

Vivendi Group Response to the

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

The Vivendi Group, as a major investor in networks, platforms and content, is pleased to contribute to the public consultation launched by the Information Society and Media Directorate-General of the European Commission on net neutrality:

- As leading player in content creation:
 - Music : Universal Music Group
 - Games : Activision-Blizzard
 - TV & Cinema : Canal + / Studiocanal

- As a leading player in telecoms networks, service platforms and content distribution:
 - Platform operator : World of Warcraft, Vevo, Canalplay (VOD), SFR, Zaoza ...
 - Content agregator : Canalsat
 - ADSL & mobile operator: SFR, Maroc Telecom, GVT

Each year, with all of those businesses combined, Vivendi invests over €5 billion (distributed equally) in content creation and acquisition and network technologies. This major contribution to innovation is key to our operations and represents 50,000 direct and 80,000 indirect jobs. It is therefore essential to keep in mind the economic impact in terms of employment and competitiveness of this issue.

The net neutrality issue was built and developed in the United States over three years ago by a coalition of Internet players, including Google. Debate on this issue was very intense before the presidential election, but has evolved to a more nuanced and focused discussion that allows for effective network management and a range of managed services so long as they do not harm users or competition.

If the net neutrality issue is getting much attention in Europe, it is nevertheless important to keep in mind the difference of competition situation in the telecommunications market in Europe, and particularly in France, compared to the United States.

In France, there has been significant investment from alternative operators, of which only a few have survived. Unbundling made this possible. Nowadays, triple-play offers propose a very good balance between affordability, attractiveness and quality.

On the other hand, in the United States, the market is structured around a duopoly because of the absence of local loop access. Consumers can subscribe to either a cable or ADSL services. The result is a comparatively high subscription fee of around 3 times the French monthly fee for the equivalent of a triple-play offer.

From a Vivendi perspective, the debate on net neutrality should be articulated on 3 essential points:

- **The “limited” nature of (technology) resources, in particular bandwidth, especially (but not only) for wireless due to the shared nature of the resource and the scarcity of frequencies;**
- **The substantial cost for operators of upgrading the bandwidth capacity required for the transmission of data flows over networks ;**
- **The necessity of traffic management, particularly to avoid network congestion, ensure network integrity and provide quality of service for all lawful applications and services that are sensitive to this criterion.**

The main challenge behind net neutrality discussions is to define how networks are going to be able to handle the explosion of traffic on the internet, while at the same time preserving the principle of universal access to content on the internet.

I - 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?

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

Response to questions 1 & 2

The surge in traffic

DSL technology has led consumers to acquire digital devices for every triple-play applications, including personal computers, boxes, consoles, printers, flat screens, videogame consoles and multimedia readers. The DSL network's effects have been exceptionally influential, because its deployment corresponded to the adoption of the Internet Protocol as the universal communications standard.

This trend now embraces mobile handsets & applications. For all operators, the rapid development of these usages translates into:

- A surge in demand for video streaming on both fixed and mobile networks.
- Rapid take-off in mobile Internet leading to a risk of congestion of mobile networks and possible service-quality problems that are sensible for customers.

The volume of Internet traffic per user doubles every two years, and video is expected to represent the bulk of all Internet traffic in the next few years.

According to Cisco, "the growth in traffic will continue to be dominated by video, exceeding 91 percent of global consumer IP traffic by 2014. Improvements in network bandwidth capacity and Internet speeds, along with the increasing popularity of HDTV and 3DTV are key factors expecting to quadruple IP traffic from 2009 to 2014".

High bandwidth-consumption applications such as streaming, newsgroups, P2P and non P2P applications (notably cyber lockers like Rapidshare linked by blogs like Google blogspot and illegal websites), combined with the new massively unicast Internet usages (YouTube, catch-up TV etc.), require operators to make significant investments to maintain the level of service-quality and require operators to support the major associated risks. We believe that infrastructure investments (FTTH, mobile bandwidth capacity, etc.) should rather be directed toward the development of innovative services, and not focused only on avoiding existing networks' saturation.

P2P and non-P2P services consume significant bandwidth although the growth in traffic does not result solely from these services but also from the substantial and continuing increase in lawful high bandwidth consuming services (such as video streaming from sites like Youtube and the BBC iPlayer)

De facto, the question of technology-resource limit is even more relevant since the take-off of mobile Internet. With their bandwidth capacities limited by spectrum scarcity nature, mobile networks cannot grow in the same way that fixed networks can in order to manage traffic congestion. With the current surge in mobile data and networks' switching from mainly voice to mainly data-flow bandwidth, network management becomes critical, because it is essential that basic services (voice in particular) are not deteriorated for the majority of customers.

By the end of 2011, the saturation of mobile networks, and 3G in particular, could impede the penetration of mobile Internet in some areas.

Growth in the number of subscribers (even if slow) combined with growth in consumers' acquisition of increasingly numerous and diverse digital devices upsets the balance observed in the high-speed telecommunications infrastructure's deployment phase.

Illegal sites/ applications' increasing bandwidth consumption

In France, new initiatives underway in the context of the Graduated Response implementation through the creation of a new administrative body (Hadopi) will also have some positive effect on the traffic used by incentivising people to subscribe to legal offers more optimised in terms of bandwidth consumption.

However, there is a substantial growth in video streaming and direct download flows. Such flows, generated in part by unlawful sites, have an even greater impact on bandwidth consumption for operators than P2P file-sharing.

The "lawfulness" criterion introduced by the FCC appears to be an essential element in Internet regulation, as stated by FCC Chairman Julius Genachovski: "As I said during my senate hearing, the principles of open Internet apply only to legal content, applications and services; they do not apply to activities like the illegal distribution of copyright-protected content, which has serious economic consequences. Compliance with copyright and other laws and the obligations regarding network openness can and must co-exist."

Vivendi would like regulation on net neutrality to ensure that lawful content, services and applications are accessible to the greatest extent possible and urge the Commission to consider the "lawfulness" criterion as an essential element of net neutrality regulation.

The "Lawfulness" criterion should therefore be taken into account in the implementation of all provisions (for example non-discrimination).

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

The Telecoms Reform Package, essentially via the Universal Service directive, treats the network-neutrality question pragmatically by setting forth several major principles and adopting a balanced approach. This framework has set the terms for an acceptable compromise for all parties, based on a balanced approach:

- Recognizing the ISPs' ability to manage traffic, in particular by applying traffic priorities ;
- Allowing National Regulatory Authorities (NRAs) to set strict transparency rules regarding the use of these practices vis-à-vis the consumer ;
- Laying down, the possibility for NRA to set minimum level of quality of service;
- Extending NRAs jurisdiction in terms of settling disputes between ISPs and applications and content providers with regard to non-discriminatory treatment.

It is important to preserve this balance as it allows flexibility for ISPs to develop new services and, at the same time, provides an adequate level of protection for consumers and application / content providers through the definition of strict transparency rules.

Therefore we believe that there is no need for further regulation for the moment. The first priority should be to implement and enforce the framework still in the transposition process for the moment.

Moreover, competition law fully applies to all players but needs to be effectively enforced by competition authorities in order to remedy any market abuse.

In particular, we would like to draw the attention of the European Commission on the importance to apply the same level of standards on local players and on global players, especially when there is direct competition between each other.

II - 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?

Managing flows to optimize quality of service

In the ADSL network's post-deployment phase, which we are now entering, the goal is not so much to increase the number of subscribers as it is to offer more new services to the benefit of consumers. Optimizing the use of bandwidth appears increasingly essential to effectively manage networks and avoid congestion, in particular during peak hours.

With the sharp increase in traffic volumes, implementation of non-discriminatory traffic management methods appears increasingly necessary.

The goal is to offer more innovative services – caching, latency optimization, optimization of encoding and various enablers (billing, localization, CRM etc.) – as well as to provide the quality required for services that need special processing within the network. Certain innovative services like telemedicine and distance learning plus other remote-service types, as well as HDTV and 3D video, need special processing within the network in order to develop. Would it be acceptable for progress in telemedicine to be hindered because other applications including illegal activities are monopolizing available bandwidth?

The creation of a bandwidth ecosystem optimizing various levels of quality of service would make it possible to achieve long-term balance between access networks and content and service providers. It will be necessary to ensure that basic service level can provide a minimum quality of service for all lawful content and service providers.

Encouraging all players to adopt mutually beneficial behaviour

Major dogmatic net neutrality proponents, which are global internet players (notably Amazon, eBay, Facebook or Google) may have an immediate interest in extending this situation's status quo, because it offers them a relative incumbent-player advantage over newcomers. On the contrary, we believe that the existence of an "upstream" market in service quality might be a differentiating factor and might represent an opportunity, particularly for some Google competitors, to access the same level of quality of service that Google enjoys thanks to significant investments to build its own network dedicated exclusively to its own services. This key advantage is strengthened by a very favourable tax situation, whereas European telecom operators, particularly in France, face increasing tax burden, which inevitably limits their ability to invest in networks and upgrades of bandwidth capacity.

Established Internet players probably have more to fear from net neutrality developing toward greater transparency in the traffic management practices than new entrants, considering the intensity of their bandwidth consumption and de facto eviction practices.

In addition, an unwillingness to adopt rules for clear, transparent priorities and categories of traffic equitably offered by operators is at this stage favourable for the established Internet players, which have the resources to develop infrastructures like content-delivery network services, granting them greater proximity to end customers.

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?

Considering that it is essential for the internet of the future to be a shared infrastructure between:

- A "best effort" infrastructure to carry IP packets indistinctly ;
- A "managed" infrastructure, designed to carry flows with a specific end-to-end quality of service.

We share the same view as the European Commission that this evolution should take place in an environment where adequate transparency is provided both to consumers and to users of "managed services" (application/content providers), so that each of them is able to choose the relevant offer.

It is crucial for both application & content providers and ISPs to know in advance whether they should agree on specific requirements to make services available to end users with an adequate quality. By way of an example, the launch of connected TV is an issue of concern for Vivendi as they will generate huge amounts of traffic on the networks and will undoubtedly create confusion for users. These services will be offered by TV manufacturers without any interaction with consumers. It

is therefore important to make sure that a minimum level of information and transparency will be applied to the connected TV retailers as consumers will probably expect the same quality on connected TV as on IPTV (as provided on triple play boxes) while they will, in **most** cases, only get the best effort quality.

That is why we would strongly support that transparency rules, provided they are applied to all players on the chain from the consumer to the application / service provider.

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

Capacity constraints are very different for fixed and for mobile networks. Fixed networks speed is conditioned by bandwidth available on the local loop, whereas wireless access speed is conditioned by the numbers of users at the same time (wireless bandwidth resource is shared) and by scarcity of available frequencies.

More precisely, bandwidth available on a copper pair in the fixed network is dedicated to one user and depends on the characteristics of this user's line (gauge and length). Customers are free to use their services at their convenience. The mobile radio access network, on the other hand, is shared between several users and applications: if one user consumes more capacity there is less bandwidth available for the others and applications that require a lot of bandwidth have a significant impact on capacity.

The bandwidth available to each user cannot be defined precisely because it depends to a large extent on the number of users in the cell, the services that are active at a given time in a cell and the distance from the base station at a given time. In line with the principle of equitable access to basic mobile phone services, these accesses competing for scarce resources must be "controlled", e.g. video and P2P flows take up a great deal of bandwidth and any abuse by one user, even temporarily, has an immediate impact on the quality and availability of the services for the other pooled users and even on the routing of security services such as remote surveillance.

Mobility management is a very complex factor: operators have to manage handovers and monitor traffic trends at all times, also paying particular attention to the risks of interference and loss of signal. All these characteristics have significant effects on performance and latency.

For all those reasons, a common minimum level of general rules could be defined for both fixed and mobile access technologies but with more flexibility when applied to the "mobile" environment.

Question 7: What other forms of prioritization are taking place? Do content and application providers also try to prioritize their services? If so, how – and how does this prioritization affect other players in the value chain?

In order to adjust to the surge in bandwidth needs, several global internet service providers such as Google (and Facebook) have already taken steps to build a worldwide private network to interconnect their data centers. This global footprint has the advantage to help bring the content

closest to the end-user and to enhance the quality of their own services. Other players, which do not benefit from the same scale effect, cannot access these new networks. This situation has resulted in a substantial distortion of competition on the services market.

In the current network post-deployment phase, the main goal is to structure long-term relationships between networks, content and consumers. Regardless of the regulation scheme selected, it is essential that all technical operators – service providers, transit operators, hosting providers and content-delivery networks (CDNs) – be treated equally in the regulations – including Intellectual Property enforcement - to avoid any free-riding behaviour.

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

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

Response to questions 8 & 9

From a general standpoint, we think that the implementation of the Telecom Reform Package complemented with soft law is the best approach to solving issues and situations that are very heterogeneous in Europe, in a quickly moving environment.

In fact, the framework provided by the Telecoms Reform Package still needs to be implemented in various member states. In France, for instance, we expect ARCEP to be given new instruments to handle disputes between telecommunications operators and application / content providers.

In this emerging ecosystem, it is important to guarantee to all stakeholders transparent, non-discriminatory contractual relationships within which any disputes may be resolved impartially by an experienced arbitrator.

The desired transparency would require the use of reliable means for controlling operators' traffic-management practices in the event of a dispute and quickly putting a stop to discriminatory practices. These tools would also make it possible to check for existing cross-subsidies. At the same time, service and content providers would be required to deal with ISPs in a non-discriminatory way.

Similarly, a vertically-integrated operator should not be able to favour its own services over competitors' services, and an ISP must not favour one service provider over another. For an "upstream" market to function properly, it is essential that all service and content providers be treated according to fair, consistent conditions in terms of payment for bandwidth.

III - 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?

Universal access to lawful content must remain the rule of thumb

The Internet-deployment economy was built upon the possibility of allowing each Internet subscriber the opportunity to access all available content and applications. The subsequent gradual, massive-scale increase in ADSL subscribers led to considerable network effects that translated into a sharp increase in the utility of Internet access for consumers and strong growth in the entire economy.

Furthermore, with more subscribers came more customers for online services, more web pages and more search-engine queries, and digital devices became more useful and in greater demand. All of these factors converged to support the rapid deployment of high-speed Internet, with a penetration rate in France that grew from 3% in 2002 to 64% in 2009.¹

To maintain their attractiveness and value for the subscriber, operators must be able to continue offering the greatest access possible to the content, services and applications available on the Internet.

By preventing the owner of a network infrastructure from taking excessive advantage of the control it has on this infrastructure, particularly in terms of content distribution and acquisition of the rights to certain content, the principle of universal Internet access takes on a dimension of serving the general interest to the benefit of all.

The preservation of the universal “nature” of Internet access is credited with a positive effect on all the relationships among participants in the value chain. On the contrary, the ability for an ISP to reserve its content offering for its own subscribers automatically brings about a fragmentation in content offerings and lowers the attractiveness of Internet access.

Vivendi is very much in favour of the universal nature of Internet access and against any dual-exclusivity scheme imposed by any telecom operator, device manufacturer or application/content provider.

A growing imbalance between the constraints weighing on national operators and global service providers

Openness of the internet has always relied on transit/peering agreements between operators exchanging equivalent amounts of traffic. In a situation where traffic flows are asymmetrical, operators should be able to choose whether they want to interconnect directly with other players or not. Indeed, operators have to constantly upgrade capacity on interconnection points, which is highly expensive, with no associated price.

¹ The ARCEP market observatory reported 7.9 million Internet subscribers as of 30 June 2002, including 0.9 million for high-speed services, while on 30 June 2009 it reported 19.4 million Internet subscribers, including 18.7 million for high-speed services.

In these new relationships, there exists no provision, and in particular no contractual/legal provision, that would require Internet players to moderate the data volumes they send to operators' networks and optimize the use of these networks.

If certain intermediaries that consume bandwidth (beginning with global service providers such as Google) do not agree to pay the variable cost of the data volume entering the local access network, unsound behaviours will develop, including overwhelming use of free resource and even strategies to take advantage of this resource at the expense of telecom operators and consumers. Alongside this, there are already contractual relationships between content publishers and internet services providers for the use of bandwidth (as in the case of Canal+), so a virtuous economic model is indeed possible.

The very sharp increase in volumes used by end clients, with traffic doubling every two years, makes bandwidth shortage inevitable. The current ADSL and 3G infrastructures will be unable to support future Internet uses.

IV - 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?

The directives stipulate that NRAs may determine minimal quality of service requirements *“in order to prevent the deterioration of the service and the obstruction or slowing down of traffic on the networks” (Universal Service Directive)*.

SFR recalls the importance of the “Best Effort” principle that has played a major role in the development of Internet infrastructure. The consequence of this principle is an obligation of means but not an obligation regarding the networks' performances. By definition, the “Best Effort” principle points out that the IP packets are delivered by the operator from point A to point B with no other guaranties but the packet's delivery. This principle should still prevail in the future. A right balance between this obligation of means and quality criteria are not so simple to define and will probably need further works.

Any step toward minimal level of quality should be preceded by an assessment by the regulator of the overall situation regarding the quality of service that occurs on all network infrastructures and for all types of users.

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

The user experience of the network quality depends on many factors and players. It is therefore essential that all players that are involved in this process be treated on equal terms. Indeed, it would be unfair to attribute the non-functioning of a specific service merely to the local operator's network,

whereas numerous other breakdowns (terminal's equipment, customer's installations, coding of transit, editors' hosts...) can contribute to decrease the quality experienced by the user.

The annual study from ARCEP on the service's quality of wireless networks seems to us an interesting initiative in many respects. It aims at giving a view on the quality experienced by the users that contributes to give a sense to measures focused on accessibility, reliability and performances of a service. Then, the study is not limited to one type of service but include a whole range of services like voice, data, SMS and MMS... Eventually, this initiative is released every year after several meetings between the operators and ARCEP, which enables fruitful discussions.

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?

We are concerned that attempts to define specific minimum quality of service standards may interfere with the successful evolution of the Internet by locking networks into systems and technologies that will quickly become outdated or will not be flexible enough to support future content or applications.

However, if a minimum level of quality of service was to be established on Internet access, criteria for ensuring a smooth navigation on most sites or services available on the internet seem a good starting point.

More broadly regarding "best effort" internet access, it does not appear advisable to lay down specific requirements on operators on segments of networks they do not manage or even control since these are outside their own footprint. Even if it may be useful to measure end to end quality of service in order to assess the quality of access service in a Internet-user perspective, requirements on operators on the quality of Best effort Internet may not go beyond compliance with the specifications of their own network, regardless of the nature of services.

In this perspective, Vivendi would like to stress that best effort Internet is a pure transport service: routing is done by packets, not services.

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

Vivendi would welcome all clarification on the fact that transparency rules apply both to the upstream market (application & content providers), and downstream market (end user) for operators.

Transparency is key information to allow users to choose the offer that suits their needs and avoid any abuse of the market players. The implementation of the Telecoms Reform Package will require operators to inform consumers about network management practices but also constraints in accessing the service. This should prompt operators to be more transparent by, for example, not

limiting themselves to including clauses in the terms of use, but rather by gathering information legibly on:

- Access limitation to certain services or applications ;
- Potential speed decreases applied : users should know when these measures apply and the consequences on their use of the service ;
- The use of traffic priorities: SFR is currently working on a catalog of managed services available to all application & content providers and could, for example and subject to the approval of application & content providers, disclose the list of those who subscribed to these services as well as the list of services that have the benefit of enhanced QoS.

V - 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?

The net neutrality legal framework has a key role to play in promoting lawful content. This could provide a strong incentive for ISPs to expand subscriptions to lawful services (TV, music, games...) by making sure that consumers can access these legal services in the best conditions.

Indeed, broadcasters acquire expensive rights to provide premium content – and music / gaming industries have huge investments dedicated to content creation- that is illegally available through the internet. This affects seriously our legitimate interests and is already affecting the financing of media and thus, media pluralism, creative content and cultural diversity.

We would like to stress it is essential that government policies explicitly encourage ISPs to work with content creators to find innovative solutions and schemes to reduce online piracy.

Regarding freedom of expression, we want to make it clear that it is a separate and distinct issue with net neutrality. We would also like to stress once again that we are very much in favour of a universal and open Internet, in which all fundamental rights are fully respected, including freedom of expression and opinion, property rights, and right of privacy.