therefore propose that the mobile broadband market is left free to grow freely without any further regulation, due to the fact that it is still in its early stage. During the next years Commission and the BEREC will continue to monitor its evolution and are of course free to decide to intervene if they would think it is needed. Moreover it is probable that the deployment of the 4th generation mobile networks (LTE) will not begin before the next 3-4 years. This new technology not only improves the frequency efficiency of the network (better bit/Hertz ratio), but also, as it is based on a full IP approach, allows for a more homogeneous management of voice and data services, as well as the improvements linked to the refarming of 2G spectrum for 3G purposes.

In that context the problem of permitting third party VoIP services over mobile broadband will look quite differently if compared with today 2G and 3G networks.

Also on this specific point Wind proposes not to introduce any specific regulation, because it seems to be a strong limitation of MNO's commercial freedom. Wind believes that a non-dogmatic approach is necessary on VoIP encouraging increase in transparency towards end users. In fact it is important to remark that the pricing of VoIP should remain a commercial choice of MNOs coupled with a clear communication to end-users. Taking into account that it is not true that not all operators don't avoid VoIP in mobile, once again the competition is the key for end-users to choose between an operator that allows VoIP in mobile or an operator that doesn't allow it.

**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?*

Wind believes that it is reasonable to have a willingness by content or application providers to prioritise their services, meaning that these subjects are interested in providing a multi-level quality of service to their end-users, assuring at the same time a *best effort* or enhanced level of quality of service for applications or contents that require it.

It would be obviously wrong to apply to all customers and all services the same and pre-defined quality of service profile since this would inevitably bring to allocation inefficiencies of resources and negatively impact overall welfare.

Wind believes that such a scenario is possible only with an *enhanced* network, that doesn't *only* mean a network with more and more capacity, which implies *per se* strong investments, but also a network which will become much more efficient by means of traffic management techniques.

That's why from Wind's point of view the model of *two-sided* market accompanied with traffic management techniques should be promoted and, moreover, allowed (that means "not foreclosed" by regulation) with a reasonable interpretation of net neutrality (for this concept see answers above).

**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?*

It would be wrong in principle to impose the same level of QoS to all providers offering the same kind of services. There are in fact too many different nuances of the same service that require different QoS. Considering for example TV and, in general, Video services on IP, a service provider would decide to offer either standard or HD quality and maybe 3D as suitable content and terminal are available; the same holds for gaming as there are games that do not require much bandwidth but need a very quick response time from the network and there are others that have opposite requirements (i.e. large bandwidth, but accept longer delays).

The situation is even more complex for mobile networks, where thousands of different applications exist, each of them possibly exhibiting specific network requirements.

A fixed classification of such a huge number of applications would generate a lot of different class of service specifications, that NOs would be forced to maintain on their network management systems. Moreover, considering the emerging nature of the broadband services market, it would be definitely too early to try to draw a significant picture of their network requirements.

It is Wind's firm belief that each content/application/online service provider should be able to negotiate on fair commercial basis with the NO, which kind of QoS (including if not a best effort one) it requires for any specific service.

For what concerns exclusivity agreements between NO and SP, those should be investigated on a case by case basis in presence of NO or even SP detaining a significant market power since such exclusivity agreement could hinder competition on both sides of the market (i.e. smaller NO could be put at a disadvantage by exclusivity agreement between larger NO and relevant SP).

**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?*

Wind believes that the present framework already regulates the negotiations between different NOs (either with or without market power) and between NOs and their end-users. The antitrust regulation has the power to sanction cases where a NO would either unduly discriminate or refuse to deal. Considering the emerging status of these markets, we suggest that the Commission should carefully monitor the ongoing developments, focusing on the problems as they emerge, and then decide either to regulate directly or to force involved parties to find a shared solution. Once again Wind reiterates that further analysis should be developed in order to assess the countervailing buyer power already detained by the most relevant Content/Service providers (e.g. Google, Youtube, Apple, etc.).

### 4.3. Market structure

**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?*

Wind believes that the commercial arrangements that currently govern the provision of access to the internet are well adequate and there are no evidences to sustain the contrary, the competitive characteristic of the internet market and the rules established and implemented regarding to the Framework Directive, Access Directive and Universal Service Directive (and theirs 2009 update/modification), are a strong incentive to assure that the internet remains open, so Wind doesn't see any reason to change the access agreements currently in force.

In this context is important to remind that the evolution of infrastructures (i.e. NGAN, and related investments) that enables the development of new services may be negatively affected if the emerging dominant role of some Content/Application providers will not be appropriately taken into account at EU level. As a matter of fact larger SP/CP with strong bargaining power (i.e. Google, Apple, Sony etc.) could discriminate smaller network operator.

#### 4.4. Consumers – quality of service

**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?*

Wind believes that the rules established and implemented regarding to the Framework Directive, Access Directive and Universal Service Directive (and theirs 2009 modification) are sufficient in a competitive market to assure that network operators provide a reasonable quality of services to theirs customers.

Wind also believes that setting by NRAs of excessive minimum quality of services requirements may rise several and strong difficulties both for MNO and NO since this would hinder a market based evolution of tailored retail offers to meet fixed and mobile customers' needs.

In particular for mobile networks the definition of fixed QoS requirements seems even more problematic given the shared character of the access connection., A paradoxical example of the economic implication of such a measure (setting a minimum *fixed* level of quality of service) would imply that if the capacity of a given mobile cell is not increased the maximum number of people who could have access at the same time to the cell would be reduced. Such a scenario might be avoided only by huge investments on an operator's cells resizing but without considering that there are strictly limitations on electromagnetic waves that vary country by country.

Further, in case of minimum quality obligations and in order to be able to defend his points in courts, an ISP/NO would be forced to build up an infrastructure measuring the performance for all the terminations of the network. The cost of this development would be very high and would necessarily increase the cost of the service.

Moreover, as far as best effort services are concerned, the QoS could only be measured on a statistic basis and it is practically impossible for an ISP/NO to guarantee that predefined limits are always respected for all users. That's why such services (when the network will allow them) should be offered at different/right price.

From the point of view of an alternative operator, which uses the incumbent's network to reach its customer base, is well known that its quality of service strongly depends on the state of copper of the incumbents itself and also by the length of copper, which in the largest part of the European territory strongly varies country by country.

In general we maintain that a coherent application of the transparency principle can guarantee a fair development of the market. NRAs have already the power to intervene whether on ISP/NO constantly disregards the terms and conditions set in contracts with his customers.

In fact, the introduction of general obligations to ISPs/NOs regarding the provision of minimum quality services of course doesn't hinder misbehaviours and, in case of complaints, any single claim should be equally demonstrated. From a legal standpoint, if the transparency principle is implemented, the introduction of minimum requirements did not give more power to NRAs or to end users than they already had to sanction the faulty ISP/NO or to ask for a compensation in a court.

Finally, there are a lot of free software on the network that can help customers measure the performances of their broadband connections whilst some NRAs have even endorsed some of them.

For all of these reasons Wind believes that the national regulatory authorities should not need to set a 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?

As already stated in other answers Wind believes that it is still too early to define specific QoS requirements for the internet market. As a matter of fact customers are still offered “best effort” access services; once a multi-level quality of service offer will be available on the network and, consequently, in the market, it will be reasonable to define specific requirements and discuss about how those should be measured and 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?*

(See the answer above)

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

The general aim of the transparency for consumers regarding access to internet content, services and applications should be to provide clear and meaningful information about their ability to access or use internet services, applications and content.

Wind believes that this aim can be achieved without excessive burden both to operators and to customers, that means avoiding any kind of information overload.

As a matter of fact, as stated in the previous answers, if on one hand a reasonable amount of information could help consumer to better understand services, applications or contents that they would buy and meaningful information about their ability to access or use these services, applications and content, on the other hand an overload of information could confuse the consumer itself and bear upon operator's costs disproportionately.

Taking into account what has been already said in the answer to the Question 11, we would like to stress the difficulty to provide a standard communication to customers, due to the lack of suitable standards.

As a matter of fact, existing QoS standards have been defined in respect to fixed telephony. They deal with voice quality, line provisioning time, repair time, customer service efficiency, billing accuracy, etc. Definitely many of those concepts make sense also for broadband, often with a slightly different meaning or with different reference values.

No standards exist yet that can measure the QoS of a broadband connection (both fixed and mobile) perceived from the user (as it is for voice calls) and takes into account its intrinsic parameters (e.g. effective bandwidth, jitter, delay, etc.). These parameters can of course be measured separately and characterised for a given broadband connection, but an agreed methodology to determine if a given measured set of parameters should be considered acceptable or not doesn't exist yet. This depends mainly on the huge variety of services that exist on the Internet: going from pure "traditional" data services (e.g. FTP and e-mail) to "new" multimedia streaming services, from VoIP to gaming, etc. Each of those services declares specific requirements toward the network infrastructure. As an example, data services are completely indifferent to jitter and delay, but benefit from a high sustained bandwidth; gaming applications are usually very sensitive to delay, but usually don't require a lot of bandwidth; real time multimedia applications are very sensitive to jitter and, in case of P2P communications, to delay, and so on.

It is therefore very difficult to express this complexity with a single number (or very few numbers) which is easy to understand for non technical people, but at same time accurate enough.

The conclusion we have reached is that forcing ISPs/NOs to declare the minimum value of a certain set of predefined parameters would not be in the consumers' interests given the complexity to choose such parameters and to balance the relevance of each single one from a consumer experience point of view. This doesn't mean that transparency is impossible, in fact each ISP/NO already has the obligation to declare the characteristic of his commercial offers and NRAs already have the power to sanction ex-post untrue statements. Moreover many NRAs are already trying to define a more practical approach to this subject (e.g. in Italy the NRA is promoting the use of a certified free software to compare QoS of any given broadband connection).

Finally it should be considered that mobile broadband networks exhibit further specific characteristics that makes difficult to define for them binding parameters. In mobile networks the “last mile” is shared and the resources available for a single user depend heavily on how many other users are served by the same cell (and also on what activities those users are performing). Moreover, the propagation of electromagnetic waves depends on the obstacles existing between the mobile terminal and the cell’s antenna; this dependency is heavier as the frequency increases. A terminal located in a place where the field intensity is not optimal can experiment significantly poorer broadband performances, compared with another terminal, maybe just few meter away, that “sees” a better illumination. This is a common experience for indoor usage. These uncertainties make it increasingly difficult to define parameters that are simple to communicate and to understand.

#### 4.5. The political, cultural and social dimension

**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?*

Given that freedom of expression is one of the shared basis on which the European Union is built upon, any direct limitation of such a fundamental right is not possible. The possibility for anyone to have access to the Internet and publish its own content freely, with the only limitations imposed by the laws protecting the privacy and banning profanity and defamation, has become a standard practice in the EU. There are of course a lot of discussions and also slightly different legal standards about the best trade off between conflicting rights (e.g. freedom of press and privacy), but, as long as all of them are protected in all Member States, there is no concern.

However, as the Internet depends on the activities of a number of different stakeholders, it is important that the role and the responsibilities of each one of them is exactly clarified. On the contrary, the resulting confusion would determine a less clear perception of the rights and the duties of each one. In this respect any regulatory hypothesis that, as an example, assigns to ISPs/NOs the responsibility to control the appropriateness or the legal status of the contents that any user uploads or downloads should be rejected. ISPs and NOs have neither the competence nor the legal authority to ban or to approve any content whilst they will continue to act on a case by case basis according to specific requests by the public authorities responsible and entitled to monitor and control such issues.

#### **4.6. Any other issues**

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

NO COMMENTS