committed to Europe

ensuring an open internet for all

Internet has transformed the way people communicate, work and live by enabling a growing range of new services; more and more people go online for shopping, banking, information and entertainment, a trend that will continue to increase with the internet-of-things. It has opened up great opportunities in education, culture, communication, social interaction, as well as enabling advancements in science and technology and more broadly encouraging freedom of expression and media plurality.
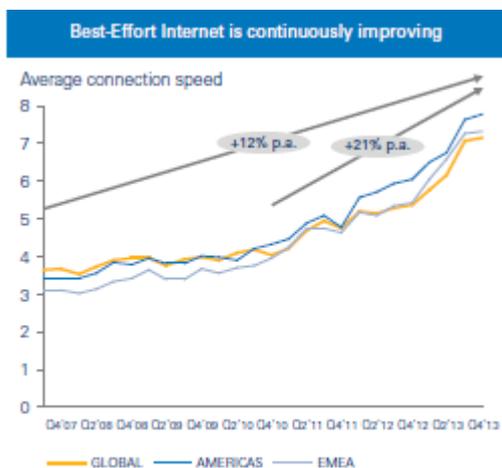
Preserving the openness of internet, in the sense everybody should be entitled to distribute and access the content, services, apps of his/her choice, is therefore essential. This relates to network neutrality but also to the internet openness in its entirety. While reminding the key factors for network neutrality, the present paper will also show the need to adopt a holistic approach on this complex issue.

internet success relies on efficiently managed networks

The constant growth in the use of the internet creates a challenge for network operators in order to meet demand. They do so by investing in new capacities and by managing existing capacity.

The internet needs continuous networks upgrades.

The internet owes much of its success to the wide availability of broadband. However, the tremendous increase of traffic, especially with growing video services, pushes for ever higher demand in terms of speeds and capacity in networks. To cope with this, European operators continuously invest in new capacities, despite a difficult environment and shrinking revenues. According to the ETNO economic report 2014, telecom operators in Europe invested €46.7bn in 2013; of this €26.3bn were channeled to fixed networks and €20.4bn to mobile infrastructures.

Best-Effort Internet is continuously improving

Average connection speed

+12% p.a. +21% p.a.

GLOBAL   AMERICAS   EMEA

These efforts improve the general quality of services provided, including the access to the internet, as showed in this graph on "best effort" (source: Arthur D Little study May 2014 – the Future of the Internet). However, only a more investment-friendly framework would allow and support the significant investments that Europe needs in new networks.

orange

networks require traffic management to work properly and deliver the best experience to end users.

Even if network upgrades could meet the continuous need for greater capacity, it is inevitably rapidly exploited by new services – jump from TV to UHD TV for example. Consequently the need for operational support called 'traffic management' will never go away. Investments in increased capacity and traffic management are complementary tools to ensure the best possible customer experience.

Traffic management is necessary for operators to operate their network on a permanent basis (e.g. to orient traffic depending notably on the current performances of different routes), to prevent congestion, to effectively protect the security and integrity of networks, to restrict the transmission of unsolicited communication to consumers (e.g. spam) or to give effect to a legislative provision or court order (e.g. child protection).

end users can have various types of services over a single access network.

An efficiently managed single access network allows the smooth co-existence of:

1. access to the internet content, application or services, provided over IP protocol, with no guarantee in terms of quality, also often named "best effort".

The network and the services are both agnostic and there is no "built-in" guarantee that data is delivered or that a user is given a guaranteed quality of service or a certain priority. Users obtain unspecified variable bit rate and delivery time, depending on the current traffic load. This is somehow similar to postal services; a sender usually cannot be certain that a letter was delivered or how long it will take. As highlighted by BEREC (Dec. 2012 - summary positions on net neutrality), this specificity is a driver for innovation, in the sense that innovative services can be developed without taking into account network constraints.

Differentiated internet access offers

Operators develop a rich portfolio of internet access offers based on speed, volumes or other characteristics to meet various customer needs. Among those, some markets see positive price discrimination offers, also named "zero rating" offers, whereby data packets relating to a specific service (e.g. a music or video streaming service, or a social networking application) do not count against any usage allowance that forms part of an end user's Internet access service. These offers are also a market response to customers' demand for transparency and cost control. As long as other types of offers remain available, consumers should not be prevented from benefiting from such offers.

2. other services with a guaranteed quality – often named managed or specialized services.

This category encompasses conventional services such as IPTV, video on demand, future mobile voice over 4G, virtual private networks for business customers but also innovative services such as remote care or secure home solutions. They are characterised by specific requirements in terms of performance (e.g. time sensitive service), interoperability or reliability. With all services moving to IP-only networks, operators have to ensure that these characteristics remain guaranteed, calling for traffic management.

Co-existence of these two categories of services in a single access network is beneficial to all:
– the demand for specialized services calls for investments in new capacity, which *in fine* is also advantageous for internet access services;
– running specialized services requires a more efficient utilization of networks, minimising traffic loads on networks and improving the quality of the internet access over the same infrastructure;
– a dynamic allocation of capacity between the two categories of services improves the overall customer experience; on the contrary, imposing a dedicated fixed capacity to some services would freeze such capacity even when these services would not be used by the customer; for instance, when IPTV is switched off, its capacity would not be available for internet access services.

best tools to guarantee network neutrality

The debate over net neutrality has mainly focused on operators using traffic management in a way which could be anti-competitive or hindering innovation, and on the impact of specialized services on internet access services. Considering the importance of the internet today, these concerns are comprehensible, even though there is little record of this happening. In any case, as the European Union already benefits from relevant safeguards, any new European initiative should be balanced and future proof.

<u>in Europe, network neutrality is already governed by competition and legislative provisions.</u>

Competition combined with transparency and switching rules imposed on operators are the best safeguards for network neutrality, as already highlighted by BEREC. In the European Union, broadband markets are characterised by strong competition and any degradation of services can lead to immediate consumers' reactions; "voting with their feet" they can switch providers, not to mention for the operators the negative impact on brand and revenues. Moreover, the fact that services over the internet have developed very successfully in Europe, even when they were competing with similar services offered by the operators, also suggests that concerns of anticompetitive behavior from operators' side are overstated; for instance, WhatsApp competes with operators' messaging services and nonetheless gained more than 400M users worldwide between April 2013 and August 2014, many of them in Europe.

Last but not least, the electronic communications framework already includes relevant rules on net neutrality. They give regulators a clear objective to safeguard net neutrality and empower them to adopt rules to preserve a minimum quality of services. They also impose operators to comply with transparency measures. Many regulators have either adopted specific measures, like in France, or monitored the development of self-regulatory measures like in the UK.

<u>any new initiative should be proportionate, simple and future proof, and be consistent at European level.</u>

To avoid a patchwork of national legislations and ensure European harmonisation, any new measure should be taken at European level. In addition, in the fast moving environment of digital technologies, regulating network neutrality requires to avoid three major risks: adopting rules that would become quickly obsolete, that would pick the winner and/or second guess innovation, which should be for the market to decide.

To tackle these constraints, the best way forward appears to adopt a set of high level principles preserving network neutrality while allowing operators to efficiently operate their network and to innovate on services. Any legislative text should focus on the outcomes, rather than to over-specify technical inputs.

While traffic management practices could be framed by principles such as transparency, proportionality or non-discrimination, it is equally important to acknowledge the necessity of those practices for a smooth network functioning. Finally, even if it may be appealing to call for all bits of traffic to be equal, this "equality" is not compatible with the way networks function. Traffic is indeed oriented diversely by routers, their function being precisely to route packets differently (i.e. not equally) depending on packets characteristics (first of all their destination) and information received on network availability or congestion. Interpreted too literally, a strict principle of net neutrality would conflict with the goals of network operation, lowering efficiency, security, and increasing congestion.

<u>Let us not forget the bigger picture.</u>

The tremendous traffic increase on networks also puts a strain on the relationships between operators and big content providers who interconnect with each other to convey the traffic. While interconnections were mainly symmetric in the past decades and so, were based on peering – free exchange of similar amount of volumes between peers – the growing asymmetric level of traffic, mainly due to the download of video

content from big content providers to network operators, create tensions.

According to the AD Little study – the Future of the Internet – May 2014 "*access networks experienced significant imbalances (in the order of 5 to 1) on average between incoming and outgoing traffic just because the nature of traffic today is media related and streaming, and therefore mainly flows one way from content providers to end users.*"
http://www.adlittle.com/downloads/tx_adlreports/ADL_LibertyGlobal_2014_FutureOfTheInternet.pdf

The question now at stake is whether operators and consumers have to be the only contributors to an efficient use of networks and to the investments required to support the traffic increase, or whether large – mainly non-European - internet players should also join the effort. In this competitive environment, this is for the market to bring solutions, by finding new balance and business models. In any case, it is important that the negotiating positions of players be not unduly impacted by a new legislative measure. In that sense, very strict rules on traffic management in the European Union, that unload the entire responsibility on the European network operators side, can negatively impact their position when they have to negotiate interconnection agreements at global level.

guaranteeing internet openness requires looking beyond network neutrality

For protection to be consistent, neutrality should not be limited to networks and should also apply to all actors of the internet. Openness and transparency are required over the entire value chain - app stores, smart phones or tablets, as well as browsers and operating systems - not to mention search engines.

There is in an increasing awareness in the public and across the European institutions that the true challenges to digital neutrality do not stem from the behaviour of network access operators; this is showed for instance by the ongoing competition investigations notably on search engines, recent studies highlighting the need to preserve openness of internet platforms – reports by the French "Conseil National du Numérique"[1] or the French higher administrative court, Conseil d'Etat[2] - or the recent European Parliament motion for resolution on the Digital single market[3].

Only a holistic approach of the entire internet value chain could guarantee an open internet in the European Union, which the Commission has still to initiate in the context of a thorough review of the regulation applied to digital services. Only this could ensure that any digital service (voice, messages, video, search, etc.) complies with common European rules on transparency, openness, interoperability or switching.

[1] http://www.cnnumerique.fr/wp-content/uploads/2014/06/PlatformNeutrality_VA.pdf
[2] http://www.conseil-etat.fr/content/download/33163/287555/version/1/file/Digital%20technology%20and%20fundamental%20rights%20and%20freedoms.pdf
[3] http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P8-TA-2014-0071&language=EN&ring=B8-2014-0286