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Cover Page Footnote

Professor of Law, Fordham University School of Law. I would like to thank Mark Riley for valuable research assistance.

NON-NETWORK BARRIERS TO NETWORK NEUTRALITY

Mark R. Patterson*

INTRODUCTION

From outside the cyberlaw community, “network neutrality” can seem a shibboleth. The concept receives a great deal of attention,¹ but its central importance is not obvious, at least to outsiders. On the contrary, it seems narrow and technical: “Network neutrality is best defined as a network design principle. The idea is that a maximally useful public information network aspires to treat all content, sites, and platforms equally.”² For most users, who operate beyond these “network design principles,” legal and practical considerations make the Internet non-neutral in a number of respects. Legal limitations, particularly those related to intellectual property, restrict the development of new Internet applications, and practical necessity compels users to rely heavily on non-neutral intermediaries. As Scott McNealy might say, “You [don’t] have [net neutrality] anyway. . . . Get over it.”³

This essay takes a broad perspective on neutrality as its starting point, focusing on several ways beyond the network proper in which the Internet is non-neutral. The topic was prompted in part by what appear to be different views regarding network neutrality held by the authors of the two books that are subjects of this event. David Post, in *In Search of Jefferson’s Moose*,⁴ appears to favor, even to celebrate,⁵ the technical perspective on

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1. See, e.g., ROBERT D. ATKINSON & PHILIP J. WEISER, THE INFO. TECH. & INNOVATION FOUND., A “THIRD WAY” ON NETWORK NEUTRALITY (2006), available at <http://www.itif.org/files/netneutrality.pdf>; Barbara van Schewick, *Toward an Economic Framework for Network Neutrality*, 5 J. ON TELECOMM. & HIGH TECH. L. 329 (2007); Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141 (2003); Christopher S. Yoo, *Network Neutrality and the Economics of Congestion*, 94 GEO. L.J. 1847 (2006); Tim Wu, *Why You Should Care About Network Neutrality*, SLATE, May 1, 2006, <http://www.slate.com/id/2140850/>.

2. Tim Wu, Network Neutrality FAQ, http://timwu.org/network_neutrality.html (last visited Apr. 3, 2010).

3. The subject of McNealy’s original comment was privacy. See Polly Sprenger, *Sun on Privacy: “Get Over It,”* WIRED, Jan. 26, 1999, <http://www.wired.com/politics/law/news/1999/01/17538>.

4. DAVID G. POST, IN SEARCH OF JEFFERSON’S MOOSE: NOTES ON THE STATE OF CYBERSPACE (2009).

neutrality that focuses on the Internet's communication schemes. In contrast, Jonathan Zittrain, in *The Future of the Internet*,⁶ would apply neutrality principles more broadly, to promote what he calls "API neutrality," where he says there is "a parallel debate that is not taking place at all."⁷ Zittrain is concerned with restrictions imposed on the use of proprietary "information appliances" like the Xbox or even Internet services like Facebook. The concern in this essay is somewhat similar, but focuses on more general, rather than application-specific, deviations from neutrality that affect all users of the Internet.

Other commentators have pointed out that the Internet is not neutral. Much of this commentary has been focused on government censorship, where there are numerous examples of non-neutrality: political censorship in China and other countries,⁸ government bans on various sorts of harmful material,⁹ and even government efforts to remove copyrighted material from the Internet.¹⁰ But others have also written more generally, observing

5. Post's enthusiasm for the technical aspects of network issues is most evident in his discussion of the Internet Engineering Task Force. *Id.* at 134–39.

6. JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET—AND HOW TO STOP IT* (2008).

7. *Id.* at 181. By "API neutrality," Zittrain refers to the absence of restrictions on interaction with information appliances and software systems, such as cellphones or Xbox and Microsoft's Windows operating system or Facebook. Some producers of such information products restrict the extent to which third parties can interact with the products, and Zittrain suggests that such restrictions should be impermissible at least for producers that seek to cut off third-party interaction after having previously allowed and benefited from it. *Id.* at 181–85.

8. See, e.g., Jonathan Zittrain & John Palfrey, *Internet Filtering: The Politics and Mechanisms of Control*, in *ACCESS DENIED: THE PRACTICE AND POLICY OF GLOBAL INTERNET FILTERING* 29 (Ronald Deibert et al. eds., 2008).

9. See Hannibal Travis, *The Future According to Google: Technology Policy from the Standpoint of America's Fastest-Growing Technology Company*, 11 YALE J.L. & TECH. 209, 225–26 (2009) ("When Google launched its Chinese version in 2006, the Chinese government lambasted the site for linking to 'illegal' content such as pornography, failing to comply with local licensing laws, and informing users that Chinese law restricted the results they saw. Google had to hand over control of part of its Chinese operations to a local Chinese partner, Ganji.com, with the result that users would be denied access to 'sites the governing Communist Party finds objectionable . . .'" (footnote omitted) (quoting Philip P. Pan, *Chinese Media Assail Google*, WASH. POST, Feb. 22, 2006, at A9)). The tension between China and Google came to a head in March when Google followed through on an earlier threat by closing its Internet search service in China and redirecting users to its uncensored search engine in Hong Kong. Miguel Helft & David Barboza, *Google Closes Search Service Based in China*, N.Y. TIMES, Mar. 23, 2010, at A1.

10. See Molly Beutz Land, *Protecting Rights Online*, 34 YALE J. INT'L L. 1, 22–23 (2009) ("Internet filtering to protect copyrighted materials has also been increasing in Europe, following models established in the United States. In these situations, states are engaging in actions that have the potential to violate individual rights in order to comply with their international obligations to protect digital works. Human rights advocates and A2K advocates alike would seek to broaden the practical and legal policy space available to states to choose methods of complying with their obligations that are less harmful to individual rights." (citing Sangamitra Ramachander, *Internet Filtering in Europe*, in *ACCESS DENIED: THE PRACTICE AND POLICY OF GLOBAL INTERNET FILTERING*, *supra* note 8, at 186, 191)); see also Joseph D. Schleimer, *Protecting Copyrights at the "Backbone" Level of the Internet*, 15 UCLA ENT. L. REV. 139 (2008) (favoring control of copyrighted material).

both that neutrality principles for the Internet are similar to those in other contexts¹¹ and that the Internet-related contexts in which the principles come into play go well beyond technical issues of network access.¹²

The focus here is at the same time more directly on the Internet itself and less on explicit limits on access. What sorts of neutrality do users want from the Internet? Is the key issue the usual one of net neutrality, whether Internet data-transfer protocols treat all data the same? Or is it whether the Internet as experienced by typical users “treat[s] all content, sites, and platforms equally”?¹³ The thrust of the argument here is that the Internet experience for most users involves a number of intermediaries, and that those intermediaries can and do skew the experience in a number of ways. A truly neutral Net would require more than technical neutrality; it could be ensured only by regulating or restricting the ways in which those intermediaries operate.¹⁴

In this respect, the perspective here differs, at least somewhat, from both Post’s in *In Search of Jefferson’s Moose* and Zittrain’s in *The Future of the Internet*. Post is an advocate of end-to-end, neutral network principles,¹⁵ while Zittrain would accept, and even recommends, deviation from

11. One of the most prominent net-neutrality advocates, Tim Wu, has placed it in context:

The actual term “network neutrality,” new or not, has a lot in common with [a lot] of old ideas. The concept of a “common carrier,” dating from 16th century English common law, captures many similar concepts. A common carrier, in its original meaning, is a private entity that performs a public function (the law was first developed around port authorities). Furthermore, in networking, the “end-to-end” principle of network design is also a close cousin, if not the direct ancestor of network neutrality. David Isenberg’s lucid and well known “dumb pipe paper” is more or less the same idea.

Moreover, the basic economic problem found in the network neutrality debate (a form of “platform exclusion” or “vertical foreclosure”) can be found in many other markets. In radio, for example, you have the problem of “payola”—payments from the recording industries to radio stations, in exchange for playing their songs. Payola isn’t great for music in the United States—it is one of the reasons radio stations all sound the same.

However, I should point out that not all economists think that things like payola are actually a problem. They argue that if payola is inefficient then radio stations that don’t accept payments will have an advantage, and would therefore stop, ergo, payola must be welfare maximizing.

Wu, *supra* note 2.

12. See, e.g., Berin Szoka & Adam Thierer, *Net Neutrality, Slippery Slopes & High-Tech Mutually Assured Destruction*, PROGRESS SNAPSHOT (Progress & Freedom Found., Wash., D.C.), Oct. 2009, at 2–3 & n.4, available at <http://www.pff.org/issues-pubs/ps/2009/pdf/ps5.11-net-neutrality-MAD-policy.pdf>.

13. See *supra* text accompanying note 2.

14. Zittrain makes a related point, focusing on the potential benefits from intermediaries. He argues that “[n]ow that the PC and the Internet are so inextricably intertwined, it is not enough for network engineers to worry only about network openness and assume that the endpoints can take care of themselves. It is abundantly clear that many endpoints cannot.” ZITTRAIN, *supra* note 6, at 166–67. His focus is primarily on Internet security, and he argues that the creation of intermediaries can be used to address security issues. *Id.*

15. POST, *supra* note 4, at 80–89.

neutrality principles to address certain problems, primarily with regard to security.¹⁶ This essay does not so much take a position on the desirability of neutrality as contend that the Internet is even now neutral only at the most basic communication level. At higher levels, the Internet is at least potentially non-neutral in a variety of ways that can significantly distort the experiences of most of its users. It seems appropriate to focus attention on those non-network non-neutralities, and to focus on them as a class, to consider the degree to which the net is truly neutral.

This essay begins with a description of the net-neutrality problem in the context of the recent *Comcast*¹⁷ decision by the Federal Communications Commission (FCC). In that decision, the FCC condemned Comcast's deviation from network neutrality in terms that could apply beyond the network level. The subsequent section then describes three other contexts in which neutrality, though not necessarily *network* neutrality, is an issue: the difference in treatment of applications that are built upon uses of copyrighted works and those that are not, possible bias in search-engine results, and the use of browsing history to tailor users' visits to websites. The following section then shows how at least some of the language in the *Comcast* decision can also be applied in these other contexts, suggesting that a policy of neutrality could have applicability broader than communication services. The final section briefly considers the implications of the different possible interpretations of neutrality.

I. THE NET-NEUTRALITY DEBATE

David Post clearly describes the benefits of neutral end-to-end design.¹⁸ The simplicity and consistency of the connections between the ends makes it easy for new ends to be added to the system, and that increases the potential of the system. Each end can rely on the connections to deliver its communications just as those same connections deliver all other communications. That is, each end can rely on the neutral delivery of its communications. As a result, each can freely direct its services at other ends, or users, without worrying about any intrusion into the end-to-end relationship.

Many commentators defend this neutral, end-to-end approach as the critical characteristic that makes the Internet what it is. Lawrence Lessig and Robert McChesney, for example, say that it "is the simple but brilliant 'end-to-end' design of the Internet that has made it such a powerful force for economic and social good," and they describe that characteristic as the determinant of the future of the Internet: "It will decide whether the

16. See *supra* note 14.

17. Formal Complaint of Free Press & Pub. Knowledge Against Comcast Corp. for Secretly Degrading Peer-to-Peer Applications, 23 F.C.C.R. 13,028 (2008) [hereinafter *Comcast*], *vacated*, Comcast Corp. v. FCC, No. 08-1291, 2010 WL 1286658 (D.C. Cir. Apr. 6, 2010). On the significance of the U.S. Court of Appeals for the D.C. Circuit's vacating of the FCC's decision, see *infra* note 30.

18. POST, *supra* note 4, at 80-89.

Internet remains a free and open technology fostering innovation, economic growth and democratic communication, or instead becomes the property of cable and phone companies that can put toll booths at every on-ramp and exit on the information superhighway.”¹⁹

The net-neutrality principle was recently tested by Comcast practices that prompted an FCC decision.²⁰ Comcast had engaged in what it called “P2P [peer-to-peer] management,” which involved terminating some peer-to-peer connections. Although not all such connections were terminated, many were, and the experiences of some Comcast customers using peer-to-peer services were significantly degraded. Comcast complicated matters by first denying that it had engaged in the practice²¹ and subsequently misdescribing it as a congestion management tool²² before finally admitting to it.²³ In response to complaints by Comcast customers and Free Press, a nonprofit organization, the FCC opened a proceeding to consider the propriety of Comcast’s actions.

The FCC approached the issue as one involving its responsibility for enforcing a “national Internet policy.”²⁴ The agency had previously promulgated an Internet Policy Statement²⁵ whose “essence,” it said in the *Comcast* decision, was to “encourage broadband deployment and preserve and promote the open and interconnected nature of the public Internet.”²⁶ That meant, the FCC said, that “‘consumers are entitled to run applications and use services of their choice’ and ‘to access the lawful Internet content of their choice,’ subject to ‘reasonable network management’ practices.”²⁷ It is this latter standard—“reasonable network management”—against which it measured Comcast’s practices.

The FCC concluded that Free Press had made a *prima facie* case that Comcast’s conduct violated these principles:

On its face, Comcast’s interference with peer-to-peer protocols appears to contravene the federal policy of promot[ing] the continued development of the Internet because that interference impedes consumers from run[ning] applications . . . of their choice, rather than those favored by Comcast, and that interference limits consumers’ ability to access the lawful Internet content of their choice, including the video programming made available by vendors like Vuze. Comcast’s selective interference

19. Lawrence Lessig & Robert W. McChesney, *No Tolls on the Internet*, WASH. POST, June 8, 2006, at A22.

20. *Comcast*, *supra* note 17.

21. *Comcast*, *supra* note 17, at 13,030.

22. *Id.* at 13,031–32.

23. *Id.*

24. *Id.* at 13,034 (quoting Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Policy Statement, 20 F.C.C.R. 14,986, 14,987 (2005) [hereinafter Internet Policy Statement]).

25. Internet Policy Statement, *supra* note 24.

26. *Comcast*, *supra* note 17, at 13,034 (quoting Internet Policy Statement, *supra* note 24, at 14,988).

27. *Id.* (quoting Internet Policy Statement, *supra* note 24, at 14,988 & n.15).

also appears to discourage the development of technologies—such as peer-to-peer technologies—that maximize user control over what information is received by individuals . . . who use the Internet because that interference (again) impedes consumers from run[ning] applications . . . of their choice, rather than those favored by Comcast. Thus, Free Press has made a *prima facie* case that Comcast's practices do impede Internet content and applications, and Comcast must show that its network management practices are reasonable.²⁸

The FCC set out a high standard for rebuttal of this *prima facie* case:

Comcast's practice selectively blocks and impedes the use of particular applications, and we believe that such disparate treatment poses significant risks of anticompetitive abuse. To the extent that a provider argues that such highly questionable conduct constitutes "reasonable network management," there must be a tight fit between its chosen practices and a significant goal. Accordingly, for Comcast's practice to qualify as reasonable network management, the company's justification for its practice must clear a high threshold. Its practice should further a critically important interest and be narrowly or carefully tailored to serve that interest.²⁹

Although the FCC was willing to assume that Comcast's stated goal of easing network congestion was a critically important interest, the agency concluded that Comcast failed to show that its practices were narrowly tailored to that interest.

For present purposes, and despite the U.S. Court of Appeals for the D.C. Circuit's very recent decision vacating this order,³⁰ the key point is the FCC's broad and ringing endorsement of access principles that arguably go beyond the simple data transfers that were at issue. As is described in the next section, there are many other practices that "impede[] consumers from run[ning] applications . . . of their choice," that "limit[] consumers' ability to access the lawful Internet content of their choice," and that "discourage the development of technologies—such as peer-to-peer technologies—that

28. *Id.* at 13,052–53 (footnotes omitted) (internal quotation marks omitted).

29. *Id.* at 13,055–56 (footnote omitted).

30. *Comcast Corp. v. FCC*, No. 08-1291, 2010 WL 1286658 (D.C. Cir. Apr. 6, 2010). The D.C. Circuit's decision was issued after this essay was written. The court concluded that the FCC lacked authority "to regulate an Internet service provider's network management practices." *Id.* at *1. This essay does not, however, rely on the FCC's order *qua* order, but only on the principles expressed in the order and in the Internet Policy Statement. The court did not take issue with these principles, so they presumably continue to express the views of the FCC, and indeed it is possible that the D.C. Circuit's decision will prompt legislative action reaffirming them. *See* Press Release, Representative Edward J. Markey, Markey Statement on Comcast Decision (Apr. 6, 2010), http://markey.house.gov/index.php?option=com_content&task=view&id=3962&Itemid=141 ("It is important to note that the Court neither called into question the wisdom of network neutrality policies nor did it exonerate Comcast for its unreasonable interference with lawful consumer Internet use. . . . I will also continue to work with my colleagues in Congress to provide the Commission any additional authority it may need to ensure the openness of the Internet for consumers, innovators and investors . . .").

maximize user control over what information is received by individuals . . . who use the Internet.”³¹

II. THE INTERMEDIATED INTERNET

The end-to-end, net-neutral vision described by Post, by Lessig and McChesney, and by the FCC in *Comcast* does not reflect the Internet as most users experience it. To be sure, sometimes a user knows where she is going, and then she can connect directly to her goal at the other end. More often, though, the user is seeking something—like information about a particular product or thing—and she does not know at which website she will find it. So she uses an intermediary—often a search engine like Google—to help find what she is looking for, or even to help decide exactly what it is that she is looking for.

There are a variety of ways in which this intermediated Internet can become non-neutral. First, the availability of intermediaries, and thus of ways in which one can find one’s way on the Internet, or access content on it, can be restricted. Incumbent intermediaries, whether in the online or brick-and-mortar world, may seek to prevent competition from new intermediaries. This has been the history of the delivery of online media, with the owners of copyrighted content repeatedly seeking to control the means by which that content is located and acquired.³² This issue is discussed below in the context of Napster.

Second, intermediaries themselves can be biased. I have previously written about the incentives that tend to push intermediaries that provide information toward non-neutrality.³³ One type of intermediary that I discussed was the search engine, and concern about search-engine bias has been increasingly expressed and elaborated, notably by Frank Pasquale and Oren Bracha.³⁴ Although the extent of any possible bias on the part of search engines is unclear, the much more intense focus on bias by communication providers like Comcast is surprising given the relative potential for harm, as discussed below.

Third, ends can also be middles. That is, one might believe that one has reached the site that one was seeking, but that site might really present itself in several alternative versions. Which version one sees might be determined by an intermediary level, imposed by the site owner, that tailors

31. *Comcast*, *supra* note 17, at 13,052–53 (omissions in original) (footnotes omitted) (internal quotation marks omitted).

32. See *infra* text accompanying notes 44–45.

33. Mark R. Patterson, *On the Impossibility of Information Intermediaries* (Fordham Law & Econ. Research Paper No. 13, 2001), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=276968.

34. See generally Oren Bracha & Frank Pasquale, *Federal Search Commission? Access, Fairness, and Accountability in the Law of Search*, 93 CORNELL L. REV. 1149 (2008); Frank Pasquale, *Internet Nondiscrimination Principles: Commercial Ethics for Carriers and Search Engines*, 2008 U. CHI. LEGAL F. 263.

the site to information that it has about you. In a network sense, the connection is still end-to-end, but the practical effect is non-neutral. Several ways in which this sort of non-neutrality can be effected are discussed below.

A. *Intellectual Property and Non-Neutrality*

Was Napster less innovative than Facebook or Twitter or YouTube? Its initial success was comparable,³⁵ but of course legal troubles drove it out of business before it became as old even as Facebook is now.³⁶ Napster's innovation was directed at the selection and acquisition of copyrighted materials, and even though Napster itself did not directly infringe copyrights, its users did. As a result, the copyright owners were able to use doctrines of indirect infringement to shut down Napster. Copyright did not pose similar obstacles to Facebook or Twitter, or even to YouTube,³⁷ so those applications were able to thrive.

It is important to remember how innovative Napster was. Its peer-to-peer transfer method was a reflection of the end-to-end nature of the Internet itself, but Napster at the time was still an innovative application of that architecture. Perhaps even more innovative was the opportunity that Napster offered users to look into the music selections of others. With Napster, one could browse the music libraries of other members of the network, in what could be used as an early, more effective version of the now-ubiquitous "Those who chose this item also chose these other items" marketing strategy.

35. Napster was started in January of 1999, Spencer E. Ante, *Inside Napster: How the Music-Sharing Phenom Began, Where It Went Wrong, and What Happens Next*, BUS. WK., Aug. 14, 2000, at 112, and apparently had at least five million users eighteen months after its launch. See John Borland, *Napster Traffic Figures Raise New Questions*, CNET NEWS, Aug. 4, 2000, <http://news.cnet.com/2100-1023-244073.html> ("Napster says it had 20 million user accounts by mid-month, before the week's surge in traffic and downloads. That's probably an overestimate, as Media Metrix counted only 4.7 million active home Napster users in June. But even the lower figure is a substantial—and fast-growing—slice of the online listening audience."). Facebook was launched in February 2004, Sarah Phillips, *A Brief History of Facebook*, GUARDIAN (London), July 25, 2007, <http://www.guardian.co.uk/technology/2007/jul/25/media.newmedia> ("In February 2004 Mr Zuckerberg launched 'The facebook', as it was originally known."), and fifteen months later, it had roughly 2.8 million registered users. See Bootie Cosgrove-Mather, *Facebook Frenzy: Where College Students Find Old Friends, Make New Ones*, CBS NEWS, July 5, 2005, <http://www.cbsnews.com/stories/2005/07/05/tech/main706634.shtml> (noting that Facebook is "[c]onstantly updated by its 2.8 million registered users at more than 800 colleges and universities"). The comparison is perhaps misleading, because Facebook was initially available only on college networks. See Posting of Justin Smith to Inside Facebook, Mapping Facebook's Growth over Time, <http://www.insidefacebook.com/2008/08/19/mapping-facebooks-growth-over-time/> (Aug. 19, 2008). Still, it seems likely that Napster's early growth was primarily due to students as well.

36. Napster (in its original form) shut down in 2001, only about two years after it launched. See Wikipedia, Napster, <http://en.wikipedia.org/wiki/Napster> (last visited Apr. 3, 2010).

37. See *infra* text accompanying notes 38–44.

The information provided by Napster was even more valuable because it provided much more context in which to learn of others' tastes.

Of course, Napster also facilitated copyright infringement, and it is reasonable to wonder whether Napster would have gotten significant use if it did not enable free file transfers. It is possible that more users were interested in getting music for free than in deriving musical suggestions from lists of others' files. But the successes of other, subsequent peer-to-peer networks, and of iTunes, and the frequent use of similar marketing techniques in other contexts, suggest that Napster could perhaps have succeeded even if users had to pay for the music they transferred.

Among Napster's problems were that initially the illegality of its conduct was not clear and that later it and its users could not easily license the music for which it was facilitating transfers. The law was unclear because the U.S. Supreme Court's focus in *Sony Corp. of America v. Universal City Studios, Inc.*,³⁸ on "substantial noninfringing uses" left unclear whether the capacity for such noninfringing uses would be sufficient to avoid liability for Napster. It was not.³⁹ Later, when Napster sought to convert itself to a paid-subscription service, it had difficulty obtaining licenses from music labels.⁴⁰

YouTube presents an interesting contrast here. Although many of the postings on YouTube are noninfringing, many are copyrighted, and YouTube has encountered many of the same legal issues as Napster.⁴¹ Indeed, some predicted that YouTube would go the way of Napster. But YouTube has to a large extent cooperated with media companies in taking down copyrighted video,⁴² and it was able, perhaps partly for that reason, to negotiate license arrangements with major media companies,⁴³ thus avoiding being shut down, though it continues to be involved in litigation. Since its acquisition by Google, in fact, YouTube has instituted some innovative arrangements with copyright owners.⁴⁴

38. 464 U.S. 417 (1984).

39. *A&M Records, Inc. v. Napster, Inc.*, 114 F. Supp. 2d 896 (N.D. Cal. 2000), *aff'd in part, rev'd in part*, 239 F.3d 1004 (9th Cir. 2001).

40. See Wikipedia, Napster, *supra* note 36.

41. See, e.g., Jeremy W. Peters, *Viacom Sues Google over YouTube Video Clips*, N.Y. TIMES, Mar. 14, 2007, at C1; Giada Zampano & Liam Moloney, *Update: Mediaset Files EUR500 Million Suit vs Google's YouTube*, CNNMONEY.COM, July 30, 2008, http://money.cnn.com/news/newsfeeds/articles/djf500/200807301025DOWJONESDJONLINE000654_FORTUNE5.htm.

42. See YouTube, Content Management: Copyright Infringement Notification, http://www.youtube.com/t/dmca_policy (last visited Apr. 3, 2010). Indeed, YouTube is deemed by some to be *too* cooperative. See, e.g., Tim Arango, *Rights Clash on YouTube, and Videos Disappear*, N.Y. TIMES, March 23, 2009, at B1.

43. Posting of Candace Lombardi to ZDNet News, *YouTube Cuts Three Content Deals*, http://news.zdnet.com/2100-9588_22-149811.html?tag=content;coll (Oct. 9, 2006, 14:57:00 EST).

44. Katie Allen, *Google Seeks To Turn a Profit from YouTube Copyright Clashes*, GUARDIAN (London), Nov. 1, 2009, <http://www.guardian.co.uk/technology/2009/nov/01/google-youtube-monetise-content>.

Why was the same path not followed by Napster? In part, the reason is no doubt that the legal landscape was not so clear, so the optimal path was not clear. But it is also important that, as compared with YouTube, Napster had little noninfringing content. This presumably was not, however, by decision. It was probably a combination of the facts that online video was not yet in common distribution ten years ago and that people apparently are not as interested in homegrown audio as in homegrown video. Moreover, because Napster was a peer-to-peer system, it did not have the ability to "take down" infringing material, which was located on its users' computers, not its own.

It seems clear, though, that Napster was no less innovative than YouTube. On the contrary, whereas Napster provided a new application of peer-to-peer technology and a novel search method, YouTube's contribution seems only to have been to appreciate that people would be interested in viewing others' videos. But because Napster's innovation was a threat to the delivery methods used and controlled by media companies, they were able to use copyright to eliminate Napster from the market. In doing so, they replicated a century-old pattern that has been described by several commentators.⁴⁵ Repeatedly, copyright owners have sought to prevent the entry of new methods of distribution of copyrighted works. And copyright law has often allowed this sort of elimination of competition.⁴⁶

The effect is to make the Internet less accessible to innovative applications and, therefore, to use Zittrain's term, less generative. Those applications that, like Napster, are built on copyrighted works are subject to suppression; other applications are more free. The point is not that copyright infringement should be permissible. The point is instead that among all the innovative ways that have been created to select and access material on the Internet, the ones that, like Napster, are applied particularly to copyrighted material are suppressed. In that respect, because copyright owners can refuse to license their content and can instead pursue indirect infringement actions, it is not the case that "consumers are entitled to run applications and use services of their choice."⁴⁷

This is particularly ironic because it is the very peer-to-peer/end-to-end nature of Napster and the Internet that created Napster's difficulties, in two respects. First, Napster was only an intermediary connecting users. As noted above, Napster had little ability, once it provided users with the capability, to prevent them from transferring copyrighted files. Suppose that Napster had sought to provide only its lists of user compositions, but not to enable the transfer of files. Had it done so, surely someone else

45. See, e.g., Jane C. Ginsburg, *Copyright and Control over New Technologies of Dissemination*, 101 COLUM. L. REV. 1613 (2001); Timothy Wu, *Copyright's Communications Policy*, 103 MICH. L. REV. 278 (2004).

46. Wu, *supra* note 45, at 345–50, 360–66.

47. Comcast, *supra* note 17, at 13,034 (quoting Internet Policy Statement, *supra* note 24, at 14,988); see *supra* text accompanying notes 25–27.

would have devised a method to enable the transfers. It is still possible, however, that Napster could have been found liable for inducing or contributing to the infringement.

Second, the music companies pursued Napster, even though it did not itself directly infringe, because it would have been too costly to identify and pursue the individual infringers. Jonathan Zittrain suggests that “[t]he Internet’s future may be brighter if technology permits easier identification of Internet users.”⁴⁸ If such identification were possible, it would be easier for entities like Napster to argue that they should not be subject to indirect-infringement liability for the infringement of others.

In the end, of course, it is difficult to know what we have lost by suits like *Napster*⁴⁹ and later *Grokster*⁵⁰ and the threat they pose to innovative intermediaries. Zittrain argues with regard to the music industry’s lawsuits against individual file sharers that “from the point of view of generativity, such lawsuits inflict little damage on the network and PCs themselves.”⁵¹ It may be true that lawsuits against the individual file sharers inflict little damage, but it is not clear that the same is true for lawsuits against intermediaries like Napster. The threat of copyright litigation may in fact have a significant deterrent effect on innovations that can be applied in some way to copyrighted works.

B. Search and Non-Neutrality

Search engines pose another sort of threat to net neutrality. Even where access to websites is neutral in the sense that it is equally easy to reach all sites, it can be non-neutral in practice, because knowledge of sites’ locations is mediated through the influence of search engines. If a search engine places one site higher than another, that non-neutrality is likely to lead to increased traffic at the favored site.

This sort of non-neutrality is not unusual. In other, non-Internet contexts, we do not expect, or at least we do not get, neutrality. Consider the sales of consumer goods. Often we acquire such goods in supermarkets or department stores where not only are the goods selected by management, but some are allocated shelf space at eye height and others are at floor level. As a result, some goods are more prominent and easy to reach than others. Moreover, this placement of goods on shelves is often influenced by payments from the manufacturers of the goods.⁵²

48. ZITTRAIN, *supra* note 6, at 194. Zittrain adds that such identification should be “combined with legal processes, and perhaps technical limitations, to ensure that such identification occurs only when good cause exists.” *Id.*

49. *A&M Records, Inc. v. Napster, Inc.*, 114 F. Supp. 2d 896 (N.D. Cal. 2000), *aff’d in part, rev’d in part*, 239 F.3d 1004 (9th Cir. 2001).

50. *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005).

51. ZITTRAIN, *supra* note 6, at 194.

52. See FED. TRADE COMM’N, *SLOTting ALLOWANCES IN THE RETAIL GROCERY INDUSTRY: SELECTED CASE STUDIES IN FIVE PRODUCT CATEGORIES 19–20* (2003) [hereinafter

Although the placement of goods on supermarket shelves might seem different from the delivery of search results, the product in both cases is information. The purpose of payment for shelf space, at least from the manufacturer's perspective, is to ensure that the product gets an advantageous share of buyer attention. Search engines provide the same sort of focusing of browser or buyer attention on particular websites.

But one might argue that Google, for example, does not allow payment for placement in its search results. Only in its "sponsored links," the argument would go, does Google allow commercial interests to affect its results. For some users, those who do not carefully distinguish between the regular listings and sponsored links, this might result in non-neutral searching,⁵³ but those users are presumably a minority. Most users, or at least most users who are seeking objectivity, focus on Google's so-called "organic" search results.

Despite a burgeoning literature on search engines and possible bias,⁵⁴ there seems to be little hard evidence of intentional manipulation of results by Google. But considerable effort is expended by other websites to try to game the "organic" search results. Search-engine optimization (SEO),⁵⁵ or the design of websites in order to move them up in search-engine results, is an active business area, though it is difficult to find statistics on the amount spent on the practice. Even if Google and other search engines seek to be neutral, and seek to limit the effects of SEO, optimization is likely to affect the results the search engines deliver. And it seems probable that many websites will feel pressure to engage in SEO if they think their competitors are doing so.

In the end, the view that search engines are neutral, or neutral enough, presumably relies upon two assumptions: that they can counter

SLOTGING ALLOWANCES], available at <http://www.ftc.gov/os/2003/11/slottingallowancercpr031114.pdf>.

53. At least in 2002, the FTC was concerned that users were insufficiently aware of paid search placement. See Consumer Alert, Fed. Trade Comm'n, Being Frank About Search Engine Rank (Sept. 2002), <http://www.ftc.gov/bcp/edu/pubs/consumer/alerts/alt119.shtm>.

54. See generally Jennifer A. Chandler, *A Right To Reach an Audience: An Approach to Intermediary Bias on the Internet*, 35 HOFSTRA L. REV. 1095 (2007); Urs Gasser, *Regulating Search Engines: Taking Stock and Looking Ahead*, 8 YALE J.L. & TECH. 201 (2006); James Grimmelmann, *The Structure of Search Engine Law*, 93 IOWA L. REV. 1 (2007); Frank Pasquale, *Rankings, Reductionism, and Responsibility*, 54 CLEV. ST. L. REV. 115 (2006).

55. See, e.g., Richard Morochove, *Driving Site Traffic with Search Engine Optimization and Paid Advertising*, PC WORLD, Apr. 22, 2008, http://www.pcworld.com/businesscenter/article/144859/driving_site_traffic_with_search_engine_optimization_and_paid_advertising.html ("SEO [search-engine optimization] refers to modifying your Web pages to enhance your visibility in search engine results. If your business sells, say, left-handed widgets, your goal is to be listed near the top of the results if someone performs a search using the keywords 'left-handed widgets.' Research shows that if your site isn't within the top 30 search results, very few visitors will click through to your site. How do you reach that coveted high rank in a search engine? You have to learn to think like the robots (also called spiders and crawlers) that search engines such as Google use to find and catalog Web pages.").

optimization efforts and that a non-neutral approach instituted by the search engine itself would, if discovered, result in loss of users.⁵⁶ Each of these assumptions seems questionable. Although Google appears to devote significant effort to discounting at least the most blatant versions of SEO,⁵⁷ there is little information available on how successful its efforts are. And since there has been no dramatic disclosure of biased search-engine results, it is difficult to know what the effect of such a disclosure would be, especially with Google's large market share.

The current situation with regard to search is therefore not dissimilar to that when there was uncertainty with regard to Comcast's conduct.⁵⁸ That is, there is reason to think that there might be non-neutrality, but there is no firm evidence of it. The concerns with Comcast might have been stronger, and they were fairly quickly confirmed,⁵⁹ but the significance of those differences is not clear. When network traffic is impeded, the user will generally be aware of the problem, but if search results are skewed, it is not clear that users would even detect it.

56. It is perhaps worth noting that even if Google and other search engines were "neutral" in the sense of a lack of manipulation, that is not the only sense of neutrality that we might care about. To the extent that search-engine algorithms, like Google's PageRank, use numbers of links to determine search results, the result may be positive feedback. The problem with popularity as a standard is that information alters preferences. That is, what one prefers depends in part on what one has seen previously and on the alternatives to which one has been exposed. The popularity of a site with many users, or Web pages, may reflect not its intrinsic value, but merely the Google-reinforced desirability of linking to it. "The PageRank derives from human-generated links, and is thought to correlate well with human concepts of importance." Wikipedia, Google Search—Page Rank, http://en.wikipedia.org/wiki/Google_search#PageRank (last visited Apr. 3, 2010). Google actually acknowledges this effect:

Occasionally, when a particular website is the subject of public attention, other sites begin linking to it. This may elevate its importance as gauged by our ranking software, which assigns a PageRank value based in part on who links to a given page. Higher ranking in Google results may lead to more awareness, which may lead to more links, and so on. This is sometimes referred to as a Googlebomb, or Googlebombing.

Googlebombs: Suspicious Results and Strange Behavior—Web Search Help, <http://www.google.com/support/websearch/bin/answer.py?hl=en&answer=4115> (last visited Apr. 3, 2010); *see also* Grimmelmann, *supra* note 54, at 22.

One aspect of this effect has been noted, and presumably taken advantage of, by search-engine optimizers. "In spite of Google claiming otherwise, there is a direct connection between buying AdWords and ranking in the organic search results. If a news article is read by a few more people and gets just a few more links off the start it will become the default article about that topic and acquire many self reinforcing links." Posting of Aaron Wall to SEO Book.com, Google's Paid Inclusion Model, <http://www.seobook.com/archives/001989.shtml> (Jan. 13, 2007).

57. *See* Matt Cutts: Gadgets, Google, and SEO, How To Report Paid Links, <http://www.mattcutts.com/blog/how-to-report-paid-links/> (Mar. 2, 2009).

58. *See Comcast*, *supra* note 17, at 13,030–31.

59. *Id.* at 13,031–32.

C. HTTP and Non-Neutrality

The final examples of non-neutrality to be discussed here come from HTTP, the communications protocol for the World Wide Web. HTTP provides several means for a website to obtain information about a user's past browsing history. The website then can use this information to tailor the user's experience based on that history, resulting in a non-neutral experience, at least if neutrality is understood to mean that two users can expect to have the same experience when they visit a website. The two HTTP examples discussed here are Referer,⁶⁰ an HTTP-specified field that can provide information to a website about the previous site visited by the user, and cookies, which can provide a broader collection of information about browsing histories.

David Post outlines the use of Referer, which he aptly characterizes as a primary determinant of Internet commerce.⁶¹ Post states, for example, that Google "makes most of its money from the Referrer field."⁶² When Google delivers a user to the site of one of its advertisers, it is Referer that tells the advertiser where the user came from, so that Google can be paid for sending the user to the site.

The commercial role played by Referer for Google seems innocuous, or at least reasonable,⁶³ but one can imagine more problematic possibilities for these techniques. For example, a seller could offer different prices to buyers depending on what site they came from. A recent study showed that consumers are unaware of this possibility,⁶⁴ yet the author of that study noted that "[a] retail photography Web site, for example, charged different prices for the same digital cameras and related equipment, depending on whether shoppers had previously visited popular price-comparison sites."⁶⁵

Perhaps the most well-known example involved the probable use of Referer by Ticketmaster.⁶⁶ To prevent another website, Tickets.com, from linking directly to ticket-purchasing pages of its website, Ticketmaster sought to block direct access, presumably by using Referer, but Tickets.com

60. The technical specification refers to "Referer," rather than to "Referrer," so I will do the same here.

61. POST, *supra* note 4, at 129–31.

62. *Id.* at 130.

63. *But see infra* p. 2860.

64. JOSEPH TUROW ET AL., OPEN TO EXPLOITATION: AMERICA'S SHOPPERS ONLINE AND OFFLINE (2005), available at http://repository.upenn.edu/cgi/viewcontent.cgi?article=1035&context=asc_papers.

65. Anita Ramasastry, *Web Sites Change Prices Based on Customers' Habits*, CNN.COM, June 24, 2005, <http://www.cnn.com/2005/LAW/06/24/ramasastry.website.prices/>; see also Joseph Turow, *Have They Got a Deal for You: It's Suspiciously Cozy in the Cybermarket*, WASH. POST, June 19, 2005, at B1.

66. See Ticketmaster Corp. v. Tickets.com, Inc., No. CV99-7654-HLH (VBKx), 2003 U.S. Dist. LEXIS 6483 (C.D. Cal. Mar. 6, 2003); Ticketmaster Corp. v. Tickets.com, Inc., No. CV00-7654-HLH (BQRx), 2000 U.S. Dist. LEXIS 12987 (C.D. Cal. Aug. 10, 2000), *aff'd*, 248 F.3d 1173 (9th Cir. 2001).

was able to defeat Ticketmaster's efforts.⁶⁷ Circumventing such efforts is possible because a user can "spoof" Referer to make it appear that the user is coming from a page different from the actual page.

The fact that Referer can be spoofed, though, does not mean that it cannot effectively be used to provide non-neutral Internet experiences. Although there is little public information on this, it seems likely that websites use Referer to provide different experiences for different users. As one commentator says, "[d]epending on the requesting site, a developer can change marketing strategies, or even block/redirect a site all together."⁶⁸ And although some Web browsers allow users to turn off Referer, at least with add-ons,⁶⁹ it seems unlikely that many users take advantage (or disadvantage⁷⁰) of this feature.

Cookies are a better-known method of tracking browsing history. A cookie is text sent by a Web server and stored on a user's computer by the user's Web browser. The cookie can then be retrieved later by the server. But some websites deliver information from multiple servers, including those sending advertising banners. Then, to the extent that those banners are delivered from multiple sites, considerable information can be accumulated. Because cookies are much better known than Referer, though, most if not all browsers provide the ability to deny cookies, even if doing so can cause problems with websites that depend on them.

The practices enabled by Referer and cookies—such as price discrimination among consumers—are of questionable value. Whether valuable or not, though, these practices are non-neutral. But it is not the sort of non-neutrality with which most net-neutrality advocates are concerned. That leads, then, to the question of what sorts of non-neutrality should concern us. The remainder of this essay takes up this question first in the context of FCC statements in the *Comcast* decision and then more generally.

67. See Patricia L. Bellia, *Defending Cyberproperty*, 79 N.Y.U. L. REV. 2164, 2215–16 & n.211 (2004).

68. CHAMP CLARK III ET AL., INFOSECURITY 2008 THREAT ANALYSIS 105 (2008); see also ERIC T. PETERSON, WEB ANALYTICS DEMYSTIFIED: A MARKETER'S GUIDE TO UNDERSTANDING HOW YOUR WEBSITE AFFECTS YOUR BUSINESS 151 (2004) ("If you understand what it was that brought the visitor to you, you can work to continue to connect with the visitor along those lines, and perhaps drive the visitor to convert.").

69. See, e.g., James Abbatiello, RefControl: Add-ons for Firefox, <https://addons.mozilla.org/en-US/firefox/addon/953> (last visited Apr. 3, 2010).

70. By turning off Referer, a user would sacrifice any benefits that might be received by using it. For example, if websites offered better prices to those who came to it from comparison-shopping sites, turning off Referer would mean the user would not receive those better prices. If, as seems likely, users that know how to turn off Referer are the same users who shop more carefully, it would be exactly those users who know how to turn off Referer who would suffer from doing so.

III. COMCAST AND NON-NETWORK NON-NEUTRALITY

Is it less harmful for Ticketmaster to impose restrictions on how visitors arrive at its Web pages than it is for Comcast to slow down certain Web traffic? Or for the owners of music copyright to suppress a new means of selecting and acquiring music files? In fact, if one takes the FCC's statements in the *Comcast* decision seriously, they suggest that all of the neutrality limitations discussed above are of concern. The language used by the FCC was very broad, and this section considers whether this language supports an expanded focus on neutrality in a broader range of Internet contexts.

A. BitTorrent and Napster

Current peer-to-peer programs like BitTorrent, which were Comcast's targets, are fundamentally similar to Napster. Moreover, like Napster, they were initially used largely to effect transfers that infringed copyright, as the FCC in *Comcast* described:

Although once relegated to serving, in most cases, the savviest Internet users with unsavory or even unlawful purposes, BitTorrent and other peer-to-peer technologies, such as Gnutella, have entered the mainstream. New online content distributors, such as Vuze, Inc., rely on BitTorrent to distribute video programming to millions of online viewers legally, as do several established distributors such as CBS, Twentieth Century Fox, and Sports Illustrated.⁷¹

Yet Comcast's hindering of BitTorrent was in the FCC's view unreasonable, while the music labels' use of the courts to eliminate Napster was legitimate. The difference in result certainly is not related to anticompetitive purpose, despite the FCC's reference to competitive effects: "Peer-to-peer applications, including those relying on BitTorrent, have become a competitive threat to cable operators such as Comcast because Internet users have the opportunity to view high-quality video with BitTorrent that they might otherwise watch (and pay for) on cable television."⁷² As described above, similar competitive implications were presented by Napster, and were no doubt a factor in the music labels' desire to eliminate it.

The key difference seems to be that by the time the FCC came to evaluate Comcast's conduct, BitTorrent, as the FCC said, was being used legitimately. Thus, BitTorrent benefited from the fact that it survived its early outlaw days to become an upstanding citizen, defended vigorously by

71. *Comcast*, *supra* note 17, at 13,030 (footnote omitted) (citing Petition to Establish Rules Governing Network Management Practices by Broadband Network Operators at 5, 7–8 & n.8, WC Docket No. 07-52 (Fed. Commc'ns Comm'n Nov. 14, 2007); Dan Mitchell, *What's Online: Pirates Take Sweden*, N.Y. TIMES, Aug. 19, 2006, <http://www.nytimes.com/2006/08/19/business/19online.html?scp=1&sq=Pirates+Take+Sweden&st=nyt>).

72. *Id.*

the FCC. Napster was not so lucky. So although the *Comcast* decision defended net neutrality at a particular moment in time, it also dramatically reflected the temporal “application non-neutrality” that can be produced by the enforcement of copyright law.

Of course, there was no reason for the FCC in *Comcast* to consider the issue of application non-neutrality. After all, by condemning Comcast, it was defending BitTorrent. But if Comcast had effectively argued that its actions were directed at deterring, or avoiding, copyright infringement,⁷³ the FCC apparently would have taken a different approach. It stated that “providers, consistent with federal policy, may block . . . transmissions that violate copyright law.”⁷⁴ In other words, the FCC apparently would have allowed Comcast to defend copyright by interfering with infringing transmissions even if its “selective interference also appears to discourage the ‘development of technologies’—such as peer-to-peer technologies—that ‘maximize user control over what information is received by individuals . . . who use the Internet’ because that interference (again) impedes consumers from ‘run[ning] applications . . . of their choice.’”⁷⁵

It is not clear why the FCC would vigorously defend network neutrality but neglect application neutrality. Of course, application neutrality here would have copyright implications as well. But the copyright cases are seen not only as pitting owner versus infringer, but also incumbent distributor versus innovating distributor. It is in that respect that the network issues might add something to the balance, especially given that the copyright doctrine in this area evolved outside the network context. Perhaps the federal policy of neutrality to which *Comcast* refers should be given some weight in cases of indirect infringement, tilting the balance somewhat toward new techniques for distributing copyrighted works and away from the works themselves.

Admittedly, it seems unlikely that the courts would explicitly adopt what would effectively be an exception to indirect infringement liability for Internet-based technologies. But the law is always focused on determining which distinctions matter, which is to say it is focused on determining which distinctions justify non-neutrality. And when one considers the issues that will determine liability for peer-to-peer technologies after *Grokster* and against the background of Internet-related legislation like the Digital Millennium Copyright Act,⁷⁶ it seems clear that those issues serve less to prevent copyright infringement than to impose spurious boundaries

73. The implications of copyright for another intermediary, search engines, are discussed in Grimmelmann, *supra* note 54, at 33–36.

74. *Comcast*, *supra* note 17, at 13,058.

75. *Id.* at 13,052 (omissions in original).

76. A roadmap for peer-to-peer technologies is offered in FRED VON LOHMANN, ELEC. FRONTIER FOUND., IAAL*: WHAT PEER-TO-PEER DEVELOPERS NEED TO KNOW ABOUT COPYRIGHT LAW (2006), http://w2.eff.org/IP/P2P/p2p_copyright_wp_v5.pdf.

on the activities of software developers. In that respect, they are the essence of non-neutrality.

B. *Equal Access and Google*

Whether Google or other search engines slant their “objective” results to accommodate commercial interests is unknown. It is perhaps unlikely that they could do so dramatically without detection, but it seems just as likely that minor tweaks would evade detection. A key consideration is that if a search engine used Referrer in the way it was intended to be used, it would provide the same Referrer information—i.e., the URL for the search results page—whether the user clicked on a sponsored listing or on one of the main, “organic” listings. To the extent, then, that the search engine was compensated based on visits, moving a sponsor’s listings up in the main results would result in greater compensation, yet it would be unclear from the HTTP trail that any manipulation had occurred.

These sorts of practices might fall within the FCC’s concerns in *Comcast*.⁷⁷ The FCC gave short shrift to Comcast’s argument that it had only delayed, not blocked, peer-to-peer services: “Regardless of what one calls it, the evidence . . . shows that Comcast selectively targeted and terminated the upload connections of its customers’ peer-to-peer applications and that this conduct significantly impeded consumers’ ability to access the content and use the applications of their choice.”⁷⁸ Perhaps it would view the demotion of websites in search results as a similar impeding of access (though search engines presumably would be outside the FCC’s jurisdiction). As the FCC said, “the expenditure of both creative and financial capital on such content and applications is much less likely if large numbers of Internet users will be unable to access them in an unfettered manner.”⁷⁹

Indeed, the harm from a biasing of search engines would arguably be greater than the harm from Comcast’s practices. Comcast denied users, at least temporarily, the ability to access files through peer-to-peer services. But the users were at least aware that their efforts were unsuccessful. The obstacle is technical, not unlike what would happen if connections were in fact reset, as Comcast suggested in the messages it sent. If a search engine biases results, the situation is different. Users are still able to access sites, but they might be led to sites that they would not have chosen. The obstacle here is one of distorted choice. Users still would be able to reach the sites of their choice, if they were able to learn of them. Whether one views the obstacles posed by a search engine as a “fettering” of users appears to be a matter of definition.

77. See *Comcast*, *supra* note 17. The issue, of course, is not whether this would be an issue for the FCC. In the past, it has been the FTC that has concerned itself with search-engine issues.

78. *Id.* at 13,054.

79. *Id.* at 13,039.

One can compare the potential for this sort of biasing of search engines with “slotting allowances” in retail stores,⁸⁰ as suggested above. Slotting allowances are payments made by manufacturers for placement of their products on retailers’ shelves.⁸¹ In antitrust analysis, potential anticompetitive effects can result from the effective exclusion, even if not complete, of competitors of those manufacturers that pay the slotting allowances. The potential countervailing benefits are twofold. First, there may be a signaling effect, whereby manufacturers that expect greater return on the placement of their goods are likely to pay more for that placement. Second, the payments can be viewed as simple compensation for valuable shelf space.

The Federal Trade Commission (FTC) has devoted attention to the competitive effects of slotting allowances, and the anticompetitive effect might be greater in the search-engine context. In retail, there are generally multiple retail outlets that buyers use. Buyers may, for example, frequent several grocery stores. Internet users typically concentrate their searches in one search engine,⁸² and then often on the first page (the eye-level shelves?) of search results. As a result, the market power of a search engine is probably greater than that of most retailers, and the degree of exclusion to those harmed by disadvantageous search result placement is correspondingly greater.

Furthermore, at least the second justification noted above for slotting allowances seems less significant for search engines. In contrast to the cost of providing brick-and-mortar shelf space, there would seem to be a lower cost of maintaining the search-engine result space. Although there are some fixed costs for servers, algorithm development, etc., the most significant cost of placing a website in the search results would seem to be the opportunity cost of selling that space to another site. In addition, search engines do not make their profits directly from the delivery of search results in the way that retailers profit from delivery of goods, so the interests of a search engine are less likely to be aligned with those of its customers.

But of course the key difference between slotting allowances and Comcast on the one hand and search engines on the other is that the use of slotting allowances and Comcast’s practices are proven, but there is no such proof for Google or other search engines. Although some have expressed suspicions,⁸³ and there has developed a considerable legal literature based

80. This analogy seems not to have been developed in the law review literature on search engines, though it has been discussed in several blogs. See Kevin Lee, *Paying for Shelf Space in the Search Supermarket*, CLICKZ, Sept. 1, 2006, <http://www.clickz.com/3623308>; Posting of Joshua Wright to The Conglomerate, *Some Economics of Payola*, http://www.theconglomerate.org/2005/08/some_economics_.html (Aug. 1, 2005).

81. See SLOTTING ALLOWANCES, *supra* note 52.

82. Here there would be a disadvantage to users to the extent that search engines used the same algorithms.

83. See, e.g., Miguel Helft & Geraldine Fabrikant, *Whose Tube?: Viacom Sues Google over Viacom Clips on Its Sharing Website*, N.Y. TIMES, Mar. 14, 2007, at C1; The Precursor

on the possibility of manipulation, for the most part there seems to be little if any evidence of search-engine non-neutrality.⁸⁴ And this is so despite the considerable incentives that search engines and other information intermediaries have to slant their results.⁸⁵

For that reason, most of the proposals for search-engine governance have not proposed remedies for manipulation; rather, they have mandated disclosure to detect possible or suspected manipulation. In this respect, those proposals echo the network-neutrality context. An underlying foundation of the *Comcast* decision is that of disclosure. As the FCC chairman put it in an accompanying statement, “[a] hallmark of whether something is reasonable is whether an operator is willing to disclose fully and exactly what [it is] doing. Consumers need proper disclosure so that they can make informed decisions when purchasing broadband service.”⁸⁶ Although the Commission did not make quite as broad a statement in its decision, it did say that “the anticompetitive harm perpetuated by discriminatory network management practices is clearly compounded by failing to disclose such practices to consumers.”⁸⁷ This principle would presumably also apply to search services, where of course Google and other search engines tightly guard their search algorithms.

Robert Atkinson and Philip Weiser have offered a disclosure-based net-neutrality proposal that one could imagine being applied in the search-engine context:

Congress should require broadband providers to state their broadband access and usage policies in clear terms. These terms should specify the level of bandwidth, amount of latency (delay), and any limitations on the ability of consumers to access the content or services of their choice. The FCC should monitor such behavior and take action against those firms that fail to comply with them. In addition, any firm selling “broadband Internet access” must make available a basic and growing level of open, unmanaged Internet access. Firms that do not meet this FCC-defined requirement would be prohibited from calling any of their services “broadband.”⁸⁸

Blog, New Evidence of Google Search Bias, <http://precursorblog.com/content/new-evidence-google-search-bias-its-relevant-doj-investigation-google-yahoo-ad-deal> (Aug. 14, 2008, 15:14 EDT); Chris Crum, *Is Google Showing Political Bias with Search Results*, WEBPRONews, Feb. 2, 2009, <http://www.webpronews.com/topnews/2009/02/02/is-google-showing-political-bias-with-search-results>; Posting of Philipp Lenssen to Google Blogscoped, Google Allows Itself a Special Ad, <http://blogscoped.com/archive/2008-08-06-n64.html> (Aug. 6, 2008).

84. Posting of Scott Buresh to Search Engine Guide, Google’s Paid Search vs. Organic Results—A Rickety Wall of Separation, <http://www.searchengineguide.com/scott-buresh/googles-paid-search-vs-organic-results-a.php> (Nov. 13, 2007).

85. See Patterson, *supra* note 33.

86. Statement of Kevin J. Martin, Chairman, FCC, Broadband Indus. Practices, WC Docket No. 07-52 (Fed. Comm’n Comm’n Aug. 1, 2008).

87. *Comcast*, *supra* note 17, at 13,058.

88. ATKINSON & WEISER, *supra* note 1, at 2.

As Atkinson and Weiser point out, this “notice and monitoring regime” is similar to an approach to Internet privacy that the FTC has recommended.⁸⁹ A complaint regarding search engines produced a similar result. With regard to “paid placement,” or payment for higher rankings or more prominent placements, the FTC staff recommended that search engines “make any changes to the presentation of your paid-ranking search results that would be necessary to clearly delineate them as such, whether they are segregated from, or inserted into, non-paid listings.”⁹⁰ With regard to “paid inclusion,” which is payment to be “included in a search engine’s index, or pool, of sites available for display as search results, when that Web site or URL might not otherwise have been included,”⁹¹ the recommendation was “that if your search engine uses paid inclusion programs that may distort rankings or placement criteria, you clearly describe how sites are selected for inclusion in your indices.”⁹²

For present purposes, the question is whether the FCC imprimatur regarding disclosure obligations in the context of the net-neutrality debate should provide support for disclosure by search engines. Even though search engines are presumably outside the jurisdiction of the FCC, if we do indeed have a national Internet policy that makes it impermissible to “significantly impede[] consumers’ ability to access the content and use the applications of their choice,”⁹³ it is hard to see why both requirements of neutrality and disclosures of non-neutrality would not apply just as strongly, and perhaps even more strongly, to search engines as to access providers.

C. *Where Are the Ends in End-to-End?*

The alteration of users’ experiences based on their browsing history that is made possible by Referer and cookies raises the question of where the “ends” in end-to-end lie. If all that is required to vindicate neutral end-to-end principles is that a user be delivered properly to the website that the user sought, then the use of browsing history to tailor the user’s experience at that site could be neutral. In fact, from one perspective the tailoring of experiences at a website seems like a vindication of end-to-end principles. If the goal of end-to-end is to allow the sites at the endpoints to shape the Internet experience as they like, then there is no problem with letting them provide different experiences to different users.

89. *Id.* at 10–11.

90. Letter from Heather Hipsley, Acting Assoc. Dir., Div. of Adver. Practices, Fed. Trade Comm’n, to Search Engine Companies (June 27, 2002), *available at* <http://www.ftc.gov/os/closings/staff/commercialalertattach.shtm>.

91. Letter from Heather Hipsley, Acting Assoc. Dir., Div. of Adver. Practices, Fed. Trade Comm’n, to Gary Ruskin, Executive Dir., Commercial Alert (June 27, 2002), *available at* <http://www.ftc.gov/os/closings/staff/commercialalertletter.shtm>.

92. Hipsley, *supra* note 90.

93. *Comcast*, *supra* note 17, at 13,054.

But this depends on what is viewed as the “end.” Consider the Ticketmaster case again.⁹⁴ If the relevant “end” for end-to-end purposes is the Web page for purchase of a particular ticket, Ticketmaster’s use of Referer or cookies to try to prevent users from reaching that page from Tickets.com would be problematic. Only if the relevant “end” is the Ticketmaster website as a whole should Ticketmaster be able to force users to follow a designated path within that website. The concern is even greater if, in contrast to the Ticketmaster instance, browsing history is not used to deny access but to alter it based on some aspect of that history, such as whether a user has comparison shopped. In that case, the use of Referer and cookies can provide different experiences for different users in a way that the users do not know of, let alone approve.

This sort of practice can actually be analogized to the practices of copyright owners in the peer-to-peer context. On the Ticketmaster website, one might follow a defined path to the page at which one can buy a particular ticket. The path to that final page might involve selecting certain characteristics of the ticket, such as the date and general location, but not others, such as proximity to the aisle or absence of an overhanging balcony. Another, competing provider, like Tickets.com, might seek to compete by offering alternative search criteria, just as Napster competed by offering different music-selection criteria. This might lead users to search for tickets on the competing website, where they might view different advertisements, rather than on Ticketmaster’s. And Ticketmaster might then seek to use its control over the actual tickets to force use of its own website, just as copyright owners might seek to use their control over copyrighted material to force use of their distribution systems.

How, then, do we decide whether a particular use of Referer or cookies is appropriate? The *Comcast* decision offers one way to consider this issue. Comcast had used a technical feature, a “reset packet,” for an unintended purpose, and the FCC disapproved:

[T]o the extent that Comcast is using TCP reset packets in a different manner than they were intended to be used, and service providers respond by modifying their services to circumvent Comcast’s efforts, that could undermine the usefulness and reliability of reset packets in general, and hinder the efficiency of the network.⁹⁵

94. See *supra* notes 66–67 and accompanying text.

95. *Comcast*, *supra* note 17, at 13,037; see also *id.* at 13,040 (“Thus, ‘variances from those standard protocols and practices damage[] the Internet as a whole,’ including the ability of entrepreneurs to enter the market with new Internet services.” (quoting Opening Statement of Dr. David P. Reed, Adjunct Professor, MIT Media Lab., at the FCC’s en banc Hearing on Broadband Network Management Practices, WC Docket No. 07-52 (Fed. Comm’n Comm’n Feb. 25, 2008), available at http://www.fcc.gov/broadband_network_management/022508/reed.pdf)).

We might consider, then, whether there are accepted purposes for Referer and cookies, and whether the uses at issue here conform to them. The latest version of the HTTP specification provides this description:

The Referer header allows servers to generate lists of back-links to resources for interest, logging, optimized caching, etc. It also allows obsolete or mistyped links to be traced for maintenance. Some servers use Referer as a means of controlling where they allow links from (so-called “deep linking”), but it should be noted that legitimate requests are not required to contain a Referer header field.⁹⁶

So the specification at least acknowledges the use of Referer for the sort of use to which Ticketmaster might have put it. It is important to note, though, that the last sentence of this passage, the one that refers to deep linking, first appeared in the July 2009 specification; previous versions had not included that sentence.⁹⁷ I have been unable to find information on the history of the change.

With regard to cookies, the HTTP specifications are in a proposed, but apparently unadopted, standard from 2000.⁹⁸ This proposal describes the use of cookies, but makes a distinction between cookies sent by the server visited by the user and so-called third-party cookies, which are those sent by other servers through the server requested by the user.⁹⁹ The proposed standard forbids third-party cookies,¹⁰⁰ which are the ones that have raised the most concern about privacy. This clear expression of disapproval is weakened, however, by the absence of adoption of the standard, and it has not been followed by at least some designers.¹⁰¹

Thus, there is some uncertainty in the technical standards, but from the perspective of those standards the use of Referer and at least third-party cookies to alter users’ Internet experiences seems problematic. If the FCC’s reference in *Comcast* to technical purposes is taken seriously, it seems that this sort of non-neutrality could be viewed by the agency as problematic. More to the point, since these practices are presumably outside the FCC’s jurisdiction, they suggest more generally that perhaps the practices should be considered as having implications that are comparable to those of concern in the net-neutrality debate.

That is especially so given the deference that we typically give to the Internet Engineering Task Force (IETF), which sets technical standards in

96. HTTP/1.1, part 2: Message Semantics, § 9.6 (Oct. 26, 2009), <http://tools.ietf.org/id/draft-ietf-httpbis-p2-antics-08.txt>.

97. Compare HTTP/1.1, part 2: Message Semantics, § 9.6 (July 13, 2009), <http://trac.tools.ietf.org/wg/httpbis/trac/browser/draft-ietf-httpbis/07/draft-ietf-httpbis-p2-antics-07.txt>, with HTTP/1.1, part 2: Message Semantics, § 9.6 (March 9, 2009), <http://trac.tools.ietf.org/wg/httpbis/trac/browser/draft-ietf-httpbis/06/draft-ietf-httpbis-p2-antics-06.txt>.

98. HTTP State Management Mechanism (Oct. 2000), <http://tools.ietf.org/html/rfc2965>.

99. *Id.*

100. *Id.* § 3.3.6; see also HTTP Cookie, Wikipedia, http://en.wikipedia.org/wiki/HTTP_cookie (last visited Apr. 3, 2010).

101. HTTP Cookie, *supra* note 100.

this area, as David Post describes.¹⁰² Regardless of whether one is as enthusiastic as Post about the IETF's role, the history here could be of concern. If one does not think that deference to the IETF is appropriate, then one would likely object to the fact that this issue was allocated to them to begin with. And even if one is generally willing to allocate these decisions to the IETF, the fact that they made a proposal in 2000 with regard to third-party cookies, an issue with considerable social-policy implications, and that the proposal has been ignored, is not reassuring.

Perhaps a disclosure approach, as in the search-engine context, would be preferable. This in fact was the approach taken, or almost taken, in Europe. The European data privacy directive provides that storing data, like cookies, on a user's computer "is only allowed on condition that the subscriber or user concerned is provided with clear and comprehensive information . . . , *inter alia* about the purposes of the processing, and is offered the right to refuse such processing by the data controller."¹⁰³ This provision, however, according to an EC staff report, apparently "is generally not implemented in practice."¹⁰⁴

The void here recalls the absence of clear rules in the net-neutrality arena. Despite the *Comcast* decision, which in any event has been vacated as beyond the FCC's authority,¹⁰⁵ the merits of neutrality rules are open to question. The previous sections have suggested that neutrality rules might

102. POST, *supra* note 4, at 133–41.

103. Council Directive 2002/58, art. 5, para. 3, 2002 O.J. (L 201) 37, 44 (EC), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:201:0037:0037:EN:PDF>.

The directive also comments on the legitimacy of cookies:

[S]uch devices, for instance so-called "cookies", can be a legitimate and useful tool, for example, in analysing the effectiveness of website design and advertising, and in verifying the identity of users engaged in on-line transactions. Where such devices, for instance cookies, are intended for a legitimate purpose, such as to facilitate the provision of information society services, their use should be allowed on condition that users are provided with clear and precise information in accordance with Directive 95/46/EC about the purposes of cookies or similar devices so as to ensure that users are made aware of information being placed on the terminal equipment they are using. Users should have the opportunity to refuse to have a cookie or similar device stored on their terminal equipment. This is particularly important where users other than the original user have access to the terminal equipment and thereby to any data containing privacy-sensitive information stored on such equipment. Information and the right to refuse may be offered once for the use of various devices to be installed on the user's terminal equipment during the same connection and also covering any further use that may be made of those devices during subsequent connections. The methods for giving information, offering a right to refuse or requesting consent should be made as user-friendly as possible. Access to specific website content may still be made conditional on the well-informed acceptance of a cookie or similar device, if it is used for a legitimate purpose.

Id. para. 25.

104. Commission Staff Working Paper, Annex to the: *European Electronic Communications Regulation and Markets 2004 (10th Report)*, at 38, COM (2004) 759 final (Dec. 2, 2004), available at http://ec.europa.eu/information_society/policy/ecom/doc/implementation_enforcement/annualreports/10threport/sec20041535vol1en.pdf.

105. See *supra* note 30.

be applicable in contexts beyond the lower-level network connections. The reverse is also true: it is possible that other contexts could provide insight into the appropriate scope of neutrality rules in the network context. The next section takes up the issue of the implications of these different contexts.

IV. WHAT SORTS OF NON-NEUTRALITY MATTER?

The issues discussed above seem at least to raise significant questions about non-neutrality. Yet despite the fact that they arguably fit within the network-neutrality verbal formulas, or at least those of *Comcast*, they have not generally been discussed in those terms. Should they be? This question is especially important as the FCC has recently begun “seeking public input on draft rules” that would codify and supplement existing Internet openness principles.¹⁰⁶ Will the openness with which the FCC is concerned go beyond network infrastructure to include applications and intermediaries that affect users’ experiences on the Internet?

Some commentators have noted the development of a broader context for the application of neutrality principles. As noted above, Jonathan Zittrain has drawn a connection between the idea of “API neutrality” and net neutrality.¹⁰⁷ And some scholars have viewed Google as implicating neutrality issues.¹⁰⁸ Others, like Berin Szoka and Adam Thierer, also see the possibility of broader applicability but decry this prospect of “regulatory creep”:

Sincere defenders of *real* Internet Freedom—that is, freedom from government techno-meddling—recognize that there will always be disputes over how companies deal with each other online across all layers of the Internet. The question is not whether we need a technical coordinating mechanism for handling such disputes. Someone *should* mediate conflicts over alleged deviations from abstract neutrality principles. But should that arbitrator be an inherently political body like FCC? Or should we instead look to truly independent, apolitical arbitrators like the Internet Engineering Task Force or collaborative efforts like the Network Neutrality Squad? Such alternative dispute resolution mechanisms and fora need not have the power of law to be effective: The weight of their expert opinion, based on careful investigation of the facts, would likely resolve most disputes, because companies have strong reputational incentives to comply with reasoned

106. Preserving the Open Internet and Broadband Industry Practices, Notice of Proposed Rulemaking, 24 F.C.C.R. 13,064, 13,082 (Oct. 22, 2009).

107. See *supra* notes 6–7 and accompanying text.

108. See, e.g., Andrew Odlyzko, *Network Neutrality, Search Neutrality, and the Never-ending Conflict between Efficiency and Fairness in Markets*, 8 REV. NETWORK ECON. 40 (2009); Pasquale, *supra* note 33. Google has also been accused of violating network neutrality in areas other than search. See Posting of Saul Hansell to Bits, AT&T Says Google Voice Violates Net Neutrality Principles, <http://bits.blogs.nytimes.com/2009/09/25/att-says-google-voice-violates-net-neutrality-principles/> (Sept. 25, 2009, 18:58 EDT).

rulings by truly neutral experts. And the white hot spotlight of public attention has a way of disciplining marketplace behavior as well.¹⁰⁹

It seems likely that there is a significant correlation between one's enthusiasm for basic network-neutrality rules and one's comfort with seeing those rules extended beyond the narrow network context. That is, one is probably either comfortable with regulation or not. But there is still some value in considering whether the traditional net-neutrality context is a more suitable target for neutrality rules than are other related areas, like those discussed in this essay. Is there something about the provision of Internet service, and particularly perhaps broadband service, that better justifies neutrality rules than do those related areas?

One possibility is that there is a federal agency, the FCC, which is responsible for communication services, but there is no Federal Search Commission¹¹⁰ or Federal Privacy Commission or Federal Copyrighted-Works-Distribution Commission. But the presence of a regulator does not make the case for regulation, or at least does not make it for neutrality regulation in this context, despite the FCC's historical background in common carriers.

Another possibility is suggested by the quotation above, and perhaps also by David Post. That is the role played by the Internet Engineering Task Force. If we are enthusiastic about how the IETF has performed its role in facilitating development of the Internet, as Post is, perhaps we believe that offers a mandate for regulating neutrality. We might believe, as Szoka and Thierer suggest, that the IETF should be the regulator.¹¹¹ For this to be a plausible solution, we would need to consider how well the IETF would likely perform in this role. The third-party cookie discussion above suggests that Szoka and Thierer are too optimistic in this regard; even on the assumption that the IETF would promote the correct rules, the Internet apparently has evolved beyond the sort of tight-knit community in which expertise and reputational sanctions are sufficient to ensure compliance.

Alternatively, we might believe that the end-to-end system that the IETF has created is so effective that it should be defended or preserved in its current form. The view here would be that the very success of the Internet, and of its neutral, end-to-end structure, shows that this structure should be maintained. Here too, though, the world has changed, as Jonathan Zittrain argues: "Now that the PC and the Internet are so inextricably intertwined, it is not enough for network engineers to worry only about network openness and assume that the endpoints can take care of themselves. It is abundantly clear that many endpoints cannot."¹¹² Zittrain argues for new intermediaries to help address security issues, which he says pose an

109. Szoka & Thierer, *supra* note 12, at 5.

110. See Bracha & Pasquale, *supra* note 34, *passim*.

111. See *supra* note 109 and accompanying text.

112. ZITTRAIN, *supra* note 6, at 166-67.

increasingly great threat.¹¹³ Such intermediaries would, in effect, non-neutralize the network, by isolating certain security threats from certain users. This form of non-neutrality could provide positive benefits, whereas in the three issues that have been the focus of this essay, the effects of non-neutrality are presumably negative. In either case, though, the questions are whether the services at issue are better provided neutrally or non-neutrally.

The primary advantage of neutrality, it seems, is the predictability and simplicity of interaction when users need not consider any special characteristics of the interaction. The advantage of non-neutrality is that there can be tailoring of users' interactions to particular needs. As a result, there typically will not be one version of non-neutrality, but multiple competing versions offered by different providers. For example, different broadband providers could provide different approaches to network management (reasonable or not), and different search-engines could offer different amounts of commercial input into search results.

The choice between these alternatives seems likely to turn in large part on the nature and effectiveness of competition among alternative non-neutralities. Szoka and Thierer, who resist the extension of the neutrality concept, argue that "the best remedy for concerns about non-neutrality is competition itself: In the high-tech sector more than any other, disruptive innovation makes it difficult for even the most successful companies to stay on top forever."¹¹⁴ But others argue that this is a market in which competition may not work well, largely because of the peculiar characteristics of markets for information.¹¹⁵ If that competition functions well, users are likely to benefit from the availability of alternatives; if it does not, users are likely to suffer. Although this issue cannot be discussed in detail here, there seem to be a number of factors, derived in part from the examples discussed earlier, that could be considered in evaluating the effectiveness of competition in these areas.

One such factor is information about the available alternatives. Competition among search engines is not likely to work well if users do not know whether search results are being manipulated, as is the case with search engines today.¹¹⁶ This makes non-neutrality in the search-engine market problematic. Similar informational problems may also exist in the examples of non-neutrality in response to browsing history discussed above. For example, if users are unaware that they are being offered prices different from those offered to other users based on their browsing history, competition will suffer. In other cases, though, as with the Ticketmaster

113. *Id.*

114. Szoka & Thierer, *supra* note 12, at 5–6.

115. Patterson, *supra* note 33, at 3–4; *Competition on the Internet: Hearing Before the Task Force on Competition Policy and Antitrust Laws of the H. Comm. on the Judiciary*, 110th Cong. 48 (2008) (statement of Frank Pasquale, Professor of Law, Seton Hall Law School).

116. Bracha & Pasquale, *supra* note 34, at 1183; Patterson, *supra* note 33, at 5–9.

example, where users are denied access to a Web page entirely, the non-neutrality will be known and will be subject to competition.¹¹⁷ And the same is true for Comcast's practices, at least to the extent that users could respond effectively to being denied use of BitTorrent and other providers.

The difficulties with information markets carry over to antitrust law, which those who favor market solutions would use as a backstop.¹¹⁸ Antitrust typically focuses on sellers' restrictions of output as evidence of anticompetitive effect, but anticompetitive conduct by search engines would not restrict the quantity of information received by users; rather, it would skew its content. It may be very difficult to prove that sort of skewing and even more difficult, perhaps, to show exactly how consumers are hurt by it. Antitrust in fact does not have a well-developed analytical approach to dealing with informational issues. Although some commentators and regulators have recently begun to focus on "consumer choice" as an antitrust issue, the emphasis there is primarily on the elimination of alternatives, not on informational mechanisms of choice.¹¹⁹

It is the difficulty of these issues that prompts the calls for disclosure as a possible remedy. But the support for this approach need not come just from the economics of information markets. It may also be that a federal policy of net neutrality makes this, or some other *sui generis* solution, appropriate. That is, although we might be willing to tolerate non-neutrality and informational problems in other contexts—as, perhaps, in the grocery store¹²⁰—we should not do so on the Internet because of the importance of the role it plays. The generative nature of the Internet is a central concern here. Although a grocery store serves as an intermediary only for groceries, the Internet is, or is becoming, an intermediary for everything, and the need for transparency is correspondingly greater.

Another way to look at the Internet's intermediating role is through the lens of externalities. An economic actor creates externalities when its activities create costs or benefits for others and those other effects are not captured in the actor's incentives. Externalities are often present in vertically linked markets. For example, peer-to-peer applications like

117. There is still a possible externality issue, though. If Tickets.com provided a superior interface, but Ticketmaster used its control over ticket access to force use of its own interface, the control over the ticket market would be facilitating imposition of externalities in the interface market.

118. Szoka and Thierer, for example, argue that "[g]overnment would still have a role to play, of course, in enforcing antitrust laws where anticompetitive harm to consumers can be proven, and in enforcing the promises companies make to consumers." Szoka & Thierer, *supra* note 12, at 5.

119. See, e.g., Intel Corp., No. 9341, 2009 WL 4999728 (Fed. Trade Comm'n Dec. 16, 2009) (Rosch, Comm'r, concurring in part and dissenting in part) ("The Commission must also be concerned with whether a course of conduct by a firm with monopoly power reduces consumer choice by reducing alternatives."); Neil W. Averitt & Robert H. Lande, *Using the "Consumer Choice" Approach to Antitrust Law*, 74 ANTITRUST L.J. 175 (2007).

120. One also wonders whether if some sort of mandatory disclosure system were adopted for search engines, a similar scheme would be instituted elsewhere.

Napster or BitTorrent can impose negative externalities on copyright owners by allowing users to gain access to copyrighted works without paying for them. The doctrines of indirect copyright infringement address these externalities by making the peer-to-peer programs potentially liable for the losses to copyright owners.¹²¹ In that sense, they can be said to reflect a determination that the resulting non-neutrality in the applications market, in which applications that allow transfer of copyrighted works are disadvantaged, is appropriate.

But the Supreme Court's focus in *Sony* on whether the allegedly infringing technology is "capable of substantial noninfringing uses" also recognizes that intermediaries can provide positive externalities.¹²² This point seems tailor-made for the generative Internet that is the focus of both Post and Zittrain. The Internet certainly offers the capability for noninfringing uses. Indeed, the Internet, and particularly its end-to-end nature, is all capability. Although the Ninth Circuit in *Napster*, and the Supreme Court in *Grokster*, focused more on the defendants' knowledge and intent than on this aspect of *Sony*,¹²³ one could argue that in the Internet context the capability issue has special bite. The role of many Internet technologies is to provide access, and the legal issues surrounding these technologies should emphasize, as *Sony* directs, this capability. That is, the emphasis should be less on the interests of the ends—copyright owners, sellers paying for search results, or websites seeking to price discriminate among visitors—and more on realizing the potential of the intermediaries.

CONCLUSION

This essay argues that the benefits of neutral end-to-end principles emphasized by David Post and Jonathan Zittrain extend beyond the network itself. There are a variety of ways beyond simple network access in which the Internet is non-neutral. If the right solution to this non-neutrality is not to "get over it,"¹²⁴ it could be useful to broaden neutrality efforts, as some have done,¹²⁵ to consider the legal and practical considerations that prevent the Internet from being the neutral conduit that advocates of net neutrality envision.¹²⁶ At the least, this broader perspective would provide a

121. In doing so, however, they impose other externalities, by allowing copyright owners to prevent copying in a way that imposes costs on the competing distribution systems.

122. See *supra* note 38 and accompanying text.

123. *Id.*

124. See *supra* note 3 and accompanying text.

125. As described above, a number of scholars have pushed for neutrality rules in the search-engine context. And of course the two goals are not inconsistent. Some scholars, such as Tim Wu, are engaged in both efforts.

126.

In essence, the CBUI [Coalition of Broadband Users and Innovators] and academics that support Net neutrality regulation are asking the FCC to mandate a "dumb pipe-lite" approach to the provision of broadband services. In other words, as a matter of public policy, BSPs [broadband service providers] should be

comparative view on the merits of neutrality mandates in different contexts. And it might be that the result would be to suggest, or provide support for, additional or alternative neutrality advocacy efforts.

discouraged from bundling new services and software into their broadband pipes. Much like the antitrust battle over which applications Microsoft should be allowed to bundle into its Windows operating system, regulatory proponents in this case are asking for restrictions on the vertical integration of content, applications, and conduit by BSPs. In the Microsoft skirmish, regulatory proponents sought the equivalent of a "dumb browser;" in the Net neutrality battle, they seek a dumb pipe.

Adam Thierer, *Are 'Dumb Pipe' Mandates Smart Public Policy? Vertical Integration, Net Neutrality, and the Network Layers Model*, 3 J. ON TELECOMM. & HIGH TECH. L. 275, 287 (2005); see also Bill Thompson, *Why the Net Should Stay Neutral*, BBC NEWS, Feb. 12, 2006, <http://news.bbc.co.uk/2/hi/technology/4700430.stm> ("Those in favour of 'network neutrality' and keeping the current model of the internet as just a data conduit include big hitters such as Google, eBay, Amazon and even Microsoft.").