

September 2015

Net neutrality

The current regulatory framework

I. Introduction

Internet's development, particularly over the past two decades, has created ties between several billion human beings. The worldwide web has helped to free up trade, our ability to communicate with one another, and to share and gain access to knowledge and culture in ways that have profoundly transformed, and continue to transform, both society and the economy. It is now a shared asset whose proper operation over the long term is a vital issue for one and all. It is within this context that the notion of "net neutrality" first emerged.

Public debates over net neutrality have been ongoing for more than ten years, focusing essentially on the question of how much control internet operators can rightly exert over the traffic they relay. This has resulted in an examination of operators' traffic management practices, but also of their relationships with certain providers of content and applications.

The purpose of this document is to deliver a summary of the current regulatory framework, with a view to the implementation of Europe's regulation on the open internet and of the legal provisions being introduced at the national level in France.

For informational purposes, four fact sheets are included in the annex, describing the main points addressed by the new regulatory framework: traffic management, commercial practices, optimised services that are distinct from internet access and the quality of internet access services. Each of these fact sheets explains the underlying issues, and sets them in the context of the current situation in France. They then describe what will change as a result of the new European regulation.

II. The European regulation on the open Internet

Background to the debates, and early net neutrality regulations in Europe

The net neutrality debate began in the United States. Questions over discriminating against certain content and data throttling arose earlier in the American market, where there is less competition between internet service providers (ISP). US regulator, the Federal Communications Commission (FCC), provided an initial response to these questions by adopting the first *Open Internet Order* in 2010¹ – portions of which were subsequently vacated in 2014². In February 2015, a further regulatory response came with a new *Open Internet Order*³, which is currently being contested the US Federal Court in Washington, D.C.

In Europe, the 2009 review of the Telecoms Package ushered in the first provisions pertaining to net neutrality: calling for increased transparency, giving regulators the power of last resort, etc. Since then, a variety of net neutrality initiatives have been undertaken in the different Member States.

A form of soft law was developed in France. As a result, ARCEP – to which the Law assigned new regulatory objectives subsequent to the transposition of the third Telecoms Package (Article L. 32-1

¹ Open Internet order of 2010 : https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-201A1_Rcd.pdf

² Ruling vacating portions of the Open Internet Order, following Verizon v. the FCC : [http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/\\$file/11-1355-1474943.pdf](http://www.cadc.uscourts.gov/internet/opinions.nsf/3AF8B4D938CDEEA685257C6000532062/$file/11-1355-1474943.pdf)

³ New Open Internet Order of 2015 : https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-24A1.pdf

of the French Postal and Electronic Communications Code, CPCE⁴) – issued a series of recommendations for ISPs in 2010 and in 2012. A Parliamentary report by deputies Corinne Erhel and Laure de la Raudière⁵, which concluded with concrete proposals for legislative provisions, also recommended that net neutrality become a political objective in France, as did the *Conseil national du numérique*⁶.

In the same vein, stakeholders in the UK adopted a voluntary code of practice⁷, whereas the Netherlands and Slovenia chose instead to adopt dedicated laws to protect net neutrality, explicitly prohibiting ISPs from engaging in certain practices.

Because no single, harmonised approach to net neutrality had been adopted across the whole of Europe, the European Commission proposed a set of regulations that include provisions on net neutrality.

Roadmap for drafting and adopting the European regulation

On 11 September 2013, the European Commission published its draft regulation which lays down measures concerning the European single market for electronic communications and to achieve a “Connected Continent”⁸. Back then, this proposal addressed a wide variety of issues.

On 3 April 2014, the European Parliament adopted the draft regulation after a lengthy series of debates, and after making a number of amendments. As adopted by the European Parliament, the proposed regulation was then examined by the Council of the European Union. Negotiations within the Council resulted in a text whose scope was restricted to net neutrality and roaming, as no consensus could be reached on the other topics covered in the initial draft. On 30 June 2015, representatives of the European Parliament, the Council and the European Commission reached a political agreement on the draft regulation, whose title had since been modified⁹.

This draft regulation has been finally adopted on 27 October 2015.

Highlights of the new European regulation

- The text introduces **the guiding principles of open Internet access and net neutrality** into European legislation for the first time: on the one hand, equal and non-discriminatory

⁴ In particular, ARCEP must ensure “that no discrimination exists, under analogous circumstances, in the relationship between the operators and providers of publicly available online electronic communication services in traffic routing and access to these service” and “end users’ ability to access and distribute information, and to access the applications and services of their choice” (Para. III, Items 3 and 6 of Article L. 32-1).

⁵ Parliamentary report logged on 13 April 2011: <http://www.assemblee-nationale.fr/13/rap-info/i3336.asp>

⁶ French Digital Council Opinion on net neutrality No. 2013-1 of 1 March 2013 <http://www.cnnumerique.fr/wp-content/uploads/2013/03/130311-avis-net-neutralite-VFINALE.pdf>

⁷ Open Internet Code of Practice: <http://www.broadbanduk.org/wp-content/uploads/2015/07/BSG-Open-Internet-Code-of-Practice-amended-November-2014.pdf>

⁸ Proposal for a Regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending directives 2002/20/CE, 2002/21/CE and 2002/22/CE and regulations (EC) No. 1211/2009 and (EU) No. 531/2012.

⁹ Position of the Council laying down measures concerning open internet access and amending Directive 2002/22/EC and Regulation (EU) No 531/2012 on roaming on public mobile communications networks

treatment of internet traffic and, on the other, all end users' (i.e. consumers and content providers) right to distribute and to access the information and content of their choice.

- **Reasonable traffic management by ISPs is acceptable in only a limited number of circumstances, and must not be based on commercial considerations.**
- **ISPs are prohibited from degrading or blocking traffic (or certain categories of traffic), except under clearly defined circumstances.** These practices are justifiable in only a small number of instances: to comply with court orders, to protect the integrity or security of the network, or to prevent impending network congestion, that occurs temporarily and under exceptional circumstances – cf. fact sheet No. 1.
- In addition to providing internet access, **ISPs can offer services that need to be transmitted in an optimised fashion to meet certain specific requirements**, provided that these practices do not have a negative impact on the availability or general quality of internet access services – cf. fact sheets Nos. 1 and 3.
- **ISPs' commercial practices are now subject to scrutiny, notably their promotion of bundled online services.** The national regulator has the right to monitor the features of these products – cf. fact sheet No. 2.
- **Operators are subject to strengthened transparency obligations.** These pertain in particular to providing more detailed information in customers' contracts: the possible impact of traffic management techniques used by the ISPs, the concrete impact of the (traffic, speed, etc.) caps or allowances attached to the plan, information on connection speeds, etc. – cf. fact sheet No. 4 for more information about quality of service.

What happens next

The regulation will come into effect on 30 April 2016.

Within nine months of the regulation entering into force, the Body of European Regulators for Electronic Communications (BEREC) must "*issue guidelines for the implementation of the obligations of national regulatory authorities under [Article 5.3 of the regulation],*" to set out the concrete implementing procedures for the regulation. The guidelines will ensure that the principles contained in the regulation are implemented in a harmonious way across the European Union.

III. Actions being taken by ARCEP

ARCEP was one of the first national regulatory authorities to engage in substantial work on net neutrality, by tackling the issue early on.

Following a public debate and a series of interviews and hearings held over the course of 2009, the Authority began an in-depth examination of the topic. In September 2010, ARCEP published 10 recommendations that were largely followed by market stakeholders: on the freedom and quality of internet access, non-discrimination of traffic, supervision of traffic management, increased transparency with respect to end users, monitoring of the data interconnection market, a call to take into consideration the role of content providers and for increasingly technology-neutral devices. An interim impact report on these recommendations was produced in 2012.

In a continuation of this work, ARCEP's actions with regard to net neutrality rely on several ongoing mechanisms that allow the Authority to maintain a good understanding of the market, and to anticipate possible future challenges to the principles of net neutrality. These include regular scorecards on the quality of mobile services (which have included indicators on the mobile internet since 2006), on the quality of fixed internet access services since 2014, questionnaires on traffic management for ISPs, as well as twice-yearly information gathering campaigns on IP interconnection data since 2012.

When the Telecoms Package of 2009 was transposed into national law, ARCEP was given increased powers in the area of net neutrality. As a result, the Authority can be called upon by one of the parties to settle a dispute over the terms of traffic transmission, between two operators or between an operator and a content provider. Moreover, to prevent the degradation of a service, and the obstruction or slowing of network traffic, the Electronic Communications and Postal Regulatory Authority could be forced to impose minimum quality of service requirements.

ARCEP is also contributing actively to the work being done by BEREC, as much on the issues of transparency and consumer information as on the supervision of traffic management practices, which include Traffic management investigation (TMI) reports, and quality of service measurements.

IV. Draft legislation on the “digital republic” and the new national regulatory framework

Because of the nature of European regulation, its provisions apply directly in each Member State and do not require their transposition into national law. However, national legal provisions are needed to define the institutional framework for net neutrality, and to ensure compliance in France. These provisions are to be proposed by the Government in the draft legislation on the “digital republic”.

Thanks to the implementation of the regulation and to national provisions, ARCEP's actions in support of net neutrality will be strengthened in several respects, as the flexible laws that have applied up until now will be replaced by a more restrictive framework for operators.

In the near future, ARCEP will participate in drafting the above-mentioned BEREC guidelines. Further down the road, the Authority will be responsible for ensuring that the regulatory provisions are implemented. And particularly:

- **the supervision of internet traffic management practices** as, to be acceptable, these practices must satisfy several criteria, which the regulator will be responsible for verifying – cf. fact sheet No. 1;
- **supervision of optimised services**, which are distinct from internet access – cf. fact sheet No. 3;
- **monitoring some of ISPs' commercial practices**: the regulator will be required to examine internet access products that promote certain features or services (*bundling, zero-rating, etc.*) to verify that they do not unduly limit end users' choices, notably as to the respective market positions of ISPs and the affected content, application and service providers – cf. fact sheet No. 2.

Fact sheet No. 1: Traffic management

What you need to know

The Internet operates essentially on what is referred to as a “best-effort” model for routing traffic. The quality of data transmission is not guaranteed: it depends directly on network dimensioning and traffic during peak times. All information streams are treated equally, with no distinction being made based on the nature of the traffic, its sender or recipient.

Traffic management, on the other hand, consists of operators giving differentiated treatment to a portion of the traffic transported over the networks, for instance by prioritising certain streams or slowing down others, and possibly even completely blocking certain types of traffic.

Some of the motives for managing traffic do seem legitimate, for instance to comply with a court order or a legal obligation, to guarantee the network’s security and integrity, or to solve a temporary and unforeseeable case of network congestion.

Some traffic management practices can, on the contrary, prevent or limit innovation or freedom of expression, and even stem from discrimination, notably when the aim is to penalise or block competing content (in the case of an integrated supplier which is both a network operator and a content provider). As such, the ability to differentiate between types of traffic through the use of recent technologies is indeed raising concerns, and may justify placing limitations on their use.

What we are witnessing in the French market

Because of these above-mentioned risks, ARCEP is closely following operators’ practices in France, through field studies, questionnaires sent to the operators¹ and regular interaction with the sector’s stakeholders. This supervision could be strengthened following the adoption of the regulation referred to in this document.

Presently, it appears that the main traffic management practices on fixed networks in France concern two optimised services (see Fact sheet No. 3 for more details): voice over broadband and live TV. By and large, these practices have a positive impact on internet traffic routing performances. Voice over broadband calling accounts for only a very small proportion of network traffic, while live television is being multicast to avoid multiple identical streams being transmitted to several users at once, which therefore saves on available capacity.

Traffic management practices on mobile networks appear more diversified. We are nevertheless observing a gradual reduction in their use since the ARCEP recommendations of 2010, reiterated and detailed in its 2012 report. In particular, the practice of blocking VoIP applications (such as Skype, WhatsApp, etc.), tethering (where a mobile handset serves as modem for another device) or peer-to-peer file sharing applications has become increasingly rare.

What the European regulation on open internet will change

¹ Operator Free chose not to respond to the exploratory questionnaire it received from ARCEP in 2015.

The European regulation introduces a **strong principle**: Providers of internet services shall treat all traffic equally, without discrimination, regardless of the sender and receiver, the content, or the terminal equipment used. *[Article 3.3, para. 1]*.

It also allows ISPs to engage, under certain conditions, in:

- **traffic management practices** that can be proven to be reasonable: internet service providers must be able to establish that those practices are transparent, proportionate and non-discriminatory, that they are based on objective requirements, not on commercial considerations *[Article 3.3, para. 2]* ;
- practices that block or degrade the transmission of a service, or a type of service, but only under three clearly defined circumstances: to comply with a legal decision or court order, to preserve network security, or to mitigate temporary and exceptional network congestion *[Article 3.3, para. 3]* ; and
- the supply of **optimised services**, under the terms and conditions detailed in Fact sheet No. 3 *[Article 3.5]*.

The regulation gives national regulatory authorities (NRA) the task of supervising these practices, inventorying them and assessing their impact on the quality of internet access services *[Article 5]*. It also introduces a procedure for end-users wanting to file a complaint with their operator *[Article 4.4]*.

The scope of the above-mentioned provisions could be set in out greater detail in the **guidelines** that BEREC will be publishing nine months after the date of entry into force of the Regulation *[Article 5.3]*.

Fact sheet No. 2: New commercial practices

What you need to know

Some of internet service providers' (ISP) commercial practices were widely debated during recent European regulatory negotiations, as they are indeed capable of undermining the principle of net neutrality.

The practices under scrutiny are:

- **bundling**, which consists of packaging an internet access plan with one or several content services, in exchange for a reduced subscription price, or possibly obtaining one of the services for free, with no special traffic treatment from a technical standpoint.
- **zero-rating**, which consists of giving preferential treatment to the traffic generated by one or several content services, by not deducting this traffic from the customer's data plan allowance (when applicable) or by not applying the same delivery or pricing "penalties" once the customer's traffic allowance has been reached.
- **sponsored data**, which consists of not charging for (or of not deducting from the customer's data plan allowance) the traffic associated with one or several content services, as the corresponding costs are shouldered by the provider of that content, based on a freephone number model¹. This model applies by default to all of the operator's access offers, unlike the previous two practices which apply only to certain specific access offers.

What we are witnessing in the French market

In the course of its supervision of operators' practices, ARCEP has observed that sponsored data has not yet appeared in the French market, unlike bundling and zero-rating – both of which are used as selling points for certain mobile plans.

Bundling is used, for instance, in the Power and Premium mobile plans marketed by SFR, whose customers can choose between a free subscription to CanalPlay, Coyote, Napster, L'Equipe, SFR Jeux or LeKiosk, and the high-end plans sold by Bouygues Telecom, whose customers can choose between a free subscription to Spotify, CanalPlay, Gameloft or B.TV.

We find zero-rating applied, for instance, in mobile plans with unlimited access to a cloud storage solution – e.g.: B. Cloud for Bouygues Telecom, LeCloud for Orange – or unlimited access to certain audiovisual services, e.g.: unlimited B.TV for Bouygues Telecom or, previously, unlimited YouTube for SFR Red customers.

¹ Special freephone numbers, starting with 0800 to 0805

What the European regulation on open internet will change

Europe's newly adopted regulation aims to frame the technical and commercial terms and conditions contained in the agreements between ISPs and end users, as well as the features of internet access plans, such as price, data allowances and connection speeds. In particular, it forbids ISPs from limiting end users' right to send and receive the information and content of their choice, or from materially reducing their freedom of choice. Here, it tasks national regulatory authorities (NRA) with intervening when ISPs fail to do so, while giving them a certain leeway in the criteria used to assess the instances in question *[Article 3.2]*.

The scope of the above-mentioned provisions could be set in out greater detail in the BEREC guidelines *[Article 5.3]*.

Fact sheet No. 3: Optimised services, other than internet access services

What you need to know

Optimised services, which are sometimes referred to as managed services or specialised services, are services delivered over the internet, but which are distinct from internet access services, and which need to be transmitted in an optimised fashion to operate properly, regardless of the load on the network. This need for optimised transmission might include a strong technical need for immediacy, and can pertain to various performance criteria such as connection speed, latency, jitter or packet loss.

The best known optimised services are **Voice over broadband**¹, **IPTV** and certain **virtual private network (VPN)** services which can be used to interconnect a company's different sites.

In future, a certain number of emerging applications with high economic and social potential could be used to supply optimised services, notably in the area of telemedicine, the Internet of Things, etc.

What we are witnessing in the French market

In France, optimised services constitute a very common part of the bundles sold by the leading internet service providers (ISP). According to ARCEP's annual observatory of electronic communications markets, at the end of 2014, there were:

Base (end of 2014)	
Internet access services	26.0 million
Optimised services	
- Telephone	24.8 million (number of channels)
- Television	15.4 million

As far as ARCEP is able to ascertain, ISPs do not currently employ optimised traffic transmission for other popular services such as cloud computing and video on demand (VOD).

What the European regulation on open internet will change

As explained in Fact sheet No. 1, European regulation authorises ISPs, on the one hand, to employ reasonable traffic management practices and, on the other, to provide optimised services.

¹ Managed by a carrier, as opposed to VoIP applications and services such as Skype, WhatsApp, etc.

The regulation does not define optimised services explicitly, nor does it provide a whitelist of services, to avoid the rules being circumvented. Strictly speaking, they are defined as “services other than internet access services” which are optimised and whose optimisation must be objectively necessary to meet service requirements for specific levels of quality [Article 3.5, para. 1].

The regulation also sets out specific safeguards with respect to optimised services. In particular, they must not be provided to the detriment of the availability or general quality of internet access services for end-users. And they cannot be a substitute to internet access services [Article 3.5, para. 2].

The scope of the above-mentioned provisions could be set in out greater detail in the BEREC guidelines [Article 5.3].

Fact sheet No. 4: Quality of internet access

What you need to know

Quality may be defined as, “*the standard of something as measured against other things of a similar kind*”¹. When speaking of the quality of a service rendered, a distinction is drawn between the notion of **quality of experience** (QoE), which refers to the customer’s perception of the quality, and **quality of service** (QoS) which refers to more objective, but potentially more abstract measures of performance. When quality of experience is hard to quantify, we turn by default to quality of service indicators that are considered sufficiently revealing of the customer experience.

Quantifying the overall quality of a fixed or mobile internet access service is a complex exercise. It involves multiple, largely independent dimensions, such as the quality of customer relations, of customer service, of the hardware and user interfaces, service set-up and repair times, as well as technical considerations such as traffic transmission performances.

Technical performance also depends on a number of factors, some of which are either partially or fully beyond the internet service provider’s control, such as:

- on mobile networks: the terminal equipment being employed, the applications being used, electromagnetic interference, number of simultaneous users in a cell, etc.
- on fixed networks: the terminal equipment being employed, the length of the access line (signal loss), electromagnetic interference, the interconnection capacities deployed, etc.

Certain objective indicators make it possible to qualify the user experience in a relevant and relatively summary fashion. These include “simple” indicators such as upload and download speeds² and latency³, along with composite indicators (i.e. with several variables) such as the average time it takes to open a webpage, or viewing quality when streaming a video.

What we are witnessing in the French market

There are several freely available websites that allow users to perform individual tests, or to view aggregate test results: Speedtest⁴, 4GMark⁵, Sensorly⁶, etc. There are also several sites that publish data that allow users to compare ISPs’ performances: Netflix⁷, Grenouille⁸, etc. There nevertheless appear to be sizeable disparities between the testing methodologies used by the different sites, which can result in explainable but significant discrepancies in their results. This illustrates why it is difficult to obtain irrefutable, succinct QoS indicators.

¹ Oxforddictionaries.com

² Also referred to as throughput, and typically expressed in Mbit/s

³ Or lag time, typically expressed in the number of milliseconds (ms) it takes for packets to be relayed between the customer and the server

⁴ <http://www.speedtest.net/fr/>

⁵ <http://www.4gmark.com/>

⁶ <http://fr.sensorly.com/>

⁷ <http://ispspeedindex.netflix.com/country/france/>

⁸ <http://www.grenouille.com/>

This is why ARCEP – which is working to improve the information available to users – concluded that it would be advisable to create its own quality of service testing tools and benchmarks for measuring the quality of fixed and mobile internet access services⁹. To this end, it worked with the sector's stakeholders to establish testing methodologies that were as robust and transparent as possible. ARCEP evaluates and enhances these methodologies on a regular basis.

What the European regulation on open internet will change

European regulation tasks national regulatory authorities (NRA) with promoting the permanent availability of non-discriminatory internet access services, with QoS levels that keep pace with technological progress. It confirms and specifies their power to impose minimum quality of service requirements on one or several ISPs, and any other adequate and necessary measures to achieve this objective. NRAs must prepare and submit an annual report to the European Commission and to the Body of European Regulators for Electronic Communications (BEREC) which contains the findings of their work in this area *[Article 5.1]*.

The regulation also strengthens transparency obligations imposed on ISPs with respect to the regulator and to their customers. ISPs are thus required:

- to provide the regulator, upon request and within a timeline set by the NRA, all information pertaining to the management of their network and the methods used for delivering traffic, along with justifications of any traffic management measures they take *[Article 5.2]*;
- to improve the information contained in customer agreements: the possible impact of traffic management techniques used by the ISP, the concrete impact of the (traffic, speed, etc.) caps or allowances attached to the plan, information on connection speeds. A significant gap between advertised performance and actual performance constitutes non-compliant performance under the means of recourse available to the consumer *[Article 4.1]*.

The scope of the above-mentioned provisions could be set in out greater detail in the BEREC guidelines *[Article 5.3]*.

⁹ Report on the quality of fixed internet access services, published in May 2015: http://www.arcep.fr/uploads/tx_gspublication/QoS-internet-semester2_2014-mai2015.pdf

Report on the quality of mobile internet access services, published in July 2015: <http://www.arcep.fr/index.php?id=12849>