

NET NEUTRALITY: MEASURING THE PROBLEM, ASSESSING THE LEGAL RISKS

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Marsden

2013 / 42



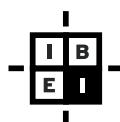
CÁTEDRA TELEFÓNICA
POLÍTICA Y REGULACIÓN TELECOMUNICACIONES E INTERNET

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ISSN: 1886-2802



INSTITUT BARCELONA
D'ESTUDIS INTERNACIONALS

IBEI WORKING PAPERS
TELEFONICA CHAIR SERIES

2013/42
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Edita: IBEI
Elisabets, 10
08001 Barcelona
Tel. 93 412 11 89
Fax. 93 304 00 71
E-mail: ibei@ibei.org
URL: www.ibei.org

Depósito legal: B-21.147-2006
ISSN: 1886-2802
Imprime: Ediciones Gráficas Reys, S.L.
Barcelona, December 2013

NET NEUTRALITY: MEASURING THE PROBLEM, ASSESSING THE LEGAL RISKS

Chris Marsden

Abstract: Network neutrality is a growing policy controversy. Traffic management techniques affect not only high-speed, high-money content, but by extension all other content too. Internet regulators and users may tolerate much more discrimination in the interests of innovation. For instance, in the absence of regulatory oversight, ISPs could use Deep Packet Inspection (DPI) to block some content altogether, if they decide it is not to the benefit of ISPs, copyright holders, parents or the government. ISP blocking is currently widespread in controlling spam email, and in some countries in blocking sexually graphic illegal images. In 1999 this led to scrutiny of foreclosure of Instant Messaging and video and cable-telephony horizontal merger. Fourteen years later, there were in 2013 net neutrality laws implemented in Slovenia, the Netherlands, Chile and Finland, regulation in the United States and Canada , co-regulation in Norway, and self-regulation in Japan, the United Kingdom and many other European countries . Both Germany and France in mid-2013 debated new net neutrality legislation, and the European Commission announced on 11 September 2013 that it would aim to introduce legislation in early 2014. This paper analyses these legal developments, and in particular the difficulty in assessing reasonable traffic management and ‘specialized’ (i.e. unregulated) faster services in both EU and US law. It also assesses net neutrality law against the international legal norms for user privacy and freedom of expression.

Keywords: Net Neutrality, Internet, ISPs, Copyright, Telecommunications Law, Human Rights.

Comments: Paper presented at the IBEI-CEPAL international seminar “Innovación y regulación en las TIC.Una perspectiva comparada entre Europa y América Latina”. Barcelona, 30 September – 1 October 2013.

1. INTRODUCTION

In 1998, the technology design innovation-control argument hinged on Microsoft's leveraging of its operating system monopoly into browser and video software, and by 1999 this had led to scrutiny of foreclosure of Instant Messaging and video and cable-telephony horizontal merger.¹ Fourteen years later, there were in 2013 net neutrality laws implemented in Slovenia, the Netherlands, Chile and Finland, regulation in the United States and Canada,² co-regulation in Norway, and self-regulation in Japan, the United Kingdom and many other European countries.³ Both Germany and France in mid-2013 debated new net neutrality legislation, and the European Commission announced on 11 September 2013 that it would aim to introduce legislation in early 2014.

2. POLICY DEBATE REGARDING TRAFFIC MANAGEMENT

Network neutrality⁴ is the latest phase of an eternal argument over control of communications media. The internet was held out by early legal and technical analysts to be special, due to its decentred construction,⁵ separating it from earlier 'technologies of freedom' including radio and the telegraph. It is important to recognize the end-to-end principle governing internet architecture.⁶ The internet had never been subject to regulation beyond that needed for interoperability and competition, building on the Computer I and II inquiries by the Federal Communications Commission (FCC) in the United States, and the design principle of End-to-End (E2E). That principle itself was bypassed by the need for greater trust and reliability in the emerging broadband network by the late 1990s, particularly as spam email led to viruses, botnets, and other risks. The lack of trust on the internet, combined with a lack

1. See Lemley, MA and Lessig, L. (2000) *The End of the end-to-end: preserving the architecture of the internet in the broadband era*, available at UC Berkeley Law & Econ Research Paper No 2000-19; Stanford Law & Economics Olin Working Paper No 207; UC Berkeley Public Law Research Paper No 37. See further Marsden, C. (1999) Report for the Council of Europe MM-S-PL(1999)012: 'Pluralism in the multi-channel market. Suggestions for regulatory scrutiny', at Section 5.1: [http://www.coe.int/t/dghl/standardsetting/media/Doc/MM-S-PL\(1999\)012_en.asp](http://www.coe.int/t/dghl/standardsetting/media/Doc/MM-S-PL(1999)012_en.asp).

2. Candeub, Adam and McCartney, Daniel John (2012) Law and the Open Internet, 64 Federal Communications Law Journal 3, pp.493-548, Available at SSRN: <http://ssrn.com/abstract=1943747>; CRTC (2009) *Review of the Internet Traffic Management Practices of Internet Service Providers*, at: <http://www.crtc.gc.ca/eng/archive/2009/2009-657.htm>.

3. See variously Marsden, C. (2013) *Network Neutrality: A Research Guide* Chapter 16 in 'Handbook Of Internet Research', I. Brown, ed., Edward Elgar, at SSRN: <http://ssrn.com/abstract=1853648>; Shin, Dong-Hee and Eun-Kyung Han (2012) *How will net neutrality be played out in Korea?* Government Information Quarterly, Volume 29, Issue 2, April 2012, pp.243-251; Jitsuzumi, T. (2012) *An analysis of prerequisites for Japan's approach to network neutrality*, Proceedings of the 38th Research Conference on Communication, Information and Internet policy (TPRC).

4. See Marsden, C, 'Network Neutrality: A Research Guide' in Brown, Ian (ed) *Handbook Of Internet Research* (Cheltenham: Edward Elgar, 2013).

5. The 'Internet' is a network of Autonomous Systems, of which about 40,000 are of a scale that is relevant. See Haddadi, Hamed et al (2009) Analysis of the Internet's structural evolution, Technical Report Number 756 Computer Laboratory UCAM-CL-TR-756 ISSN 1476-2986.

6. See Saltzer, JH, Reed, DP and Clark, DD (1984) End-to-end arguments in system design, 2 ACM Transactions On Computer Systems p 288.

of innovation in the Quality of Service (QoS) offered in the core network over the entire commercial period of the internet since NSFNet was privatized in 1995 meant that development was focused almost entirely in the application layer, with Peer-to-Peer (P2P) programmes such as low-grade Voice over Internet protocol (VoIP) and file-sharing as well as the World Wide Web (WWW) designed during this period. However, 'carrier-grade' voice, data and video transmission was restricted to commercial Virtual Private Networks (VPNs) that could guarantee trust, with premium content attempting to replicate the same using Content Delivery Networks (CDNs) such as Akamai, or the ISPs' own local loop offerings deployed within the user's own network.

As a result, E2E has gradually given way to trust-to-trust mechanisms, in which it is receipt of the message by one party's trusted agent which replaces the receipt by final receiver. This agent is almost always the Internet Service Provider (ISP), and it is regulation of this party which is at stake in net neutrality. ISPs also can remove other potentially illegal materials on behalf of governments and copyright holders, to name the two most active censors on the internet, as well as prioritizing packets for their own benefit. As a result, the E2E principle would be threatened were it not already moribund. Even in 2012, scholars suggest freedom to innovate can be squared with design prohibitions, despite over a decade of multi-billion dollar protocol development by the ISP community resulting in the ability to control traffic coming onto their networks, and wholesale rationing of end-user traffic. Network engineer Crowcroft makes three major points: the internet was never intended to be neutral; there has been virtually no innovation within the network for thirty years; 'network-neutrality has in fact stifled evolution in the network layer'.⁷ Network congestion and lack of bandwidth at peak times is a feature of the internet. It has always existed. That is why video over the internet was, until the late 1990s, simply unfeasible. It is why Voice over the Internet (VOIP) has patchy quality, and why engineers have been trying to create higher QoS. 'End to end' is a two-edged sword, with advantages of openness and a dumb network, and disadvantages of congestion, jitter, and ultimately a slowing rate of progress for high-end applications such as High Definition video.⁸ End-to-End may have its disadvantages for those introducing zoning as compared with QoS, and in this it has obvious parallels with 'common carriage' and its alter ego 'specialized services'.

7. See Crowcroft, Jon (2011) 'The Affordance of Asymmetry or a Rendezvous with the Random?' *Convergence and Communications Review*, 12, and Crowcroft, J. (2007) *Net Neutrality: the technical side of the debate: A white paper*, 37 ACM SIGCOMM Computer Communication Review 1, 49–56.

8. Clark, David (2007) 'Network Neutrality: Words of Power and 800-Pound Gorillas', 1 *International Journal of Communication* 701–708; Peha, JM (2007) 'The Benefits and Risks of Mandating Network Neutrality, and the Quest for a Balanced Policy', 1 *International Journal of Communication* 644, 644–659.

3. LEGAL AND REGULATORY DEBATE OVER NET NEUTRALITY

Dividing net neutrality into its forward-looking positive (or 'heavy' and backward-degrading negative (or 'lite') elements is the first step in unpacking the term, in comprehending that there are two types of problem: charging more for more, and charging the same for less⁹. Abusive discrimination in access to networks is usually characterized in telecoms as a monopoly problem, manifested where one or two ISPs have dominance, typically in the last mile of access for end-users. ISPs can discriminate against all content or against the particular content that they compete with when they are vertically integrated. Conventional US economic arguments have always been broadly negative to the concept of net neutrality, preferring the introduction of tariff-based congestion pricing.¹⁰ Hahn and Wallsten explain that net neutrality¹¹ 'usually means that broadband service providers charge consumers only once for Internet access, don't favor one content provider over another, and don't charge content providers for sending information over broadband lines to end users.' This is the focus of the problem: Network owners with vertical integration into content or alliances have enhanced incentives to require content owners (who may also be consumers) to pay a toll to use the higher speed networks that they offer to end-users. Note all major consumer ISPs are vertically integrated to some extent, with proprietary video, voice, portal and other services.

Net neutrality has been variously defined, most prominently by regard to its forerunners 'open access' and common carriage. Common carriers who claim on the one hand the benefits of rights of way and other privileges, yet on the other claim traffic management for profit rather than network integrity, may be trying to both have their cake and eat it.¹² Common carriage is defined by the duties imposed on public networks in exchange for their right to use public property as a right of way, and other privileges. Common carriers in mediaeval times included farriers and public houses (every horse to be shod and person to be allowed shelter without discrimination between travellers). In the US, it was established in 1901 that a public telegraph company (and more especially the largest) has a duty of non-discrimination towards the public.¹³ Telecoms networks were established to be common carriers as they achieved maturity, following telegraphs, railways, canals and other networks. Noam explained in 1994, it is not the failure of common carriage but rather its very

9. I have argued that the real problem lies in the 'middle mile' of interconnection, in Marsden, C, *Network Neutrality: Towards a Co-regulatory Solution*, (London: Bloomsbury Academic, 2010).

10. See David, Paul (2001) 'The Evolving Accidental Information Super-Highway', 17(2) *Oxford Review of Economic Policy* pp159–187.

11. Hahn, Robert and Scott Wallsten, (2006) 'The Economics of Net Neutrality' AEI Brookings Joint Center for Regulatory Studies: Washington, DC at: <http://www.offnews.info/downloads/economicsOfNeutrality.pdf>

12. See Frieden, R, (2010) 'Invoking and Avoiding the First Amendment: How Internet Service Providers Leverage Their Status as Both Content Creators and Neutral Conduits', 12 *University of Pennsylvania Journal of Constitutional Law* 1279; Werbach, Kevin (2010) 'Off the Hook', 95 *Cornell law Review* 535.

13. See *Western Union Telegraph Co v Call Publishing Co*, 181 US 92, 98 (1901).

success that undermines the institution. By making communications ubiquitous and essential, it spawned new types of carriers and delivery systems.¹⁴

He forewarned that net neutrality would have to be the argument employed by those arguing for non-discriminatory access, as well as accurately predicting the death of common carriage ten years later. Common carriers are under a duty to carry goods lawfully delivered to them for carriage. The duty does not prevent carriers from restricting the commodities that they will carry. Carriers may refuse to carry dangerous goods, improperly packed goods, or those that they are unable to carry (on account of size, legal prohibition, or lack of facilities). This definition offers several reasons not to common carry that can be extended to ISPs—spam and viruses for instance may be refused. In common-law countries such as the UK and USA, carriers are liable for damage or loss of the goods that are in their possession as carriers, unless they prove that the damage or loss is attributable to certain excepted causes: ‘Acts of God). That provides several more reasons for loss—one thinks of the loss of undersea cables, or alleged foreign power Denial of Service (DoS) attacks. It might be stretching a definition to suggest that P2P streams can be ‘jettisoned’ in order to allow other traffic to progress during peaktime congestion. Thus twenty-first century ISPs who choose to traffic manage on a discriminatory fashion could not be considered common carriers.

The US regulator FCC has acted on several network neutrality complaints (notably those against Madison River in 2005 and Comcast in 2008¹⁵) as well as introducing the principle in part through several merger conditions placed on dominant ISPs, but delayed its report and order on net neutrality until its eventual publication in the Federal Register in September 2011, whereupon it was instantly challenged by various interested parties and is being litigated in 2013.

Development of European legal implementation of the network neutrality principles has been slow, with the European Commission referring much of the detailed work to the new Body of European Regulators of Electronic Communications (BEREC), which developed an extensive work programme on net neutrality in 2011-12¹⁶. At European Member State level, statements of principle in favour of net neutrality have been made in for instance France, but no legislation was implemented by mid-2013,¹⁷ though Netherlands and Slovenian laws had been passed in 2012 and awaited implementation in mid-2013.

14. Noam (1994) ‘Beyond liberalization II: the impending doom of common carriage’, (1994) 18(6) Telecommunications Policy, pp 435–52 at p 435, explaining that: ‘When historically they [infrastructure services] were provided in the past by private firms, English common law courts often imposed some quasi-public obligations, one of which one was common carriage. It mandated the provision of service of service to willing customers, bringing common carriage close to a service obligation to all once it was offered to some.’

15. *Comcast v FCC* (2010) No 08-1291, delivered 6 April.

16. See generally http://berec.europa.eu/eng/about_berec/working_groups/net_neutrality_expert_working_group_/282-net-neutrality-expert-working-group.

17. For details of national implementation and the divergences therein, see Cave, M., DAF/COMP/WP2(2011)4 Directorate For Financial And Enterprise Affairs: Competition Committee Working Party No 2 On Competition And Regulation: Hearing On Network Neutrality Paper by Mr. Martin Cave (2011).

I now summarize first the US then the European debate to date.

4. NETWORK NEUTRALITY REGULATION IN THE US

While issues about potential discrimination by ISPs have been current since at least 1999, the term ‘network (net) neutrality’ was coined by Tim Wu in 2003.¹⁸ In the period since, the debate was dismissed as ‘an American problem due to abandonment of network unbundling’ and common carriage. Competition in the US is ‘inter-modal’ between cable and telecoms, not ‘intra-modal’ between different telecoms companies using the incumbents’ exchanges to access the ‘Last Mile’.¹⁹ Instead of regulated access to both cable and telecoms networks, there are now less regulated ‘information’ not ‘telecommunications’ services.

Chair Michael Powell of the FCC decided that a statement of consumer-oriented open access policy should persuade ISPs to avoid egregious discrimination. In February 2004, he declared: ‘I challenge the broadband network industry to preserve the following Internet Freedoms: Freedom to Access Content; Freedom to Use Applications; Freedom to Attach Personal Devices; Freedom to Obtain Service Plan Information.’²⁰ The ‘Four Freedoms’ were applied in the Internet Policy Statement,²¹ Madison River, the AT&T and Verizon mergers, and the Comcast action. The first regulatory action to prevent blocking of access was against a small ISP that had been blocking a rival VOIP service, Madison River.²² It was an easy case in many ways: the abuse was incontrovertible and defended as a legitimate business practice, the vertical integration of the ISP with its voice telephone service meant it had obvious incentives to block its competitor, and the practice was intended to degrade its customers’ internet access. It was an example of negative network neutrality: customers signed up for broadband service with the ISP, but it chose to degrade that service in the interest of preserving its monopoly in telephone service. Madison River is a small consumer ISP, not a large behemoth national carrier. After Madison River, the next large-scale regulatory action came in the merger of AT&T and BellSouth, when the merged company undertook various commitments not to block other companies’ applications directed to their users.²³ The Regional Bell

18. Wu, T (2003) ‘Network Neutrality, broadband discrimination’, 2 Journal on Telecommunications and High-Tech Law 141.

19. Communications Act of 1934 as amended by Communications (Deregulatory) Act of 1996, 47 USC §§ 153(20) (definition of ‘information service’), 153(10) (definition of ‘common carrier’), 153(43) (definition of ‘telecommunications’), and 153(46) (definition of ‘telecommunications service’).

20. Powell (2004) Four Freedoms speech, at <http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf>.

21. FCC 05-151, adopted 5 August 2005.

22. Madison River Communications, LLC, Order, DA 05-543, 20 FCC Rcd 4295 (2005), available at: <http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-543A1.pdf>.

23. In *AT&T Inc and BellSouth Corp* (2007) Application for Transfer of Control, 22 FCC Rcd 5562, note the dissent at Appendix F, slip op p 154.

Operating Companies (RBOCs) re-emerged in 2006 mergers as two local-long distance-internet-wireless combines, now called AT&T and Verizon.²⁴ AT&T agreed to:

1. Follow the FCC's four Network Freedoms for thirty months;
2. Apply network neutrality principles for its broadband ISP between subscribers and the first internet exchange point for a period of two years;
3. But it expressly reserved the option not to apply network neutrality principles for its IP Television (IPTV) service, and to any service beyond the first Internet Exchange point.

Note from the description of the first Internet Exchange or 'handover' point that, though discrimination is typically characterized as behaviour by 'last mile' consumer ISPs against content providers, it can equally be undertaken at peering points by third parties.²⁵ Various types of discrimination are possible at various pinchpoints on the internet.

FCC then made a 2008 Order against Comcast, a major cable broadband ISP.²⁶ Comcast deposition to the FCC stated that it began throttling P2P filesharing application BitTorrent in May 2005–2006, slowed by use of Sandvine technology. The FCC ruling was against Comcast's attempts to stop P2P by sending phantom RST reset packets to customers reflects another 'easy' case, that is about as "smoking gun" as the VOIP blocking in Madison River in 2005. The Comcast use of DPI to discriminate between providers of P2P was also condemned in strong terms: 'Comcast's practices are not minimally intrusive, as the company claims, but rather are invasive and have significant effects.' FCC concluded that Comcast's conduct blocked internet traffic, rejected Comcast's defence that its practice constitutes reasonable network management, and 'also concluded that the anticompetitive harms caused by Comcast's conduct have been compounded by the company's unacceptable failure to disclose its practices to consumers.' Comcast responded to the ruling by repeating its claim that it engineers its own VOIP product with QoS and avoids the public internet. They also hint that future investment prospects will be less rosy if the FCC keeps penalizing them. Comcast had much more functionality in the Sandvine box than they used (courtesy of the first FCC decision in 2009).²⁷

24. See Federal Communications Commission 'FCC approves SBC/AT&T and VERIZON/MCI mergers' 31 October 2005 at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-261936A1.pdf.

25. Werbach, Kevin (2002) *A Layers Model for Internet Policy*, 1 Journal on Telecommunications & High Technology Law 37; Lehr, WS, Gillett, Sirbu, M and Peha, J. (2006) *Scenarios for the Network Neutrality Arms Race*, Presented at the 34th Research Conference on Communication, Information, and Internet Policy (TPRC); Peha, J.M., Lehr, W.H. and Wilkie, S. (2007) *The State of the Debate on Network Neutrality*, International Journal of Communication, 1: 709–716.

26. Federal Communications Commission (2008) Formal Complaint of Free Press and Public Knowledge Against Comcast Corp for Secretly Degrading Peer-to-Peer Applications; Broadband Industry Practices; Petition of Free Press et al for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for 'Reasonable Network Management' 2008, Memorandum Opinion and Order, 23 FCC Rcd 13028 ('ComcastOrder').

27. See Karpinski, R, Comcast's Congestion Catch, 22, 23 January 2009, at http://telephonyonline.com/residential_services/news/comcast-congestion-0123/index1.html and http://downloads.comcast.net/docs/Attachment_B_Future_Practices.pdf.

FCC found that ‘Comcast has an anti-competitive motive to interfere with customers’ use of P2P applications.’ This is because P2P TV and movie file sharing via BitTorrent offers a rival TV service delivery than cable, which the FCC found ‘poses a potential competitive threat to Comcast’s video-on-demand (VOD) service.’ FCC justified its regulatory authority to issue the order, invoking its Title I ancillary jurisdiction under the Communications Act to regulate in the name of ‘national Internet policy’ as described in seven statutory provisions, all of which speak in general terms about ‘promoting deployment’, ‘promoting accessibility’, ‘reducing market entry barriers’. Comcast brought a suit to the DC Court of Appeals, to overturn the order on these grounds. Note that the FCC decision was not condemning ‘metered broadband’. Comcast announced a 250GB monthly limit in early September 2008, replacing its previous discretionary Terms of Use reasonable caps. (This would be the cause of much controversy over specialized services under its merger consent with NBC-Universal in 2012-13: see Section ‘Specialized Services’). Comcast also replied by explaining its use of Sandvine technology, and its plans to introduce a ‘blunter weapon’ in its future shaping of traffic.²⁸

The US Congress passed the American Recovery and Reinvestment Act 2009, including a broadband open access stimulus:²⁹ \$2.88b was to be spent on extending broadband into under-served areas, with open access and net neutrality provisions built into the grants. This sets no great precedents for the future of net neutrality, though it actually mandates non-discrimination for the Broadband Technology Opportunities Program. The FCC was charged with aiding the National Telecommunications Infrastructure Administration in defining open access rules, and in a report of June 2009 explained the government role in building out previous such infrastructures.³⁰

The FCC extended a consultation on net neutrality over 2009–10, with over 27,000 submissions made. This process was finishing just as the Court of Appeal in April 2010 in *Comcast v FCC* judged that the FCC’s regulatory actions in this area were not justified by its reasoning under the Communications Act 1996. The successful Comcast appeal meant that the FCC had to either reclaim Title II common carrier authority for ISPs under the 1996 Telecommunications Act, else ask Congress to re-legislate to grant it Title I authority, or try to assert its own Title I authority subject to legal challenge. It adopted this last course in its Order of 23 December 2010³¹, to be challenged before the courts in 2012. The Report and Order was then subjected to an unusual delay in publication in the Federal Register until September 2011, following which it required 60 days before both pro- and anti-net neutrality

28. See <http://www.wired.com/images_blogs/threatlevel/files/comcastic.pdf>.

29. American Recovery and Reinvestment Act 2009, at Division B, Title VII, Section 6001(k)2, A, D, E.

30. See Federal Communications Commission, Report on a Rural Broadband Strategy, 22 May 2009, at: <http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-291012A1.pdf> at pp 15–17 especially footnotes 62–63.

31. See FCC Report and Order (2010) Preserving the Open Internet, 25 FCC Rcd 17905 and FCC Report and Order, In The Matter Of Preserving The Open Internet And Broadband Industry Practices, GN Docket No 09-191, WC Docket No 07-52, FCC 10-201 §21–30 (2010).

organizations were able to formally make representations to bring the question of the FCC authority under the Communications Act to court. A case before the DC Appeals Court will be heard in late 2012,³² and the outcome of US net neutrality may in turn depend on the result of the 2013 Appeals Court case. FCC in 2011-13 refused several times to intervene in interconnection and piercing disputes that were claimed by CDNs to unreasonably impair traffic contrary to the controversial and sub judice net neutrality rules³³.

Implementation of the technical means for measuring reasonable traffic management are to be tested in a self-regulatory forum, the Broadband Industry Technical Advisory Group (BITAG). Its specific duties include that to offer 'safe harbor' opinions on traffic management practices by parties making formal reference for an advisory technical opinion:

*Specific TWG functions include: (i) identifying 'best practices' by broadband providers and other entities; (ii) interpreting and applying 'safe harbor' practices; (iii) otherwise providing technical guidance to industry and to the public; and/or (iv) issuing advisory opinions on the technical issues germane to the TWG's mission that may underlie disputes among discrete parties.*³⁴

5. A REASSESSMENT OF EUROPEAN ELECTRONIC COMMUNICATIONS POLICY

European law upholds transparency on a mandatory basis, and minimum Quality of Service on a voluntary basis, under provisions in the 2009 electronic communications framework. Both the 28 Member States, European Economic Area members and the 47 members of the Council of Europe must also conform to the human rights law of the European Convention on Human Rights.³⁵ This is supplemented in the European Union by data protection legal instruments which are implemented using both the decisions of national and European courts³⁶, and taking account of the advice of the group of European Union privacy commissioners.³⁷ In 2011, the Europe-

32. *In Re: Federal Communications Commission, In the Matter of Preserving the Open Internet, Report and Order*, FCC 10-201, 76 Fed Reg 59192 (2011), 23 September 2011, Consolidation Order, 1 (Judicial Panel on Multidistrict Litigation, 6 October 2011), available at: <http://www.fcc.gov/document/preserving-open-internet-broadband-industry-practices-1>.

33. Frieden, Rob (2012) Rationales for and Against Regulatory Involvement in Resolving Internet Interconnection Disputes 14 Yale J.L. & Tech 266 at: <http://yjolt.org/sites/default/files/FriedenFinal.pdf>.

34. Broadband Industry Technical Advisory Group (2011) *By-laws of Broadband Industry Technical Advisory Group* at: http://members.bitag.org/kwspub/background_docs/BITAG_Bylaws.pdf: Section 7.1.

35. See Koops, Bert-Jaap and Sluijs, Jasper P. (2012) *Network Neutrality and Privacy According to Art. 8 ECHR*, European Journal of Law and Technology 2(3); at <http://dx.doi.org/10.2139/ssrn.1920734>; Sluijs, Jasper P. (2012) *From Competition to Freedom of Expression: Introducing Art. 10 ECHR in the European Network Neutrality Debate*, Human Rights Law Review 12(3) at <http://dx.doi.org/10.2139/ssrn.1927814>.

36. See Case C-461/10: *Bonnier Audio AB and others v Perfect Communication Sweden AB*, OJ C 317, 20/11/2010 P. 0024—0024 final judgment 19 April 2012 at <http://curia.europa.eu/juris/document/document.jsf?doclang=EN&text=&pageIndex=0&mode=DOC&docid=121743&cid=848081>.

37. See further Marsden C. [2012] *Regulating Intermediary Liability and Network Neutrality*, Chapter 15, pp701-750 in 'Telecommunications Law and Regulation' (Oxford, 4th edition).

an Data Protection Supervisor expressed his concern that traffic management would result in exposure of users' personal data including IP addresses³⁸. The CoE also issues various soft law instruments to guide member states in observance of citizens' rights to privacy and free expression³⁹.

In its initial explanation of its reasons to review the raft of 2002 Directives,⁴⁰ the Commission noted the US debate but did no more than discuss the theoretical problem.⁴¹ Over 2007–8, the volume of regulatory reform proposals in the USA,⁴² Japan, Canada, and Norway had grown along with consumer outrage at ISP malpractice and misleading advertising, notably over notorious fixed and mobile advertisements which presented theoretical laboratory maximum speeds on a dedicated connection with no-one else using it and subject to 'reasonable terms of usage'—which meant capacity constraints on a monthly basis, some of these on mobile as low as 100MB download totals.⁴³

5.1 Net neutrality Amendments in 2009 Directives

Net neutrality became a significant issue, together, with graduated response, in the voting on the First Reading of the 2009 telecoms package, in May 2009. The European Parliament voted down the reforms at First Reading prior to imminent parliamentary elections in June. Amendments on consumer transparency and network openness were offered to the Parliament in the Conciliation process, collated in the European Commission 'Declaration on Net Neutrality',⁴⁴ appended to 2009/140/EC:

'The Commission attaches high importance to preserving the open and neutral character of the Internet, taking full account of the will of the co-legislators now to enshrine net neutrality as a policy objective and regulatory principle to be promoted by [NRAs] (Article 8(4)(g) Framework Directive), alongside the strengthening of related transparency requirements (Articles 20(1)(b) and 21(3)(c) and (d) Universal Service Directive) and the creation of safeguard powers for [NRAs] to prevent the degradation of services and the hindering or slowing down of traffic over public networks (Article 22(3) Universal Service Directive).'

38. European Data Protection Supervisor (2011) *Opinion on net neutrality, traffic management and protection of privacy and personal data* at http://www.edps.europa.eu/EDPSWEB/webdav/site/mySite/shared/Documents/Consultation/Opinions/2011/11-10-07_Net_neutrality_EN.pdf.

39. See Declaration of the Committee of Ministers on network neutrality adopted 29/9/2010: 1094th meeting of the Ministers' Deputies, a soft law instrument to guide member states in the application of net neutrality rules: aspirations of Articles 6/8/10 of the Convention. See further Council of Europe multi-stakeholder dialogue on network neutrality (2013) 29–30 May, communicated to the Council of Europe Steering Committee on Media and Information Society (CDMSI).

40. See Directive 2002/21/EC ('Framework Directive'), Directive 2002/20/EC ('Authorisation Directive'), Directive 2002/19/EC ('Access Directive'), Directive 2002/22/EC ('Universal Service Directive'), Directive 2002/58 on Privacy and Electronic Communications.

41. COM(2006) 334 *Review of the EU Regulatory Framework for electronic communications networks and services*, Brussels, 29 June 2006 at section 6.2–6.4.

42. For a flavour of the European academic debate in 2007–8, see Scott Marcus, J. (2008) 'Network Neutrality: The Roots of the Debate in the United States', 43 *Intereconomics* 30–37; Sluijs Jasper P. (2010) 'Network Neutrality Between False Positives and False Negatives: Introducing a European Approach to American Broadband Markets', 62 *Federal Comm Law Journal* 77–117; Cave, M and Crocioni, P. (2007) 'Does Europe Need Network Neutrality Rules?', 1 *International Journal of Communication* 669–679; Valcke, P et al (2008) 'Guardian Night or Hands off? The European Response to Network Neutrality: Legal Considerations on the Electronic Communications Reform', 72 *Communications and Strategies* 89–112.

43. Leading to a significant emphasis on net neutrality in SEC(2007) 1472 *Commission Staff Working Document: Impact Assessment* at 90–102.

44. European Commission, Declaration on Net Neutrality, appended to Dir 2009/140/EC, O J L 337/37 at p 69, 18 December 2009 at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:308:0002:0002:EN:PDF>.

There in summary are the concerns about ISPs discriminating against content they dislike, or in favour of affiliated content.⁴⁵ The new laws which became effective in Member States in May 2011⁴⁶ states that Member States may take action to ensure particular content is not discriminated against directly (by blocking or slowing it), or indirectly (by speeding up services only for content affiliated with the ISP). Note that as network neutrality extends to all consumer ISPs symmetrically, it may not be subject to competition law assessments of dominance, as abuse of dominance is not necessarily an accurate analysis of the network neutrality problem, at least in Europe.⁴⁷ Dominance is neither a necessary nor sufficient condition for abuse of the termination monopoly to take place, especially under conditions of misleading advertising and consumer ignorance of abuses perpetrated by their ISP.⁴⁸

This Declaration, and the more legally relevant Directive clauses, will rely heavily on the implementation at national level and proactive monitoring by the Commission itself, together with national courts, and privacy regulators where content discrimination contains traffic management practices which collate personal subscriber data.⁴⁹ Nevertheless, it lays out the principle of openness and net neutrality. The Commission itself adds that it will introduce 'a particular focus on how the 'net freedoms' of European citizens are being safeguarded in its annual Progress Report to the European Parliament and the Council'.⁵⁰ Article 22(3) of the Universal Service Directive, stipulates that regulatory authorities should be able to set minimum quality-of-service standards: 'In order to prevent the degradation of service and the hindering or slowing down of traffic over networks, Member States shall ensure that [NRAs] are able to set minimum quality of service requirements'.

5.2 Interpretation by BEREC

The European Commission closed its consultation on network neutrality implementation on 30 September 2010⁵¹. BEREC's response⁵² concluded that mobile should be subject to the net neutrality provisions, listing some breaches of neutrality: 'blocking of VoIP in mobile networks occurred in Austria, Croatia, Germany, Italy, the Netherlands, Portugal, Romania and Switzerland'.⁵³ BEREC explained:

45. See Jasper P Sluijs, Florian Schuett and Bastian Henze, Transparency regulation in broadband markets: Lessons from experimental research, (2011) 35 Telecommunications Policy 592–602 for an experimental analysis of transparency regulation in broadband.

46. Directive 2009/136/EC (the 'Citizens Rights Directive') and Directive 2009/140/EC (the 'Better Regulation Directive') both of 25 November 2009, which must be implemented within 18 months.

47. See Marsden (2010) at p 1.

48. Some authors question the distinction between degrading and prioritizing altogether, as they find that the latter naturally presupposes the former. See, eg Filomena Chirico, Ilse Van der Haar and Pierre Larouche, 'Network Neutrality in the EU', TILEC Discussion Paper (2007), <<http://ssrn.com/abstract=1018326>>.

49. See Directive 95/46/EC of 24 October 1995, OJ L 281/31 (1995); Directive 2002/58/EC, OJ L 201/37 (2002); Directive 2006/24/EC of 15 March 2006 on the retention of data generated or processed in connection with the provision of publicly available electronic communications services or of public communications networks and amending Directive 2002/58/EC OJ L105/54 (2006).

50. Ibid.

51. <http://ec.europa.eu/information_society/policy/ecomm/library/public_consult/net_neutrality/index_en.htm>.

52. BoR (10) 42 BEREC Response to the European Commission's consultation on the open Internet and net neutrality in Europe, at: <http://berec.europa.eu/doc/berec/bor_10_42.pdf>.

53. BoR (10) 42 at p 3.

‘Mobile network access may need the ability to limit the overall capacity consumption per user in certain circumstances (more than fixed network access with high bandwidth resources) and as this does not involve selective treatment of content it does not, in principle, raise network neutrality concerns.’⁵⁴

They explain that though mobile will always need greater traffic management than fixed (‘traffic management for mobile accesses is more challenging’⁵⁵), symmetrical regulation must be maintained to ensure technological neutrality: ‘there are not enough arguments to support having a different approach on network neutrality in the fixed and mobile networks. And especially future-oriented approach for network neutrality should not include differentiation between different types of the networks.’

BEREC in December 2011 published its guidelines on transparency and QoS⁵⁶. This is the type of detailed guidance that the subject called out for, including for instance Network Performance (ie what ISPs can actually be monitored for).⁵⁷ NRAs have to implement net neutrality in 2013-14 with such detailed guidance. However, on transparency, ‘BEREC states that probably no single method will be sufficient’⁵⁸ and points out the limited role of NRAs. Governments’ consumer and information commission bodies are likely to also play a key role.

BEREC note that legal provisions in the Directives permit greater ‘symmetric’ regulation on all operators, not simply dominant actors, but ask for clarification on these measures: ‘Access Directive, Art 5(1) now explicitly mentions that NRAs are able to impose obligations “on undertakings that control access to end-users to make their services interoperable”’. Furthermore, the new wider scope for solving interoperability disputes may be used in future, revised Article 20 of the Framework Directive now provides for the resolution of disputes between undertakings providing electronic communications networks or services and also between such undertakings and others that benefit from obligations of access and/or interconnection (with the definition of “access” also modified in Article 2 Access Directive as previously stated). Dispute resolutions cannot be considered as straightforward tools for developing a regulatory policy, but they do provide the option to address some specific (maybe urgent) situations. The potential outcome of disputes based on the transparency obligations can provide a ‘credible threat’ for undertakings to behave in line with those obligations, since violation may trigger the imposition of minimum quality requirements on an undertaking, in line with Article 22(3) Universal Service Directive.

54. BoR (10) 42 at p 11.

55. Ibid.

56. Documents BoR 53(11) Quality of Service and BoR 67(11) Transparency, at http://erg.eu.int/documents/berec_docs/index_en.htm.

57. See BoR 53 [11] at p 3.

58. See BoR 67 [11] at p 5.

This repairs a lacuna in the law, in that the 2002 framework did not permit formal complaints to be made by content providers regarding their treatment by ISPs.

5.3 Interpretation by Other European Institutions

Telecommunications regulators are aware that net neutrality is a more important issue than they are equipped to explore, as the technologies at stake are technologies of censorship.⁵⁹ The European Data Protection Supervisor has recently expressed its concerns in this area.⁶⁰ Private Internet censorship, consistent with Article 10(2) ECHR, may only in limited circumstances be acceptable. Note that the introduction of network neutrality rules into European law was under the rubric of consumer information safeguards and privacy regulation, not competition policy.

One of the several principles of network neutrality promulgated by both the FCC and European Commission is that only 'reasonable network management' be permitted, and that the end-user be informed of this reasonableness via clear information. Both the FCC in the US and the European Commission have relied on non-binding declarations to make clear their intention to regulate the 'reasonableness' of traffic management practices. In Canada, the CRTC has relied on inquiries to the dissatisfaction of advocates, while in Norway and Japan non-binding self-regulatory declarations have been thus far non-enforced. Little was done to define reasonableness and transparency by the European Commission prior to the implementation deadline. This has led to extensive and prolonged criticism by the European consumers' organisation, and a substantial package of measurement, consumer empowerment and regulation for greater transparency and consumer rights in the proposed 2013 reforms (discussed below).

5.4 National Regulation since 2010: UK, France, Netherlands, Slovenia

Ofcom confined itself to measuring ISP broadband performance, and making it easier for consumers to switch to rival providers. Ofcom has continually attempted since 2008 to reach a self-regulatory solution, creating the unedifying spectacle of appearing to drag unwilling ISPs to the table to agree on what is at least formally 'self-regulation' though with the strongest of regulator pressure applied. Ofcom tried to encourage industry self-regulation via transparency Codes of Conduct, which were unconvincing as recalcitrant industry players agreed to only minimal restrictions on arbitrary limits on consumers' behaviour. By 2011, with implementation of 2009/140/EC needed, the government-funded Broadband Stakeholder Group (BSG) finally produced a Code of Conduct. The UK Ofcom Draft Annual Plan 2012–13 had a small section on traffic management which is bland and uninformative,⁶¹ but prom-

61. Ofcom (2012) Draft Annual Plan 2012/13 at paragraphs 5.40–5.42.

59. BoR (10) 42 at p 20.

60. European Data Protection Supervisor, Opinion on net neutrality, traffic management and the protection of privacy and personal data, 2010.

ised that Ofcom would ‘undertake research on the provision of “best-efforts” internet access.’

France also conducted extensive consultation on net neutrality. Having consulted extensively over an entire year on how to implement the 2009 framework on net neutrality⁶², ARCEP in 2010 released a ‘10 point’ principles for net neutrality⁶³. ARCEP updated their ‘10 points’ in a report to the French parliament in 2012 which concluded that competition and transparency was insufficient to deal with potential long-term consumer detriments from anti-neutrality behaviours⁶⁴. It concluded that further legislation of the type passed in Netherlands and Slovenia would be required in order to stop blocking and throttling, especially of VOIP over mobile networks, but that this was of course Parliament’s competence. ARCEP’s position has been that managed services would be permitted to be offered alongside open Internet access, “provided that the managed service does not degrade the quality of Internet access below a certain satisfactory level, and that vendors act in accordance with existing competition laws and sector-specific regulation” (Principle 4 of 2010). It confirmed this stance in permitting an agreement for preferential access to France Telecom/Orange and Free’s services by Google’s YouTube content delivery network (CDN) in early 2013⁶⁵. It is important to note that this is a non-neutral provision for a higher speed ‘managed service’, to which we return in section 8. Furthermore, the competition authority in September 2012 demanded that France Telecom clarify the relationship between its wholesale and retail operations in order to ensure it did not cross-subsidise and margin squeeze competitors, notably Cogent Communications⁶⁶. This has been noted with approval by expert telecoms analysts, with Robinson stating “ARCEP is therefore calling for the elimination of the blocking of VoIP and P2P traffic. The regulator concludes that QoS is a crucial long-term issue that must be monitored in order to “strengthen competitive emulation”⁶⁷.

US operators active in the French market did not wish to reveal their traffic data. On 10 July 2013⁶⁸, the Conseil d’Etat confirming ARCEP’s decision of 29 March 2012 on gathering information on the technical and pricing conditions governing interconnection and data routing, and denied the appeal of US ISPs Verizon and AT&T and their French subsidiaries⁶⁹. ARCEP argued that:

62. See further Curien, N. and W. Maxwell (2010) *Net Neutrality in Europe: An Economic and Legal Analysis*, Concurrences, Review of competition laws, N°4; Sieradzki D.L. and W. Maxwell (2008) *The FCC’s network neutrality ruling in the Comcast case: towards a consensus with Europe?* Communications & Strategies, N° 72, p. 73.

63. ARCEP (2010) *Internet and network neutrality: proposals and recommendations* at: http://www.arcep.fr/uploads/tx_gspublication/net-neutralite-orientations-sept2010-eng.pdf.

64. ARCEP (2012), “Report to Parliament and the Government on Net Neutrality”, http://www.arcep.fr/uploads/tx_gspublication/rapport-parlement-net-neutralite-sept2012-ENG.pdf.

65. DSL Prime (2012) *France Telecom, Free To Google YouTube: You’re Blocked Unless You Pay*, 27 December at <http://www.dslprime.com/dslprime/42-d/4881-france-telecom-free-to-google-youtube-youre-blocked-unless-you-pay>.

66. Autorite de la concurrence (2012) 12-D-18 *Décision du 20 septembre 2012 relative à des pratiques mises en œuvre dans le secteur des prestations d’interconnexion réciproques en matière de connectivité Internet*, 20 septembre 2012 Origine de la saisine : Cogent communications France, Cogent communications Inc; Entreprise(s) ou organisme(s) concerné(s) : Groupe France Télécom, Fondement juridique : L. 464-2 at <http://www.autoritedelaconcurrence.fr/user/avisdec.php?numero=12D18>.

67. Robinson, James (2012) *ARCEP favors an uncomplicated, flexible approach to net neutrality*, September 28, Ovum Update, at: <http://ovum.com/2012/09/27/arcep-favors-an-uncomplicated-flexible-approach-to-net-neutrality/>.

68. Conseil d’Etat (2013) Decision No. 360397/360398 of 10 July 2013, at http://arcep.fr/fileadmin/uploads/tx_gsactualite/CE36313071014170.pdf.

69. ARCEP decision No. 2012-0366 of 29 March 2012.

“Regular, twice-yearly information gathering campaigns were vital to the regulator’s ability to ensure that these markets run smoothly over time from a technical and economic perspective, particularly in relation to ARCEP’s ability to settle any possible disputes that might arise between ISPs and providers of public online communication services.”

The decision to uphold the information-gathering demands of ARCEP means that the French regulator will be able to gather more information on the traffic management practices of Tier 1 ISPs and CDNs such as Google than any other national regulator, including those outside the European Union⁷⁰. Arguably it also means that ARCEP will be placed in the best European position to assess the state of competition in the backbone IP interconnect market.

Netherlands network neutrality regulation was voted on by its Senate on 6 March 2012,⁷¹ which made it the first European nation to formally introduce mandated network neutrality. The law was delayed until the second half of 2013 by the need for secondary legislation from the Ministry mandating the regulator to implement the law.

Slovenia also passed a law mandating net neutrality, on 28 December 2012, which is on its face more restrictive than the Netherlands law⁷². This was also due for implementation in 2013. Field research is needed to examine the effectiveness of such laws and their operator and consumer effects⁷³.

5.5 2013 Proposed European Regulation

On 11 September 2013, the European Commission adopted a proposed regulation that would substantially impact and harmonise net neutrality provision, allowing priority ‘specialized services’ and generally preventing ISPs from blocking or throttling third party content⁷⁴. The proposal was extensively strengthened from a July 2013 draft, and its essential items are in part positive and in part negative for net neutrality policy.

70. See ARCEP (2013) The Conseil d’Etat backs up ARCEP’s powers in interconnection and data routing markets, and confirms its ability to query all of the players in these markets, including those located outside the European Union, at http://arcep.fr/index.php?id=8571&tx_gsactualite_pi1%5Buid%5D=1616&tx_gsactualite_pi1%5Bannee%5D&tx_gsactualite_pi1%5Btheme%5D&tx_gsactualite_pi1%5Bmotscle%5D&tx_gsactualite_pi1%5BbackID%5D=26&cHash=af231efe682036dbe00ed2317f1a9dccc&L=1: “Conseil d’Etat thereby also upheld ARCEP’s power to query all market undertakings, including those located outside the European Union whose business and/or activity could have a significant impact on internet users in France...ARCEP’s information gathering campaigns were necessary and proportionate...”

71. Netherlands: Senate will debate net neutrality law 6 March 2012 <http://www.eerstekamer.nl/wetsvoorstel/32549_implementatie_van_herziene>.

72. U K A Z o razglasitvi Zakona o elektronskih komunikacijah (ZEKom-1) Razglasam Zakon o elektronskih komunikacijah (ZEKom-1), ki ga je sprejel Državni zbor Republike Slovenije na seji dne 20. decembra 2012. Št. 003-02-10/2012-32 Ljubljana, dne 28. decembra 2012, at <http://www.uradni-list.si/1/content?id=111442>, Helpful translation of key aspects at <https://wlan-si.net/en/blog/2013/06/16/net-neutrality-in-slovenia/>.

73. The author has conducted personal interviews with the relevant national experts in April 2013 (Netherlands) and June 2013 (Slovenia) as well as the Minister responsible in Slovenia (August 2013) and consumer representatives (June 2013). More such research with operators and consumer groups is needed.

74. COM(2013) 627 final 2013/0309 (COD) Proposal for a Regulation laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012.

Net neutrality ‘heavy’ is explicitly rejected in a definition of Assured Service Quality⁷⁵, in Article 2.12 of the draft law: “assured service quality (ASQ) connectivity product” means a product that is made available at the internet protocol (IP) exchange, which enables customers to set up an IP communication link between a point of interconnection and one or several fixed network termination points, and enables defined levels of end to end network performance for the provision of specific services to end users on the basis of the delivery of a specified guaranteed quality of service, based on specified parameters”. We return to the issue of ASQ in the next section.

Article 23(5) enforces net neutrality ‘lite’, thus conforming to the Netherlands and Slovenian laws⁷⁶:

“Within the limits of any contractually agreed data volumes or speeds for internet access services, providers of internet access services shall not restrict the freedoms provided for in paragraph 1 by blocking, slowing down, degrading or discriminating against specific content, applications or services, or specific classes thereof, except in cases where it is necessary to apply reasonable traffic management measures.”⁷⁷

6. SPECIALIZED SERVICES: THE EXCEPTION TO NET NEUTRALITY

ISPs are creating managed service lanes alongside the public Internet, with guaranteed Quality of Service (QoS). As the FCC Open Internet Advisory Committee (OIAC) states: “The business case to justify the investment in the expansion of fiber optics and improved DSL and cable technology which led to higher broadband speeds was fundamentally predicated upon the assumption that the operator would offer multiple services”⁷⁸. In its Comcast/NBC merger conditions, FCC held that Specialized Service means:

75. The ASQ definition, also in Annex II of Com(2013) 627 is taken from the ETICS project (2010-12) majority funded (€8,000,000) by the European Commission 7th Framework Programme, which featured the major European incumbent telcos, led by Alcatel-Lucent: <https://www.ict-etics.eu/overview/objectives.html> See for regulatory implications in particular their Deliverables 8.4 at [https://bscw.ict-etics.eu/pub/bscw.cgi/d48625/D8.4%20Standardization%20activity%20reports%20\(version%202\).pdf](https://bscw.ict-etics.eu/pub/bscw.cgi/d48625/D8.4%20Standardization%20activity%20reports%20(version%202).pdf) and D3.4 at Chapters 4-5: https://www.ict-etics.eu/fileadmin/documents/publications/deliverables/D3.4_Master_Document_v1.0_final_20120517.pdf ETIS D3.4 is explicit in its aim (p211): “increased market value will be split between well-established traditional CDNs (Akamai, Limelight and Level 3) and ETICS’ players. Assuming ETICS will serve only the market corresponding to the very unsatisfied customers who will increase video demand with ETICS ASQ launch, the lower bound would then be equal to \$68.4 million. The upper limit will consider that ETICS could either develop a “proprietary” CDN solution or reduce CDN’s relevance by creating an [ASQ] pipe, possibly cannibalizing part of the market for traditional CDN providers.”

76. Article 203(4) of Slovenian Law on Electronic Communications, No. 003-02-10/2012-32, 20 December 2012, and Article 7.4a(3) of the Netherlands Telecommunications Act 2012, translated by the Dutch government at <http://www.government.nl/files/documents-and-publications/notes/2012/06/07/dutch-telecommunications-act/tel-com-act-en-versie-nieuw.pdf> (not official legal translation).

77. COM(2013) 627 final 2013/0309 (COD) *ibid*. It continues “Reasonable traffic management measures shall be transparent, non-discriminatory, proportionate and necessary to: a) implement a legislative provision or a court order, or prevent or impede serious crimes; b) preserve the integrity and security of the network, services provided via this network, and the end-users’ terminals; c) prevent the transmission of unsolicited communications to end-users who have given their prior consent to such restrictive measures; d) minimise the effects of temporary or exceptional network congestion provided that equivalent types of traffic are treated equally. Reasonable traffic management shall only entail processing of data that is necessary and proportionate to achieve the purposes set out in this paragraph.”

78. Federal Communications Commission Open Internet Advisory Committee (2013) Annual Report Released August 20, 2013, at p68.

*Any service provided over the same last-mile facilities used to deliver Broadband Internet Access Service other than (i) Broadband Internet Access Services [BIAS], (ii) services regulated either as telecommunications services under Title II of the Communications Act or as MVPD services under Title VI of the Communications Act, or (iii) Comcast's existing VoIP telephony service*⁷⁹.

The FCC Order of 2010 offers a definition of:

*Services that share capacity with broadband Internet access service over providers' last-mile facilities, and may develop and offer other such services in the future. These 'specialized services,' such as some broadband providers' existing facilities-based VoIP and Internet Protocol-video offerings, differ from broadband Internet access service and may drive additional private investment in broadband networks and provide end users valued services, supplementing the benefits of the open Internet.*⁸⁰

BEREC offers a different definition, more rigorous in enforcing separation from the public Internet:

*Electronic communications services that are provided and operated within closed electronic communications networks using the Internet Protocol. These networks rely on strict admission control and they are often optimised for specific applications based on extensive use of traffic management in order to ensure adequate service characteristics.*⁸¹

BEREC explained it: "might be the case that all IAPs present in the access markets are blocking traffic of special P2P applications. That situation might be considered as collective SMP, which is difficult to prove."⁸² It went on in paragraph 279 to observe that "Blocking P2P systems or special applications reduces consumers' choice, restricts their efficient access to capacity-intensive and innovative applications and shields the user from innovation. Thus it reduces the consumer's welfare, statically and dynamically." It concludes at paragraph 307 that "For a vertically integrated IAP, a positive differentiation in favour of its own content is very similar to a specialised service." This is an important conclusion, that specialized services can in reality form a means of evading net neutrality regulations, while diverting traffic away from the public Internet to a less regulated premium priced alternative. It created substantial controversy in the US where Comcast was accused of failing to conform to its obligations not to favour its own specialized IPTV service in 2012-13,

79. Federal Communications Commission (2011) *In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licensees*, MB Docket No. 10-56, FCC 11-4, Appendix A, I (Definitions), pg. 121, at <http://www.fcc.gov/document/applications-comcast-corporation-general-electric-company-and-nbc-universal-inc-consent--20>.

80. Federal Communications Commission (Dec. 23, 2010) *Preserving the Open Internet Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52, FCC10-201, paragraph 112 following Federal Communications Commission (October 2009) *Notice of Proposed Rulemaking, In the Matter of Preserving the Open Internet Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52, FCC 09-93.

81. BoR (12) 131 *Guidelines for quality of service in the scope of net neutrality* Document date: 26.11.2012, p5.

82. BoR (12) 132 *Differentiation practices and related competition issues in the scope of net neutrality*: Final report, of 26 November, at paragraph 277.

while under the terms of its 2011 merger consent from the FCC⁸³. As with all telecoms licensing conditions, net neutrality depends on the physical capacity available, and it may be that de facto exclusivity results in some services for a limited time period as capacity upgrades are developed.⁸⁴ Regulations passed in licensing can affect network neutrality at a fundamental level. Interoperability requirements can form a basis for action where an ISP blocks an application.

As the FCC OIAC explains “A high threshold or cap may represent an additional factor that shapes the ability of an edge provider to supply its service or conduct business with a user. If an ISP imposes a data cap or other form of UBP, this could affect user demand for the edge provider’s service, which, in turn, may shape the ability of the edge provider to market and deliver its service”⁸⁵. This is especially so if the ISP offers specialized services that compete with the edge provider, and for which a cap or other UBP does not apply”⁸⁶. They continue “There is a rationale for separately provisioning between the specialized and non-specialized services, usually to achieve some engineering or market objective, such as improve the quality of service (e.g., reduce user perceptions of delay). In addition, one service often has a set of regulatory requirements associated with it, and one often does not.” The conclusion is:

A specialized service should not take away a customer’s capacity to access the Internet. Since statistical multiplexing among services is standard practice among network operators, the isolation will not be absolute in most cases. However, if a specialized service substantially degrades the BIAS service, or inhibits the growth in BIAS capacity over time, by drawing capacity away from the capacity used by the BIAS, this would warrant consideration by the FCC to further understand the implications for the consumer and the possible competitive services running on the BIAS service”⁸⁷.

As FCC OIAC admits in suggesting technology neutrality be observed where possible (2013: 70) “There are painful edge-conditions to this principle, which we acknowledge.” There will be substantial controversy regarding definition of specialized services, data caps on public Internet (or ‘BIAS’ as the FCC calls it), and the limits of public net neutrality rules. This is already apparent in the US, and will be a central feature of the European net neutrality debate in 2014.

83. See Public Knowledge (2013) Re: *Public Knowledge Petition in MB Docket No. 10-56, Application of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licenses*, p2 at <http://www.publicknowledge.org/files/PK%201%20Year%20Letter%20on%20Comcast%20Xbox%20Petition.pdf>. “the Commission must show that it has the conviction to actually enforce merger conditions – not merely to impose them”.

84. See GN Docket No 09-191 Broadband Industry Practices WC Docket No 07-52 ‘In the Matter of Further Inquiry into Two Under-Developed Issues in the Open Internet Proceeding Preserving the Open Internet’, and Andersen et al, Joint Reply Comments Of Various Advocates For The Open Internet, 4 November 2010, Comments on Advancing Open Internet Policy Through Analysis Distinguishing Open Internet from Specialized Network Services.

85. See e.g. Lee, Timothy B. (2012) May 2, “Sony: Internet video service on hold due to Comcast data cap,” *Ars Technica* <http://arstechnica.com/tech-policy/2012/05/sony-warns-comcast-cap-will-hamper-video-competition/>.

86. Federal Communications Commission Open Internet Advisory Committee (2013) Annual Report Released August 20, 2013, at p18.

87. FCC OIAC (2013) *supra*: p68.

7. CONCLUSION: TOWARDS A NEW EUROPEAN LAW ON NET NEUTRALITY?

The decision to adopt a net neutrality 'lite' approach is that which had been anticipated ever since the 2009 package was voted through the College of Commissioners on 11 September 2013 and is now in negotiation between the institutions. It enables incumbent telcos and others to charge for higher quality but maintains some baseline of free public Internet services. It may require the revision of the Dutch and Slovenian laws, but will take direct effect – should the Regulation actually be enacted – elsewhere far more rapidly than the national regulatory debate otherwise promised. However, the debates in the European Parliament may yet see revision or even blocking of the proposed Regulation between autumn 2013 and spring 2014 (Parliament will be dissolved and a new European Parliament will be elected in May 2014). It is therefore unclear whether this lite-heavy compromise will survive the politics of the winter 2013/14.

There remains an important research question aside from specialized services. One of the main claims by ISPs wishing to traffic manage is that Internet traffic growth is unmanageable by traditional means of expansion of bandwidth and that therefore their practices are reasonable. In order to properly research this claim, regulators and legislators need access to ISP traffic measurement data. There are several possible means of accessing data at Internet Exchange (IX) points, but much data is private either because it is between two peers who do not use an exchange, or because it is carried by a Content Delivery Network (CDN). The delays to the network may make it unreliable for video gaming or voice over the Internet. Regulators are beginning to engage with measurement companies to analyse real consumer traffic⁸⁸, and more research into the reality of the consumer broadband experience is much needed. The most recent reliable commercial data suggests Western European fixed Internet traffic is growing at only 17% CAGR and mobile at 50% or lower (the latter number is inherently unreliable as mobile is only 0.15% of overall Internet traffic and networks jealously guard actual data use)⁸⁹. Both are historically low figures, suggesting the opposite of a 'data explosion'. In order to properly research this claim, regulators and researchers need access to ISP traffic measurement data. There are several possible means of accessing data at Internet Exchange points, but much data is private either because it is between two peers who do not use an exchange, or because it is carried by a CDN⁹⁰. Evidence-based policy-making is sorely needed in this area.

88. For instance UK, US regulators and the European Commission employed SamKnows to conduct wide-ranging measurement trial, while Akamai and Cisco issue quarterly 'state of the Internet' traffic aggregation studies. The European Commission contracted SamKnows to conduct tests with consumers in March 2012, inexplicably published only in June 2013, and in 2013/14 SamKnows was to repeat the tests with annual reports to the Commission, which will hopefully publish with less than fifteen months' delay. See European Commission (2013) *Quality of Broadband Services in the EU: March 2012*, contracted to SamKnows with Contract number: 30-CE-0392545/00-77; SMART 2010/0036. ISBN 978-92-79-30933-5 DOI: 10.2759/24341.

89. Cisco (2012) *Visual Networking Index*, at http://www.cisco.com/en/US/netsol/ns827/networking_solutions_sub_solution.html.

90. Faratin, P. Clark, D.D. Bauer, S. Lehr, W. Gilmore, P.W. and Berger, A. (2008) *The Growing Complexity of Internet Interconnection*, Communications & Strategies, (72): 51, 4th Quarter at SSRN: <http://ssrn.com/abstract=1374285>.

ANNEX - EC 2013 PROPOSAL EXCERPTS

Article 23 - Freedom to provide and avail of open internet access, and reasonable traffic management

1. End-users shall be free to access and distribute information and content, run applications and use services of their choice via their internet access service. End-users shall be free to enter into agreements on data volumes and speeds with providers of internet access services and, in accordance with any such agreements relative to data volumes, to avail of any offers by providers of internet content, applications and services.

2. End-users shall also be free to agree with either providers of electronic communications to the public or with providers of content, applications and services on the provision of specialised services with an enhanced quality of service. In order to enable the provision of specialised services to end-users, providers of content, applications and services and providers of electronic communications to the public shall be free to enter into agreements with each other to transmit the related data volumes or traffic as specialised services with a defined quality of service or dedicated capacity. The provision of specialised services shall not impair in a recurring or continuous manner the general quality of internet access services.

Article 25 - Transparency and publication of information

1. Providers of electronic communications to the public shall, save for offers which are individually negotiated, publish transparent, comparable, adequate and up-to-date information on:

- a) their name, address and contact information;
- b) for each tariff plan the services offered and the relevant quality of service parameters, the applicable prices (for consumers including taxes) and any applicable charges (access, usage, maintenance and any additional charges), as well as costs with respect to terminal equipment;
- c) applicable tariffs regarding any number or service subject to particular pricing conditions;
- d) the quality of their services, in accordance with implementing acts provided for in paragraph 2;
- e) internet access services, where offered, specifying the following:
 - (i) actually available data speed for download and upload in the end-user's Member State of residence, including at peak-hours;

(ii) the level of applicable data volume limitations, if any; the prices for increasing the available data volume on an ad hoc or lasting basis; the data speed, and its cost, available after full consumption of the applicable data volume, if limited; and the means for end-users to monitor at any moment the current level of their consumption;

(iii) a clear and comprehensible explanation as to how any data volume limitation, the actually available speed and other quality parameters, and the simultaneous use of specialised services with an enhanced quality of service, may practically impact the use of content, applications and services;

(iv) information on any procedures put in place by the provider to measure and shape traffic so as to avoid congestion of a network, and on how those procedures could affect service quality and the protection of personal data...

2. The Commission may adopt implementing acts specifying the methods for measuring the speed of internet access services, the quality of service parameters and the methods for measuring them, and the content, form and manner of the information to be published, including possible quality certification mechanisms. The Commission may take into account the parameters, definitions and measurement methods set out in Annex III of the Directive 2002/22/EC. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 33(2).

3. End-users shall have access to independent evaluation tools allowing them to compare the performance of electronic communications network access and services and the cost of alternative usage patterns. To this end Member States shall establish a voluntary certification scheme for interactive websites, guides or similar tools. Certification shall be granted on the basis of objective, transparent and proportionate requirements, in particular independence from any provider of electronic communications to the public, the use of plain language, the provision of complete and up-to-date information, and the operation of an effective complaints handling procedure. Where certified comparison facilities are not available on the market free of charge or at a reasonable price, national regulatory authorities or other competent national authorities shall make such facilities available themselves or through third parties in compliance with the certification requirements. The information published by providers of electronic communications to the public shall be accessible, free of charge, for the purposes of making available comparison facilities.ç

Article 26 (2)

...providers of electronic communications to the public shall provide end-users, unless otherwise agreed by an end-user who is not a consumer, at least the following information with respect to their internet access services:

(a) the level of applicable data volume limitations, if any; the prices for increasing the available data volume on an ad hoc or lasting basis; the data

speed, and its cost, available after full consumption of the applicable data volume, if limited; and how end-users can at any moment monitor the current level of their consumption;

(b) the actually available data speed for download and upload at the main location of the enduser, including actual speed ranges, speed averages and peak-hour speed, including the potential impact of allowing access to third parties through a radio local area network ;

(c) other quality of service parameters;

(d) information on any procedures put in place by the provider to measure and shape traffic so as to avoid congestion of a network, and information on how those procedures could impact on service quality and protection of personal data;

(e) a clear and comprehensible explanation as to how any volume limitation, the actually available speed and other quality of service parameters, and the simultaneous use of specialised services with an enhanced quality of service, may practically impact the use of content, applications and services.

3. The information referred to in paragraphs 1 and 2 shall be provided in a clear, comprehensive and easily accessible manner and in an official language of the end-user's Member State of residence, and shall be updated regularly. It shall form an integral part of the contract and shall not be altered unless the contracting parties expressly agree otherwise. The end-user shall receive a copy of the contract in writing.

Article 28 (4)

End-users shall have the right to terminate their contract without incurring any costs upon notice of changes in the contractual conditions proposed by the provider of electronic communications to the public unless the proposed changes are exclusively to the benefit of the end-user. Providers shall give end-users adequate notice, not shorter than one month, of any such change, and shall inform them at the same time of their right to terminate their contract without incurring any costs if they do not accept the new conditions...

5. Any significant and non-temporary discrepancy between the actual performance regarding speed or other quality parameters and the performance indicated by the provider of electronic communications to the public in accordance with Article 26 shall be considered as nonconformity of performance for the purpose of determining the end-user's remedies in accordance with national law.