

Internet and network neutrality

Proposals and recommendations



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Introduction

Electronic communications are becoming an increasingly prominent part of both the economic and social landscape, in particular thanks to the internet. At the same time, technological developments and changing consumption habits are causing upheavals in the relationships between internet players.

The information and communication technologies sector already generates revenue of €2,700 billion, or close to 7% of global GDP, and could account for 20% of GDP within the next 10 years. But, going beyond the confines of this sector, many believe that the internet could become the backbone of our entire future economy and society, and so constitutes a shared global strategic asset that needs to operate in an optimal fashion, for everyone's benefit. Ensuring the future viability of electronic communications networks and of the internet will therefore be one of the central issues of the next decade, so public authorities naturally need to concern themselves with it.

At the heart of these issues is the question of the internet's and of the networks' neutrality. The crux of the debate is: how to reconcile maintaining a public digital space, which is a vehicle for freedom and innovation, with financing the investments made necessary by the ongoing and ever-faster rate of increase in the use of the internet, and also with the protection of certain rights? This debate emerged in the mid-2000s and has already led certain regulatory authorities around the world (the United States, Canada and Japan) and in Europe (Norway, Sweden) to examine and publish works on the subject.

It was within this environment that ARCEP (hereafter also referred to as "the Authority") began its examination of the issue back in October 2009. From November 2009 to March 2010, the Authority conducted some fifty interviews along with a survey, the purpose being to engage in a dialogue with the players concerned by the question of internet and network neutrality (electronic communications operators, providers of content, service and applications, equipment manufacturers, consumer associations, public authorities, etc.) from both Europe and around the globe.

The Authority also held talks with other institutions and regulatory authorities that were interested in the matter, and drew on existing publications on the topic to help further its exploration. Among the documents the Authority took into consideration were: the report from March 2010 on internet network neutrality ("*La neutralité dans le réseau internet*") drafted by the French General Council for industry, energy and technologies, the "*FCC Policy Statement*", dated 23 September 2005, and "*FCC Notice of proposed rulemaking*" of 22 October 2009, the "*Report on Network Neutrality*" published in Japan in September 2007, the "*Principles for Network Neutrality*" report from March 2006 by the Centre Annenberg in Sweden and "*NPT Guidelines for network neutrality*" produced by the Norwegian regulator in February 2009.

On 13 April 2010, the Authority hosted an international conference on internet and network neutrality. This widely covered event marked the end of the period of investigation that began in autumn 2009, and which resulted in the Authority's publication for comments (from 20 May to 13 July 2010) of a document entitled "*Discussion points and initial policy guidelines on internet and network neutrality*".

Parallel to the process begun by the Authority in October 2009, and in response to a request from French Parliament for the federal government to submit a report on Net neutrality before 30 June 2010 – pursuant to the Law on bridging the digital divide that was ratified in December 2009 – the French Government submitted a report on internet and network neutrality to Parliament on 29 July 2010.

Meanwhile, at the European level, a working group devoted to net neutrality, of which the Authority is a member, has also been created as part of the Body of European Regulators for Electronic

Communications (hereafter referred to as “BEREC”), which is due to publish a report on the topic by the end of 2010. – added to which the European Commission launched public consultation on this topic on 30 June, with 30 September 2010 as the deadline for responses.

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ARCEP set itself the task of identifying those measures that would be necessary to ensure the efficient operation of electronic communications networks in general, and the internet – itself a network of interconnected networks – in particular, taking account of the principle of neutrality as well as the various restrictions weighing on market players. The Authority’s goal here is threefold:

- to guarantee that providers of an access to internet supply users with access to all of the content, services and applications carried over the network, in accordance with the legal provisions in effect and in a transparent and non-discriminatory fashion;
- to ensure that electronic communications networks run smoothly, in other words to guarantee a satisfactory quality of service;
- to enable the long-term development of the networks and services thanks to innovation and the development of the most efficient technical and business models.

To achieve this, the Authority intends to promote rules and best practices that apply to the entire value chain, in a manner that is fair to all of the different stakeholders, and which has a dual dimension: technical-economic and socially responsible.

Unless otherwise indicated, these rules and best practices are meant to apply regardless of access technology, and to both fixed and mobile networks – although their implementation does need to take the specific features of each type of network into account.

The present document includes:

- a brief background of the situation and a reminder of the issues at hand (Chapter I);
- for those areas that are within the Authority’s regulatory purview, eight specific proposals concerning electronic communications networks in general and the internet in particular (Chapter II);
- for those areas that are not within the Authority’s purview, at least not immediately, two proposals and guidelines intended to contribute to the public debate at the national, European and international levels (Chapter III).

Chapter I

Background and issues

A. Definitions and general issues

One of the goals of this document is to enable all of the players concerned by the overall operation of the “internet chain” to share their understanding of the main (technical, legal and economic) concepts and notions that form the basis of the debate on internet and network neutrality, despite their different vantage points.

• The notion of “internet and network neutrality”

Tim Wu, the man considered to have coined the expression “Net neutrality,” defines it as a network design principle whereby “a maximally useful public information network aspires to treat all content, sites, and platforms equally. This allows the network to carry every form of information and support every kind of application.”¹ For the purposes of this document, the internet, as defined below, is the main network being considered.

To better understand this approach, we should begin with the reminder that the essential feature of electronic communications networks in general, and of the internet in particular, is that they constitute a platform for free trade, both market and non-market, between all economic and social agents connected to it: whether for the purposes of self-expression and interaction, to view information, publish content, to offer services and applications or to access them. To guarantee the freedom and the symmetry of these various transactions (with each user of the network capable of acting as either a receiver or transmitter of content), which are sources of strong positive externalities, the network must uphold a principle of neutrality as much as possible. This principle can be defined as consisting of a dual demand of non-interference and equal treatment: on the one hand, exchanges between users in the “upper layer”² must be neither prevented nor restricted by operators’ practices in the “lower layer”² and, on the other, data routing requests submitted to the network under equivalent conditions must be given equal treatment by the network.

In other words, according to the principle of neutrality, every user must have access, via the internet and, more generally, electronic communications networks (regardless of distribution platform) to all of the content, services and applications carried over these networks, regardless of who is supplying or using them, and in a transparent and non-discriminatory fashion.

Putting this principle – which is not inscribed anywhere but widely agreed upon by stakeholders – into practice comes up against a variety of constraints, such as having to protect the networks from attacks, along with traffic problems, the need to install mechanisms to comply with legal obligations... All of which lead the Authority to take a pragmatic and reasonable approach to examining the principle of internet and network neutrality – the goal being to avoid the two following extreme scenarios:

- a total lack of traffic management (see definition below), which creates a clear risk of network degradation and, ultimately, of the quality of service for end users;
- complete freedom in traffic management practices and in operators’ definition of the terms governing internet access, which can lead to discriminatory and anti-competitive behaviour, which would threaten the model of openness, universality and freedom of expression that is proper to the internet.

1 Tim Wu’s website, “Network Neutrality FAQ”: http://www.timwu.org/network_neutrality.html

2 The “upper layer” is the one where data are exchanged, while the “lower layer” is where data are transported (see definitions below).

It should be noted that, in this document, the term “discriminatory” refers to situations where unequal treatment is applied in an unjustified manner to equivalent services, and causes prejudice in the market. A clear distinction therefore needs to be made between this concept of discrimination and the concept of differentiation – the latter being not necessarily problematic.

Other definitions

In addition to the terms defined in the code governing postal and electronic communications in France (CPCE), below are the definitions for the main terms used in this document.

“Internet”: the public network, routed by IP³, made up of some 50,000 autonomous systems recognised by the IANA (Internet Assigned Numbers Authority).

More precision can be added here: the “Web” is a distinct concept of the internet, i.e. it is an application that operates over the internet in the same way as e-mail or instant messaging, for instance, and which allows users to view the pages available on websites through a browser (using a hypertext system).

It is true that the word “internet” is often used to refer to both the network and the services and applications it carries. Unless explicitly stated otherwise, in this document the word will be used to refer only to the network, as defined above.

Also worth noting is that, although the internet uses the IP for routing, other networks employ it as well.

“Internet access”: a service that consists of providing the public with the ability to send and receive data by using the IP communication protocol, from all or virtually all points, designated by an internet address made public, of all of the interconnected public and private networks around the world that make up the internet.

In particular, this service enables the public to access online communication services (e.g. websites) as well as private correspondence services (e.g. e-mail).

It would be worth providing a further clarification here: the routing method used on the internet is often referred to as the “best effort” method, which means that, by design, it does not offer any performance guarantees (in terms of time delay, packet loss, etc.), even if certain IP extensions have been introduced to improve transport quality, such as the transmission control protocols enabled by TCP (*Transmission Control Protocol*) and UDP (*User Datagram Protocol*). There is therefore an obligation of means but not of results.

“Internet service provider” (hereafter referred to as “ISP”): a provider of electronic communications services, one of whose areas of business is providing the public with access to the internet.

3 IP (internet Protocol): basic protocol used on the internet for data transmission. It defines the way that data packets are organised for routing over the Web.

4 Directive 2002/21/EC (Framework Directive): “An electronic communications service means a service normally provided for remuneration which consists wholly or mainly in the conveyance of signals on electronic communications networks, including telecommunications services and transmission services in networks used for broadcasting, but exclude services providing, or exercising editorial control over, content transmitted using electronic communications networks and services; it does not include information society services, as defined in Article 1 of Directive 98/34/EC, which do not consist wholly or mainly in the conveyance of signals on electronic communications networks”.

For the purposes of this document, we will occasionally employ the broader term “operator”. Unless explicitly stated otherwise, other business areas in which some ISPs engage – such as hosting, content production and distribution, etc. – are not covered by this document.

“Information society service vendor”⁵ (hereafter referred to as “ISV”): any legal entity or natural person that provides an information society service, in other words any service provided by means of electronic equipment and at the individual request of a recipient of a service, regardless of the business model employed.

In practice, this category of economic actor includes the providers (publishers, distributors) of services/content/applications to the public by electronic means – particularly but not solely via the internet (e.g. TV channels delivered over ADSL). It should be mentioned that a consumer (see definition below) who makes information available on the internet is one particular example of an ISV.

Also worth mentioning is that, as they are defined here, the categories of ISP and ISV are not mutually exclusive as a company may engage in both activities. Some ISPs also have ISV operations (portals, music services, TV services, etc.) and, on the flipside, some ISVs operate their own network and may even provide themselves with internet access services.

“End user”: a legal entity or natural person who uses or requests an internet access service, but does not themselves provide the service⁶.

In most instances, the end user is an ISP’s customer. It should be pointed out that an end user may also make different types of content or application available online (see below). Lastly, we will occasionally use the term “consumer” in this document to refer to a natural person who uses or requests an internet access service for non-business purposes.

We can group ISVs and end users together as being the “upper layer” services players (the layer where data are exchanged) as opposed to the networks’ “lower layer” where data are transported.

The services/content/applications are made available to end users according to the different transport methods provided by operators. This may be internet routing in the strictest sense of the term, or other electronic communications techniques which may employ the same infrastructure as the one used to provide access to internet – and in some instances the internet protocol as well.

Such is the case with what are referred to as “broadband offers” whose bandwidth makes it possible to supply specific services alongside internet access, such as voice over broadband or access to a package of TV channels for residential users or, for business customers, channels supplying guaranteed or symmetrical bitrates, etc. These specific services will be referred to here as “managed services”

5 Directive 2000/31/EC (Electronic commerce Directive) and Directive 98/34/EC, as amended by Directive 98/48/EC: “any legal entity or natural person who provides an information society service, in other words any service normally provided for remuneration, at a distance, by means of electronic equipment and at the individual request of a recipient of a service.”

6 Directive 2002/21/EC (Framework Directive): “user means a legal entity or natural person using or requesting a publicly available electronic communications service”; “end-user means a user not providing public communications networks or publicly available electronic communications services.”

(see below). They are routed using transport systems that employ particular procedures for processing traffic, which generally fall under the heading of "traffic management," in addition to or instead of those procedures used for "best effort" routing.

"Managed services": services providing access to content/services/applications through electronic means, for which the network operator guarantees certain specific features end-to-end and/or over a given period of time, thanks to the techniques it uses, either directly on the network it owns and operates, or through agreements with the operators responsible for routing traffic.

Some of the classic features include reliability rate, minimal latency, jitter (variation in time between packets), guaranteed bandwidth, security level, etc. According to the above definition, providing end users with access to the internet does therefore not constitute a managed service.

Some managed services can be governed by a contract between an ISP and an ISV, or may result from an offer made available to the end user, whether as a standalone offer or in the form of an option bundled with internet access.

"Traffic management": all the technical means used to process data streams that take into account the type of traffic or the identity or status of its transmitter or its recipient.

This could include measures that consist of introducing delays between the transmission of certain data packets, referred to as "traffic shaping", of queuing or slowing certain applications (for instance through "buffer management" techniques), of imposing an order on the transmission of certain application streams, a process referred to as "traffic scheduling", or of blocking the transmission of certain streams.

Traffic management can be employed in any type of electronic communications service, and in a wide variety of situations. We can nevertheless underscore the fact that "managed services" in particular rely on traffic management procedures to guarantee certain features.

"Access": pursuant to Article L. 32 (Para. 8) of the code governing electronic communications and postal affairs in France, CPCE, access is defined as the "making available of facilities, hardware or software, or services for the purpose of providing the beneficiary with electronic communications services. Exempt from the present code are access systems under certain conditions and technical systems that enable the reception of audiovisual communication services, as defined and regulated by Law no. 86-1067 of 30 September 1986 concerning freedom of communication".

"Interconnection": pursuant to CPCE Article L. 32 (Para. 9), interconnection means the "the physical and logical linking of public communications networks used by the same or a different undertaking in order to allow the users of one undertaking to communicate with users of the same or another undertaking, or to access services provided by another undertaking. Services may be provided by the parties involved or other parties who have access to the network. Interconnection is a specific type of access implemented between public network operators".

"Electronic public communication services": pursuant to Article 2 of the amended Law no. 86-1067 of 30 September 1986 concerning freedom of communication, public electronic communications means refers to "the provision of access to the public or a section of the public, through an electronic communications process of signs, signals, writing, images, sounds or messages of any nature which are not private correspondence".

"Online public communication services": pursuant to Article 1 of Law no. 2004-575 of 21 June 2004 on confidence in the digital economy (LCEN), online public communication means, "all transmissions, upon individual request, of digital data that does not constitute private correspondence, through an electronic communications process enabling the reciprocal exchange of information between the sender and the recipient".

B. "Net neutrality": a global debate

To have a better understanding of the original context of the debate over network neutrality, we need to remember that it emerged at a time when many of the regulations governing ISPs' activities were being lifted (broadband services having already been removed from the scope of the sector's regulation) in the United States in the early 2000s. As a result, the FCC (Federal Communications Commission) decision of 2005⁷ can be interpreted as the creation of safeguards for consumers, specifying their rights to use all of the content/applications/devices and to leverage competition between ISPs for their own benefit.

Since the traffic management practices that cable company Comcast put into place on its network in 2007, a more proactive approach emerged and resulted in the proposed guidelines that the FCC submitted to public consultation in October 2009. In this document, self-regulation and consumer rights were replaced by obligations imposed on ISPs, in the form of six rules – with transparency and non-discrimination being added to the four guiding precepts established in 2005. This process has been undermined in recent months by several court rulings, and by counter-proposals from the sector's players. For now, the debate continues, particularly over the power that the FCC could have to impose its policy on the matter.

In Europe, the recent review of the regulatory framework provided an opportunity for all of the stakeholders to assess regulatory needs and appropriate tools, while recognizing that the sizeable economic and technological shifts that were taking place on the networks made too proscriptive an approach a dangerous thing. The Telecom Package nevertheless confirms the prime objective of providing access to content, and introduces several notions and mechanisms that directly echo the concerns surrounding network and internet neutrality (cf. paragraph I.D).

The issue of neutrality is currently being examined by several departments of the European Commission which launched a public consultation on the topic on 30 June 2010, and by several national regulatory authorities (NRAs) – two of which have already published guidelines (NPT in Norway, in a co-regulation-based approach with the sector's players) or reports ("Open Networks and Services" by Swedish regulator, PTS). In both instances, competition and transparency in the broadband retail market are upheld as keys

⁷ In 2005, the FCC stipulated the four general principles of healthy self-regulation: consumers' right to access the lawful internet content of their choice; consumers' right to run the applications and use the services of their choice, subject to the needs of law enforcement; their right to connect their choice of legal devices that do not harm the network; and their entitlement to competition between network access providers and application, service and content providers.

to guaranteeing neutrality. Norwegian regulator NPT has added the requirement of there being no discrimination between data streams (according to their nature, origin or destination) at any point of connection along the network.

Other NRAs are considering further publications (Ofcom in the UK, for instance), but most are still in the preliminary examination phase. And, finally, as mentioned in the introduction, the topic of network neutrality is part of the BEREC work programme for 2010. Early efforts in this area have already helped put forward certain best practices.

The Canadian regulator, the CRTC, announced a new framework in October 2009 for ISPs' "*Internet traffic management practices*" (ITMPs). The CRTC based its policy on four principles: transparency, innovation, clarity and competitive neutrality.

Competitive neutrality is an idea that is also found in the 2007 report produced by Japan's Ministry of Information and Communication (MIC) on Net neutrality. Three guarantees for consumers (access to the internet, non-discriminatory use and a reasonable price) are listed in this report, alongside actions aimed at promoting internet neutrality, notably a government-led initiative for stimulating investment in networks and open access to these networks.

There are similarities between all of the cases mentioned, such as the need to give operators some leeway, notably to allow them to handle congestion problems (traffic management), as well as a major preoccupation with ensuring that consumers have the freest possible access to the internet (non-discrimination).

C. The bodies responsible for network and internet regulation in France

There are several public and semi-public entities in France that apply different forms of regulation in this arena. Their areas of responsibility are nevertheless quite clearly identified and their reciprocal means of intervention ensure the cohesion of their actions. In addition to the courts, the main bodies are as follows:

ARCEP, which is in charge of the sector-specific regulation of electronic communications markets, and so of internet service providers (ISPs), particularly as concerns their relationship (e.g. via interconnection) with other links in the internet value chain, regardless of the type of network (fixed or mobile) or the content being transported.

The broadcasting authority, referred to hereafter as CSA (*Conseil supérieur de l'audiovisuel*), which is responsible for regulating audiovisual content, regardless of distribution network. This, in practice, now includes new services such as video on demand and catch-up TV, grouped together under the name of "on-demand audiovisual media services".

The Competition Authority (*Autorité de la concurrence*) which oversees all players' (*content, network, etc.*) compliance with competition law.

The French national commission on computing and freedom, referred to hereafter as "CNIL" (*Commission nationale de l'informatique et des libertés*) whose chief responsibility is to protect privacy and freedom in the digital world.

The High authority for the distribution of creative works and protection of rights on the internet (hereafter referred to as "HADOPI"), which is in charge of protecting the interests of the parties who control the rights to literary and artistic works.

The general directorate for fair trade, consumer affairs and fraud control, hereafter referred to as "DGCCRF" (*Direction générale de la concurrence, de la consommation et de la répression des fraudes*) which oversees issues that concern consumers in particular.

The French Association for internet domain naming in cooperation, or AFNIC (*Association française pour le nommage internet en coopération*) which is the registry of the database of .fr (France) and .re (Reunion Island) internet domain names.

And, finally, the internet rights forum (*Forum des droits de l'internet*) which is an association that brings together different internet players to fulfil a public service mission. It has set itself the task of promoting co-regulation of internet usage.

A similarly large array of players is also found in other countries, notably in the United States.

D. Legal environment

Internet companies must take account of all the rules of common law as they apply to the internet, as well as certain stipulations that are specific to the internet universe. These are listed in Chapter III.B.2 of this document.

As indicated earlier, the principle of internet and network neutrality is not provided for specifically in legislation and the "globally neutral" practices that have developed over the past several years are chiefly the result of unwritten rules. What is the current legal framework governing network neutrality?

Provisions exist in national law, such as the notion of "*neutrality with respect to the content of transmitted messages*" introduced in Para. 5 of Section II of Article L.32-1 of the French Postal and Electronic Communications Code, (CPCE). This notion pertains especially to a lack of discrimination⁸ between users, but provides a rather limited basis for regulatory intervention.

Other areas of French law do, however, appear capable of providing relevant instruments, particularly those applying to consumer rights (cf. II.D.1.) and to interconnection and access obligations (cf. II.D.4).

More specific demands are contained in the new European regulatory framework that was adopted last autumn, where significant room is given to symmetrical regulation, providing NRAs with more wide-reaching tools than before for achieving the overarching objective of guaranteeing access to content. One case in point is Article 8 of the Framework Directive, which lists among the goals of regulation the need for NRAs to promote the interests of the citizens of the European Union by "*promoting the ability of end-users to access and distribute information or run applications and services of their choice*"; (Art. 8 § 4.g) and ensure that competition in the electronic communications sector is not distorted or restricted, "*including for the transmission of content*" (Art. 8 § 2.b).

⁸ Parliamentary debates over the Law of 29 December 1990 seized upon it as a means of ensuring equal treatment for users, and especially, "to refuse applying price- or tax-based discrimination according to the nature of the message being delivered".

The transposition process will provide an opportunity to be more specific in how the provisions in the directive are put into effect at the national level, namely:

- the obligation to be transparent with end users about any possible restrictions on usage practiced by network operators, and about traffic management techniques implemented by operators (Art. 20 & 21 of the amended Universal Service Directive);
- a new power to set a minimum quality of service, overseen by the Commission, *"in order to prevent the degradation of service and the hindering or slowing down of traffic over networks"* due in particular to certain traffic management practices, in accordance with Article 22 of the amended Universal Service Directive. It suggests that quality of service does not pertain only to the end user's point of view, but also includes the terms extended to ISVs for routing their traffic. The whereas clause (34) associated with this article also stipulates that, *"Those procedures should be subject to scrutiny by the national regulatory authorities, acting in accordance with the Framework Directive and the Specific Directives and in particular by addressing discriminatory behaviour"*;
- expansion of NRAs' powers to settle disputes (Art. 20 of the Framework Directive). A content provider may appeal to an NRA to obtain reasonable terms of network access from an ISP, or to safeguard itself against any discriminatory practices. By the same token, an operator may appeal to the NRA to resolve a dispute with an ISV in cases where the dispute involves the terms governing traffic routing.

Of course the legislature will need to specify these new regulatory tools but, even before that happens, we need to deepen our understanding of the technical, legal and economic chain: information needs to be gathered on how the different markets operate and on users' experiences and wishes, so that the legislature can implement the most appropriate regulatory instruments and so that regulators use them as effectively as possible.

E. The situation and debate in France today

The vast majority of players in the markets concerned, and civil society actors in general, have expressed their desire to have an open and neutral internet as the general rule, while working to ensure economic efficiency and taking account of societal issues (cf. I.A). The principle of neutrality also appears to have been upheld on the whole in France and in Europe until recently, without having been an absolute and inviolable rule. This has been particularly true on fixed networks, especially since there have been no major congestion issues on these networks and due to the satisfactory state of competition in the fixed broadband and ultra-fast broadband retail market in France. Visible, major and prolonged disparities between ISPs are in fact commercially difficult to imagine in this environment. The situation in the mobile market is a more contrasted one, and neutrality is not the rule.

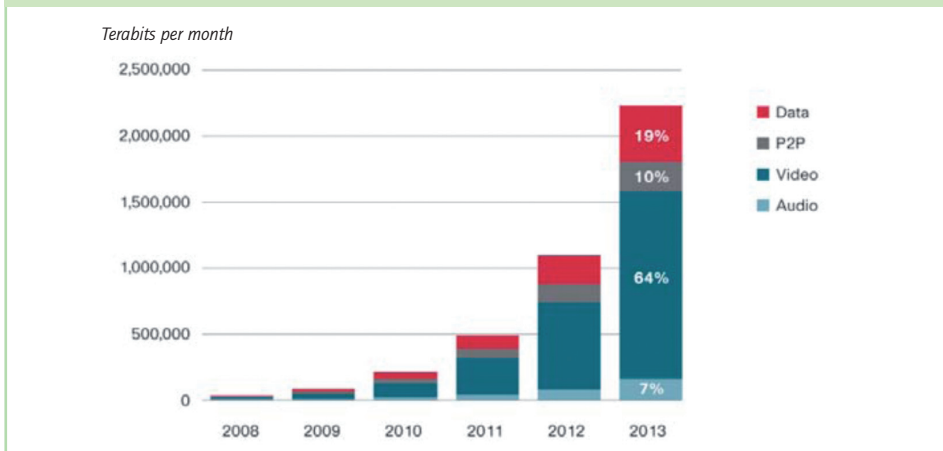
To better understand recent developments, the first thing that needs to be mentioned are the profound upheavals in the affected markets, such as the tremendous increase in video traffic travelling over the networks, and the growing asymmetries in traffic at points of interconnection.

According to a recent study, Pyramid Research and Light Reading predict a rise in annual global revenue for voice and data services of around 2.5% and 12.8%, respectively, between 2010 and 2013, while data

traffic is forecast to increase by 131% during that same period⁹. To give an example, in December 2009 ComScore reported that 5.4 billion videos had been watched in France that year (a 141% increase over the year before), of which 1.8 billion on YouTube.com between January and September.

According to Cisco, the massive rise in users' average consumption is expected to be especially significant on the mobile internet, as illustrated in the following graph:

Forecast growth of global mobile internet traffic (Cisco Visual Networking Index 2009)



Consumption patterns are also evolving: while they were once dominated by entertainment, they are tending to expand into services that will have a potentially structuring influence on daily life, such as home automation, telelearning, telemedicine, e-government, etc. This can lead to shifts in both public and private sector players' expectations and strategies.

At the same time, internet service vendors' (ISV) global economic clout is growing, combined with the mergers and emergence of a small group of heavyweight online service providers whose influence is no longer negligible when compared to that of operators, even if operators still out-earn them by a sizeable margin¹⁰.

Lastly, new forms of traffic management are being rolled out which are capable of analysing both larger volumes of traffic and in a more detailed, hence more selective and customised, fashion. This marks a real development over the more summary methods employed up until now, and one which increases concerns over anti-competitive behaviour on the part of those who are using these new systems, and over the negative effects they might have on innovation and freedom of expression on the internet.

All of these upheavals lead to questions over which business models will enable not only the creation and distribution of content, but also the networks' development and operation.

⁹ Sur www.alcatel-lucent.com : from a talk at the Mobile World Congress in Barcelona in February 2010.

¹⁰ Annual income in France: operators: ≈45 billion, ISVs: ≈25 billion of which ≈20 billion for e-commerce (sources: CSA, IDATE, Coe-Rexcode).

It is within this environment that some stakeholders are raising concerns over the following practices:

- **from fixed telcos and ISPs:** instantaneous throttling or port blocking in non-unbundled areas, cases of false DNS (Domain Name System), restrictive “*peering*”¹¹ policies, bandwidth capping on customers beyond a certain reasonable usage, degradation of the conditions of access to Dailymotion site for the subscribers of Neuf-Cegetel in 2008, fee-based option marketed by Free of preferred access to the network’s shared resources (as part of its “TV Replay” offer);
- **from mobile operators and ISPs:** a number of sites and applications are not available to customers with “unlimited internet” flat rates (“streaming”¹², peer-to-peer, Skype...), integration of “widgets”¹³ on mobile platforms, differentiated limits imposed on users’ access to different ISV’s content (Orange-Deezer offer);
- **ISVs:** geo-IP filtering (e.g. users in France cannot access content on American on-demand TV platform, Hulu), exclusive programming rights, the proliferation of applications that make inefficient use of transport resources;
- **device vendors:** walled gardens such as the App Store, Google Voice blocked on certain handsets, remote deletion of books on certain e-book reader models.

Meanwhile, concerns are also being raised over seeing the legislature impose solutions that are not “neutral”, either to achieve objectives that are in the general interest or to protect certain rights: battle against child pornography on the Web (cases in Australia and in Germany¹⁴), protecting private property, copyright (Creative works and internet Law), etc.

Because of the current situation, the vast majority of stakeholders appear to want firmer action from public authorities, albeit to varying degrees and for very different – and in some cases opposite – reasons.

What appears most necessary to address all of these issues is for public authorities (Parliament, the federal government, ARCEP and other public institutions) to:

- identify those practices that are acceptable or advisable at all levels of the network and the internet value chain (the “rules of the game”);
- equip themselves with the tools needed to ensure the effective application of these rules.

11 Often free interconnection between two players for their shared traffic

12 Continuous transmission of audio and video streams.

13 Small interactive applications that make it possible to display information (weather, stock market prices, etc.) or to perform small operations (calculator, dictionary, etc.).

14 The draft legislation in Germany that allowed a “filtering” mechanism was quashed in February 2010, and replaced by a law on content removal.

F. The Authority's analysis and approach

1. Neutrality: a relevant principle for networks contributing to the internet

A principle that concerns all networks in general, but more particularly applies to internet networks

The debate over network and internet neutrality mainly concerns the legitimacy and acceptability of using traffic management techniques on the networks. This question is posed differently depending on whether it is electronic communication networks in general or the internet in particular that is being considered.

When looking at networks as a whole, and the services they convey, when the routing of these services is sufficiently distinct from the routing of internet services and not meant to replace it, it seems neither necessary nor advisable to impose a specific framework on the possible traffic management techniques employed to deliver these services, beyond the general stipulations of competition law and the sector-specific regulation that currently applies to these practices. Market players must therefore be given a great deal of leeway to develop and market "managed services," in addition to internet access, as much with respect to end users as in relation with information society service vendors (ISVs). This, in turn, helps to stimulate all of the players' capacity to innovate.

Within the networks, however, the internet and the services it conveys have acquired a considerable and special significance over the past several years, in both our economy and our society. The swift development of the internet and the services it makes available can be attributed in particular to its open and non-discriminatory nature, a neutrality that allows anyone to offer content or services, whether commercial or not, to all internet users, to test innovations, business models, to communicate ideas, swap and share without having to obtain prior agreements or permission, and with no economic, regulatory or social "thresholds effect".

In accordance with the objectives assigned to it by law, the Authority believes it is in everyone's interest that these essential characteristics continue to exist, as much for technical-economic reasons as for reasons of social responsibility.

A principle that concerns the entire "internet chain," but more particularly applies to electronic communications networks

Upholding the principle of neutrality concerns all of the players involved in the "internet chain," whether the parties operating electronic communications networks routing internet traffic, or the many and various information society service vendors (ISVs) – which include the operators of search engines that have a particular impact on the visibility of services that can be accessed on the internet, or the manufacturers of the devices that constitute an unavoidable interface between the internet user and the content.

As we can see, some of the questions raised by the issue of internet neutrality fall outside the realm of the rules and regulations that apply only to electronic communications networks. Electronic communications networks nevertheless occupy a central place on the "internet chain" and among the players that populate it. Indeed, the entities that operate these networks have a special responsibility because of their function of routing traffic between users. They are therefore the first ones affected by the demand for neutrality.

Although this report addresses the different issues involved in the principle of neutrality, ARCEP found it therefore necessary to pay particular attention to the means of guaranteeing neutrality on electronic communications networks contributing to the internet.

2. The role of competition

A fundamental role

It appears that one of the chief guarantors for ensuring that neutrality is upheld on internet networks, and particularly for achieving a sufficient level of quality of service for all, lies in maintaining, and even improving, the state of competition in the wholesale and retail broadband and ultra-fast broadband markets, both fixed and mobile.

An ISP will indeed have less incentive to degrade or limit the quality of the services supplied by ISVs that are available to its subscribers if there is strong competitive pressure coming from rival ISPs, who may well seek to differentiate themselves with a better quality of service or a broader array of services.

One of the Authority's key objectives in regulating broadband and ultra-fast broadband markets is precisely to ensure the development of effective competition that is beneficial to consumers.

Here, a comparison with the situation in the United States seems particularly apt, especially the situation surrounding fixed networks, as it helps to underscore the fundamental link between the state of competition in the access network and potential threats to neutrality.

Following a decision by the FCC in 2005 (consecutive to a Supreme Court ruling in the case of "Brand X"), regulation in the United States has not been based as in Europe on extended unbundling or bitstream¹⁵ obligations imposed on incumbent operators on DSL networks. The result has been an extremely concentrated broadband and ultra-fast broadband retail market (a *de facto* monopoly or, at best, a duopoly of the incumbent DSL provider and a local cable company), which means very real risks of infringements of the principles tied to internet and network neutrality. This explains why the majority of current disputes over internet and network neutrality are occurring in the United States.

In France, on the other hand, in accordance with the European framework, regulation requires France Telecom to market wholesale unbundling and bitstream solutions to its competitors. This has gone a long way in helping to create a competitive and dynamic retail market which allows end users to have access to a wealth of innovative bundled services, and the lowest price per Mbit/s for DSL offers in the world. The Authority is committed to sustaining this healthy state of competition for optical fibre ultra-fast broadband networks, thanks to recently adopted and future regulatory decisions.

The need for additional action

The rules of healthy competition that can be put into place by sector-specific and competition regulators provide fundamental guarantees in the area of neutrality. They are particularly helpful, first, in situations where a dominant player develops a policy whose aim is to unduly favour its partners' or its affiliates' content or services. Second, the fact of encouraging a multiplicity of offers helps increasing users' freedom of choice so that they can access the services they want on the internet.

¹⁵ Bitstream is a type of wholesale offer that allows alternative operators to rent broadband connections activated by France Telecom. They can then market retail broadband services in areas where they are not present via unbundling.

Several factors need to be taken into consideration, however, to ensure that this freedom of choice remains fully in effect:

- the market's transparency and liquidity must be such that it allows users to exercise their choice. This justifies imposing specific transparency requirements on the characteristics of internet access offers;
- the desired services must be available in the market; this is not guaranteed by the existence of a generally competitive market, for instance in the case of sparsely populated areas where there may be only a single provider.

As it stands, the competitive nature of ISPs' business models gives them a natural incentive to offer broad access to online content and services. But because of the particular nature of the internet, if the market no longer offered these guarantees it could have a tremendous impact on innovation and the protection of fundamental rights and freedoms.

It therefore seems crucial for the Authority to develop a preventative approach to these issues.

3. The Authority's line of action

ARCEP has therefore formulated a series of proposals aimed at promoting a lasting, neutral and high quality state of equilibrium, and this even if there is no dominant ISP in the retail market.

The proposals presented in this document are different in nature:

- they may take the form of a recommendation – such as those concerning supervision of traffic management techniques – or constitute more prescriptive regulations, such as the proposals on the information provided to end users;
- they may be intended for immediate application – such as the recommendations concerning freedom of use, the sufficiently high quality and non-discrimination of internet access streams – or application at a later date, such as ISPs' publication of QoS indicators, which will require sizeable efforts to be devoted beforehand to defining those indicators;
- their application may fall under the purview either of the Authority – such as gathering information on data interconnection markets – or that of other entities, such as monitoring content-related issues;
- for those that fall under the Authority's purview, they may be undertaken either in accordance with ARCEP's existing responsibilities, such as the publication of QoS indicators, or require it to be endowed with new competencies, such as the power to settle disputes between ISPs and ISVs.

We shall conclude this introductory section by underscoring again the fact that the Authority's overall approach is primarily one of prevention, as the threats to the internet's neutrality lie more in practices that could develop, rather than current malfunctions in the marketplace. The Authority's current line of action is therefore one of recommendation, along with a process of market monitoring which is part of its current responsibilities. In future, this action could be completed by more prescriptive measures should they prove necessary, and which would be taken as part of new forms of action entrusted to ARCEP, particularly those resulting from the transposition of revised European directives.

Chapter II

Neutrality of Internet access networks

A. Main thrust of the Authority's proposals

As stated in the background to the current situation, for a long time the internet ecosystem was an area governed by self-regulation between the different players along the chain, according to an operating mode that was based on private contractual relations, often involving no monetary exchange (as is the case with free peering system), on unwritten and often disparate rules of behaviour and a certain opacity with respect to end users.

To ensure a dynamic and lasting state of equilibrium for this ecosystem, the Authority believes it necessary to structure those elements that pertain to:

- internet access (cf. II.B) where neutrality has to be the rule. Users must be able to clearly identify this service, and operators must provide it in accordance with the principles defined in this document: freedom of use and sufficiently high quality (cf. proposal no. 1), and no discrimination between traffic streams (cf. proposal no.2). To ensure that any deviations from these principles are limited, the Authority has defined a framework to govern traffic management practices (cf. proposal no.3);
- “managed services” (cf. II.C), whose importance must also be recognized and which operators must be allowed to develop, provided that specific wholesale offers between ISPs and ISVs are available, which comply with competition regulation and any other specific regulation that may apply (cf. proposal no. 4).

With this as the point of departure, in addition to maintaining a satisfactory and dynamic state of competition in broadband and ultra-fast broadband retail markets, maintaining quality internet access (cf.II.D) requires:

- the promotion of increased transparency with respect to end users, the goal being to provide them with clear information and the ability to compare offers (cf. proposal no. 5),
- monitoring ISPs' traffic management techniques, in accordance with stated criteria (cf. proposal no. 6),
- regular assessments of the quality of the service being provided, based on verifiable parameters (qualification of these parameters and publication of relevant indicators) (cf. proposal no. 7),
- obtaining more detailed knowledge of and monitoring the way the wholesale data interconnection market functions, particularly with a view to assessing the state of competition (cf. proposal no. 8).

These principles are intended to be applicable to any access technology, on both fixed and mobile networks – although their implementation does need to take the specific features of each type of network into account.

B. Internet access

Freedom of use, satisfactory quality of service and no discrimination between traffic streams appear to be the three criteria of a complete and actual “internet access”.

1. Freedom and quality of internet access

1ST PROPOSAL

ARCEP recommends that, in accordance with the legislative provisions that are in effect, ISPs marketing internet access be required to provide end users with:

- the ability to send and receive the content of their choice;
- the ability to use the services and run the applications of their choice;
- the ability to connect the hardware and use the programmes of their choice, provided they do not harm the network;
- a sufficiently high and transparent quality of service.

There may be exceptions to this principle, provided they comply with the guidelines set out in proposal no. 3.

Freedom to access all of the internet's functionalities

In accordance with this first proposal, ISPs must offer full access to all of the internet's functionalities, without imposing any deliberate restrictions, whether in terms of content, services, applications or devices.

The first party responsible for restricting access to certain content is the service vendor, as part of its distribution policy, and, second, the end user in the choices he makes with respect to access. Here, it is of course entirely legitimate for an ISP to offer end users a spam filter or a parent lock that will allow them to filter out or block certain content or services according to their nature, whether the filters are optional or included as a default feature in the service. If they are default features, however, users must be able to request they be deactivated.

In addition to the above recommendations, it should be pointed out that end users cannot lay claim to a right to send or receive any content (or use services, applications, hardware or software to this end) which has been qualified as illegal by a competent judiciary or administrative authority, in accordance with a procedure provided for by law. For its part, an ISP is not required to take the initiative to verify the legality of the uses being made of the Internet. An ISP must, however, implement the measures provided for by law – which concern network integrity, protection of personal data, the battle against child pornography or protecting intellectual property¹⁶, for instance – when requested to do so by the competent parties and authorities.

Also worth mentioning is that “offering the possibility” of using a service or an application does not signify guaranteeing that it will operate perfectly: some services may be unable to work on a given network because of its technical properties, e.g. bandwidth, latency, etc. Here, the structural differences between fixed and mobile networks need to be taken into account. What is incumbent on the operator here is not to deliberately hinder the service's operation as permitted by the network under normal conditions and the technical properties of the offer to which the end user subscribes.

Although this principle is presented in the form of a recommendation, the Authority believes that any potential deviations from it should be minor (cf. proposal no. 3 in section II.B.3) and be stated very explicitly in the terms of the offers (cf. proposal no. 5 in section II.D.1.). An offer that strays too far from this principle should therefore not be qualified as an internet access offer (cf. also proposal no. 5).

¹⁶ A more complete description of the legal framework governing the treatment of content can be found in section III.B of this document.

Open relationships

This freedom of access and use of the internet implies open and lasting relationships between ISPs, ISVs and all of the players (transit operators, CDN providers¹⁷, etc.) who convey content/services/applications so that these items are truly available in their entirety through internet access.

More specifically, in the same vein as the above recommendations that apply to ISPs, the open nature of internet access requires that ISVs comply with an obligation to treat all operators in a non-discriminatory fashion with respect to the accessibility of their services/applications/content made available over the internet.

In terms of interconnection mechanisms, the open nature of internet access also requires operators who are supplying service providers and end users with access to the internet, to grant all reasonable requests for interconnection in an objective and non-discriminatory fashion (cf. proposal no. 8 in section II.D.4.).

Sufficiently high quality of service

A connection to the internet must be provided with a sufficient and transparent quality of service. In particular, this means avoiding an excessive degradation in this quality for the benefit of managed services. Because of the shared social interest associated with supplying the maximum number of users with internet connectivity in a satisfactory fashion (see above), it does indeed seem necessary to work to ensure a sufficiently high quality of service for this internet connectivity.

What constitutes a satisfactory quality of service level will evolve over time, depending on how consumption habits evolve. It must correspond to a sufficiently high quality of service that ensures functional access to the reasonable and current uses of the moment, under good conditions. On the other hand, a sufficient quality of service is naturally different from the guaranteed quality of service that is proper to managed services, in that it will not ensure the operation of specific services at all times, particularly when they consume a great deal of bandwidth or are sensitive to certain features such as latency.

An ISP's responsibility in this matter is naturally central, even if it should be said that the quality of service that they can control is distinct from the quality of end users' actual experience, of which access is only a sub-element. It is nonetheless possible to identify and monitor parameters that provide a relevant indication of the performance and the quality of the service supplied by ISPs (cf. proposal no. 7 in section II.D.3.)

Transparent quality of service

This requirement means that end users must be contractually informed of the technical properties of their internet access, so that they can know the resources that have been assigned to them and the performance they can expect under "normal conditions" (i.e. "best effort" operations). Also included here is information on the way in which internet access (potentially) shares available connectivity (or capacity) resources with other electronic communication services. This stipulation applies especially to bundled broadband solutions whose contractual terms must specify how use of the television, for instance, affects the quality of the internet connection.

¹⁷ Content Delivery Network: a network made up of servers that are connected via the Web and which cooperate to provide users with content or data (especially large multimedia files) in an optimal fashion.

2. Non discrimination between internet traffic streams

2ND PROPOSAL

On the matter of internet access, ARCEP recommends that, as a general rule, no differentiation be made between the way in which each individual data stream is treated, whether according to the type of content, the service, application, device or the address of the stream's origin or destination. This applies to all points along the network, including interconnection points.

There may be exceptions to this principle, provided they comply with the guidelines set out in proposal no. 3.

This means that the guiding principle for internet access is one of equal treatment for traffic streams. Data routing requests submitted to the network under equivalent conditions must be treated by the network in an equivalent fashion.

Providing a complement to the ability to access all functionalities, this principle guarantees a broad equivalence of treatment for the services being carried by the network, and particularly for comparable or competing services, regardless of whether they are conveyed by analogous streams, supplied under classic or more innovative conditions, by established players or new entrants.

This principle of no discrimination between data streams provides a guarantee against possible anti-competitive effects, whether deliberate or indirect.

Although this principle is presented in the form of a recommendation, the Authority believes that any potential deviations from it should be minor (cf. proposal no. 3 in this section) and be stated very explicitly in the terms of the offers (cf. proposal no. 5 in section II.D.1.). An offer that strays too far from this principle should therefore not be qualified as an internet access offer (cf. also proposal no. 5).

3. A framework to govern traffic management practices

3RD PROPOSAL

Marking exceptions to the principles stated in proposals nos. 1 and 2, and to limit any possible deviations from these principles, ARCEP recommends that when ISPs do employ traffic management techniques for ensuring access to the internet, that they comply with the general criteria of relevance, proportionality, efficiency, non-discrimination between parties and transparency.

Network operation constitutes the core of operators' business. It encompasses an array of activities, ranging from planning infrastructure deployments to managing network failures and attacks. Traffic management is just one component, concerning the rules for routing data along the network.

Many ordinary management practices pose no problem with respect to the principles stated earlier (proposals nos. 1 and 2), but traffic management does raise certain particular issues.

If ensuring that data are properly routed over the internet – from their sender to their recipient – requires a minimum amount of traffic management, the increasing technical capability to differentiate and customise routing techniques is creating concerns over the practices themselves and the motives behind their use. These techniques are especially likely to constitute significant deviations from the general objectives of freedom of use and non-discrimination between data streams stated here above.

There is sometimes a fine line between preventing saturation by slowing certain streams and degrading the quality of competing services, between limiting practices that ISPs deem inefficient and protecting one's own service offering or between guaranteeing a certain quality of service and capitalizing on a welcome scarcity, and we need to avoid overstepping the bounds.

First, however, it needs to be made clear that operators' response, from a structural standpoint, to the fact that most end users are consuming more and more bandwidth must be to invest in increasing the networks' capacity, provided this constitutes a lasting and viable solution.

In cases where traffic management does occur, the purpose will be to have capacity shared by end users under the most fair and efficient conditions possible. To achieve this objective, ISPs may, for instance, endeavour to maintain a "technical" neutrality by slowing all data packets to the same degree if they have similar technical parameters (same underlying protocol, etc.), or endeavour to maintain a neutrality "with respect to network termination points," by reducing the bandwidth supplied to each user in the same proportions. Choosing between these methods will depend on the network configuration, and the effect will vary considerably depending on users' consumption and connectivity mode. For instance, the fact of limiting the bandwidth available to all users to an equal degree does not really resolve a congestion problem in the network's core.

It is therefore understandable that it would be difficult, and probably not relevant, to specify in advance which traffic management methods are "acceptable," and even less so to exclude categorically all adjustments that ISPs make to data streams. Adjustments are indeed necessary in certain cases, to protect the network against spam, for instance, or denial of service attacks (which seek to cripple the network), as is the prioritisation of certain services that are critical for society in emergency situations.

As a result, to limit any possible deviations from the principles stated in proposals nos. 1 and 2, the Authority recommends that all traffic management measures implemented by an ISP for internet access meet the following criteria:

- **Relevance:** this concerns the motives behind the planned measure and its correlation to the problem that has been identified. Acceptable motives include: avoiding congestion (when a danger has been proven, e.g. temporarily on mobile networks due to a scarcity of available frequencies and the current huge increase in traffic spurred by smartphones), ensuring network integrity (e.g. protecting it from attacks) or its proper operation when changing architectures, or to satisfy regulatory or legal obligations. On the contrary, an operator's attempt to favour or protect the services it markets itself when faced with competition from third-party services is not an acceptable motive. Using balanced measures also means that the response is properly targeted – for instance not managing type A traffic to resolve congestion due to type B traffic, or not continuing to use the techniques for remedying congestion problems beyond those set times of day when they are necessary. In the same vein, blocking a given protocol or application does not seem appropriate when other protocols or applications with similar consequences are allowed, e.g. that have an equivalent impact on the load on the network.

- **Proportionality:** the measure must seek to have the least possible impact on the network's operation. Available capacity allocated to a certain type of traffic must not, for instance, be divided by four if it will suffice to divide it by two to avoid congestion. One important criterion in this area appears to be the duration and frequency of the measures applied: beyond a certain threshold, the congestion can no longer be viewed as temporary but rather a capacity issue whose cause is structural, and for which corrective measures need to be put into place, particularly through additional investments. Also, any justification for fully blocking a stream will necessarily be assessed using much stricter criteria than would be applied to slowing traffic, and will raise serious questions in terms of proportionality.
- **Efficiency:** this means that the measure must produce the hoped-for effects, by limiting collateral damage as much as possible (e.g. in terms of data security) and any harmful technical and economic incentives. This principle can therefore be verified if the adjustments to traffic lead to a real improvement in access to certain services, without significantly degrading the rest of the services that can be accessed via the internet, and without lessening ISVs' incentives to code their content efficiently.
- **Non discrimination against the players:** when an operator employs a traffic management technique that contravenes the principle of non-discrimination between traffic streams, it must by no account result in discrimination against another player. By the same token, streams that are technically different but conveying clearly similar services must not be subject to any technically unfounded difference in treatment. The goal or effect of this treatment must not be to produce anti-competitive effects. A particular objective is to prevent an ISP from favouring its partners' content/ services/applications (or its own if it is vertically integrated) over those supplied by other parties, as this type of preferential treatment must be reserved for managed services only, and cannot apply to internet access.
- **Transparency:** for an ISP this means informing end users properly, as much as possible, on the traffic management techniques it employs. Naturally, the right level of detail and the most opportune time and means of communication need to be sought so that this information be as useful as possible. In the case of "fair use" policies (cf. proposal no. 5 in I.D.1.) in particular, subscribers must be kept informed of their consumption levels, while avoiding overly intrusive mechanisms that would discourage use of the services.

These principles constitute a framework of assessment and the general rules governing best practices that all players must endeavour to comply with for all cases of internet access provision. Their application to technical situations that are objectively different in the short term will differ, however, depending on the different types of access being considered, and depending on the problem that needs to be solved.

If the traffic management techniques employed to deliver a service do not comply with these five criteria, this service cannot be called an internet access offer (cf. proposal no. 5 in section II.D.1).

Furthermore, ARCEP will monitor the traffic management techniques that the operators are employing, these techniques' compliance with the criteria set by the Authority, along with their impact with respect to the principles set out in proposals nos. 1 and 2 (cf. proposal no. 6 in section II.D.2.)

C. Managed services

4TH PROPOSAL

To maintain all of the players' capacity to innovate, all electronic communications operators must be able to market "managed services" alongside internet access, to both end users and information society service vendors (ISV), provided that the managed service does not degrade the quality of internet access below a certain satisfactory level, and that vendors act in accordance with existing competition laws and sector-specific regulation.

Managed services: types and features

As mentioned earlier, and in light of the definition given for internet access, the term "managed services" refers to any solution for accessing content/services/applications by electronic means, which is marketed by an operator and whose features are in certain respects superior to those of "internet access". This could include greater guarantees ("premium"), for instance, provided by the operator in terms of guaranteed bandwidth, packet loss, jitter, latency or increased network security.

Historically, managed services have included the services other than internet access that ISPs market as part of bundled solutions: voice over broadband services, television over ADSL/FTTH supplied by ISPs or third-party distributors (chiefly the Canal Plus Group), which can be accessed over a TV set, video on-demand or catch-up TV services over ADSL/FTTH supplied by ISPs or third-party distributors. In most cases, these services benefit from a dedicated channel on operators' networks (upstream from the last mile), which is independent from the one that supplies access to the internet.

In the business market, certain types of virtual private network, or VPN, are another example of a managed service, providing client enterprises with a private communications network.

Over time, this line-up of services could expand to encompass a great many others that need or demand a preferential quality of service: this could include expanding certain existing managed services (e.g.: ubiquitous high-definition and later 3D TV services), emerging applications that require better quality and reliability to develop (e.g. telemedicine, telepresence, online gaming, online voting, etc.) or services that are available via the internet and marketed by ISVs that want to differentiate themselves with end users.

The following partial table, which was produced by IDATE, helps to underscore the fact that different types of service could have very different needs in terms of higher quality of service. To give an example, while latency, or time delay, is critical for online gaming, jitter is the most important parameter for playing video content in real time.

Applications	Delay	Jiter	Bandwidth consumption
Email	+	+	+
File sharing (file transfer)	+	+	++
Web browsing	++	+	++
Online Gaming	+++	++	+
VoD	+	+++	+++
VoIP call	+++	+++	+
Video conferencing	+++	+++	+++

+ : low sensitive +++ : sensitive

In any event, it does not seem relevant to make a list of potential managed services, nor to limit the quality of service parameters that operators can adjust when marketing managed services, as it could impede internet companies' and operators' ability to innovate, particularly with respect to the necessarily evolving and hard to predict nature of the applications that the internet and electronic communications networks of tomorrow might enable.

A possibility for players to allow new business models to emerge

The Authority believes that all operators must be able to market or offer “managed services” to both end users and ISVs.

The first case corresponds to a model whereby the ISP could market managed services that would enable end users to adjust some of the parameters of their own data service directly, possibly in a dynamic fashion.

The second case constitutes the main category of managed service, resulting from agreements between operators and ISVs in the wholesale data interconnection market, regardless of whether or not these agreements are exclusive.

As is already the case with TV over ADSL and with managed video on-demand services on the TV screen, this type of managed service could involve ISVs paying the operator for the “transport” service, more than what might be paid for “internet access” because the operator provides greater quality of service guarantees. This payment system would mark a departure from the system in place up until now, which has chiefly been end users’ subscriptions for internet access remunerating ISPs and the networks they have deployed.

It is nevertheless crucial to clarify that a managed service agreement between an ISV and an operator in the wholesale IP data interconnection market in no way predetermines differentiated or higher billing for the corresponding service in the retail market. A good example is e-government services which require a high quality of service and could involve the client administration remunerating the operator (which means they are wholesale market managed services), but it goes without saying that these services need to be available for free via any internet access that an end user might subscribe to.

In terms of operator/ISP remuneration, then, there are four possible models for managed services:

- specific remuneration by the end user (higher than the price of the internet access flat rate), without higher remuneration from the ISV that may be involved (e.g. a VPN service in the business market);
- specific remuneration by the ISV (higher than what it would pay the operator as part of internet access), with end users paying no specific remuneration to operators (e.g. TV over ADSL offers supplied by third-party distributors, such as the Canal Plus Group or e-government services that require a specific QoS level, etc.);
- specific remuneration by the ISV and by the end user;
- no specific remuneration by either the ISV or the end user (e.g. free-to-air terrestrial channels included in operators' basic TV over ADSL or over FTTH packages).

Necessary supervision with regards to legislation and the protection of internet access

Transport agreements between ISPs and ISVs (which may be vertically integrated) for managed services must nevertheless:

- comply with the general rules of competition law, notably those that apply to exclusivity practices, and must not constitute an abuse of dominant position by the major content, internet or electronic communications providers, by leveraging their positions in these markets or their vertical integration to favour their own content or networks unduly (cf. II.A.1.);
- take the specific features of certain services into account, notably audiovisual media services (cf. II.B.1.), in accordance with any possible decisions by the authorities concerned.

Beyond that, it would be interesting to see a structured and relatively transparent wholesale market develop between operators and ISVs for traffic routing solutions with QoS guarantees, and for these offers to be accessible in a non-discriminatory fashion.

Equally worth mentioning is that although managed services may be developed at the expense of internet access, particularly by being the beneficiaries of the bulk of investments in increasing capacity, it is nevertheless reasonable to believe that the balance between managed and internet access services will be more of a win-win situation. The development of managed services is likely to trigger investments in network capacities that will benefit internet access since the capacity is ultimately shared, and because managed services will not use all of the added capacity all of the time.

Different models can result in managed services and internet access services interacting and sharing resources: this could be in response to an end user's request for a specific configuration for their internet access, or the implementation of a premium agreement for an ISV's service that is also available on the internet.

Regardless of the model employed, in order to ensure that the development of managed services not occur at the expense of internet access, the following rule of conduct must be obeyed: the techniques employed must not degrade the quality of the internet access services, and particularly the quality of

other users' internet access service, below a certain level. In addition, when being offered these options, users must be informed explicitly of any detrimental effect these techniques might have on their other traffic.

D. Information and monitoring compliance with internet access requirements

Because internet access is subject to particular requirements (cf. proposals no. 1, no. 2 and no. 3 in section II.B), efforts will need to be deployed progressively to analyse possible ways in which market practices deviate from ARCEP recommendations.

The first goal here is to promote increased transparency with respect to end users (cf. proposal no. 5 in section II.D.1.) to provide them with clear information and the ability to compare the different available offers. In particular, when a service strays too far from the requirements of freedom of use and neutrality, it should be forbidden from calling itself "internet" access.

To establish whether these possible deviations are justified and, more broadly, to enable a better description of the offers available in the marketplace, ARCEP proposes to devote itself to more precise qualification and monitoring:

- first, in the area of traffic management, the Authority will monitor the techniques being employed by operators to verify whether they comply with the criteria recommended above. In addition to the information provided to end users, the sector's players are invited to display and compare their current and planned techniques with these criteria immediately, to be able to establish best practices (cf. proposal no. 6 in section II.D.2.);
- second, on the matter of quality of service, ARCEP invites operators and their representative associations to work with the Authority to qualify the main QoS parameters that apply to internet access, and to establish the resulting suitable indicators (cf. proposal no. 7 in section II.D.3.).

These efforts will make it possible to specify the service provision objectives to be met, and allow users to better understand and assess the offers available to them.

At the same time, the Authority plans on monitoring and gaining a better understanding of how the wholesale data interconnection market works, in particular to analyse the state of competition (cf. proposal no. 8 in section II.D.4.). To this end, it will undertake an information-gathering campaign and, depending on the results of this analysis, additional actions may need to be taken in this area.

1. Increased transparency with respect to end users

5th PROPOSAL

ISPs must provide end users – in both their sales material and the contractual terms and conditions of their electronic communications services, and in the information that is available to the customers of these offers for the duration of their service contract – with clear, precise and relevant information on:

- the services and applications that can be accessed through these data services,
- their quality of service,

- their possible limitations,
- and any traffic management practices that might affect them.

To this end, ARCEP recommends in particular that:

- any restriction on a data transmission service that deviates from the principles of freedom of use and non-discrimination between data streams, stated in proposals nos. 1 and 2, be stipulated explicitly in the ISP's sales material and contractual clauses, in a clear and understandable fashion;
- the term "internet" cannot be used to qualify these services if certain of these restrictions do not meet the requirements of proposal no. 3;
- the term "unlimited" cannot be used to describe service offerings that include "fair use" type limitations that result in access being cut off temporarily or in extra billing for the services, or in an excessive degradation of access speeds or the quality of the service.

The Authority will initially request that ISPs and consumer association representatives work together to define common systems for providing end users with information on the limitations of the offers and their traffic management practices, and to submit their proposals on the matter to ARCEP by the end of Q1 2011.

Subsequently, should it prove necessary, the Authority could work in tandem with the General directorate for fair trade, consumer affairs and fraud control, DGCCRF, to complete these proposals.

Contractually-based transparency and user information

The end users of electronic communications services have a stated right to information on the pricing methods applied to the service, the technical terms of its supply, the terms and conditions for renewing their contract and on the terms for executing and cancelling their contract, pursuant to Section XI of the French Consumer code (Code de la consommation), entitled "*Electronic communications service contracts*".

Article L121-83 of the Consumer code states that, "*any contract that a consumer enters into with an electronic communications service provider, as defined by Paragraph 6 of Article L. 32 of the Postal and electronic communications code must contain at least the following information:*

- a) the provider's name and address;*
- b) the services provided, their level of quality and the time needed for their delivery;*
- c) the retail tariffs charged and the means by which updated information on all of the tariffs and maintenance fees applied can be obtained;*
- d) the compensation and reimbursement formulas applicable if the quality of service stipulated in the contract is not achieved; [...]."*

The Order of 16 March 2006 concerning electronic communications service contracts stipulates, more specifically that, "*to satisfy the obligation to provide information on the quality of the services being provided, as stipulated in Paragraph b of Article L. 121-83 of the Consumer code, each electronic communications service contract must stipulate at least [...] the minimum guaranteed quality of service for each of the essential technical characteristics defined in the offer, such as access speed, capacity and any other characteristic that can be measured [...]."*

Furthermore, CPCE Article D. 98-12, entitled, “*Rules concerning user information and protection*,” goes into more detail on the type of information that end users must be made aware of when subscribing to an electronic communications service. It stipulates in particular that, “the operator will make information available to the public on [...] the general and contractual terms and conditions governing the supply of the service provided as part of its statement, which specifies: [...]”

- the terms and conditions concerning quality of service;
- the price of its offers, including the tariff reduction formulas [...].”

The new regulatory framework for Europe, which will soon be transposed into national law, provides for strengthened obligations with respect to transparency.

First, the scope of Articles 20 and 21 of the Universal Service Directive has been expanded to include all end users (consumers in the strictest sense of the word, i.e. natural persons, as well as business users¹⁸, in other words legal entities).

Second, these articles strengthen the information obligations to which electronic communications operators are subject in their service contracts, and when any change is made to the terms and conditions, after the customer has signed her contract. On the matter of network neutrality, this involves a transparency obligation with respect to:

- the conditions limiting access to services and applications or their use, when these conditions are authorised by virtue of national law, in accordance with Community law;
- all procedures implemented by the enterprise to measure and route traffic in such a way as to avoid loading or overloading one of the network’s lines, and information on the way in which these procedures could affect quality of service;
- any restrictions that the provider imposes on the use of the terminal equipment it has supplied.

In light of these provisions which are geared to affording end users the greatest possible degree of transparency, for both fixed and mobile internet access offers to develop, the information that ISPs must make available to end users needs to be specified, as does the way in which this information is to be provided so that it is understandable and enables end users to compare the services that are available to them.

First, however, in their contracts/general terms and conditions of sale for their retail data services, and particularly those governing internet access and managed services, it seems crucial for ISPs to provide – which is not systematically the case today – clear, precise and relevant information on:

- all of the services, applications, software, websites and protocols that cannot be accessed via these retail offers (this concerns mobile networks in particular);
- the traffic management techniques that operators are likely to use, when they may have a direct impact on the end users’ experience, and specifying the circumstances under which they are likely to be applied;
- the identification of managed services, as defined above. The contracts must stipulate the specific terms attached to the supply of these services for end users (e.g. dedicated and priority bandwidth, shorter latency, etc.);

18 Only “upon request” in Article 20, and systematically in Article 21.

- the actual bandwidth available to end users, for the part that can be controlled by the operator, making a distinction with the bandwidth attached to managed services, if applicable;
- regulations governing unlimited flat rate offers including fair use policies (see explanation below).

This information must be provided and accessible before the contract is signed, and must be updated and remain accessible throughout the contract's lifespan.

Unlimited offers with a "fair use" clause

For ISPs, fair use policies consist of setting – in the general terms and conditions of sale – “reasonable” limits on the use that end users can make of their access to a data service offering, notably flat rate services. In practice, this can mean that, when an end user exceeds this “reasonable” consumption threshold, it could result in him having his access speed reduced, or he may be billed an overage charge on top of his flat fee. This type of practice already exists, particularly on mobile and cable networks, but the way it is applied is generally unclear.

It seems neither opportune nor relevant to forbid operators from engaging in this type of practice. To the extent that it appears that 5% to 10% of end users consume more than half the bandwidth on electronic communications networks, it may be preferable in certain cases for ISPs to implement this type of system to ensure that the behaviour of a minority is not detrimental to the quality of service provided to the majority of end users. This type of system may even prove necessary, particularly in the case of access networks whose local loops are shared by several end users – which is notably the case with mobile networks.

These practices nevertheless need to be supervised, to ensure that they do not constitute an impediment to the use of and innovation via the internet, nor a means for ISPs to avoid investing in increasing their networks' capacity. It is particularly important that these practices be transparent and as clear as possible to end users, particularly in terms of consumption caps, prior alert mechanisms and the consequences of exceeding set limits.

To remain consistent with the qualification of “unlimited,” fair use policies should satisfy the following conditions:

- only a small proportion of users actually reach the ceiling;
- once the ceiling is reached, access is not cut off; the user is informed they have reached their limit; the user continues to be able to use the service at no added cost but possibly with limited features, and full service can be restored in exchange for an added fee.

In addition, information on the terms to consumption beyond the ceiling must be easily accessible.

These conditions are detailed below.

As concerns caps on consumption in unlimited offers, it seems necessary for them to be set by ISPs so that, in practice, they affect only a very small percentage of end users. In the opposite case, it could lead to the vast majority of users “under-consuming” their data offers for fear of exceeding the threshold, or to preventing them from accessing certain new innovative services that consume a great deal of bandwidth.

The first structural response that operators need to bring to the fact that most end users are consuming an increasing amount of bandwidth consists of investing in additional network capacity, particularly since the price of the technologies needed to do so is decreasing steadily. This means that the consumption cap is bound to vary over time, depending on end users' average and median consumption levels.

Furthermore, this threshold needs to be clear to end users: for example, information on what they can do with a precise quota would be welcome (x number of web pages can be viewed on average, x number of photos can be downloaded on average, etc.).

On the matter of the alert mechanisms to be put into place, the minority of end users concerned by the possibility of exceeding the cap set for their offer must be sufficiently well informed ahead of time of the risk of going over their limit, to give them the opportunity to reduce their consumption if they so desire. For instance, an ISP could systematically send out an alert, notably via SMS or email, as soon as a customer reaches the 80% mark on their allowed consumption and, of course, again once they have reached their limit.

The traffic management mechanisms employed by an ISP for an end user who has exceeded the cap set on their unlimited offer must be proportionate and reasonable. Completely cutting off access to the data services that the user subscribes to appears to be a particularly unacceptable solution, as it would clearly be incompatible with the term "unlimited". In addition, the measures that are taken must not last more than 30 days.

Relatively similar considerations can be applied to existing caps on all standalone flat rate data offers (regardless of how they are branded), provided they include a consumption quota. It is particularly important that users be informed when they reach their quota, especially in cases where exceeding the quota does not automatically block their access but rather causes them to be billed automatically for their overage consumption.

ISPs could therefore market a range of retail offers with different quota levels, so that virtually all users could choose an offer whose quota exceeds their consumption level. This type of selection already exists, in the UK for instance.

2. Monitoring traffic management practices

6TH PROPOSAL

ARCEP will ask ISPs and their representative associations, ISVs and their representative associations, as well as consumer associations to work together to identify and qualify the different types of traffic management practices, including "fair use" limitations associated with so-called "unlimited" offers, and to submit their proposals on the matter to ARCEP by the end of Q1 2011.

In the meantime, the Authority will monitor the evolution of the traffic management techniques that operators are employing, in particular to evaluate whether they comply with the criteria of relevance, proportionality, efficiency, non discrimination between parties and transparency.

Subsequently, should it prove necessary, the Authority could work in tandem with the DGCCRF to complete these proposals.

ARCEP has proposed criteria for analysing traffic management techniques (cf. proposal no. 3 in section II.B). The Authority will monitor the traffic management techniques that operators are employing, and whether these techniques comply with the chosen criteria and their impact on the principles set out in proposals nos. 1 and 2. This will ensure in particular that, should it prove necessary, the Authority can be efficient in its implementation of the procedures entrusted to it pursuant to the new EU directives.

At the same time, ARCEP will ask the sector's players for their suggestions on how to qualify the different traffic management techniques and, possibly, to help identify best practices.

Depending on the results achieved by the different actions, working in tandem with the competent authorities, ARCEP could add to the proposals received from market players.

3. Monitoring the quality of the internet access service

7th PROPOSAL

To ensure that the quality of the internet access service is both sufficiently high and transparent, ARCEP will work to:

- identify the main quality of service parameters for internet access and establish suitable indicators;
- require ISPs to publish these QoS indicators periodically for their retail data transmission services, particularly for internet access on both fixed and mobile networks;
- This work will be performed in tandem with the DGCCRF, operators and their representative associations, ISVs and their representative associations, as well as consumer associations.

Several approaches, which are by no means mutually exclusive, are possible when seeking to guarantee a sufficient quality of service:

- a standards-based approach, using existing quality of service specifications for audio, video and data applications on fixed and mobile networks (ITU-T G.1010 and ETSI TS 122 105 standards). Although they are important, such initiatives are long and complicated, so probably not a suitable solution in the short term;
- sector-specific co-regulation approaches between NRAs and market players to identify and disseminate common references, notably with respect to the definition of quality of service parameters for internet access, and best practices (Ofcom in the UK already supports one such programme¹⁹);
- statistical measurement and monitoring methods, based on the selection and supervision of indicators and, possibly, setting relevant requirement levels at a later time based on analysis of these indicators, which can be paired with giving users the ability to measure, report and compare their own qualitative experience (e.g. by making a dedicated application available). EETT in Greece has been engaged in such a process since summer 2009²⁰;

19 The "Code of Practice on broadband speeds" entered into force in December 2008, and was signed by all of the top ISPs in the UK.

20 Cf. EETT Decision 480/017/2008 (Official Gazette 1153/B/24-6-2008) "Designation of quality indicators for the electronic communication services provided to the public and definition of the content and the form of the information to be published and the time and means of its publication by the electronic communication service providers" and "Measurement Lab" (M-Lab): <http://measurementlab.net/>

- imposing a minimum quality of service on operators, as the new provisions in Article 22 of the Universal Service Directive will allow once they have been transposed – with the European Commission having a right to oversee these requirements. It appears difficult at this stage to define minimum quality criteria, and even more so to verify them. This approach can only be part of long-term plans and needs to be based on preliminary work to limit the risks of sending negative signals to the affected markets.

In the current state of affairs, the Authority therefore believes that the priority is to begin sector-specific work on qualifying the main quality of service parameters for internet access, and implementing specific indicators.

First, the Authority invites operators and the associations that represent them to engage in efforts to determine the main quality of service parameters for "internet access" (availability, bandwidth, latency, packet loss, jitter, etc.).

To be useful, this work could be the basis of exchanges with consumer associations and be enhanced by close collaboration with other relevant players, and particularly with ISVs since, as the designers of services and applications, they are particularly well suited to analysing users' qualitative experience.

Second, the supply of a sufficient quality of service could be further enabled by the implementation, through a decision from the Authority, of specific retail market quality of service indicators for internet access from the end-user perspective, providing consumers with a statistical view of the overall quality of service supplied by each of the operators.

To this end, ARCEP began conducting a survey in Q1 2010 whose purpose is to identify the relevant indicators from the user's perspective. This work could lead into a process similar to the one that resulted in the Authority's adoption of Decision no. 2008-1362 of 4 December 2008, concerning operators' publication of QoS indicators for their fixed services.

Additionally, as part of their obligation to be transparent about their terms of service (cf. proposal no. 5 in section II.D.1.), operators could be asked to supply more customised information on the theoretical quality of service that could potentially be provided (prior to subscription), or on the actual quality of service being supplied (after subscription).

4. Monitoring the data interconnection market

8th PROPOSAL

ARCEP recommends:

- that parties providing end users with access to the internet grant, in an objective and non-discriminatory fashion, all reasonable requests for interconnection whose purpose is to provide these users with access to internet services or applications;
- that parties providing ISVs with access to the internet grant, in an objective and non-discriminatory fashion, all reasonable requests for interconnection whose purpose is to make these vendors' services or applications accessible to internet users.

To eradicate the lack of clarity that currently exists in data interconnection markets, and to obtain information that will be useful to exercising its powers, the Authority will be adopting a decision on the periodical collection of information on these markets, before the end of S1 2011. .../

/...

Based in part on this information, the Authority will later assess whether it is necessary to implement more prescriptive regulatory measures in these markets.

A requirement: open interconnection for a seamless internet

The freedom of access and use of the internet (cf. proposal no. 1 in section II.B.1.) implies open and lasting relationships between ISPs, ISVs and all of the players (transit operators, CDN providers²¹, etc.) who convey content/services/applications so that these items are truly available in their entirety through internet access.

In terms of network interconnection, which constitutes the foundation of the internet, this means compliance with the dual recommendation stated above to grant all reasonable requests for interconnection in an objective and non-discriminatory fashion.

This dual requirement is nonetheless likely to come up against certain obstacles in the short term.

An observation: a complex and, up until now, opaque market

Unlike electronic communications network operators' business which is strictly supervised at the national level, from the very start interconnection on the internet has been a self-regulated area between the different players along the chain, based in part on unwritten and often very opaque rules. As a result, current interconnection mechanisms are both heterogeneous and complex.

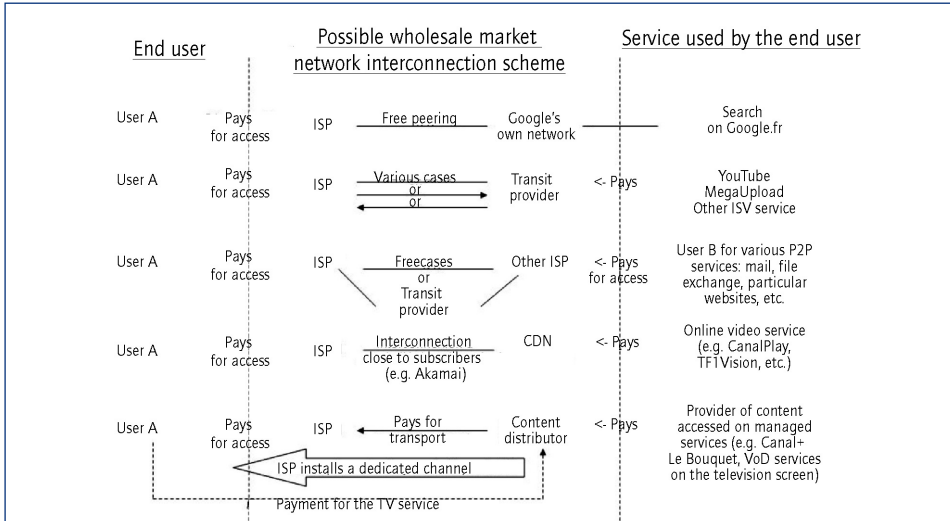
Data interconnection agreements between the leading operators, and particularly incumbent carriers and the main ISVs, are currently based on systems of traffic exchange and compensation, through what are called peering agreements, which involve no direct financial compensation. Paid peering has become more common in recent years, however, particularly when there is an especially large difference between the volume of incoming and outgoing traffic.

Other mechanisms exist as well, such as transit. It is IP transit operators that currently supply the link between ISPs and ISVs, for which they are paid (e.g.: Level 3, Cogent). These operators do not generally discriminate according to their customers' traffic volume, and allow small providers to access all ISPs' networks

Lastly, some service providers use Content Delivery Networks, or CDN, which are a means of making content or data, and particularly large multimedia files, available to users, notably through interconnection with ISPs located close to their subscribers.

²¹ Content Delivery Network: a network made up of servers that are connected via the Web and which cooperate to provide users with content or data (especially large multimedia files) in an optimal fashion.

The diagram below, which has been deliberately simplified, provides a non-exhaustive overview of the various possible interconnection schemes, allowing an end user to access one type of service or another.



Issues under debate: financing traffic routing and the efficiency of economic signals

The tremendous rise in the amount of data being consumed over the past several years, and especially video content, has meant an increase in the costs linked to (the increasingly asymmetrical) transport of online services, particularly on mobile networks. This trend should, for that matter, act as an incentive to push ISPs to encourage the development of more local usage²² to curb this asymmetry, at least partially. Among other things, this observation gives rise to questions over financing the necessary increase in network capacity at different levels: core network, collection network, access network. The denser the network, the greater the investment needed, which amounts to several hundred million euros in France for the fixed and mobile core and collection network. Investments in deploying optical fibre in access networks are greater still (in the tens of billions of euros). But a significant drop in storage and transmission costs has been observed as access rates increase.

Up until now, it has been primarily end users' internet access subscriptions that have remunerated ISPs and the networks they have deployed. There is widespread agreement over the fact that the development of the Web and internet access during the past ten years can be attributed chiefly to the existence of a broad array of innovative services which have attracted consumers. Their number and diversity stems from the ability to access the network freely, and the lack of obligation of a prior and direct economic and contractual relationship between the ISV and ISPs.

22 E.g. by encouraging distributed content hosting and exchange.

In an environment where online traffic and the internet's economy is developing at a tremendous pace, a profound and increasingly vociferous disagreement has arisen over how traffic routing should be financed (or who should assume the costs²³), and the effectiveness of economic signals. On the whole, the division is split clearly between:

- ISPs, who point to the fact that their retail revenue has capped out, and to an ongoing increase in their costs due to an explosion in traffic between international exchange nodes and local exchanges, and who are therefore in favour of having all players along the chain (including ISVs) helping to cover the added costs incurred by this rising traffic at the collection network level. Because of the current circumstances, a number of operators want to see an overhaul of interconnection schemes for internet services between operators and between operators and ISVs, and particularly the introduction of an ex ante "data call termination" mechanism, comparable to the voice call termination model, so that ISVs that are heavy consumers of bandwidth, and potentially sources of network congestion, contribute more to financing investments in increasing core and collection network capacity, and even in access networks, in a way that is proportionate to the volume of data they generate or the bandwidth they consume. Because of their lack of negotiating power with the leading internet service vendors, and particularly North American ones, some ISPs want to see a decision from the regulator in this direction.
- And ISVs/players from the content and applications universe who hold the view, first, that they are already helping to finance the networks, for instance via routing to the point of peering and in deploying CDNs and, second, that ISPs earn a return on their investments through the sale of subscriptions to retail market customers – which they believe should remain the status quo. Furthermore, internet service vendors warn against the introduction of a data traffic termination system, stating that it would run the risk of creating disincentives to innovation as it would reduce content producers' economic area, especially the smallest ones which are often operating on a precarious business model.

We undoubtedly need to have an open economic debate on the financing of traffic routing. It is entirely legitimate to explore the most effective and future-proof principles for covering costs between end users and ISVs. Here, an analysis of the underlying drivers (principle of causality) and of the distribution of the utility of data streams between the different players along the value chain (principle of relative valuation) could provide useful elements of response. The Authority notes that applying the principle of causality makes it possible to implement efficient economic signals with a view to limiting costs.

In light of the information at its disposal at this time, the Authority considers the topic still open to debate, the responses to which will not necessarily be united or identical. ARCEP does not believe it necessary to make an immediate decision on a possible overhaul of the data interconnection business

23 Here, the Authority believes that the issue of spreading the cost of financing traffic routing, or "cost sharing," is more relevant to debates over internet and network neutrality than the sometimes cited issues of "value sharing" or "sharing the revenue" generated by these services, to the extent that "cost sharing" pertains more directly to the cost of routing traffic, regardless of the value of the services being conveyed and the revenue they might generate (cf. debates in the French Parliament over the Law of 29 December 1990, noting that the purpose of "neutrality with respect to the transmitted messages (Art.L32-1) was especially a refusal "to apply price- or tax-based discrimination according to the nature of the transported message").

model. It does not, however, exclude the possibility of taking actions in any direction further down the road, particularly should the difficulties being predicted by some of the players materialize. The Authority could eventually impose certain limits, in accordance with its powers, for instance should a player propose unreasonable terms of interconnection, or if it were to propose services that unduly favoured its own partners or affiliates. This prospect already justifies starting immediately to pay closer and ongoing attention to these interconnection relationships.

In any event, a better organisation of the different wholesale data interconnection markets would help prevent potential transgressions against neutrality in internet access retail markets. It would be beneficial if these relationships – and notably any possible associated billing systems – provided an incentive to be efficient, particularly in terms of coding²⁴ video content on the Internet for the ISVs concerned, and in terms of the performance and quality of the respective transport solutions provided, along with an encouragement for end users to be reasonable in their consumption of internet services. The Authority could eventually take all of these elements into consideration if called upon to settle disputes over the terms applied to traffic routing.

The different tools available to the Authority

It should be mentioned that data interconnection is within the Authority's regulatory purview, in the same way as voice service interconnection.

Article L. 34-8 of the code governing postal and electronic communications markets in France, CPCE, stipulates that, *"to achieve the objectives defined in Article L. 32-1, the Authority can impose the terms of access and interconnection, in an objective, transparent, non-discriminatory and proportionate manner:*

- a) either on its own initiative, after having received the opinion of the Competition Authority, public consultation and having notified the European Commission and the other competent national regulatory authorities in European Union Member States, the decision is adopted under the terms of the procedure published previously by the Authority;*
- b) or at the request of one of the other parties, in accordance with the terms of Article L. 36-8²⁵ »*

The implementation of (a) would involve the Authority adopting a specific regulatory decision concerning data interconnection, e.g. on the ex ante implementation of a "data call termination" mechanism, using the same model as voice call termination.

A regulatory approach of this kind could only be taken after work has been performed at the European level involving the different national regulatory authorities (NRA) and the European Commission, particularly within BEREC which has launched a working group devoted to net neutrality. The Authority is involved in this effort, and will take the utmost account of the guidelines and recommendations defined at the European level.

Shortly after that work has been done, to help create efficient and transparent market-initiated data interconnection relations, the Authority could intervene in two ways in particular to help modernise the relationship between the players, by making it a lasting and transparent one.

²⁴ The process of transforming of a file (image, sound, etc.) by applying a code that generally involves compression, intended to reduce the size of the file.

²⁵ Article concerning the Authority's powers to settle disputes.

As mentioned in part I. of this document, the Authority could intervene by settling any disputes that arise in this area between operators, in accordance with part b) of the Article cited here above, and those between operators and ISVs, after having transposed the new Telecom Package which expands the Authority's powers to resolve this type of dispute. When one of the two players involved comes from the audiovisual media sector, the CSA (Audiovisual Superior Council) could be asked to give its opinion. These powers to settle disputes could be enough to guarantee the obligation that the Authority would want to impose on operators to "*grant all reasonable requests for interconnection from a third party for "internet access" in a non-discriminatory fashion*".

The Authority indeed has the power to collect information to be able to carry out its missions, notably those cited above. According to the terms of CPCE Article L. 36-13, "*The Electronic communications and postal regulatory authority collects information and conducts the surveys necessary to the performance of its duties, within the limits and under the terms set by Article L. 32-4*".

CPCE Article L. 32-4 endows the Authority with the power to collect information or documents from the legal entity or natural person who operates electronic communications networks or provides electronic communications services, which will allow it to ensure that these parties are complying with the principles defined in Articles L. 32-1 and L. 32-3, and with the obligations to which they are subject, in accordance with the CPCE and the texts adopted for its application.

In particular, the Authority is responsible for adjudicating data interconnection agreements concluded between players. CPCE Article L. 34-8 stipulates that, "*interconnection or access are subject to an agreement under private law between the concerned parties. This agreement will determine, in accordance with the provisions of the present code and the decisions issued for its application, the technical and financial terms governing interconnection or access. It will be submitted to the Electronic communications and postal regulatory authority upon request*".

Implementing periodical monitoring of the affected markets

Prior to possible regulatory involvement, and because of the lack of clarity in the markets in question, the Authority believes it is advisable to encourage a better understanding of data interconnection systems, not only on the part of the Authority but for all economic stakeholders and public authorities. To this end, the most relevant solution would be to implement the periodical monitoring of the affected markets.

To monitor data interconnection markets (transit, peering, etc.), the Authority will need to equip itself with tools that allow it to gain a better understanding of these markets. To this end, the Authority will adopt a decision on the periodical gathering of information on these markets from the players concerned. This process of information gathering will concern both operators and ISVs engaging in network operations.

This type of approach seems capable of helping to evolve from an opaque market to a situation of lasting and more transparent reciprocal relations, and one which preserves those properties that are specific to the internet, particularly the ability for all consumers to develop a wide range of uses and applications.

Chapter III

Other dimensions of neutrality

The purpose of this section is to identify and examine issues other than those that are tied directly to internet access, and which are also likely to be affected by questions of network neutrality, and especially internet neutrality.

The issues surrounding neutrality are not confined to electronic communications markets, taken on their own. This has become all the more true in recent years, with the development of major internet companies that are not electronic communications operators, at least not primarily. Whether in the area of search engines, online advertising or internet-ready devices, some of these players are earning very substantial margins in newly formed and often very high growth markets. The question of sharing revenue with electronic communications operators has become a relevant one particularly because, first, operators do not always have a direct relationship with ISVs whose services occupy a significant portion of the bandwidth supplied by the networks and, second, they state they sometimes have very little negotiating power with the “internet giants,” most of which are American.

To properly assess the issue of internet and network neutrality as a whole, we need to look at how competition law makes it possible to address certain practices that could potentially violate this neutrality, but also to analyse the specific and general regulations that apply to the different types of content that is available via the internet and other electronic communications networks. And, finally, given the global nature of the markets and of many of the players involved, the not only European but international dimension of the neutrality question naturally arises, particularly with respect to internet governance.

A. Neutrality and competition

If, as was mentioned earlier, the existing regulatory framework in wholesale electronic communications markets in France has enabled the creation of effective and satisfactory competition in broadband and ultra-fast broadband retail markets, at least on fixed networks, competition issues in markets adjacent to electronic communications have been raised with the Competition Authority. The practices being employed in these adjacent markets are, in all case scenarios, likely to have an effect on the electronic communications sector, particularly if a player deemed with significant market power – especially a vertically integrated one – leverages its market dominance, or in instances where an excessive number of exclusivity agreements has been established.

Several procedures of this kind have been brought to the attention of the Competition Authority, whose opinions and decisions on the matter will furnish useful reminders of the ability of competition law to remedy the competition risks encountered in the markets in question, and which are likely to impinge on internet and network neutrality.

1. Taking account of the ISV's role in internet neutrality

9th PROPOSAL

ARCEP underscores the fact that users' actual ability to exercise their freedom to choose between offers (services/applications/content) made available by ISVs over the internet implies that these vendors comply with:

- a principle of non-discrimination in the different operators' ability to access these offers;
- principles of objectivity and transparency with respect to users, in terms of the rules employed, in cases where the ISV selects and/or ranks content coming from third parties, which is notably the case with search engines.

The Authority invites the private- and public-sector parties concerned to take these issues into full consideration.

Part II of this document emphasised the importance of having operators convey all internet services/applications/content in a non-discriminatory fashion. Nevertheless, for users to be able to access the content of their choice, it is equally necessary that the process through which ISVs make this content available via the internet also be based on non-discriminatory conditions.

The terms governing this supply should therefore be in accordance with this requirement. This includes all of the contractual terms and conditions between the players along the internet value chain, of which exclusivity agreements are the most likely to impede users' ability to access a given service/application/content. This also includes the applications and techniques implemented for processing users' requests, such as search engines which play a major role in this area.

As in the electronic communications sector, the state of competition in the markets mentioned above will be critical to ensuring that the objective is met. Some salient points about the current state of these markets are mentioned in the following paragraphs, and for which the Competition Authority will help to decide if public action needs to be taken.

Issues tied to exclusivity agreements

An analysis of the competitive impact of exclusivity agreements between different links in the economic value chain is a source of daily concern for competition authorities.

The internet and electronic communications networks in general are no exceptions here. Examples can be found in the exclusivity deals signed by Orange and Apple for marketing the iPhone, and those between Canal+ and Orange for pay-TV services, both of which are likely to have an effect on electronic communications markets and both of which were the subject of recent decisions or opinions issued by the Competition Authority.

As an aside, it is worth underscoring the fact that the Competition Authority has issued a reminder on several occasions that exclusive distribution or sales agreements are not in themselves anti-competitive, even when they are made by companies that enjoy a dominant position or are vertically integrated. They can, for instance, be necessary to enabling a business area to be profitable, for instance to earn a return on investments that the company would not make if it did not enjoy that exclusivity. The Competition Authority therefore proceeds on a case-by-case basis: it performs a close examination of the concrete market circumstances when analysing exclusivity agreements.

In practice, by creating artificial barriers to entry, the price squeeze or foreclosure effect that exclusivity agreements could constitute depend on a number of factors, including the area and scope covered by the exclusivity deal, the share of demand involved, the duration or combination over time of the agreements, the terms of the contract's cancellation or renewal, the geographical distribution and the atomism of demand, the existence of a technical justification for exclusivity and the economic compensation given in exchange for this exclusivity.

On the other hand, if the goal of these agreements is to distort or restrict the competition dynamic in the market in question, the actual or potential foreclosure effect they cause, either directly or indirectly, constitutes an abuse of dominant position which is forbidden under Article L. 420-2 of the Commercial code.

First, on the matter of marketing the iPhone, Bouygues Telecom filed a complaint with the Competition Authority in September 2008 concerning the partnership deal negotiated between Apple and Orange, which made Orange the iPhone's sole network operator and wholesaler in France.

Given the very long period of exclusivity stipulated in the agreement, and its extension to future models of the iPhone, the Competition Authority ruled that the exclusivity that Orange had over the iPhone was apt to create a further element of rigidity in a sector already suffering from a lack of competition. It also pointed out that an exclusivity deal of this kind was likely to even further increase operator switching costs for mobile customers.

Believing that, under the terms of its negotiation, the exclusivity agreement was, at the time when the complaint was filed, likely to be prohibited by Community and national competition laws, and capable of constituting a serious and immediate threat to competition in the mobile market and to consumers, the Competition Authority therefore decided to order protective measures that resulted in iPhone products no longer being marketed exclusively by Orange, but rather allowing them to be sold by any other operator wanting to design an offer based on this device. This ruling allowed, on the one hand, SFR and Bouygues Telecom to sign distribution contracts with Apple for the iPhone 3G and now the 3GS and, on the other, to lift the wholesaler exclusivity enjoyed by Orange.

On 12 January 2010, as part of the examination of the complaint filed by Bouygues Telecom, the Competition Authority accepted the commitments proposed by Apple and Orange on the matter of exclusivity, as a result of the application of the injunction issued as a protective measure, and made them into lasting obligations.

Second, in addition to its own voluntary pronouncements, the Competition Authority has been called upon over the past several years to rule on exclusivity practices in the television sector, notably by Orange and Canal+. The Competition Authority's forthcoming decisions on these matters will send out strong signals on the competition practices that are and are not acceptable for these services.

A preliminary response was already given as part of a task force that the Prime Minister assigned to Marie-Dominique Hagelsteen in late 2009. In its Opinion No. 09-A-42 of 7 July 2009 on exclusivity deals between electronic communications and content and service distribution activities, the Competition Authority expressed its desire to see the legislature set, as soon as possible, "*clear rules of conduct to, first,*

define very strict terms concerning the length of time – of a maximum one or two years – during which an exclusivity over the transport of and access to innovative services could be tolerated and, second, to enable a large enough opening to be created in the wholesale market for pay-TV channels, notably in the areas of sport and cinema”.

In the report submitted to the Prime Minister in late 2009, Marie-Dominique Hagelsteen expressed the view that, on the matter of exclusivity over transport, if the legislature were to intervene, it should confine itself to procedural provisions consisting of imposing a system of supervision on these exclusive transport practices, by requiring the operators involved to submit official notification to ARCEP. The task force believed it was necessary to implement veritable ex ante regulation of the wholesale pay-TV market, via the broadcasting authority, CSA.

Because television services (TV over ADSL or optical fibre, video on demand, catch-up TV) are most often marketed as managed services, the directions for these services which are listed in section II.c must naturally comply with the general rules of competition, and notably those concerning exclusivity practices.

State of competition in search engine and online advertising markets

In this complex internet chain, any abuse of a proven dominant position in one of the markets that are linked to electronic communications markets could well affect the open and neutral nature of the internet, and the quality of the user experience, as defined in this document, and for which all of the players – each at their own level – are at least partially responsible.

This explains why, during the ARCEP conference on 13 April 2010 and the interviews conducted by the Authority, a number of players expressed their concerns over the state of competition in the online advertising market and in the search engine market, citing in particular Google’s dominant position in both.

It will be especially interesting to see the stance taken by the Competition Authority on the state of competition in the online advertising market, in the opinion on this very matter that it is due to submit in the near future to the Minister responsible for the economy, industry and employment.

2. Increasing the neutrality of devices

10th PROPOSAL

As part of the upcoming review of the RTTE Directive, ARCEP recommends that the opportunity to complete this directive be examined, to take better account of developments in the devices market, particularly the growing importance of the software layers and interactions with ISVs.

The Authority invites the private- and public-sector parties concerned to take these issues into full consideration.

Mobile handsets

During the conference hosted by the Authority on 13 April 2010 and the preliminary interviews it conducted, a number of players expressed their concerns over the practices surrounding mobile handsets, and particularly the ubiquity of walled gardens that limit the list and kinds of applications that can be installed, the browsers that can be used and the sites that can be accessed, and this in a manner that is relatively independent of the operator.

Among the different distribution modes for mobile telephony, offers that combine a mobile service and a subsidised handset are the most common. This appears to be a reflection of the great importance that consumers give to the features of their handset which has become a personal object that provides access to a growing number of services (e-mail, Web browsing, mobile TV, etc.), but also to an array of complementary functionalities (camera, PDA, MP3 player, radio, etc.). As a result, the industry considers the mobile telephony market as a “device” or hardware market.

The mobile market, which has reached maturity in Europe, owes a great deal of its momentum to the speed at which the range of handsets is refreshed, the main incentive for end users being apparently to own a “more modern” device.

Smartphones constitute a strategic sub-market. They are the fruit of the convergence of mobile phones and PDAs (personal digital assistants) since the start of the 2000s, and offer a growing array of capabilities (Wi-Fi connectivity²⁶, planner and address book, GPS, camera, video/MP3 player), where more conventional handsets offer only one or two and without the same ease of use, and associate them through a dedicated operating system.

This sub-market appears to be a strategic one for sustaining mobile operators’ growth. With the emergence of 3G and the growing number of bundled solutions, operators are focused on having their customers upgrade their devices, notably by buying new mobile handsets, using customer loyalty mechanisms, and by consuming new services (internet) which are often value-added ones: this is how smartphones, software applications and dedicated add-on services – such as location-based ones – are developing, all of which constitute a major competitive asset for this segment.

It should nevertheless be said that operators are working in some instances to promote common platforms that operate independently from the devices, which are in theory more open to all applications developers online – one example being the Wholesale Applications Community announced by 24 mobile operators at the Mobile World Congress in Barcelona in February 2010, and supported by the GSMA (Global System for Mobile communications Association).

An example that is more representative of the issues referred to here is the iPhone, which enjoys a special appeal (aesthetic features, ergonomics) with consumers. This can be measured just by looking at sales figures: 77% of the handsets sold with a flat rate at Christmastime in 2009 were iPhones – of which an estimated 50 million units have been sold worldwide.

But some websites cannot be accessed on the iPhone because it is not compatible with Flash technology. Although this inability to access certain sites is due to the handset and not to mobile operators’ practices, the end result is still the fact that an end user cannot access all internet services, even if his operator is providing him with an “internet access” offer.

²⁶ Wi-Fi is a wireless technology that makes it possible to connect several devices within a computer network.

From a broader perspective, as underscored by the Competition Authority in its Decision No. 08-MC-01 of 17 December 2008 on the practices employed in the distribution of the iPhone, Apple's dominant position, thanks to the popularity of the iPod and the iPhone, is a particular source of concern for a number of players. In addition to the competition issues raised, and the negative effects on end users, we can also wonder about Apple's responsibility with respect to the applications hosted on the App Store.

This situation warrants a reminder of the key role that the Directive 1999/5/EC of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity, also known as the RTE Directive. It imposes a set of obligations on operators (publication, etc.) concerning their interfaces, the purpose being to prevent them from distorting competition in the mobile handset market by limiting the interoperability of devices on the different national networks.

These obligations are aimed at preventing situations where an operator would be in a position to determine unilaterally its network's standards for compatibility with devices, which would enable it to leverage its market power as a network operator to the adjacent handset market. This directive does not, however, include any stipulations aimed at preventing possible distortions in mobile telephony market competition created by handset manufacturers. It would be useful to address this point when reviewing this directive in future at the European level, or during the European public consultation on internet and network neutrality.

Connected televisions

Here also, recent developments in industry players (manufacturers, content producers...) strategies appear to call different companies' existing business models into question.

This is a major source of concern for electronic communications operators, at a time when they are making substantial investments in infrastructure and particularly in optical fibre ultra-high speed systems. They are particularly concerned about being left out of these agreements, even though the most attractive services delivered by connected televisions could well be those that consume a great deal of bandwidth on the network – most notably video-based services. The agreements that currently exist between ISVs or broadcasters and television manufacturers, notably those that include exclusivity clauses, could hence prove incompatible with foreseeable investments in networks (as they are defined without operator involvement).

Meanwhile, certain ISVs hold the view that this development in the marketplace could help to stimulate the economic relationship between the players along the internet value chain. These agreements indeed also represent an opportunity to balance out negotiating powers in the distribution of "premium" content. Some of the stakeholders nevertheless point out one major question raised by connected televisions: will they make it possible to replicate the internet's open and neutral model? On the one hand is the reasonable assumption that access to a thriving selection of applications and content will be key to the success of connected TVs. Here, equipping the televisions with a browser could help guarantee neutrality and openness since it would provide access to the entire internet. On the other hand, the risk could lie in walled gardens, comparable to an app store, which a number of equipment manufacturers, such as Sony, and telcos, such as Vodafone, appear keen to emulate. They are working to create stores offering exclusive services, using standards that would require a website to make certain adjustments to be compatible with the televisions in question.

In any event, this is not a problem of network neutrality, per se, but rather one of device neutrality which, at the very least, raises concerns over the open nature of the connectivity platforms that are available to the public.

Unveiled at the CES (Consumer Electronics Show) in Las Vegas in spring 2009, televisions that are connected to the internet via Wi-Fi access or integrated Ethernet, and an HTML (HyperText Markup Language, which makes it possible to create web pages) browser, appear to be developing rapidly, as was previously the case with internet-ready game consoles.

This means that users will be able to access a great many services over the TV set: personal content, photos and blogs, content from sharing sites such as YouTube, video games, e-commerce, catch-up TV and VoD services, weather services, etc. Most manufacturers have chosen to use a system of “widgets”²⁷ for accessing these services.

From a technical standpoint, these services will still be transported via ADSL or optical fibre as part of a customer’s internet access offer, without involving payment to the ISP as the distributor or transporter of the services, but also without guaranteeing any particular quality of service.

We have seen a growing number of agreements around these services between television manufacturers and players from the world of television since 2009: Sony-M6 Replay, Canal Play-TCL-Canal Play, LG-Orange, Panasonic-Eurosport, Samsung-TF1, etc.

These agreements come on top of those that have already been made or are being negotiated between television manufacturers and the major ISVs such as Yahoo, Google and Dailymotion. Of these three companies alone, Yahoo has signed agreements with Samsung, Sony, LG and Visio since 2008 for incorporating services that can be accessed through their connected televisions. At MIPTV 2010, Yahoo unveiled a service called “*Connected TV*” which, through a widget-based system installed on Samsung TV sets, allows users to access certain internet services. Google is also gearing up for the launch of its Google TV service in summer 2010, in partnership with Sony, Intel and Logitech.

It also appears that these agreements contain exclusivity deals, at least temporary ones, which could in any event create competition issues, and especially lead to the creation of walled gardens that prevent access to certain digital content/applications/ services that could be very prejudicial to end users.

This is a sensitive and urgent matter given that, starting next year, virtually all of the televisions available in shops are expected to be “connected televisions”.

B. Neutrality and content

The regulation that applies to content travelling over electronic communications networks varies a great deal from service to service, and from country to country. One case in point is hate speech which, when expressed on a given network, will not face the same repercussions in France and the United States.

²⁷ Small interactive applications that make it possible to display information (weather, stock market prices, etc.) or to perform small operations (calculator, dictionary, etc.)

In the following paragraphs, we will outline the regime that applies specifically to audiovisual media services²⁸, and the one that applies to other content transiting over electronic communications networks and the internet.

1. The regime that applies specifically to audiovisual communication services

Audiovisual communication services make up a special category of content that can be accessed over (wireless or wireline) electronic communications networks due to the sector-specific regulation that applies to them, as per the amended Law of 30 September 1986 on freedom of communication.

As a result, a television or radio station that wants to be broadcast in France must first complete certain formalities with the broadcasting authority, CSA. These include a variety of procedures: signing an agreement then obtaining a frequency licence, in the case of a service to be broadcast over the terrestrial radio network, or signing an agreement or making a simple declaration in the case of a service to be delivered over another network. This second case applies to cable, satellite, ADSL, optical fibre and mobile telephony networks, as well as the Web (internet TV and radio).

Among other things, CSA must ensure operators' compliance with the laws and regulations, and with their commitments and obligations, in other words the legal framework governing freedom of communication. CSA exercises its regulatory powers over all audiovisual media services, regardless of whether or not they are broadcast over a network that uses spectrum allocated by CSA, to ensure that fundamental principles are upheld, such as protecting human dignity and public order, in addition to combating discrimination in the area of audiovisual communication.

CSA also devotes efforts to ensuring that audiovisual media companies meet their obligations with respect to programmes, in terms of pluralism, the honesty of the information, broadcasting cinematographic and audiovisual works, TV channels' contribution to the development of cinematographic and audiovisual production, protecting children and adolescents, advertising, sponsorship, product placement and teleshopping, and defending and showcasing the French language.

Fulfilling these mandates as they pertain to television and radio services has constituted the broadcasting authority's core activity for several years.

More recently, the Law of 5 March 2009 on audiovisual media and the new public television service, which transposes the European Audiovisual Media Services Directive 2007/65/EC of 11 December 2007 (AVMSD) into national law, introduced the notion of on-demand audiovisual media services in the amended Law of 30 September 1986 on the freedom of communication, taking time-shifted media content that is available on the different networks into account, and particularly video on-demand and catch-up TV services. This law extends the scope of most of the broadcasting authority's powers to include on-demand AVMS. The majority of time-shift audiovisual media services are already managed services marketed by ISPs – a situation that is bound to become even more commonplace.

28 As defined by Article 2 of the amended Law of 30 September 1986.

It was this state of affairs that led CSA to launch a public consultation in June 2009, whose purpose was to specify the regulatory elements that applied to these new audiovisual services. On 20 April 2010, CSA published an executive summary of the contributions to this consultation, in which it offers a number of guidelines for the regulation that should be put into place for AVMS.

To stimulate the development of audiovisual media services, CSA decided to allow catch-up TV services to offer sneak previews of programmes before they aired on television. It also expressed the view that the economic system governing (paid or free) catch-up TV solutions could be different from the one used by the channel to which they are attached.

Furthermore, AVMS give rise to specific questions over the protection of minors and a code of conduct for programmes. CSA will be adopting a deliberation on these services and on interactive applications in the near future.

Lastly, Proposal No. 14 of the “*Création et internet*” (Creative works and the internet) report produced by Patrick Zelnik, and submitted in January 2010 to the Minister responsible for culture and communications, proposes including on-demand audiovisual media services in the list of disputes that can be settled by CSA, after having received the opinion of ARCEP when necessary.

2. The regime that applies to all content

The regime described in paragraph B.1 applies only to audiovisual communication services, which now include television and radio (AVMS) and on-demand audiovisual media services. This does not mean that there are no rules governing other audiovisual services being produced by players other than audiovisual media companies, and notably by end users, and the other content transiting over networks. All of this content is subject to either general pre-existing laws that apply across the board, or to regimes that are specific to network and internet-based activities. In addition, the internet rights forum (*Forum des droits de l'internet*) set itself the task of encouraging co-regulation on the use of this content.

Common law systems applicable to online activities

Online activities must naturally comply with the different branches of applicable laws. It is therefore the responsibility of each public or private sector player to take into account all existing national and international laws – which are aimed at meeting a wide array of objectives, from protecting individual freedoms to promoting cultural diversity or ensuring the integrity of essential infrastructure.

To give an example, this is why, since the adoption of the Law of 21 June 2004 concerning confidence in the digital economy (*Loi pour la confiance dans l'économie numérique*), hereafter referred to as “LCEN”, there is no longer any ambiguity over the fact that online publications, even if addressed to a very small audience, are subject to the Press Law of 29 July 1881, in the same way as any print or audiovisual medium, which punishes defamation.

Article 29 of this Law of 29 July 1881 concerning freedom of the press, indeed stipulates that, “*Any allegation or attribution of a fact that damages the honour or reputation of the person or entity to which the fact is attributed constitutes defamation. The publication, either direct or through the reproduction of this allegation or this attribution, is punishable, even if made in a dubitative form or if it targets a person or an entity that is not expressly named but which can be identified by the terms used in the incriminated speech, cries, threats, written or printed, bills or notices*”.

Provisions specific to electronic communications networks and the internet

The development of the most diverse array of activities on the networks, whether commercial or non-commercial, has led to the implementation in France and in a number of other countries, and according to very disparate methods, of a number of legal and regulatory measures that apply specifically to this area.

Their chief objectives include combating child pornography, monitoring online gambling sites and protecting literary and artistic property rights²⁹.

As with the system that applies to audiovisual media services, the supervision of this content can be considered, "literally," as a violation of the principle of neutrality, but the legislature and the Constitutional Council expressed the view that it did not threaten any fundamental freedom and that it was in pursuit of essential and legitimate goals that are in the public interest

Implementing these specific provisions

The implementation of these provisions nevertheless requires that particular attention be paid, on the one hand, to respecting other fundamental rights such as the right to privacy and freedom of expression and, on the other, to ISPs' very limited scope of responsibility.

First, some players are concerned by the prospect of seeing this type of measure – which is initially introduced to address specific, temporary needs – being then steadily expanded. In the digital universe, it is indeed no small affair to be assured that certain monitoring systems that are authorised for a specific need are not employed unduly to other ends. The CNIL had occasion to express this very concern in several of its recent opinions. In particular, DPI³⁰ techniques could prove a serious threat if adequate safeguards are not in place. These provisions must be implemented while taking into account the fact that each end user's connection to the internet is recognised as being necessary, in current society, to ensuring their ability to exercise the fundamental right of freedom of expression³¹.

29 Article L.331-13 of the Intellectual property code, amended by Law No. 2009-669 of 12 June 2009 stipulates that the "*The High Authority: (...)*

Para. 2 Has the responsibility of protecting works and objects [to which copyright or a right related to copyright is attached] from breaches of these rights committed on electronic communications networks used to provide communication services to the public online; (...)".

Article L.331-23 of the same code specifies that the High Authority "(...) will assess, among other things, the trials carried out in the area of packet inspection and filtering technologies by the designers of these technologies, the holders of the rights to protected works and objects and entities whose business is to provide a communication service to the public online. It will provide an account of the main developments observed in this area, notably in terms of the efficiency of such technologies, in its annual report, pursuant to Article L. 331-14."

30 "*Deep Packet Inspection*": an activity that consists of analysing the content (beyond the header) of a data packet (generally an IP packet), for network infrastructure hardware, to extract statistics, filter the content or detect intrusions, spam or any other type of predefined content.

30 Cf. Decision of the French Constitutional Council (Decision No. 2009-580 DC of 10 June 2009) on the HADOPI graduated response mechanism, and more generally Article 1.3 of the revised Telecom Package Framework Directive: "*(...) Any of these measures regarding end-users' access to or use of services and applications through electronic communications networks liable to restrict those fundamental rights or freedoms may only be imposed if they are appropriate, proportionate and necessary within a democratic society, and their implementation shall be subject to adequate procedural safeguards in conformity with the European Convention for the Protection of Human Rights and Fundamental Freedoms and general principles of Community law, including effective judicial review and due process. (...)"*».

Second, the Directive of 8 June 2000 concerning e-commerce, and the Law of 21 June 2004 concerning confidence in the digital economy, or LCEN, specify the different service providers' responsibilities with respect to the content travelling over their networks. Article 6.1.7 of the LCEN thus states that ISPs have no obligation to monitor the information that they store or transmit.

C. Neutrality and international issues

There is no single, "multi-purpose internet regulator", which is understandable given the vast array of issues and areas of regulation that are potentially involved, starting with the many versions of the concept of neutrality itself. There is, however, no denying the major international dimension of all of these issues. It is clear that several of the questions that have been raised go beyond any national border since networks, and especially the internet, are without frontiers.

One illustration of this lies in the difficulty that public authorities may have in applying a homogeneous legal framework to players operating similar businesses but in different countries. The problem of the territoriality of law is not a new one, but is particularly meaningful when it comes to services being offered on the internet (TV channels broadcast on the Web, online advertising, etc.), and therefore require States to make an added effort to overcome the disparities in legal systems

This example, along with others that arose during the interviews and the conference organised by the Authority, brought to the fore the need for greater global cooperation, and for European cooperation in particular – which should not be hampered by the number of parties involved – in upholding and promoting common regulatory methods and standards concerning internet and network neutrality.

This means that European institutions should be encouraged to take this issue of network and internet neutrality into account in the different international negotiation bodies.

From a broader perspective, we need to increase national and European influence over all matters concerned with the regulation and governance of the internet which constitutes a global strategic shared asset.

The debate over network and internet neutrality has led a great many players to question the democratic legitimacy of structures like ICANN (Internet Corporation for Assigned Names and Numbers) and the processes underpinning the internet's operation. Of course, to a certain extent it is true that the current, essentially American management of scarce resources (IP addresses, root servers) or the management, for instance, of non-Latin languages in naming can be viewed as "non-neutral" with respect to end users (businesses, individuals), depending on their country of origin.

It is often by citing the delays or failure to take their particularities into account that some countries have justified creating autonomous systems for organising "their" internet. These systems provide these States with a greater ability to block certain sites and content for political reasons, which constitutes a form of censorship that goes against the freedom of expression and universality of the internet. More than 180 nations, which had come together at the World Summit on the Information Society, recognised the full applicability of Universal Declaration of Human Rights to the internet, and particularly of Article 19 which establishes the freedom of expression and opinion.

Under these conditions, putting the defence of fundamental freedoms and human rights at the heart of internet governance is one objective that French authorities can legitimately set for themselves. From a broader perspective, France can play a central role in steering all of these questions over how to organise a space where public and private interests intersect, particularly as it has a tradition of balanced regulation that combines the creation of a state of lasting competition and the pursuit of public interest objectives, which corresponds precisely to the Web's specific regulatory needs.

Strengthening the efforts that French public authorities devote to this issue is therefore fully justified, so that the internet is not "governed" solely by English-speaking countries and players. The first step involves a better organisation of national public and private sector players' involvement in internet standardisation and management bodies³², but also in the other entities devoted to the governance of electronic communications networks, and of the internet in particular (notably the ITU), as well as in the research being done on the "Future Internet". The French "presence" needs to be structured, so as to ensure a fruitful participation of public and private sector players in the inner sanctums of governance, including non-State entities.

This is a particularly pressing mission for public authorities in light of the questions being raised over the preservation of national interests and the promotion of their respective legal systems. The development of cloud computing, which involves the concentration and remote storage of data, is a significant example here. The appeal of these distributed applications systems is considerable, but a country's massive transfer of its data outside its borders necessarily gives rise to the question of national digital sovereignty and the level of protection given to personal data.

It is in this context that we need to view the letter that data protection authorities from ten countries sent to the directors of Google, demanding that they comply with privacy protection laws, following the launch of *Buzz*, the company's new social networking service.

32 E.g. IETF ("Internet Engineering Task Force"), IAB ("Internet Architecture Board") or the W3C ("World Wide Web Consortium").

Conclusion and next steps

The significance that the internet has gained over the past several years in our economy and our society, and the central role that the neutral and open nature of the network plays in this development, help to explain why the Authority is working to ensure the neutrality of the electronic communications networks that converge onto the internet.

This goes by way, first, of a state of healthy competition in the internet access market. The Authority nevertheless believes that a dedicated approach needs to be adopted as well, which is mainly one of prevention as the identifiable threats lie more in practices that could develop, rather than current malfunctions in the marketplace.

The Authority's approach chiefly involves issuing recommendations and monitoring, in accordance with its current responsibilities. Should it prove necessary, this approach could later include more prescriptive measures which could be taken as part of new forms of action entrusted to ARCEP, particularly those resulting from the transposition of revised European directives.

1. Formulation and monitoring of recommendations to be implemented rapidly

Formulation of requirements concerning internet access

The Authority has specified principles of freedom of use, sufficiently high quality and non discrimination between data streams with which an internet access service, whether fixed or mobile, is inclined to comply. The Authority nevertheless recognizes the possibility of exceptions to these principles, provided that any possible deviations remain minor: it has therefore formulated five criteria that must be met by any traffic management techniques operators might employ in the supply of internet access.

Recognition of the interest of managed services

At the same time, the Authority recognizes the importance of managed services, and the substantial leeway operators should be afforded to provide them, alongside internet access, within a framework whose aim is to ensure that dedicated wholesale market solutions between ISPs and ISVs comply with competition regulation and any specific regulation that also applies.

Increased information for end users

The Authority has specified an obligation for ISPs to increase the information provided to end users on the features of their offers, as they pertain to the requirements listed above. In particular, any departure from the previously stated principles must be indicated explicitly, and the term "internet" must not be used to describe a service that employs traffic management techniques that do not satisfy the five stated criteria.

Authority monitoring of internet access requirements

On its own initiative and in accordance with its current responsibilities, the Authority will design and implement market monitoring instruments devoted in particular, first, to traffic management practices and quality of service, to be able to monitor compliance with internet access requirements and, second, to the data interconnection market, to come into position to anticipate and, if necessary, prevent any possible malfunctions.

2. Possibility of introducing more prescriptive measures if necessary

Subsequently, to ensure the widespread adoption of the stipulated standards and principles, or should these provisions ultimately prove insufficient for preventing an excessive degradation of the characteristics of internet access offers, or their scarcity – resulting either in offers with fewer features or in the sole existence of managed services – the Authority could rely on new lines of action introduced by the revised European directives, whose terms of application will be specified by the legislature when they come to be transposed into national law.

To begin with, the Authority could take the various principles explored in this document into consideration when called upon to settle disputes over the terms governing traffic routing, a procedure that has been extended to the relationship between an information society service vendor and an operator, and no longer only between two operators.

Second, once the transposition has been completed, the Authority could impose a minimum quality of service requirement on operators' internet access service.

3. Monitoring other dimensions of the principle of neutrality

At the same time, the Authority has expressed its views on the current situation and on the issues surrounding the various questions raised by internet neutrality, beyond the confines of electronic communications networks. In particular, it has formulated proposals on the role that ISVs have in upholding internet neutrality, on the one hand, and on increasing the neutrality of devices, on the other. ARCEP intends to continue to discuss these topics with the concerned parties.

• • •

The proposals contained in this document constitute an important stage: the completion of the period of discussion and consultation begun one year ago, and the start of a cycle of work and monitoring of internet companies' practices, which will take place in an open and concerted fashion, involving all of the market's stakeholders.

Appendix

Recap of the 10 proposals

A. Neutrality of internet access networks

Freedom and quality of internet access

1st PROPOSAL

ARCEP recommends that, in accordance with the legislative provisions that are in effect, ISPs marketing internet access be required to provide end users with:

- the ability to send and receive the content of their choice;
- the ability to use the services and run the applications of their choice;
- the ability to connect the hardware and use the programmes of their choice, provided they do not harm the network;
- a sufficiently high and transparent quality of service.

There may be exceptions to this principle, provided they comply with the guidelines set out in proposal no. 3.

Non discrimination between internet data streams

2nd PROPOSAL

On the matter of internet access, ARCEP recommends that, as a general rule, no differentiation be made between the way in which each individual data stream is treated, whether according to the type of content, the service, application, device or the address of the stream's origin or destination. This applies to all points along the network, including interconnection points.

There may be exceptions to this principle, provided they comply with the guidelines set out in proposal no. 3.

A framework to govern traffic management practices

3rd PROPOSAL

Marking exceptions to the principles stated in proposals nos. 1 and 2, and to limit any possible deviations from these principles, ARCEP recommends that when ISPs do employ traffic management techniques for ensuring access to the internet, that they comply with the general criteria of relevance, proportionality, efficiency, non-discrimination between parties and transparency.

Managed services

4th PROPOSAL

To maintain all of the players' capacity to innovate, all electronic communications operators must be able to market "managed services" alongside internet access, to both end users and information society service vendors (ISV), provided that the managed service does not degrade the quality of internet access below a certain satisfactory level, and that vendors act in accordance with existing competition laws and sector-specific regulation.

Increased transparency with respect to end users

5th PROPOSAL

ISPs must provide end users – in both their sales material and the contractual terms and conditions of their electronic communications services, and in the information that is available to the customers of these offers for the duration of their service contract – with clear, precise and relevant information on:

- the services and applications that can be accessed through these data services,
- their quality of service,
- their possible limitations,
- and any traffic management practices that might affect them.

To this end, ARCEP recommends in particular that:

- any restriction on a data transmission service that deviates from the principles of freedom of use and non-discrimination between data streams, stated in proposals nos. 1 and 2, be stipulated explicitly in the ISP's sales material and contractual clauses, in a clear and understandable fashion;
- the term "internet" cannot be used to qualify these services if certain of these restrictions do not meet the requirements of proposal no. 3;
- the term "unlimited" cannot be used to describe service offerings that include "fair use" type limitations that result in access being cut off temporarily or in extra billing for the services, or in an excessive degradation of access speeds or the quality of the service.

The Authority will initially request that ISPs and consumer association representatives work together to define common systems for providing end users with information on the limitations of the offers and their traffic management practices, and to submit their proposals on the matter to ARCEP by the end of Q1 2011.

Subsequently, should it prove necessary, the Authority could work in tandem with the General directorate for fair trade, consumer affairs and fraud control, DGCCRF, to complete these proposals.

Monitoring traffic management practices

6th PROPOSAL

ARCEP will ask ISPs and their representative associations, ISVs and their representative associations, as well as consumer associations to work together to identify and qualify the different types of traffic management practices, including "fair use" limitations associated with so-called "unlimited" offers, and to submit their proposals on the matter to ARCEP by the end of Q1 2011.

In the meantime, the Authority will monitor the evolution of the traffic management techniques that operators are employing, in particular to evaluate whether they comply with the criteria of relevance, proportionality, efficiency, non discrimination between parties and transparency.

Subsequently, should it prove necessary, the Authority could work in tandem with the DGCCRF to complete these proposals.

Monitoring the quality of the Internet access service

7th PROPOSAL

To ensure that the quality of the internet access service is both sufficiently high and transparent, ARCEP will work to:

- identify the main quality of service parameters for internet access and establish suitable indicators;
- require ISPs to publish these QoS indicators periodically for their retail data transmission services, particularly for internet access on both fixed and mobile networks.

This work will be performed in tandem with the DGCCRF, operators and their representative associations, ISVs and their representative associations, as well as consumer associations.

Monitoring the data interconnection market

8th PROPOSAL

ARCEP recommends:

- that parties providing end users with access to the internet grant, in an objective and non-discriminatory fashion, all reasonable requests for interconnection whose purpose is to provide these users with access to internet services or applications;
- that parties providing ISVs with access to the internet grant, in an objective and non-discriminatory fashion, all reasonable requests for interconnection whose purpose is to make these vendors' services or applications accessible to internet users.

To eradicate the lack of clarity that currently exists in data interconnection markets, and to obtain information that will be useful to exercising its powers, the Authority will be adopting a decision on the periodical collection of information on these markets, before the end of S1 2011.

Based in part on this information, the Authority will later assess whether it is necessary to implement more prescriptive regulatory measures in these markets.

B. Other dimensions of neutrality

Taking account of the ISV's role in internet neutrality

9th PROPOSAL

ARCEP underscores the fact that users' actual ability to exercise their freedom to choose between offers (services/applications/content) made available by ISVs over the internet implies that these vendors comply with:

- a principle of non-discrimination in the different operators' ability to access these offers;
- principles of objectivity and transparency with respect to users, in terms of the rules employed, in cases where the ISV selects and/or ranks content coming from third parties, which is notably the case with search engines.

The Authority invites the private- and public-sector parties concerned to take these issues into full consideration.

Increasing the neutrality of devices

10th PROPOSAL

As part of the upcoming review of the RTTE Directive, ARCEP recommends that the opportunity to complete this directive be examined, to take better account of developments in the devices market, particularly the growing importance of the software layers and interactions with ISVs.

The Authority invites the private- and public-sector parties concerned to take these issues into full consideration.