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J. Scott Marcus*

Network Neutrality: The Roots of the Debate in the United States

What is meant by “network neutrality”? Why has the issue emerged at this particular time, and in this particular way? Why does the debate seem to be so much more heated and intense in the US than in Europe?

Network neutrality is something of a catch-all phrase that emerged in the United States over the past decade to reflect a number of potential behaviours that some have considered to be anticompetitive. Network neutrality implies that all IP packets should be treated more or less the same, and the debate reflects concerns that they might not be in the future – that a network operator might somehow apply different treatment to IP packets (or “datagrams”) associated with different services, applications, destinations or devices. Emblematic of these concerns are:

- the possibility that a network operator offering broadband Internet services (an integrated Internet Service Provider (ISP)) might offer better performance to some Internet sites than to others;
- the possibility that an integrated ISP might assess a surcharge where a customer wants to reach certain Internet sites with better-than-standard performance;
- the fear that the integrated ISP might permit access only to affiliated sites, and block access to unaffiliated sites;
- the fear that the integrated ISP might assess supra-competitive surcharges for the use of certain applications, or of certain devices;
- the fear that the integrated ISP might disallow outright the use of certain applications, or of certain devices, especially where those applications or devices compete with services that the integrated ISP itself offers and for which it charges;
- the fear that the integrated ISP might erect “toll-gates” in order to collect unwarranted charges from

unaffiliated content providers who need to reach the integrated ISP’s customers.

This is, to be sure, a rather strange list. Readers will probably wonder – and with good reason – why some of these scenarios have been viewed as being problematic in the first place. Economists do not necessarily consider service or price discrimination to be problematic *per se* in competitive markets. For other items in the list, the concerns are obvious.

Lending a further Alice-in-Wonderland quality to the discussion, nearly all of the concerns that have been raised are about *potential* conduct by network operators, not about actions that they have actually taken. There have been very few clear-cut, problematic deviations to date from the principle of network neutrality.¹

More recently, a US expert, Tim Wu, has explored a new *wireless* dimension of the network neutrality issue.² He notes what most Americans have taken for granted: (1) that mobile operators support only a limited selection of devices on their networks; (2) that mobile operators cripple some handset features;³ (3) that some features are not developed, even though potentially valuable to consumers, because the mobile operators do not want them; (4) that mobile operators tend to restrict broadband services both in terms of bandwidth available (e.g. for peer-to-peer applications (P2P)) and for competing applications (e.g. Voice over IP (VoIP)); and (5) that barriers to entry for mobile application developers are high due to restrictions imposed by the mobile operators. Wu proposes four remedies for the US:

¹ Not all experts share this view. See, for instance, Tim Wu’s and Lawrence Lessig’s letter (2003) to the FCC: http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6514683885. There are also indications that deviations may be on the rise. At an informal level, see: <http://theyee.ca/Media-check/2007/12/27/NetNeutrality/print.html>.

² Tim Wu: *Wireless Net Neutrality: Cellular Carterfone and Consumer Choice in Mobile Broadband*, New America Foundation, Working Paper No. 17, February 2007, at: http://www.newamerica.net/files/WorkingPaper17_WirelessNetNeutrality_Wu.pdf.

³ This seems to be routine in the US, but not in Europe.

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- a “Carterphone” rule to allow consumers to attach any safe mobile device;
- a network neutrality obligation to ensure that consumers can run any application and view any content they choose;
- full disclosure of any limitations on the service;
- standardisation of application development platforms.

Again, Europeans may find this list confusing – it addresses a set of problems that are not entirely relevant to Europe. The ability to use any compliant (unlocked) GSM phone is not in question. Standardisation of the application platform is advancing in many contexts, including the IP Multimedia System (IMS). Full disclosure of limitations in service is not necessarily in place, but is clearly within the scope of authority of national regulators under the Universal Service Directive.

This paper seeks to put the issue in proper perspective for an international audience. It provides the necessary economic background, but without recourse to more economic jargon than is necessary to convey the relevant concepts. It begins with a classical analysis, considers the implications that market power on the part of network operators would have on upstream application services, and then looks at network neutrality from the perspective of the recently developed economic theory of two-sided markets. Next it discusses differences between broadband and mobile markets in the United States and the EU, with a particular focus on last mile broadband and on mobile. It then considers differences in the regulatory and competition law environment between the US and the EU.

A clear conclusion is that the fundamental underlying problem (for the broadband aspects of network neutrality, not necessarily for the mobile) is the emergence of market power for last mile broadband facilities in the US – were it not for increasing emergence of market power, the presence or absence of price discrimination should not have raised serious concerns, and would not have emerged as an intense policy issue.

Price Discrimination and Market Power in Conventional Markets

The more extreme advocates of network neutrality take issue with the use of price or quality differentiation in networks. This fairly radical view runs counter to a long line of economic reasoning.

The basic economic theory that evolved in the Nineteenth Century described a world of perfect cut-throat

competition, in which firms would compete away all of their profits and would price down to their marginal costs. It was subsequently recognised that real markets are not perfectly competitive; moreover, in utility markets like electronic communications, which are often characterised by high fixed costs and low marginal costs, such a model would tend to be ruinous for the operators. Pricing to pure marginal cost would leave the operators with no possibility of recovering their quite substantial fixed costs.

The solution to this quandary has been obvious to businessmen and to economists for more than a hundred years. By offering services at different levels of quality, the business can retain some pricing power, and can thus achieve profitability in a business that would otherwise price down to an unsustainable marginal cost.⁴

We are all familiar with this principle in the context of airplane or railroad tickets: we do not consider it anti-competitive for airlines to offer economy, business and first class tickets. Moreover, we recognise instinctively that the differences in *price* are only weakly linked to differences in *cost*. French railroads ran the passenger cars for their least expensive service without roofs in the Nineteenth Century not because of the cost of the roof, but rather in order to terrify passengers who could afford to pay more out of taking the less expensive service.⁵

More generally, optimal pricing would be based on Ramsey-Boiteux principles, where the highest mark-ups would be assessed to those whose demand is least elastic, that is, whose demand is least likely to be impacted by high prices.⁶ Ideally, the firm would price to each individual's elasticity (first order price discrimination); however, this is generally impractical, so firms in practice price to reflect the willingness to pay on the part of large groups of prospective customers (second order price discrimination). When an airline offers a lower price to those who are willing to stay over on a Saturday night, it has nothing to do with the airline's costs, but everything to do with the willingness of prospective customers to pay. Business customers generally want to be home on the week-

⁴ See especially Harold Hotelling: Stability in Competition, in: *The Economic Journal*, March 1929, pp. 41-57.

⁵ See Andrew Odlyzko: The evolution of price discrimination in transportation and its implications for the Internet, in: *Review of Network Economics*, Vol. 3, No. 3, September 2004, pp. 323-346, available at http://www.rnejournal.com/articles/odlyzko_RNE_sept_2004.pdf. He draws on earlier work.

⁶ For an introduction to Ramsey-Boiteux pricing, see Jean-Jacques Laffont, Jean Tirole: *Competition in Telecommunications*, 2001, MIT Press.

end, and are relatively insensitive to price because the costs are borne by their firms rather than being carried personally by the traveller. Airlines charge them more because they are willing to pay more.

In competitive markets, this price discrimination is generally welfare-enhancing. Airline price discrimination makes it possible for budget-minded vacationers to get favourable packages, and generally expands the economic frontier in such a way that passengers may collectively fly more miles, and that planes have fewer empty seats, all effects that tend to enhance overall welfare.

The darker side of price and quality discrimination appears when the firm has market power. Price and quality discrimination then provides a means for the firm to extract more of the economic surplus (the perceived value to the customer, minus the cost) from the customer. Price discrimination benefits the firm, at the cost of harming consumer welfare. The real underlying problem here is not the price discrimination, but rather the lack of competition, which results in higher prices and in lower overall levels of consumption than would be the case in an effectively competitive market. The resultant loss of welfare can be referred to as a “dead-weight social loss”.

This aspect of price discrimination is the core of the debate in the United States, and the reason why it is so difficult for Europeans to follow. Americans instinctively realise that price discrimination is a threat because the underlying markets, especially those for broadband Internet access, are probably no longer sufficiently robust to inhibit anticompetitive price discrimination. The real issue is the decline in last mile competition in the broadband marketplace in the US; however, concerns over last mile broadband competitive conditions have no political traction in the US with a Republican in the White House, a Republican majority in the increasingly politicised Federal Communications Commission (FCC), and a communications industry that no longer includes competitive firms with money available for lobbying purposes. The network neutrality debate in the US is largely a proxy for the deeper, but stalled, debate over overall competition in the electronic communications services sector.

Economic Foreclosure

In the United States, as in Europe, the providers of content and applications (e.g. Google, Yahoo, Vonage, and YouTube) are in most cases not the same as the network operators (e.g. AT&T, Verizon, Comcast), although a few companies have a foot in both camps (e.g. America Online (AOL) / Time Warner). The net-

work neutrality debate is complicated by the fact that these markets are largely distinct, but are upstream/downstream from one another.

The economics of market power in industries subject to network externalities has been extensively analysed over the years,⁷ and implications for Internet interconnection were analysed more recently.⁸ In general, where no player has a dominant market share (in overall percentage terms, and also relative to the next largest players) in terms of controlling access to customers, all players will be motivated to have good interoperability and interconnection. Where one player has a sufficiently large share, however, that player will be motivated to have less-than-perfect interoperability and/or interconnection because perfect interconnection would prevent it from exploiting its market power.

One aspect of the network neutrality debate is that network operators might affiliate with (or acquire) certain content or application providers, and might then disadvantage their competitors. This kind of behaviour smacks of economic foreclosure or tying, where a firm that possesses market power in one market segment attempts to project that market power into upstream or downstream market segments that would otherwise be competitive.

To date, attempts to exercise this kind of foreclosure have often failed. AOL/Time Warner did not notably benefit from possessing both network and content. The merger of Excite and @Home also did not seem to generate advantage – in particular, @Home did not attempt to limit the Excite portal to its cable customers, nor did Excite attempt to treat @Home cable customers differently from other customers. On the other hand, a small local telephone company (Madison River) apparently attempted to block Vonage Voice over IP access to its customers, which presumably would have been profitable for Madison River had the FCC not intervened.⁹

Once again, where underlying markets are sufficiently competitive, anticompetitive actions are usually unprofitable (foreclosure cannot exist in the absence of

⁷ See M. Katz, C. Shapiro: Network externalities, competition, and compatibility, in: *American Economic Review*, Vol. 75, 1985, pp. 424-440; and J. Farrell, G. Saloner: Standardization, compatibility and innovation, in: *RAND Journal of Economics*, Vol. 16, 1985, pp. 70-83.

⁸ Jacques Cremer, Patrick Rey, Jean Tirole: Connectivity in the Commercial Internet, May 1999.

⁹ In March, 2005, the FCC investigated “... allegations that Madison River was blocking ports used for VoIP applications, thereby affecting customers’ ability to use VoIP through one or more VoIP service providers.” Madison River agreed to discontinue the practice, and to pay a small fine. Note that Madison River probably had substantial market power relative to its rural telephony customers.

market power); however, where underlying markets are highly concentrated, problems could indeed emerge.

Two-sided Platforms

A recent development in economic theory is the ability to analyse two-sided platforms. A two-sided platform brings together the two distinct sides of a market in a way that benefits both. Common examples include (1) singles bars, and (2) free-to-air television broadcasting.

In a sense, every market is two-sided. In most cases, the more complex analysis necessary for a two-sided market does not provide a deeper understanding of the market. For certain markets, however, the *structure* of prices matters, not just the *level* of prices.¹⁰ For example, a singles bar might find it profitable to offer free drinks to women (or for that matter to men) in order to ensure the right number of each are present. As another example, end-users typically do not pay for free-to-air broadcasting – the costs are in effect carried by advertisers. Pricing schemes that would be irrational in conventional markets can be appropriate in two-sided markets.

The Internet has some parallels to the free-to-air broadcasting case. Laffont et al. analysed the Internet in terms of web sites and consumers, and found that access charges between Internet backbone networks (which today are often zero) would have a tendency to transfer relative welfare between content providers versus consumers.¹¹

This two-sided analysis is relevant to at least one aspect of the network neutrality debate. One of the prime manifestations of the network neutrality debate in the US has been the stated desire of broadband service providers to charge a premium to content and application providers to reach the former's customers with suitably good service quality, even in cases where the content provider was not a customer of the network operator in question. This intent is perhaps most clearly stated in a statement by Ed Whitacre, head of the firm that is now called AT&T, that played a large role in sparking the current debate:

"The chief executive of AT&T, Edward Whitacre, told Business Week last year that his company (then called SBC Communications) wanted some way to charge

¹⁰ Jean-Charles Rochet, Jean Tirole: Two-Sided Markets: An Overview, March 12, 2004, available at: http://faculty.haas.berkeley.edu/hermalin/rochet_tirole.pdf.

¹¹ Jean-Jacques Laffont, J. Scott Marcus, Patrick Rey, Jean Tirole: Internet interconnection and the off-net-cost pricing principle, in: RAND Journal of Economics, Vol. 34, No. 2, Summer 2003, available at <http://www.rje.org/abstracts/abstracts/2003/rje.sum03.Laffont.pdf>.

major Internet concerns like Google and Vonage for the bandwidth they use. 'What they would like to do is use my pipes free, but I ain't going to let them do that because we have spent this capital and we have to have a return on it,' he said."¹²

The statement has widely been interpreted as a thinly veiled threat to degrade quality of service for content and application providers who refuse to pay a supracompetitive premium to the network operator. Note that we are not necessarily talking about the content or application provider's network operator – there is little doubt that the content provider's own network operator is already being paid a market-based price. We are talking here about a network operator serving the end-user – a network operator that does not necessarily have a direct commercial relationship with the content or application provider.

Whether such payments would be positive or negative for societal welfare is a complex question. In an effectively competitive environment, they would probably be either harmless or welfare-enhancing. In a re-monopolised environment, however, the payments probably harm overall welfare.¹³

This is not the first time that Internet providers have attempted to extract payments from third parties. It was occasionally attempted in the mid-nineties. In the past, content providers simply ignored such demands – they knew that end-users seeking to access their services would resent network operators that blocked access, and that enough end-users would change network operators to make such a strategy unprofitable for the network operator. That the issue is re-emerging today indicates, once again, that underlying broadband competition in the US has been eroded to the point where content providers and end-users are no longer convinced that competition is sufficient to inhibit anticompetitive conduct on the part of network operators. The real culprit is not the structure of payments, but rather the decline in effective competition for last mile fixed broadband Internet access in the United States.

How Does the United States Differ from the European Union?

In the context of network neutrality, the United States is very different from the European Union in terms of both market conditions and of the regulatory (and competition law) environment. The following parts

¹² New York Times, March 8, 2006.

¹³ See Nicholas Economides, Joacim Tåg: Net Neutrality on the Internet: A Two-sided Market Analysis, New York University Law and Economics Working Paper, November 2007.

compare the markets, the regulatory environment, and the competition law environment respectively.

Market Conditions

As noted above, the competitiveness of underlying markets, especially the marketplace for last mile fixed broadband Internet access, is critical to the network neutrality issue.

In the mid-nineties, Internet access in the US and in the EU was primarily accomplished by means of dial-up and leased lines. Facilities-based network operators in the US were required to make their facilities available to competitors on terms no less favourable than those on which they self-supplied the same capabilities, and competitors made extensive use of those facilities. At one point, there were more than 7,000 Internet Service Providers (ISPs) in the US¹⁴ The marketplace for Internet access in the US was felt to be highly competitive, and there was little concern about deviations from network neutrality.

The growth of broadband Internet access, coupled with the collapse of the dot-com bubble and a series of deregulatory regulatory decisions, changed all of this.¹⁵ The FCC withdrew obligations that had previously applied to telecommunications network operators to make their broadband facilities available to competitors at wholesale (with the notable exception of copper loops). This had the predictable effect of forcing most competitive operators to exit the market; alternatively, a few of the largest (including the former AT&T and WorldCom) were acquired by incumbents. Today, not more than 3.1% of all DSL lines are provided by competitive operators (CLECs), and this percentage continues to decline over time.¹⁶

This is not to say that there is no competition whatsoever. A majority of those US consumers who subscribe to broadband services depend on cable television. Across the US, there are many cable companies. There are also many telephone companies, although a substantial majority of subscribers get their fixed telephony services from just three network operators. What this means in practice is that most Americans are effectively subject to a duopoly of broadband service provision – they can choose between a cable

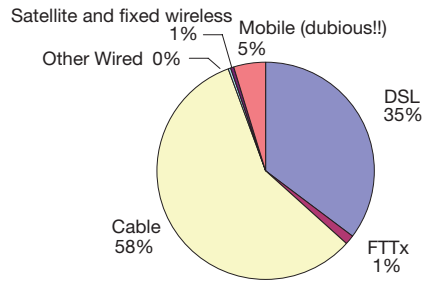
¹⁴ Boardwatch magazine.

¹⁵ For a more extensive explanation of these changes, see J. Scott Marcus: Is the U.S. Dancing to a Different Drummer?, in: Communications & Strategies, No. 60, 4th quarter 2005. Available at: http://www.idate.fr/fic/revue_telech/132/CS60%20MARCUS.pdf. Also available in intermedia (the journal of the International Institute of Communications), Vol. 34, No. 3, July/August 2006.

¹⁶ Based on the latest FCC data corresponding to December 2006.

Figure 1
US Residential Broadband

(at least 200Kbps both directions, December 2006)



Source: FCC data, December 2006.

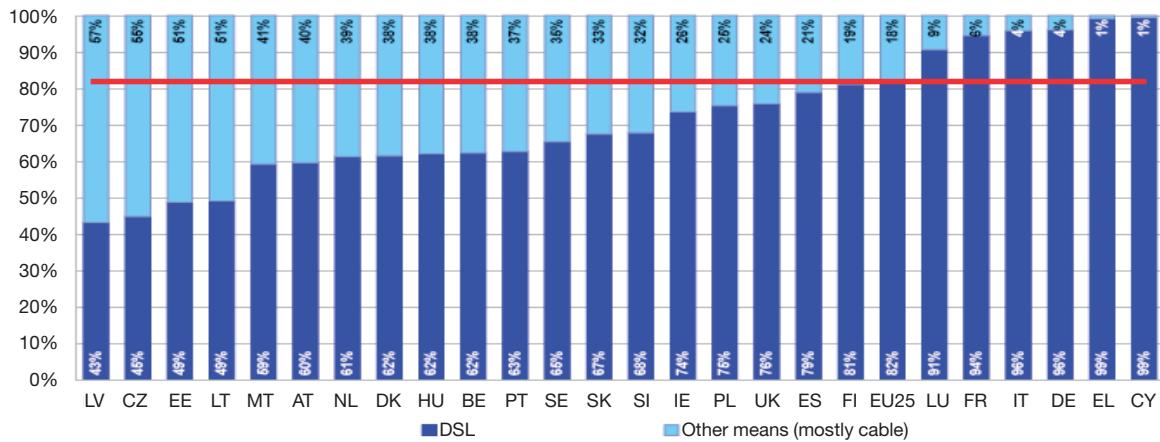
company and a telephone company, as shown in Figure 1.

There tends to be much debate about what is and is not reflected in these FCC statistics. A few facts are worth noting: (1) the FCC uses various definitions of broadband, some of which nobody other than the FCC would consider to be broadband (for example, services that are less than 200 Kbps in the slower direction); (2) high speed Internet access is available across the US using a range of technologies such as satellite, but few people subscribe to them for reasons of cost and scalability; (3) the FCC data do not systematically track licence-exempt solutions such as WiFi, but a hot spot (at, say, a Starbucks coffee shop) does not realistically replace fixed broadband access at home; and (4) it is unclear what mobile broadband services the FCC is counting, but most of them are probably most appropriately viewed as economic complements to wired broadband rather than as economic substitutes – they do not replace a fixed broadband connection.

Taking all of this into account, it is appropriate to regard the US broadband marketplace as a series of non-geographically-overlapping cable/telecoms duopolies. Real consumer choice is limited.

The European environment is strikingly different. First, there is far less presence of cable television across Europe as a whole; however, the situation is highly varied from one EU Member State to the next, as shown in Figure 2. Countries like the Netherlands, Belgium, Denmark, Austria, Hungary, Romania and Switzerland have quite substantial cable television presence, and substantial broadband Internet access over cable. France has very little cable (but nonetheless gets good competitive results as a result of intensive regulation). Italy has no cable to speak of. Germany has very extensive cable television, but very

Figure 2
Total Fixed Broadband Retail Lines by Technology, October 2006



Note: Data for Austria as of July 2006. Line represents the EU average.

Source: European Commission: 12th Implementation Report, Annex 2, page 65. Note that "other means" includes cable television but is not limited to it.

little broadband access over it due to ill-conceived competition rules.¹⁷

Much of Europe thus lacks a "second wire to the home"; nonetheless, overall competition is much more robust than in the United States. Averaged across Europe, more than 40% of DSL lines are provided at retail by third parties, although the results vary substantially from one Member State to the next, as is shown in Figure 3.

In terms of network neutrality, competitive broadband based on wholesale alternatives (bitstream access, shared access or LLU) represent meaningful competition as long as the incumbent is prevented (by technical, regulatory or contractual means) from adversely impacting the quality of the service that the competitor offers to its end-user.

As a practical matter, this means that most Americans have at most two meaningful alternative providers of broadband Internet access; most Europeans have more than two viable alternative providers of broadband Internet access.

The mobile marketplace is also substantially different. The European 2G mobile market is overwhelmingly GSM; in the US, about 45% of the mobile market is GSM, with the rest being CDMA, iDEN, or other alternatives. This implies that the US market has less

economies of scale than the European (but still substantial economies of scale). It also means that a majority of US handsets do not have SIMs, and thus are truly locked to a single service provider.¹⁸

At the same time, US wholesale arrangements are more efficient than those in Europe, and result in retail prices that are much closer to cost than those in Europe. This means that handset subsidies are much lower in the US than in Europe (service providers are not motivated to provide large initial incentives).¹⁹

The higher subsidies in Europe, coupled with the presence of SIMs, collectively imply that European customers have more economic means but less technical means than their US counterparts to restrict the options of their customers. A number of European mobile operators have suggested that their customers already have most if not all of the freedoms that are being sought as mobile network neutrality in the US.

The Regulatory Milieu

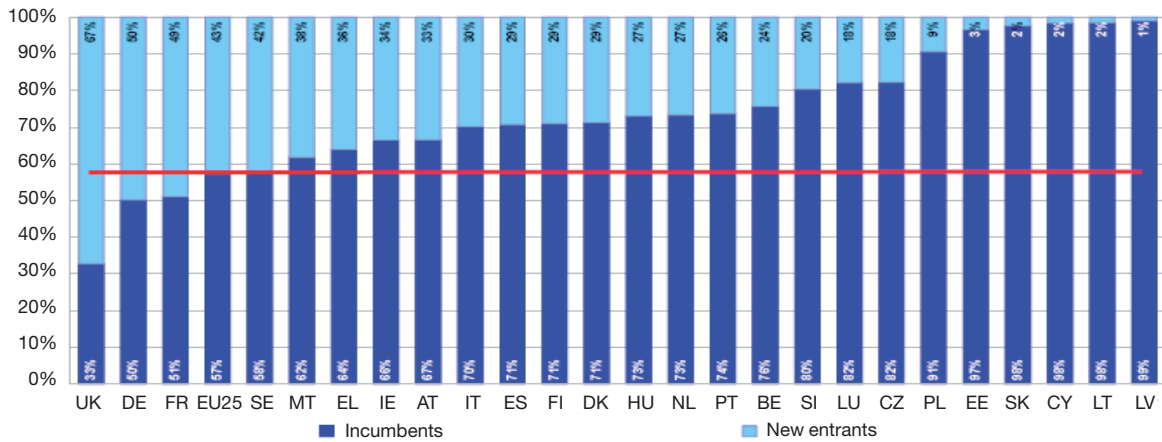
In both Europe and the United States, a key regulatory philosophy has historically been to regulate only where necessary to address market power. In the EU, the adoption of economic tests based on competition law, coupled with the institutional separation of powers between the European Commission and the Member State National Regulatory Authorities (NRAs), have

¹⁷ See J. Scott Marcus, Peter Stamm: Kabelinternet in Deutschland, 2006, (German only), at: http://www.deutscherkabelverband.de/web/cms/upload/pdf/06-12-14_Studie_Kabelinternet_in_Deutschland.pdf.

¹⁸ Those that have SIMs are generally SIM-locked by default.

¹⁹ Stephen C. Littlechild: Mobile Termination Charges: Calling Party Pays vs Receiving Party Pays, in: Telecommunications Policy 30, 2006, pp. 242-277.

Figure 3
European Market Share of Retail DSL Lines (Incumbent vs Competitor), October 2006



Note: Data for Austria as of July 2006. Line represents the EU average.
Source: European Commission, 12th Implementation Report, Annex 2.

helped to enforce independent, objective decision-making.

In the United States, by contrast, an ambiguous and increasingly irrelevant communications law, coupled with an FCC that is increasingly politicised and progressively more responsive to lobbying dollars, have resulted in the effective abandonment of the FCC’s historic procompetitive regulatory philosophy in favour of a deregulatory, pro-incumbent stance.²⁰

This means that the differences that already exist in the broadband marketplace between the EU and the US are likely to grow over time.²¹ Competitive alternatives are likely to continue to flourish in Europe, with a gradual migration to more cash-intensive alternatives (e.g. local loop unbundling (LLU) and true facilities-based entry) as competitors climb the “ladder of investment”. In the US, the present pattern of duopoly is likely to continue over time and perhaps to harden.

European regulators have the ability to impose non-discrimination obligations on network operators that have market power. They have authority to impose interconnection obligations, and could if necessary do so even on operators that do not possess “significant market power”.²² They also have substantial ability to protect the rights of consumers, for example by requiring network operators to disclose deviations from net-

work neutrality either online or in their contracts with end-users.²³ These consumer protection powers are particularly important, in that they potentially enable NRAs to ensure informed consumer choice.

US regulators do not have explicit power to regulate broadband Internet service in general. The FCC rulings of the past few years have placed broadband Internet access into the category of an unregulated *information service*. The FCC could conceivably take any steps that were necessary by resorting to its raw jurisdictional authority over electronic communications, as expressed in Title I of the Communications Act, thus crafting entirely new rules “out of whole cloth”, as it were; this cure, however, is likely to be worse than the current disease. It would effectively turn an increasingly politicised FCC into a truly legislative body, without any of the political accountability to which legislatures are generally subject. Sooner or later, a fundamentally flawed process would lead to fundamentally flawed outcomes.

Competition Law

In Europe, competition law is viewed as an after-the-fact (*ex post*) complement to the application of anticipatory (*ex ante*) application of electronic communications regulation. To the extent that competition law addresses market failures such as tying, it provides a sophisticated alternative to regulation.

Many of my US-based colleagues harbour the assumption that European competition law is utterly dif-

²⁰ J. Scott Marcus: Is the U.S. Dancing to a Different Drummer?, op. cit.

²¹ This could perhaps change under a Democratic administration in the US in the years to come, but it is difficult to see how the steps that the FCC has taken could be reversed.

²² Access and Interconnection Directive, Article 5.

²³ Universal Service Directive, Articles 20 and 22.

ferent from that of the United States. This is partly true, and partly false. A comparison of horizontal merger guidelines between the US and the EU demonstrates that the two systems are in principle nearly identical.²⁴ There are some differences in emphasis, but the largest difference in practice is that the relevant US agencies rarely do more than to pay lip service to their own nominal guidelines.

In the area of electronic communications, however, there are substantive practical differences. A series of court rulings in the US²⁵ have taken the position that matters covered by the Communications Act²⁶ do not constitute a separate cause of action under antitrust (competition) law. In practice, the applicability (not just the application) of regulation in the US is thus for the most part mutually exclusive of the application of competition law.

²⁴ Compare US Department of Justice and Federal Trade Commission: Horizontal Merger Guidelines, 57 Fed. Reg. 41557 (April 2, 1992, as revised April 8, 1997), available at <http://www.ftc.gov/bc/docs/horizmer.htm>, to European Commission (February 2004): Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03).

²⁵ Notably *Goldwasser v. Ameritech Corp.* 222 F.3d 390 (7th Cir. 2000) and *Law Offices of Curtis V. Trinko, L.L.P. v. Bell Atlantic Corp.*, 294 F.3d 307 (2nd Cir. 2002).

²⁶ The Communications Act of 1934, as amended.

Conclusions

The network neutrality issue has been viewed by many as a US debate, the relevance of which to Europe was unclear. Or rather, it has been viewed as two debates, one related to fixed broadband Internet access, the other to mobile services.

The network neutrality debate is relevant to Europe, but it will play out quite differently than in the United States. The European fixed broadband marketplace is far more robustly and diversely competitive than that of the US, which means that the issues are less contentious and more tractable in Europe than in the US. For mobile services, the network neutrality issue is not necessarily less problematic than in the US, but it is clearly different.

If the diagnosis in Europe is different, the same could be said of the cure. European regulators already have a substantial palette of tools to apply to any problems that might emerge. The Commission's proposals of 13 November 2007 expand modestly on these already considerable tools, primarily by fostering informed consumer choice. Moreover, the complementary applicability of competition law – which is not a realistic option in the US – again means that there are adequate tools in Europe to deal with the problems that might emerge.