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TILEC Discussion Paper

NETWORK NEUTRALITY IN THE EU

Filomena Chirico,^{*} Ilse van der Haar,^{**} Pierre Larouche^{***}

Abstract

This paper seeks to assess exactly where and how the network neutrality discussion taking place in the United States is relevant in the EU context, and thus where Europeans should be concerned. Secondly, where there is a concern, it looks to EC law to ascertain whether it already provides a response or whether further action at the legislative or regulatory level would be needed. The paper tackles three contentious issues of the net neutrality debate: discrimination, blocking user access to content and access-tiering. It does so by first singling out the markets affected by such practices, then analysing the competitive situation therein and finally discussing EC law response to the concerns thus identifies.

Moreover, the analysis is put in the perspective of the more general discussions surrounding the appropriate infrastructure policy in the EU.

JEL classification: K21, K23, L51, L86,

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Table of Contents

Introduction.....	3
I. Broadband Internet – Industry Structure.....	6
1.1. Basic model.....	6
1.2. First refinement: multi-player transmission chain.....	8
1.3. Second refinement: End-User subscriptions and switching costs.....	9
1.4. Third refinement: Web 2.0 and bidirectionality.....	10
II. Broadband Internet – Market Definition and Market Power.....	11
2.1. Relevant markets definition.....	11
2.1.1. <i>Retail markets</i>	11
2.1.1.1. The retail market for content.....	11
2.1.1.2. The retail market for broadband access provision (Retail BAP market).....	12
2.1.1.3. The market for content transmission to End-Users.....	12
2.1.2. <i>Wholesale markets</i>	13
2.1.2.1. The wholesale market for broadband access provision.....	13
2.1.2.2. The wholesale market for content transmission to End-Users.....	16
2.2. Dominance and SMP on the relevant markets.....	18
2.2.1. <i>Market power</i>	19
2.2.2. <i>The regulatory framework</i>	20
III. The link between infrastructure policy and network neutrality.....	22
IV. Discrimination.....	25
4.1. Definition of discrimination – Four hypotheses.....	26
4.2. First hypothesis: the Integrated BAP with a presence at the content level..	27
4.3. Second hypothesis: the Simple BAP with a presence at the content level ..	33
4.4. Third hypothesis: Simple BAP without presence at the content level.....	33
4.5. Fourth hypothesis: Integrated BAP without presence at the content level ..	34
V. Blocking user access to content.....	35
5.1. Blocking user access to content and EC Competition Law.....	37
5.2. Blocking user access to content and the SMP regime.....	39
5.3. Blocking user access content and the general interconnection regime.....	39
VI. Degrading and access-tiering.....	41
6.1. Understanding access-tiering.....	42
6.2. Feasibility of access-tiering.....	45
6.3. A problem or an opportunity?.....	50
6.3.1. <i>Static perspective</i>	51
6.3.2. <i>Dynamic perspective</i>	52
6.4. Regulatory responses.....	56
6.4.1. <i>Access-tiering is not prohibited</i>	58
6.4.2. <i>Access-tiering is to be prohibited</i>	62
VII. Conclusions.....	65

INTRODUCTION

The debate on network (or net) neutrality has been raging for some time in the United States¹ and is now also entering the agenda in Europe. Leaving aside early proposals made in the general discussions on Internet Governance,² the European Commission more recently enquired about certain issues connected with net neutrality during the latest public consultation concerning electronic communications regulation.³ Some national authorities have also manifested their position.⁴

Given the extent and intensity of the debate in the USA, the issue deserves a thorough treatment. When it comes to the EU, this implies that care must be taken to ensure that the terms of the debate are properly translated to take the peculiarities of the USA and of the EU into account.

The aim of this paper is twofold. First, it seeks to assess exactly where and how the network neutrality discussion is relevant in the EU context, and thus where Europeans should be concerned. Secondly, where there is a concern, it looks to EC law to

¹ See, among the copious scholarly work, Wu, Tim, "Network Neutrality: Competition, Innovation, and Nondiscriminatory Access" (April 24, 2006). Available at SSRN: <http://ssrn.com/abstract=903118>, Crawford, Susan, "Network Rules" (June 14, 2006). Cardozo Legal Studies Research Paper No. 159 Available at SSRN: <http://ssrn.com/abstract=885583>; J. Gregory Sidak "A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet" *Journal of Competition Law and Economics*, Vol. 2, No. 3, pp. 349-474, September 2006, Christopher Yoo "Network Neutrality and the Economics of Congestion", *Georgetown Law Journal*, Vol. 94, June 2006, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=825669, Christopher S. Yoo, "Beyond Network Neutrality", *Harvard Journal of Law and Technology*, Vol. 19, Fall 2005 Available at SSRN: <http://ssrn.com/abstract=742404>.

² Back in 2005, the end-to-end principle was included in the EU proposal for the WSIS declaration on Internet Governance. European Union, Proposal for Addition to Chair's Paper Sub-Com A Internet Governance on Paragraph 5 "Follow-up and Possible Arrangements," Doc. WSIS-II/PC-3/DT/21-E (Sept. 30, 2005), available at <http://www.itu.int/wsisis/docs2/pc3/working/dt21.pdf>. Moreover, the French Government had included network neutrality among its proposals for fundamental principles of Internet Governance. See French Government, General Principles of Internet Governance: Proposal of the French Government 2, 3 January 2005, available at <http://www.netgouvernance.org/GovernancePrinciplesENG.pdf>. Another French position paper is "Internet Architecture: The Stakes of the End to End Principle", 6 June 2005, available at <http://www.netgouvernance.org/E2E.PDF>.

³ See the 2006 Communication on the Review of the EU Regulatory framework for electronic communications and especially the complementary Staff Working Document (paragraph 6.4 and 9.2), both available at http://ec.europa.eu/information_society/policy/ecommm/tomorrow/roadmap/index_en.htm#communication1. Later, the Commission has also included a question on the neutrality of the Internet in its consultation on the regulation of online content. See website.

⁴ For example, the Dutch parliament has adopted a resolution in which it calls for a neutral Internet {ref} while British authorities seem oriented in a different way. See, for example, the statements reported by Zdnet <http://news.zdnet.co.uk/communications/0,1000000085,39286400,00.htm>.

ascertain whether it already provides a response or whether further action at the legislative or regulatory level would be needed.

It is important to note at the outset that “network neutrality” is used to cover different issues which are not necessarily related to one another nor amenable to a single solution. As a consequence, attempts at giving a comprehensive and consistent definition of this expression have generated more problems than they have solved. This paper avoids entering the definitional debate. On the basis of the existing legislative documents (in particular, the FCC Policy Statement of 2005, the bills proposed to the Congress, the AT&T/BellSouth Settlement)⁵ we isolate and discuss the three main contentious issues,⁶ namely discrimination, blocking user access to content and access-tiering.

Discrimination runs through as a theme in all the documents and includes a) discrimination by the Broadband Access Provider (hereinafter “BAP”) between various Content Providers (a form of second-line discrimination); b) discrimination by the BAP between third-party Content Providers and its own subsidiary Content Provider (a form of first-line discrimination).

⁵ The Policy Statement issued by the FCC on 23 September 2005 (*Policy Statement regarding Internet Regulation*, FCC 05-151) contained four propositions which launched the network neutrality debate. Later on, a number of members of Congress introduced bills that would amend the Communications Act 1934. At the core, the latest version, the would-be “Internet Freedom Preservation Act” (IFPA), contains a set of six propositions for the regulation of broadband access providers. Finally, the first and so far only appearance of network neutrality in actual law took place in December 2006, when AT&T and BellSouth agreed to two commitments branded as “network neutrality” in order to obtain the authorisation of the FCC for their merger. (*FCC Approves Merger of AT&T Inc. and BellSouth Corporation*, FCC Docket 06-74, Press Release 29 December 2006 and the commitment letter attached thereto).

⁶ Propositions not discussed here are uncontroversial from the point of view of economic regulation. FCC proposition 3 and IFPA proposition 2, for instance, relate to equipment and are already part of EC electronic communications regulation: see Directive 88/301 of 16 May 1988 [1988] OJ L 131/73 and Directive 1999/5 of 9 March 1999 [1999] OJ L 91/10. Similarly, the Universal Service Directive – at least in spirit, if not explicitly – obliges service providers to inform consumers on the service provided and the service quality levels on offer, which could cover the content of IFPA proposition 3: Directive 2002/22 {...}. IFPA proposition 6 seems merely ancillary, and the first AT&T commitment adds nothing to the FCC Policy Statement.

*Blocking user access to content, applications and services,*⁷ essentially, comes down to the BAP erecting a barrier in either or both directions between an End-User and the Content Provider of his or her choice.

Degradation and Access-tiering. BAPs would be prevented from charging *Content Providers* feeding their services into the Internet (as opposed to users receiving these services) a fee depending on the type of services. In simple terms, BAPs and Backbone Providers, as the case may be, already charge both sides for capacity used; the issue is whether they can also perceive a fee for a certain quality of service level, as reflected in prioritisation of certain content, a practice often referred to as *access-tiering*. BAPs would be prevented from charging Content Providers for access-tiering, while this practice would remain acceptable towards End-Users.

In a technical sense, there is a common theme running through these three issues, which would perhaps explain why they are brought together under the network neutrality keyword. The Internet as it is today is based on the so-called end-to-end architectural principle.⁸ By virtue of such principle, the network performs no function except the transmission of packets of data, while all other functions are done by the devices connected at the end points, where intelligence lies. By contrast, in order to engage into any of the three practices mentioned above, it is necessary to look into the packets as they transit over the Internet.

This paper puts the issues thus identified in the European context. This requires, on the one hand, singling out the respective peculiarities of the US and European communications sectors, and on the other hand, identifying applicable regulatory solutions in the EC legal system. As far as the latter are concerned, it seemed natural to look at EC competition law, in particular at the rules concerning dominant firms.⁹

⁷ For the sake of simplicity and in line with most of the literature on network neutrality, “content” will be understood to include services and applications as well.

⁸ Enshrined in some official technical documents, called RFCs, representing a sort of self regulation by the engineering community. It was first suggested in a paper by Jerome H. Saltzer, David P. Reed & David D. Clark, *End-to-End Arguments in System Design*, 2 *ACM Transactions on Computer Sys.* 277 (1984), available at <http://www.reed.com/Papers/EndtoEnd.html>.

⁹ EC competition law applies only in so far as the conduct in question is susceptible to affect inter-state trade, in order for the EC to have jurisdiction. However this condition is not too difficult to satisfy, especially in connection with a *per se* cross-border activity such as the Internet.

Secondly, electronic communications regulation¹⁰ comes into consideration, in particular two elements: the so-called “SMP” (Significant Market Power) regime,¹¹ framed along similar lines of reasoning as competition law¹² and, where relevant, the general interconnection regime.¹³

The paper is divided into seven parts. Part I explains how the industry works. Part II identifies likely relevant markets for regulation and illustrates how market power is being assessed under EC law. Part III touches upon the link that exists between infrastructure policy and network neutrality. On the basis of the background thus delineated, the following three parts deal with the further analysis of the three contentious issues identified above: discrimination in Part IV, blocking access to content in Part V, access-tiering and the concomitant degrading of traffic in Part VI. Conclusions are drawn in Part VII.

I. BROADBAND INTERNET – INDUSTRY STRUCTURE

Before embarking on a discussion of the three main issues identified above, it is useful to explore how the industry is structured, with a view among others to investigate how relevant markets could be defined for the purposes of applying competition law and the SMP regime under electronic communications regulation.

1.1. Basic model

At its simplest, we are dealing here with a three-level vertical chain.

¹⁰ Directive 2002/21/EC on a common regulatory framework, 7 March 2002, Official Journal, OJ L 108, 24.4.2002, p.33, (Framework Directive); Directive 2002/19/EC on access and interconnection, 7 March 2002, Official Journal, OJ L 108, 24.4.2002, p. 7, (Access Directive), Directive 2002/20/EC on the authorisation of electronic communications networks and services, 24 April 2002, Official Journal, OJ L 108, 24.4.2002, p. 21, (Authorisation Directive), Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services, 24 April 2002, Official Journal, OJ L 108, 24.4.2002, p. 51, Directive 2002/77/EC on competition in the markets for electronic communications services, 17 September 2002, Official Journal, OJ L 249, 17.09.2002, p. 21, Decision 2004/641/EC amending decision (2002/627/EC) establishing the European Regulators Group for Electronic Communications Networks and Services, 16 September 2004, Official Journal, OJ L293, 16.6.2004, p. 30.

¹¹ Framework Directive, Articles 6-7 and 14-16, Access Directive, Articles 6-13.

¹² This regime is broadly aligned with competition law, in the sense that it follows the same analytical structure (market definition, market analysis, remedies) and that it purports to rely on competition law notions of market definition and dominance in so doing.

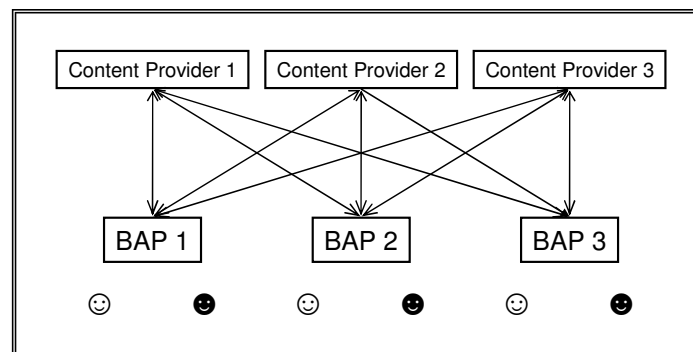
¹³ Articles 4 and 5 Access Directive.

At the upstream level, we find a class of firms which we will all put under the heading “Content Providers” for the sake of simplicity. Distinctions are sometimes made between the provision of content, application or services.¹⁴ In any event, for our purposes, the distinction is not crucial: even if content, application or service provision were separate markets (or if the upstream level is further broken down into smaller markets), our arguments would remain valid.

The downstream level is made up of the various players who are involved in the transmission of the content to End-Users. We call them “Broadband Access Providers” or BAPs for the sake of consistency with existing literature.¹⁵

Further downstream, we find the End-Users. Each End-User contracts with a BAP and pays that BAP for the transmission of content.

If we assume that both levels are competitive – for the sake of clarity, we placed only three players at each level, but the actual number would have to be higher –, that product differentiation plays no role and that switching costs are negligible, this simple model would look as follows:



In this simple model where both levels are competitive, Content Providers have an incentive to ensure that their content is distributed through all operators at the

¹⁴ Intuitively, one would characterise iTunes, for instance, as a content provider, since the mainstay of its business is the supply of music and video files. Google would exemplify service provision, in this case a search service leading customers to specific content. Finally, VoIP providers like Skype or Vonage would qualify as application providers, since they offer an application (voice telephony) over the existing IP networks.

¹⁵ In principle, there is no reason to restrict the discussion to broadband, since the same problems could theoretically arise with respect to narrowband. However, in practice, the range of content marketable in a narrowband environment is fairly limited and hence the discussion really concerns broadband.

downstream level. Indeed distributing their content through one distribution channel only is unlikely to increase their profit such as to compensate the losses from foregone sales through the other channels. Conversely, operators also have an incentive to carry content from all providers. As for End-Users, they would prefer to obtain content from one or the other operator, depending on offer and demand.

This simple model is not so unusual. In fact, it is the traditional manner in which much content has been distributed. For instance, books in bookstores, recorded music in record shops, movies in cinemas (to a lesser extent), etc. follow this model.¹⁶ However, when discussing the distribution of content over the Internet, three refinements have to be brought to that simple model.

1.2. First refinement: multi-player transmission chain

First and most significantly, the transmission of content can be further broken down. The simple model sketched above would imply that the BAP controls the transmission and distribution of content from the Content Provider all the way to the End-User. This can be true sometimes – a point which will be discussed further below¹⁷ – but in practice, this has been the exception rather than the rule so far. Typically, packets transit through a number of backbone networks before reaching the BAP and then the End-User, as the following figure illustrates:



The core of the Internet, i.e. the various interconnected backbone networks, is represented by a cloud, indicating that there are many transmission paths and that it does not matter precisely which path the packets take within the cloud. The cloud, however, does not reach either the Content Provider or the End-User. Rather, each of them must be linked to the cloud via a local transmission path.

In reality, the BAPs then offers to the End-User a bundle of services, namely (i) the local transmission path between the BAP and the End-User and (ii) passage through

¹⁶ In traditional media distribution channels, the presence of a network at the downstream level is less apparent, but it is there nonetheless (be it through wholesale networks for the supply of retailers).

¹⁷ See the discussion of the feasibility of access-tiering at page 45 *et seq.*

the cloud all the way to the resource at destination (including the local path out of the cloud), commonly referred to as Internet connectivity (usually via some form of connectivity agreement¹⁸).

Traffic over the local transmission path is under the control of the BAP. In the EU as in the US, two main paths to the user are currently available, namely via an ADSL connection (and thus via the revamped telecom network) or via the cable TV network (updated for data transmission). In the US and EU, the firms which own these paths – typically the incumbent telecommunications and cable TV operators respectively – are almost always offering also broadband access to End-Users: we will call them “Integrated BAPs”. Moreover, the incumbents – on their own motion or because of regulatory obligations – can also offer their facilities on a wholesale basis to other BAPs. The type of offer can range from simple resale to renting the unbundled local infrastructure (loop), and includes also intermediate formula such as so-called bitstream access. BAPs which rely on wholesale offers from incumbents to link to their End-Users will be called “Retail-only BAPs” by opposition to Integrated BAPs.

There is also a local path leading from the Content Provider to the cloud. Since the typical Content Provider generates and receives much larger volumes of data than End-Users, it requires something more powerful than access provision using DSL or cable. A Content Provider would normally purchase a higher-volume connection – a leased line or other comparable solution – directly from one of the firms whose network is part of the cloud, in order to have better access to the cloud (let us call that firm a “Backbone Provider” for the sake of argument).¹⁹ The Backbone Provider, much like the BAP, sells to the Content Provider a mix of access to the Internet (the link between the Content Provider and the cloud) and Internet connectivity.

1.3. Second refinement: End-User subscriptions and switching costs

¹⁸ It can be either a peering agreement (where the two parties, usually large players, exchange traffic on a reciprocal basis without any fee) or a transit agreement (where a smaller party entrusts its traffic to a larger one, in return for a fee).

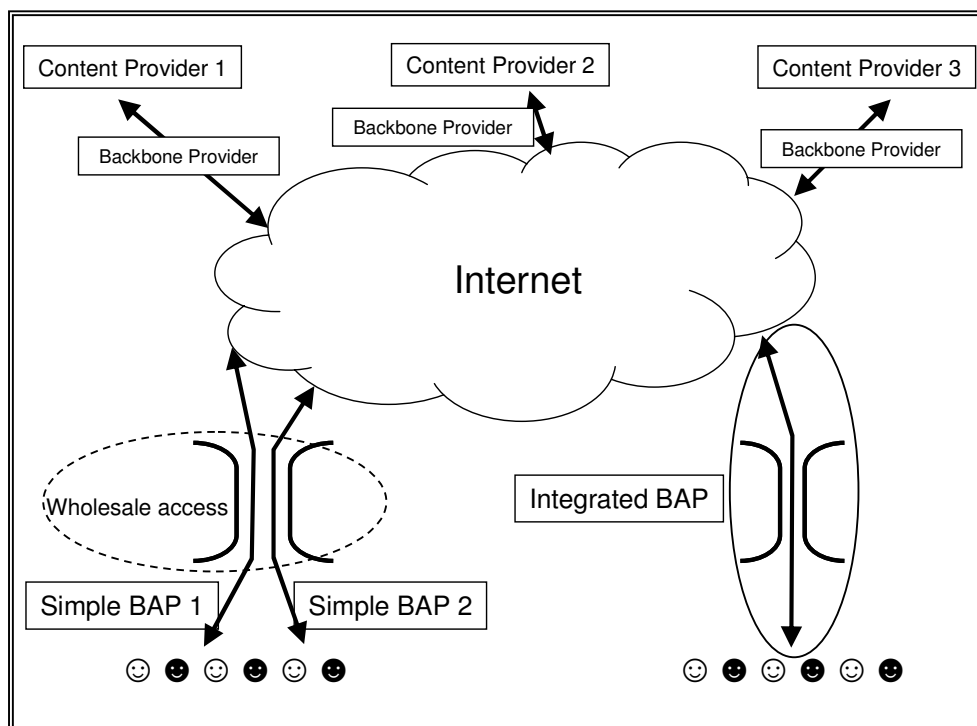
¹⁹ That firm could very well also be active on the market for the provision of broadband access to End-Users.

Secondly, considering that in practice End-Users do subscribe to the services of one or the other operator to obtain access to the Internet, we will also associate them more closely with one or the other BAP. This implies the existence of switching costs should an End-User wish to change her BAP. Such costs, however, are not necessarily insurmountable.

1.4. Third refinement: Web 2.0 and bidirectionality

Thirdly, the model above also assumes a one-way transmission of content from the Content Provider to the End-User.²⁰ While this may still accurately describe the functioning of the industry, the rise of peer-to-peer distribution of content – the so-called “Web 2.0”, including blogs, vlogs, video sharing, etc. – is turning End-Users into Content Providers of their own (so-called user-generated content). Presumably, the traditional Content Providers will remain larger players, but the evolution cannot be ignored.

In the end, therefore, the following illustration might prove a more accurate description.



²⁰ With a return channel if needed for some amount of interactivity as well as backoffice functions.

II. BROADBAND INTERNET – MARKET DEFINITION AND MARKET POWER

Given that competition law (and sector-specific regulation modelled thereupon) plays a central role in the discussion, the first step in the analysis must be to ascertain which relevant markets could be defined. The relevant market definition exercise is useful in any event to gain a better understanding of the competitive constraints already playing out on the various markets, before considering any regulatory intervention.

2.1. Relevant market definition

2.1.1. Retail markets

As a starting point, it is apparent from the decision practice of the Commission and from the basic structure of the electronic communications framework that a broad distinction is made between the upstream and downstream levels.²¹ This can be seen in the most relevant Commission decisions such as *AOL/TimeWarner*²² and *Vivendi/Seagram*,²³ as well as the last major audiovisual media decision, *Newscorp/Telepiù*.²⁴

2.1.1.1. The retail market for content

At the upstream level, in line with what was mentioned before, it is not material for this piece to distinguish further.²⁵ We will thus assume a broad market for content,

²¹ For more details, see P. Larouche, “Communications convergence and public broadcasting” TILEC DP 2002, available at <http://www.tilburguniversity.nl/tilec/publications/discussionpapers/larouche2.pdf>

²² Commission Decision no. 2001/718/EC of 11 October 2000 (Case No COMP/M.1845 – AOL/Time Warner), Official Journal L 268 , 09/10/2001 p. 28.

²³ Commission Decision of 13/10/2000 (Case No IV/M.2050 - 3* VIVENDI/CANAL+ /SEAGRAM), Official Journal C 311 , 31/10/2000 p. 3. These two decisions might seem obsolete by now, if only because the underlying transactions were based on business plans which totally failed to materialise and the firms have in the meantime been broken up or restructured. The relevant market definitions might also seem overly cautious, yet the distinction between the content and network levels remains solid.

²⁴ Commission Decision 2004/311/EC of 2 April 2003 (Case COMP/M.2876 — Newscorp/Telepiù), Official Journal L 110 , 16/04/2004 p. 73.

²⁵ In fact, the decision practice of the Commission does define more precise relevant markets depending on the type of content, and in the light of substitutability. Examples include the market for music (cases AOL/TimeWarner, Vivendi/Seagram), the market for movie or, more precisely, for movie

where Content Providers (supply side) seek to sell content to End-Users (demand side) or use that content to sell other products to End-Users or to advertisers.

2.1.1.2. *The retail market for broadband access provision (Retail BAP market)*

Downstream, the transmission and distribution infrastructure is typically broken down further into more specific relevant markets, which are of interest here. Commission Recommendation 2003/311 on relevant product and service markets,²⁶ which identified markets susceptible of *ex ante* regulation under the SMP regime contained in EC electronic communications regulation, will serve as a guide.²⁷

At the retail level, in the light of developments in recent years, the Commission would now put broadband Internet access on a separate relevant market from narrowband access.²⁸ In line with the description given above, the Commission considers that BAPs sell to End-Users a retail bundle of (i) the local transmission path and (ii) Internet connectivity.²⁹

2.1.1.3. *The market for content transmission to End-Users*

So far, the relevant retail markets have been defined with the End-User on the demand side. But the Content Provider is also a customer for transmission services at retail level; it wants to ensure that its content is transmitted to the End-Users. Content Providers contract with Backbone Providers to ensure that the content will be

rights (cases Vivendi/Seagram, Newscorp/Telepiù) and the market for sports rights (cases Newscorp/Telepiù, as well as the case-law concerning Eurovision, the marketing of sports rights, etc.).

²⁶ [2003] OJ L 114/45. The Recommendation itself contains little by way of analysis, but it was accompanied by an explanatory memorandum, available at http://ec.europa.eu/information_society/policy/ecomms/info_centre/documentation/recomm_guidelines/. A draft updated Recommendation (with draft explanatory memorandum) was released on 28 June 2006 and is available at http://ec.europa.eu/information_society/policy/ecomms/doc/info_centre/public_consult/recommendation_final.pdf. On the issues discussed here, the updated Recommendation and its explanatory memorandum do not introduce major changes.

²⁷ See also competition law decisions such Decision 2003/707 of 21 May 2003, *DT (prize squeeze)*[2003] OJ L 263/9 and the subsequent DT price squeeze case concerning wholesale offerings for data communications (line sharing), settled in March 2004, IP 2004/281 (1 April 2004).

²⁸ See the draft explanatory memorandum, *supra*, at footnote 26, at pp. 27-29. In the current explanatory memorandum, issued in 2003, the Commission was less conclusive on the distinction between broadband and narrowband at the retail level.

²⁹ Explanatory memorandum, *supra*, at footnote 26 at p. 21.

transmitted to End-Users, hence giving rise to a retail market which is different from the retail BAP market, given that Content Providers require a different kind of product.

2.1.2. Wholesale markets

When it comes to wholesale markets, US and EC regulation part ways in a manner which has very significant consequences for the rest of the discussion. The wholesale level is relevant for the last two retail markets examined above.

2.1.2.1. The wholesale market for broadband access provision

(i) In the USA

In the USA, on 23 September 2005, the FCC adopted its Wireline Broadband Access Order.³⁰ Formally, that Order classified broadband Internet access over ADSL as an “information service” within the meaning of the Communications Act. In reality, this meant that Integrated BAPs using DSL (mostly telecom incumbents) were relieved of their regulatory obligations concerning this service,³¹ and in particular of the obligation to offer the so-called “transmission component” of this service (“bitstream access” in EC parlance) at wholesale level to competing Retail-only BAPs on a non-discriminatory basis.³² It should be noted, however, that the obligation to offer wholesale Unbundled Local Loops (ULL), pursuant to § 251 of the Communications Act, remains in force.³³ However, that latter obligation does not apply to fibre-based networks; as copper is replaced by fibre, therefore, ULL is no longer mandated.³⁴ This Order marked the end of a cycle of deregulatory measures, which had begun with the *Cable Modem* ruling, to the effect that broadband Internet access over cable was also

³⁰ FCC, *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, CC Docket 02-33, Order, FCC 05-150 (23 September 2005).

³¹ *Ibid.* at pp. 23 and ff. para. 41 and ff.

³² Described *ibid.* at pp. 14-20, para. 26-31.

³³ *Ibid.* at pp. 70-71, para. 126-127.

³⁴ That is the result of a combination of orders in parallel proceedings: see FCC, *Triennial Review Order*, CC Docket Nos. 01-338, 96-98, 98-147, 18 FCC Rcd 16978, (2003), that part upheld in *US Telecommunications Association (USTA) v. FCC*, 359 F. 3d 554 (2 March 2004); *MDU Reconsideration Order*, CC Docket No. 01-338, FCC 04-191, 19 FCC Rcd 15856 (8 September 2004); *FTTC Reconsideration Order*, CC Docket Nos. 01-338, 19 FCC Rcd 20293 (18 October 2004) and *Broadband 271 Forbearance Order*, CC Docket Nos. 01-338, 19 FCC Rcd 21496 (27 October 2004).

an “information service”, with similar consequences.³⁵ The Cable Modem ruling was upheld by the US Supreme Court in *Brand X*,³⁶ thus providing, in substance, judiciary endorsement of the whole deregulation of broadband services by the FCC.

The FCC measures are not formally based on competition law reasoning; rather, they purport to apply the complex definitional scheme of the Communications Act. Nevertheless, in substance, they are based on some kind of relevant market assessment by the FCC. The FCC takes a decidedly forward-looking approach, finding that the market includes a number of actual and potential competing platforms, including not only DSL and cable, but also satellite, wireless and powerline.³⁷ Even at the wholesale level, thus, the FCC declines to hold that these platforms – in particular DSL and cable – form separate markets.

In closing, it should be mentioned that, by virtue of the position taken by the US Supreme Court in *Trinko*,³⁸ on the relationship between sector-specific regulation and antitrust law, it is very likely that the FCC order will also imply that US antitrust law will not be available³⁹ to force cable or DSL operators to grant bitstream (or similar) access to their competitors.

(ii) in the EU

EC electronic communications regulation applies to “electronic communications networks” and “electronic communications services”⁴⁰, notions which certainly cover BAPs activity. However, since EC electronic communications regulation relies on a content/network divide,⁴¹ Content Providers fall outside of the scope of the regulatory

³⁵ FCC, *Cable Modems*, GN Docket 00-185, Declaratory Ruling and NPRM, FCC 02-77 (14 March 2002).

³⁶ *National Cable & Telecommunications Ass’n v. Brand X Internet Services*, 125 S. Ct. 2688 (2005).

³⁷ FCC, *Wireline Internet Broadband Access Order*, *supra*, note {...} at pp. 28-33, para. 50-61.

³⁸ *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko*, 540 US 682 (2004).

³⁹ To the extent that it would be available at all: *Trinko* also contains a severe critique of the Essential Facilities Doctrine, although the Court does not name it so.

⁴⁰ These two notions are defined at Art. 2 of the Framework Directive: (a) “electronic communications network” means transmission systems and, where applicable, switching or routing equipment and other resources which permit the conveyance of signals [...] irrespective of the type of information conveyed; (c) “electronic communications service” means a service normally provided for remuneration which consists wholly or mainly in the conveyance of signals on electronic communications networks, including telecommunications services and transmission services in networks used for broadcasting, but exclude services providing, or exercising editorial control over, content transmitted using electronic communications networks and services[...];

⁴¹ As evidenced by the definitions above and by Articles 1(2) and 1(3) of the Framework Directive.

framework. Their activities in feeding content into the Internet would typically not qualify as “electronic communications”.⁴²

At the outset, thus, EC law already differs from US law in a very significant way. The whole net neutrality debate in the US arose because the FCC classified broadband access as an “information service” and thereby put it outside of the reach of Part II of the Communications Act, which contains most of the significant regulation. Seen from another angle, the FCC drew a line between a thoroughly regulated narrowband world (largely made up of “telecommunications services” subject to Part II of the Act) and a largely unregulated broadband world. Such a sharp line cannot be drawn under EC electronic communications regulation: rather, broadband and narrowband services are *prima facie* both falling under the regulatory framework. Some broadband services can perhaps be more lightly regulated on the grounds that they find themselves on so-called emerging markets, but as the decision practice of the Commission shows,⁴³ this is not easily achieved.

Moreover, in contrast with the position of the FCC, EC regulation has defined much narrower wholesale relevant markets. The Commission unravels the bundle into separate wholesale markets. Generally, it considers that the market for Internet connectivity is competitive.⁴⁴ This leaves the wholesale market for the local transmission path, referred to in EC documents as “wholesale broadband access provision”. The Commission still maintains that, at the wholesale level, cable and DSL are not on the same relevant market.⁴⁵ It does acknowledge⁴⁶ that competitive

⁴² They would rather constitute “Information Society services” within the meaning of Directive 2000/31 (E-commerce Directive) [2000] OJ L 178/1 or “broadcasting” within the meaning of Directive 89/552 (Television Without Frontiers) [1989] OJ L 298/23, as amended. Amendments recently proposed to the latter directive would replace and expand the “broadcasting” concept with “linear” and “non-linear audiovisual services”. More details on the website http://ec.europa.eu/avpolicy/reg/tvwf/modernisation/proposal_2005/index_en.htm

⁴³ {VDSL in Germany??}

⁴⁴ This market was thoroughly examined in two major merger control cases, *Worldcom/MCI* (Decision 99/287 of 8 July 1998, Case IV/M.1069 [1999] OJ L 116/1) and *MCIWorldcom/Sprint* (Decision 2003/790 of 28 June 2000, Case COMP/M.1741 [2003] OJ L 300/1). In both cases, the Commission feared the creation of a dominant position in the market for “top-level or universal Internet connectivity”, i.e. the ultimate wholesale market for Internet connectivity.

⁴⁵ The issue is left open in the explanatory memorandum to Recommendation 2003/311, cit. *supra*, footnote 26, at 24. The draft explanatory memorandum for the revised Recommendation, however, incorporates the experience of the last few years and clearly states the current view of the Commission that the two are on separate markets. See pp. 30-31.

⁴⁶ Draft memorandum, *ibid*.

pressures arising from the retail market, where cable- and DSL-based products compete, impose some constraints at wholesale level, but without affecting market definition.⁴⁷ In essence, the Commission would include the two platforms on the same market only if cable TV were used to provide a wholesale broadband access similar to bitstream, in which case it might substitute for bitstream access in the eyes of the wholesale customers, i.e. the BAPs. Generally, in Europe cable TV networks are only used for the self-provision of broadband access to the BAP arm of cable TV operators. Since third-party Retail-only BAPs do not have access to cable TV platforms, there is thus no substitutability.⁴⁸

2.1.2.2. *The wholesale market for content transmission to End-Users*

As mentioned above, the Backbone Provider, like the BAP, sells a bundle of access to the Internet (local path) and Internet connectivity to the Content Provider (including the final delivery – or termination – of the content to the End-User via the local path out of the cloud. Such termination path is under the control of the BAP to whom the End-User subscribed. Hence, such BAP supplies some of the connectivity going into the package sold by the Backbone Provider to the Content Provider. This is a wholesale market with the BAP as supplier and the Backbone Provider as customer.⁴⁹

The BAP is thus not directly linked with the Content Provider.

Here market definition in the EC could differ from the US in another significant way, if market definition was refined along the same lines as the termination markets for circuit-switched voice communications (fixed and mobile).⁵⁰ The BAP supplies the last part of the connectivity, routing the packets out of the Internet backbone onto a local path to the End-User. Therefore, the BAP is functionally in the same position as

⁴⁷ Indeed in the decisions taken by National Authorities concerning the market for wholesale broadband access (Market 12), the Commission has criticised all National Authorities who sought to put DSL- and cable-based access on the same market. See the Commission comments to Austria (AT/2005/312), Estonia (EE/2006/522), Finland (FI/2006/547 and 548), Ireland (IE/2004/93), Portugal (PT/2004/118) and the UK (UK/2003/32 to 34), available at <http://forum.europa.eu.int/Public/irc/infos/ecctf/library>.

⁴⁸ It is interesting to note that the presence of a bitstream offer over DSL platforms is a consequence of regulation, so that in fact relevant market definition ends up being conditioned by asymmetric regulation (and not the other way around).

⁴⁹ The Backbone Provider buys either directly from the BAP or indirectly, where the BAP is linked with for instance a top-tier Internet backbone with which the Backbone Provider has a transit agreement.

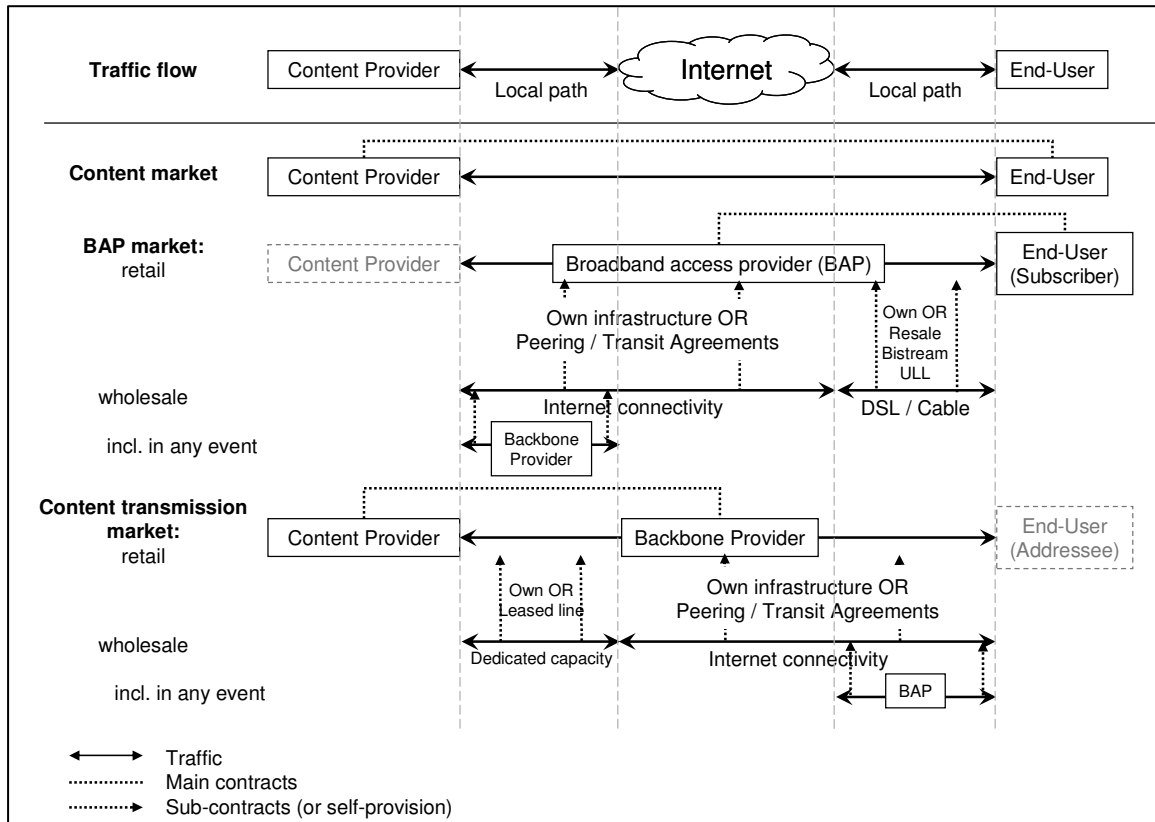
⁵⁰ {See Recommendation and explain...}

the terminating network operator in a circuit-switched architecture. By analogy, the reasoning of the Commission, as set out in the Recommendation on relevant markets, could be followed.⁵¹ The absence of direct contractual relationship between BAP and Content Provider is immaterial. This would imply that, as a starting point, the installations of each BAP (router, servers, links to End-Users) would form a separate relevant market at wholesale level.⁵² One must then look at the factors which would justify expanding the relevant market, namely demand or supply substitution. Given that the End-User is reachable via one BAP only, there is no supply or demand substitution at wholesale level. There might be competitive pressure from demand substitution at retail level if alternative channels exist to deliver the content to the End-User, for instance mobile Internet or Internet access via another connection (work, friends, etc.), but these substitutes exert a limited influence. However, in contrast to circuit-switched communications where the calling-party-pays (CPP) convention gives no incentive to the recipient to switch providers because of change in termination tariffs and conditions, here the BAP subscriber (End-User) feels the impact of the conduct of the BAP more directly. Should some content become less accessible (or even not accessible at all) the End-User might decide to move his or her subscription to another BAP, thereby exerting indirect pressure on the BAP. Yet switching costs for End-Users, albeit low, are not negligible, as will be seen below. In the end, each BAP might find itself on its own wholesale market for transmitting data to its subscribers (End-Users) as part of an Internet connectivity package.

The overall picture of relevant markets would thus be as follows:

⁵¹ Supra, footnote 26. See in particular the explanatory memorandum accompanying the Recommendation.

⁵² In theory, transmission of packets to each End-User is a separate market, since one End-User cannot substitute for the other. As the Commission notes in the Explanatory Memorandum, *ibid.*, however, it is difficult at the wholesale level to price discriminate according to the End-User. On the Internet, it would involve discrimination according to the IP address, which is not so easy to carry out when most users have dynamic addresses.



2.2. Dominance and SMP on the relevant markets

At the outset, it must be recalled that the *control* which the BAP could exert⁵³ in the course of routing is the key element which gives rise to all three network neutrality issues discussed here.⁵⁴ Indeed, if packets are to be controlled, such an operation would take place at the routing layer, which as far the local path between the Internet backbone (cloud) and the End-User is concerned, lies under the control of the BAP.

⁵³ It should be noted that, when BAPs decide to exert greater control over the content of the traffic they are routing, they might also be exposing themselves to liability. The current regime relieves BAPs (in their capacity as ISP) from liability, provided that they do not exert editorial control over the traffic delivered via their facilities: see for the EU, Directive 2000/31 (e-commerce Directive), Art. {...}. It could be argued that the kind of regard exerted when packets are “opened” for controlling their origin and destination, as would be done to implement discrimination, blocking or access-tiering, goes some way towards editorial control.

⁵⁴ It should be underlined that such control is carried out via the routing equipment which each BAP must install to carry out its business (even if the infrastructure is only leased). Therefore control over the underlying facilities (lower layers) is immaterial. As is explained further below in the part dealing with access-tiering, traditionally routing has been done on a best-effort basis, i.e. the BAPs did their best to get all packets through and on to their destination, without looking into their address or their content, hence the use of “neutrality” to describe the situation where BAPs do not treat any packet differently from another.

As indicated before, in the US the FCC was satisfied that all relevant retail markets were competitive, and it proceeded to remove the regulatory requirements imposed on Integrated BAPs providing wireline broadband Internet access.⁵⁵ The FCC was nonetheless confident that these Integrated BAPs would have the incentive to offer spontaneously a wholesale broadband access service to third-party Retail-only BAPs, as the evidence before the FCC seemed to indicate.⁵⁶ The approach in the European Union looks rather different.

2.2.1. Market power

In the light of the market definition outlined above on the basis of EC precedents, market power – perhaps reaching as far as to qualify as significant market power (SMP) or dominance – is likely to arise at two places.

(i) Control over the underlying infrastructure (Wholesale BAP market)

First of all, a BAP might have market power with respect to its own customers (the End-User) on the retail BAP market. A likely source of market power is control over the underlying infrastructure, which would give an Integrated BAP market power at the wholesale level.⁵⁷ Indeed, in line with the relevant market definition suggested by the European Commission, the national authorities in charge of regulating the electronic communications sector (“NRAs”) have concluded that the DSL-based Integrated BAPs (typically the incumbents) enjoyed significant market power (SMP), i.e. dominance, on the market for wholesale broadband access. It is interesting to note that cable TV-based Integrated BAPs, in contrast, were not found to have SMP for wholesale access over their own platform, presumably on the basis that there was no market in the absence of any offering to third-party Retail-only BAPs.⁵⁸

(ii) Control over content delivery or termination (wholesale content transmission to end-users)

⁵⁵ I.e. over a DSL platform. As mentioned earlier, by virtue of the *Cable Modem* finding, *supra*, note 35, cable-based Network Operators were already free of such regulation.

⁵⁶ FCC, *Wireline Internet Broadband Access Order*, *supra*, note {..} at pp. 40-42, para. 74-76.

⁵⁷ Leaving aside such leveraging from the wholesale to the retail market, a BAP (Integrated or Retail-only) could perhaps also exert market power as a direct consequence of its position on the retail broadband access provision market itself, but this appears less likely.

⁵⁸ See the discussion *supra*, p. 15 *et seq.*

The second concern arises in relation to Content Providers, where the BAP supplies the Backbone Provider with wholesale components for Internet connectivity.⁵⁹ If, along the lines suggested above, the transmission facilities and subscriber base of each BAP is found to constitute a separate market, each BAP would also automatically find itself in a dominant position as gatekeeper on its “own” wholesale market for transmitting content between the Internet (cloud) and its subscribers (End-Users). In contrast to the first concern, control over the underlying facilities would not influence the analysis, so that both Integrated and Retail-only BAPs would be equally likely to be found dominant. However, here also by analogy with the termination markets for circuit-switched communications, countervailing buying power⁶⁰ (i.e. of Backbone Providers, in the case at issue) is a factor to be taken into account and could negate any market power on the part of BAPs.⁶¹ It is to be noted, nevertheless, that the conduct of the BAP affects not its immediate counterpart but rather the Content Provider, which is one step further removed in the chain of contracts. Hence the buying power of the Backbone Provider would not necessarily constrain the BAP.

The two concerns just identified roughly match the first two issues discussed under the net neutrality heading, namely discrimination and blocking. As we will see in the following sections, market power arising from control over the underlying infrastructure is most likely to lead to discrimination concerns, while market power arising from control over termination via the local path becomes problematic when blocking is engaged into.

2.2.2. *The regulatory framework*

⁵⁹ See above the discussion of the market for content transmission to End-Users, p. 16.

⁶⁰ See the Explanatory Memorandum to the Relevant Market Recommendation, *supra*, note 26 and in particular the draft Explanatory Memorandum at 23 (fixed termination) and 39 (mobile termination).

⁶¹ This issue has proved very controversial in the application of the SMP regime, with diverging views as to whether and to what extent obligations to interconnect imposed on powerful counterparts would negate their countervailing buying power. See among others the Commission Decision of 17 May 2005, Case DE/2005/0144 – Call termination on individual public telephone networks provided at a fixed location – Germany, available at <http://circa.europa.eu/Public/irc/infso/ecctf/library> or the decision of the UK Competition Appeals Tribunal in *Hutchison 3G (UK) Limited v Ofcom* [2005] CAT 39 (29 November 2005). However, with respect to the wholesale transmission of content between the Internet and End-Users, this controversy does not play out, in the absence of any regulation.

The markets above⁶² identified are certainly susceptible of analysis under general competition rules. However, it can be questioned whether the same relevant markets are meant to fall within the scope of the specific electronic communication regulation.

First of all, as mentioned already, the EC electronic communications regulation is not intended to extend to the content level.⁶³ As Recital 5 of the Framework Directive mentions, however, the separation between networks and content “does not prejudice the taking into account of the links existing between them”. Indeed it would be odd if BAPs escaped the application of regulation simply on that account.

Secondly, the wholesale BAP market (identified under 2.1.2.1) has been selected for scrutiny in Recommendation 2003/311 (Market 12)⁶⁴ but this is to the benefit of the customers of these services, namely the Retail-only BAPs.⁶⁵ Conversely, in the network neutrality discussion, the discriminatory course of conduct is undertaken by the BAP themselves when routing traffic, which is part of the retail service to End-Users.

The retail BAP market (2.1.1.2) has not been selected for scrutiny in the abovementioned Recommendation and there are no plans to include it in the next version either.⁶⁶ Furthermore, that retail market has been considered mostly from the perspective of End-Users which subscribe to broadband services, but not from the perspective of Content Providers⁶⁷ which indirectly rely on BAPs to reach customers (as identified under 2.1.1.3).⁶⁸

⁶² *Supra*, p. 11 *et seq.*

⁶³ See Framework Directive, *supra* note 10, Rec. 5 and Art. 1(2) and 1(3).

⁶⁴ Recommendation 2003/311, *supra*, note 26, Annex. Two separate markets have been selected for Unbundled Local Loop (market 11) and bitstream access (market 12). The Commission is not planning to remove these markets from the list when it revises the Recommendation later this year. Of course, NRAs are free to define other markets themselves and analyse them, but they are then subject to the veto of the Commission on market definition.

⁶⁵ See Recommendation, *cit. supra* note 26.

⁶⁶ The Commission presumably found that it did not meet the test for selection (the so-called “three-criteria” test), since it did not even seem to give the idea a serious thought. See on this point the more detailed draft Explanatory memorandum for the new version of the Recommendation, *supra*, note 26 at 26-29.

⁶⁷ However, even if the perspective were changed, it is still open to question whether the “three-criteria test” to subject the market to regulation would be met.

⁶⁸ In this sense, retail broadband access could be seen as a two-sided market, where Content Providers and users are brought in contact with each other on the platform provided by the BAP.

The second concern, i.e. the dominance of BAPs as wholesale suppliers to Backbone Providers for termination to their End-Users, escapes the set of selected markets entirely. The Recommendation refers to two wholesale termination markets concerned with fixed and mobile voice networks respectively.⁶⁹ The one market covering the transmission of content, Market 18, is limited to broadcasting only and does not extend to transmission of content over the Internet, which follows a different model altogether.⁷⁰

III. THE LINK BETWEEN INFRASTRUCTURE POLICY AND NETWORK NEUTRALITY

The market analysis just conducted also highlights the relationship between infrastructure policy and network neutrality.

In the US, as a result of the deregulatory programme of the FCC, the only obligation still weighing on the Integrated BAPs is the provision of unbundled local loop (ULL) over the copper wires. The market is therefore consolidating towards the following picture. At retail level, there are two main players, the Integrated BAPs who also own the local transmission path, namely the incumbent local network operator and the cable-TV operator. In addition, there are some competing Integrated BAPs who have rolled out their own local network or who are using other platforms such as mobile, satellite or powerline. Retail-only BAPs, if any, can operate on the basis of ULLs rented from the incumbent, on which they install their own DSL equipment. Finally, if and when Integrated BAPs decide that it is in their business interest to provide a wholesale broadband access offer to competing Retail-only BAPs (without being obliged to do so), some Retail-only BAPs might also operate on the basis of wholesale access purchased from an Integrated BAP. According to FCC figures,⁷¹ the two main Integrated BAPs (incumbent telecom or cable-TV firms) between themselves control 95% of the retail market, leaving a negligible share to the others, including Retail-only BAPs.⁷²

⁶⁹ Markets 9 and 16

⁷⁰ In this respect it could be argued that Market 18 should have been defined in a more technology-neutral fashion, so as to encompass all methods of content transmission, not just broadcasting.

⁷¹ See FCC, Report on High-Speed Services for Internet Access (2007), available at <http://www.fcc.gov/wcb/iatd/comp.html>, containing figures as of June 2006.

⁷² Including new entrants operating on the basis of ULL from the incumbents.

This market outlook is consistent with the choices underlying the FCC broadband deregulation policy, namely the fostering of infrastructure-based competition for broadband,⁷³ even if this implies that the retail market becomes concentrated in the hands of a few (essentially two) Integrated BAPs. In order to properly understand how the network neutrality debate started in the USA, why it is so significant there and why the situation might be different in the EU, it is essential to see the link with the broadband policy of the FCC. By heralding a duopoly of Integrated BAPs, the FCC effectively terminated the wholesale broadband access provision market⁷⁴ and turned the ownership of a local transmission path into a pre-condition for entering the retail BAP market. Given the expense involved in rolling out local infrastructure, this creates a significant barrier to entry on that market. Already, at the same time as that policy was established, the FCC was concerned about the impact on the Internet and it issued the Policy Statement on Internet Freedoms mentioned in the introduction.⁷⁵ Now, it seems that the FCC is worried that its deregulation policy has led to – or at least has been distorted by – increased concentration in the industry as a result of mergers in recent years, and it is revisiting these issues.⁷⁶

In the EU, a number of remedies have been imposed on the grounds that incumbent telecom operators hold SMP on the wholesale BAP market.⁷⁷ Firstly, incumbent telecom operators have been compelled to offer unbundled local loops (ULL).⁷⁸ Furthermore, it was generally recognised that the availability of ULL was not sufficient to correct the failure arising from the presence of a bottleneck at the local

⁷³ Without wanting to rehearse a debate which is as large as network neutrality, the FCC finds that a deregulated environment is more conducive to the volume and the kind of investment and innovation which it perceives are needed if the US communications infrastructure is to remain first class: see FCC, *Wireline Internet Broadband Access Order*, *supra*, note 30 at pp. 35-40, para. 65-73.

⁷⁴ Unless Integrated BAPs revive the market through their own choice to open their infrastructure, which they have not done so far.

⁷⁵ *Supra*, note 5.

⁷⁶ *Broadband Industry Practices NOI*, *supra*, note {...}.

⁷⁷ These issues are put under the “remedies” heading for the sake of logic. However, in the SMP regime, these regulated access products (ULL, bitstream) are somehow considered *a priori* as relevant markets, because in line with competition law, “access markets” can be defined almost *ex nihil* on the basis of the expressed desires of competitors. This quirk in the reasoning does not affect the substance of the analysis, however.

⁷⁸ Through Regulation 2000/2887 on unbundled access to the local loop [2000] OJ L 336/4. The Regulation is still in force, so that this remedy was bound to stay in place irrespective of the outcome of the SMP procedures. Nevertheless, the Commission indicated that it would have been justified under the SMP regime as well. See the Explanatory memorandum to Recommendation 2003/311, *supra*, note 26 at 24-25.

network level. A further remedy was required, namely the provision of a wholesale broadband access offering (bitstream).⁷⁹ It is worth noting that the EU so far has refrained from suggesting the imposition of remedies upon cable TV operators.

In contrast to the USA, the EU has a more incremental policy to the rollout of broadband infrastructure. As in the USA, infrastructure-based competition is the ultimate goal,⁸⁰ but the EU prefers to rely on a larger number of players to carry out infrastructure investments. Through its “ladder of investment” concept, for instance, it wants to entice new entrants to become infrastructure-based competitors in step with the growth of their business.⁸¹ As underlined in the Communication launching the 2006 Review of electronic communications regulation, “[b]oth new entrants and incumbents, in response to competition, are investing to extend and upgrade fixed and wireless network infrastructure in order to provide innovative services. Relative to their turnover, new entrants are investing more than incumbents. Investment can flourish in a variety of regulatory situations, but competition remains the main driving force.”⁸²

In the eyes of the Commission, the EU’s policy choices are vindicated by the main market indicators.⁸³ The broadband penetration rate – at least in those Member States which the Commission considers best-of-breed – is significantly above that of the USA or Japan. Moreover, the make-up of the broadband market is strikingly different from the USA. First of all, for historical and technical reasons, DSL accounts for more than 80% of broadband connections in the EU, compared to less than 50% in the US. Furthermore, among the DSL lines, a significant proportion is sold by new entrants (Retail-only BAPs) via either resale, bitstream, shared access or full ULL;

⁷⁹ See in particular the Draft explanatory memorandum, *supra*, note 26 at 29-30.

⁸⁰ This goal guides EC competition policy and decisions and is explicitly recognised as a regulatory issue in the Regulatory Framework for Electronic Communications Article 8 of the Framework Directive 2002/21/EC, but it is repeated in other places, such as Recital 19 of the Access Directive 2002/19/EC.

⁸¹ The “ladder of investment” concept was launched among others by Martin Cave in his study “Remedies for Broadband Services” for the Commission (September 2003), available at http://ec.europa.eu/information_society/policy/ecomms/doc/info_centre/studies_ext_consult. See also the ERG Report on Broadband Market Competition, ERG(05)23, available at www.erg.eu.int, where the concept is explained in detail.

⁸² Communication on the Review of the EU Regulatory Framework for electronic communications networks and services, COM(2006) 334 (28 June 2006) at 5.

⁸³ The following figures are taken from the 12th Report on European Electronic Communications Regulation and Markets, COM(2007)155 (29 March 2007), in particular Volume I of the accompanying Staff Working Document, SEC(2007)403 (29 March 2007).

when cable-based broadband is also taken into account, the incumbent telecom Integrated BAP accounts for slightly less than half of the broadband retail market in the EU overall. It is worth noting that, among the wholesale access products taken up by new entrants, resale (largely unregulated) is very popular (more than 30% of these wholesale accesses), and there is a trend away from bitstream towards full or shared ULL (46%), which would support the ladder of investment approach of the Commission. When, in order to make comparison possible, the two main Integrated BAPs (incumbent telecom and cable-TV Network Operators) are put together, they account for 70% of the retail market, as opposed to 95% in the USA.

In the end, whereas the US regulatory approach effectively leaves the market (at most) to a duopoly of Integrated BAPs,⁸⁴ the EC approach allows the wholesale BAP market to blossom and prevents the ownership of the local path from becoming a barrier to entry on the retail BAP market. Retail-only BAPs can then operate. These BAPs are typically competitive entrants on the retail BAP market, where they do not come close to having a dominant position. The retail BAP market is thus much more competitive than in the USA.

Accordingly, when analysing network neutrality issues in an EU context, this significant difference must be kept in mind. Referring back to the two competitive concerns identified above,⁸⁵ this would imply that the likelihood of dominance on the retail BAP market is severely reduced in the EU. The EU infrastructure policy does not necessarily alleviate to the same extent the concern arising from the position of the BAPs on the wholesale market for termination of content transmission between the Internet (cloud) and their subscribers (End-Users). Indeed there, as explained above, competitive pressure from the threat of End-Users switching to another BAP is more remote.

IV. DISCRIMINATION

⁸⁴ Pending the possible arrival of further platforms such as satellite, powerline and wireless – on the assumption that the latter would constitute a full-fledged alternative.

⁸⁵ See *supra*, p. 19 *et seq.*

Having set out in the previous sections the background against which the discussion on network neutrality plays, we move now to the analysis of the three issues identified above as the main contentious points. In this section, we discuss the first of them, namely discrimination. As will be seen below, this is the issue which most readily lends itself to the application of competition law and economic regulation such as the SMP regime.

4.1. Definition of discrimination – Four hypotheses

As a preliminary matter, it should be recalled that discrimination is limited here to discrimination by the BAP between individual Content Providers, in such a way that competition is affected on either the content market or retail BAP market. Other practices could arguably be considered discriminatory. For instance, differentiation can take place between categories of firms (different terms and conditions for different types of upstream firms, i.e. VoIP providers as opposed to file-sharing services) or according to objective criteria (different terms and conditions according to capacity and/or service level). To the extent such differentiation would not be directed at one or more specific firm in such a way as to affect competition,⁸⁶ it might be better dealt with under one of the other two issues, namely blocking and access-tiering/degrading. Similarly, differentiation between packets at the network layer (routing) is much too basic a proposition to be discussed under the header of discrimination; here as well, this is better analysed by reference to the specific higher-level issue which leads to differentiation, be it discrimination between firms, blocking or access-tiering.

In the light of the survey of relevant markets made earlier, we have chosen to focus on four specific discrimination hypotheses, which in our view should cover all possible cases. All these hypotheses share three common features: first of all, the discrimination is carried out by the BAP⁸⁷, secondly, the discrimination takes place between firms at the upstream level, i.e. Content Providers and thirdly, the anti-competitive effect arises from the position of the BAP on the retail BAP market (first

⁸⁶ Of course, the criteria can be seemingly objective in appearance but in fact cover discrimination directed at one or more firms, in which case there is discrimination within the meaning of this paper.

⁸⁷ Since the discrimination is implemented in the routing and the router giving access to the End-User connection is under the control of the BAP.

competitive concern).⁸⁸ In the discussion that follows, control (that becomes dominance) over the infrastructure is the crucial factor to take into account. The four hypotheses can be briefly introduced as follows:

- (i) *The Integrated BAP, which is present also at the content level.* Here the BAP is vertically integrated at all three levels (content, retail access provision, transmission channel). It is presumably trying to favour its own operations at the content level. For the purposes of the analysis, exclusive contractual relationships between Content Providers and BAPs⁸⁹ are assimilated to vertical integration.
- (ii) *The Retail-only BAP which is present also at the content level.* Such BAP does not own the local path, but is rather buying a wholesale BAP offering from a network operator (prevalent in the EU, rare in the US). Much like under (i), this BAP would try to favour its own operations at the content level.
- (iii) *The Retail-only BAP, without presence at the content level.* On the assumption that such a BAP is a new entrant, it could try to give more favourable treatment (even unilaterally) to large Content Providers in order to profit from the positive externality of the appeal of such Content Providers to End-Users.
- (iv) *The Integrated BAP, without presence at the content level.* Such BAP – typically the incumbent network operator – could discriminate between Content Providers in order to foreclose rival BAPs.

They will now be analysed in turn, turning first to economics to assess whether there is cause for concern, and then to the law to see how these concerns could be addressed.

4.2. First hypothesis: the Integrated BAP with a presence at the content level

An Integrated BAP may try to favour its upstream operations at content level. This is the hypothesis which most readily springs to mind. Moreover, it represents perhaps

⁸⁸ See supra p. 19 *et. seq.*

⁸⁹ I.e. the Content Provider delivers its content exclusively to the End-Users subscribing to the BAP in question. We leave aside the issue of whether it would be rational for a Content Provider to enter into such a relationship.

the biggest concern on the side of Content Providers.⁹⁰ It is reminiscent of the “walled garden” business model followed by already established “online service providers” such as AOL or CompuServe when the Internet was emerging: End-Users are given better access to certain content, over which the BAP has control. Provided the “walled garden” is sufficiently attractive to the End-Users, the Integrated BAP should be able to improve its position on the retail BAP and content market(s) by leveraging its control over the underlying infrastructure.

Before any deeper analysis, one might wonder whether such a strategy is sensible. Indeed, as hinted earlier, history is stacked against this type of vertical integration in the media sector. Whether it concerns books, records, movies, games or other content formats, after some time the industry has always tended to settle upon a model where all content is available on all transmission/distribution platforms. While it is true that certain consumers may prefer less choice at lower price to more choice at higher price,⁹¹ it seems that End-Users do not particularly value vertical integration here, and prefer to have a choice of transmission/distribution channels (bookstores, record shops, cinemas, videoclubs, games stores, etc.), each of which carries all the available content. Closer to home, the “walled garden” models of AOL and CompuServe failed against the ISPs which offered access to the whole of the Internet.

Economic analysis

The results observed historically are in line with neo-classical economic theory, which would predict that if the upstream and downstream markets are competitive, then market power cannot be gained through vertical integration, making this option unattractive. Rather, the “walled garden” model is more likely to result in a loss of revenue as the sales of content via other channels (here other BAPs) are lost.

If market power is present at one or the other level, then the picture would be different. Neo-classical economics would indicate that, under these circumstances,

⁹⁰ See Google’s comments to the Commission’s Consultation, available on the website http://ec.europa.eu/information_society/policy/ecommm/info_centre/documentation/public_consult/review_2/index_en.htm.

⁹¹ As noted by Shelanski, [Three Constraints on Net Neutrality, Tradeoffs with the “End to End” Principle](#), Presentation, Boulder, CO February 8, 2004, available at http://www.pff.org/weblog/Shelanski_Boulder04.pdf

vertical integration would only take place if it is efficient, for instance, if double marginalisation would be avoided. It is argued that in any event, there would be no concern, because even monopolists can extract only one monopoly rent, no matter on which (related) markets they are active. Thus, in our case, a monopolistic BAP does not need to try to monopolise a content market, because it can obtain monopoly profits through pricing of its BAP services. A monopolist may actually benefit from independent Content Providers, by extracting additional surplus from the secondary market through increasing the price of the monopoly good. Accordingly, a BAP would not have any incentive to discriminate against an independent Content Provider but would rather extract additional revenues by asking a higher price for its services.

However, despite the unfavourable historical evidence and all the economic arguments sketched above, transmission operators such as BAPs still want to try to extend their control to a different level in the value chain. Other strands of economic science have tried to explain why this may be a sensible strategy. Especially in the context of the relevant markets at stake here, there are a number of good arguments against the neo-classical approach.⁹² Discrimination can increase the profits of the BAP in the content market in a variety of ways, in particular when the BAP is offering a competing product to the one that is being discriminated against.⁹³ Due to the specific cost structure of content (high fixed cost, low marginal costs), the BAP will increase its profits by selling its own product in the content market rather than providing access to a competing Content Provider that will sell a competing product in the content market. These profits will further increase due to the fact that by blocking competitors the advertising revenues of the BAP also increase.⁹⁴

⁹² See the overview made by B. van Schewick, *Towards an Economic Framework for Network Neutrality Regulation*, 5 *Journal on Telecommunications and High Technology Law*, vol. 5, 2007, available at <http://ssrn.com/abstract=812991>. Van Schewick would even argue that {...}

⁹³ Discrimination may be profitable even in the case a BAP is not “technically” competing but offers comparable services, such as a company offering traditional telecom services that blocks VoIP: since higher long-distance rates only make sense in the context of traditional telecom services, the BAP has a strong incentive to block competing VoIP services: *Id.*, {...}

⁹⁴ Which will be higher than when the Content Provider will get advertising revenues of which the BAP will extract outside revenues. Proprietary content services also give BAPs an incentive to exclude when competing products may decrease the switching costs caused by the use of proprietary content services, besides, again, decrease the advertising revenues a BAP would otherwise be able to extract when customers would be using the proprietary content service of the BAP.

Even if a BAP has incentives to discriminate, it could still be the case that the costs of exclusion are sufficient to balance out such incentives. However, it seems that the costs of exclusion will generally be lower than the expected extra profits.⁹⁵ Discriminating by improving the quality of the BAP's own content as compared to that of a competing Content Provider,⁹⁶ would cause the End-User to value the product of the BAP more, thus reducing the number of End-Users who switch in reaction to such discrimination.⁹⁷

In the US setting where the BAP market is in the hands of a duopoly of Integrated BAPs, the issue of discrimination is clearly cause for concern, as the network neutrality debate itself evidences.

In the EU, however, the situation is more complex. First of all, the market power of the Integrated BAP – if any – would typically arise from its control over the local path, and hence it is located at the wholesale level. Regulation intervenes to counter that power via compulsory offerings of ULL or bitstream, as set out above. Indeed the retail BAP market in the EU appears fairly competitive, with the Integrated BAPs holding on average less than 50% (DSL) and 20% (cable TV) of the market. Retail-only BAPs relying on these wholesale ULL or bitstream offerings (and on resale) are on the rise. Integrated BAPs would risk a lot by pursuing a strategy of discrimination to support their content-level operations: End-Users can then turn to other BAPs which are not putting them in a “walled garden” of sorts by making non-affiliated Content Providers less attractive.

Whether the threat of End-Users moving to rival BAPs is credible, thus providing competitive pressure against discriminatory conduct, depends on the switching costs. As regards hardware, as long as the switch takes place between two DSL-based BAPs, the costs are limited, since the same End-User equipment can be re-configured

⁹⁵ In particular, if the exclusionary conduct drives the competitor out of the market entirely, the end-consumers will not be able to switch to a competing provider, which will naturally lower the cost.

⁹⁶ When such form of discrimination is involved, the case would not fall within the access-tiering practices discussed in part VI, which covers only cases when better QoS is on offer also to competitors.

⁹⁷ *Id.* p....

and re-used.⁹⁸ However, the costs of rescinding the existing contract (usually with a notice period)⁹⁹ and perhaps of changing e-mail address,¹⁰⁰ etc. are not negligible. All in all, the inconvenience caused to the End-User must be significant in order to prompt a switch.¹⁰¹ As long as this remains on a small scale and is not bound with an unacceptable price differential with rival BAPs, an Integrated BAP could possibly pursue a discrimination policy in favour of its own content operations without being disciplined by the market.

Under this first hypothesis, the competitive concern is therefore much lower in the EU as compared to the USA, given that the downstream market (retail BAP market) is more competitive, and that the market power of the Integrated BAPs is found on another market, wholesale BAP, on which regulation is in place to counter that market power. The assessment could be different if the evolution of the market in the EU would produce an oligopoly of BAPs all discriminating in favour of their respective “walled” or preferred content; in such a case, End-User choice could be restricted and entry would become very difficult.

Law

In any event, on the assumption that there is cause for concern in the EU, existing law suffices to address it.

Indeed, under EC competition law, whilst academics are critical towards how Article 82 EC is applied to all manners of discrimination, they agree on one point. Article 82 prohibits a dominant firm from discriminating on an upstream (or downstream)

⁹⁸ At the other end, some costs are also incurred as between BAPs, and they are more significant when the switch involves a ULL than a bitstream solution. These “connection costs” are often passed on via the retail tariffs.

⁹⁹ The new BAP can undertake to process these steps and pay any penalty on behalf of its new customer, thereby reducing the perceived switching costs (which are then hidden in the new subscription).

¹⁰⁰ A large number of End-Users have BAP-independent e-mail addresses (hotmail, gmail, etc.), thereby eliminating this difficulty.

¹⁰¹ The OECD in its paper “Internet Traffic Prioritisation: an Overview” indicates that switching costs are such a crucial factor as to justify a regulatory intervention to minimise them, thus increasing consumer’s pressure. See DSTI/ICCP/TISP(2006)4/FINAL, 6 April 2007.

market in favour of its subsidiary on that market, and rightly so.¹⁰² In the electronic communications sector more specifically, after a few cases, the Commission set this out clearly in its Notice on Access Agreements in 1998.¹⁰³

In the hypothesis under study here, the market power of the Integrated BAP lies on the wholesale BAP market, and not necessarily at the retail level, so the situation is slightly more complicated. Even if EC competition law tends to be more willing to accept leveraging than economic theory would warrant,¹⁰⁴ the leverage would take place from a wholesale market – in fact an input to retail BAP – over the retail market on to the content market – which can be seen as another input.¹⁰⁵ This might be taking leveraging too far. In the end, the applicability of Article 82 EC might hinge on whether the position of the Integrated BAP on the *retail* BAP market in and of itself is strong enough to qualify as dominance. If so, then Article 82 EC will apply to prevent the Integrated BAP from discriminating in favour of its content operations. Whilst the market figures given above would tend to show that in the EU the Integrated BAP does not generally hold such market power at the retail level, EC competition law has a relatively low dominance threshold (with the resulting risk of Type I error). At first sight, an integrated BAP with close to 50% of the retail market will be presumed dominant, and counterweighing factors (low barriers to entry, moderate switching costs, dynamism of the market, etc.) might not suffice to rebut that presumption.

In addition to EC competition law, the SMP regime under EC electronic communications regulation might also apply. As set out before, however, the relevant markets at stake here have not been selected for SMP analysis. If they were selected, the type of discrimination studied under this first hypothesis would then be covered

¹⁰² See the review of ECJ case-law and Commission decisions made in D. Geradin and N. Petit, “Price Discrimination under EC Competition Law: The Need for a Case-by-Case Approach”, GCLC Working Paper 07/05, available on SSRN, at 29-32. See also D. Gerard, “Price Discrimination under Article 82(c) EC: Clearing up the Ambiguities”, in D. Geradin, ed., *GCLC Research Papers on Article 82 EC* (2005), available at www.coleurop.be/gclc, 105 at 128-130.

¹⁰³ Notice of 22 August 1998 on the application of the competition rules to access agreements in the telecommunications sector [1998] OJ C 265/2 at pp. 15, 16 and 20, para. 86, 95 and 126. See also P. Larouche, *Competition Law and Regulation in European Telecommunications* (Oxford: Hart Publishing, 2000) at 225-230.

¹⁰⁴ Larouche, *ibid.* at 268-275.

¹⁰⁵ Alternatively, it could be that the Integrated BAP is attempting to build such a position at the content level as to be able to injure its rival BAPs by depriving them of access to that content (or degrading their access to such content). On this point, see the discussion of the fourth hypothesis below.

by the law. The ERG¹⁰⁶ identifies it as one of the competition concerns which must be assessed by the NRAs,¹⁰⁷ and the Access Directive expressly empowers the NRAs to impose remedies to address this type of discrimination.¹⁰⁸

In conclusion, to the extent that discrimination by an Integrated BAP with a presence at the content level would create concerns within the EU context, they could probably be addressed via EC competition law or – with some additions, such as a new selected market – the SMP regime of electronic communications regulation.

4.3. Second hypothesis: the Retail-only BAP with a presence at the content level

Under this hypothesis, a Retail-only BAP – to recall: a BAP which does not own the local path to the End-User and thus relies on a wholesale offering for the underlying infrastructure – also attempts to build a sort of “walled garden” for its customers, in the hope of improving its market position. This implies some discrimination between Content Providers, in favour of its own or affiliated content operations. We assume that a Retail-only BAP would somehow find such a course of conduct attractive from a business perspective.

This hypothesis can be dealt with quickly, against the background of the discussion of the first hypothesis. By definition, the Retail-only BAP does not hold a dominant position – or any position for that matter – on the wholesale BAP market, contrary to the Integrated BAP. Furthermore, under the current circumstances, it is highly unlikely that the Retail-only BAP would hold significant market power or dominance on the retail market either. Both from an economic and a legal perspective, this hypothesis is no cause for concern.

4.4. Third hypothesis: Retail-only BAP without presence at the content level

¹⁰⁶ European Regulators Group.

¹⁰⁷ See ERG, *Revised Common Position on the approach to appropriate remedies in the ECNS regulatory framework*, ERG (06) 33 (May 2006), available at www.erg.eu.int, at pp. 29-32, 88 and ff.

¹⁰⁸ Article 10(2) of the Access Directive, *cit supra* note 6.

It is conceivable that, even without any presence at the content level, a Retail-only BAP might want to discriminate in favour of certain Content Providers.

From a technical perspective, the BAP controls the flow of data on its network. Giving a privileged position (higher quality of service) to major Content Providers could enable a BAP to raise its profile by advertising that it offers better access to those Content Providers than its rivals.¹⁰⁹ The reputation and strength of the Content Providers would then create a positive externality for the Retail-only BAP. In principle, the BAP does not need to agree with the Content Providers on this; it can just decide to offer a higher quality of service of its own motion.

Like under the second hypothesis, the Retail-only BAP is unlikely to be dominant or to have SMP on any market. In addition, this type of discrimination could actually foster the goals of electronic communications regulation. Indeed it has the potential to create additional revenue flows for the BAP, if the latter manages to increase its market share. These extra revenues could then be used to move up the ladder of investment and turn the Retail-only BAP into an Integrated BAP owning the local path. Accordingly, there should be no cause for concern from an economic or a legal perspective.

4.5. Fourth hypothesis: Integrated BAP without presence at the content level

In response to the strategy sketched out under the third hypothesis or on its own motion, the Integrated BAP might also want to offer a higher quality of service to leading Content Providers. The Integrated BAP would then be able to advertise the higher quality of its access to leading Content Providers.

In economic terms, this could be analysed as an exclusionary strategy, designed to raise rival costs by forcing them to grant similar advantages to Content Providers or face loss of market share. In theory, if the retail BAP market is competitive, no BAP (including the Integrated BAP) can afford to raise End-User prices. All BAPs would therefore have to absorb the cost of this practice, whilst End-Users would benefit from

¹⁰⁹ Think of an advertising campaign along the lines of “We have the quickest access to YouTube or BitTorrent”.

a higher quality of service. Integrated BAPs could be pursuing a predatory strategy: cross-subsidising the losses suffered in one market on order to force competitors to exit. However, we can reasonably exclude this occurrence: the market whose profits should be used to cross-subsidise, i.e. the wholesale BAP market, is tightly regulated. There is thus no cause for concern, unless the retail BAP market would not be competitive because the Integrated BAP has significant market power. Whether and under which conditions that could be the case was discussed above under the first hypothesis.

In legal terms, should the Integrated BAP have significant market power and be dominant on the retail BAP market, then EC competition law would intervene to prohibit a strategy such as that pursued under this fourth hypothesis. Such a form of primary-line discrimination, whereby the dominant firm seeks to injure its direct competitors via discriminatory practices, falls foul of Article 82 EC, as the ECJ and the Commission have held.¹¹⁰ As for the SMP regime, here as well under the assumption that the relevant markets would be selected and that Integrated BAP would have SMP, it would not be too difficult for an NRA to identify this type of discrimination as an issue to be addressed. It is not clear, however, that the Access Directive would offer a ready-made remedy for this hypothesis. The remedy would consist in an obligation not to unilaterally grant favourable treatment to certain Content Providers, which is not so easily squared in within any of the remedies listed in the Access Directive.¹¹¹ The Directive allows for new remedies to be fashioned, however.¹¹²

V. BLOCKING USER ACCESS TO CONTENT

Blocking user access to content occurs when a BAP puts up a barrier between an End-User and certain content, i.e. prevents the flow of traffic between the End-User and the Content Provider. Technically, this can be done by reading packet headers and preventing the flow of packets which originate from or terminate to a certain address.

¹¹⁰ See the review of case-law and decision practice in Geradin and Petit, *supra*, note {...} at 11-18.

¹¹¹ This could be a non-discrimination obligation (in reverse) pursuant to Article 10 of the Access Directive, *supra*, note 10, or an access obligation pursuant to Article 12, but it does not resemble the typical application of these provisions.

¹¹² Access Directive, *ibid.*, Art. 8(3).

This part of the paper does *not* cover cases where content is blocked by a BAP as part of a plan to discriminate between Content Providers (including its own content operations); these cases were discussed in the previous part. Whilst blocking without anti-competitive discrimination appears unlikely to arise, it cannot entirely be excluded and there could be some situations where BAPs would have an incentive to block (irrespective of any discriminatory intent).

For example, a BAP could decide not to allow users to ‘waste’ available capacity on certain bandwidth-hungry applications, regardless of SMP or dominance.¹¹³ In other words, a BAP may want to leave capacity available for other Content Providers rather than seeing it being all “eaten up” by just one.

Secondly, a BAP could also block access to start-up Content Providers with new applications or services which appear to have the potential to disrupt operations or consume bandwidth. Alternatively, in a market with high demand uncertainty (such as the market for Internet content), a BAP might have an incentive to first see how an independent Content Provider is coping in a new complementary market. Once this new market appears profitable, the BAP could resort to blocking the independent Content Provider and enter the market.¹¹⁴

Thirdly, the blocked content could be loosely connected to the BAP (deriding the BAP, proposing comparisons of services to competitors etc.) or to other interests.

Finally, BAPs could also block access to Content Providers for non-economic reasons, i.e. because the content in question or the Content Provider breaches the law (intellectual property law, criminal law, etc.).

Irrespective of which of the above cases arises, blocking could have an adverse effect on competition. While a BAP can only block traffic within its own reach (i.e. between

¹¹³ This is not just a hypothetical case: BAPs have been reported as blocking access to certain bandwidth-hungry applications, such as happened in Britain with the online game World of Warcraft, distributed through peer-to-peer networks..Other BAPs are *de facto* disconnecting End-Users who make use of too much bandwidth as compared to “normal usage”.

¹¹⁴ Even though this would come close to a case of discrimination in favour of the BAP’s own operations, as discussed in the previous part.

its subscribers and the rest of the Internet), blocking leads to a loss of economies of scale or network effects which might eventually cause the blocked Content Provider to be excluded from the market entirely. On the other hand, blocking may increase the incentive of BAPs to invest in their own content; however this increase will likely not outweigh the adverse incentive on investment by independent Content Providers if they face the prospect of being blocked.¹¹⁵ Broadly speaking, only in the last of the above four cases would blocking appear to be justified *prima facie*.

5.1. Blocking user access to content and EC Competition Law.

On the basis of the above, and to the extent that blocking can prove a cause for concern, it is useful to explore what possibilities are currently offered by European law to counteract blocking, outside of the cases involving discrimination.

Under EC competition law, blocking by a BAP could be construed as a form of refusal to supply or a denial of access to an essential facility (under the so-called “Essential Facilities Doctrine”, hereinafter EFD).¹¹⁶ The theory of competitive harm would run as follows: through blocking, the BAP is making it impossible for the upstream firm (the Content Provider) to reach End-Users, thereby excluding it from the content market.

For the purposes of this paper, the precise outlines of the law on refusal to supply or the EFD are not so material.¹¹⁷ In any event, irrespective of how the controversial legal points are settled, three conditions need to be fulfilled for competition law to apply:

¹¹⁵ Certain innovations will be less interesting for BAPs than for independent Content Providers, which will naturally affect the diversity of innovations. See van Schewick cit. supra note 92.

¹¹⁶ Both refusal to supply and the essential facilities doctrine are controversial topics within the broader area of European competition law. Moreover, the separating line between the two doctrines is a fine one.

¹¹⁷ There is debate in the literature as to whether the older case-law on refusal to supply (Commercial Solvents, Joined Cases 6/73 and 7/73 [1974] ECR 223, Telemarketing, Case 311/84, ECR. 3261) has now been subsumed into the EFD. In the light of the ECJ case-law (Magill, Joined Cases C-241/91 P and C-242/91 P RTE and ITP v Commission [1995] ECR I-743, Bronner, Case C-7/97 [1998] ECR I-7791, IMS Case C-418/01 [2004] ECR I-5039), it seems also that the EFD applies differently depending on whether the facility in question is physical or intellectual property. For example, the “new product” criterion emphasised in IMS would seem to apply only to cases involving intellectual property: see the Commission 82 paper available at <http://ec.europa.eu/comm/competition/antitrust/others/discpaper2005.pdf> and the recent Microsoft judgment, Judgment of the Court of First Instance of 17 September 2007 Case T-201/04.

- the BAP holds a dominant position;
- the routing function of the BAP, where the blocking is implemented, is *indispensable* for the Content Provider to be active on the market, i.e. to offer its content to End-Users;
- blocking enables the BAP to exclude or eliminate competition on the content market;

These three conditions are unlikely to be satisfied in the case under discussion.

As set out at the beginning of this paper,¹¹⁸ there are two relevant markets where a BAP could perhaps be *dominant*. On the retail BAP market, dominance is unlikely given the EU infrastructure policy which breaks the link between the wholesale and retail BAP market. On the wholesale market for transmitting content between the Internet (cloud) and the End-User, each BAP could conceivably be on its own market (and then dominant), although End-Users do exert an indirect competitive pressure which would affect relevant market definition, and Backbone Providers could exert buying power in such a way as to counter the market power of the BAP.

However, the facility in question (routing by the BAP) is unlikely to qualify as indispensable or essential. According to the case law, in particular *Bronner*,¹¹⁹ irrespective of the market definition, a facility could still fail to meet the indispensability test because of other possible distribution methods that do *not* fall within the same market.¹²⁰ Here since there are other BAPs whose services can be used to transmit content between the Content Provider and the End-User (even if some switching costs are involved), the routing facilities of the blocking BAP would not be indispensable.

In any event, blocking does not fit the exclusionary pattern of the typical refusal to deal or EFD case (the third of the above conditions). Indeed unless the blocking BAP is also active on the content market – in which case we are most likely back to

¹¹⁸ See the market analysis performed above at p. 18 *et seq.*

¹¹⁹ Cit. *supra*, note 117.

¹²⁰ In *Bronner* the Court held that the distribution network to which Bronner was seeking access was not 'indispensable' since there were other means of distributing daily newspapers such as shops, kiosks and by post.

discrimination – blocking Content Providers will not exclude or eliminate competition on the content market. It will at best impair the ability of some Content Providers to reach some End-Users.

5.2. Blocking user access to content and the SMP regime

In principle, the SMP regime could also apply to blocking. However, as discussed above,¹²¹ for the regime to apply additional markets have to be defined and selected for analysis. Moreover, as with competition law, the imposition of SMP obligations presupposes that a BAP is found to hold SMP, i.e. to be dominant on the market in question, which is not a foregone conclusion.

Should these conditions be fulfilled, blocking could be prevented by imposing an access obligation pursuant to Article 12 of the Access Directive. In comparison with competition law, Article 12 is less severe, and could be used to impose access obligations outside of the narrow requirements of the Essential Facilities Doctrine, as long as the general principles of proportionality, adequacy, etc. are respected.¹²² As a general rule, firms are first supposed to negotiate about access. However, when this does not bring about the desired result, operators may actually be required to “give third parties access to specified network elements and/or facilities”.¹²³ This can be translated, in the case that concerns us, into an obligation for a BAP to give Content Providers access to its network, including the obligation “not to withdraw access to facilities already granted”, i.e. not to block.¹²⁴

5.3. Blocking user access content and the general interconnection regime

It was seen in the previous paragraphs that many hurdles stand in the way of applying competition law or the SMP regime to deal with blocking.

¹²¹ Cross ref.

¹²² Larouche, “Legal issues surrounding remedies in network industries”, in D. Geradin, ed., *Remedies in Network Industries: EC Competition Law vs. Sector-specific Regulation* (Antwerp: Intersentia, 2004) 21.

¹²³ Art. 12 sub 1 letter a

¹²⁴ Art. 12 sub 1 letter c

However, there is an additional, kind of concern that might also come into play, besides issues of market power. Public authorities might want to ensure that content is smoothly flowing over the Internet and that no “islands” are created, whereby certain End-Users can access only certain content and other End-Users are limited to a different set of content, etc. due the restrictions imposed by their respective BAPs. It is worth mentioning that at this juncture freedom of expression also enters the equation: End-Users and Content Providers alike enjoy a fundamental right to receive and impart information, enshrined among others at Article 10 European Convention on Human Rights.¹²⁵

The primary (or default) interconnection regime of Articles 4 and 5 of the Access Directive is meant to address this sort of concern. Although not the best developed part of the regulatory framework, the interconnection regime exists and applies independently of any interconnection obligation arising out of the SMP regime. Whereas the SMP regime – much like competition law – is meant to ensure the proper functioning of markets, the rationale behind the interconnection regime is the protection of *the general interest*, in particular the integrity of the overall electronic communications sector, so that it would fulfil its role as a foundation for society and the economy.

In cases where negotiations between operators would not lead to any result and the public interest would dictate that networks be interconnected, Article 5(1)(a) of the Access Directive gives NRAs the power to impose obligations on “undertakings that control access to end-users” “to the extent that is necessary to ensure end-to-end connectivity”.¹²⁶

It is worth mentioning that, differently from other provisions of the same regime,¹²⁷ Article 5 does not refer just to ‘network operators’, but to ‘undertakings that control

¹²⁵ {Reference to cases where FoE was found to extent to specific media used to convey information, e.g. Autronic??} The American point of view is explored in Moran Yemini, “Mandated Network Neutrality and the First Amendment: Lessons From Turner and a New Approach” , 2006 Virginia Journal of Law & Technology, available at <http://ssrn.com/abstract=984271>.

¹²⁶ End-to-end connectivity also ranks amongst the general policy objectives of NRAs in Art. 8(3)(b) of the Framework Directive, *supra* note 10.

¹²⁷ In particular article 4 of the Access Directive, that specifically applies only to network operators, imposing on them just an obligation to “negotiate” interconnection.

access to end-users'. That latter concept is nowhere defined, but on its face it would seem to cover BAPs (both Integrated and Retail-only), who control the routing of data between the Internet and their End-Users. Secondly, Recital 6 of the Access Directive mentions, as a specific example of situation in which end-to-end connectivity is at stake, the case of network operators that "restrict unreasonably end-user choice for access to Internet portals and services". Even if the wording of that provision is slightly outdated, a BAP blocking access to content seems to fall squarely into the concept of "unreasonable restrictions" to End-User choice. Finally, Article 5(1)(a) does not require that the operator concerned hold any level of market power.

Article 5(1)(a) of the Access Directive appears well suited to deal with blocking (in the absence of discrimination). Indeed, while isolated instances of blocking might not cause too much concern, if blocking becomes too prevalent, then the integrity of the overall sector is at stake. End-Users and Content Providers will no longer benefit from universal end-to-end connectivity, which has been key to the success of the Internet.¹²⁸ This is no longer an issue of competitive relationships between firms on the market, but rather of the ability of the overall sector (i.e. the sum-total of all Backbone Providers, BAPs and other players, with their respective facilities) to deliver the expected benefits to the rest of the economy and to society, and ultimately also of freedom of expression. In contrast to discrimination, blocking directly affects these interests by preventing connectivity. Under these circumstances, Article 5(1)(a) could be used to forbid blocking, outside the justified cases (breach of the law, etc.).

VI. DEGRADING AND ACCESS-TIERING

As seen in the previous parts, blocking and discrimination are issues which can be comprehended using the analytical tools of economic regulation. A firm enters into a course of conduct which could distort the proper functioning of markets. If that is the case, competition law or sector-specific regulation could provide a remedy. The main challenge is to use economic regulation correctly.

¹²⁸ {C.f. references in Paul's paper}

Beyond these two issues lies the third one, access-tiering. Provided that BAPs (and Backbone Providers) neither discriminate nor block traffic outright, can they move away from the current best-efforts approach and start charging Content Providers and End-Users for different levels of quality of service (QoS)? This is the most controversial of the three issues discussed in this paper, where the debate moves beyond economic regulation to a more fundamental (or philosophical) level, i.e. that of the vision of the Internet and the general telecommunications policy goals in the longer run.

Given that the debate is so far inconclusive and sometimes emotional, this part begins with an attempt to explain access-tiering (6.1.), before going on to the feasibility (6.2.) and the economics of such practice (6.3.). Finally, in the light of controversial nature of access-tiering, two policy scenarios are worked out: letting the market introduce access-tiering (6.4.) or prohibiting it altogether (6.5.).

6.1. Understanding access-tiering

Unfortunately,¹²⁹ the factual accounts put forward in the debate on access-tiering sometimes tend to be partial or misleading, taking advantage of opacity and technical difficulties to push a particular interpretation.¹³⁰

The term access-tiering is used to refer to the practice of offering Content Providers different Quality of Service (QoS) levels at different prices, so as to give priority and steady delivery¹³¹ to their content. Access-tiering does not as such involve discrimination (within the meaning discussed earlier), in that all Content Providers willing to purchase a certain QoS level pay the same price, while different prices

¹²⁹ Also R. Frieden in “Internet 3.0” voices the same dissatisfaction, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=962181 February 2007, p. 23 et seq.

¹³⁰ For example, diverging policy suggestions often depend on whether the authors see the existing duopoly in the supply of broadband Internet (DSL and cable) as a situation where there are “at most” two suppliers or “at least” two suppliers, thereby implying that the market is not competitive enough or, to the contrary, that competition is thriving.

¹³¹ Edward W. Felten explains in his AEI-Brookings paper “Nuts and Bolts of Network Neutrality” of August 2006 <http://www.aei-brookings.org/publications/abstract.php?pid=1106> that in fact QoS goes beyond priority and speed: QoS requires “smooth and predictable” performance. Just for simplicity of exposition, in our paper we might at times treat QoS and priority as synonyms.

apply to different QoS, the same way different prices are charged for different bandwidth usage.

The current standards and protocols used on the Internet are based on a “best-effort” commitment on the part of BAPs (and Backbone Providers), not on guarantees of delivery or QoS. Very often, when there is no scarcity in either transmission or routing capacity, there is not much difference between best efforts and QoS guarantees: data traffic is transmitted as fast and reliably as possible.

While it has been reported that at this point in time the Internet exhibits excess capacity¹³² rather than congestion, it is also true that the existence of a chokepoint somewhere in the network may cause congestion at that particular point.¹³³ This problem is particularly likely to affect wireless networks, because of spectrum scarcity.¹³⁴ When congestion occurs on the Internet, where, in other words, there is not enough capacity to transmit or route all content, choices have to be made.

Currently, the software running applications at the edges of the Internet responds to congestion by “voluntarily” slowing down. At the same time, some packets might be held up along the way, waiting to be routed, sent on a different route or even dropped altogether. This is a kind of universal behaviour on the Internet, equated by some to a sort of “social contract”.¹³⁵ Any traffic can thus be slowed down. In other words, without access-tiering, choices are made randomly and packets corresponding to time-sensitive applications might at times be affected.¹³⁶ Towards the rest of the Internet community, a BAP (or a Backbone Provider) will make its best effort to avoid slowing down or impeding traffic, which implies that it cannot offer more to its customers either.

¹³² See Prüfer J, Jahn E (2007) Dark Clouds over the Internet? *Telecommunications Policy* 31(3-4): 144-154.

¹³³ See Goldsmith and Wu’s book *Who controls the Internet*. This can be the case, in particular, at the switch-points, i.e. the routers.

¹³⁴ AS reported by the OECD in its report on “The Implications of WiMAX for Competition and Regulation”, DSTI/ICCP/TISP(2005)4/FINAL, 2 March 2006, p. 25.

¹³⁵ See Edward W Felten AEI paper cit. supra, note 131..

¹³⁶ To be sure, even the “dumb network” is able to identify some packets of data already today: for example, packets using different protocols, such as those carrying Skype services, can already be treated differently by the network.

For reasons explored under the next heading, some BAPs (and Backbone Providers) would wish to abandon the “best-effort” standard and move to an environment where they can offer – at a price – guaranteed levels of QoS and delivery for time-sensitive applications, such as voice or video, i.e. access-tiering.

It is important to bear in mind that access-tiering is bound with degradation, i.e. a *reduction* in QoS, such as slowing down packets of data or dropping them before they reach their destination. Because of the current configuration of the Internet, degradation and prioritisation are in fact two facets of the same conduct: one can only give priority by slowing down or dropping packets corresponding to competing content, applications or services.

In fact, currently if a Content Provider (or an End-User) would like to get quicker transmission, a first option would be to acquire more capacity (i.e. bandwidth).¹³⁷ Content Providers as well as End-Users, indeed, currently may choose the level of bandwidth they wish, with the corresponding price tag.¹³⁸ This may already be seen as a form of prioritisation, since it amounts to putting the content on a wider “road”, hence with higher certainty that it reaches its destination without delay. In principle, if the “road” is wide enough, all traffic can travel side-by-side without hindrance.

Purchasing prioritisation by means of access-tiering would then be of interest only in the event of anticipated congestion in the network, where, in other words, there is not enough bandwidth for all content and choices have to be made. The random rule associated with the current best-effort environment, which implies delays or dropping of *all* packets with a certain frequency, would then be replaced by a hierarchical rule. Content Providers (and End-Users) may then purchase priority at the gate: after identification or tagging, their “premium” packets are *always* passed on first, which

¹³⁷ See Sidak’s account in “A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet”, cit. at footnote 1, p. 69 et seq.

¹³⁸ This is reflected more directly in the bandwidth available on the local path between the Content Provider (or End-User) and the Internet (the cloud): a Content Provider can purchase a certain type of dedicated capacity, just as an End-User can choose between various formulae, even within the “broadband” category (DSL and cable-based broadband being somewhat scalable). Typically, that part of the retail price which covers the cost of Internet connectivity (passage through the cloud and beyond) will also vary according to the capacity purchased on the local path, since the BAP (or Backbone Provider) must provision its Internet connectivity according to the amount of traffic it expects to handle.

necessarily implies that lower priority packets are more often slowed down or dropped altogether. To prioritise or increase QoS for some is necessarily to degrade it for others.

Access-tiering can take an even more extreme form, namely pure degradation in the absence of any capacity constraint. QoS is reduced for low-priority packets even when there is no need to ensure delivery for high-priority ones, i.e. even when there is no congestion problem.¹³⁹ It is something akin to requiring earlier check-in for Economy class passengers, even if there is no advantage to Business class customers, in other words, simply to price discriminate.

6.2. Feasibility of access-tiering

Some services aiming at improving the QoS – or traffic management techniques¹⁴⁰ – are already available.¹⁴¹ Virtual Private Networks (VPNs), for instance, represent a break from “neutrality”, although they are not used primarily for prioritisation or QoS reasons. Rather, as their name indicates, VPNs allow for Local-Area Networks (LANs) in separate locations to communicate over the Internet as if they formed part of a single private network, via the use of techniques such as tunnelling. The traffic in question is then treated differently and sometimes separately from the rest of Internet traffic.

Another “better than best efforts” service is currently offered in the form of caching content on servers closer to customers,¹⁴² which can thus be served more quickly and efficiently.¹⁴³ This form of “premium” service is located at the service level, i.e. at the edges of the network, and not at its core, as access-tiering techniques would have to

¹³⁹ E. Felten, *cit supra* note 131, p. 3.

¹⁴⁰ See for example the OECD report on WiMAX, *cit. above* at note 134, p. 25.

¹⁴¹ While this point is often used to argue that the Internet is already non-neutral, this remark does not affect our analysis because we have adopted the approach of going beyond the keywords to concentrate on actual problems in need of a solution. What matters to our analysis is therefore not whether the Internet is currently neutral according to some particular definition of neutrality, but whether a certain practice is problematic and thus requires a corrective intervention, through existing legal tools or new ones.

¹⁴² For example, by Akamai.

¹⁴³ See more in Rob Frieden “Internet 3.0” *cit.* 129.

be. Accordingly, access to the network is an *input* to “caching” (or “akamizing”).¹⁴⁴ At applications level, buffering for audio and video streaming is another example of improving QoS: audio and video files can avoid jitter by downloading every frame few seconds before showing it. For voice conversations, delay and jitter are more difficult to correct, yet the most successful VoIP providers have managed to achieve a satisfactory QoS level by wise bandwidth management.¹⁴⁵

More to the point, prioritisation has been trialled out with certain protocols such as Diffserv, IntServ and others, which have been developed to treat content in a differentiated way, much like access-tiering would operate. However, they require a lot of coordination to work with a multi-network environment. Thus, it seems that for the time being they only work well when applied to a small number of networks under the same administrator.¹⁴⁶ The experience with DiffServ and other protocols points to the major obstacle to implementing access-tiering in practice, namely coordination between the various providers (Broadband Providers, BAPs, etc.) through whose facilities traffic must pass. Indeed access-tiering only makes sense as a commercial proposition if it can be offered *end-to-end*, i.e. if the traffic is prioritised in the same fashion throughout the whole of its transmission between, say, the Content Provider and the End-User.

Given the Internet “cloud” described above,¹⁴⁷ BAPs and Backbone Providers can prioritise “premium” packets and slow down lower-priority packets only on those parts of the transmission over which they exert control, including the local path between the Internet and the Content Provider or End-User.¹⁴⁸ For the rest, they are

¹⁴⁴ This point seems to have been overlooked by G. Sidak, cit supra at footnote 1, at p. 85, when he states in his article that Akamai’s service would compete with access-tiering practices, thus ensuring an acceptable level of competition. At some point in his article, Sidak refers the network neutrality proponents to one Aesop’s fable, to stigmatise the attitude of envy. We may now refer to another fable, i.e. the wolf and the lamb: the wolf, who is looking for an excuse to eat the lamb, complains about it allegedly polluting the river. The problem with the wolf’s argument is that the lamb is accessing the river only downhill from the wolf, so it cannot pollute the wolf’s water. Similarly, Akamai is situated down the road as compared to network operators. Consequently, network operators do not need to be constrained by Akamai: suffice it to charge Akamai for priority access to immediately raise its costs and nullify its competitive pressure.

¹⁴⁵ {Skype case}.

¹⁴⁶ See the article by Andy Oram “The Network Neutrality Debate: When the Best Effort Is Not Good Enough” at http://www.praxagora.com/andyo/ar/network_neutrality_best_effort.html, 28 June 2006.

¹⁴⁷ {Cross reference}

¹⁴⁸ This is consistent with the fact mentioned above that protocols such as Diffserv only work well when the few network involved in content management are controlled by the same administrator.

dependent on their fellow providers (with whom they also compete for customers). We find here a classical *coordination* problem, but the players have complex incentive patterns. Whereas for instance interconnecting networks is mutually beneficial to the customers of both operators,¹⁴⁹ without obvious drawbacks for these customers (given the internalisation of network externalities), cooperating on access-tiering involves conferring benefits to customers of a rival provider, potentially at the expense of one's own customers (on the assumption that priority is a rival good in contrast to interconnection).

The coordination problem is compounded by a further difficulty: access-tiering can be applied to both ends of the communication. A BAP may of course charge its subscribers (End-Users) for priority and QoS, so that they can have a more enjoyable experience.¹⁵⁰ Similarly, a Content Provider may be charged for access-tiering as well.¹⁵¹ The preferences of the two ends must then be reconciled. If an End-User pays for the highest QoS level in order to access relatively small Content Providers who have chosen for a lower QoS level, the result might not meet expectations. If the same End-User rather wants to access large Content Providers which have purchased gold-plated QoS in any event, perhaps overcharging has taken place.

Given this coordination problem, the following scenarios are possible:

1. *Dissolving the cloud single-handedly.* A first option is to seek to exert control over the whole of the transmission process, i.e. dissolving the "cloud". For instance, if a provider is both a large BAP and a large Backbone Provider, chances are that it can offer an end-to-end path over its own facilities, over which it can of course implement access-tiering. This solution seems quite at

¹⁴⁹ Assuming networks of comparable sizes. See Besan & Farrel.

¹⁵⁰ Charging End-Users seems to be accepted; in the US, the debate concerns access-tiering charges for Content Providers.

¹⁵¹ It is not quite clear how this would work. Of course, Backbone Providers can also impose their own access-tiering charges on Content Providers. The main worry of US policymakers seems to be rather that BAP would impose access-tiering charges on Content Providers. From a legal perspective, considering the picture drawn earlier, it is difficult to see how BAPs can charge Content Providers for access-tiering, in the absence of a direct contractual relationship. However, as seen below, the FCC duopoly policy and the concentration on the US market makes it likely that the largest players combine BAP and Backbone Provision, thus controlling transmission end-to-end.

odds with the nature of the Internet as a public network,¹⁵² and it is actually outside the Internet as we know it. The strength of the Internet has always been its decentralised way of routing packets, depending on availability of pipes, condition of traffic and so on, at the level of each router. However, in this interpretation, prioritisation requires going back to a sort of circuit-switched network or at least replacing the “public” Internet with a private network where priority rules are enforced. If BAPs pursue this avenue in implementing access-tiering, then in fact they are building (or slicing off) a series of “special Internets” for their premium customers, leaving perhaps a small “traditional” Internet for the rest.

2. *Cooperating to dissolve the cloud.* If it is not possible for a single firm to exert end-to-end control, then BAPs (and Backbone Providers) must cooperate, via agreements. In a simple two-firm, two-customer model as outlined above, there might not be much incentive to cooperate, but in an environment with more firms, it might be tempting for a number of them to pool their resources so as to be able to offer end-to-end QoS guarantees to their customers, knowing that this gives them an advantage over other competitors. Here also, this implies creating a sort of “private network” besides the Internet.¹⁵³
3. *Pretending that the cloud is dissolved.* If none of the previous two scenarios materialises, the coordination problem remains unsolved, and BAPs (and Backbone Providers) are promising something they cannot in fact deliver. They can only degrade service for those who do not pay for priority every time their content happens to pass through the realm where the BAP (or Backbone Provider) exerts control over routing. As some have pointed out, such a course of conduct smacks of extortion.

Infrastructure policy could here again be crucial in deciding which one of these scenarios eventually materialises. In the USA, the infrastructure duopoly policy of the FCC not only creates incentives to discriminate and to block, but it also makes single-

¹⁵² Within the meaning of “public network” under EC electronic communications regulation (see Framework Directive *supra* note 10), i.e. a network (or a network of networks as the Internet) which is open to everyone and links all its termination points together. {Check}

¹⁵³ The likelihood that the agreements are caught by legal prohibitions, such as competition law, will be addressed below.

handed access-tiering (Scenario 1) more feasible. Indeed, the FCC left the retail BAP market to Integrated BAPs, i.e. the incumbent telco and cable TV providers. In view of the consolidation which took place in the industry in recent years, not only is there more often than not a duopoly at local level, but the number of players at national level is very limited: the remaining three local incumbents¹⁵⁴ control 82% of telecom subscriptions nationally, and the leading five cable TV providers,¹⁵⁵ 73% of cable TV subscriptions. These Integrated BAPs are also active on the Internet backbone (the cloud) and thus belong to the core of the Internet. They are most likely in a position to implement access-tiering on their own facilities and thus offer interested customers QoS and priority guarantees (at least as far as reaching their respective End-Users in the USA is concerned).

In contrast, infrastructure policy in Europe is producing a fairly competitive retail BAP market, as seen above. This makes it difficult for BAPs to control end-to-end transmission, with the possible exception of the Integrated BAP from the incumbent telecommunications operator, which often also operates the bulk of the national backbone. Even then, contrary to the situation in the USA, there are no EC-wide players on the market; rather, the retail BAP market tends to be populated by different players from one Member State to the other. Hence even Integrated BAPs have little hope of offering end-to-end guarantees on their own at a pan-European level. Once more, the EC infrastructure policy (combined with fragmentation along national lines) appears to be successful in preventing the EU from following the evolution in the USA.

This does not imply that the EU does not need to be concerned about access-tiering, however. Indeed Scenario 1 could materialise at Member State level, and then - in addition to any potential competition law problems at national level – there is a risk of fragmentation of the internal market if the implementation of access-tiering differs technically from one Member State to the other. Alternatively, Scenario 2 is pursued

¹⁵⁴ AT&T, Verizon and Qwest, which result from the re-merger of the entities which had been created when the old AT&T monopoly was split in 1982. Figures as of June 2006, source: FCC Local Telephone Competition Report, January 2007, available at www.fcc.gov.

¹⁵⁵ Comcast, TimeWarner, Cox, Charter, Cablevision. Figures as of June 2005.

at EU level, with a risk that agreements between BAPs (and Backbone Providers) would have anti-competitive effects.

6.3. A problem or an opportunity?

Even if the feasibility of access-tiering is questionable, as just seen, leading BAPs appear interested at least to try to implement it. Accordingly, assuming for the sake of argument that access-tiering is somehow feasible, the following paragraphs outline the main arguments why allowing access-tiering might or might not be desirable from a public policy perspective.

Not much formal economic analysis is available to assess the welfare effects of access-tiering.¹⁵⁶ Even the existing literature shows no consensus on the issue.¹⁵⁷ Supporters argue that it is a market response to demand for “premium” services and moreover a suitable tool – arguably the only one – to generate an adequate inflow of profits to reinvest in infrastructure development.¹⁵⁸ Opponents argue that access-tiering merely redistributes rents from Content Providers to BAPs, that it puts control of information in the hands of BAPs and that it can change the nature of the Internet, thus wasting the gains that such type of network provides.¹⁵⁹

In order to try to structure the discussion, we will examine the trade-offs involved in allowing access-tiering to be implemented, first from a static and then from a dynamic perspective.

¹⁵⁶ Most of the literature adopts a rather intuitive approach, rather than formal models. See for example {...}

¹⁵⁷ An economic analysis has recently been carried out by Kocsis and De Bijl “Network neutrality and the nature of competition between network operators” (2006), TILEC report, <http://www.tilburguniversity.nl/tilec/publications/report/dget.pdf> forthcoming in Journal of International Economics and Economic Policy. See also Economides, Nicholas, “Net Neutrality, Non-Discrimination and Digital Distribution of Content Through the Internet” (March 2007). NET Institute Working Paper No. 07-03 Available at SSRN: <http://ssrn.com/abstract=977096>

¹⁵⁸ See J. Gregory Sidak “A Consumer-Welfare Approach to Network Neutrality Regulation of the Internet” cit. at footnote 1., Christopher Yoo “Network Neutrality and the Economics of Congestion”, cit. at footnote 1., Id., “Beyond Network Neutrality”, cit. at footnote 1,

¹⁵⁹ See Barbara van Schewick “Towards an Economic Framework for Network Neutrality Regulation”, cit. 92, Wu, Tim, “Network Neutrality: Competition, Innovation, and Nondiscriminatory Access”, cit. at footnote 1, Crawford, Susan, “Network Rules”, cit. at footnote 1,

6.3.1. *Static perspective*

In static terms, the current best-efforts environment implies no differentiation between users: a certain QoS level is offered that includes the risk that packets might be delayed or dropped along the way because of congestion.¹⁶⁰ Let us for the sake of argument assume two categories of customers: those who value a high QoS (higher-QoS customers) and those who are not interested in priority and would rather pay less for a lower QoS (lower-QoS customers). All other things being equal, under those assumptions, access-tiering would involve a Pareto-efficient reallocation of resources¹⁶¹ between lower-QoS and higher-QoS customers: the former receive a discounted price but lower quality, the latter pay a premium to obtain better quality.

If however, the assumptions are relaxed and for whatever reason¹⁶² the potential for price reduction is not exploited, lower-QoS customers continue to pay the same price for a lower-quality service, thereby effecting a net transfer of wealth to BAPs and Backbone Providers.¹⁶³ Besides fairness arguments against this outcome, an investment that merely produces redistribution of rents is also economically wasteful.

In another scenario, BAPs and Backbone Providers may invest in both access-tiering and additional capacity¹⁶⁴ – in particular extending fiber into the local network. Increased capacity will enable them to maintain a similar level of QoS for lower-QoS customers and thus continue to charge them the same prices as today. Higher-QoS customers will pay more for the increase in quality they receive and the revenues would contribute to financing the investment in capacity.¹⁶⁵ It is not clear however that this is a sensible strategy for BAPs: in order to raise revenues from Higher-QoS customers, such customers must find that purchasing prioritisation is worthwhile, i.e.

¹⁶⁰ The current best-efforts environment can be equated to a discount on pricing, as compared to the perfect hypothesis of instant delivery and highest QoS. Best-efforts implies a certain QoS level, but with a risk that packets might be delayed or dropped along the way because of congestion. Since that risk affects all packets in the same fashion, the discount is applied across the board. Access-tiering means that the discount can be applied selectively, in response to demand.

¹⁶¹ The resource in this case is “fast and reliable delivery”

¹⁶² Typically either explicit collusion between BAPs or an oligopolistic market structure which fosters non-collusive coordination of behaviour.

¹⁶³ Who may pass on some of it to higher-QoS customers, depending on the circumstances.

¹⁶⁴ Integrated BAPs are more likely to be investing in infrastructure roll-out, but under the ladder of investment model relied upon by EC policymakers, Simple BAPs will presumably be drawn to infrastructure investment as well.

¹⁶⁵ This is the hypothesis most often put forward by proponents of access-tiering.

that the differentiation in quality as compared to the lower QoS levels is significant.¹⁶⁶ In fact, for these reasons, BAP might decide to slow down investment in capacity in favour of increased investment in access-tiering equipment.

Furthermore, the two-sided dimension of access-tiering, mentioned above, also affects the analysis. Content Providers choose between higher- and lower-QoS offerings on the basis of the characteristics of their product and of the demand they face. Therefore, it is reasonable to imagine that they will choose to prioritise the content (or application) that has the highest success with End-Users. For less-demanded content,¹⁶⁷ Content Providers could accept some degradation of service, making that content less enjoyable to End-Users, who might in turn reduce even more the demand for such content, which may over time not be supplied any longer. Content Providers seem then likely to evolve into some kind of broadcasters. Less commercially-oriented Content Providers will probably see access-tiering as a plain increase in their costs, hence will be discouraged from engaging into content production. This would negatively affect welfare by frustrating the freedom of choice of End-Users¹⁶⁸ and their demand for “universal connectivity” on the Internet, which is different and stronger than the demand of a “traditional” voice communications customer to reach all customers everywhere in the world.¹⁶⁹

It follows from the above that the net effect of access-tiering on static efficiency is not unequivocal.

6.3.2. *Dynamic perspective*

The effects on dynamic efficiency are even less clear.

¹⁶⁶ This is common observation in those sectors where similar forms of price discrimination are practiced, such as in the airline market.

¹⁶⁷ A very important point is the possible reduction in pluralism and by extension in freedom of expression.

¹⁶⁸ Customers of a certain Content Provider are not able to know or anticipate what content they would be missing or receiving with degraded quality.

¹⁶⁹ N. Economides "Economics of the Internet" (January 2007). NYU Law and Economics Research Paper No. 07-07 Available at SSRN: <http://ssrn.com/abstract=954446>

Essentially, introducing access-tiering could lead to the proverbial paradigm shift in the dynamics of the Internet. First of all, innovation could occur also at the core of the Internet instead of at the edges only; in other words, an “intelligent” network would replace the current “dumb” network. Secondly, the public network or “commons” model could be replaced by a series of private networks. Thirdly, as already alluded to above, access-tiering can create a transfer of wealth to the benefit of BAPs and Backbone Providers so as to foster investment in new infrastructure. Each of these is discussed in turn.

First of all, the current paradigm – intelligence at the edge, with a dumb network in the middle and routing carried out on a best-effort basis – has proven remarkably successful in generating innovation, as has been shown since the mid-1990s.¹⁷⁰ Essentially, only very basic functions (the physical and the network layers) are implemented in the network, and the higher functions are conducted at the edge (i.e. outside of the control of the network operator). This allowed a very competitive and innovative industry to emerge on the edges, adding value at the higher layers. The proposition behind access-tiering is that innovation can also be generated at the core, by adding intelligence there.

That intelligence would consist mainly in systems designed to improve QoS through prioritisation, among others. Such systems would allow also BAPs to innovate, as compared to a situation where transmission of content is commoditised. Moreover, the benefits of such systems being put at the core of the network would positively spill over to innovation on the edges as well, especially with regard to time-sensitive content (video, real-time applications, etc.).¹⁷¹ Yet it has been contended that, even if BAPs and Backbone Providers were to integrate vertically into content markets to benefit from these spillovers fully, the reduction of innovation at the edges by pure Content Providers cannot be offset by the increase in innovation generated by vertically-integrated players.¹⁷² In addition, the unavailability of a higher QoS level in the core until now has not prevented innovation from taking place at a furious pace on the edge. Finally, Content Providers – even major ones who would presumably

¹⁷⁰ See Felten cit. at footnote 131, page 1: edges have the most memory; edges have a better idea of what consumers want because they are controlled by them; innovation at edges happens faster.

¹⁷¹ See Sidak, *supra* note 1 p. 93.

¹⁷² Barbara van Schewick cit. at footnote 92.

benefit from higher QoS and could afford it – are usually against access-tiering, thus suggesting that they would not really receive extra incentives to innovate if access-tiering is available.¹⁷³

Secondly, as was already suggested before, if access-tiering is to be implemented properly – through either Scenario 1 (single-handed) or 2 (cooperation) above¹⁷⁴ – some private islands will emerge on the Internet. This would mark a break with the commons – or public network, in European terms – model currently prevailing, save for VPNs and a few exceptions mentioned earlier. That model represents the outcome of a certain industry structure which fostered cooperation: a young sector still, very dynamic, originating from a community effort outside of commercial circles, with few if any unassailable players. To some extent also, the current model is a by-product of telecommunications regulation: innovation blossomed at the edges because the core was heavily regulated. The advantages of that model are well-known: end-to-end connectivity, standardisation (thus competition *in* rather than *for* the market), economies of scale in production, network effects, etc. In any event, for whatever reason the current “commons” or “public network” model came to be, its value is perhaps underestimated in the absence of any counterfactual.

Even if the analogy is not perfect, the experience with 3G standards shows how valuable coordination and standardisation are. Having escaped first-generation balkanisation with the introduction of GSM, European mobile communications operators were very reluctant to be drawn into a standards battle by rival equipment manufacturers, whereby they risked returning to the pre-GSM patchwork.¹⁷⁵ Here, the historical experience with other content markets, as indicated earlier, indicates that a “commons” or “public network” model seems to be the preferred model for content

¹⁷³ To be sure, Content Providers seem to be willing to purchase “better than best effort” services, such as the mentioned Akamai caching. However, an important difference is that with Akamai’s service the decision of buying or not buying priority does not entail the risk of being degraded. On the contrary, the particular position of network operators may allow them to take advantage of such position to put in place actions to the detriment of non-priority clients. Such actions would be moreover very hard to detect and monitor: if a consumer is not receiving content correctly, where in the network is the problem? Is the Content Provider’s server overloaded? Is the consumer’s ISP connection slow? Is the telecom operator somewhere degrading the service to favour other applications?

¹⁷⁴ *Supra*, p. 47 *et seq.*

¹⁷⁵ See Larouche (2000) at 388-393.

distribution in the eyes of End-Users and Content Providers.¹⁷⁶ While private islands or subsets might bring innovation and higher QoS, the current model is thus also valuable. The Internet “commons” are unlikely to disappear altogether, however part of the traffic is likely to travel on more integrated private subsets of the Internet, which may or may not be entirely compatible with the commons.

In the same vein, Kocsis and De Bijl showed that access-tiering is likely to induce product differentiation.¹⁷⁷ Even in the absence of discrimination, in presence of different QoS levels, subscribing with a given BAP will bring priority access to certain content and sloppy (hence, arguably useless) access to competing content. Transparency in the market is thus likely to be reduced. End-Users will find it more difficult to switch from one BAP to the other, with a consequent reduction of the level of competitive pressure and increase in profits, which can however be invested in innovation. Under these circumstance, whether access-tiering improve social welfare from a dynamic perspective will depend on whether the existing level of competition in the retail BAP market is higher or lower than the level that maximises the incentives of BAPs to innovate.¹⁷⁸

Thirdly, access-tiering could increase dynamic efficiency by providing incentives to invest in new infrastructure both to existing BAPs/Broadband Providers and to Content Providers.¹⁷⁹ That argument is stronger when put against the background of US infrastructure policy, which fosters a duopoly of Integrated BAPs precisely so that revenues from the BAP business can be pumped into infrastructure rollout. Nevertheless, there are other revenue streams, including first and foremost revenues accruing from the provision of capacity to Content Providers and End-Users (under a “best-effort” QoS standard). One might wonder why these revenues are not sufficient already.¹⁸⁰ Furthermore, given the increased differentiation and the likely emergence

¹⁷⁶ Save for vertically-integrated Content Providers. However, it can be noted that vertical integration attempts so far have not originated from Content Providers, but rather from BAPs/Backbone Providers.

¹⁷⁷ Cit *supra* note 157, at p. {...}

¹⁷⁸ Id. p. {...}

¹⁷⁹ The former benefit from additional revenue streams, the latter would then be driven to roll out their own infrastructure if they find the prices for priority too high. See C. Yoo, for example.

¹⁸⁰ Note that, from an industrial policy perspective, introducing access-tiering in the EU implies that Content Providers, many of which are US-based, would have to pay EU Backbone Providers and BAPs for the level of QoS they desire (on the assumption that they will want to purchase higher QoS). Globally, this would result in a financial flow from US Content Providers to EU firms, which could

of private “islands”, private investment in infrastructure can result in a welfare-increasing innovation or a rent-appropriating innovation. In any event, part of that investment will be dissipated in QoS and prioritisation systems instead of actual infrastructure rollout. Societal and private interests can thus come to diverge. From a societal perspective, it would be preferable not to invest in prioritisation at all, but rather in increasing capacity and eliminating congestion, so as to enable a higher QoS without degrading quality for lower-QoS customers. BAPs and Backbone Providers, on the other hand, probably see considerable extra profits from introducing prioritisation technologies alongside (or even instead of) investment in capacity. Indeed, as an author put it, prioritisation technologies are “optimised for billing”.¹⁸¹

In the end, both the static and dynamic effects of access-tiering are unclear.

6.4. Regulatory responses

The previous heading does not allow clear policy recommendations to be drawn.

Policymakers face the following dilemma. On the one hand, the current situation is not a default position. There is a clear risk that some of the welfare gains flowing from the current “public network” or “commons” model, with its best-effort QoS standard, would be lost when access-tiering is introduced. On the other hand, if it unfolds properly, access-tiering can bring considerable welfare gains, both static and dynamic. Given that, as sketched above, the feasibility of access-tiering is not yet established, a worst-case scenario is also possible, where the welfare gains resulting from the current situation are dissipated without access-tiering being implemented in such a way as to deliver its benefits.

As a starting point, given that the welfare effects are uncertain, policymakers should abstain from intervention and wait until the situation is clearer. After all, it could be argued that even if a paradigm shift is playing out, many industries experience such

then be used to finance infrastructure roll-out in the EU. Some will recognise parallels with the debate on accounting rates which prevailed in the 1990s as telecommunications were being liberalised. For a brief account of that debate, see Bronckers and Larouche “Telecommunications Services” (with M.C.E.J. Bronckers), in P. Macrory and A. Appleton, eds., *The Kluwer Companion to the WTO*

¹⁸¹ Susan Crawford at http://scrawford.blogware.com/blog/_archives/2006/5/18/1968004.html

shifts without any need for intervention to guide them; public authorities are then content to monitor the situation and intervene later if the outcome is not satisfactory. Obviously, Content Providers, BAPs and Backbone Providers do not agree, and their business models clash, but that as such does not warrant intervention. The principle of technological neutrality, central to EC electronic communications regulation, could be invoked in support of that position:¹⁸² the State should let the debate between the “dumb” and “intelligent” network models, between the “public” and “private” models, be settled by the market according to customer preferences. In parallel, if they are to discharge their function, public authorities must nevertheless develop their own vision and expectations about the future of the Internet, encompassing issues such as the balance between innovation at the edges and at the core (“dumb” or “intelligent” networks) and the need to invest in infrastructure. They can then test the outcome against that vision.

Yet waiting is only a valid option if the potential negative effects of attempts to introduce access-tiering are reversible. If it turns out that access-tiering is undesirable from a societal point of view, can “intelligent” networks be “dumbed” down? Can private islands be reunited with the Internet? At a mere technological level, the answer is positive: it is a matter of removing equipment or disabling features; some wasteful investment will then have taken place, but that was the price to pay to find out if access-tiering would turn out to be a positive development. Customer relationships and business models might be harder to unwind, however.

Concretely, one option would be not to prevent BAPs and Backbone Providers from implementing access-tiering but at the same time impose conditions aiming at avoiding the most egregious problems that could arise and ensuring reversibility. The other option is to prohibit access-tiering, but such outright prohibition of a commercial development that has never been tested and whose assessment is to a large extent speculative would also be rather difficult to justify.

For both options, we now analyse which tools European regulators have at their disposal.

¹⁸² See I. van der Haar “Technological Neutrality; What Does it Entail?”, (March 2007). TILEC Discussion Paper No. 2007-009 Available at SSRN: <http://ssrn.com/abstract=985260>.

6.4.1. Access-tiering is not prohibited

In the first scenario, access-tiering is not prohibited but regulators want to minimise its potential negative effects, and in particular: (1) excessive degradation of the Lower-QoS services; (2) depending on whether Scenario 1 or 2 above prevails, either internal market fragmentation due to uncoordinated decisions at national level or anti-competitive agreements; (3) extortive practices aiming only at extracting rent without actually delivering access-tiering; (4) rent-appropriation instead of investment in network infrastructure.

(1) A first set of remedies should aim at avoiding that excessive degradation takes place, thereby leading valuable content to become unattractive to End-Users or to disappear altogether because demand for it falls.

EC competition law does not seem to catch excessive degradation. In theory, Article 82 EC could apply to the unilateral degradation of the service indirectly offered by a BAP (as the supplier of a wholesale component for Internet connectivity) to a Content Provider. Assuming that the BAP is dominant, degradation could be abusive if it caused an alteration of the structure of the market by putting the Content Provider at competitive disadvantage or pushing it out of the market. Yet if access-tiering is legal then degradation for those who do not purchase premium services cannot be considered exclusionary: differentiating QoS is what access-tiering is all about, thus a network operator either is not abusing or has at least an “objective justification” in the form of a legitimate business reason to degrade. The Content Provider is free to choose a better level of service – and pay for it – if it so prefers.

As outlined earlier,¹⁸³ the SMP regime does not readily apply to net neutrality issues for lack of selected relevant markets. In fact, the European Commission has mooted minimum QoS levels as a possible addition to electronic communications regulation

¹⁸³ See *supra* p. 20 *et seq.*

in the course of the current policy review. The Commission has indeed asked for comments on this point in the public consultation launched in 2006.¹⁸⁴

It seems to us rather difficult for a public authority to ascertain what the appropriate minimum QoS level would be. Such level is bound to differ between Member States, depending on local preferences and technological development. Moreover, the minimum quality standard will have to vary in step with technological upgrades, conjuring the scenario of a legal rule constantly chasing technology. Additionally, monitoring and enforcing the established standard is likely to create further difficulties: regulatory authorities are hardly in a position to verify that potential transmission problems are due to lack of implementation of the standard itself rather than to other factors beyond the BAP's control.

A less complicated alternative would be to impose transparency obligations pursuant to Article 9 of the current Access Directive. This is the least intrusive remedy at the disposal of the authorities, thus it is the one that poses the least problems as far as the proportionality test is concerned. However, transparency obligations can induce collusion if the market is otherwise competitive.

Such transparency obligation – in the form of a public reference offer – would cover all relevant information and technical specifications relative to QoS. The operator would then be forced to make clear not only what it is offering to its higher-QoS customers but also how much degradation it is imposing on lower-QoS ones. Clearly, this does not eliminate degradation, but it makes customers better aware of the kind of services they can expect from network operators. Customers can evaluate whether the degradation is too severe and may eventually switch to another operator.¹⁸⁵

¹⁸⁴ See the Communication on the Review of the EU Regulatory framework for electronic communications and especially the complementary Staff Working Document *cit. supra* note 3.

¹⁸⁵ Despite SMP regime and competition law are inspired by the same philosophy, this seems to be a case in which general competition law would not be able to catch the problem. As explained above, such conduct of excessive degradation does not seem to fulfil the test of Article 82, yet there are still good economic and non economic reasons to impose an *ex ante* obligation of transparency.

Beyond EC competition law and the SMP regime, here again the general interconnection regime of the Regulatory Framework¹⁸⁶ may be invoked to impose “obligations” on firms that “control access to end-users” when it is necessary “to ensure end-to-end connectivity”. It could be argued that excessive degradation presents a threat commensurate to blocking as regards the proper functioning of the Internet as a whole. Using this rationale, all BAPs could be subject to the same kind of transparency obligation described above for dominant (SMP) operators.

NRAs could furthermore warn BAPs that should the situation evolve into an undesirable outcome, more intrusive remedies – such as a regulated minimum QoS level – would be imposed.

(2) It was seen earlier that, while US infrastructure policy fosters the single-handed end-to-end implementation of access-tiering over the networks of the largest BAPs/Broadband Providers, EU infrastructure policy maintains or even increases the fragmentation of the sector, including across national lines. Either access-tiering will be implemented single-handedly but over national networks (Scenario 1) or it will be implemented at EU level through a network of agreements among BAPs and Backbone Providers (Scenario 2). In the former case, there is a risk of fragmentation of the internal market if the implementation of access-tiering differs technically from one Member State to the other.

In the latter case, the agreements may not breach Article 81 EC. In principle, these agreements would aim to develop and deploy a technology to supply QoS management services and priority and they would not have as their *object* to restrict competition. If it were found that their *effect* on competition was too significant, such agreements may still escape prohibition by virtue of the R&D block exemption regulations¹⁸⁷ or in line with the Horizontal Guidelines¹⁸⁸ since they will be deemed to contribute to technological progress.

¹⁸⁶ In particular Article 5 of the Access Directive, already discussed above for blocking. See p. 39 *et seq.*

¹⁸⁷ Regulation 2659/2000 of 29 November 2000 on the application of Article 81(3) of the Treaty to categories of research and development agreements [2000] OJ L 304/{}. Industry-wide agreements on QoS will not be covered by this exemption, however, since they will exceed the market share thresholds set out therein.

Whether to avoid fragmentation of the internal market or anti-competitive practices, the solution is the same: the EC technical standardisation model should be followed. Access-tiering techniques should probably be assessed by an appropriate EU industry consortium or should go through the European standardisation bodies.

(3) Access-tiering could result in extortion by BAPs. The simplest scenario in this sense would be one in which BAPs introduce different QoS levels at some point in time and automatically transfer traffic to the lowest tier unless End-Users or Content Providers agree to pay more. In general, as the BAP market is reasonably competitive, such choice would negatively affect End-Users – directly or indirectly, if Content Providers are extorted – and induce them to switch to another BAP. Therefore a BAP does not seem to have any interest in pursuing this strategy, except if it enjoys market power or a dominant position. However, market mechanisms might not be as robust as for discrimination or blocking. Since the implementation of access-tiering in the EU could involve a certain degree of cooperation among BAPs, in all likelihood competing BAPs to which a dissatisfied End-User might turn will also be involved in access-tiering and might not offer much of an alternative. There could be an issue of collusion (Article 81 EC) or collective dominance¹⁸⁹ in such a case.

If Article 81 EC were to apply, the concern would be price-fixing. If Article 82 were to apply on account of either a single or a collective dominant position, the abuse would consist in charging customers more than before for the same kind or even a lower level of service: Content Providers who currently are offered a “best effort” service would be given a “worse-than-best-effort” service, unless they agree to a higher price. This kind of abuse would not be exclusionary, but rather exploitative, i.e. aiming at extracting customers’ surplus directly, without prior elimination of competitors. The application of Article 82 EC to cases of excessive pricing, however, is rife with difficulties, as the limited case-law illustrates.¹⁹⁰ Here, however, there would be evidence of an unjustified increase in price or lowering in quality.

¹⁸⁸ See the Guidelines of 6 January 2001 on the applicability of Article 81 of the EC Treaty to horizontal cooperation agreements [2001] OJ C 3/{...}.

¹⁸⁹ The difficulties inherent in such doctrine do not allow us more than a mention in this paper. The reader is referred to the relevant literature and case law. {...}

¹⁹⁰ See the article of Pijnacker Hordijk on the topic {...}

(4) Despite assurances that the profits from access-tiering are needed to invest in infrastructure modernisation, it cannot be excluded that BAPs would shirk from their statements and invest not in infrastructure development but rather in other more profitable technological innovations. This would nullify any societal interest in allowing access-tiering at the outset.

As discussed earlier, the EU infrastructure policy fosters a competitive retail BAP market. The expected profits from access-tiering are likely to be lower than those potentially available to BAPs in the United States. However, since more entities will benefit from such profits, there will be higher competitive pressure on them to invest in climbing up the investment ladder¹⁹¹ and thus undertake infrastructure building. It is difficult to foresee whether such effect would be sufficient to avoid the risk that not enough is invested in this socially desirable endeavour.

At this point in time, there are no legal instruments at the disposal of public authorities to force BAPs to deliver on promises to invest in infrastructure.¹⁹² In the broader political discussion between regulatory authorities and network operators, part of the regulatory deal could be that BAPs are allowed to introduce access-tiering in return for undertakings concerning infrastructure development, along the same lines as universal service or mobile network coverage obligations.

6.4.2. Access-tiering is to be prohibited

In the second scenario, if access-tiering would be prohibited, the most significant issues to consider are: (1) whether access-tiering is or could be prohibited under the existing legal setting or a new regulatory instrument would be necessary; (2) how to deal with the problem of investment in infrastructure development in absence of the profits from access-tiering. Note that the same analysis applies if the first scenario were followed and later on authorities came to the conclusion that access-tiering is undesirable.

¹⁹¹ Cit. above p. 24..

¹⁹² In the absence of a specific licence, to which conditions could be attached (as is the case when operators must obtain rights of use over spectrum for mobile communications), it is not possible to rely on the Authorisation Directive.

(1) EC competition law cannot be used to prohibit access-tiering altogether, absent a case of discrimination or blocking. As far as Article 81 is concerned, horizontal agreements among BAPs/Backbone Providers to deploy access-tiering technology are likely to escape a prohibition.¹⁹³ As far vertical agreements between a BAP and a Content Provider are concerned, the policy towards vertical restraints is rather lenient¹⁹⁴ and the purchase of a premium service or of a QoS guarantee does not in its face partition the market and does not fix prices (the only clearly prohibited clauses). It could have an exclusionary effect if it were coupled with exclusivity, but in this case the practice would rather qualify as blocking or discrimination. Article 82 does not seem to catch access-tiering in itself either. Offering different QoS guarantees at different prices is generally a legitimate business practice. Save for cases of discrimination and blocking, the main consequence of access-tiering is to increase the costs to access the network in a way that affects all players. This may or may not be inefficient but it does not seem anticompetitive as such.

Under electronic communications regulation, the SMP regime as it stands now cannot apply to access-tiering because the relevant markets (as outlined above) are currently outside the regulation. If this were to change and if BAPs were found to hold SMP, access-tiering could be prohibited by means of a price control obligation (Article 13 Access Directive). Such obligations are usually very invasive and require the authorities to invest a considerable amount of resources for price calculations and monitoring. In the case of access tiering, however, price-control could be formulated in a less intrusive and less resource-intensive fashion, as a duty not to make access prices dependent on quality. Such obligation would effectively prevent BAPs from implementing access-tiering, while leaving open to them the possibility¹⁹⁵ of determining prices on the basis of capacity. Moreover, the monitoring would be ensured by a simple system of complaint mechanisms and would not require complex cost-price analyses.

¹⁹³ {Cross reference}

¹⁹⁴ See the Commission Guidelines on Vertical Restraints [2000] OJ C 291/1 and Regulation 2790/1999 of 22 December 1999 on the application of Article 81(3) of the Treaty to categories of vertical agreements and concerted practices [1999] OJ L 336/21.

¹⁹⁵ “Open” in this context does not exclude of course the obligations that have already been imposed on SMP operators on other grounds.

It remains to be seen whether such an obligation would be justified in the light of the “nature of the problem” and the “proportionality” of the remedy, as required by the Framework Directive. NRAs should have clear evidence on the negative consequences of access-tiering in order to show the appropriateness of the remedy.¹⁹⁶ A further difficulty is that NRAs could ban access-tiering only in their own jurisdiction: for a pan-European ban, concerted action¹⁹⁷ would be necessary.

The obvious limit of this regime is that it applies only to BAPs with SMP, leaving others free to offer access-tiering. If the analysis bears on the wholesale market for content transmission (where BAPs provide a wholesale component to the Backbone Provider’s offering), however, every BAP could be found to hold SMP. Otherwise, since access-tiering is so clearly linked with the evolution and the functioning of the Internet as a whole, Article 5(1)(a) of the Access Directive could perhaps again be referred to: obligations may be imposed on all market operators in order to ensure end-to-end connectivity.

(2) Even if access-tiering were prohibited, it remains that the Internet infrastructure of the future must be built and financed. This issue is admittedly a difficult one and for the most part it goes beyond the scope of this paper. Nevertheless, we wish to highlight its connection with the network neutrality discussion and give some preliminary indications as to how to deal with it.

A first approach for public authorities is to “wait and see” for the market to provide an alternative solution to access-tiering. Even if BAPs may not find any, investment may come from the side of Content Providers. The most obvious example is Google’s initial attempts at building wireless Internet infrastructure. Should this happen, we would face again an issue of vertical integration, but the other way around. A thorough analysis of this situation goes beyond the scope of this paper.

An alternative approach is to invest public funds directly in infrastructure building. The rationale behind such intervention would lie in the abovementioned disalignment

¹⁹⁶ Obviously this will be easier if the prohibition comes after the negative effects of access-tiering have been shown in the practice, i.e. after the technology has been deployed.

¹⁹⁷ Using the ERG (European Regulators Group) as a forum.

of incentives: put it simply, if society as a whole benefits from new infrastructure while BAPs benefit from access-tiering, then once the latter is prohibited, the most appropriate cost-bearer for infrastructure building is society.¹⁹⁸

We already observe an increase in public investment broadband infrastructure, especially at the municipal level. However, clearly, this is not an easy avenue either, which again we can only briefly sketch without covering it fully. For example, in the EU, public investment in infrastructure may fall within the prohibition of State aid, although so far in most instances the Commission has exempted the investment under either Article 86(2) or 87(3) EC.¹⁹⁹ In most of the cases the Commission investigated, however, public investment concerned investment rural or remote areas (so-called “white areas”).²⁰⁰ The outcome could be different in so-called “grey” or “black areas”, as the recent *Appingedam* case showed.²⁰¹

VII. CONCLUSIONS

In this paper, we have analysed and discussed the need for regulatory intervention at the juncture between infrastructure and content on the Internet that goes under the name of Network Neutrality. We have chosen to discuss not the definition of this expression, but the three practices that seem to raise the central concerns: discrimination between Content Providers, blocking user access to content and access-tiering.

As far as discrimination is concerned, the four most likely hypotheses of discrimination have been analysed. When they are put together, a reasonably reassuring picture emerges. First of all, the situation in the EU is different than in the US. Competition in the retail BAP market is more lively, with a large number of Retail-only BAPs relying on wholesale access offerings from Integrated BAPs. The competitiveness of the retail market alleviates a significant part of the concerns

¹⁹⁸ Of course, BAPs would also benefit from the infrastructure, and in this case a joint investment might be envisaged.

¹⁹⁹ In some countries, the Commission has allowed public financing of broadband development (Greece, Ireland, etc.), while in other countries, it deemed such financing illegal under State aid rules, because it was distorting the existing competition in the market, as in the Netherlands: { ... }

²⁰⁰ { ... }

²⁰¹ Available at http://ec.europa.eu/comm/competition/state_aid/decisions/c35_2005/en.pdf

surrounding potential discrimination by BAPs towards Content Providers. When some concerns remain, then in all likelihood EC competition law can apply to address them. With some twists, the SMP regime under electronic communications regulation could also apply to these cases.

The analysis of blocking – beyond discriminatory blocking – has shown that competition law is not too effective in tackling this problem. Conversely, the Regulatory Framework does provide useful legal tools to this purpose. When the central concern is the general interest in the “integrity” of the Internet as a network for the circulation of information and end-to-end connectivity, the general interconnection regime could provide the basis for intervening to make sure that blocking practices do not harm such general interest.

As far as access-tiering is concerned, the analysis showed that it is hard to take position in favour or against it. Thus, we have chosen, instead, to identify the possible legal response to the potential problems connected with allowing access-tiering, and to confront it to the potential regulatory hurdles to prohibit such practice. We found that European competition law is of limited use in both scenarios, while the electronic communications regulation is more helpful, along the same lines of reasoning highlighted for blocking. Accordingly, we differentiated the case in which an operator with SMP prevents the market from solving the problem, from the cases in which end-to-end connectivity is at stake. We briefly sketched in this context the consequences on broadband infrastructure development.

At a more general level, the discussion in this paper shows the link between network neutrality and the policy concerning broadband infrastructure. In the US, FCC policy paved the way for a duopoly of Integrated BAPs to dominate the retail market, hence creating the potential for discriminatory practices towards Content Providers, with significant anti-competitive consequences. In the EU, a more incremental policy, which fed a lively and competitive range of Retail-only BAPs to compete with the Integrated BAPs, goes a long way towards dissipating a number of competitive concerns.

The given justifications for the desirability of access-tiering are also clearly linked to the issue of broadband infrastructure development.

This would imply that network neutrality must be factored in the discussions surrounding the appropriate infrastructure policy in the EU. The more incumbent operators are given leeway to invest in infrastructure without too many regulatory shackles (pursuant to so-called “regulatory holidays”), the more the EU market will resemble the US market, and the more network neutrality will become a pressing regulatory issue, which requires intervention. Such intervention is likely to be complex and costly, if only for its enforcement. A trade-off must therefore be made: the hypothetical increase in investment and the savings in transaction and regulatory costs which would result from a light-handed infrastructure policy must be balanced against the costs which would be coupled with heavier regulatory intervention to ensure that the ensuing network neutrality issues are addressed.