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Net neutrality and audiovisual services

van Eijk, N.

Publication date

2011

Document Version

Final published version

Published in

Why discuss network neutrality?

[Link to publication](#)

Citation for published version (APA):

van Eijk, N. (2011). Net neutrality and audiovisual services. In S. Nikoltchev (Ed.), *Why discuss network neutrality?* (pp. 7-19). (IRIS plus; No. 2011-5). European Audiovisual Observatory. http://www.obs.coe.int/oea_publ/iris/iris_plus/iplus5LA_2011.pdf.en

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Why Discuss Network Neutrality?

The following article:

Net Neutrality and Audiovisual Services

by Nico van Eijk

is an extract from the publication IRIS *plus* 2011-5
"Why Discuss Network Neutrality?".

The entire publication as a printed version can be purchased
from the European Audiovisual Observatory.

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IRIS *plus* series
IRIS *plus* 2011-5

Foreword

The freedom to receive and impart information is guaranteed by Article 10 of the Convention for the Protection of Human Rights and Fundamental Freedoms of the Council of Europe. As is the case for exercising other fundamental freedoms, the mere recognition of the freedom of expression does not mean that citizens are in a position to enjoy it. For that to happen, they need to be able to communicate with each other, which in the modern world can be made possible through a wide array of communications outlets including the Internet. The European Audiovisual Observatory examines questions related to the exercise of freedom of expression regarding their importance for audiovisual media. In the context of the Internet, this means, for example, looking at the many audiovisual media services that use broadband capacity to reach the consumer or, conversely, at the content that Internet users self-generate and post on Internet platforms. Obviously, the receiving or imparting of content offered by or to audiovisual media services via the Internet presupposes access to communication networks. Whenever such access is restricted we will find somebody to diagnose an impact on the exercise of freedom of expression. Whether this diagnosis is correct and, if this were to be the case, whether the impact qualifies as undue interference with the freedom of expression is one question discussed under the notion of “network neutrality”. It is the very issue looming in the background of this *IRIS plus*.

Yet it is not the only question addressed by this publication. The Lead Article, in particular, focuses on the technical and economic aspects of net neutrality as well as on where legislatures (European and national) stand with regard to ensuring this neutrality. The potential interests (and power) of communication network providers to facilitate or hinder access to communications networks is only one among many shifting parameters that the process of convergence has brought into the interplay between communications and audiovisual media services. Vertically operating telcos or platform providers supply competing services and dispose of more means (such as controlling applications and selection systems) to influence the value chain, as the Lead Article points out. That companies compete does, however, not necessarily imply that they apply restricting measures in pursuance of (illegitimate) business considerations. Limiting access to networks might simply be technically required because of an over-demand for existing capacity. But even when access restrictions merely respond to scarcity, net neutrality remains an issue because restricting measures have the potential to discriminate. Therefore the restraints of limited network capacity should be passed on to potential users in a way that does not amount to an anticompetitive measure or unfair business practice.

The Related Reporting-section of this IRIS *plus* supplies additional information related to principles for the regulation of net neutrality and reports on recent efforts towards extending broadband capacity to avoid or at least reduce scarcity. The amended EU regulatory framework for electronic communications gives member states the opportunity to deal with aspects of network management. In April this year, the European Commission fueled the discussion about network neutrality by releasing its Communication on the open Internet on net neutrality in Europe where it concludes that the Commission “will assess the need for more stringent measures”. The question of whether net neutrality needs regulation has already been answered in the US, the country where one might say the issue of “net neutrality” originated. The Federal Communications Commission (FCC) already engages in regulation and hence, the US discussion centers around whether what the FCC has done corresponds to actual needs and its legal mandate. This more advanced US discussion is explained in the Zoom section and it may turn into a European toolkit for potential solutions at this side of the Atlantic.

Strasbourg, September 2011

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Net Neutrality and Audiovisual Services

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Net neutrality is high on the European agenda. New regulations for the communication sector provide a legal framework for net neutrality and need to be implemented on both a European and a national level. The key element is not just about blocking or slowing down traffic across communication networks: the control over the distribution of audiovisual services constitutes a vital part of the problem. In this contribution, the phenomenon of net neutrality is described first. Next, the European and American contexts are dealt with. The impact for audiovisual services is sketched in the analysis, including the question of whether net neutrality is a new phenomenon and whether parallels can be drawn with previous issues. In the conclusion, we refer to the necessity of seeing net neutrality as a value chain issue. In addition, existing and future regulatory intervention needs to take a more concrete approach to net neutrality.

I. Introduction

1. Net Neutrality: Definition

Discussions about net neutrality in current regulations and policy-making are focussed primarily on net neutrality on the Internet. This is also how the topic landed on the agenda. As mentioned by other authors before, it was Tim Wu who put the subject on the agenda in 2003 with his paper *Network Neutrality, Broadband Discrimination*.² He described net neutrality as “an Internet that does not favour one application (say, the World Wide Web) over others (say, e-mail).” For audiovisual services this would imply the unhindered delivery of, for example, a web-based Video on Demand (VOD) service to consumers. Little by little, net neutrality found its way onto the political agenda as well, first in the United States, later on in Europe. In 2005, the American telecommunications and media regulator FCC (Federal Communications Commission) issued its Internet Policy Statement,³ which included four principles with respect to network neutrality: (1) consumers are entitled to access the lawful Internet content of their choice, (2) consumers are entitled to run applications and use services of their choice, subject to the needs of law enforcement, (3) consumers are entitled to connect their choice of legal devices that do not harm

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2) T. Wu, *Network Neutrality, Broadband Discrimination*, 2 J. on Telecomm. and High Tech. L. 141, 2003. (http://www.jthtl.org/content/articles/V2I1/JTHTLv2i1_Wu.PDF; also: <http://ssrn.com/abstract=388863>).

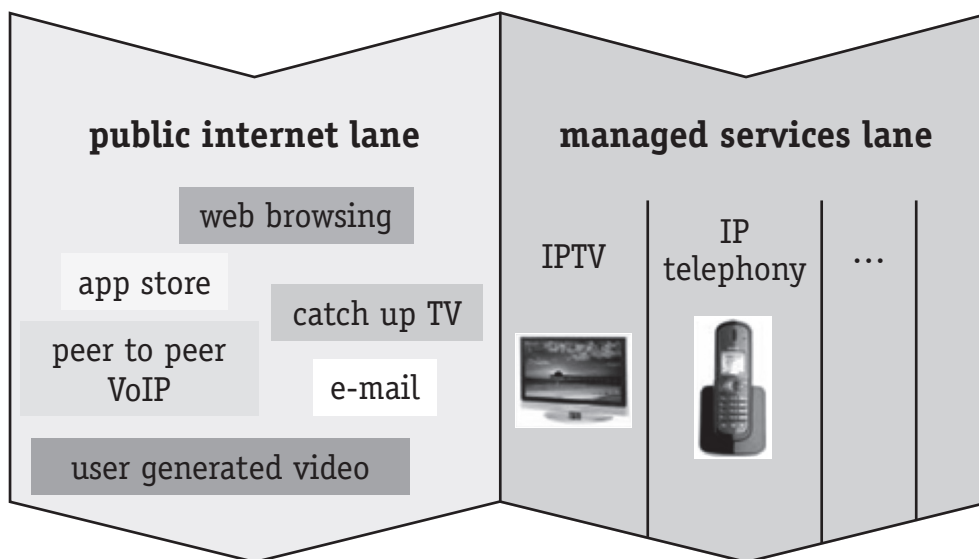
3) FCC Policy Statement on Network Neutrality FCC 05-151, adopted 5 August 2005.

the network and (4) consumers are entitled to competition among network providers, application and service providers, and content providers. The current FCC chairman, Julius Genachowski, added two further principles: non-discrimination and transparency.⁴ These six principles more or less form the core of the net neutrality debate.

2. Technology

In principle, net neutrality is network-neutral. The call for net neutrality is not restricted to certain fixed or wireless networks, thus lending the subject a high impact. For audiovisual services net neutrality is essential. These services are increasingly distributed in other ways than through traditional distribution via terrestrial broadcasting networks, satellite or cable television networks. The Internet, accessible through fixed and mobile networks, is also suitable for providing video services, such as linear services consisting of the distribution of television programmes via IPTV⁵ (a service often provided by traditional telecommunication companies still owning the former telephony-network), or non-linear services like video-on-demand (ordering films, time shifting/catch-up TV). A certain capacity is usually reserved for such services (as part of what is called the managed lane). Both linear and non-linear services are increasingly provided "Over the Top" (OTT). OTT refers to the fact that the respective service is "freely" available on the open Internet (the unmanaged lane).⁶ OTT-services are in principle similar to the ones provided via reserved capacity and therefore include "streaming video" services, downloading films, etc.. Other examples include the so-called peer-2-peer systems that provide access to audio-visual material via file sharing.

The two lane model



Source: Marcus et al (2011), p. 38

4) FCC, news bulletin ("FCC Chairman Julius Genachowski Statement on Open Internet Public Notice"), 1 September 2010.
 5) IPTV (Internet Protocol Television) is a system through which Internet television services are delivered using the architecture and networking methods of the Internet Protocol Suite over a packet-switched network infrastructure (such as the Internet or other access network), instead of being delivered through traditional radio frequency broadcast, satellite signal, and cable television (CATV) formats (<http://en.wikipedia.org/wiki/IPTV>).
 6) As is usually the case with many other services (access to search engines or to web sites, for example).

The transmission of audiovisual services in particular puts a strain on the network because of the capacity demand.⁷ The Internet, or rather the IP protocol used, is intended to slow down information temporarily at times of congestion until transport capacity becomes available. For various applications this deceleration is not relevant. For e-mail it makes no difference if the transfer of messages is delayed by a few (milli)seconds. In contrast, the delay would be unacceptable for viewing video signals live or playing games, as it would have adverse consequences for the end-user's "Quality of Experience" (QoE). Therefore, these services should in principle take priority over other services, or they should have a protected status, for instance. For video distribution via the Internet, through so called Content Delivery Networks (CDN), there is the option of placing video content on servers that are closer to the end-users and the option of giving priority to particular services over others. The available bandwidth is a major factor. Managing the network has always been part of the Internet. In this respect, the idea that "the Internet does not favour one application over others" is an ideal worth pursuing, rather than actual practice. Proper management can prevent visible deceleration. Of course, adding sufficient capacity would also help to reduce the scarcity problem.

Insight into network strain is often obtained by the analysis of traffic flows, either generically or on a highly detailed level. A more generic method is the analysis of the total amount of traffic passing through. Traffic can also be linked to certain "ports" (to which applications can be linked; when these "ports" are managed or switched on and off, the amount of traffic to be transported is increased or decreased respectively). At a detailed level, traffic analysis is possible via "Deep Packet Inspection" (DPI). With DPI the content of individual data packages can be viewed to determine which applications are used and how much traffic they generate. DPI is used on a large scale, but it is controversial due to its impact on the freedom of communication and privacy.⁸

3. Economic Issues

Managing Internet capacity can be necessary for technical reasons (congestion) but can also be relevant from an economic perspective. Management can prevent costs from getting out of hand. Deceleration of certain traffic flows can be used to prevent or handle peaks in network traffic. Internet service providers are known to throttle peer-2-peer traffic if network traffic is busy.

Internet traffic management offers some additional interesting options for "optimizing" the Internet service providers' business models. The Internet Service Provider (ISP) can make strategic use of his position as a bottle-neck for Internet access. Both content providers and end-users depend on him; the market is a two-sided market. A price can be charged for such privileges as guaranteed bandwidth. Services or end-users using too much bandwidth can be cut off. Limiting competition might be another reason for restrictive measurements. Skype is a classic case in point. Providers of mobile telephony consider Skype a threat to their business model that is based on charging time units. Time units are a much bigger source of income than the provision of Internet access. Skype as an OTT service can set its own rates (or offer its service partly for free). By refusing access to Skype, mobile network providers try to prevent their own business model from being cannibalized. The same is going on with SMS services: with a smartphone application like WhatsApp the traditional SMS service can be by-passed. WhatsApp is an extremely popular cross-platform (iphone, Android, Blackberry, Nokia) application which allows users to send text messages to each other over the Internet.⁹

7) More detailed information about the technical aspects of net neutrality can be found in the following study (Marcus et al, 2011): J. Scott Marcus, P. Nooren, J. Cave & K.R. Carter, Network Neutrality: Challenges and responses in the EU and in the U.S., European Parliament, 2011 (<http://www.europarl.europa.eu/document/activities/cont/201105/20110523ATT20073/20110523ATT20073EN.pdf>).

8) In 2008 the European Commission started an investigation on the use of DPI technology in the context of behavioural targeting (IP/09/570). More recently, the use of DPI by the Dutch telco-incumbent KPN raised concerns. Nevertheless, DPI seems to be an established practice, also in the context of video distribution (<http://www.mspnews.com/news/2010/04/30/4760968.htm>).

9) <http://www.whatsapp.com/>

With the distribution of audiovisual media services it is not much different. Providers of these services (e. g. VOD service providers) can agree with ISPs that priority is given to their traffic and that it is available at a certain quality for end-users. The same applies to end-users: ISPs can offer various quality levels to them at different prices. Last but not least, Internet service providers with multiple interests can deploy management to optimize their business model. For example, a cable operator or IP TV provider who simultaneously provides open access to the Internet, can ensure that audiovisual services he provides as part of his basic services are also available, and available at the same quality on the Internet. If this operator or provider is vertically integrated and has interests in the production of content, management can be used to exclude competing services or to distribute them at a poorer quality.

Net neutrality primarily pertains to these choices to be made with respect to not only the technical, but especially also the economic aspects of network management. What should be the ratio between the “public Internet lane” and the “managed service lane” and what priorities can or could be given within either lane to specific services? The perspective of ISPs as well as the position of the end-user, who is looking for open access to the available assortment of services, play a part in this context.

II. Regulatory and Policy Context

1. European Union

1.1. New Regulatory Framework

In Europe, the debate on net neutrality coincided with handling the so-called New Regulatory Framework (NRF). This Framework, primarily focussing on the telecommunications sector, includes five directives.¹⁰ New provisions dealing with net neutrality can be found in the Framework Directive and the Universal Service Directive.¹¹

According to the amended European directives, regulators have to promote the interests of the citizens by promoting the ability of end-users to access and distribute information or run applications and services of their choice.¹² In principle, end-users should be able to decide which content they want to send and receive, and which services, applications, hardware and software they want to use for such purposes.¹³ The market should provide such a choice, and regulators should promote this approach.

To achieve this, transparency is needed first of all. Operators need to provide their users with information on topics such as limitations on use, including the type of content, applications or

10) Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) OJ L 108/33 (24 April 2002); Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive) OJ L 108/7 (24 April 2002); Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive) OJ L 108/21 (24 April 2002); Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) OJ L 108/51 (24 April 2002) and Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications or e-privacy directive) OJ L 201/37 (31 July 2002).

11) Amendments to the Framework Directive and the Universal Service Directive: Directive 2009/136/EC of 25 November 2009, OJ L 337/11 (18 December 2009) (“Citizens’ Rights Directive”) and Directive 2009/140/EC of 25 November 2009, OJ L 337/37 (18 December 2009) (“Better Regulation Directive”).

12) Article 8.4 , sub g, Directive 2002/21/EC (Framework Directive): “(..) The national regulatory authorities shall promote the interests of the citizens of the European Union by inter alia: (...) (g) promoting the ability of end-users to access and distribute information or run applications and services of their choice; (...)”.

13) Citizens’ Rights Directive, Recital 28.

services involved. In Article 21.3 (d) of the Universal Service Directive, there is explicit reference to the need to provide users with information on any procedures on shaping traffic and their effect on the quality of the service.¹⁴ This framework assumes that a competitive market will ensure that end-users get the quality of service they want but also recognizes that in particular cases there might be the need to ensure that public communications networks attain minimum quality levels in order to prevent degradation of service, the blocking of access and the slowing of traffic over networks.¹⁵ In this context, it is recognized that operators apply network management. These practices should be subject to scrutiny by the national regulatory authorities in line with principles set out in the regulatory framework, with a particular focus on discriminatory behaviour which would affect competition. If appropriate, the Directive allows the setting of minimum quality of service requirements. Therefore, national regulatory authorities should have the necessary regulatory powers.

In the second place, as part of the regulations on quality of service, rules can be set with respect to network neutrality: "In order to prevent the degradation of service and the hindering or slowing down of traffic over the network, Member States shall ensure that national regulatory authorities are able to set minimum quality of service requirements" However, in good time before setting such requirements, the relevant national regulatory authorities have to provide the European Commission with a summary of the grounds for action, the envisaged requirements and the proposed course of action. Furthermore, this information must also be sent to the Body of European Regulators for Electronic Communications (BEREC). The European Commission can make comments or recommendations in order to avoid negative effects on the internal market. Although not binding, the national regulatory authorities have the obligation to take very much into account such comments/recommendations when deciding on specific net neutrality requirements.

It should be mentioned, that the Directives as such neither mandate nor prohibit limiting access to or the use of particular services or applications but only impose an obligation to provide information about it.¹⁶ However, governments that do want to limit access, need to comply with existing fundamental rights including the freedom of expression, the right to privacy and rules on due process. It is for this reason that the Framework Directive encompasses a provision on respect for fundamental rights. In Article 1.3(a) Better Regulation Directive, explicit reference is made to the European Convention on Human Rights.¹⁷ All in all, the wording of this article is very strong, and the article is of substantial interest for the free flow of information, including audiovisual services.

1.2. Consultation European Commission

In the context of the implementation of the new regulatory framework for the communications sector, several national supervisory bodies and governments entered into consultations and looked

14) Article 21.3, sub d, Citizens' Rights Directive: "Member States shall ensure that national regulatory authorities are able to oblige undertakings providing public electronic communications networks and/or publicly available electronic communications services to inter alia: (...) (d) provide information on any procedures put in place by the provider to measure and shape traffic so as to avoid filling or overfilling a network link, and on how those procedures could impact on service quality; (...)"

15) Preamble Citizens' Rights Directive, Recital 34 ; Article 22.3, Directive 2002/22/EC (Universal Service Directive).

16) Preamble Citizens' Rights Directive, Recital 29.

17) Article 1.3a: "Measures taken by Member States regarding end-users' access to, or use of, services and applications through electronic communications networks shall respect the fundamental rights and freedoms of natural persons, as guaranteed by the European Convention for the Protection of Human Rights and Fundamental Freedoms and general principles of Community law.

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 with general principles of Community law, including effective judicial protection and due process. Accordingly, these measures may only be taken with due respect for the principle of the presumption of innocence and the right to privacy. A prior, fair and impartial procedure shall be guaranteed, including the right to be heard of the person or persons concerned, subject to the need for appropriate conditions and procedural arrangements in duly substantiated cases of urgency in conformity with the European Convention for the Protection of Human Rights and Fundamental Freedoms. The right to effective and timely judicial review shall be guaranteed."

into the matter of net neutrality.¹⁸ The European Commission, too, asked the market for input.¹⁹ In total 318 comments were sent.²⁰ The main outcome was put into a short report by the European Commission.²¹ According to the analysis, there seems to be widespread agreement about the fact that there are currently no problems with the openness of the Internet and net neutrality in the European Union. However, it is also clear that traffic management exists; the BEREC comments²² signal several cases of unequal treatment. In its response, BEREC gives a list of examples, including the blocking of Voice over IP (VoIP, such as Skype) and the throttling of file-sharing networks (Peer-to-Peer).

But responses from the broadcasting sector also include various issues that have arisen concerning the distribution of audiovisual services.²³ In particular the EBU reports that several of its members and other media organisations have been degraded because of network congestions and traffic management practices applied by the network operators.²⁴ According to the EBU, these practices are in particular significant in case of live programmes (coverage of popular sport events). This has created consumer confusion, also due to the lack of transparency: the quality was less than expected and/or access to video streams was limited because of too great a demand. The problems are primarily linked to television because the distribution of video signals demands high bandwidths. Furthermore, the EBU is concerned about discriminatory behaviour, which risks undermining the open and neutral character of the Internet, ultimately resulting in consumer harm and citizen detriment. The EBU is of the opinion that sufficient competition is lacking and regulatory intervention is needed to address net neutrality issues. In this context, IPTV as a managed service is mentioned as a typical example: these services should be open for all interested content providers contrary to what – at least according to the comments of the EBU – seems currently practiced by some ISPs. Elsewhere in its response the EBU refers to Fair, Reasonable And Non-Discriminatory (FRAND) access as a basic principle for the provision of managed services. The EBU belongs to the group of respondents who emphasize the role of net neutrality in the context of freedom of expression and plurality.

Several of the EBU remarks were supported by reactions from individual broadcasting organisations, such as The Groupe Canal+ (underlining the need for further national implementation),²⁵ VOD provider Dailymotion²⁶ (given an example of its services being blocked) or the Netherlands Public Broadcaster NPO²⁷ (illustrating congestion when streaming sport events). However, the Association of Commercial Television in Europe (ACT) states that it is not aware of

18) For example: the Autorité de régulation des Communications électroniques et des postes (ARCEP), "Discussion points and initial policy directions on Internet and network neutrality", May 2010; Office of Communication (Ofcom), "Traffic Management and 'net neutrality, a Discussion Document'", 24 June 2010. Or more recently, The Autorità per le garanzie nelle comunicazioni (AGCOM), "Delibera 40/11/CONS, Public consultation on Net Neutrality", 3 February 2011

19) IP/10/860 of 30 June 2010 ("Digital Agenda: Commission launches consultation on net neutrality"). In this contribution we will mainly focus on the first two questions on current problems with net neutrality and on future issues that might arise.

20) The responses can be found here:

http://ec.europa.eu/information_society/policy/ecomms/library/public_consult/net_neutrality/comments/index_en.htm

21) European Commission, "Report on the public consultation on 'The open internet and net neutrality in Europe'", 9 November 2010; IP/10/1482 of 9 November 2010 ("Digital Agenda: consultation reveals near consensus on importance of preserving open Internet").

22) BEREC, Response to the European Commission's consultation on the open internet and net neutrality in Europe, 30 September 2011, document code BoR (10)42.

23) We focus here on responses by the broadcasting sector, but also other interested parties, such as the producers, distributors and right holders of audio visual works responded (FIAD - Fédération internationale des associations de distributeurs de films; MPA - Motion Picture Association; GESAC - European Grouping of Societies of Authors and Composers and FEP - Federation of European Publishers). These reactions addressed similar concerns, but in addition discussed related issues such as the illegal distribution of audiovisual works.

24) EBU, The EBU response to the questionnaire for the public consultation on the open internet and net neutrality in Europe, 30 September 2010.

25) *Réponse du Groupe Canal+ à la consultation publique sur l'internet ouvert et la neutralité du net en Europe*.

26) Dailymotion, contribution de Dailymotion à la consultation publique sur l'internet ouvert et la neutralité en Europe, 29 septembre 2010

27) Response of the Nederlandse Publieke Omroep (NPO: Netherlands Public Broadcasting) to the EC Questionnaire for the public consultation on the open internet and net neutrality in Europe: publication date: 30 June 2010.

any problems with Internet access to date.²⁸ Nonetheless, national regulators should deal with net neutrality issues and ensure that the open Internet is not compromised in the future.

As far as the future is concerned, respondents to the questionnaire of the European Commission indicated that new Internet business models might need to be taken into account. Managed services like IPTV could present problems when network operators favour certain services over others. Furthermore, certain content providers signalled the risk that network providers might want to charge them, accusing them of being “free riders”.²⁹ Such behaviour would be in contrast with the idea of an open Internet and would disregard the investments made by content providers. Network providers argued that such concerns were not justified.

BEREC mentioned three possible issues for the future: (1) the scope for discrimination leading to anti-competitive effects, (2) the potential longer-term consequences for the Internet economy affecting innovation and freedom of expression and (3) confusion among or harm to consumers due to lack of transparency. However, the general opinion – at least according to the interpretation of the European Commission – was that the new regulatory framework should be able to deal with these future issues and that no immediate regulation was needed.

The necessity of network management – a concern explicitly expressed by the broadcasting sector (see the response of the EBU mentioned earlier) – was broadly recognized and seen as an essential part of the operation of an efficient Internet. Network management was not considered to be incompatible with net neutrality. However, certain respondents addressed privacy issues in relation to net management, such as the use of Deep Packet Inspection. With respect to prioritisation, various references were made, in line with reactions from broadcasters, to Content Delivery Networks (CDNs). Prioritization can help to improve the services delivered to end-users but does carry the risk of discrimination. Interestingly, content providers also emphasized the need for more clarity about managed services. They underlined the necessity of a level playing field in which any managed services are offered to all content and application providers on equal terms and without discrimination. Most comments, however, showed agreement that additional regulation was not yet necessary. The question about possible concerns affecting freedom of expression, media pluralism and cultural diversity did not generate many responses, but those responding included content providers.

1.3. Communication European Commission

Although no direct action has arisen from the consultation, the European Commission issued a communication in April 2011 that can be regarded as a precursor of further measures to be taken.³⁰ The communication includes a summary of the state of affairs and provides some insight into the further steps the European Commission intends to take. First, in collaboration with BEREC a study will be performed exploring practices of blocking, throttling and commercial practices of equivalent effect, transparency and quality of service as well as the competition issues relating to net neutrality such as discriminatory practices by a dominant player. The report on the findings is expected by late 2011. On the basis of these findings, the European Commission will decide if additional guidance with respect to net neutrality is necessary. If significant and substantial problems should come to light, more stringent measures may be required, for instance in the form of specific regulations on traffic management, including a ban on blocking lawful services. The wording shows that the European Commission was inspired by the United States, where such ban is already in place. The American situation will be discussed later on in this article.

28) Association of Commercial Television in Europe (ACT), The Response of the Association of Commercial Television in Europe to the Net Neutrality Consultation.

29) I.e. by arguing that network providers have to invest in more bandwidth from which the content providers benefit.

30) Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee on the Regions, The open internet and net neutrality in Europe, Brussels, 19 April 2011, COM(2011) 222 final. Also: “The internet belongs to all of us”, speech by Nelie Kroes, European Commission Vice-President for the Digital Agenda, Brussels, 19 April 2011, SPEECH/11/285.

2. Council of Europe

The Council of Europe closely follows the question of net neutrality. The Council of Ministers adopted a resolution on Internet governance and critical Internet resources in Reykjavik in 2009.³¹ In the resolution, attention is drawn to the relationship with tools such as the European Convention on Human Rights, and further action is called for. Setting up an Ad Hoc Advisory Group on Cross-border Internet is one of the results. In April 2011, this Advisory Group published a draft for a Declaration of the Council of Ministers on Internet Governance Principles.³² One of the principles is about net neutrality. The classic point of departure is subscribed to: "Users should have the greatest possible access to Internet-based content, applications and services of their choice, whether or not they are offered free of charge, using suitable devices of their choice." The next sentence is about the traffic management issue: "Any traffic management measure or privilege should be non-discriminatory, justified by overriding public interest, and must meet the requirements of international law on the protection of freedom of expression and access to information."

In fact these more recent activities build on earlier Council of Europe instruments such as the Committee of Ministers Recommendation on the public service value of the Internet.³³ This value should be understood as people's significant reliance on the Internet as an essential tool for their everyday activities (communication, information, knowledge, commercial transactions) and the resulting legitimate expectation that Internet services be accessible and affordable, secure, reliable and on-going.

3. United States³⁴

While the consultation on net neutrality was taking place in Europe, the United States had already moved on to the next stage, and the supervisor, the FCC, adopted a "Report and Order" in December 2010, which for the first time introduces specific regulation for the open Internet and net neutrality.³⁵

Several experiences, including those with audiovisual services, caused the FCC to deal with the topic. In the zoom section of this IRIS *plus* Michael Erzingher describes the Comcast-case (an Internet service provider throttling traffic).³⁶ Google and telecommunications operator Verizon tried to hammer out a deal excluding mobile from open Internet rules.³⁷ Another conflict arose between Comcast and Level 3.³⁸ Level 3 is responsible for the distribution of the very popular video service Netflix and Comcast claimed fees from Level 3 because Netflix demand was using too much bandwidth.

At the heart of the FCC regulation, there are three rules, the broad outlines of which are briefly discussed here. They concern transparency, the prohibition of access blocking, and the prohibition of unreasonable discrimination.

31) http://www.coe.int/t/dghl/standardsetting/media-dataprotection/conf-internet-freedom/REYKJAVIK_RESOLUTION_INTERNET_GOVERNANCE.pdf

32) <http://www.coe.int/t/dghl/standardsetting/media-dataprotection/conf-internet-freedom/Internet%20Governance%20Principles.pdf>

33) Recommendation CM/Rec(2007)16 of the Committee of Ministers to member states on measures to promote the public service value of the Internet (Adopted by the Committee of Ministers on 7 November 2007 at the 1010th meeting of the Ministers' Deputies).

34) For more details on the US situation see the zoom contribution.

35) FCC, Report and Order, 21 December 2010, FCC-10201. The rules have gone into effect in July 2011. There is no particular difference between net neutrality and the open internet. As the FCC puts it "Network neutrality is just another way of referring to open Internet principles" (<http://www.openinternet.gov/open-internet-faq.html>).

36) The FCC decision in the case: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-183A1.pdf

37) <http://www.wired.com/epicenter/2010/08/google-verizon-propose-open-vs-paid-internets/>

38) <http://www.washingtonpost.com/wp-dyn/content/article/2010/11/29/AR2010112907024.html>

Providers of broadband Internet access must publicly disclose accurate information on network management, performance and commercial terms of the provided broadband service. This needs to be done at a level that allows consumers to make informed choices. The Order includes further details as to the type of concrete information to which it refers, without making these details binding. But the use of phrases like “effective disclosures will likely include” is very telling. It should be noted that the FCC does not regard transparency as an independent means to tackle the problem of net neutrality. This is why the two additional rules are set.

Blocking access is not allowed. An Internet provider “shall not block lawful content, applications, services, or non-harmful devices, subject to reasonable network management.” This rule applies to providers of fixed Internet access; for mobile providers the rule is limited to accessing lawful web sites. Blocking applications that compete with the providers’ voice or video telephony services, however, is not allowed (again “subject to reasonable network management”). This second rule means that end-users are to have free access to the Internet, both to retrieve information and to disseminate it. Although the rules for mobile networks are less stringent, the FCC believes that blocking providers of Voice over IP must be prohibited. In addition, in the FCC’s view there is no difference between blocking and degradation of traffic. Making non-blocking dependent on payment of compensation is not allowed under the anti-blocking rule either.

The third rule has two elements. First, there is the prohibition for providers of fixed broadband Internet access services to discriminate unreasonably in transmitting lawful network traffic over a broadband Internet access service chosen by the consumer. Second, it is ruled that reasonable network management shall not constitute unreasonable discrimination. According to the FCC, a network management practice is reasonable if it is appropriate and tailored to achieving a legitimate network management purpose, taking into account the particular network architecture and technology of the broadband access services. Next, several examples of legitimate purposes are mentioned, including avoiding congestion of the network.

The FCC’s remarks about prioritising certain traffic over other traffic are particularly important. This is a tricky issue, for there is increasing pressure on certain service providers that generate much traffic to give their traffic “priority” in return for payment. Some service providers are prepared to pay for quality transport as well. Stating various considerations, the FCC suggests that pay for priority is unlikely to comply with the rule on unreasonable discrimination. From the text it follows that the rule prohibiting unreasonable discrimination as such does not however apply to mobile services. The argument provided is that mobile Internet use is still under development and that intervention by the FCC therefore remains restricted to “measured steps”.

Finally, in the context of reasonable/unreasonable network management, the FCC recognizes the “specialized services” phenomenon (sometimes, including in this article, referred to by the term “managed services”). The respective services share capacity with broadband Internet access, such as certain IP protocol based voice telephony and video services. The development of these services will be monitored closely and, as the FCC notes, the definition of broadband Internet access service also includes services that are functionally equivalent or intended to circumvent the new rules.

4. National Developments

4.1. The Netherlands

The FCC’s pioneering role clearly has had an impact in Europe. As already indicated, the communication of the European Commission explicitly refers to the American model, but some of its key elements are also found in the first national regulation within the European Union that goes beyond the strict implementation of the directives discussed earlier. In June 2011, the Dutch parliament voted in favour of an amendment to a newly proposed article of the Telecommunications Act prohibiting service blocking: “Providers of public electronic

communication networks which deliver Internet access services and providers of Internet access services must not hinder or slow down applications and services on the Internet (...).³⁹ Only a limited group of four exceptions is allowed (including reasonable network management).⁴⁰ Furthermore, the article forbids providers of Internet access services to make the price of the rates for Internet access services dependent on the services and applications which are offered or used via these services.⁴¹

The idea that "Internet service providers will increasingly take measures to hinder or slow down Internet traffic, either at their own initiative or under pressure from third parties, unless this is prohibited", is a main driver behind the new provision according to the Explanatory Memorandum.⁴² And although congestion may legitimize traffic management the best solution to congestion is avoiding it by adequate investment in capacity.

4.2. Other Initiatives

What about other European Countries? As far as the member states of the European Union are concerned, 20 of them are still in the process of implementing the revised directives. Actually, the European Commission has started legal action against these member states.⁴³ The other countries have mainly implemented the directives without explicitly regulating net neutrality (as the Dutch did). Worth mentioning are developments in Finland and Norway. Finland has introduced a constitutional right to Internet access, but it is unclear to what extent this includes obligations concerning net neutrality. In Norway, the regulator has formulated non-binding principles on net neutrality.⁴⁴ The three principles are clearly inspired by the US doctrine on net neutrality. Consumers are entitled to a transparent Internet connection (predefined capacity and quality), should be able to make their own choices (regarding sending/receiving content, use of hardware and applications) and the non-discrimination rule should apply (no discrimination based on application, service, etc.).

5. Further Steps

Net neutrality is getting further and further concretised, for instance in US and Dutch legislation. On the basis of the findings of the envisaged study by the European Commission and BEREC it will be decided if further actions are necessary. It is most likely that the European Commission will issue a communication in 2012 proposing steps that are consistent to a large extent with the regulation in the United States. As already stated, the latest communication from mid-2011 provided the corresponding signals.

This means that in line with US regulation it might be established that transparency about net neutrality, however important, is not a means in itself, as already stated by the FCC. Transparency in the context of net neutrality, on the one hand, aims at informing users about the service they are getting but, on the other hand, transparency shall also enable the user to make - based on the

39) The proposal still needs approval from the Senate, but it is not very likely that the Senate will refuse to support the changes on net neutrality. For a non-official translation of the provision (Article 7.4a of the Telecommunications Act) and its underlying considerations: <https://www.bof.nl/2011/06/15/net-neutrality-in-the-netherlands-state-of-play>

40) Allowed restrictions are according to the text of the amendment: "a. to minimize the effects of congestion, whereby equal types of traffic should be treated equally; b. to preserve the integrity and security of the network and service of the provider in question or the terminal of the end-user; c. to restrict the transmission to an end-user of unsolicited communication as referred to in Article 11.7 Telecommunications Act, first paragraph, provided that the end-user has given his prior consent (this article deals with spam filtering); d. to give effect to a legislative provision or court order."

41) "Providers of Internet access services do not make the price of the rates for internet access services dependent on the services and applications which are offered or used via these services."

42) *Supra* FN 39.

43) European Commission, "Digital Agenda: Commission starts legal action against 20 Member States on late implementation of telecoms rules", IP/11/905.

44) <http://www.npt.no/ikbViewer/Content/109604/Guidelines%20for%20network%20neutrality.pdf>

information obtained – deliberate choices between accepting to stay with a service once chosen or switching to another. Practice will probably show that transparency has only a limited effect on switching. Information is definitely not communication and might thus not be endorsed properly by the consumer. The danger is that information overkill may lead to information not being read instead of fully penetrating. The challenge will be to provide end-users with clear, precise and relevant information on (i) the services and applications that they can access through their data transmission services, (ii) the traffic management practices employed on the networks of the providers, (iii) the technical quality of services offered and their possible limitations etc. The next challenge is to provide this wide range of information in a form end-users are able to digest. Whether consumers then actually decide to change providers on the basis of the information obtained, depends on many factors. It is not without reason that consumers switching access services in order to reduce costs are receiving more and more attention.⁴⁵ Questions are asked about whether there is a genuine choice or whether offers are equally good or rather equally bad? How easy is it in the event of dissatisfaction about broadband access to change once a bundle of services has been purchased? How complex are the change procedures (red tape, contractual terms, deadlines etc.)?

Based on the outcome of the investigation by the European Commission and BEREC, measures such as a no blocking rule and questions such as how to deal with managed services will be looked into.

III. Getting the Context Right

Putting net neutrality in the right context is essential in order to answer these questions. It should be acknowledged that net neutrality is part of a value chain and that technological questions are not isolated.

1. The Value Chain and Business Model

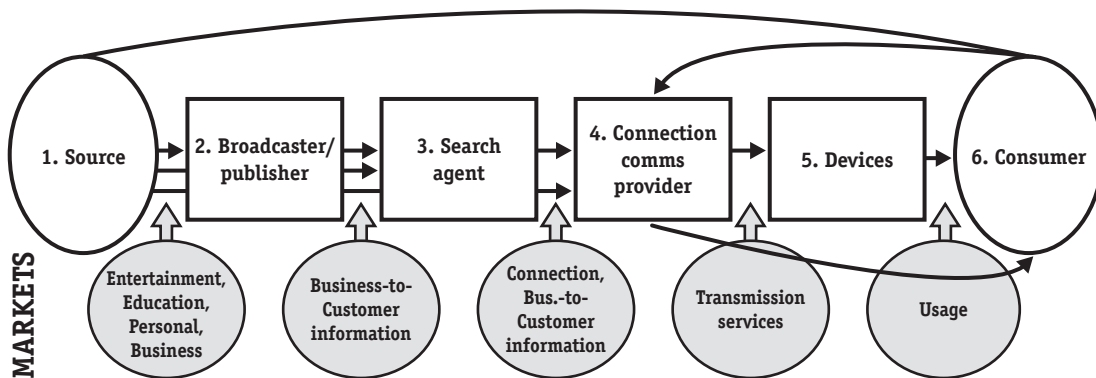
At the beginning of this contribution, we provided a definition of net neutrality. In a much quoted article, Lessig and McChesney also defined net neutrality as an end-to-end issue: “Net neutrality means simply that all like Internet content must be treated alike and move at the same speed over the network. The owners of the Internet’s wires cannot discriminate. This is the simple but brilliant ‘end-to-end’ design of the Internet that has made it such a powerful force for economic and social good.”⁴⁶ In such end-to-end approach, a complex value chain is embedded.

The players in this converging value chain have a mutual and permanent dynamic relationship. The telecommunication companies and the access providers on the one hand, and the content (platform) providers on the other hand, are obviously inclined to obtain the value that has been realized earlier or elsewhere in the value chain.

45) See for example the BEREC-study “BEREC report on best practices to facilitate consumer switching”, October 2010 (http://www.erg.eu.int/doc/berec/bor_10_34_rev1.pdf).

46) “No Tolls on The Internet”, L. Lessig & R.W. McChesney, in: *The Washington Post*, 8 June 2006 (<http://www.washingtonpost.com/wp-dyn/content/article/2006/06/07/AR2006060702108.html>).

Today's Converging Information Delivery Chain



(Source: Rand Europe, *Responding to Convergence*, p. 9)⁴⁷

Every link in the value chain is potentially weak: every position in the chain can develop into a bottle-neck. Should net neutrality obligations restrict Internet service providers in their possibilities to influence (i.e. prioritize) traffic, the problem of potential discrimination of certain services will probably shift to another spot in the value chain. Also, we should be aware of the fact that net neutrality issues already exist elsewhere in the chain. Platform providers and peripheral equipment suppliers try to affect “net neutrality” by granting favours to their own providers by controlling applications, selection systems (search, recommendation/reputation systems, Electronic Program Guides (EPGs)), and vertical integration. Cable operators providing Internet access themselves, discover they have allowed the Trojan Horse in: after all, the services they provided previously (traditional cable TV) can now be substituted by services received via the Internet (for example via OTT video services). This explains why various stakeholders prefer to safeguard sufficient space to manoeuvre with regards to net neutrality. However, solutions that do not take the value chain dynamics into account only fight the symptoms, not the disease. A value chain approach is inevitable.

Net neutrality is therefore not (just) about something “technical”; it is only one aspect of a problem that has existed since much longer: who takes control of the eyeballs, who takes control of the content? The party taking control of the users and/or content, also takes control of the major income flow. From this perspective, the Internet has much in common with the classic broadcasting organizations in terms of its earnings model.

2. Technological Challenges

This does not mean that technical aspects are unimportant. On the contrary, technology as an enabler/disabler can have a major influence. Scarcity in capacity, whether this scarcity is artificial or not, increases the strain on available capacity. Capacity providers can use technology to optimize their business model (invest more to increase capacity, probably with the result of higher prices for end-users or take advantage of scarcity and make information providers pay along). The question about quality guarantees requires technical measures anyway. This applies to the video content distribution described earlier, for instance. These types of specialized/managed services make the Internet “flatter”: services are no longer part of the “cloud” but are more directly supplied by the Internet service provider based on special agreements with content providers. Such agreements may also be required to regulate other aspects, such as access to selection systems or payment mechanisms. Yet, all these interventions can be translated into economic or policy-based choices.

47) Rand Europe, *Responding to Convergence: Different Approaches for Telecommunication Regulators*, 2008.

IV. Conclusions

Net neutrality is an interesting phenomenon with many facets. Currently, we are still in an explorative stage in which net neutrality is being mapped out in further detail. It is remarkable how little is known about what is happening exactly in the complex process between providing and purchasing audiovisual media services, in both a technical and economic sense. This should lead to the actual issues becoming visible. Only then, we will get to the heart of the matter. In the regulation concepts formulated so far, much emphasis is on reasonableness: reasonable net management is allowed, "unreasonable net management" should be forbidden. In the next few years, this basic principle will have to be given further attention. In particular, the role of capacity consumption and the quality of service aspects of audiovisual services will increase more and more. Should capacity be reserved for such services? And if so, how? What would be the position of the "open Internet" in all this? These questions also have a cultural dimension. Part of the net neutrality debate is not new: several showdowns took place in the past about access to distribution networks for instance. Not surprisingly a comparison is made in the literature with policy and regulation in the field of cable TV networks.⁴⁸ Countries introduced regulation on must carry obliging operators to carry specific programmes and/or regulation allowing content providers to claim access to analogue or digital channels. But also basic practices such as the allocation of frequencies based on content related criteria and access rules opening up communications networks and giving providers of services a right to claim capacity at regulated conditions can be seen as examples. Bringing previous experiences to the task can be useful, but it can also open a can of worms. It is something that requires a cautious approach because previous experiences can be bad experiences or carry a risk of suffering from oversimplification. This does not alter the fact that there is unmistakable convergence between the (tele)communication and media domain and that net neutrality is to be discussed within this wider context. In this process, increasing conflicts will probably be the main driver for policymaking and regulation.

48) For example: R. Frieden, "Winning the Silicon Sweepstakes: Can the United States Compete in Global Telecommunications?", Yale University Press, 2010, pp. 275-289.