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HEARING ON NETWORK NEUTRALITY

-- Paper by Mr. Martin Cave --

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COMPETITION AND CONSUMER PROTECTION ISSUES IN THE NET NEUTRALITY DEBATE, WITH SPECIAL REFERENCE TO EUROPE¹

Paper by Mr. Martin Cave

Abstract

1. The debate about net neutrality in Europe has lagged behind that in the United States by several years, and has taken place in a context where access-based competition has generated less concentrated retail broadband markets than in the US. While some discussions have embraced broad objectives such as maintaining the openness of the internet, much of the discussion has focussed on a range of possible harms to consumers which might require additional regulatory intervention. Legislative revisions to the Directives governing electronic communications services passed in 2009 enhanced transparency and gave regulators some additional powers, but most recent discussions have focussed upon four issues in particular: the need for end users to be furnished with better information; the desirability of imposing a minimum quality of service (QoS) on internet providers; traffic management and exclusion policies; and charges levied by ISPs on service providers. The paper reviews whether these issues are likely to require regulatory intervention in Europe, concluding that there is very limited evidence to suggest that existing powers are not adequate to deal with any problems. It expresses concern that European regulators with a power to set minimum quality of service levels may be tempted to use them when they are not necessary. But it also notes that a 2011 Communication on net neutrality from the European Commission, while pressing for further examination of the conduct of internet providers, makes no further proposals for intervention.

1. Introduction²

2. The scope of the net neutrality debate ranges from fundamental and sometimes portentous discussion of how to protect the open, democratic or even anarchic ‘no permission required’ nature of the Internet from powerful profit-seeking corporations, to the familiar regulatory and competition policy issues of how to prevent firms with significant market power from behaving dysfunctionally, and how to ensure that customers do not get ripped off in the process. This paper deals almost exclusively with the second category of issues, and, in the interests of variety, it addresses net neutrality through the prism of the experience and policies towards it adopted in European Union – rather than the more familiar US version.

3. In brief, the lively and more fundamental debate on net neutrality in the United States has been followed, with a lag, by a less polarised and more instrumental discussion in Europe. In a reversal of conventional roles, the issues covered in the European debate are generally a pragmatic subset of the US debate, without the more lofty philosophical elements. They include: is the open internet undermined by differential tiers of service?; should ISPs be allowed to charge content and application providers (CAPs)

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² This paper draws heavily on joint and separate work by Martin Cave and Pietro Crocioni, including Cave & Crocioni (2007); Cave et al. (2009); Crocioni (2011); and Cave and Crocioni (2011, forthcoming).

for access to the network?; what forms of traffic management are legitimate?; is blocking of legal content a concern?; how should information about such practices be made available to end users?

4. US companies have played a role in the European debate. Verizon and AT&T have kept a watching and warning brief, and Google has participated too, until its message became garbled and its contribution muted. But the main *dramatis personae* have been the European ISPs, particularly the larger historic monopolists such as Telefonica; CAPs such as the BBC and, notably, US-based giants such as Facebook³; and, of course, governments, legislatures and regulators, at both the Member State and European Union levels.

5. Decision points in the European debate are now upon us. Fundamental legislation has been passed by the European institutions which Member States should have transposed by 25 May 2011. The aim of this paper is to describe the European debate, set out the stage which it has reached, and give an evaluation of the policy proposals, adopted or emerging. The paper first analyses the different tenor of the debates in the US and Europe, and set out the basic chronology and contours of the European debate. It then reviews the European discussion of the four topics which have been the focus of the debate everywhere.

2. Network neutrality in the US and Europe

6. The term and concept of ‘net neutrality’ originated in the United States, and discussion in the United States of legislative and regulatory proposals to ‘impose’ net neutrality began several years before it started in Europe (see Faulhaber 2011).

7. This culminated in the adoption by the FCC of a Report and Order (FCC, 2010), which laid down three basic rules for the continued freedom and openness of the internet:

- transparency: fixed and mobile broadband providers must disclose the network management practices, performance characteristics, and terms and conditions of their broadband services;
- no blocking: fixed broadband providers may not block lawful content, applications, services, or non-harmful devices; mobile broadband providers may not block lawful websites, or block applications that compete with their voice or video telephony services; and
- no unreasonable discrimination: fixed broadband providers may not unreasonably discriminate in transmitting lawful network traffic.

8. These rules are subject to legal challenge.

9. The regulatory context for broadband differs considerably between Europe and the United States.⁴ Over three-fourths of European Union (EU) households are passed by at most one wire – normally that of the historic telecommunications incumbent; cable networks deliver service to a minority. Fixed broadband competition is thus mainly provided via a regime which grants competitors access to unbundled copper loops and/or a bitstream product.

³ Tensions between some European countries and the US over Internet regulation were evident at the May 2011 E-G8 summit in France. These may relate not only to privacy but also to the conflicting economic interests of European telecommunications firms and US content providers such as Facebook; see the article by Vittorio Colao, chief executive officer of Vodafone, in *Financial Times* 6 June 2011, p 11.

⁴ See European Parliament (2011) pp. 47-61.

10. Fixed broadband penetration in the EU is about the same as in Japan and slightly lower than in the USA (European Commission 2010a). About one fifth of broadband subscriptions are provided by technologies other than copper-based DSL – mostly cable, but with a small contribution from fixed wireless and a very small but growing element of fibre. 45% of subscribers to DSL services buy from the incumbent, 55% from an access-based competitor. There is a lively but inconclusive debate in Europe concerning the degree to which the access regime, and the prices at which access products are available, deter investment, particular in new access technologies,⁵ and about what an appropriate alternative policy might be in areas where there is at present only one fixed network. As a result, European broadband customers typically have access to a wide range of retail suppliers which increasingly relies on LLU rather than bitstream access. This contrasts with the situation in 2008 in the USA, where 96% of homes had at best access to only two retail wireline broadband services (Wallsten & Mallahan, 2010).

11. Marsden (2010) writes that:

‘European regulators generally claimed that net neutrality is a US problem, a result of duopoly competition and regulatory failure to commit to competition in the Bush years.’

12. The same point was made by the then European Commissioner (Information Society and Media), Viviane Reding, in a speech in October 2009 (Reding 2009, p. 3):

‘In general consumers and service providers in Europe seem to be in a relatively good position overall with regard to Net Neutrality, compared to the situation in the US where the debate is just really starting now. This is because European consumers generally have, thanks to pro-competitive EU regulation, a greater choice of competing broadband services available to them than US consumers under the strongly deregulated US telecoms market.’

13. However, despite a degree of European disdain for what was seen as deficient regulation of broadband in the US, by 2009 there was a recognition by regulators that a set of issues relating to transparency, quality of service and traffic management would have to be addressed in Europe, and were being addressed in revisions to the Directives governing electronic communications services, which are the key legislative basis for regulation in the European Union. Ms Reding also emphasised the need for vigilance against the new threats, noting that:

‘reforms in favour of net neutrality are therefore a very important, (and often underestimated) achievement of the telecoms reform, and many European Parliamentarians, but also many ministers deserve the credit for having strengthened the corresponding wording during the legislative package’.

14. In other words the message was: it is worse in the United States (poor them), but there are issues in Europe too.

3. The debate in Europe

15. In the European Union, revisions to the 2003 Regulatory Framework for electronic communications services⁶ were approved in 2009, for transposition by Member States by 25 May 2011. In relation to network neutrality the revisions have introduced new duties upon and powers for the national regulators to enforce consumer transparency and a new regulatory instrument, minimum QoS (Directive, 2009; see also Table 1).

⁵ For a survey, see Cambini & Jiang (2009)

⁶ See, for example, Cave 2009.

Table 1: European Regulatory Tools

Older regulatory tool	Description	Relevant provision(s)
Access obligation in presence of significant market power (SMP).	Well-known tool to impose regulatory obligations but only on providers with SMP. Unbundled local loops and bitstream are widely available to ISPs to access the incumbent DSL network. However, there is no easy way for national regulators to intervene in data termination. Unlike voice termination, no wholesale market for data termination is listed as one of the Commission's relevant markets subject to <i>ex ante</i> regulation. As this is a requirement for intervention, national regulators would have to pass the so-called three criteria test ⁷ , setting a high(er) burden of proof, to be able to intervene.	Access Directive (Art. 2)
End-to-end connectivity obligation (no need for SMP).	National regulators can promote end-to-end connectivity through the interconnection regime without SMP. Application appears limited to transmission and not content services.	Access Directive (Art. 4 and 5)
New Tools introduced in 2009		
Enforcing transparency through general conditions.	National regulators can oblige all providers to inform subscribers of any changes to conditions for access to lawful services and provide information on traffic shaping. A requirement that contracts should be clear and easily accessible and include information on conditions limiting access to lawful applications. They should also specific minimum quality information and what procedures for traffic shaping are in place.	Universal Service Directive (Art. 20(1)(b); 21(3)(c) and (d))
Protecting a minimum level of service (minimum QoS).	National regulators can impose a minimum QoS on all providers "in order to prevent the degradation of service and the hindering or slowing down of traffic over networks". This requires consultation between the national regulators, the Commission and BEREC.	Universal Service Directive (Art. 22(3))

16. While no *ex ante* non-discrimination rule for net neutrality was introduced, in 2010 the European Commission (2010b) issued a questionnaire in preparation for a consultation, in which, amongst other things, it raised some questions related to discriminatory practices.

17. We start by examining the response of BEREC to the Commission questionnaire (BEREC 2010a). BEREC represents all national regulators of the European Union, as well as playing a role in the formal decision-taking process of regulation. BEREC's position was that it was difficult to reach a definitive evaluation of how well the regulatory framework would cope with net neutrality issues, but incidents causing concern were few and mostly solved without regulatory intervention. Hence, at present it was premature to consider further intervention. BEREC is committed to delivering guidance on transparency in the first half of 2011 and on quality of service requirements in the second half (BEREC 2010b).

18. The BEREC response thus raised but did not answer a number of questions, such as:

⁷ Before a market not included in the European Commission's list of relevant markets subject to *ex ante* regulation can be analysed to see if the conditions for imposing a remedy have been satisfied, it is necessary for the national regulatory authority to show 1) that there are high and non-transitory entry barriers; 2) that the structure of the market does not tend to effective competition in the relevant period; and 3) that the application of competition law alone would not adequately address the market failures concerned (European Commission, 2003 and 2007).

- what constitutes discrimination against a CAP?
- what information is needed for end users to make an informed choice?
- what could trigger the imposition of minimum QoS?

19. Ofcom, the UK regulator, suggested in its discussion document that the best approach may be first to ensure that competition between ISPs remain vibrant and consumers have and can act on the relevant information, before considering more radical additional interventions such as minimum QoS (Ofcom 2010). It signalled that the debate is about traffic management rather than an abstract term such as net neutrality. It recognised that traffic management is essential to satisfy consumers' demand but that it could also potentially be used as an anticompetitive and exclusionary tool. It argued that such concerns should only arise in presence of market power and when ISPs discriminated in favour of their own services. It saw no case for *ex ante* blanket intervention. Transparency though was an issue increasingly important together with ensuring that consumers switching was easy.

20. At the other end of the spectrum, the French regulator ARCEP was one of the first European regulators to set out a fully articulated approach to net neutrality in September 2010. This was intended, in ARCEP's words, to:

'promote rules and best practices that apply to the entire value chain, in a manner that is fair to all of the different stakeholders, and which has a dual dimension: technical-economic and socially responsible'. (ARCEP 2010, p. 3)

21. Ten proposals were identified. Customers would be guaranteed access rights, with no differentiation between the ways in which individual data streams were treated, subject to necessary traffic management techniques. ISPs would be allowed to market 'managed services', alongside internet access, provided the managed service does not degrade the quality of internet access below a certain level. ISPs must also transparently disclose their quality of, and limitations on, service, and their traffic management practices. These must be measured and monitored, and ARCEP will identify appropriate indicators and require ISPs to publish their performance data also in relation to data interconnection. ARCEP is also concerned to take account in network neutrality of what it calls information society service vendors or ISVs, which provide content services to the public with electronic means. These must comply with a principle of non-discrimination in different operators' ability to access their offers, and objectivity with respect to users, when, for example they are search engines - i.e. 'neutrality of search.'

22. This amounts to a wide agenda. It is difficult to understand fully why ARCEP may have come to an apparently very different and interventionist position than Ofcom. One reason seems to be ARCEP's greater concern about the impact of discrimination and charging on content innovation.

23. Others appear much more cautious at this stage. The Italian regulator AGCOM has also recently issued a consultation on net neutrality (AGCOM 2011). It notes that all types of traffic management – i.e. blocking, throttling, traffic deterioration etc – do not necessarily have a negative connotation. They could reflect either the need to maintain the integrity of the network or to maintain or improve the quality of the services to their customers. AGCOM also recognises that traffic management could also be used anticompetitively. Transparency and switching are considered to play an important role in ensuring competition and efficient outcomes for consumers, although it is described as necessary but in itself may not be sufficient. Some forms of discrimination, blocking access, tiering and quality degradation could have anticompetitive effects. The consultation also covers area such as freedom of expression, plurality of information sources and preservation of cultural diversity which are not addressed here.

24. The Commission's Communication answering the responses to its 2010 questionnaire suggests that it may be prepared to intervene more strongly than previously indicated (European Commission 2011a). Although it still places significant emphasis on transparency and on competition via access regulation and repeats that some traffic management practices ensure the efficient use of networks, it sends a strong message that it is prepared to intervene in other ways:

'the fact that some operators, for reasons unrelated to traffic management, may block or degrade legal services (in particular Voice over IP services) which compete with their own services can be considered to run against the open character of the Internet.'

25. The other example mentioned in the press release accompanying the Communication is one in which slow down, and hence degrade, the quality of service of a rival video provider (European Commission 2011b). It announced that BEREC would undertake a rigorous fact finding exercise on blocking and throttling practices. The Information Society Commissioner Neelie Kroes also made it clear how far the Commission could go:

'At the end of 2011, I will publish the results, including any instances of blocking or throttling certain types of traffic. If I am not satisfied, I will not hesitate to come up with more stringent measures, which may take the form of guidance or even general legislative measures to achieve the competition and choice consumers deserve. If this proves to be insufficient, I am ready to prohibit the blocking of lawful services or applications.'

26. The Communication made it clear that such measures would apply to all ISPs irrespective of market power.

27. This, then, is the current position concerning net neutrality in Europe. In what follows, four topics are identified for more detailed examination. They are familiar from other jurisdictions, perhaps with the exception of minimum QoS, but the focus is on how they are viewed in Europe. They are

- transparency;
- a minimum QoS;
- exclusion (i.e. blocking or throttling of content); and
- ISPs' charging for data termination.

4. Transparency

28. That consumers have access to information about products and services is a great help in promoting competition and ultimately consumer welfare. If enough consumers can and do search and can easily switch, this should keep the market honest. Equally, one might hope that the well-known 'unravelling' result related to supplier disclosure would operate (Dranove and Jin, 2010, pp. 941-5). According to this result, a supplier offering the highest quality service has an incentive to disclose. Then the next best wants to distinguish itself from the pack. And so on until there is virtual full disclosure. This does not always happen, of course, in either theory or practice, and certainly has not in the case of traffic management in Europe.⁸

⁸ A different problem in Europe and elsewhere is the widespread practice of advertising broadband services on the basis of 'maximum speeds' which are several times higher than what is actually available.

29. The simplest remedy seems to mandate disclosure. If the problem is lack of information then an information remedy must be the first line of defence. A number of steps have been taken in Europe to promote more transparency. A new Article 21 of the Universal Service and Users' Rights (Universal Service Directive) was introduced, covering transparency and the publication of information. Member States must ensure that national regulators require operators to publish information on tariffs, terms and conditions and so on, and encourage the publication of comparable data on prices. Also, undertakings must be required

'to inform subscribers of any change to conditions limiting access to and /or use of services and applications'.

30. This legislation has led to subsequent discussions and proposals by national regulators. Ofcom noted the importance of ensuring that customers know in advance what traffic prioritisation, degradation and blocking policies would be applied by their ISP, and suggested that industry should work together to find an effective solution for disclosing information that is meaningful to consumers. In March 2011, a group of UK fixed and mobile broadband operators signed up to a code of practice requiring them to provide more information on traffic management, to provide it to consumers in an accessible and comparable way, and to publish key facts on their web sites by June 2011 (Broadband Stakeholders Group 2011).⁹

31. The conclusions on net neutrality reached by ARCEP (2010, pp 30-41) also place considerable weight on transparency and monitoring. These obligations will go beyond ISPs to include the data interconnection market, where transactions occur between the leading operators and between these and CAPs, on either a peering or a paid peering basis. ARCEP wants to understand this marketplace better, to ensure that neutrality is not jeopardised at other points within the value chain than access. ARCEP is also concerned with ensuring transparency in relation to search engines, citing concerns about Google's dominance in that market.

32. The Commission's questionnaire on net neutrality (European Commission 2010b) recognises the value of transparency but appears rather sceptical about its effects:

'while it is in the interests of consumers to have a range of differentiated services from internet service providers which they can subscribe to, in the case where there could be limited competition or significant switching costs, transparency as to the nature of traffic management practices in place might not be sufficient'.

33. To summarise, while regulators may say that the principle of transparency is non-negotiable, there is still a long way to go in Europe to make reality conform to the new principle. And there is still room for debate about how to present information in ways which permit ready comparison by users with widely diverging degrees of technical knowledge. But will transparency be enough? Clearly not if '*confusopoly*'¹⁰ tactics or market power originating in collusive practices or switching costs prevent customers from receiving the services they would wish for. Furthermore, transparency and non-discrimination policies are linked. Absent prohibitions on discrimination, ISPs might in principle be able to move customers who are unable to make informed choices away from "best-efforts" access services to more expensive services.

⁹ According to *Financial Times* (16 March 2011, p. 8) the UK minister alarmed the assembled operators by saying that they should go further, by eschewing discrimination against content-providers on the basis of commercial rivalry.

¹⁰ A term coined by the Dilbert cartoonist Scott Adams to describe a group of companies with similar products which intentionally confuse customers instead of competing on price.

34. However, transparency, comparability and switching could all be enhanced, thus enabling consumers to get more from broadband services (Faulhaber, 2010). It is encouraging that the results of an economic experiment run for the Dutch Ministry of Economic Affairs on transparency in broadband suggest that when consumers either face imperfect information (i.e. quality is random) or only some consumers are informed, outcomes are much closer to the full information scenario than to the no information one (Sluijs, Schuett and Henze, 2010). There may be no need for transparency to be perfect in order to work. While information must be both easily comparable, it is currently very technical in nature. For consumers to understand if a package is good for high quality video services they need to understand whether the package combination of the speed, prioritisation among services and usage caps features, for example, permit the required quality of service. This is a complex exercise which few consumers could do easily and correctly. It would seem easier for consumers to decide on the basis of output rather than technical input information – i.e. is this package able to deliver good quality video?

5. Minimum QoS

35. The ability of national regulators to impose a minimum QoS obligation on ISPs is the main novelty of the revised Universal Service Directive, and it is likely to become the hot topic in net neutrality in Europe. We understand this to be a power that does not formally (but may in practice) rely on a finding of Significant Market Power (SMP). Significant uncertainty, however, surrounds minimum QoS. Its exact definition remains unclear, what is for and what type of evidence would trigger it. The Commission Communications is largely silent on this.

36. First, on the definition. This is probably best interpreted as a Universal Service Obligation (USO) which raises more complex issues than the voice fixed telephony USO. Our interpretation is that minimum QoS is a tool to set a floor on the quality of the Internet traffic experienced by consumers. It does not seem appropriate to us to interpret this also as geographical USO; this aspect was discussed separately prior to the adoption of the new framework under the banner of a broadband USO for Europe. So unlike the fixed voice telephony USO, there is neither a geographic nor a social tariff aspect. A minimum QoS probably does not refer to the minimum speed, either download or upload, of the connection, but to the minimum level of latency that Internet access services should provide.

37. A minimum QoS presents national regulators with some important practical and implementation difficulties and potentially high risks of error. For example, if the minimum QoS levels were set too high, consumers demanding low QoS may not be willing to pay the higher price and would exit the market (Hermalin & Katz, 2007).¹¹ Perversely, this could have an effect opposite to that of a social tariff – i.e. reduce rather than increase adoption. The risk of regulatory failure is not insignificant. Voice telephony was a simple and technologically stable service. The fixed voice minimum QoS for analogue services has not required updating for decades. For broadband it is unclear which service should be used as a reference. Is the quality that necessary to support high quality online games or, for example, low quality video? As the services and applications rapidly evolve, the minimum QoS might have to be frequently adapted. Its verification and enforcement present equally complex issues. Presumably ISPs would be responsible for ensuring minimum QoS on their access and perhaps backhaul networks. However, the quality of Internet traffic is not fully under the control of ISPs. For example, if the CAPs chose poor quality hosting services, the responsibility for a drop in service quality might not lie with the ISP. Disputes may be frequent and the resulting monitoring and enforcement costs correspondingly high.

38. Second, what should a minimum QoS be used for? This is unfortunately a very frequent problem in the net neutrality debate. A remedy is put forward and then the search for a justification starts. The

¹¹ Here we assume national regulators would have the power to impose a minimum QoS but not price regulation.

remedy could have two broad aims. It could be to correct or prevent a market failure of some sort. This requires evidence of a market failure, and, if so, whether a regulatory intervention of this type would improve matters. Second, it could achieve a social or non-economic objective - in which case the regulator needs to ask what is the cost of pursuing that objective. Here we focus only on the former.

39. According to the revised Universal Service Directive, a minimum QoS could be contemplated “in order to prevent the degradation of service and the hindering or slowing down of traffic over networks.”(Directive, 2009, Art 22.3) This seems currently interpreted as a remedy which might need to be imposed if the quality of best effort access were degraded below a certain level – which could include today’s level. The concern behind this provision is that as CAPs and ISPs enter into agreements for the provision of better quality access (often described as “managed or prioritised services”), the capacity dedicated to and the quality of the best effort applications may be reduced.¹² While the “preservation” of (current) best efforts Internet appears to be the main reason for the introduction of minimum QoS, there may be others. If this outcome reflected consumers’ preferences for managed services relative to services relying on best efforts, consumers would get what they wanted. There may perhaps be concerns if consumers demanded best efforts services but their demand were not satisfied, for example because ISPs could not extract consumers’ value for some reason and hence would undersupply it. This seems unlikely as current broadband offers are based on the provision of best efforts connectivity, and ISPs can currently monetise the value this generates to consumers. There would be a problem if ISPs individually or jointly were in a position to abuse their market power to the detriment of consumers, but the natural way to deal with this within the European regulatory framework is directly to tackle the market power, probably by appropriate access remedies.

40. There may be another way to interpret minimum QoS. It could be taken to mean that ISPs need to provide access (of a minimum quality) to any CAP requesting it – i.e. an obligation on ISPs to provide access to CAPs. But this is probably a misconceived interpretation of this remedy. Access obligations should be imposed only if the provider(s) has (have) significant market power. Although there is no market for data termination in the current Commission Recommendation on the relevant markets subject to ex ante regulation (European Commission 2007), if a national regulator could make a good case this would seem the most appropriate way to address this concern.

41. A somewhat different justification has been put forward by Brennan (2010) based on network externalities. His argument is similar to the economic justification for a fixed voice telephony USO. A prospective new subscriber to a telephony network would not incorporate in his or her decision the benefit conferred on existing subscribers (who would gain an additional calling opportunity). It could, therefore, be efficient to subsidise marginal joiners to fixed telephony. In the case of broadband, however, the network externality arises on the CAPs’ rather than on the consumer side. A new potential CAP, the argument runs, when considering to set up online would not take into account the potential benefits it may confer on existing websites. The new website may contain links to and, hence, generate traffic towards existing websites, thereby benefitting them. This reasoning works as long as consumers hop from website to website using links. Whether this is the way consumers surf the net today is more contentious. The presence of search engines may suggest that consumers rely more and more on searches to reach content. While there could be possible justifications for a minimum QoS, currently there does not seem to be a cogent case for it in Europe.

42. Finally, unlike other asymmetric regulatory tools (see the example of access obligations triggered by a finding of SMP in Table 1), there is no clear trigger for a minimum QoS. It is an optional tool, which national regulators need to make a case for it based on the existence of a market failure, which can best be

¹² This type of argument implicitly assumes that ISPs would not have incentives to expand capacity if demand for capacity spurred by consumers preference for prioritised services occurred.

tackled by this, rather than by another tool. We argue (see next section) that market power seems an unlikely concern in Europe. And unlike voice USO, there seems to be no social policy justification in place for a minimum QoS.

6. Exclusion

All European national regulators seem to agree that traffic management is beneficial to consumers by improving the quality of the services they receive. We also believe that this is the case, especially in presence of congestion, capacity constraints, consumers' heterogeneous preferences, different access requirements across services and applications and fixed and common costs. Regulators have also expressed concerns as to its possible anticompetitive effects. It is therefore important to understand better when such concerns could arise.

6.1. Anticompetitive exclusion

43. Conceptually the simplest justification for net neutrality is to address anti-competitive exclusion. ISPs with market power may have the ability and incentive to engage in anticompetitive practices to exclude or marginalise their rivals; they can harm consumers in this way by blocking access, or price discriminating against CAPs or degrading the quality of access provided to them. *Blocking* (including charging a very high price) is in principle more severe but *throttling* by degrading the serviced quality may have similar effects. While the debate focuses on ISPs, market power could emerge at different levels. Some CAPs may hold market power towards ISPs or other CAPs.¹³

44. Consumer harm from exclusion could arise when certain (cumulative) well-known conditions are met (Crocioni, 2008). The ISPs:

- should have market power. Because of mandated wholesale access regulation currently in Europe there is no indication that this is a serious concern and no regulator has intervened either *ex ante* or *ex post* so far;
- should either be vertically integrated into the provision of content and applications or planning to be so in the near future. Currently, in Europe this is very unusual;¹⁴ and
- would need an incentive to exclude competitors. For example, a monopolist ISP may benefit from valuable complements and it may be better off charging a higher price for Internet access instead of trying to force customers onto its own services.

45. Abstracting from implementation difficulties, if such concerns were justified and, critically, pervasive, there might be a case for *per se ex ante* rules. But given that currently there do not seem to be significant risks and evidence that exclusionary behaviour is an endemic feature of competition in Europe, *ex post* rules seem a better option.¹⁵

¹³ For example, if consumers spent a significant amount of time on a social network, other CAPs may need to gain access to that social network in order to reach consumers.

¹⁴ The situation may well be different in the US. *Typically in the US (and to a much lesser extent the UK and some European countries), cable operators are vertically integrated and have rights to a significant amount of valuable (video) content as the network is used to deliver television services as well as broadband.*

¹⁵ See Cave & Crocioni (2007) and Crocioni (2011).

6.2. *VoIP Blocking*

46. VoIP providers have argued that they have been blocked from accessing subscribers of some or most mobile networks. This could be seen as exclusionary behaviour, if the conditions listed above existed. VoIP is clearly a very close substitute for the voice services of mobile operators; the latter could, therefore, have a motive to prohibit it. However, absent market power is unlikely that exclusion would happen and, even if it did it, that it could have harmful implications for consumers. Exclusion may not happen if one mobile operator was better-off providing access itself rather than a competitor doing it. But even if it did, this should not make a difference for consumers if competition among mobile operators were intense. This has many resemblances with the debate about access by mobile virtual network operators (MVNOs) which lost momentum in Europe because of absence of SMP.

47. Imposing access obligations on operators without market power is very rarely justified on economic regulation grounds either in telecoms or more generally. If there were a concern about competition in mobile voice regulators could perhaps resurrect the market for “Access and call origination on public mobile telephone networks” (European Commission 2003). This was specifically designed where competition in mobile voice was deemed to be insufficient. It remains the best regulatory approach to increasing competition if needed. VoIP largely exists because it exploits arbitrage opportunities. If it were a cheaper way to deliver calls we would expect mobile networks to have adopted it themselves.

48. Imposing access to VoIP on competitive mobile providers, particularly at a zero access charge, is likely to alter the mobile retail price structure. Mobile providers would be likely to react to the loss of their voice revenues by raising the price of either mobile Internet access or more likely the data or internet access subscription charge. Furthermore, VoIP access may prove a temporary issue. As mobile termination rates decline further and mobile retail packages are more and more structured as large bundles of minutes for a fixed price, VoIP arbitrage opportunities may quickly be eroded.

7. **Charging**

49. The balance of charges levied by ISPs has not been discussed in Europe as explicitly as in the US. However, implicitly this entered the debate with reference to the impact on innovation by CAPs. We briefly examine the static arguments about the risk of overcharging under the “competitive bottleneck” and the dynamic issues associated with innovation and investment.

7.1. *“Competitive bottleneck”*

50. There is a so far purely theoretical argument that if ISPs were free to price this would lead to a “competitive bottleneck” outcome where CAPs are charged “too much” even in the absence of any exclusionary strategy. Internet access is a two-sided market. ISPs act as the platforms allowing consumers to access CAPs’ services on the Internet and, equally, allowing the latter to provide their services to consumers. The benefit that a consumer derives from accessing the Internet depends on the amount (and quality) of content and applications available. The benefit for a CAP depends on how many consumers can access the Internet. Arlandis & Baranes (2010) find that there are synergies between ISPs, CAPs and consumers.¹⁶ Two-sided market theory tells us that when a platform sets the prices on each side it takes into account these cross-group externalities to get the right balance between participation on both sides (Evans 2010, Rochet & Tirole 2006). The prices charged to the two sides may be skewed, though efficient. There is, however, a particular type of two-sided market (“competitive bottleneck”) for which the

¹⁶ They also find that net neutrality regulation would have implications as to the nationality of the providers that stand to gain or lose. American content providers would benefit from net neutrality regulation while European ISPs would lose.

economic literature has identified a potential market failure when some consumers multi-home while others single-home (Armstrong 2006). Each platform has market power in providing access to its own single-homing customers because each controls access to its own subscribers and CAPs have no choice other than dealing with that provider. The price structure is distorted (even if and when all profits made on one side are dissipated on the other)¹⁷ and cannot be corrected by increasing competition.

51. Internet access may be described as a “competitive bottleneck”. Most consumers subscribe to only one ISP (i.e. they single-home) while CAPs are available to subscribers to all ISPs (i.e. they multi-home). This, if corroborated by evidence, would predict that each ISP is likely to have market power in providing CAPs with access to their customers.

52. The efficient access price for CAPs may be between two extremes. A zero price seems unlikely to be efficient. One possible justification of such price structure is that CAPs should be “bribed” (via a zero price) to participate because this is significantly valued by consumers. However, Internet access (like broadcasting) is largely supported by revenues from advertisers. At the same time a “competitive bottleneck” price which is “too high” seems also unlikely as it rests on specific assumptions:

- CAPs particularly valued by consumers (e.g. Google, Yahoo, etc.) could exert bargaining power vis-a-vis ISPs;
- CAPs may reverse any “competitive bottleneck” outcome by committing to exclusive contracts in return for some “compensation”, rather than having to pay “too much” to the ISPs for access; and
- consumers may not single-home as they often have access to the Internet from home and separately from work and/or via a fixed and a mobile line.

53. There are no signs to date of ISPs charging, let alone overcharging, CAPs. This runs counter the prediction of the “competitive bottleneck” theory.

7.2. Investment and innovation incentives

54. CAPs have claimed that if ISPs were allowed to charge, they would extract all the rents and, hence, negatively affect the CAPs’ incentives to invest and innovate. Conversely, ISPs have claimed that if they were not allowed to charge, CAPs would “free ride” on their investment.

55. Let us first consider the dynamic efficiency argument against ISPs’ charging first. Unless ISPs exercise *market power*, *this argument does not appear very convincing*. First, if a firm has a valuable proposition, one would expect it to still be able to obtain financing (absent capital market imperfections). *A CAP could launch in the “best-efforts” sphere, before moving on to prioritised access*. Second, the concern about reducing the CAPs’ investment requires assuming that the more content the better. If a zero price is not efficient, it may lead to “too much” investment by CAPs. Third, in the absence of *net neutrality rules*, *ISPs will likely offer prioritised access for a fee and interruptible or “best-effort” access for free*. *To the extent that consumers have a preference for prioritised access, CAPs will be able to offer a better quality service for which consumers (or advertisers) would be willing to pay for*. Fourth and critically, *delay-sensitive services such as online games and telemedicine may never emerge absent priority access*. Overall, this argument does not appear particularly convincing.

¹⁷ This is termed the “waterbed effect” where any extra profits made on the multi-homing side are competed away to attract single-homing consumers on the other side.

56. Next, we consider the “free riding” argument by ISPs. Traffic management is an alternative to increased capacity. Without it there will be either congestion or excessive investment in network capacity - neither of which is efficient. It would be inefficient to respond to congestion by investing to double capacity when prioritising traffic (by allowing delay-sensitive services to emerge) could achieve the same benefits for consumers with a fraction of investment (Cave et al 2009). One concern could arise if there were already little incentive to increase network capacity. This is a complex issue. In Europe ISPs that rely on access lease the incumbent’s local loops and either build or lease capacity deeper into the network (a part of the network often known as “backhaul”). On DSL technology this has not proven a concern so far in Europe. The potential migration to next generation networks (NGN) raises critical questions about investment incentives, which however, seem largely unrelated to net neutrality. In essence, preventing ISPs from charging seems unlikely to be statically efficient and would not necessarily result in more investment in capacity as some net neutrality proponents seem to argue. The outcome could simply be no additional capacity and more congestion.

8. How to intervene, if it is necessary?

57. If there were a concern about exclusion (Section VI), current competition law should be sufficient. If not, this may signal that broadband access products (the markets for which are regularly reviewed under the European framework) are not guaranteeing satisfactory retail competition. This should be the area of focus if exclusionary behaviour became frequent.

58. *Ex ante* intervention is currently inappropriate as there is no evidence of ISPs charging CAPs (Section VII). In the future, even if they started to do so, this would not necessarily be a concern. For example, absent restrictions a two-tiered system could emerge with prioritised access offered for a fee and best efforts access remaining free. A concern about a competitive bottleneck would probably arise only if ISPs started to charge a “high” price for best efforts. Intervention would mimic that for voice termination in Europe. First, a national regulator would have to make a case for a new market under the three criteria test¹⁸ – i.e. for data termination - to be added to those in the Commission Recommendation on markets subject to *ex ante* regulation. Second, even if SMP were found in such a market, it is unclear what type of remedy could be imposed. Cost based access is certainly one option, though it would be very complex. A price cap of zero, as proposed by some net neutrality proponents, may not be currently legally possible in Europe as a zero price would not be cost-based.

9. An emerging consensus?

59. Our account of how the net neutrality debate has unfolded to date in Europe is a fairly optimistic one. We agree with Commissioner Reding that the less concentrated nature of the ISP retail market in most of Europe may have acted as a defence against the prospect of market power being deployed by ISPs against CAPs, to the ultimate disadvantage of consumers. Also helpful is the appreciation by regulators and others that poorly designed interventions make things worse for all parties - ISPs, CAPs and customers. The initial focus should instead be on enhancing transparency and easy switching.

60. However, there are some areas of concern. Some new optional powers – i.e. minimum QoS - have been introduced ahead of any evidence of need. As a result, regulators such as BEREC are currently engaged in the task of defining the conditions in which such instrument might be applied. This is a clear example of the phenomenon of a solution looking for a problem. It carries the attendant danger that parties will constantly seek to persuade the regulator to try it out, and may ultimately succeed; or the regulator will succumb to temptation itself. In other words, an ‘anti-precautionary’ principle can be applied to regulators, stating that they should not be granted powers ahead of demonstrated need.

¹⁸ See footnote. 8 above.

61. Finally, the above discussion on exclusion and charging also highlights a possible risk that a minimum QoS could be misused to try to introduce an *ex ante* ban on any form of discrimination (beyond the currently accepted distinction between managed and best efforts services), even in the absence of any market power concerns. It would be a matter of concern if national regulators followed the route taken by the US Federal Communications Commission (FCC) of “no blocking of lawful CAPs allowed”, as it is sometimes presented. Indeed the recent Communication from the Commission seems to have steered closer to the position of the FCC on this point. In some cases blocking could harm consumers. But because in many cases it may not, a *per se* ban is inappropriate and at best ineffective in furthering consumers’ interests. At worst, it would prevent the internet from evolving from today’s focus on best efforts to new business models that may better serve consumers. There is a risk of making best efforts into a sacred cow which consumers may not need or want in the future.

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