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J. ON TELECOMM. & HIGH TECH. L.

FROM THE EDITOR

This issue distills the proceedings of the sixth annual Silicon Flatirons Telecommunications Program symposium.¹ Articles by Jon Nuechterlein and Tim Wu recall the counterpoint of panelists discussing video-over-Internet-protocol, also known as IPTV. Expanding upon the symposium panel on digital rights management (DRM), Professor Randy Picker considers the utility of individual identifiers in DRM schemes, Public Knowledge president Gigi Sohn argues against government technology mandates, and Professor Chris Sprigman analyzes price discrimination (or lack thereof) in online music services. From the panel on industry structure, consumer advocate Mark Cooper offers his views on the political economy of information goods, while Alfred Kahn, known best for his role in promoting competition within the airline industry, responds to recent calls for antitrust-like reforms in telecommunications regulation.² Finally, Internet pioneer and conference keynote speaker Robert Kahn, along with Patrice Lyons, reflects on the role of “digital objects” in digital networks.

Three other submissions received after the symposium complement and illuminate the works enumerated above. Professors Jerry Brito and Jerry Ellig offer an interdisciplinary analysis of video franchise requirements. Professor Tom Hazlett reflects on recent developments in the long-running debate over a la carte in cable television. My own student comment, selected for publication by last year’s editorial board, rounds out the issue with a cautionary note on the role of the public interest in the IPTV debate.

I thank these authors whole-heartedly for their incredible contributions. Kevin Bell, James Crowe, Darlene Kondo, and Preston Johnson likewise deserve high praise for their ability to juggle their duties as articles editors with newborns, summer jobs, and weddings.

1. The Silicon Flatirons Telecommunications Program, The Digital Broadband Migration: Confronting the New Regulatory Frontiers, http://www.silicon-flatirons.org/conferences_old/20060219dbm.asp (last visited Sept. 29, 2006); *see also* Integrated Telecommunications Program, SFTP Conference Videos, http://telecom.colorado.edu/index.php?load=content&page_id=126 (last visited Sept. 29, 2006) (offering videos of the conference proceedings).

2. *See generally* PROGRESS & FREEDOM FOUND., PROPOSAL OF THE REGULATORY FRAMEWORK WORKING GROUP RELEASE 1.0, 25 (2005), <http://www.pff.org/issues-pubs/other/050617regframework.pdf>; Kyle D. Dixon & Philip J. Weiser, *A Digital Age Communications Act Paradigm for Federal-State Relations*, 4 J. ON TELECOMM. & HIGH TECH. L. 321 (2006).

J. ON TELECOMM. & HIGH TECH. L.

Casenote and comment editors Becky Farr, Patrick Haines, Ryan Howe, and Justin Pless completed the unenviable task of reviewing all of the membership applications, and for that I am truly in their debt. I also owe particular thanks to Mike Boucher, Lisa Lewis, and Gabe Lopez for going above and beyond the call of duty. In addition, I could not not ask for a better executive board than Mark Walker, Danny Sherwinter, and Todd Spanier. I am continually impressed by the associate editors and members, all of whom continue to elevate our reputation and quality while navigating sometimes unfamiliar territory.

Still others deserve recognition. Dale Hatfield, Patrick Ryan, and Brad Bernthal provide an invaluable base of support, mentoring, and student note topics. Paul Ohm, our new co-advisor, is an incredible sounding board and an emerging star within the legal academy. Members of the Silicon Flatirons Program Advisory Board likewise allow this publication to reach new heights, and we thank them deeply for their continued support.

Above all, however, we owe undying gratitude to Professor Philip J. Weiser. My predecessor often noted Phil's incredible ability to multi-task. Phil's peers will often praise Phil's intelligence, leadership, idetic memory, civic involvement, networking abilities, and undying love for the New York Mets. I can only echo these laudatories, and hope that they will soften the blow of an inevitable loss this October.

With that, we are pleased to offer this, the first issue of the fifth volume of the *Journal on Telecommunications & High Technology Law*.

Micah Schwab
Editor-in-Chief

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VIDEO GAMES: THE ODDLY FAMILIAR TERMS OF DEBATE ABOUT TELCO ENTRY INTO THE VIDEO SERVICES MARKET

JONATHAN E. NUECHTERLEIN*

“You cannot step twice into the same river; for other waters are continually flowing in.”

—Heraclitus (Fragment 41)

“This life as you now live it and have lived it, you will have to live once more and innumerable times more; and there will be nothing new in it”

—Nietzsche¹

INTRODUCTION

Two clichés sum up the telecommunications policy world for the past half dozen years. First, the only constant is change. Second, the more things change, the more they stay the same. The main topics of debate have turned, in just three years, from unbundled network elements and “open access” to video franchising reform and “net neutrality.” But the deep structure of the debate remains eerily familiar. As discussed below, the disputes today, like those three years ago, still concern (i) the role of cooperative federalism in implementing national telecommunications policy, (ii) the extent to which upstarts should be permitted to skim the cream of the incumbent’s customer base, (iii) how to characterize new services within an outdated statutory framework, and (iv) whether regulatory intervention is needed to keep last-mile broadband providers from harming the Internet.

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1. FRIEDRICH NIETZSCHE, *THE GAY SCIENCE* 341 (Walter Kaufman trans., Vintage Books 1974).

I. THE ONLY CONSTANT IS CHANGE.

Before we examine how things have stayed the same, let us first consider how much they have changed. It has not been that long since, in August 2003, the Federal Communications Commission released the *Triennial Review Order*, which accentuated the longstanding debate between competitive and incumbent local exchange carriers (“CLECs” and “ILECs”) about “UNE-P.”² UNE-P was the regulatory entitlement that allowed new entrants to lease, at rates determined under a malleable cost methodology known as TELRIC, all the components of the telephone system they needed to provide mass market telephone service.³ ILECs hated both UNE-P and TELRIC because, they said, such regulatory perks made it too easy for CLECs to cream-skim the most profitable customers and undersell the ILECs, who alone were burdened by implicit universal service subsidies and carrier-of-last-resort obligations designed for a non-competitive environment.

In the *Triennial Review Order*, the FCC delegated enormous discretion to the states to decide when UNE-P would be available to CLECs. That decision continued a lively legal debate, first raised in the *Iowa Utilities Board* litigation of the 1990s,⁴ about the proper relationship between the federal government and the states and localities in implementing the Telecommunications Act of 1996.⁵ The D.C. Circuit put a lid on that debate a year later when, in an opinion written by Judge Stephen Williams, it held that the FCC had violated its statutory responsibilities by ceding so much of its authority to the states.⁶

The UNE-P controversy was one dispute that defined telecom policy through the early 2000s; another was the proper statutory characterization of broadband Internet services and the consequences of the answer

2. See Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, *Report & Order & Order on Remand & Further Notice of Proposed Rule-making*, 18 FCC Rcd. 16,978, 17,041-48 (2003) [hereinafter *Triennial Review Order*], vacated in relevant part, *United States Telecom Ass’n v. FCC (USTA II)*, 359 F.3d 554 (D.C. Cir. 2004).

3. “UNE-P” stands for “unbundled network elements—platform,” and “TELRIC” stands for “total element long run incremental cost.” For an overview of TELRIC and the rise and fall of UNE-P, see JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, *DIGITAL CROSSROADS: AMERICAN TELECOMMUNICATIONS POLICY IN THE INTERNET AGE* 98-108, 431-53 (2005) [hereinafter *DIGITAL CROSSROADS*].

4. *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 379-80 (1999) (upholding FCC jurisdiction to implement pricing rules of the Telecommunications Act of 1996).

5. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 15, 18 and 47 U.S.C.) [hereinafter 1996 Act].

6. *USTA II*, 359 F.3d at 568.

for network access by unaffiliated providers. Starting in the late 1990s, people argued about whether cable modem service contained a “telecommunications service” subject to common carriage obligations under Title II of the Communications Act, or whether it was solely an “information service” subject to Title I and exempt from network sharing obligations.⁷ When Congress added these defined terms to the Act in 1996, it did not clearly answer this statutory characterization question, because cable modem service would not enter the market for another couple of years: a classic example of technological change outpacing legislation.

In 2002, after more than three years of political paralysis, the FCC finally answered this statutory characterization question in favor of the cable companies, thereby ending, it seemed, the longstanding regulatory uncertainty that had complicated investment decisions.⁸ A year later, in the *Brand X* case, the Ninth Circuit stirred up the debate anew when it overturned the FCC’s answer to that question and found a “telecommunications service” within cable modem service.⁹ But ultimately, in 2005, the Supreme Court restored order by reversing the Ninth Circuit and reinstating the FCC’s deregulatory characterization.¹⁰

Riding on the answer to this abstruse statutory characterization question was the issue of “open access”—the ability of independent ISPs like Earthlink to gain access to the networks of cable companies like Comcast. Advocates of network “openness” feared that, without such access, Comcast and the rest would begin discriminating against unaffiliated applications providers and destroy the traditional end-to-end ethic of the Internet. But the FCC’s *Cable Modem Order* and the Supreme Court’s eventual affirmation of that order put an end to that whole open access debate. And the parallel debate about multiple ISP access to the *telcos*’ wireline broadband platforms ended in August 2005, when the FCC repealed the key *Computer Inquiry* rules that, for 25 years, had forced telcos to unbundle their information services from their telecom

7. See generally DIGITAL CROSSROADS, *supra* note 3, at 162-67. Title II of the 1996 Act, codified at 47 U.S.C. §§ 201-207 (2000), contains the legacy common carrier regulations applicable to conventional telephone companies. Title I, codified at 47 U.S.C. §§ 101-104, 151 (2000), gives the FCC residual authority of uncertain scope to regulate interstate communications services that are not otherwise addressed by the substantive titles of the Communications Act. See, e.g., *United States v. Sw. Cable Co.*, 392 U.S. 157 (1968).

8. See *Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities, Declaratory Ruling & Notice of Proposed Rulemaking*, 17 FCC Rcd. 4,798, 4,801-02 (2002) [hereinafter *Cable Modem Order*].

9. *Brand X Internet Servs. v. FCC*, 345 F.3d 1120, 1132 (9th Cir. 2003).

10. *Nat’l Cable & Telecomm. Ass’n v. Brand X Internet Servs.*, 125 S.Ct. 2688, 2702 (2005).

services and sell the latter on nondiscriminatory terms to unaffiliated information service providers.¹¹

II. THE MORE THINGS CHANGE, THE MORE THEY STAY THE SAME.

On the surface, the four topics just discussed have passed from center stage: the debate about cooperative federalism lost much of its relevance with the demise of *Triennial Review Order*; as UNE-P died, so did much of the controversy about cream-skimming by new entrants; *Brand X* resolved the vexing statutory characterization problems that had beset disputes about how to treat cable modem service; and, specifically, *Brand X* put an end to those longstanding debates about open access to cable modem platforms. But appearances deceive. These four issues—federalism, cream-skimming, statutory characterization of unforeseen services, and broadband network access—are, in a nutshell, the same four issues that people argue about today when they debate the terms on which telcos and other new entrants may enter the market for multi-channel video services in competition with traditional cable television companies.

Federalism

Since the dawn of cable television several decades ago, the states and thousands of local governments have played a critical role in deciding the terms on which cable companies can use public rights of way to provide multi-channel video services to end users.¹² Originally, many policymakers viewed cable television as a natural monopoly market, and many states and localities granted exclusive franchises to particular companies in exchange for heavy regulatory oversight. Over time, policymakers recognized that the public would benefit from competition in this market—from direct-to-home satellite providers such as DirecTV and EchoStar, cable overbuilders such as RCN, and traditional telephone companies.¹³ The telcos never seriously threatened to enter this market until, with the growth of broadband Internet access, they began deploying fiber-optic cables deeper and deeper into the nation's residential

11. See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Report & Order & Notice of Proposed Rulemaking*, 20 FCC Rcd. 14,853, 14,857 (2005).

12. See generally Jerry Brito & Jerry Ellig, *Video Killed the Franchise Star: The Consumer Cost Of Cable Franchising and Proposed Policy Alternatives*, 5 J. ON TELECOMM. & HIGH TECH. L. 199, 202-206 (2006).

13. See generally DIGITAL CROSSROADS, *supra* note 3, at 357-84.

neighborhoods—cables with enough capacity to support not just fast access to the public Internet, but high-quality video programming as well. Although that fiber build-out remains a work in progress, the largest telcos contend that they will deliver the benefits of widespread video competition as soon as they are assured of freedom from the cumbersome obligation to obtain thousands of franchises to use public rights-of-way for that purpose.

It was one thing for cable companies to negotiate such franchises with municipalities over a period of many years when, for all practical purposes, they were literally the only multi-channel video providers in town. It is quite another thing for a new video entrant to negotiate thousands of franchises when it must build up a big footprint quickly enough to cover the prodigious cost of programming and the enormous capital expenditures needed to bring fiber close to the home, all before it has any certainty that it will win even one subscriber and while competing with an entrenched incumbent that greets new entry by slashing prices. Thus telcos claim, with some justification, that they could provide competing video services much faster if Congress or the FCC stepped in to impose national rules for telco entry into the video market.¹⁴

This has devolved into a predictable debate between incumbents and new entrants about the relative merits of federal vs. local oversight of the franchising process. The incumbents favor the localities, with whom they have dealt for many years, and the new entrants, fearful of delay and regulatory capture at the local level, favor a much greater role for federal authorities. In many ways, these are exactly the same sides that the corresponding industry groups took in the federalism debate that followed enactment of the Telecommunications Act of 1996. Then, the incumbents, with their greater state-level lobbying resources, favored a greater state role, whereas the new entrants, suspecting regulatory capture at the state level, favored a greater federal role, although the two sides flipped institutional allegiances later once state officials revealed

14. In late 2005, the FCC opened an inquiry into whether it could and should adopt national rules forcing local authorities to streamline the process for obtaining video franchises. See Implementation of Section 621(a)(1) of the Cable Commc'ns Policy Act of 1984 as amended by the Cable Television Consumer Prot. & Competition Act of 1992, *Notice of Proposed Rulemaking*, 20 FCC Rcd. 18,581 (2005). The FCC then put that proceeding essentially on hold pending congressional consideration of the issue. In early 2006, different bills began circulating in the House and Senate that, among other things, would give the FCC explicit authority to grant video franchises for new entrants on a national level or subject local franchising authority to severe federal constraints. As of this writing (October 2006), the Senate appears unlikely in the near term to approve any video franchising reform proposal without including, as part of a package deal, a set of strong net neutrality requirements that the telcos would view as a poison pill and the House would uncompromisingly reject.

much greater sympathy to CLEC interests than anyone had anticipated.¹⁵

Cream-skimming

As with the UNE-P debate, the substance of the video franchise debate involves arguments by incumbents that they lack regulatory parity with putatively cream-skimming new entrants. Cable companies have long been subject to build-out and anti-redlining obligations.¹⁶ These are the cable industry's counterpart to the telephone industry's universal service and carrier-of-last-resort obligations,¹⁷ although cable companies do not have true universal service obligations in the sense of having to bear the costs of serving all (as opposed to most) customers within a given area.

The telcos answer, at the outset, that as the third or fourth entrant into this market, they should not be subject to such regulation any more than CLECs have been under the 1996 Act, and CLECs are typically immune from provider-of-last resort obligations. The telcos also disavow any interest in redlining. And they claim that market pressures will force them to offer video service as ubiquitously as possible, even without regulatory requirements, to catch up with the cable incumbents' formidable subscribership numbers. But cable companies are skeptical about those assurances and fear that, for the indefinite future, telcos could maintain a competitive edge by serving only wealthier households likely to order premium services without incurring the costs of building out to serve less profitable households.

Cable companies also fear that franchise relief would tilt the playing field in favor of the telcos by exempting them from various benefits the cable companies have traditionally bestowed on local governments. For example, the cable incumbents have long paid a percentage of their revenues to municipalities in the form of franchise fees, which greatly exceed the costs imposed by the cable companies' use of municipal rights-of-way. In effect, these above-cost fees are a local tax on cable service, which cable companies pass through to end users. That pass-through is an economically inefficient means of raising local revenue, but in theory it should create no *competitive* distortions in the video market if all major competitors also pay the same fees.

15. *Compare Iowa Utils. Bd.*, 525 U.S. at 385 (rejecting ILEC advocacy for exclusive state pricing jurisdiction for unbundled network elements), *with USTA II*, 359 F.3d at 581-82 (rejecting CLEC advocacy for delegation of federal authority to the states).

16. 47 U.S.C. § 541(a)(3), (4) (2000).

17. *See generally* DIGITAL CROSSROADS, *supra* note 3, at 333-55.

Should telcos pay the same fees? One could make the argument that, at least as a theoretical matter, telcos should not have to pay states or localities any fees in addition to those they already pay for the same rights-of-way to provide broadband services. After all, the telcos have laid, and are laying, fiber-optic cables along public rights-of-way to provide broadband services as well as video, and municipalities incur no extra costs or disruption when telcos shoot video-related packets through those same pipes. To reach a politically viable compromise, however, most telcos say they are willing to pay roughly the same franchise fees to localities as the cable companies, although they would prefer a streamlined franchising mechanism with a federally prescribed fee level. But the devil is in the details, and the cable companies fear that, if subject to different franchising procedures, the telcos will achieve a competitively biased advantage in this respect as well. And the telcos also want to avoid doing the miscellaneous favors that cable incumbents have long promised to do for municipalities in return for their original franchises or when those franchises are up for renewal, such as providing institutional networks or wiring fire stations and other local government buildings for free.

In all these respects, the cable incumbents remain saddled with legacy obligations designed for an age when they faced very little competition, and they oppose any effort to relax those obligations for new entrants because they fear that doing so would introduce competitive bias. The telco entrants answer that any competitive asymmetries introduced by franchise relief should be of little policy concern, since incumbents always face greater regulatory obligations than new entrants, and the proper response to growing competition is to relieve burdens on incumbents, not impose them on new entrants. This set of issues, relating to regulatory parity in an era of demonopolization, is endemic to the communications field.¹⁸ It arose in the ILEC-CLEC battles under the 1996 Act, and it persists today not just in the video services market discussed here, but in other areas as well, such as the extent to which VoIP providers should be subject to legacy obligations designed for monopoly-era telephone companies.¹⁹

Statutory characterization of unforeseen services

Much like the *Brand X* debate several years ago about how to characterize cable modem service, the video debate presents challenging is-

18. *See id.* at 25-30.

19. *See id.* at 220-22.

sues about how to characterize new, IP-based services that were unforeseen when the relevant statutory definitions were written. Under section 621 of the Communications Act, Title VI franchise obligations apply only to a “cable operator” that provides a “cable service” over a “cable system.”²⁰ Of the two major telcos with aggressive video plans, Verizon concedes that its service and network, at least as currently configured, fall within the scope of that provision, but AT&T does not concede the same about its own, quite different service and network. In particular, AT&T claims that its Project Lightspeed service does not meet the definition of a “cable service” because it is based on the Internet protocol, it is two-way and highly interactive, and it consists of subscriber-specific video streams rather than the broadcast model used in the traditional cable architecture.²¹ The cable incumbents disagree that those characteristics of Project Lightspeed make any difference to AT&T’s statutory duty to obtain video franchises.²² This disagreement involves divergent interpretations of the intricately interrelated definitions of “cable operator,” “cable service,” “cable system,” “interactive on-demand services,” and “video programming,” all set forth in section 602 of the Communications Act.²³

This statutory characterization debate, which first assumed prominence in 2005, subsided a bit during 2006 while Congress took up the issue of video franchising reform, and ultimately it may fall into irrelevance if Congress resolves the issue itself through statutory revision. The key point for present purposes is that this debate bears a strong family resemblance to all the other statutory characterization debates that arise whenever Congress writes legislation for the communications industry. By its nature, lawmaking involves drawing lines and assigning different rules to different categories of services or providers. As technology evolves, it blurs the lines, makes the old categories arbitrary, and spawns intense semantic debates of interest only to lawyers. That is a key sign that the law needs to be changed.

20. 47 U.S.C. § 541 (2000).

21. See, e.g., Comments of AT&T Servs. Inc. to the *Notice of Proposed Rulemaking* in IP-Enabled Services, WC Dkt. No. 04-36 (Jan. 12, 2006), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518309058.

22. Comments of Nat’l Cable & Telecomm. Ass’n to *Notice of Proposed Rulemaking* in IP-Enabled Services, WC Dkt. No. 04-36 (Nov. 1, 2005), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518176498.

23. 47 U.S.C. § 522 (2000).

Network access

The prospect of legislative overhaul brings us, finally, to the topic of network access. The 1996 Act provided what Congress then viewed as a forward-looking response to the network access debate: the specification of CLEC rights to lease capacity on the last-mile facilities of incumbent telephone companies.²⁴ That particular debate persists in various contexts, but, as discussed, the demise of UNE-P makes it much less important than it was before. And the traditional “open access” debate—that is, the debate about the rights of independent ISPs to gain access to DSL and cable modem networks—has all but disappeared in the wake of the Supreme Court’s *Brand X* decision and the FCC’s partial repeal of the *Computer Inquiry* rules in 2005.

So the network access debate is dead, right? Long live the network access debate. The same debate, in slightly different form, carries on, though this time the proposed regime is called “net neutrality.” Whereas the 1996 Act focused on creating greater competition at the physical layer, and “open access” initiatives focused on creating alternatives to cable- or telco-affiliated ISPs at the logical layer, net neutrality proposals focus directly on protecting competition at the applications and content layers.²⁵ In particular, advocates of net neutrality rules seek to prohibit owners of physical-layer transmission networks from “discriminating” against, or among, unaffiliated providers of applications or content in ways that, by some standard, would harm consumer welfare.²⁶ Opponents of such rules maintain that they, too, oppose “discrimination” that harms consumers over the long term but argue that market forces will almost always preclude such discrimination and that government intervention would do more harm than good.²⁷

In a February 2004 speech later published in this *Journal*, then-FCC Chairman Michael Powell propelled this debate into the broader public consciousness when he became the first high-profile official to suggest that the government might someday need to play a backstop role in policing “Internet Freedom” principles.²⁸ Since then, the FCC as an institution has given a few nods in the same direction. First it issued a vague

24. 47 U.S.C. §§ 251(c)(3), 251 (d)(2) (2000).

25. See generally DIGITAL CROSSROADS, *supra* note 3, at 149-90.

26. See generally Tim Wu, *Why have a Telecommunications Law? Anti-Discrimination Norms in Communications*, 5 J. ON TELECOMM. & HIGH TECH. L. 15 (2006).

27. See DIGITAL CROSSROADS, *supra* note 3, at 168-79 (discussing opposing viewpoints).

28. See Michael K. Powell, *Preserving Internet Freedom: Guiding Principles for the Industry*, 3 J. ON TELECOMM. & HIGH TECH. L. 5 (2004).

policy statement in 2005 encouraging broadband providers to accommodate consumer choice on the Internet.²⁹ Then it extracted “voluntary” and temporary promises from AT&T and Verizon to comply with that policy statement as a condition for their recent mergers.³⁰ As this essay goes to press, Congress is also considering various net neutrality proposals, although any “strong” version—such as a provision that would entitle an aggrieved applications provider to sue a broadband provider for equal treatment—seems unlikely to pass anytime soon.

Discussions about net neutrality remain very long on academic theory and very short on practical considerations. Part of the reason is that, with rare exceptions, broadband providers have not discriminated in any plainly abusive sense against unaffiliated applications or content providers.³¹ But the issue will come to a head when telcos and the cable companies begin running all of the services they provide consumers, including both voice and video, as applications over a unified IP platform. As that process unfolds, it will become increasingly necessary for these physical-layer transmission providers to distinguish among the packets passing through their pipes and give preferential treatment to some packets over others to ensure quality of service for time-sensitive applications. And preferential treatment is precisely what worries net neutrality advocates, who resist any major deviation from the end-to-end ethic of packet neutrality that has characterized most forms of Internet access from its inception.³²

Video-over-IP, with its prodigious quality-of-service demands, is the ultimate net neutrality battleground. Here it is important to distinguish between two types of video applications: streaming video, which operates in close to real time and can compete with conventional television services, and non-real-time video downloading services. For the

29. Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Policy Statement*, 20 FCC Rcd. 14,896 (2005).

30. See, e.g., SBC Commc'ns Inc. and AT&T Corp. Applications for Approval of Transfer of Control, *Memorandum Opinion & Order*, 20 FCC Rcd. 18,290, 18,392 (2005).

31. The most prominent exception has been the short-lived decision of a rural telephone company, Madison River Communications, to block the ports that its DSL customers used for VoIP (“voice over Internet protocol”) services. Madison River quelled the ensuing public furor by agreeing, in an FCC-sponsored consent decree, to unblock the ports, even though the FCC lacked any explicit regulatory authority to order that relief on its own initiative. See Madison River Commc'ns LLC and Affiliated Cos., *Order & Consent Decree*, 20 FCC Rcd. 4,295 (2005).

32. See, e.g., LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 36-47 (2001); Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141 (2003); J. H. Saltzer et al., *End-to-End Arguments in System Design*, 2 ACM TRANSACTIONS ON COMPUTER SYSTEMS 277 (1984).

foreseeable future, net neutrality concerns are more likely to arise for streaming video than for download services. At least today, high-quality streaming video requires quality-of-service guarantees in the form of prioritized IP packets over a managed IP network, and that is what the network owners propose to give themselves and their chosen video partners and not unaffiliated providers of Internet-based streaming video services. To be clear: the major telcos and cable companies, as providers of physical-layer transmission services, are unlikely ever to block or gratuitously degrade the video streams of unaffiliated providers operating on the public Internet. But the telcos and cable companies are also unlikely to ensure for these public Internet providers the same quality of service they give their preferred video channels over their managed IP networks—unless those providers agree to pay a market-based rate for the privilege.

Is this a good thing or a bad thing? In our recent book, Phil Weiser and I have avoided the sorts of animated broad-brush answers that characterize so much of the opposing advocacy.³³ At bottom, we argue, policymakers must weigh the asserted *need* for government intervention in this market against the potential *costs* of such intervention, and that cost-benefit analysis is exceptionally difficult to resolve when so many of the variables remain unknown.

The asserted *need* for net neutrality regulation is the first of those unknown variables. Opponents of government intervention raise good questions about whether non-price-regulated platform providers will have the incentive to engage in inefficient, anticompetitive discrimination against higher-layer providers, given the economic principle known as the internalization of complementary externalities (“ICE”).³⁴ They also question whether the market would allow platform providers to act on such incentives even if they had them, given the competitive pressures posed by existing and potential platform rivals.³⁵ To be sure, a cable-telco duopoly for broadband services, where and when it persists, is not

33. See DIGITAL CROSSROADS, *supra* note 3, at 169-79.

34. See Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85 (2003). Roughly speaking, the ICE principle holds that a non-price-regulated provider of a platform monopoly has an incentive to maximize the value of its platform by encouraging competition in the market for complementary applications and thus lacks an incentive to injure unaffiliated applications providers except in specific circumstances, such as where an application threatens to replace the platform itself.

35. See Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1 (2005); Christopher S. Yoo, *Would Mandating Broadband Network Neutrality Help or Hurt Competition? A Comment on the End-to-End Debate*, 3 J. ON TELECOMM. & HIGH TECH. L. 23 (2004).

the same as full competition, and the ICE principle has much-discussed cracks.³⁶ But these antitrust-oriented questions about whether a physical-layer provider has the *incentive* and *ability* to harm competition in adjacent markets are the questions we need to ask. We should not simply assume that, if the government leaves them alone, platform owners will try to harm consumer choice in adjacent markets, much less that they will succeed. Nor should we throw traditional economic analysis to one side on the ground that the end-to-end ethic of the Internet trumps all other values and must be rigidly maintained in all contexts no matter what the effect on consumers.

There is also great uncertainty about the potential *costs* of net neutrality regulation, and thus about whether those costs outweigh the uncertain benefits. Here, too, asking the right questions is as important as offering thoughtful answers. If all video streams over an IP platform are entitled to the same quality of service, will any video stream have enough quality of service to serve as an attractive alternative to conventional video delivery? Many advocates of net neutrality regulation envision a world of redundant dumb transmission pipes similar in principle to the dumb wires and outlets in the electric power grid.³⁷ But if net neutrality rules lead to the commoditization of all pipes, such that one pipe is largely indistinguishable from another and the providers' margins are all small, why would any private firm risk lots of money in building those pipes to begin with? From a financial perspective, isn't this a bit like trying to persuade investors to buy bonds with a small yield but a high risk of default?

Finally, since few people seriously argue that *all* prioritization among packets is per se bad for consumers—almost everyone agrees, for example, that real-time applications such as voice and video should take priority over other applications—who, exactly, will adjudicate which sorts of prioritization *are* bad and should be banned? How fact-specific and expensive will such adjudications be? And how much will the uncertainty caused by unpredictable, case-by-case regulatory intervention depress investment incentives?

I can answer only one of these questions with certainty. If codified into law, any net neutrality guarantee will produce many fact-intensive disputes and fill the sails of Washington law firms for many years. I work in such a firm and would be grateful for the opportunity. But what's good for telecommunications lawyers is not necessarily good for

36. See DIGITAL CROSSROADS, *supra* note 3, at 157-58, 171-74; Farrell & Weiser, *supra* note 34.

37. See, e.g., LESSIG, *supra* note 32, at 39.

consumers. That is a lesson we should have, but may not have, learned from the lawyer-enriching, but ultimately pointless, UNE-P litigation that persisted for eight years after enactment of the 1996 Act. But as they say, the more things change, the more they stay the same.

WHY HAVE A TELECOMMUNICATIONS LAW? ANTI-DISCRIMINATION NORMS IN COMMUNICATIONS

TIM WU*

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INTRODUCTION

Since the late 1990s academics and policymakers have advanced various ideas for fundamental telecommunications reform in the United States. The immediate challenge for any proposed reform, however, is understanding what the point of a telecommunications law is in the first place. Communications networks are part of the nation's infrastructure, and a locus of innovation that inspires visions of a better society. Yet the industry also has a long history of competition problems, monopolization and outright corruption that drives a history of regulatory oversight. Over the years the reasons for the law have varied with regulatory fashion. The law today reflects a pastiche of values popular at one time or another, like "localism," "fairness," "innovation," and "competition."

This paper describes a vision of what telecommunications laws' central goals should be in coming decades, and what kind of legal instruments will serve those goals. The telecommunications law, I suggest, has been preoccupied with three projects: allocating rights, managing discrimination, and achieving various social goals, like indecency regulation. This paper argues that in the future the main point of the telecommunications law should be as an anti-discrimination regime, and that the main challenge for regulators will be getting the anti-discrimination rules right.

The view advanced here, while much popularized over the last decade, has deeper roots reaching back to the origins of telecommunications and common carriage itself. It views information networks as a form of public infrastructure that is most valuable as a general purpose input into *other* activities—a catalyst. This is at the center of what might be called the infrastructure view of network theory, and is at the heart of "innovations commons" theories.¹ This single presumption affects the goals of communications policy. It makes it not the maximization of the value of the infrastructure for its own sake, but maximization of its value as a catalyst for other activities.

The link between the utility of a network and anti-discrimination rules has appeared frequently over the history of telecommunications regulation. From the early days of the telegraph and Bell interconnection through today's network neutrality rules, many (though not all) of the regulatory challenges in communications law have featured a network owner who conditions or bans carriage. The regulatory responses have been varied and inconsistent. For example, Western Union's network favoritism helped give Associated Press a nearly unchallenged monopoly

1. For an overview of this point, see generally Tim Wu, *The Broadband Debate, A User's Guide*, 3 J. ON TELECOMM. & HIGH TECH. L. 69 (2004).

over American news late in the 19th century, with no response from government. Conversely, the FCC rules blocking Bell's discrimination against third-party network attachments, like non-Bell phones, are widely seen as a great success, while efforts to combat "discrimination" by forcing the sharing of cable lines and local lines in the 1992 Cable Act and 1996 Telecom Act, widely seen as failures. As discrimination rules almost certainly become central to the future of telecommunications law, there is much to learn from these various uses and abuses of discrimination norms.

While of central importance, as the history shows, getting anti-discrimination rules right is exceptionally challenging. The first challenge is to categorically ascertain what types of information networks merit anti-discrimination rules in the first place. The oldest and hardest question in the field of common carriage is what exactly constitutes a "business affected with a public interest."² On today's networks, that usually means distinguishing private from public information networks.

The second challenge is devising anti-discrimination rules that broaden the utility of the network without destroying any incentive to build it in the first place. Regulators using anti-discrimination norms are in practice creating rules of market entry, where the challenge is to provide sufficient controls on incumbents' power to block market entry without destroying the incentives to become an incumbent.³

The third challenge is devising rules that do not themselves become tools of incumbent power, the fate of many if not most well-intentioned telecommunications regimes.

For purposes of discussion this paper outlines a "one rule" proposal, a hypothetical, single anti-discrimination rule that would form the center of telecommunications law. The rule should be (1) a general norm that is technologically neutral, (2) in the form of an ex ante rule with ex post remedies, and (3) anchored on a model of consumers' rights.⁴ The form of the rule recommended here is hardly radical. Instead, it is something of a restatement of the best of telecommunications practice based on decades of telecommunications experience.⁵ It borrows from what, as best we can tell, has worked, while shunning the regimes with the greatest tendency toward corruption.

2. *Chas. Wolff Packing Co. v. Court of Indus. Relations*, 262 U.S. 522, 535 (1923).

3. See Ilya Segal & Michael Whinston, *Antitrust in Innovative Industries* (Stanford Law Sch. John M. Olin Program in Law and Econ., Working Paper No. 312, 2005).

4. See James B. Speta, *A Common Carrier Approach to Internet Interconnection*, 54 FED. COMM. L.J. 225 (2002).

5. It is like some of the layered models, based on two of U.S. telecommunications law's greatest successes: the Computer Inquiries, and the Part 68 Rules for network attachments. Its centerpiece is a rule of antidiscrimination and a two-layer transport/applications distinction that is an import of the enhanced/basic service dichotomy from Computer Inquiries.

Many caveats are necessary. While the point of the proposal is to accomplish as much as possible with as few rules as possible, it obviously cannot capture everything. It leaves out at least one other essential function of a telecommunications regime: the licensing and the assignment of property rights, or the prior selection of who may *be* a market entrant. The discussion here deliberately leaves out the social aspects of telecommunications regulation that serve very different goals, including indecency regulation, progressive redistribution and technical standard setting. It would also be impossible to specify, in full detail, how an anti-discrimination regime might handle every conceivable case. I explain, instead, what an evolving system of anti-discrimination telecommunications law might look like.

Part 1 provides background on telecommunications reform. Part 2 discusses the importance, history, and operation of anti-discrimination regimes in telecommunications regulation. Part 3 suggests the different ways an anti-discrimination regime might operate.

I. PROPOSALS FOR TELECOMMUNICATIONS REFORM

Over the last two decades, many have advanced various ideas for fundamental telecommunications reform. All of the proposals have been reactions to the current legal structure, which few have praised publicly or explicitly.⁶

The question exists: what does the current telecommunications law look like, and what values does it serve? As telecommunications lawyers know well, the current law regulates on the basis of network type. Each of broadcasting, telephones, and cable television get their own regime. The first assumption is that transport and services are integrated. That is to say, that both the services provided on the network, and the infrastructure itself, are owned by the same company, as in today's telephone and cable television networks. The second assumption is that each type of network has separate regulatory concerns.

A scattered set of values reflecting the fashions of various eras can be found expressed through law in the current system. Concerns of monopoly pricing have meant price-setting for telephone and cable service. Interests of localism and the public interest have led to franchising and licensing requirements for cable operators and broadcasters of all kinds. In the name of universalism, the telephone companies and a few others contribute to a multi-billion dollar universal service fund which subsidizes rural telephony.

The general impression is that the actual programs lying behind

6. As is often the case in communications policy, some parties implicitly praise the current system by resisting any manner of reform to it.

each of these values, whether or not ever honorable, are now corrupted and perverse. Broadcasting licenses designed to protect localism and free television effectively destroyed any competition in local broadcasting. Worse, they let broadcasters occupy highly valuable public spectrum, preventing higher uses than say, UHF broadcasting. Though parts of the universal service fund are used to fund technology in schools, large amounts go to subsidize rural phone companies, as if it were 1909 and telephones might otherwise be beyond the financial reach of farmers. While price-setting regimes are perhaps useful for preventing certain types of customer abuse, they also force entrants to negotiate with the government before getting started. These problems are well known, yet most public officials are quick to voice support for these entitlement programs, for opposition can be political suicide. The regulated firms themselves are stuck in a strange logical contradiction—they constantly agitate for deregulation for themselves, based on principles like “competitiveness.” Yet since they know the system well, and how to make use of it, they tend to resist real or radical change. They also have the capacity to become high regulationists, at least when there is some chance to stick market entrants and rivals with onerous duties. In the year 2005, for example, the cable industry, despite years of opposition to the duties of local franchising, began discussing how well the local franchising system works, inspired by the possibility that the telephone companies might enter the cable market.

The larger structure of the resulting system is sometimes called a “vertical” or “silo” regulatory system, and it reflects the fact that lawmakers simply wrote a new law for each new network as it arrived. The result is the pile of network-specific laws we know as the Telecommunications Act.

Both the absurdity and technological infirmity of the system have led to important proposals for reform. The proposals can be placed into two groups: “layered” proposals, and “European” or “antitrust” proposals. What these proposals have in common is that they ask regulators to discard the Telecommunications Act’s assumptions of vertically-integrated services (cable, telephone, etc.). Where they differ is over whether *function*, or findings of *market power*, ought be the guiding principle of telecommunications law.

A. Layered Models

Proposals for a “layered” telecommunications law suggest getting rid of or supplementing the current system and replacing it with a regulatory structure that regulates on the basis of function as opposed to his-

torical contingency.⁷ Since network functions are generally organized in horizontal layers, such proposals are sometimes called “horizontal” models of telecommunications regulation. Kevin Werbach, author of one of the first layering proposals, writes that a layered model “is most useful in framing questions, helping policymakers identify hidden tension points and giving them a better vocabulary to craft solutions.”⁸

In their basic forms, horizontal models are calls for the reform of classification. Proponents of horizontal models want to reform how the FCC decides whether it will apply either one rule-set or another to a given activity (A). Today, as just discussed, the FCC makes that decision based on a “service” approach: by deciding whether activity A is a “cable service,” “information service,” “telecommunications service,” and so on. This decision depends on statutory criteria for defining services that can be malleable, outdated, or both. One consequence is that similar, competing services may end up being regulated differently, like cable and DSL broadband. Another consequence is long delays and litigation over the FCC’s classification decisions, typified by the *Brand X* litigation.⁹ A third is that the FCC itself is organized by service type, with separate bureaus for wireless, wireline, and “media” services, which reinforces the separation.

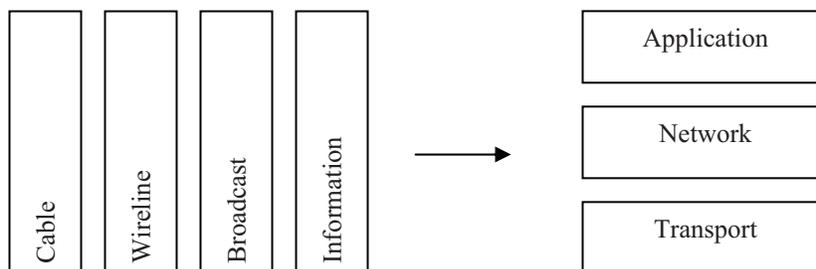
The reforms suggested by advocates of horizontal models argue that classification decisions should follow from function, not service type. Regulators, in other words, should decide which rules to apply depending on what *network layer* Activity A is—not what service type it is. For example, using a simplified TCP/IP protocol stack as an example, they should consider whether the activity is at the application layer, network layer, or the physical/transport layer, and regulate accordingly.

7. See Tim Wu, *Application-Centered Internet Analysis*, 85 VA. L. REV. 1163 (1999); Kevin Werbach, *A Layered Model for Internet Policy*, 1 J. ON TELECOMM. & HIGH TECH. L. 37 (2002); Douglas Sicker, *Further Defining a Layered Model for Telecommunications Policy* (2002), <http://tprc.org/papers/2002/95/LayeredTelecomPolicy.pdf>; Lawrence Solum & Minn Chung, *The Layers Principle: Internet Architecture and the Law*, 79 NOTRE DAME L. REV. 815 (2004); cf. Mark Lemley & Lawrence Lessig, *The End of End-to-End: Preserving the Architecture of the Internet in the Broadband Era*, 48 UCLA L. REV. 925 (2001); Richard S. Whitt, *A Horizontal Leap Forward: Formulating A New Public Policy Framework Based on the Network Layers Model*, 56 FED. COMM. L.J. 587 (2004); Joshua L. Mindel & Douglas C. Sicker, *Leveraging the EU Regulatory Framework to Improve a Layered Policy Model for US Telecommunications Markets*, 30 TELECOMM. POL’Y 136 (2006); Robert Frieden, *Adjusting the Horizontal and Vertical in Telecommunications Regulation: A Comparison of the Traditional and a New Layered Approach*, 55 FED. COMM. L.J. 207 (2003). An important antecedent was David Isenberg, *The Rise of the Stupid Network*, <http://www.rageboy.com/stupidnet.html> (last visited October 2, 2006).

8. Kevin Werbach, *Breaking the Ice: Rethinking Telecommunications Law for the Digital Age*, 4 J. ON TELECOMM. & HIGH TECH. L. 59, 95 (2005).

9. See, e.g., *Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967 (2005).

Figure 1. “The Horizontal Leap Forward”



Why bother making the change from vertical to horizontal? Advocates give two sets of reasons for why layered regulatory models are attractive.¹⁰ The first is *descriptive* coherence. Since the 1970s, telecommunication networks have actually been built on horizontal models.¹¹ It is important to realize that the Internet, while an important example, is not the only example. Cable television networks and even dedicated phone networks have long been conceptualized and built on horizontal architectures. The vertical regulatory silos are more out of touch than many lawyers may realize. They reflect practices abandoned in the engineering world decades ago. As Rick Whitt, then at MCI, wrote, “the layers model represents a shift in thinking that successfully mirrors the way that networks and markets actually operate.”¹²

Greater descriptive coherence is closely related to another heavily stressed advantage: that the same types of services be treated similarly, and that the right rules apply to the right types of behavior. For example, applications and transport services present fundamentally different regulatory problems. Yet at the same time, different types of application services, whether labeled “voice,” “video” and so on, present similar regulatory problems, and ought to be treated similarly. In the words of Robert Cannon of the FCC, “[b]y conceptualizing the policy as layers, the analyst is capable of grouping and segregating issues.”¹³ He can “identify markets, clarify issues, create boundary regulations that are effective, and, in so doing, target solutions where issues reside without interfering with other industries and opportunities.”¹⁴

10. What follows is a summary. A survey of arguments in favor of a horizontal model can be found in Richard Whitt, *A Horizontal Leap Forward*, in *OPEN ARCHITECTURE & COMMUNICATIONS NETWORKS* 292, 312-317 (Mark Cooper ed., 2004).

11. See ANDREW TANNENBAUM, *COMPUTER NETWORKS* 30 (4th ed. 2002).

12. Whitt, *supra* note 7, at 317.

13. Robert Cannon, *The Legacy of the Federal Communications Commission’s Computer Inquiries*, 55 *FED. COMM. L.J.* 167, 195 (2003).

14. *Id.*

Much of the criticism of layered models has been based on the charge that layered models tend to be either too complicated or inconclusive for regulatory purposes.¹⁵ While this paper draws heavily on the layered proposals it takes a slightly different tack. This paper questions whether a classification system, horizontal or vertical, is actually necessary to communications regulation at all. It asks whether the right answer is really to transform the silos, when it may be classification itself that is the problem. The point is that the task of creating regulatory classifications has often led to delays, litigation and other costs of administering such a complex system, ultimately for no apparent reason.

It is true that there is some necessary minimal complexity in any conceivable scheme. Nonetheless if the impact of a regulatory model creates the need for classifications and rulings on classifications, those are additional costs, and it must be asked whether the costs are justified.

True to what advocates have said, the layered proposals are most important in the minds of the regulator. As Timothy Denton put it, “[h]ow regulators act invariably depends on how they see the world. The most important thing about a layered model is that it can rearrange the ‘mental furniture’ with which regulators act.”¹⁶ The question becomes whether a classification system is necessary to ensure that regulators understand that networks operate on a horizontal model. The real effort should be to ensure that FCC regulators understand modern networks and use a *de facto* layered model in their analysis. There are promising signs. Bryan Tramont, former Chief of Staff to former FCC Chairman Michael Powell, for example, explained the FCC’s approach to regulation as follows: “The main difference for us is between how we regulate the *infrastructure*, and *services*. Each has its own concerns and priorities.”¹⁷ Moreover that distinction, as Robert Cannon writes, was a critical matter in the *Computer Inquiries*.¹⁸

As developed later, the one-rule proposal has no specific classification scheme, though it requires some general jurisdictional limit on what constitutes a communications network at all. However, it does direct regulators to consider whether discrimination is (1) between transport infrastructures, (2) between transport infrastructures and application services, or (3) between application services. As such, it recommends an

15. See, e.g., David P. Reed, Comments at the Silicon Flatirons Conference: The Rise of Cable and its Future (Oct. 18, 2005); New Millennium Research Council, Free Ride: Deficiencies of the MCI “Layers” Policy Model and the Need for Principles that Encourage Competition in the New IP World (July 2004), http://www.newmillenniumresearch.org/news/071304_report.pdf.

16. Timothy Denton, Comments at Freedom to Connect Conference (March 31, 2005).

17. See Bryan Tramont, Comments at the Silicon Flatirons Conference: The Digital Broadband Migration (Feb. 13, 2005).

18. Cannon, *supra* note 13, at 167-205.

implicit, but un-codified two-layer system. In the mind of the regulator, it ought to look something like the following:

Application Services				
video (television)	voice	web	email	[future]
wireline	cable	wireless	fiber optic	[future]
Transport Infrastructure				

A second criticism of layered models is that they focus on function to the exclusion of economics. Stated differently, while layered models may help make function clear, it may be at the cost of ignoring the problems of market power and its abuse, which can take many forms. That point takes us to the European proposals for telecommunications reform.¹⁹

B. European Proposals

European or “antitrust” proposals for telecommunications reform begin from the position that the central problem in telecommunications law is market power and its abuse. The stronger version says that the FCC should be replaced altogether by antitrust courts,²⁰ a milder approach speaks to the attractions of Europe’s telecommunications regime.²¹

Here is a brief description of how the scheme created by the European Directives works.²² The European Commission was given the task of defining the relevant telecommunications markets in existence. Next, the “National Regulatory Authority,” or telecom regulator, in each market uses economic methods to assess whether “Significant Market Power” exists in any of the markets within its borders. If it does, the regulator is to impose one of various *ex ante* remedies, such as a duty to offer wholesale unbundling, price controls, or anti-discrimination rules. If, conversely, the regulator does not find market power, it is obliged to get rid of any extant rules for that market.

The European proposals put an important concept front and center, also pushed by American academics: that telecommunications law presents economic questions identical or similar to those faced in antitrust

19. Sicker, *supra* note 7, at 10 (“[W]e should not confuse the technical implementation of the Internet with the policy goals of a layered model. What we should take away from the protocol design is its design philosophy; including things like decentralized control, autonomy, efficiency, etc.”).

20. See PETER HUBER, *LAW & DISORDER IN CYBERSPACE* 3 (1997).

21. See J. Scott Marcus, *The Potential Relevance to the United States of the European Union’s Newly Adopted Regulatory Framework for Telecommunications* (FCC Office of Plans & Policy, Working Paper No. 36, 2002).

22. See Council Directive 2002/19, 2002 O.J. (L 108) 19 (EC); Council Directive 2002/20, 2002 O.J. (L 108) 20 (EC).

regulation.²³ The economic problems in telecommunications, in this view, are caused by discrete types of market failure—like network effects, economies of scale, and monopoly leveraging. Telecommunications law should therefore premise its actions on the same criteria as modern antitrust, where findings of market power play the starring role.

As with the layered proposals, there is much to praise in the European approach. The European approach represents the world's most ambitious effort to make telecommunications law generalized to the problems of 21st century technology.²⁴ Additionally, if the Europeans are right that most, but not all, agree that telecommunications law faces problems similar to antitrust, one may ask if there is any real disagreement.

There are two grounds for disagreement. The first criticism of European-style reform may not be so much a substantive disagreement as a procedural one. In a world of perfect information, all regulatory action would be premised on exact findings of market power. Furthermore, in such a world, market players would be able to predict in advance that such action would be forthcoming. However, in this world and in the United States, gathering information with respect to market power means time, errors, and some manner of adversarial process. The result may be unduly weak protection for potential market entrants and their investors.²⁵

Some support for this contention comes from the experience with the American branch of market-power dependent telecommunication law, which is better known as the antitrust law. While writers like Peter Huber have argued that antitrust courts would be an appropriate replacement for the FCC,²⁶ no one doubts that antitrust action is expensive and slow. James Speta writes of the most aggressive and extensive use of antitrust in telecommunications law history, against the AT&T monopoly:

MCI's litigation against AT&T, which was based upon serious and repetitive anticompetitive activities by AT&T, did not by itself result in any substantial change in AT&T's behavior. AT&T did agree to divest itself of the Bell companies as the result of government antitrust litigation, but that result came eight years after the government instituted the case and thirty-three years after the government originally tried by antitrust means to control AT&T's anti-competitive be-

23. See JONATHAN E. NUECHTERLEIN & PHILIP J. WEISER, *DIGITAL CROSSROADS* 1 (2004) (discussing use of antitrust and telecommunications law for similar purposes); see also Tim Wu, *Copyright's Communications Policy*, 103 MICH. L. REV. 278, 286 n.24 (2005).

24. Some critics argue that giving telecommunications law an antitrust orientation neglects other, non-qualitative values.

25. See Segal & Whinston, *supra* note 3.

26. HUBER, *supra* note 20.

havior.²⁷

In the language of American telecommunications policy, invoking anti-trust as an alternative is often a polite code word for doing nothing. If the European approach transported to American soil means anything like an antitrust process, the results could be too ineffective to serve any goal of communications policy, other than doing nothing. In particular, if significant barriers to entry are blocking competitive entry, a long antitrust-style process may be cold comfort to investors in market entrants.

But even if antitrust principles could be affected there is a second criticism of the European approach that is more fundamental. The focus on market power may neglect some of the social benefits of general purpose networks, independent of market power concerns. Stated in economic terms, while market power can create one form of market failure in telecommunications, there is another problem: externality problems. Non-discriminatory networks may be valuable and worth preserving even in the absence of significant market power because of the independent economic value as a source of spillovers for other activities. Public infrastructures, in this view, are a collective good that some minimal government action preserves.²⁸ This point will be developed further in what follows, and in the discussion of common carriage.

To be fair, European telecommunications law, but not necessarily U.S. antitrust practice, is partially sensitive to both of these criticisms. While often presented as here, as anchored to findings of market power, part of the European law (the Access Directive) requires “operators of public communications networks” to interconnect regardless of any findings of market power.²⁹ In addition, as opposed to the lengthy ex post antitrust process used in the United States, the European approach imposes ex-ante regulations on firms based on findings of market power without evidence of abuse of their market position.

* * *

The discrimination-centered approach elaborated in the remainder of this paper borrows heavily from the two proposals just described. While premised on the same economic principles that motivate the European proposals, it advocates a discrimination system that is premised on an implicit two-layer model. It also draws strongly on and further devel-

27. Speta, *supra* note 4, at 277.

28. A related argument is made by Barbara van Schewick, who points out that the fact that a network operator faces competition in its primary market may make it want to capture additional exclusive revenue in complementary markets. Barbara van Schewick, *Towards an Economic Framework for Network Neutrality Regulation*, 5 J. ON TELECOMM. & HIGH TECH. L. (forthcoming 2007), available at <http://ssrn.com/abstract=812991>.

29. Council Directive 2002/20, art. 4, 2002 O.J. (L 108) 20 (EC).

ops earlier proposals by Eli Noam and James Speta, both of whom have advocated some form of new anti-discrimination norm in different ways.³⁰ The point of the one-rule proposal is to try to capture some of the advantages of the horizontal regulatory models in a workable, practicable, and simple fashion.

II. ANTI-DISCRIMINATION RULES

It might be useful to return to the subject of the introduction and discuss what the purpose of telecommunications policy should be in the first place, and how that connects to the law itself.

I see the regulators' task as trying, as best as possible, to foster the vibrancy and health of the part of the nation's public infrastructure called its information networks. Information networks make possible a large range of activities—commercial, such as corporate meetings; political, such as news distribution; and purely personal; such as the planning of birthday parties and happy hours. Networks also catalyze innovation, both in the network itself, and in activities that depend on the transport network, from voice communications through online travel agents. A chief goal of telecommunications policy, in this view, is to maximize the value of the information networks as a catalyst for all these activities.

Both network ideology and government policies can affect how valuable the networks are as a catalyst or input into other activities. The more general-purpose the network is, the more generally valuable the network is. That is the essence of the infrastructure theory of networks, and also what motivated the “end-to-end” principle of network design. The essence of the end-to-end principle is that the most valuable network is that which supports the broadest number of uses.

The analogy to urban planning is obvious but worth repeating. A street and a sidewalk have a value that in part derives from their multiplicity of uses. Stores on Fifth Avenue can sell hats, coats, toys and coffee. The urban planner doesn't need to decide the use, and does better by not deciding.³¹ A dedicated network is like a street designed from the outset to sell, say, top hats. Surely the dedicated network, in the beginning, is not useless, but less useful than perhaps it could be. It is also a street that could face a serious problem when top hats go out of fashion.

If the goal is to maximize the value of the information networks as a catalyst for commercial, political, and personal activities, it would be useful to speak of the dangers that face the telecommunications regulator. The first is over planning, both public and private. Government has

30. See Speta, *supra* note 4; Noam, *infra* note 60.

31. Cf. JANE JACOBS, THE DEATH AND LIFE OF GREAT AMERICAN CITIES 222 (1961) (“Intricate minglings of different uses in cities are not a form of chaos. On the contrary, they represent a complex and highly developed form of order.”).

sometimes had success planning the future, usually by funding scientists who then build what they think the future should be (the story of the internet's origins.³²) But unless they give money to scientists, regulators' and legislative efforts to plan the future, influenced by what today's powers think that future should be, have a storied history of failure. In the 1960s television broadcasters managed to convince the FCC that UHF was the technology of the future, cable a trifle and threat to localism. That was then, yet today the FCC and Congress remain officially committed to a planned second-coming of broadcast television, akin to the resurrection of UHF, known as broadcast digital television. It is scheduled to arrive sometime in the 2010s and seems likely to be dead on arrival. Were it to succeed, billions of dollars in public money will have been spent to make televisions slightly larger. Whatever the result, far more money has been and will be spent on the project of enlarging televisions than on something called the internet and the technology of broadband.

Such tales may give rise to libertarian twitching and thoughts of total deregulation, but the flip-side of government inaction is no less serious. The non-hypothetical danger is that private network owners will individually destroy the collective value of the public networks. Of course, the value of activities that depend on a network also make the network valuable, leading to a natural incentive to support a network with varied and valuable uses.³³ However, we also know network owners may have good reason to deviate from what is in the collective interest. Consider two persistent reasons. First, it is no secret or surprise that incumbent firms act first and foremost to preserve their existing investments and to nullify competitive threats. To the extent activities facilitated by the network challenge the incumbent firm's existing investments, firms try to block them. This is particularly a threat to dramatic innovation that threatens to take over vested interests. Stated otherwise, no firm plans on its own death, even if the downfall of the firm is actually in the public interest.

Second, firms cannot internalize or capture all of the public benefits of an infrastructure they own, particularly those benefits that are hard to commodify. As Brett Frischman and Mark Lemley observe, infrastructures are a form of good that tend to create spillovers.³⁴ Consider urban planning again. How possibly could the owner of a sidewalk capture the

32. See generally KATIE HAFNER & MATTHEW LYON, *WHERE WIZARDS STAY UP LATE* (1996).

33. This point is explained carefully in Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 HARV. J.L. & TECH. 85 (2003).

34. Mark A. Lemley & Brett M. Frischmann, *Spillovers* (Stanford Law & Econ. Olin Working Paper No. 321, April 2006), available at <http://ssrn.com/abstract=898881>.

value of conversations held walking along, or thoughts that ramble, or the joys of window-shopping? The problem is that incumbent firms may make sad efforts to capture some of the value of what their infrastructure inspires. In the process of trying to capture for themselves more of the public value of what transpires on their network, firms can lessen or destroy the value of the network as a catalyst for other activities. This is the great tragedy of badly executed “value-added” network models. By trying to extract side payments for services usually otherwise available and better provided elsewhere, the risk is diminishing the real value of the network.

The challenge in dealing with the previously described behavior is the usual pitfall of unintended consequences. We have seen that so many seemingly well-motivated regulations become twisted to serve new and perverse ends. In some way, they usually end up guaranteeing some stable income to an incumbent, and/or form a barrier either to new networks, or new innovations that depend on access to networks. In other words, one of the gravest perils in telecommunications law is the law itself and its capacity to entrench.

These fears on both sides may make telecommunications policy seem nearly impossible. Additionally, there are problems caused by raw market power that go beyond the scope of this discussion. The following is designed to minimize the various evils identified above. As detailed below, the anti-discrimination norms have historically been among the most effective and least involved of available government remedies. Moreover, an anti-discrimination rule that creates strong ex-ante norms can be an effective measure for preventing private suffocation of what would otherwise be a vibrant information network. It can preserve the health of separate markets that rely on the network as an input, so that the network owner does not become as bad a centralized planner as the government.

A. The Use and Abuse of Anti-Discrimination Rules

There are many excellent histories of American telecommunications policy available, and what follows is not a contribution. Instead the following emphasizes two points. First, telecommunications regulators have been dealing with discrimination problems for a very long time under a variety of labels like “common carriage,” “interconnection,” and will likely continue to do so. The second point being the techniques used to combat perceived discrimination problems are varied, and the success and failure of measures differ. While it is difficult to be conclusive in drawing from history presented, the following presents several examples

that help frame how discrimination problems arise.³⁵

The examples discussed here have several features in common. Consumers have an interest in using their network in a given way, either to reach someone on another network, to attach a given device, or use a given service reachable over the network. Sometimes, though the difference can be subtle, companies are interested in reaching consumers with a given service or content. In response and for a variety of reasons, the carrier blocks or makes difficult either the consumer or the company's access to consumers, often leading to some kind of government action.

* * *

The United States' first electric information network was the telegraph, and with it came a paradigmatic story of network discrimination that can serve as a model for much that has followed. The electric telegraph was developed by British and American inventors, including Samuel Morse, in the late 1830s. In the United States, the first deployments were financed and owned by the federal government, rather like the early Internet. By 1866 a private company, Western Union, through acquiring rivals had consolidated a near-complete monopoly position in telegraph service.³⁶

One of the most important early customers for the telegraph was the press. The telegraph made it possible to find out, faster than through land mail, what was happening in other parts of the country. Access to a telegraph network was, for a newspaper, an obvious advantage. After consolidating its monopoly in 1866, Western Union made an exclusive deal with the Associated Press, and granted AP preferential access to its network. In exchange, AP members made the startling promise not to "encourage or support any opposition or competing Telegraph Company." Western Union's actions were a classic, and perhaps defining example of network discrimination.

In this instance we can clearly see the problem presented by network discrimination. Western Union may have helped itself, but the more serious problem was the distortion of competition among newspapers. As telecommunications historian Paul Starr writes, "Western Union had exclusive contracts with the railroads; AP had exclusive contracts with Western Union; and individual newspapers had exclusive

35. For more detailed historical treatments, see Glen O. Robinson, *The Federal Communications Act: An Essay on Origins and Regulatory Purpose*, in A LEGISLATIVE HISTORY OF THE COMMUNICATIONS ACT OF 1934 (Max D. Paglin ed., 1989); Kevin Werbach, *The Federal Computer Commission*, 84 N.C. L. REV. 1 (2005); PAUL STARR, *THE CREATION OF THE MEDIA* (2005).

36. For more on the early history of the telegraph, see ROBERT L. THOMPSON, *WIRING A CONTINENT: THE HISTORY OF THE TELEGRAPH INDUSTRY IN THE UNITED STATES 1832-66* (1947); see also DANIEL J. CZITROM, *MEDIA AND THE AMERICAN MIND* 1 (1982).

contracts with AP. These linkages made it difficult for rival news services to break in.”³⁷ Another problem is that while Western Union’s telegraph might have been used for a variety of newspaper types that might have flourished, all was sacrificed to the AP model.

In his work, Starr contrasts the difference between the American telegraph system and the British telegraph, which was run like the postal system, on a neutral basis. “Britain’s postal telegraph helped equalize power between the provincial and metropolitan press, whereas Western Union helped stronger papers dominate weaker ones.”³⁸ The influence of the AP monopoly was to have a lasting and well documented effect on national politics. Historian Menahem Blondheim has carefully documented AP’s use of its monopoly to influence politics in the late 19th century, and much of it relies on AP’s preferential access to the telegraph network.³⁹ AP, sympathetic to Hayes and the Republican party, simply flooded the telegraph wires with Republican campaign materials, and refused to carry most stories coming from the Democratic party.⁴⁰

Western Union’s discriminatory practices were eventually remedied through the device of “common carriage.” In 1888, Congress gave the Interstate Commerce Commission the power to regulate subsidized telegraph lines, and in 1910, Congress declared telegraph companies to be common carriers. The “common carriage” concept was preserved in the 1934 Communications Act and still forms the basis for the regulation of telephone carriers, and thus necessitates a close look.

As an anti-discrimination regime, common-carriage is important both historically and conceptually. The concept, as refined in the 19th century, can minimally be described as requiring “businesses affected with the public interest” to offer their services to all without discrimination, at just and reasonable rates, in exchange for certain immunities.

The questions remain who falls within the common-law definition of common-law carriage and what makes a business affected with the public interest? The Supreme Court struggled for decades in the late 19th and early 20th century with these difficult questions in the law of common carriage. Common-carriers were historically defined by their economic function: the carriage of goods or information, open to the public, without substantial transformation of those goods or information. Common carriage is premised on the idea, usually traced to Lord Hale, that special public duties must attend certain types of private business that provided essential social functions, like transportation.

A key to understanding common carriage is that the early defini-

37. STARR, *supra* note 35, at 184.

38. *Id.*

39. *See* MENAHEM BLONDHEIM, *NEWS OVER THE WIRES 1844-97* (1994).

40. *Id.*

tions had little to do with market power. Instead, the definition was strictly based on the type of business in question. In the words of a 19th century treatise, a common carrier is a person who “exercise[s] the business of carrying as a ‘public employment,’ and must undertake to carry goods for all persons indiscriminately; and hold himself out as ready to engage in the transportation of goods for hire as a business, and not as a casual occupation pro hac vice.”⁴¹ In other words, it is the role the carrier plays in the economy that necessitates duties of common carriage, not necessarily the potential for abuse of market power.

These conclusions are fortified by the work of Professor Thomas Nachbar, who has carefully studied the historic patterns of common carriage rulings, and tried to understand which businesses were given common carriage duties.⁴² He concluded that factors like necessity, the “networked” nature of the business, and market power have always played a role. Yet the clearest point of commonality is affiliation with transportation or communications where the inherent public interest in transportation and communications infrastructure seems to make all the difference.

* * *

The second major discrimination story comes from the early telephone networks. By the early part of the 20th century, AT&T was owner of many local exchange carriers and also the nation’s finest long-distance network. AT&T did not, as Western Union had, discriminate so obviously between what kind of end-users might be allowed to use its basic services. AT&T practiced a different form of discrimination. Its competitive strategy was to refuse to allow non-affiliated carriers to connect to its long-distance network, so as to starve local rivals out of existence.⁴³

AT&T’s behavior posed a different puzzle of network discrimination. Consumers on given networks wanted to reach people on other telephone networks but needed Bell’s interconnection to do so, which Bell withheld. That behavior and an aggressive acquisition program which led, among other things, it to owning Western Union, attracted the attention of the Justice Department. Eventually, in a 1913 letter, AT&T agreed to interconnect its long-distance services with independent telephone carriers, a promise now known as the Kingsbury Commitment.⁴⁴

41. THOMPSON CHITTY & LEOFRIC TEMPLE, A PRACTICAL TREATISE ON THE LAW OF CARRIERS OF GOODS AND PASSENGERS BY LAND, INLAND NAVIGATION, AND IN SHIPS 14-15 (1857).

42. See Thomas Nachbar, Open Access (2006) (on file with author).

43. See generally Adam Candeub, *Network Interconnection and Takings*, 54 SYRACUSE L. REV. 369 (2004).

44. For a discussion of the Kingsbury Commitment, see Peter Huber, *Loose Ends*, 4

As an anti-discrimination remedy, the Kingsbury Commitment was partial. It blocked one form of discrimination, long-distance to local, while leaving AT&T free to engage in other forms. At the local-local level, AT&T never agreed to connect to independent local carriers. It also never agreed to interconnect either its long distance or local networks with competing long-distance carriers. Consequently, as many have documented, the Kingsbury Commitment, along with many other strategies, ultimately lead to AT&T consolidating its position in American telephone service as a regulated monopoly.

During the long period of “pure” AT&T monopoly, from 1913 through 1968, telephone service was subject to the common-law anti-discrimination duties of common-carriage discussed above. The duties were codified in the 1934 Communications Act.⁴⁵ The overall system for regulating the AT&T monopoly has been heavily criticized. Indeed, criticism of the common-carriage model is the starting point for much contemporary telecommunications writing. The main point is that the FCC’s system largely protected AT&T from any serious competition. Yet it is hard to see how it might have been the anti-discrimination duties of common carriage alone, as opposed to other incidents of the law, that are to blame. The anti-discrimination duties were only part of the regulatory regime that AT&T was subject to. AT&T was and still is subject to rate-setting, universal service subsidies, and various other duties. More importantly, potential entrants required FCC permission to begin offering phone service. Given the threat of such entry, AT&T would invariably complain that entrants would “cherry-pick” profitable services and destroy the system of subsidies built into in the universal service system.⁴⁶

The efforts of AT&T to block nearly any kind of market entrant led to a third story of discrimination in telecommunications, the well-known story of network attachments. In the 1950s and 1960s, consumers began to want the freedom to connect devices to their telephone lines. At first, telephone-accessories, and later on, telephones made by companies other than Bell, and later answering machines, fax machines, and modems. Since the FCC at first blocked even the attachment of a simple rubber cup to a telephone, it fell to the D.C. Circuit to suggest a non-discrimination rule for network attachments. It did so in the *Hush-a-Phone* decision, creating the following rule: a telephone subscriber has a

MEDIA L. & POL’Y 1, 1-2 (1995).

45. The Act states “It shall be unlawful for any common carrier to make any unjust or unreasonable discrimination in charges, practices, classifications, regulations, facilities or services . . . or give any undue or unreasonable preference or advantage to any particular person, class or persons, or locality, or to subject any particular person, class of persons, or locality to any undue or unreasonable prejudice or disadvantage.” 47 U.S.C. § 202(a) (1934).

46. See CHARLES KENNEDY, AN INTRODUCTION TO U.S. TELECOMMUNICATIONS LAW (2d ed. 2001).

“right reasonably to use his telephone in ways which are privately beneficial without being publicly detrimental.”⁴⁷

While *Hush-a-Phone* was decided in 1956, it was not until 1981 that the FCC completed the deregulation of consumer network attachments. Along the way, it announced the *Carterfone* principle, leading to the Part 68 Rules, which let users connect whatever they wanted so long as it created no harm to the network or other users.⁴⁸ In 1981, in the *Computer II* decision, the FCC enacted a strong non-discrimination rule for consumer network equipment, and even blocked the regional Bell operating companies from offering such equipment other than through an independent subsidiary.

The creation of an anti-discrimination regime for consumer equipment is widely seen as a great success, and is arguably a model for the Telecommunications law generally. FCC economists Jay M. Atkinson and Christopher C. Barnekov describe the impact of banning discrimination against competing consumer equipment providers:

It is difficult to overestimate the impact of Computer II's decision to give customers the right to purchase CPE [Consumer Premises Equipment] outright, rather than only to buy discrete CPE services from the LEC [Local Exchange Carrier]. We will not attempt to prove this assertion here, but we believe that the recent development of the Internet, and of much of Information Technology, would not have happened if CPE (for example, modems) were still marketed only by LECs. The blossoming of the CPE market into a highly competitive industry offering a wide variety of choice at low cost and rapid technological advances, and enabling previously unknown possibilities such as the increasingly numerous Internet services, is arguably a direct consequence of the deregulation of CPE.⁴⁹

The most prominent feature of the CPE rule is that it completely separated network attachments, as a market, from telephone service and required AT&T to allow any safe usage of its network.

The next example of how network discrimination can arise is the “must-carry” rules. Traditionally, broadcasters originated and cable companies carried television content. In the early days of television, cable channels fought hard for the right to carry broadcast content of ABC, CBS, etc., without permission. Then by the 1980s the tables turned, and

47. *Hush-A-Phone Corp. v. United States*, 238 F.2d 266, 268 (D.C. Cir. 1956).

48. Use of the Carterfone Device in Message Toll Telephone Service, *Decision*, 13 F.C.C.2d 420 (1968), *reconsideration denied*, *Memorandum Opinion & Order*, 14 F.C.C.2d 571 (1968). See also Werbach, *supra* note 8.

49. See Jay Atkinson & Christopher Barnekov, *A Competitively Neutral Approach to Network Interconnection 3* (Office of Plans & Policy, FCC, Working Paper No. 34, 2000), available at http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp34.pdf.

Broadcasters fought to require cable operators to carry its content. While there have been many versions of must-carry requirements, the clearest were the rules in the 1992 Cable Act, which required large cable operators to devote channels to essentially every broadcast station operating in the same area as the cable operator.⁵⁰

Must-carry has some similarities and some differences to the other regimes considered here. Broadcast stations argued that they were seeking access to their customers through the cable network. They accused the cable operators of discriminating against local stations in favor of their own, affiliated programmers. The broadcasters went so far as to write this as a Congressional finding in the Act. As the Act states, “cable operators have the incentive and ability to favor their affiliated programmers. This could make it more difficult for noncable-affiliated programmers to secure carriage on cable systems.”⁵¹

Many see the must-carry laws as simply a form of industrial protection for an uncompetitive set of UHF stations. However, were the must-carry laws in any way distinguishable in principle from some of the other non-discrimination rules discussed here? Arguably, yes. The purpose of the law was at no point actually linked to consumer demand, as opposed to the needs of a competing industry. As the Supreme Court wrote, “Congress found that the physical characteristics of cable transmission, compounded by the increasing concentration of economic power in the cable industry, are endangering the ability of over-the-air broadcast television stations to compete for a viewing audience and thus for necessary operating revenues. Congress determined that regulation of the market for video programming was necessary to correct this competitive imbalance.”⁵² In other words, as the Supreme Court suggested, Congress’s primary interest was saving marginal broadcasters from cable. In the stories of the telegraph, the telephone, and later the internet, there is no particular need to discriminate as among users or content providers by the nature of the service itself. Cable service, at least in the 1980s, was still limited in its number of channels and the law was not preserving competition between competing content providers, but giving one class of content providers a permanent advantage.

The last anti-discrimination story is from the early days of broadband regulation. In the late 1990s and early 2000s, consumers began to attach new devices to their internet connections, and use internet services that were not in existence in the mid-1990s. The reaction of many broadband operators was to impose various contractual limits on the activities of their subscribers. In the best known examples, they disciplined

50. 47 U.S.C. §§ 534, 535 (1992).

51. 47 U.S.C. § 521 (1992).

52. *Turner Broad. Sys. v. FCC*, 512 U.S. 622, 632-33 (1994).

users of Virtual Private Networks. AT&T, as a cable operator, warned users that using a Wi-Fi service for home-networking constituted “theft of service” and a federal crime.⁵³

These early instances of broadband discrimination prompted a remedy known as the “network neutrality” regime. FCC Chairman Michael Powell in 2004 first announced the relevant non-discrimination rules, which he called the principles of “Network Freedom.”⁵⁴ As he explained later, “My approach is like this: we give companies a lot of room to do what they want. But they need to know, when they break the rules, we’re going to really slam them.”⁵⁵ Under pressure from the FCC and consumer groups, the broadband operators generally relaxed their most glaring limits. Later, in the spring of 2005, in the *Madison River* case, the FCC for the first time showed a willingness to enforce its network neutrality rules, fining a local telephone carrier for blocking VoIP service. As then-FCC Chairman Michael Powell stated, “The industry must adhere to certain consumer protection norms if the Internet is to remain an open platform for innovation.”⁵⁶

* * *

This very brief look at the history of non-discrimination rules in telecommunications makes clear the challenges and pitfalls of managing network discrimination. An anti-discrimination rule can become part of a larger scheme that is used to deter competitive entry, as in the regulation of AT&T. Purported anti-discrimination rules can be used as merely a form of industrial life-support, as in the must-carry episode. Yet doing nothing at all, as in the early days of the telegraph industry, can lead to serious anti-competitive behavior that distorts not only infrastructure competition, but the economic freedoms of the press.

Alternatively, anti-discrimination rules are essential to the health of telecommunications networks, yet must be used with great care. What follows in the last section is a discussion of what best practices in the administration of an anti-discrimination regime look like.

III. AN ANTI-DISCRIMINATION REGIME

A central challenge for an antidiscrimination-based system and a

53. See Wu, *infra* note 61, at n.57.

54. Powell’s discussion of “Internet freedom” focuses on users’ rights. The “freedoms” relevant here are (1) freedom to access content, (2) freedom to use applications, and (3) freedom to attach personal devices. See Michael K. Powell, *Preserving Internet Freedom: Guiding Principles for the Industry*, 3 J. ON TELECOMM. & HIGH TECH. L. 5, 12 (2004).

55. Michael K. Powell, Former Chairman, Federal Communications Commission, Comment at the Silicon Flatirons Conference: The Digital Broadband Migration (Feb. 14, 2005).

56. Jonathan Krim, *Phone Company Settles in Blocking of Internet Calls*, WASH. POST, Mar. 4, 2005, at E2.

central challenge of telecommunications policy is differentiating between “bad” and “justified” discrimination. Should leeway be given to network providers who want to “internalize complementary externalities,” or provide their own specialized services? Should a carrier be forced to serve all customers, or only those who can pay? How about treating customers differently based on their needs? Does there need to be a public/private distinction?

Given a general anti-discrimination norm, this section discusses several ways to approach the design of anti-discrimination system. The first focuses on the *type* of or category of discrimination, where the most relevant question is whether the discrimination in question implicates the neutrality of an important public infrastructure.

A. *Discrimination Type*

One approach is to categorize the types of discrimination problems that emerge. Network discrimination tends to fall into three categories: (1) between rival *transport infrastructures*, and (2) between *transport infrastructures* and *application services*, and (3) between rival *applications services*.

What follows discusses each type separately. However, the general point is that infrastructure-based discrimination should be suspect, including infrastructure discrimination that affects the market for applications.

1. Between Rival Transportation Services (interconnection)

Anti-discrimination remedies as between transport infrastructures are better known as “interconnection” requirements. They have a central place in the history of American telephone regulation, including but not limited to the Kingsbury Commitment, and later in both the 1934 Act’s interconnection requirement (now §201) and the various orders related to the 1984 breakup of the AT&T system. As discussed earlier, the European system continues to retain broad interconnection requirements.

The interconnection requirements are historically derived from common carriage rules, and the economic justification as a means of facilitating market entry is strong and well known.⁵⁷ Transportation infrastructures have well-known, unusual economics that lead to outcomes like natural monopolies, market oligopolies, and government programs like universal service and subsidization. The usual argument for interconnection is premised on network effects. The argument is that because a larger network is more valuable than a smaller one, without any duty to

57. See generally Speta, *supra* note 4, at 251.

interconnect, smaller carriers will have great difficulty entering the market. As James Speta argues, advocating a general interconnection duty for internet providers:

Where there are network effects, one manner of decreasing the barriers to entry is an interconnection technology or requirement. In this manner, new (and smaller) companies can connect to the incumbent's installed base. It is for this reason that communications law (from the 1934 Communications Act to and including the Telecommunications Act of 1996) has always included interconnection requirements. Without the ability for new companies to promise customers that they will also be able to place calls to and receive calls from subscribers of the incumbent telephone carriers, new entrants would never stand a chance.⁵⁸

As Speta argues in general, the economic case for transportation-level interconnection is strong. It suggests that the absence of an interconnection duty for physical networks other than the telephone network is a mistake. In other words, a foundation of minimal telecommunications regulation is the duty for all transport infrastructure providers to interconnect their networks.

2. Between Applications and Transport

The case for interconnection between transport infrastructures has traditionally been taken as the stronger and more obvious case. Many writers, along with the European Union, consider interconnection remedies an easy case but are more hesitant about policing discrimination as between transport infrastructures and service. This paper argues, to the contrary, that in the coming decades, anti-discrimination rules as between applications and transport services are the single greatest priority for the telecommunications law.

The main reason is this. Applications or "services" have long been closely bundled with given transport infrastructures. Their separation, however, by the design of the internet has led to an explosion of innovation and the creation of a range of new competitive markets for searches, online auctions, and many other services. The importance of anti-discrimination rules in this context is generally to protect the open market in applications services from the well-known distortions and oddities of the physical infrastructure market.

Stated differently, the prevention of the distortion of the applications market is central to making communications networks useful public infrastructures and platforms for innovation. The strongest track record

58. *Id.*

of innovation comes from the network edges, not the center. As previously discussed, one simple reason is simply numerical. Networks have hundreds of millions of users and potential innovations while the number of network owners is limited. Hence, most efforts to control the network from the center, however well intentioned, will intentionally or inadvertently block innovators at the edges. The second problem is that everyone will invariably make mistakes. However, mistakes made by the network centers can persist for decades, and stall the entire economy, while mistakes made by edge innovators simply mean another company dies. In short, telecommunications' central and most important anti-discrimination rule might be understood as the safeguarding of easy-entry service markets from infrastructure economics.

3. Between Applications

A third type of discrimination is between applications services. These problems arise on the internet. Some examples are problems between competing email, instant message, or "talk" services. These problems are conceptually similar to transportation level interconnection. The problems are problems of "horizontal" interconnection as opposed to the "vertical" problems that are seen as between applications and transport.

As with interconnection between transportation infrastructures, we face a familiar problem. Given the network tendency to converge toward a single standard, what kind of government action is necessary? I suggest that application-layer discrimination is presumptively less of a problem or a suspect class than the previous two categories. The reasoning simply derives from examinations of conditions for market entry. So long as entry is not blocked by actors at the infrastructure layer, better technologies ought to be capable of supplanting inferior ones, even given network effects. Factually, this is the track record of network services, various generations of talk programs have entered the market, despite the supposed dominance of AOL or other chat programs.

B. Zoning Discrimination—Private Public Distinctions

A common and useful approach in running an anti-discrimination system is to create zones where discrimination is allowed and disallowed. As discussed above, common carriage law was traditionally occupied with the distinction between "public" business, and the rest, which were presumably "private." The same distinction is central to the anti-discrimination regime surrounding public accommodations in the

United States.⁵⁹ As the example, goes, if you operate a restaurant, you must serve customers of all races but you have no duty to invite the man on the street to a dinner party at your house. What discrimination duties attach in either case depends on the extent to which the carrier seeks the benefits of being a public accommodation or carrier.

This same distinction is of great utility for telecommunications regulators. The regulator might map out zones of non-discrimination. The inspiration for this position is a 1994 paper written by Professor Eli Noam. Noam suggested that reform of telecommunications might center on the principle of “neutral interconnection.” The idea is to offer carriers a choice: be a fully private carrier, and discriminate as you like, or interconnect with other carriers, and become subject to anti-discrimination requirements. As Noam wrote:

A carrier can elect to be private by running its own self-contained infrastructure, and having full control over its content, use and access. But if it interconnects into other networks and accepts transmission traffic from them, it cannot pick some bits over other bits. This means that while a private carrier can be selective in its direct customers, whether they are end-users or content providers, it cannot be selective in what it accepts from another interconnected carrier. . . . All of common carriages’ free-flow, goals of low transaction cost, and no-liability goals are thus preserved by a system of (a) non-exclusive interconnection (b) neutral traffic acceptance.⁶⁰

Under Noam’s approach, the telecommunications world would be divided into zones of discrimination. He calls for something similar to the absolutist position on public networks, but allows total freedom to discriminate in private zones.

This distinction between public and private networks is useful. It recognizes that private, non-connected networks may derive much value from their discriminatory nature. At the same time, it sees the public networks as necessarily more neutral, reflecting society’s greater interests in that respect. One way to implement the public/private distinction on modern information networks is called “police what you own.”⁶¹ This approach distinguishes between discrimination that is premised on *local* criteria versus *internetwork* criteria. In other words, network providers of all types have the freedom to discriminate on their local network on the basis of criteria that are entirely under the control of the lo-

59. See, e.g., 42 U.S.C. § 12181(6)-(7) (2000).

60. Eli Noam, *Beyond Liberalization II: The Impending Doom of Common Carriage*, 18 TELECOMM. POL’Y 435, 452 (1994).

61. See Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141, 167-71 (2003).

cal network. For example, in the broadband context, a provider may decide what they want to offer such as different types of bandwidth, or even prioritized access to content on their own network. However, once a provider makes that decision they may never discriminate on the basis of internetwork criteria or content and applications from other networks.

C. *Justifications*

Discrimination regimes also may differ on the degree to which they accept justifications for deviations from neutrality. The analogy to anti-discrimination rules in employment should be obvious. Under Title VII, employers are barred from discrimination unless there exist grounds for discrimination—a “bona fide occupational qualification” in the jargon of employment law.⁶² The question is, what should the allowable justifications be in a telecommunications anti-discrimination regime?

1. Absolute Neutrality

The absolutist position argues that neutral public carriage should be taken as an absolute principle that should never be susceptible to case-by-case justification. The absolutist position begins from a core case of the internet and the problem of “bit discrimination.” An absolutist would suggest that carriers must, absent the strongest of compelling reasons, treat all bits, all ones and zeros, alike. Data is data and carriers must offer neutral carriage. Carriers should make no discrimination in their carriage on the basis of origin or destination, application type, content, or anything else.

In its strongest forms, for example, the absolutist position insists that Internet service providers should not block known spam sites, based on the proposition that control of spam should be handled by the network ends. It also goes without saying that the absolutist position takes a dim view of a carriers’ desire to prioritize certain forms of service over others.

Behind the absolutist position is a strong faith in the importance of neutral public infrastructures as a social good that promotes economic growth and decentralized innovation. A main problem with the absolutist position is that it needs a clear rule on scope. Some problematic questions arise such as, can a carrier practice customer discrimination and discrimination between customers on the basis of ability to pay? Can it practice network discrimination and have no connection whatsoever to, say, the internet? The absolute position must be coupled to clear zoning of allowable discrimination, as in the public/private distinction discussed

62. 29 U.S.C. § 623 (f)(1) (2000).

above, to avoid absurd results.

2. Grounds

A second approach suggests that carrier's discrimination as between content or network points that consumers want to reach is generally illegal, subject to various categorical exceptions. The difference between this approach and the absolutist approach is that it accepts that discrimination may be good in some instances and bad in others. It seeks the development of network discrimination norms that distinguish between the two.

When proposals vary, the bases of justified discrimination are usually two:

1. Prevention of public harms;
2. The provisioning of services for which discrimination is necessary.

As an example, an early version of a House's Draft 2005 Telecom Reform bill included a ban on discrimination that nonetheless allowed carriers to take measures to (inter alia):

1. Protect the security and reliability of its network and broadband Internet transmission services; or
2. Prevent theft of [Internet services] or other unlawful conduct; or
3. Carry or offer a broadband video service or any other service that provides enhanced quality of service to subscribers through the [Internet] provider's utilization of network and routing management or customized hardware, except that such carrying or offering of such services may not block, or unreasonably impair or interfere with, the offering of, access to, or the use of any lawful content, application, or service provided over the Internet may not unreasonably restrict the right of subscribers under subsection to connect and use devices.

While absolutists challenge discrimination even when intended to fight public harms like discrimination against persistent spammers on the internet, the first ground tends to be less controversial. More controversial is discrimination practiced for the purpose of providing services. For example, as discussed above, cable operators currently discriminate between their own video services and the data they carry, favoring the former over the latter to deliver a high quality signal. The various plans for fiber-based television services contemplate reserving wavelengths for

television services.

The argument in favor of allowing such discrimination is simply this: but for the discrimination, a publicly attractive service will not or cannot be offered. Furthermore, but for permission to reserve a wavelength for television alone, telephony carriers won't be in a position to offer television services.

As absolutists point out, the danger is that the exception can quickly swallow the rule. A carrier may begin offering so many "special" services that its service competitors on the public internet suffer by comparison, rather than merit. Moreover, absolutists insist, the services in question can in fact be provided over a public, non-discriminatory channel. One reason a carrier might want to offer television service over a reserved wavelength is to give themselves a means to prevent others from developing effective, competitive services.

3. Like Treatment

A third approach focuses on the concept of "like treatment," a concept central to the anti-discrimination rules used in the international trading system. In the international trading system, as in telecommunications, the premise is that distortionary forms of discrimination are principally those which operate on the basis of *identity*. In trade, if a country bans tomatoes from Italy but not from Spain, the result is a distortion of competition in the tomato market. For that reason, the trading system generally bars country from discriminatory treatment of "like products."

In the telecommunications context, the premise is that treating information from one firm or carrier any differently than from another carrier based only on the identity of the carrier will similarly distort the production market for that information. An inefficient provider may dominate the market not because of a superior product but because of preferential access to the network.

Interestingly this approach continues to allow *some* forms of discrimination on the network. It mandates, however, that the discrimination undertaken must be related to the content in question, and not the source of the information. For example, an internet carrier might decide to speed up the delivery of all video packets on the network, a difference in treatment driven by the differences in the underlying information type. But what the carrier may not do under this approach is to choose favorites, to treat similarly situated packets differently.

A sample of language embodying this approach, as applied to a network carrier, looks as follows: "A carrier may prioritize content, applications, or services within the operator's networks based only on the

type of content, applications, or services and the level of service purchased by the user, without charge for such prioritization.”

D. Anti-Discrimination Remedies

Any anti-discrimination system needs a system of remedies. Here there is an important and basic theoretical distinction between negative and positive anti-discrimination rules. A negative rule announces that discrimination is illegal and seeks to punish identified episodes of discrimination on a case-by-case basis. A positive rule, conversely, identifies likely areas where discrimination will be a problem, and creates affirmative legal duties that are intended to remedy either past or the likelihood of future discrimination.

While there is great debate over this matter in other contexts, few can deny that enforcing a negative prohibition puts the government in its more familiar and easier position of forbidding bad behavior instead of trying to compel good behavior. As Charles Fried put the point in another context, “[d]iscrimination . . . should be stamped out whenever it occurs. This, like all the most stringent injunctions of morality, is a negative—not a positive—duty. ‘Thou shall not kill’ is an injunction at once more absolute, more definite, and more readily enforced than ‘Love your neighbor as yourself.’”⁶³

In the telecommunications context “love thy neighbor” policies are positive remedies; rules of compelled sharing, particularly those pursuant to government-set rates. As with a positive moral duty, it would be nice if incumbent phone companies would share their lines with entrants, but creating a duty to do so pursuant to government rates has by common consensus proved a disaster. The FCC’s role is decidedly simpler when it enforces “thou shall nots.” Whenever possible, the Congress and the FCC should rely on a negative anti-discrimination rule.

This distinction between a negative anti-discrimination rule and positive duties may seem slippery when the question of remedies is reached. If the government encounters a discrimination problem and seeks to cure it, it may issue injunctive orders and thereby converts the negative rule into a series of positive duties. But as we shall discuss in this section, administration of an anti-discrimination rule need not necessarily be so complex.

A typical remedy in a telecommunications context is an “interconnection remedy.” One carrier has a record or practice of refusing to connect with others like local telephone carriers, for example, that refuse to allow non-preferred long distance carriers to reach their customers. The government, to combat the discrimination, orders interconnection. The

63. CHARLES FRIED, *ORDER & LAW* 130 (1991).

long-standing assumption is that any such interconnection remedy will require a complex, government administered rate-setting scheme. The government, the argument goes, will have to set the prices for access to the carriers' customers, thereby converting any anti-discrimination rule into an affirmative price-setting schema.

These views are misleading. An anti-discrimination regime need not rely on government price-setting at all or, stated otherwise, it can rely on the setting of prices at zero which is not administratively difficult.⁶⁴ In the interconnection context, while there remains debate, economists have persuasively argued, under the mantra of "bill and keep," that an economically efficient interconnection scheme can be maintained without a system of government-set compensation for forced interconnection.⁶⁵ The premise is that both ends of any connection benefit from inter-connection and that the best system is to have carriers on both sides collect from their customers for the connection.

Imagine, circa 1980, that long distance firm MCI wants to be able to reach customers on Pacific Bell's local network. One government remedy is to set prices that MCI must pay Pacific Bell for the privilege of accessing its network. Another approach, however, is to simply order that Pac Bell accept MCI's calls, but give Pacific Bell the right to charge its own customers for the connection. In this alternative scheme the government sets the connection rule but is not directly involved in setting prices as between the two carriers.

There are of course arguments against bill and keep, and its efficiency depends on the degree of symmetry of traffic between providers. But the point here is not to advocate bill and keep, but rather reverse the presumption that anti-discrimination rules necessarily require complex price-setting schemes. Restated slightly, the anti-discrimination proposal here envisions as much freedom as possible from complex price setting schemes, coupled with serious injunctive remedies for violation of clear anti-discrimination rules.

IV. CHALLENGES

The main challenge to these proposals and in fact, a typical chal-

64. Gerald Brock points out, for example, that the deregulation of consumer network attachments can also be labeled an interconnection requirement with a price set at zero. See GERALD W. BROCK, *THE ECONOMICS OF INTERCONNECTION* (Teleport Communications Group 1995).

65. See Atkinson & Barnekov, *supra* note 49.; Patrick DeGraba, *Central Office Bill and Keep as a Unified Inter-Carrier Compensation Regime*, 19 YALE J. ON REG. 37, 40 (2002); Patrick DeGraba, *Efficient Intercarrier Compensation for Competing Networks When Customers Share the Value of a Call*, 12 J. ECON. & MGMT. STRATEGY 151, 207 (2003); for an good survey of the issues see Adam Candebub, *Network Interconnection and Takings*, 54 SYRACUSE L. REV. 369 (2004).

lenge to anti-discrimination or network neutrality rules is that the rules get the problem of market entry wrong. More particularly, the rules destroy the incentives for the market entry of transport providers. As the Congressional Research Service restates the argument “the physical network providers (local exchange carriers and cable system operators) argue that they will be discouraged from undertaking costly and risky broadband network build-outs and upgrades if their networks are subject to open access and/or non-discrimination requirements that might limit their ability to exploit vertical integration efficiencies or to maximize the return on (or even fully recoup) their investments.”⁶⁶

While loudly proclaimed, the salience of this argument against anti-discrimination rules is greatly overstated. There is little question that market entry in any infrastructure market is likely to be challenging. However, that is for reasons having little to do with anti-discrimination rules and everything to do with recovering the considerable costs of infrastructure deployments.

The initial investment necessary to provide any network connection has always been high and remains so today. Consequently, the only instances of successful market entry are either pursuant to government subsidy or in order to provide a radically innovative or improved product. Examples of the later include the original telephone networks, cable television, television broadcasting, and so on. In each instances, the entrant at the physical layer provided the consumer with access to a service that did not exist previously.

The challenge of entry to offer a marginally superior, or competing product are much more profound. It runs into the natural monopoly problem in infrastructure that is familiar across industries. But so too are its chief remedies (1) opening the market to as many potential entrants as possible, (2) government subsidization of one kind or another, and (3) direct government build-outs.

The challenge of encouraging infrastructure deployments is real. Additionally, it is true that an exemption from anti-discrimination rules may, on the margin, encourage some deployment. But the idea that the government’s best answer should be an exemption from anti-discrimination rules is bizarre. As stated in the premise, there are good reasons to believe that economic growth depends on open market entry. Why then, among the possible means of encouraging physical infrastructure deployment, allowing the blocking of market entry seems among the worst possible choices. The analogy here is to Ramsay pricing. Government should, when it must regulate, choose its least-distorting of means. Encouraging deployment by allowing operators to block applica-

66. CHARLES B. GOLDFARB, CONGRESSIONAL RESEARCH SERVICE, TELECOMMUNICATIONS ACT: COMPETITION, INNOVATION, AND REFORM 7 (Aug. 12, 2005).

tions seems among the most distortionary choices available.

It is also highly unclear whether discrimination is, in fact, a profitable long-term policy, and so allowing it as a form of subsidy may fail. It is hard to see clearly that the potential revenues that might stem from being allowed to block customers from applications will be enough to encourage companies to invest in the cost of infrastructure deployment absent any other prospect of profit. Instead, it seems that if government wants to promote the construction of new infrastructure, it should do so directly, either by providing direct subsidies, or by doing so itself.

In other respects, the anti-discrimination rules may also promote transport layer market entry. Some anti-discrimination rules protect transport entrants who are protected from horizontal discrimination; that is to say, require physical interconnection with other transport providers. Second, while not yet seen, an *ex ante* rule may block discrimination practiced by powerful application providers. In other words, the transport layer entrant, as much as anyone else, has reason to want a law that prevents blocking market entry.

CONCLUSION

One way of understanding the communications law is to see it as preoccupied with two main problems: allocating rights, and managing discrimination. The problem of allocating rights, as in spectrum, cable franchising, and other areas, hasn't gone away altogether, but is a diminishing and increasingly hard to justify part of the telecommunications laws. Conversely, the other side of the law, managing problems of discrimination, seems unlikely to go away now, or ever.

Given these developments, this paper presents telecommunications law with a challenge. How much of the present Telecommunications Act's objectives might be accomplished with a focus on a central anti-discrimination rule? The one-rule model provides one answer.

MISTRUST-BASED DIGITAL RIGHTS MANAGEMENT

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INTRODUCTION

Consider this hypothetical: You buy a music CD and pop it into your computer. Before you can rip the CD to your computer, a registration window opens. That window takes your name and credit card information. Once registered, you can rip the CD and play the music to your heart's content. You can add the songs to your central media servers at home or put the songs on your iPod and the iPod of each member of your family. You can do a mash-up if you want: take the first 20 seconds of each song and make a new one. And if you want to upload the CD to a peer-to-peer network, go ahead.

What's the catch? The catch is that your identity travels with the songs—more precisely, not your full identity but an ID tag that can be matched with your stored account information—and someone in possession of the tag can access part of your account, turn in the tag, and get \$10 charged to the account holder's credit card. Think of this as identity-based digital rights management (DRM) with incentives or—more sharply—mistrust-based DRM. How would this approach differ from current DRM schemes and why might this one have a better chance of succeeding?

As I explain below, it would be difficult to implement this sort of scheme for standard music CDs or DVDs. But just as the VCR has gone the way of the dodo, physical media are dying as mechanisms for delivering content. Edison's wax cylinders have had a great run, but online distribution of content will supplant physical media in the next decade. We are replacing products with services.

The scheme I describe above is precisely the one that is being implemented in online distribution today, at least in part. This is still at an early stage, but Apple's iTunes, Google's new video service, and Amazon's forthcoming Amazon Upgrade give us a sense of how online DRM will be implemented, not as a kludgy add-on as is being done for music CDs, but as part of the original design. Mistrust-based DRM will be a key part of this, precisely because of the way that it leverages the content purchaser's incentives to protect identity and, in so doing, protect content.

DRM is both important and controversial. From the copyright holder's perspective, DRM is first and foremost about making meaningful the legal rights assigned to the copyright holder under copyright law, especially the right to control the making of copies.¹ The right to control

1. See 17 U.S.C. § 106 (1) (2000) ("Subject to sections 107 through 121, the owner of copyright under this title has the exclusive rights to do and to authorize any of the following: (1) to reproduce the copyrighted work in copies or phonorecords; . . ."); Council Directive 2001/29, art. 2, 2001 O.J. (L 167) 16 (EC) ("Member States shall provide for the exclusive

copying of a work isn't self executing. Copying has been controlled through the technology of copying, where until the last thirty years or so, copying was expensive and asymmetric. By expensive, I mean that it was relatively difficult to make the second copy of a work. By asymmetric, I mean that it was typically substantially cheaper to make the second copy as part of making a unified run of copies of the work than it was for a third-party to make a second copy from a first physical copy of the work.

This has changed over the last thirty years. With the rise of the cassette tape recorder, photocopying equipment, the VCR, and, more recently, of peer-to-peer networks, copying costs have dropped and third-parties are as well-situated as the copyright holder to make additional copies. Copying costs have become symmetric, and technology, once the barrier to copying, has become the means of copying. Legal rights previously enforced through technological barriers are now much harder to enforce, at least not without new technological barriers, hence the rise of digital rights management. The promise is meaningful enforcement of the rights that exist on the statute books; the fear is a shift in control in favor of copyright holders and away from the public, perhaps through limits on fair use of works.

With add-on DRM of the sort we have seen for music CDs, the CD owner and a dedicated decryptor have a shared interest in evading use restrictions. The CD owner is eager to enlist the help of the decryptor and has little concern about the wide spread over the network of the music on the CDs, and one p2p user has little to fear from a fellow user of the network. In contrast, identity-based DRM—when a valuable ID tag travels with the content (or with access to the content)—will drive an incentives wedge between the CD owner and the decryptor and between members of the p2p network. The CD owner will fear that in removing the use restrictions, the decryptor will acquire the account information and that information could be put to ill use or that the content will seep out into the p2p network still bearing the ID tag.

The darknet critique of DRM says that it only takes one: just one person to get around the DRM and put the content out into the clear free of the wrapper.² Mistrust-based DRM embraces that idea: if it only takes one person to claim the bounty ID tag, the content owner may choose not to share the content. The interesting, almost sociological, question is how

right to authorise or prohibit direct or indirect, temporary or permanent reproduction by any means and in any form, in whole or in part: (a) for authors, of their works; . . . “).

2. See Fred von Lohmann, *Measuring the Digital Millennium Copyright Act Against the Darknet: Implications for the Regulation of Technological Protection Measures*, 24 LOY. L.A. ENT. L. REV. 635, 641 (2004) (citing Peter Biddle et al., *The Darknet and the Future of Content Distribution*, <http://crypto.stanford.edu/DRM2002/darknet5.doc> (last visited Sept. 26, 2006)); posting of Ed Felton to Freedom to Tinker blog, *DarkNet*, <http://www.freedom-to-tinker.com/index.php?p=206> (Nov. 25, 2002, 11:47 EST).

much suspicion do you need to introduce into a file-sharing system for content owners to refuse to share with anonymous recipients over peer-to-peer networks? And if the small-worlds phenomenon tells us that we are just six links from everyone else on the planet, how many of my friends will I trust with access to my account, given that they may give it to their friends, who may give it to their friends, etc.? Small-group sharing plus six degrees of separation equals sharing with the entire world, and, unfortunately, not everyone in the world can be trusted.

I should be more precise about the mechanics of implementing identity-based DRM. The core notion is that an identification tag is attached to each song, presumably at the point of downloading. Given concerns about privacy, it is highly unlikely that this tag would be transparent, that is, that it would be readable by any recipient. An encrypted tag but one that uniquely identifies the original recipient of the content suffices.

We should build this system up one brick at a time. With ID tags embedded in songs, the download service could scour p2p networks for tagged content and could implement a penalty when tagged content was found. Very little limits that penalty structure. The download service could revoke the right to use that service and could couple that with a monetary fine.

This is ID tagging plus centralized enforcement. We could decentralize enforcement, and that would probably require some sort of bounty system to induce users of p2p networks to turn in songs to collect the bounty. Note that this does not mean that identity needs to be transparent; all that is required is that the—you choose: snitch/tattletale/whistleblower—has knowledge of the existence of the tag and seeks to collect the bounty by turning in a tagged song.

Identity tags plus bounties gets us to mistrust-based DRM. We need decentralization of enforcement to create mistrust and to break the alignment of incentives that otherwise exists in p2p systems. Mistrust enters at two points, as to both software (code) and peers. If shared songs carry with them valuable ID tags, you will be willing to share tagged songs only with trustworthy peers. You almost certainly will not want to share those songs with anonymous users of p2p networks. The second possible point of mistrust is the software that gets songs from your PC to the p2p network. There have often been alignment issues with this software, perhaps most notoriously with KaZaa. The existence of valuable ID tags takes this another step, as the tags may create the fear that the software itself will try to access the value embedded in the tags.³

3. Whether this system can be implemented is in dispute. For critical commentary, see posting of Ed Felten to Freedom to Tinker blog, *Mistrust-Based DRM*, <http://www.freedom-to-tinker.com/?p=980>, (Feb. 22, 2006, 13:54 EST); posting of Ed Felten to Freedom to Tinker blog, *How Watermarks Fail*, <http://www.freedom-to-tinker.com/?p=981> (Feb. 24, 2006, 9:07

Section I addresses four ways in which DRM is currently used, namely, copy-control; per-use pricing; closed-system definition and patent-royalty collection; and competition structuring. Section II looks at one attempt at copy-control DRM, namely, Sony BMG's distribution of copy-protected music CDs. It would be a mistake for us to generalize from the real difficulties associated with adding DRM to a preexisting product. The world of online content services is fundamentally different. In Section III, I discuss Google Video, Amazon Upgrade, and Apple's iTunes. These are three leading examples of services that are embracing, at least in part, identity-based DRM.

I. WHY DIGITAL RIGHTS MANAGEMENT?

We should consider what digital rights management is seeking to accomplish. Four roles come to mind: (1) copy control to avoid SOFE (sold once, free everywhere); (2) per-use pricing, making possible greater pricing granularity, so as to charge consumers different prices for different uses of the same work; (3) patent-royalty collection across devices and media; and (4) competition structuring, so as to control how competition evolves with linked devices and content.

A. Copy-Control DRM

A standard use for DRM is copy control: use software to limit the number of copies that can be made. Sony BMG's infamous attempt to add DRM to music CDs—discussed in detail in Section II—imposed a number of limits on making copies of the songs on the CD. Sony BMG wasn't trying to charge more for consumers who wanted to use the CDs in a standard CD player and on a computer. The content creator is perfectly happy to have the actual purchaser use the content in any time, place, and manner that the purchaser so desires, but the producer of the content wants to prevent the purchaser from making copies to give to friends or to upload to peer-to-peer networks.

Whether this stands any chance of working is contested. Playing a song so that I can hear it—I am listening to Chick Corea as I type—means that I can record it and the DRM scheme may not survive the recording process. The quality of that copy may be degraded, but it may be good enough. And a professional decryptor—is that the right phrase to use instead of hacker?—might strip away the DRM, and put an unencrypted copy onto a peer-to-peer network. Both of these possibilities work against effective DRM designed to control copies.

With music CDs, we are trying to retrofit DRM onto an existing

platform. The analysis in Section II should make clear the enormous difficulties associated with this sort of add-on DRM. But we won't be doing too much retrofitting going forward. As discussed below, DVDs came with encryption, and the battle over the broadcast flag for digital television (and high-definition radio, too) is precisely about whether these new formats will come with built-in copy and use controls. For digital television and radio, these are public battles, where we will fight about the scope of the authority given—or to be given—to the Federal Communications Commission and about the virtues and vices of government technology mandates. In contrast, the private online content services to be discussed in Section III—Google Video, Apple's iTunes, and Amazon Upgrade—will implement DRM without any need to consult with the FCC and will do so by choice and in competition with others and as part of the DNA of the platform.

But the success or failure of copy-control DRM is not just about retrofitting of the sort that we have seen with music CDs. The core need to have the content in the clear, as it were, for the standard non-computer CD players creates the problems we will see in the Sony BMG episode. But there is a more basic problem with locked-down DRM: the content purchaser and the professional decryptor have a shared interest in evading the copy control. That will be true even if the copy control is built in originally. Unless the copy-control is identity-based, we won't give the content purchaser a reason to stay away from professional decryptors and their tools. That means that there is good reason to think that the broadcast flag regime is likely to struggle too.

B. Bundled Uses and Per-Use Pricing

I buy a DVD. Most users play DVDs on their home DVD players, but I want to watch my DVDs on my video iPod. The copyright holder wants to charge me extra for my non-standard use and uses DRM to restrict my ability to move the DVDs to the iPod. DRM might facilitate per-use charging, as might take place if the DVD producer assessed a fee to unlock the DVD content for the iPod.

I don't want to try to assess the virtues and vices here of per-use pricing. I think that this is tricky. Absent DRM, using the DVD on the video iPod is a use that comes bundled with the DVD itself. That means that each DVD purchaser has to buy the entire bundle—the standard DVD player use and the video iPod use—even when she might just want to buy the standard use. The bundled uses might come at a higher price than the standard use.

The only point to note here is how per-use pricing DRM influences the willingness of the content purchaser to try to crack the DRM scheme. Restrictions on use—as opposed to restrictions on sharing—will push the

content purchaser towards figuring out how to evade the DRM scheme. The core theme of this paper is that we want to try to separate content purchasers from professional DRM evaders. Encoding identity into content will help do that, but restricting use will create more reasons to put identity at risk so as to circumvent use restrictions.

C. Patent-Royalty Collection

DVDs are encrypted with the content scramble system (CSS).⁴ Encryption has the consequence of linking DVD discs and DVD players together in a closed system. Absent hacking, a DVD disc will play only on an authorized player. And the fact that licenses are required for the right to use CSS means that other controls can be implemented consistently across the DVD platform. For example, the DVD Copy Control Association required CSS licensees to implement DVD drives that respected a regional encoding scheme.⁵ Pick a recent DVD and shop for it first at Amazon.com and then at Amazon's United Kingdom site, www.amazon.co.uk. The U.S. website sells DVDs with region 1 encoding (for the U.S. and Canada) while the UK website sells region 2 DVDs (Europe, Japan, South Africa and the Middle East, including Egypt according to Amazon).

So far this sounds like a series of use controls perhaps directed at making price discrimination possible, as more surfing at Amazon suggests that UK DVDs are more expensive than those in the U.S. But more is at stake than just price discrimination. Dates of movie theater releases vary across countries. Part of this is presumably related to the inability of stars and directors to be in Paris and Los Angeles at the same time. If stars are important for launching a movie, you will want to open the movie on different dates in different countries.

But note what that means for the release of the DVD. If the right delay window is three months—release the DVD three months after the theatrical run has ended—the DVDs will need to be released in a staggered fashion as well. But if all DVDs play anywhere, the staggering doesn't work. Regional encoding makes that possible, and, as we have seen, the need to license CSS provides a lever to enforce regional encoding in DVD players.

But as if this were not enough complexity, there is more at stake. The DVD standard is based on more than a hundred patents. Royalties on those patents are recovered through the sale of DVD discs and players. Many of those patents are in the two main DVD patent pools, the 6C

4. See generally DVD Copy Control Association, Content Scramble System, <http://www.dvdcca.org/css/> (last visited July 8, 2006).

5. See DVD Copy Control Association, Regional Playback Control, <http://www.dvdcca.org/rpc.html> (last visited July 8, 2006).

pool⁶—originally comprised of patents from six companies and now with eight participants—and a second pool involving patents from Philips, Sony, and Pioneer.⁷

Patent pools have a long history.⁸ One of the key virtues of patent pools is to reduce the transactions costs associated with licensing required technology. With 100 plus patents implicated in DVDs, individual negotiations for the right to use those patents could be horrifically time-consuming, plus a licensor would fear the hold-out problem, where the holder of the last needed patent seeks a disproportionate payment. The patent pool reduces both of those costs.

How will the pools collect royalties? Toshiba was to act as the administrator for the 6C pool and would initially charge royalties of \$.075 per DVD disc and 4% of the net sales price of DVD players and DVD decoders, with a minimum of \$4.00 per player or decoder.⁹ The closed system makes it possible to obtain royalties on both the player and the discs. We are now talking about how to run a tax system. If we are going to collect royalties on the patents, should we collect them on just the players? Just the discs? On both? There is conventional economic theory—Ramsey pricing—which attempts to provide a guide on that, but the bottom line is that we shouldn't just assume that we—society, not the patent holders—are necessarily better off if we force the patent holders to open the system and just charge royalties on the players. DRM is the lock that makes this closed system possible.

D. DRM and Shaping Competition

The Apple iPod and iTunes have emerged as the leading wave of the move to online digital entertainment. The iPod has led to a huge run-up in Apple's stock price,¹⁰ and the iPod is so successful that it now defines its own economic ecosystem with a large market in add-on devices. And indeed, Apple is profiting from these sales, often obtaining 10% of the wholesale price of a product.¹¹

6. See DVD 6C Licensing Agency, DVD 6C Patent Pool, <http://www.dvd6cla.com> (last visited July 8, 2006).

7. See Philips, DVD Format and Logo Licensing, <http://www.licensing.philips.com/information/dvd/documents206.html> (last visited July 8, 2006).

8. See generally FLOYD L. VAUGHAN, THE UNITED STATES PATENT SYSTEM 39-67 (1956).

9. See Letter from Joel I. Klein, Assistant Attorney General, to Carey R. Ramos, Paul, Weiss, Rifkind, Wharton & Garrison (June 10, 1999), available at <http://www.usdoj.gov/atr/public/busreview/2485.htm> (citing the Authorization Agreement § 5.1 in footnotes 32 and 33).

10. See John Authers, *iPod Provides Apple with a Record Breaking Run*, FIN. TIMES (London), Dec. 30, 2005, at 21.

11. See Ina Fried, *Apple Seeks 'Tax' on iPod Accessories*, CNET NEWS.COM, Mar. 16,

An empty iPod isn't very interesting. How do you get content into the iPod? The iPod plays MP3 content. That means that you can take a music CD, rip those files into MP3 files, and move the content to the iPod. I use a text-to-speech program to listen to text files on my iPod Nano, and those files are written as MP3s. You can also buy MP3s online at sites like emusic.com. Note that none of this content is sold particularly for the iPod and none of it is subject to DRM. This is all content that could easily be moved around p2p networks.

iTunes—and, here is the key point, *only* iTunes—sells non-MP3 online content for the iPod. This content is encoded in the AAC format (Advance Audio Coding) and is wrapped in Apple's FairPlay DRM scheme. Apple has refused to open the iPod to other sellers, such as by licensing FairPlay to them.¹² Indeed, when RealNetworks figured out a way around the DRM limitation so that it could sell online music for iPods, Apple intimated that RealNetworks might have violated the Digital Millennium Copyright Act or engaged in contractually-barred reverse engineering. In any event, Apple updated the iPod software—not just for new iPods but for all existing iPods—and reestablished incompatibility.¹³

Systems competition is complicated, so it would be a mistake to assume that Apple has acted in a way that should trouble us or that should be found to violate U.S. antitrust law. But the inherent difficulty of regulating systems competition means we are likely to see a variety of policy responses to this particular use of DRM. France has already threatened to force greater interoperability for the iPod and iTunes.¹⁴

II. THE PROBLEM OF THE CD: SONY BMG AND ADD-ON DRM

The producers of music CDs fear that they have entered a SOFE world: sold once, free everywhere. If a person can buy a CD, rip it, and upload it to a peer-to-peer network, the copyright holder may only sell one copy of a CD. Of course, that isn't the real world, but it is close enough to understand the urge to add digital rights management to music

2005, http://news.com.com/2100-1041_3-5620959.html.

12. This isn't to say that users aren't looking for ways around FairPlay. See, e.g., Kirk McElhearn, *Classical Music on the iPod and iTunes*, PLAYLIST MAG., Mar. 11, 2005, <http://playlistmag.com/features/2005/03/classicalipod/index.php>.

13. For a discussion of formatting see BERKMAN CENTER FOR INTERNET & SOCIETY, iTUNES 11-12 (2005), <http://cyber.law.harvard.edu/media/uploads/81/iTunesWhitePaper0604.pdf>. For a discussion of Real Networks see John Borland, *RealNetworks Breaks Apple's Hold on iPod*, CNET NEWS.COM, July 26, 2005, http://news.com.com/2102-1027_3-5282063.html; John Borland, *Apple Fights RealNetworks' 'Hacker Tactics'*, CNET NEWS.COM, Dec. 14, 2004, http://news.com.com/2100-1027_3-5490604.html.

14. See *French Measure Is Criticized As Encouraging Music Piracy*, WALL ST. J., Mar. 23, 2006, at B6.

CDs.

But we run into a disabling problem immediately: music CDs need to play in CD players. For decades, CDs have played in CD players and a new CD needs to be able to do that as well. So somehow an ordinary CD player needs to play the CD flawlessly, yet when that same CD is inserted into the CD drive built into your computer, it needs to work differently. Otherwise if the computer is given unfettered access to the music, it's rip, upload, and off to the p2p networks.

This is a real problem: make sure that the product can be used in its traditional, standard uses and yet limit new uses. That isn't a statement about the merits of that approach, just the difficulties of implementing it. It is as if the CD needs to play in the CD player and yet somehow be prevented from being inserted into a toaster when the purchaser really wants to pop it in.

A. Staring at the Jewel Box: Neil Diamond's 12 Songs.

Enter Sony BMG and two different encryption schemes, XCP and MediaMax. Sony BMG has released a number of music CDs using the two schemes.¹⁵ To take one example, Neil Diamond's *12 Songs* is encrypted with the XCP copy protection scheme. A careful examination of the front spine of the CD reveals a logo coupled with the phrase "CONTENT PROTECTED" and, beneath that, in small letters, a suggestion to see the reverse side for what are optimistically described as "features."

On the back, along with the usual list of songs, near the bottom, we see blocks of information relating to copyright. That includes the FBI anti-piracy warning symbol;¹⁶ a statement that "unauthorized copying is punishable under federal law;" and a "compatible with" block. The latter addresses playback, ripping, and the use of portable devices. The block indicates that limited copies are possible; that the website cp.sonybmg.com/xcp should be consulted for additional information; and a footnote indicating that "certain computers may not be able to access the digital file portion of this disk. Use subject to applicable end user license agreement."

And, were that not enough, all of that is followed with yet smaller print indicating a variety of copyrights, trademarks, and a final statement: "WARNING. All Rights Reserved. Unauthorized duplication is a violation of applicable laws." A music CD that only a lawyer could love.

15. For a list of relevant CDs, see Sony BMG Music Entertainment, <http://www.sonybmgcdtechsettlement.com/CDList.htm> (last visited July 9, 2006).

16. For details, see Press Release, Federal Bureau of Investigation, Pirates in Cyberspace: Not Exactly Fun and Games (Feb. 19, 2004) available at <http://www.fbi.gov/pressrel/pressrel04/piracy021904.htm>.

Some of what appears on *12 Songs* is completely generic, such as the FBI anti-piracy warning and the indication of copyright and restrictions on duplication. It is the detailed copyright-control information that is distinctive.

Remove the plastic shrinkwrap and examine the CD. It is stamped with the FBI anti-piracy warning logo and the FBI anti-piracy warning itself along with further indications of copyright and trademarks. We learn—for I did not know it before opening the CD—that the logo on the spine of the CD is the “copy control logo,” which is a trademark of International Federation of the Phonographic Industry (IFPI)¹⁷ and used under license on the CD.¹⁸

The CD liner contains pictures of Neil Diamond making music; a brief amount of text; and the usual production information. We are told once again about copyrights and trademarks, and a final warning about reserved rights and unlawful duplication. The only new copyright item of interest is that all of the songs—words and music by Neil Diamond—are published by DiamondSongs and are available through SESAC, rather than ASCAP or BMI. The liner tells us nothing about the copy-control scheme.

What happens next? That depends on what you do with the CD. If you insert the CD into a standard CD player—say a Sony Discman or a CD player in your car—the music plays, just like it has since Thomas Edison built his phonograph. That almost comes as a surprise: you half expect the CD to start smoking and self-destruct, just like in *Mission Impossible*, but, nope, it plays music. Diamond describes the music as “a stripped-down acoustic sound.” That seems right; the orchestration is notable for its sparseness and simplicity. The complicated part of the CD isn’t the music, it’s the copy-control scheme.

But a CD player is a relatively locked-down device. Not fully so, as there needs to be a port for headphones to get the music out to our ears, and you can instead use that port to hook the music up to your computer to record—or at least so my 16-year old son tells me—so we can expect leakage even from CD players. But the target of the XCP encryption scheme isn’t the CD player and its port for headphones but instead your personal computer.

B. Inside XCP and MediaMax

Typically, when I purchase a CD, I immediately rip it using the Windows Media Player (WMP). Just to get the mechanics right, I will

17. IFPI, <http://www.ifpi.org/> (last visited Oct. 11, 2006).

18. See Press Release, IFPI, IFPI Announces New Optional Copy Control Symbol for CDs (Sept. 17, 2002), available at <http://www.ifpi.org/site-content/press/20020917.html>.

first open WMP and then will insert the CD into my computer. With an unencrypted CD, I select the rip tab in WMP and the music is then stored on my computer. The current version of WMP allows me to determine whether or not the copy on my computer is subject to a copy protection scheme implemented by the WMP itself.

What happens instead if I insert a CD copy-protected by either XCP or MediaMax? I have not done that but Ed Felten, a computer scientist at Princeton, and his graduate student, Alex Halderman, have done so and have reported the results, initially on the “Freedom to Tinker” blog and subsequently in an academic paper.¹⁹ There are lots of details, but I will lay out a simple version.

XCP and MediaMax are what Felton and Halderman have termed active protection systems. Both copy-protection schemes take advantage of the autorun feature built into the Windows operating system.²⁰ The point of autorun is to simplify installation of new software. Absent autorun, the consumer needs to figure out what program should be started from any CD to install new software. Autorun takes that process out of the consumer’s hands and reduces the possibility that a consumer won’t understand how to install new software.

With autorun on, the insertion of a copy-protected CD causes software embedded on the CD to be invoked. The precise details are different for XCP and MediaMax, and those differences might matter, but not for my purposes here. The key idea is that the automatically-invoked software can block normal copying of the CD and can impose an end-user license agreement that limits access by the computer to the CD.²¹

To make all of this work, autorun installs software on the user’s computer and then takes the additional step of installing additional software to hide the newly-installed DRM software.²² I am not sure how to describe this behavior, but as Felten and Halderman make clear, uninvited installation coupled with cloaking is exactly the behavior that we

19. See J. Alex Halderman & Edward W. Felton, *Lessons from the Sony DRM Episode* (Ctr. for Info. Tech., Princeton Univ., Dep’t of Computer Sci., Working Paper, 2006) available at <http://itpolicy.princeton.edu/pub/sonydrm-ext.pdf>; Freedom to Tinker, <http://www.freedom-to-tinker.com> (blog entries describing their work with the Sony DRM).

20. Microsoft, HOW TO: Create an Autorun CD-ROM for Applications That You Create by Using Microsoft Visual Studio .NET, <http://support.microsoft.com/default.aspx?scid=kb;en-us;818804> (last visited July 9, 2006) (provides a more detailed explanation). Autorun is a Windows feature; if the CD is inserted into a computer running Linux or the Macintosh operating system, users won’t invoke the DRM.

21. For a discussion, see J. Alex Halderman, *Analysis of the MediaMax CD3 Copy-Prevention System* (Princeton University Computer Science Technical Report TR-679-03, 2003) available at <http://www.cs.princeton.edu/~jhalderm/cd3/>; see also Posting of J. Alex Halderman to Freedom to Tinker, *CD DRM Makes Computers Less Secure*, <http://www.freedom-to-tinker.com/?p=919> (Nov. 1, 2005, 11:35).

22. *Id.*

expect and fear from spyware and other forms of malware, and in particular, a class of malware known as “rootkits.”²³ These are programs that hide on PCs and allow outsiders to exercise some control over the machines (frequently making the machines zombie PCs and creating a parade of harms to the network).²⁴

So Sony BMG installs software and then hides the software to make it more difficult for consumers to remove it. Sony BMG discloses the existence of the software in the End-User License Agreement (EULA), but if you didn’t read that carefully, you might not notice that software was being installed.²⁵ And the EULA says very little about how the software is installed, making it quite hard for consumers to remove the now-hidden software later. Of course, that is the point. If the DRM software is actually going to control access to content, the software needs to be there. It can’t be the case that the consumer can remove the software at will, at least if doing so won’t also end the right to access the associated content sitting on the computer.

But the particular cloaking approach used by Sony BMG also made it possible for outsiders to hide their software in the same hidden area of the consumer’s computer. Of course, a malware author might very well bundle his own cloaking device with the malware, and, indeed, this is a standard complaint about rootkits.²⁶ The real question is whether the existence of the Sony BMG cloak made it possible for a malware author to hide his malware when he couldn’t have done so on his own. Whatever mechanism is used to bring in the malware in the first place should also be available to install the malware cloak, though part of this depends on exactly what level of access—administrator, user, or something else—that the user makes available, intentionally or not, to the intruder. And the fact that we actually observed a malware author taking advantage of the Sony BMG cloak tells us very little. My guess is that malware authors are high on the list of DRM haters, so we could readily predict that the Sony BMG cloak would be exploited. What we can’t know is whether the malware was simply written to make Sony BMG look bad or

23. Posting of Ed Felten to Freedom to Tinker, *SonyBMG “Protection” is Spyware*, <http://www.freedom-to-tinker.com/?p=923> (Nov. 10, 2005, 8:23 EST); Posting of J. Alex Halderman to Freedom to Tinker, *MediaMax Permanently Installs and Runs Unwanted Software Even if User Declines EULA*, <http://www.freedom-to-tinker.com/?p=936> (Nov. 28, 2005 14:23 EST). For a general discussion, see GREG HOGLUND & JAMES BUTLER, *ROOTKITS: SUBVERTING THE WINDOWS KERNEL 4* (2006) (“In other words, a rootkit is a set of programs and code that allows a permanent or consistent, undetectable presence on a computer.” (emphasis omitted)).

24. See generally Randal C. Picker, *Cybersecurity: Of Heterogeneity and Autarky*, in *THE LAW AND ECONOMICS OF CYBERSECURITY* 115 (2006).

25. For what purports to be the Sony BMG EULA, see <http://www.sysinternals.com/blog/sony-eula.htm> (last visited July 6, 2006).

26. See Halderman, *supra* note 21.

whether absent the Sony BMG cloak the malware author would have written his own cloak.

Felten and Halderman make clear that a savvy computer user will be able to avoid the XCP and MediaMax encryption schemes.²⁷ Turning off autorun means that the user affirmatively has to invoke the software, and the consumer has no incentive to do so. Indeed many computer security experts recommend turning off autorun as the insertion of the CD can otherwise have unexpected consequences.

C. Four Problems for Add-On DRM

We should take stock of the situation faced by content producers such as Sony BMG. First, the analysis by Felten and Halderman make clear that add-on DRM is likely to be ineffective. Smart consumers will sidestep the DRM limitations by turning off autorun and that will give them access to the standard audio files that are on the CDs. From there it is just a hop, skip, and a jump to wide distribution on p2p networks.

Second, add-on DRM faces stiff consumer resistance. I first encountered *12 Songs* in my native capacity as consumer. Amazon did a good job of emphasizing that the CD was copy-protected and I quickly clicked elsewhere. Some consumers have attempted to organize boycotts of companies that sell copy-protected CDs. I suspect that none of this is lost on content sellers, and that influences how much—or how little—they emphasize that the CDs are copy-protected. My detailed description of *12 Songs* was meant to highlight that it would be easy for a consumer to miss the copy protection. Yes, there was a lot there, but much of it is in small print; if you weren't looking for it as I was, it might be easy to skip right over it. And the appearance of an End-User License Agreement might not be enough either, as for better or worse, consumers routinely click through these agreements.

Third, add-on DRM will need to navigate a thicket of federal and state laws. The class-action lawsuit filed by the Electronic Frontier Foundation alleged claims under the California Consumer Legal Remedies Act; for unfair, unlawful and fraudulent business practices in violation of California Business and Professions Code Section 17200; for breach of the implied covenant of good faith and fair dealing; and for false or misleading statements under California Business and Professions Code 17500.²⁸

State Attorneys General in Massachusetts and New York launched

27. Posting of Ed Felten to Freedom to Tinker, *What Does MediaMax Accomplish?*, <http://www.freedom-to-tinker.com/?p=935> (Nov. 23, 2005, 8:54 EST).

28. For background on the case, including the complaint, see Electronic Frontier Foundation, Sony BMG Litigation Info, <http://www.eff.org/IP/DRM/Sony-BMG> (last visited July 6, 2006).

investigations out of Sony BMG sales, and the Texas Attorney General brought suit under the Texas Consumer Protection Against Computer Spyware Act of 2005, a new law that became effective on September 1, 2005.²⁹ And blog commentary has raised questions about the applicability of the federal Computer Fraud and Abuse Act, which criminalizes under certain conditions unauthorized access of a computer.³⁰

The point here is not to address the legal sufficiency of these claims. For example, I think that we will be cautious in taking the Computer Fraud and Abuse Act into these situations. That act focuses on outside break-ins, rather than those who proceed under permission of the sort set forth in Sony BMG's XCP EULA. We will not quickly move from possible contract violations—and indeed I am not sure that there are any of those here—to criminal liability.³¹ That does mean, as Felten has pointed out, that installing software without a contract in place will pose greater risks, as Felten and Halderman suggest occurs with MediaMax DRM. Instead, the point is to note that a business strategy that engenders multiple class actions and investigations and lawsuits by state Attorneys Generals is likely to be short-lived.

Fourth, I should also say that while I do not expect us to jump quickly from contract to criminal violations, I also think that in the longer-run we will probably not allow content providers to simply enforce one-sided EULAs. We face a basic conflict over control: computer owners want to control their PCs, content sellers want to control what happens to their content.³² I don't think that there are many absolutes in this argument. The fact that I paid for my laptop doesn't mean that I can't agree with Sony BMG or some other content provider that there are limits on what I can do with my computer, limitations that I might want to agree to to get access to content. And content owners start with terms

29. Arik Hesseldahl, *Spitzer Gets on Sony BMG's Case*, BUS. WK., Nov. 29, 2005, http://www.businessweek.com/technology/content/nov2005/tc20051128_573560.htm (last visited July 7, 2006); Press Release, Mass. Attorney Gen., Recalled Sony BMG CDs with Potential Risk to Computer Viruses Are Still Available in Boston (Nov. 30, 2005), available at <http://www.ago.state.ma.us/sp.cfm?pageid=986&id=1540>; Press Release, Attorney Gen. of Tex., Attorney General Abbott Brings First Enforcement Action In Nation Against SonyBMG for Spyware Violations (Nov. 21, 2005), available at <http://www.oag.state.tx.us/oagNews/release.php?id=1266>.

30. Computer Fraud and Abuse Act, 18 U.S.C. § 1030 (2000). For commentary, see Posting of Ed Felten to Freedom to Tinker, *Sony CDs and the Computer Fraud and Abuse Act*, <http://www.freedom-to-tinker.com/?p=949> (Dec. 21, 2005, 8:44 EST); see also Posting of Eric Goldman to Technology and Marketing Law Blog, *Is Sony's DRM Spyware*, http://blog.ericgoldman.org/archives/2005/11/is_sonys_drm_sp.htm (Nov. 7, 2005, 10:10 EST).

31. See *Secureinfo Corp. v. Telos Corp.*, 387 F.Supp. 2d 593 (E.D. Va. 2005).

32. See John Borland, *Who has the right to control your PC?*, CNET NEWS.COM, Nov. 21, 2005, http://news.com.com/2100-1029_3-5961609.html; see Bruce Sterling, *The Rootkit of All Evil*, WIRED MAG., Feb. 2006, at 94.

set by copyright. Some of those terms clearly benefit copyright holders, but others, such as fair use and the first-sale doctrine, benefit content users.

These contracts—whether written on paper or implemented through agreement and technological limits—sit out there as part of the legal landscape. Computer users should be able to cede control over their machines if they choose to do so. We see this frequently with software that updates itself remotely, such as Google Desktop Search, or as Sony BMG contemplated updates would occur.³³ And it is far from clear to me that consumers can't waive fair use rights under the Copyright Act.

We are entering an era in which consumer commitments about how they will receive, manage and use content will matter. Content owners want to know that content is entering a protected environment, meaning an environment that may control use, copying, and distribution of copyrighted works. If consumers can't make meaningful commitments, content providers won't be able to make meaningful distinctions between consumers.

That said, whatever one concludes about the angels-dancing-on-the-head-of-pins question about the limits of contract, my guess is that click-through agreements implementing unreasonable rules regarding third-party access to consumer computers will not be sustainable politically, either before juries or in Congress. If that is right, contract won't be the main device by which we will validate DRM, but we instead may require additional legislation with accompanying safe harbors, where some will favor strong protections for consumers—possibly as to uses and probably as to privacy—and others will favor content producers.

If you sell music CDs, this is a bleak story. Add-on DRM hasn't worked, isn't wanted by consumers, and leads to lawsuits. In settling the EFF lawsuit, Sony BMG has agreed to stop selling music CDs with MediaMax or XCP.³⁴ Given the reaction so far, Sony BMG almost must be delighted that it is now legally barred from doing something that it should no longer want to do anyhow.

III. IDENTITY-BASED DRM: SWITCHING FROM PRODUCTS TO SERVICES

Return to the hypo at the beginning of the paper. Buy a CD, slide it

33. For a discussion of Google Desktop Search, see Randal C. Picker, *Rewinding Sony: The Evolving Product, Phoning Home and the Duty of Ongoing Design*, 55 CASE W. RES. L. REV. 749, 757 (2005); see Sony BMG EULA, *supra*, at 25 (Article 8 reads "The SONY BMG PARTIES may from time to time provide you with updates of the SOFTWARE in a manner that the SONY BMG PARTIES deem to be appropriate.").

34. See Information Web Site for the Sony BMG Music Entertainment, Sony BMG CD Technologies Settlement, <http://www.sonybmgcdtechsettlement.com> (last visited July 7, 2006).

into your computer for ripping, and up pops a registration window. After registering with a credit card, you have full access to the content, and that content is tagged with your identity. Share the content on a peer-to-peer network and you share your identity, including account information allowing future purchases, with the world.

As Section II of the paper should make clear, it will be very hard to implement this with CDs. The core problem with add-on DRM is that the CD content needs to be available in the clear to standard CD players. Consumers will have every incentive to elide pop-up windows requiring registration. But this is the standard method of doing business for online content services: create an account first, with credit card and other ID information, and buy second. Identity-based DRM is possible and the only question is how we will implement it. Look at three versions of this: Google Video, Amazon Upgrade, and Apple's iTunes.

A. Google Video

Go to Google Video (video.google.com) and look around. Thought that Super Bowl XL was dull? Maybe you would prefer to watch the commercials instead. Google Video has them, including the dreadful Burger King Whopperettes; the official version of the approved GoDaddy.com ad (it took them fourteen tries to get past the censors, and Google Video has four of the rejects); and my personal favorite, Richard Dean Anderson reprising his role as MacGyver for debit MasterCard, where he buys a bunch of miscellaneous household junk, including a \$4 tube sock, which he uses to escape from his evil captors. (Lest there be confusion, the ad tells us: "Dramatization. Do not attempt.")

The commercials are free, but Google Video is also in the business of selling content—mainstream professional content, such as sporting events, as well as standard TV content both old—*I Love Lucy* and *The Brady Bunch*—and new, including *CSI* and *Survivor: Panamá*. And unlike iTunes with its one-price-fits-all policy, prices at Google Video move around. Single episodes of television shows are \$1.99, just like at iTunes. But if you want to see Kobe Bryant knock down 81 points against the Toronto Raptors, it will set you back \$3.95. *Charlie Rose* is a comparative bargain: almost a full hour of current TV for \$0.99.

Google Video shows an acceptable but low-quality brief preview of the show alongside a chance to buy the higher-quality full version. Enter the usual credit card information—Google stores this for future purchases—and before you know it you are downloading. My first download was of an episode of *Star Trek Voyager* in which Captain Janeway and the crew find Amelia Earhart (her plane wasn't lost in 1937; she was abducted by aliens and put into cryostasis for 400 years, obviously).

Downloading what exactly? You initially see a downloaded video file of 708 bytes, but, assuming that you didn't select streaming, Google eventually stores the entire video file on your hard drive (177 megabytes for *Voyager*). You playback the download in Google's Video Player. You can try to open the file in the Windows Media Player, but it can't decode it. Google's FAQ notes that downloaded videos must be played in the Google Video player because some of the videos are copy-protected.

Files in hand—both the small files and the large content files—what can you do? That seems to depend on the settings of the file. The *Voyager* file is more controlled. When you click on it to see what happens—either the small file or the video contents file itself—you see a series of messages in the Google video player: connecting and creating the video file, buffering, determining file ownership, authenticating. If you have not stored a Google account cookie on your computer, you will be asked to log on to your Google account. If you have a cookie, Google will use the cookie to confirm your right to play the file. Either way, you need to establish a live Internet connection to play the video.³⁵ This means no video iPod. In contrast, you seem to establish rights to *Charlie Rose* once—single validation rather than per-use validation. You can watch it again if you must without being connected to the Internet.

What does that mean for file sharing? The small video files don't bring the content with them. If you move a small file to another computer and click on the file there, it will seek to make contact with the Google mothership. The file seems to remember your gmail address, but you have to insert your password. As to the video files, the *Charlie Rose* file plays in full without contact or a password (though in a degraded form, but that may be a result of burning the file to a CD and moving that file physically to a second computer). The *Voyager* video file phones home and needs password access to the account before playing.

This is one version of identity-based DRM, in many ways, a natural, conservative implementation of identity-based DRM. Absent the ability to strip the DRM from the downloaded file, anyone using the file needs access to the password to the Google account. But the downloaded video files are a natural target for unwrapping, and the purchaser of the file has no reason not to share the files with others. If the files came with access to the Google account—email and password—the file downloader would have a much stronger incentive to not share the file.

35. See Google, Google Video Player Privacy Notice, <http://video.google.com/support/bin/answer.py?answer=32170> (last visited July, 7, 2006).

B. Amazon Upgrade

Switch from video to text, and, in particular, the digitized book market. Google Book Search has received most of the attention—in the market and in the courts—but Amazon has announced two interesting programs: Amazon Pages and Amazon Upgrade.³⁶ Pages is a pay-per-page model. Want to read only the juicy parts of the latest tell-all? You could go to the bookstore and stand there flipping through the book with a clerk looking over your shoulder, but now, with Pages you can go legit: you can just search for “Monica Lewinsky,” pay for the two pages you really want to see, and be done with it.

Amazon Upgrade is something else entirely: digital access to books purchased through Amazon. This is a really clever move by Amazon. They are changing the basic scope of the book business, which will put even more pressure on independent book sellers and even large operators like Barnes & Noble and Borders. And they have come up with a structure that should put meaningful limits on the sharing of digital texts.

Many readers—including me—want it both ways: the joy of reading books on paper and the search capability of books online. If I am actually going to take the time to read the whole book, I want to be able to maximize my use of it. A paper copy and a searchable digital copy will do just that. Amazon Upgrade does just that. The details are a little murky, but the core idea is buy the book, get the search service.

Buy a book from Amazon—one click shipped to you—and Amazon will sell you the right to search that book online at Amazon. Sell when? Just when I buy the book, as a bundle? Can I buy online access later? At the same price I could have paid at the time of purchase? Pay an annual fee and get access for all of my purchases through Amazon? None of that is particularly clear, and each approach might have different competitive consequences.

But focus instead on copyright and digital copies. Amazon doesn't seem to be selling digital offline copies with the paper copies. Instead, Amazon is selling a search service. Everything suggests that Amazon intends to do this with the consent of copyright holders, presumably for a split of the revenues.

The difference between service and product is substantial. If I downloaded a copy of the digital book, Amazon (and the copyright holder) would have to worry about what I do with the copy. Do I try to make other copies? If it is wrapped in some encryption via DRM software, do I strip off the wrapper and put the content into the open? Again

36. See Press Release, Amazon.com, Inc., Amazon.com Announces Plans for Innovative Digital Book Programs That Will Enable Customers to Purchase Online Access to Any Page, Section, or Chapter of a Book, as Well as the Book in its Entirety (Nov. 3, 2005), available at <http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle&ID=778248>.

the darknet critique: It only takes one sophisticated person to break the encryption, and then the content can circulate freely. And the “size” of access required for digital text is quite different from that of video or music. You want all of the video or music, not frames or notes here and there. In contrast, a search service for digital text with access to chunks in response to search terms might suffice.

The service model limits that possibility considerably. Presumably, I will need to log on to Amazon with my account information to use the digital books that I have “purchased.” For me to share my access with anyone else, I will have to give them full access to my Amazon account. I will probably do that with family members, and maybe a friend or two, but I won’t do it with my 10,000 closest friends halfway around the world.

That was Napster and Grokster, but the Amazon service model gives me a strong incentive to control access to the copy. By linking access to the digital object to access to other attributes that I care about—my account information and the ability to ship books via one-click around the globe—the service model turns me into an honest trading partner. I don’t have that same strong incentive with a digital book product.

C. iTunes

iTunes, a separate download available on Apple’s website, is the key software for the iPod universe.³⁷ It is the software interface to the iPod through which content is put on the iPod. iTunes is also an online content store, originally music and now music and video. Let’s go shopping. As I open the iTunes Music Store, I see at the top a list of featured albums. Click on one—*Unwritten* by Natasha Bedingfield—and iTunes switches to a new window. We see the album cover, basic release info (an album with 14 songs released on August 2, 2005), and a series of buttons—“Gift This Music,” “Artist Alert,” and “Tell a friend”—plus, most importantly, a button to buy the album for \$9.99. But iTunes also sells each of the separate 14 tracks as singles for 99 cents each. Want just the title track? Click, pay—through previously provided account info—and download and you “own” the *Unwritten* single that you just made.

As good shoppers, we should comparison shop at Amazon. A search on music on “unwritten Natasha Bedingfield” pulls up 14 items, plus sponsored links for ringtones. It isn’t immediately obvious what the 14 different items are, but two jump out at you. The last one on the list is the Sony XCP copy-protected version of the CD, listed as currently unavail-

37. See Apple, iTunes 7, <http://www.apple.com/itunes/overview/> (last visited Sept. 26, 2006).

able. The first one looks like the album cover that we saw at iTunes, so click there. And that version is the August 2, 2005 release, 13 tracks, for a price of \$12.98, marked down \$6.01 from the list price of \$18.98. Amazon also offers a link to used versions of the CD, starting at a low price of \$7.99. (A bit of a mystery: Amazon lists 13 tracks, iTunes 14 with the fourteenth being a song listed as a hidden track.)

Two points should jump out immediately. First, online delivery changes the cost structure of delivering content. No CDs, no jewel boxes, no stacks of inventory sitting around. Although estimates of savings differ, many believe that the drop in the costs of delivering content are substantial. The prices reflect this: \$9.99 at iTunes vs. \$12.98 at Amazon, plus shipping. Second, we can unbundle the album and sell songs song by song. This allows consumers to choose only the songs that they want. Even when singles were popular, only a limited number of singles were produced. Now on iTunes, every album brings with it its own singles. That gives rise to some tricky pricing issues, but I won't explore those here (so what price would you need to set for the singles such that the anticipated revenue sales for the album and the singles is not less than would have been earned had the album been sold only bundled). Unbundling also means that songs can be released faster and an artist need not wait until 14 songs have been amassed to release any one of them.

iTunes also sells video for playback on the video iPod or on a computer. For video, single items sell for a \$1.99; be it a 21-minute episode of NBC's *Scrubs*, 43 minutes of *Desperate Housewives* or a 4-minute Pixar short. iTunes also sells a season pass to a particular show—good for all episodes of a particular season—for \$34.99. There is a lot that is strategically interesting about the video on iTunes and we should examine that briefly to understand what is at stake for digital rights management on iTunes.

Start with cable bypass. The over-the-air broadcast networks would love to restore a direct relationship with their viewers. Right now, between cable TV and satellite, roughly 85% of U.S. viewers receive broadcast TV through an intermediary. Cable bypass means that the broadcasters have figured out a way to cut out the cable and satellite companies. iTunes is one path to bypass, though, of course, serious use of iTunes means a broadband connection, and for now at least, broadband comes from the cable company or as DSL from the local phone company.

For premium cable networks, online video makes it possible to unbundle the channel and make it easy for viewers to sample hot premium cable shows. Showtime is making some of its content available on iTunes. Premium cable channels are typically purchased by the month, and you pay a flat amount regardless of how many shows you want. On iTunes, if you just want to watch Kirstie Alley in *Fat Actress*, you can

buy it episode by episode.

The irony is that while the Federal Communications Commission has been pushing cable networks to create family-friendly cable tiers or else³⁸—the else is mandatory à la carte pricing—per-show pricing has come to iTunes. iTunes sells content from both the Disney Channel and MTV, but you can spend your money on Disney and never spend a dime on MTV.

We should now head inside iTunes and consider briefly how Apple has approached DRM.³⁹ Apple's DRM is called "FairPlay" and it is identity-based. Purchased songs can be copied to an unlimited number of computers, but only five computers at a time can play the songs. This is unlimited copying, limited use, and is implemented through an authorization process that amounts to assigning an identity to particular computers. Authorization is simple: "To authorize a computer, simply play a purchased song on your computer. The first time you authorize your computer, you'll need to enter your iTunes account name and password."⁴⁰ So the songs are freely sharable, but only someone with access to your account information can actually play the songs, and you can only authorize five computers. Again, like Google Video, a content purchaser isn't affirmatively discouraged from sharing the content—there is no DRM bounty—so songs can be shared and subject to unwrapping by clever decryptors.

D. Implementing Identity-Based DRM

Focusing on the choices that we need to make in implementing identity-based digital rights management one choice is local storage (downloading) vs. remote storage (streaming). That choice will take into account the relative costs of storage and bandwidth. A download model means that the content is delivered once and is stored on the central server and on each consumer's computer. A streaming model means that bandwidth is used each time the content is used. Listen to the song once, use bandwidth; listen to it 100 times, use 100 times the bandwidth.

Another question is frequency of validation. A streaming model presumably does one-to-one validation, meaning that your right to use the song is confirmed with each use. It would be difficult to give you access to the song without knowing who you were. Note, of course, that validation doesn't mean that we can tell that you are you: it just means

38. See Press Release, Chairman Kevin J. Martin's Statement on the Announcement That Cable Companies May Voluntarily Offer Family Tiers (Dec. 12, 2005), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-262676A1.pdf.

39. See generally BERKMAN CENTER FOR INTERNET & SOCIETY, *supra* note 13.

40. Apple, iTunes Music Store Customer Service: Authorizing Your Computer, <http://www.apple.com/support/itunes/musicstore/authorization/> (last visited Sept. 26, 2006).

that the remote computer seeking to access the song is presenting authentication information that matches with the access rights to the content.

In a downloading model, validation is a choice. An online seller could require validation each time the downloaded content is used. For example, for some content, Google Video downloads the content to the consumer's computer but still confirms that access is allowed with each use. In contrast, Apple's iTunes contemplates that content will be downloaded to a computer and then loaded on an iPod. The iPod cannot make contact to the Internet on its own—it isn't a networked device—and so content is used without per-use validation.

We can start to see the stresses in this system. Per-use validation of the sort seen in Google Video limits use of the content to networked devices, meaning no video iPod. Per-use validation will raise privacy issues,⁴¹ but per-use validation means that the person using the content has to have access to the account information. Access and identity travel together. In contrast, if content can be downloaded and used without validation—meaning without use of the account information—then we quickly come back to the world of locked-down DRM. This isn't music CDs where it will be hard to get consumers to implement the DRM in the first place. But it does mean that if the consumer can strip off the DRM, the content will move into the clear and can be used by anyone, even someone without the account information.

But, you should say, haven't we just changed the amount of stripping that needs to be done? If content from iTunes comes with DRM designed to prevent p2p distribution and content from Google Video comes with DRM designed to require per-use validation, don't we still face the core problem that professional DRM breakers will strip both of these? That will unwrap the content from the DRM and allow it to enter p2p networks free of the DRM restrictions.

That is why we need to switch approaches by embedding identity with the content. Content producers want to raise the cost of uploading content to p2p networks. They have tried to do that with locked-down DRM and have largely failed, and they have tried to raise costs through lawsuits. But we should instead try to harness the incentives of the content purchasers. We should want to make them as careful with content as they would be with their own identities.

Switch to identity-based DRM with incentives. Recall the idea: content is tagged with a version of my identity and a bounty. Turn in the bounty, collect a reward. The point isn't that this information couldn't be stripped by the dedicated decryptor but rather that the content purchaser should fear that the decryptor will not have the incentive to remove the

41. Posting of Ed Felten to Freedom to Tinker blog, *Google Video and Privacy*, <http://www.freedom-to-tinker.com/?p=956> (Jan. 20, 2006, 9:34 EST).

bounty but will instead use it. Plant fear, uncertainty, and doubt—introduce suspicion into p2p networks—and see what happens. Mistrust-based DRM would change the incentives to upload and share with strangers. You might be perfectly happy to give copies of songs tagged with the bounty ID to family members and close friends, but almost certainly not the strangers.

Here is where the ID bounty model makes a difference. With locked-down DRM, the content purchaser and the computer hacker have symmetric interests in wanting to see the encryption scheme broken. The DRM scheme limits uses that the consumer might wish to make. Remove the restrictions and the consumer can do more, and if at the same time that means that the song is available throughout the world on a p2p network, who cares?

In contrast, with ID-bounty DRM, the interests of the CD purchaser and those of the professional decryptor and the peers in the p2p network may diverge. The CD purchaser may not be confident that a decryptor will want to be as careful with the bounty as the purchaser would be. The uncertainty about whether the bounty has been stripped from the file might introduce a substantial cost to uploading. We have all learned that when we delete a file on our computer it's really still there; actually removing it is much more work. In similar fashion, professional decryption software might leave a residue of the bounty, which another smart professional decryptor might recover and collect on.

CONCLUSION

The powerful shift in copying technology over the last thirty years has destabilized how we produce copies and the economic arrangements associated with prior technologies. These technological changes have created a broad shift in the ability to make copies, moving control away from producers towards consumers. As a consequence, these technologies have altered the practical enforceability of the rights that law assigns to copyright owners.

Digital rights management technologies are an effort to make meaningful the legal rights of copyright owners. DRM faces severe obstacles. For preexisting products like the music CD, it has proven to be very difficult to add DRM after the fact. CDs need to work in standard CD players, and that limits DRM. The firestorm over Sony BMG's effort to produce CDs subject to DRM suggests that we are unlikely to see meaningful DRM for music CDs soon.

But we are switching how we deliver content from products to services. Music CDs and eventually DVDs will be replaced by online services such as Apple's iTunes and Google Video. Both of these come with DRM built-in and both rely on identity-based DRM. Identity-based

DRM ties identity to content. Content can be shared widely, but absent access to identity, the content is worthless.

This is a substantial step forward for DRM, but may still be a step short of where we need to be. Content purchasers still have no reason to protect purchased content. Identity-based DRM coupled with bounty tags will create an incentives wedge between content purchasers and stripping/p2p software and with peers in a p2p network. We should want a system where content purchasers are as careful with content as they would be with identity, and mistrust-based DRM may be that system.

DON'T MESS WITH SUCCESS: GOVERNMENT TECHNOLOGY MANDATES AND THE MARKETPLACE FOR ONLINE CONTENT

BY GIGI B. SOHN*

INTRODUCTION

In Las Vegas each January, the International Consumer Electronics Show features a huge display of new innovative computer and consumer electronics devices. These devices range from MP3 players that fit in the palm of your hand to car stereo speakers so large they can only fit in the trunk. This year's show was the biggest ever – taking up not only the entire Las Vegas Convention Center, but several adjoining buildings as well. But while the show's sheer size is noteworthy, what made the 2006 "CES" truly unique were the newly forged partnerships between technology companies (consumer electronics and computer companies) and content companies (the movie studios and record companies).

While the tech and content industries tend to be at odds over issues like copyright and technology mandates, there appeared to be a détente in this post-*MGM v. Grokster* era. Content providers and electronics makers showcased a slew of partnerships and innovative devices at the 2006 CES:

1. Microsoft demonstrated new versions of its Media Center software that enables the playback of a consumer's favorite media, whether on the individual's home office monitor, living room television, or PDA. The company has also developed a new music service in conjunction with MTV, VH1, and CMT music channels.
2. Innovators like DigitalDeck, NewSoft, SlingMedia, and Sony each have developed competing technologies that allow consumers to remotely watch the television playing in their living rooms on a laptop, mobile phone, or portable gaming console.

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3. Yahoo! announced the development of software and services that enable consumers to view, create, and share content between their mobile phones, computers and living rooms, all using the Internet.
4. Google developed a distribution system to allow anyone to provide videos for free or for sale, and allow others to download that content to a computer, Apple iPod, or Sony Play Station Portable (PSP). Google has already announced content distribution agreements with large content providers like CBS and the NBA. NBC, ABC, CBS and Fox are similarly distributing programming in partnership with Apple's iTunes.
5. TiVo displayed a soon-to-be-released software update that makes it simple for consumers to watch their favorite television shows on popular players like the iPod and PSP. And the recently released next generation TiVo recorder allows consumers to record over-the-air high-definition television..
6. Together, XM Radio and Pioneer developed an innovative portable satellite radio player that allows consumers to automatically record their favorite songs or shows while they are being broadcast. A consumer's preferences are stored on the radio, and when connected to a computer, XM's software helps the consumer to find more information about the artists, purchase music through the new Napster, and discover other songs and shows by similar artists.

The message of the show was clear. The market for delivering content digitally over new technologies is working. Consumers can watch and listen to the content they purchase anytime and anywhere they want. Digital Rights Management (DRM) tools will protect some of that content, and consumers can decide whether that protection is flexible enough for their needs. All of these great developments happened without government intervention.

The public appetite for buying individual TV shows and songs online is growing by leaps and bounds. There are more ways than ever to watch TV and movies and listen to music. Thirty-five million episodes of free over-the-air TV shows were downloaded from iTunes for \$1.99 each from October 2005 to July 2006.¹ In February, iTunes announced that it had sold its one-billionth song.² ABC/Disney's recent experiment,

1. Press Release, Apple and MTV Networks, MTV Networks & Apple Bring More Music, Comedy & Entertainment Programming to the iTunes Music Store (June 19, 2006), <http://www.apple.com/pr/library/2006/jun/29itms.html>.

2. Press Release, Apple, iTunes Music Store Downloads Top One Billion Songs (Feb. 23, 2006), <http://www.apple.com/pr/library/2006/feb/23itms.html>.

offering some of its most popular programming for free viewing over the Internet, was a wild success; they plan to expand their offerings in the fall.³ Warner Brothers announced that it would sell TV shows and movies via Bit Torrent, the powerful file sharing software.⁴ The Slingbox, which permits an individual to watch their local TV and cable stations remotely on a computer, is one of the hottest new consumer electronics devices. And sales of high-definition TV sets (HDTV) are skyrocketing.

Yet even as innovators in the content industry promote these alternative distribution technologies, the very same content industry wants Congress to step in and give it protection from the vague threat of massive copyright infringement they believe these new technologies could facilitate. Importantly, the content industry has yet to show any infringement that has resulted from these technologies, nor have they shown that government technology mandates will effectively stop actual copyright pirates, rather than prevent ordinary consumers from engaging in lawful activities.

The content industry is asking Congress to impose three technology mandates: the broadcast flag, radio content protection and an end to the "analog hole." Each mandate 1) injects government into technological design; 2) places limits on lawful consumer activities; and 3) increases consumer costs. Once consumers start to purchase devices that are compliant with these technology mandates, the costs will be enormous. For example:

1. A consumer would not be able to record over-the-air local news on her broadcast-flag compliant digital video recorder in her living room and play it back on a non-compliant player in her bedroom (broadcast flag).
2. A member of Congress could not email a clip of his appearance on the national news to his home office (video broadcast flag).
3. A consumer would not be able to record analog home movies using a digital camcorder and transfer them to a computer in order to make a DVD (analog hole).
4. A student would be prohibited from recording excerpts from a DVD for a college Powerpoint presentation (analog hole).
5. A consumer would be unable to record individual songs off digital broadcast and satellite radio (audio broadcast flag).
6. A university could not use digital TV video clips for distance

3. Frank Ahrens, *ABC Encouraged by Internet TV Trial*, WASH. POST, June 21, 2006, at D2.

4. Burt Helm, *BitTorrent Goes Hollywood*, BUS. WK., May 9, 2006, available at http://www.businessweek.com/technology/content/may2006/tc20060508_693082.htm.

learning classes (video broadcast flag).

In light of recent marketplace developments, calls for these technology mandates raise several important questions. Is it good policy to turn the Federal Communications Commission into the Federal Computer Commission or the Federal Copyright Commission? Is it good policy to impose limits on a new technology like HD Radio (that unlike digital television, consumers need not adopt) that may well kill it? Is it good policy to impose a technological mandate (like the broadcast flag and closing the analog hole) that would result in consumers having to replace most of the new devices that they just purchased?

There are better alternatives for protecting digital content than heavy-handed “tech mandates.” Those alternatives are a multi-pronged approach of consumer education, enforcement of copyright laws, new business models for content distribution and the use of technological tools developed in the marketplace, not mandated by government. The *MGM v. Grokster* decision and the passage of the Family Entertainment and Copyright Act are just two of several new tools that the content industry has at its disposal to protect its content.

I. TECHNOLOGY MANDATES HARM INNOVATION AND ARE COSTLY AND INCONVENIENT FOR CONSUMERS

I served as counsel to the nine public interest and library groups that successfully challenged the Federal Communications Commission’s (FCC) video broadcast flag rules in the United States Court of Appeals for the District of Columbia Circuit. The broadcast flag is a series of bits embedded in a digital TV signal that, if activated, prohibits all online distribution of part or all of that signal. Public Knowledge financed and coordinated the case, *American Library Association v. FCC*, 406 F.3d 689 (D.C. Cir. 2005). The court ruled that the FCC lacked the authority under the Communications Act to require technology manufacturers to build their devices to read and obey the broadcast flag.

The impact of the D.C. Circuit’s decision vacating the broadcast flag rules goes far beyond the ability of citizens to make non-infringing uses of copyrighted material they receive on free over-the-air broadcast television. Equally as important, the court’s ruling limited the power of a government agency that, in the court’s own words, has never exercised such “sweeping” power over the design of a broad range of consumer electronics and computer devices. In doing so they affirmed the hands-off approach that has fostered a robust marketplace for electronic devices and has made this country a leader in their development and manufacture.

For this reason, any attempt to portray legislative reinstatement of

the broadcast flag rules as “narrow” should be viewed with great skepticism. The rules put the FCC in the position of deciding the ultimate fate of every single device that can demodulate a digital television signal, or that can *connect* to such a device (so called “downstream devices”). The broadcast flag rules require the FCC to undertake a “certification process” to pre-approve television sets, computer software, digital video recorders, cellphones, game consoles, iPods and any other device that can receive a digital television signal.⁵ This certification process places the FCC in the position of dictating the marketplace for all kinds of electronics.

The agency has neither the resources nor the expertise to engage in this kind of determination. This type of government oversight of technology design will slow the rollout of new technologies and seriously compromise US companies’ competitiveness in the electronics marketplace.

Some argue that the initial FCC certification process worked because all thirteen technologies submitted to the agency were approved. This is a very superficial view of that process. First, several manufacturers removed legal and consumer-friendly features of their devices before submitting them to the FCC, largely at the behest of the movie studios. Second, the changing nature of the FCC and its commissioners is likely to make for widely varying results. Given the fervor of then-Commissioner Martin’s dissent to the Commission’s approval of TiVo-To-Go, it is unlikely that such technology would be certified today under Chairman Martin’s FCC.⁶

The constraints imposed on device manufacturers have repercussions for consumers beyond the availability of certain convenient features. To preserve the integrity of the copy protection measures, flag compliant devices will not interoperate with non-compliant devices, rendering millions of pre-Flag consumer devices obsolete. The FCC’s certification process exacerbates this problem: none of the thirteen different technologies approved by the FCC in its interim certification process work with one another other. This means that a consumer who buys one Philips brand flag-compliant device must buy *all* Philips brand flag-compliant devices. Not only will this raise consumer transition costs, it raises serious questions about vendor lock-in and its impact on competi-

5. Transcript of Oral Argument at 31, *Am. Library Ass’n v. FCC*, 406 F.3d 689 (D.C. Cir. 2005) (D.C. Circuit Court Judge Harry Edwards noted this reach at oral argument when he said, “You’re beyond transmission. . .I mean you’re out there in the whole world regulating. . . .I mean, I suppose it will be washing machines next.”).

6. See CENTER FOR DEMOCRACY AND TECHNOLOGY, LESSONS OF THE FCC BROADCAST FLAG PROCESS (2005) (providing a detailed analysis of the flaws of the FCC’s certifications process), <http://cdt.org/copyright/20050919flaglessons.pdf>.

tion between digital device manufacturers.⁷

Proposals to mandate content protection for digital broadcast and satellite radio would similarly place the FCC in the position of mandating the design of new technologies. For example, H.R. 4861, the Audio Broadcast Flag Licensing Act of 2006, gives the FCC the authority to adopt broadcast flag-like regulations governing all “digital audio receiving devices.”⁸ In the case of so-called High-Definition (or HD) Radio,⁹ this could destroy this new technology at birth. Digital broadcast radio benefits consumers through improved sound quality (particularly for AM radio) and gives radio broadcasters the capacity to provide additional program streams and metadata. Unlike digital television, however, consumers need not purchase digital broadcast receivers to continue receiving free over-the-air broadcast radio. Certainly, if digital radio receivers have less functionality than current analog radio receivers, consumers will reject them and the market for HD radio will die.

In the case of digital satellite radio, mandated radio content protection has the potential to cripple this increasingly popular, but still nascent, technology. XM Radio now has nearly seven million subscribers,¹⁰ and Sirius Radio recently passed the four million subscriber mark.¹¹ Consumers are buying all types of receivers for those services, based in part on the new flexibility and features the equipment offers, such as the ability to store, disaggregate and play back individual songs.¹² The type of content protection the recording industry seeks would likely slow this incredible growth.

7. For a detailed discussion of these issues, see Mike Godwin, *Consumer Impact of the Broadcast-Flag Scheme*, <http://www.publicknowledge.org/content/presentations/bflagpff.ppt>.

8. Audio Broadcast Flag Licensing Act of 2006, H.R. 4861, 109th Cong. (2006).

9. See HD Radio Content Protection Act of 2005, 109th Cong. (2005), available at <http://judiciary.house.gov/media/pdfs/hdradio110305.pdf>. I say “so called,” because calling a digital radio broadcast signal “High-Definition” is quite misleading. Whereas in the television context, High-Definition connotes a far clearer and sharper picture, an HD radio signal simply raises the quality of AM radio to FM standards, and permits the reception of broadcast radio in places where an analog signal would get cut off, such as in a tunnel or at a traffic light. Indeed, an “HD” quality signal is not even a CD quality signal. See Ken Kessler, *Digital Radio Sucks, it's Official*, STEREOPHILE ENEWSLETTER, Oct. 18, 2005, <http://www.stereophile.com/images/newsletter/1005Bstph.html>.

10. Press Release, XM Satellite Radio, XM Satellite Radio Reaches 6.89 Million Subscribers During Second Quarter of 2006 (July 6, 2006), http://www.xmradio.com/newsroom/screen/pr_2006_07_06.html.

11. Press Release, SIRIUS Satellite Radio, SIRIUS Satellite Radio Reports Strong First Quarter 2006 Results (May 2, 2006), <http://investor.sirius.com/ReleaseDetail.cfm?ReleaseID=194903&cat=earnings&newsroom=>.

12. For 2005, XM Radio forecasts a doubling of retail satellite radio receiver sales for both services to more than one billion dollars. See Consumer Electronics Association, *Digital Satellite Radio* (2005), http://www.ce.org/press/CEA_pubs/861.asp.

II. THE CONTENT INDUSTRY HAS NOT JUSTIFIED THE NEED FOR TECHNOLOGY MANDATES

Hollywood's core justification for imposition of the broadcast flag scheme can be paraphrased thusly: if the threat of indiscriminate redistribution of "high value" high-definition television content is not reduced, broadcasters will not make that content available, thus slowing this country's transition to digital TV.¹³

One of the most vocal proponents of this argument was Viacom, which told the FCC in 2002 that "if the broadcast flag is not implemented and enforced by next summer, CBS will cease providing any programming in high-definition for the 2003-2004 television season. And without the security afforded by a broadcast flag, Paramount will have less enthusiasm to make digital content available."¹⁴

Viacom never did carry out its threat to withhold HD programming, and the argument that the broadcast flag is necessary to encourage the broadcast of high value content and the orderly transition to digital TV transmission has been repudiated in the marketplace.¹⁵ First, broadcasters are making "high value" content available for HDTV or, "in HD"—50%¹⁶ of TV shows, including 66%¹⁷ of prime time programming, is broadcast in high-definition. A number of "high value" sports programming broadcasts, including Monday Night Football, the Super Bowl, the NBA Finals, the NCAA Final Four college basketball championship, Major League Baseball's All-Star Game and World Series games, all NBC NASCAR races, the U.S. Open golf tournament, and the Olympics, are broadcast in HD along with many other select sporting events throughout the year.¹⁸ Second, the country's transition to digital TV is accelerating, not slowing down, as sales of digital TV sets continue to

13. See Digital Broadcast Content Protection, *Report & Order & Further Notice of Proposed Rulemaking*, 18 FCC Rcd. 23,550, 23,553 (2003).

14. Comments of Viacom to the *Notice of Proposed Rulemaking* in Digital Broadcast Content Protection, MB Dkt. No. 02-230, 12 (Dec. 6, 2002), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513394608.

15. D.C. Circuit Judge Edwards also rejected this argument. See Transcript of Oral Argument at 32, *Am. Library Ass'n*, 406 F.3d at 689 (Judge Edwards: "This in no way—what you do here or not in no way impairs the ability to . . . stay on the digital deadline. . . . In no way.").

16. See ATI Technologies Inc., HDTV Wonder, <http://www.ati.com/products/hdtvonder/> (last visited July 29, 2006).

17. For the week of Jan. 19 to Jan. 25, ABC will broadcast 13 of 32 prime-time shows in HD. During the same week, CBS will broadcast 31 of 34 prime-time shows in HD; NBC will broadcast 32 of 50 prime-time shows in HD during the same period. For all 3 networks combined, 76 of 116 (66%) prime-time shows will be broadcast in HD for one week in January 2006.

18. See David Katzmaier, *HDTV World—HDTV Listings*, CNET.COM, Sept. 18, 2006, http://www.cnet.com/4520-7874_1-5119938-1.html.

increase. According to the Consumer Electronics Association, sales of digital TV sets grew 60% to \$17 billion dollars.¹⁹ According to Forrester Research, 16 million American homes have digital television sets. That number is expected to rise to 50 million by 2010, or one in two households.²⁰ Indeed, the case could be made that rather than accelerate the DTV transition, the broadcast flag could slow the transition when consumers discover that expensive new television sets have less functionality than their current sets.

The recording industry has similarly failed to demonstrate that radio content protection is necessary. The industry does not cite a single instance of a digital broadcast or satellite radio transmission being copied illegally or retransmitted over the Internet. Indeed, RIAA chief Mitch Bainwol's recent testimony and comments on the subject make clear that the real rationale for seeking radio content protection is not copyright infringement, but the recording industry's displeasure over the licensing fees it receives from broadcast and satellite radio broadcasters.²¹

III. BROADCAST FLAG AND AUDIO FLAG SCHEMES WILL TRANSFORM THE FEDERAL COMMUNICATIONS COMMISSION INTO THE FEDERAL COPYRIGHT COMMISSION

Despite the FCC's protestations to the contrary, the broadcast flag scheme and any radio copy protection scheme will necessarily involve the agency in shaping copyright law and the rights of content owners and consumers thereunder. Making copyright law and policy is not the FCC's job—it is Congress' job.²²

While it is true that the video broadcast flag scheme does not completely bar a consumer from recording her favorite TV show, it does prevent consumers from engaging in other lawful activities under copyright law. For example, as the D.C. Circuit noted in *Am. Library Ass'n. v. FCC*, the broadcast flag would limit the ability of libraries and other educators to use broadcast clips for distance learning via the Internet that

19. See Press Release, Consumer Electronics Association, 2006 is the Year of DTV, Forecasts CEA: New CEA Figures Show 2005 DTV Revenues Grew 60 Percent (July 29, 2006), http://www.ce.org/Press/CurrentNews/press_release_detail.asp?id=10913.

20. See, Alan Breznick, *Consumer Confusion Hampers Cables HDTV Sales Drive*, CABLE DIGITAL NEWS, Sept. 1, 2005, <http://www.cabledatcomnews.com/sep05/sep05-3.html>.

21. See *Content Protection in the Digital Age: The Broadcast Flag, High-Definition Radio, and the Analog Hole: Before the Subcomm. on Courts, the Internet, and Intellectual Property of the H. Comm. on the Judiciary*, 109th Cong. 58 (2005) (statement of Mitch Bainwol, Chairman and CEO, Recording Industry of America); Mitch Bainwol, *Out: P2P Paranoia*, In: *Platform Parity*, BILLBOARD MAG., Jan. 7, 2006, at 4.

22. See Brief of Petitioner at 43-50, *Am. Library Ass'n*, 406 F.3d at 689 (D.C. Cir. 2005) (No. 04-1037), 2004 WL 3080422.

is permitted pursuant to the TEACH Act.²³

This and other examples highlight that while proponents of the flag may justify flagging as prohibiting only “indiscriminate” redistribution of content over the Internet, flag-compliant technologies actually prohibit any and all distribution, no matter how limited or legal. For example, if a member of Congress wants to email a snippet of her appearance on the national TV news to his home office, the broadcast flag scheme would prohibit her from doing so. Video bloggers would similarly be unable to post broadcast TV clips on their blogs for commentary and analysis. Media watchdog groups like the Parents Television Council, which rates television programs according to how child friendly they are, would be prevented from posting clips from those programs for parents to see.²⁴

The Congressional Research Service Report entitled *Copy Protection of Digital Television: The Broadcast Flag (May 11, 2005)* details the ways in which the broadcast flag limits lawful uses of copyrighted content. CRS concluded that:

While the broadcast flag is intended to ‘prevent the indiscriminate redistribution of [digital broadcast] content over the Internet or through similar means,’ the goal of the flag was not to impede a consumer’s ability to copy or use content lawfully in the home, nor was the policy intended to ‘foreclose use of the Internet to send digital broadcast content where it can be adequately protected from indiscriminate redistribution.’ However, current technological limitations have the potential to hinder some activities which might normally be considered “fair use” under existing copyright law. For example, a consumer who wished to record a program to watch at a later time, or at a different location (time-shifting, and space-shifting, respectively), might be prevented when otherwise approved technologies do not allow for such activities, or do not integrate well with one another, or with older, ‘legacy’ devices. In addition, future fair or reasonable uses may be precluded by these limitations. For example, a student would be unable to email herself a copy of a project with digital video content because no current secure system exists for email transmission.²⁵

Proposals for digital radio content protection with an “audio flag”²⁶ simi-

23. See Technology, Education, and Copyright Harmonization Act of 2002, 17 U.S.C. §§ 110, 112, 882 (2002); *Am. Library Ass’n*, 406 F.3d at 697.

24. Parents Television Council, www.parentstv.org (last visited Sept. 26, 2006).

25. ANGIE A. WELBORN, CONG. RESEARCH SERV., COPYRIGHT PROTECTION OF DIGITAL TELEVISION 5 (2005), available at <http://www.opencrs.com/getfile.php?rid=22078>.

26. The technical specifications of the flag are unavailable because they do not yet exist. Previous content protection plans involving encryption of the digital satellite signal were scrapped on the objections of broadcasters. The current proposal, H.R. 4861, directs the FCC authority to implement regulations for digital radio that “shall include prohibitions against un-

larly, and perhaps even more directly, place the FCC in the position of determining consumers' rights under copyright law. For example, the House bill gives the FCC the authority to:

[C]ontrol the unauthorized copying and redistribution of digital audio content by or over digital reception devices, related equipment, and digital networks, including regulations governing permissible copying and redistribution of such audio content.²⁷

Under this proposal, the FCC is placed in charge both of 1) determining the extent to which unauthorized copying (which is legal in some circumstances) of digital broadcast and satellite radio content is permitted; and 2) determining what kind of copying and redistribution of audio content is permissible.

Not only does this language give the FCC power to set copyright law, it also directly conflicts with copyright law, specifically the Audio Home Recording Act. That Act, passed in 1992, was the product of a compromise between the recording industry and the consumer electronics industry that enabled the sale of digital audio recording devices in the United States without fear of litigation. While granting the recording industry royalty payments on blank digital media and recording devices and restrictions on serial copying, Congress explicitly gave consumers the right to record digital radio transmissions for noncommercial use.²⁸ *A digital radio content protection mandate would undercut this compromise and sharply curtail consumers' home taping rights.*

IV. A TECHNOLOGY MANDATE TO CLOSE THE ANALOG HOLE IS PREMATURE, UNNECESSARY AND WOULD CAUSE GREAT CONSUMER CONFUSION, COST AND INCONVENIENCE

In 2005, a bill was introduced in the House of Representatives that would mandate that all digital devices with analog outputs or inputs read and obey two specific technologies – an encryption technology called CGMS-A and a watermarking technology called VEIL.²⁹ The content industry claims that both of these technologies are necessary to ensure that

authorized copying and redistribution of transmitted content through the use of a broadcast flag or similar technology.” Audio Broadcast Flag Licensing Act of 2006, H.R. 4861, 109th Cong. (2006).

27. *Id.*

28. See 17 U.S.C. §§1001-1010 (2006). The AHRA also protects manufacturers of digital recording devices from copyright infringement suits. The RIAA has since reneged on the compromise struck in 1992, challenging this language in a suit against XM for new devices which allow subscribers to record, store and disaggregate songs broadcast over XM's subscription service. See *Atl. Recording Corp. v. XM Satellite Radio* (S.D.N.Y. filed May 16, 2006).

29. See The Digital Transition Content Security Act of 2005, H.R. 4569, 109th Cong. (2005).

analog content cannot be captured and digitized for possible indiscriminate distribution over the Internet.

Preliminarily, I would note that while the CGMS-A + VEIL technology was discussed at the Analog Hole Reconversion Discussion Group, a standards group with both industry and public interest participation, it was quickly dismissed as not worthy of further consideration. Thus, this technology has not been fully vetted by industry and public interest groups. If Congress feels it must do something about the analog hole, it should refer the technology back to industry and public interest groups so CGMS-A+VEIL can be thoroughly analyzed for its impact on consumers and the cost to technology companies. In the complete absence of any such review, the one-sided imposition of such a detailed technology mandate would be unprecedented.

More importantly, the proposed analog hole fix suffers from a number of important substantive flaws.

First, the analog hole technology mandate would be even more intrusive than the broadcast flag, affecting a much broader range of devices. While the broadcast flag would put the FCC in charge of design control just for technologies that demodulate a broadcast signal, the proposed fix would mandate design for *every* device with an analog connection, including printers, cellphones, camcorders, etc. Like the broadcast flag, it sets in stone a copy protection technology for technologies that are constantly changing.

Second, the analog hole mandate would impose a detailed set of encoding rules that would restrict certain lawful uses of content. The House bill includes tiered levels of restriction based on the type of programming (*e.g.*, pay-per-view, video on demand) that limit lawful uses in a manner that ignores the four fair use factors of 17 U.S.C. §107. This upsets the balance established in copyright law between the needs of copyright holders and the rights of the public by placing far too much control over lawful uses in the hands of the content producers.

Third, and perhaps most disturbingly, the mandate would eliminate the DMCA's "safety valve." The presence of the analog hole is a common justification for greater limitations on fair use imposed by the anti-circumvention provisions of Digital Millennium Copyright Act. Individuals who, for example, want to exercise their fair use rights by extracting a snippet of a DVD were directed to hold a video camera up to a video screen or connect a recording device to the analog outputs on a TV set.³⁰ An analog hole mandate would eliminate this safety valve.

30. *Rulemaking Hearing: Exemptions from Prohibitions on Circumvention of Technological Measures that Control Access to Copyrighted Works*, Copyright Office § 1201, 71-72 (May 15, 2003) (statement of Steve Metalitz, representing Content Industry Joint Commenters) ("... I think the best example I can give is the demonstration that Mr. Attaway [MPAA

VI. THE PROPER BALANCE BETWEEN CONTENT PROTECTION AND CONSUMER RIGHTS SHOULD BE SET BY COPYRIGHT LAW AND MARKETPLACE INITIATIVES

I am often asked the following question: if Public Knowledge opposes the broadcast flag, radio content protection and closing the analog hole, what are better alternatives to protect digital television and radio content from infringing uses? The best approach to protecting rights holders' interests is a multi-pronged approach: better education of the public, using the legal tools that the content industry already has at its disposal, and deploying the technological tools that are being developed and tested in the marketplace every day. In the past year alone, the content industry has used and won several important new tools to protect content.

The Supreme Court's decision in *MGM v. Grokster* gave content owners a powerful tool against infringement by holding that manufacturers and distributors of technologies that are used to infringe could be found liable for infringement if they actively encourage illegal activity. As a result, a number of commercial peer-to-peer (P2P) distributors have gone out of business, moved out of the U.S., or sold their assets to copyright holders.

In addition to targeting manufacturers who active encourage illegal infringement, both the RIAA and the MPAA continue to sue individuals who are engaged in massive infringement over P2P networks. By their own admission, these lawsuits have had both a deterrent and educative effect. The RIAA now characterizes the P2P problem as "contained."³¹ Meanwhile, new agreements between Internet service providers and content companies strike a balance between consumer privacy and concerns surrounding the distribution of copyrighted works over the Internet. Last year, Verizon and Disney entered into an agreement by which Verizon will warn alleged copyright infringers using its networks, but will not give up their personal information to Disney. Verizon officials have told

Executive Vice President for Government Relations and Washington General Counsel] gave for you [Marybeth Peters, Registrar of Copyrights] earlier this month in Washington in which he demonstrated that he used a digital camcorder viewing the screen on which a DVD was playing to make a excerpt from a DVD film and have a digital copy that could then be used for all the fair use purposes. . . ."), available at <http://www.copyright.gov/1201/2003/hearings/transcript-may15.pdf>; *Rulemaking Hearing: Exemptions from Prohibitions on Circumvention of Technological Measures that Control Access to Copyrighted Works*, Copyright Office § 1201, 71-72 (May 15, 2003) (statement of Dean Marks, Senior Counsel Intellectual Property, Time Warner, Inc.) ("I agree with everything Steve has just said about fair use copying or taking clips . . . with digital camcorders and analog camcorders being widely available . . ."), available at <http://www.copyright.gov/1201/2003/hearings/transcript-may15.pdf>.

31. See Jefferson Graham, *RIAA Chief Says Illegal Song-Sharing "Contained"*, USA TODAY, June 12, 2006, available at http://www.usatoday.com/tech/products/services/2006-06-12-riaa_x.htm.

me that they intend to enter into similar agreements with other content providers.

The passage of the Family Entertainment and Copyright Act in 2005 addressed some of the most damaging forms of copyright infringement, the distribution of copies of films prior to, or very shortly after a film's release. The FECA gave copyright holders a new cause of action to help limit leaks of pre-release works and made explicit the illegality of bringing a camcorder into a movie theatre. It also provided for the appointment of an intellectual property "czar" to better enforce copyright laws.

These tools are in addition to the strict penalties of current copyright law, including the DMCA. To the extent that the content industries are looking for a "speed bump" to keep "honest people honest," I would contend that many such speed bumps already exist, while more are being developed every day without government technology mandates.

Finally, by far the most effective means of preventing massive copyright infringement involves the content industry doing what it took the music industry far too long to do³²—satisfy market demand by allowing consumers to enjoy fair and flexible access to content at reasonable prices (inevitably produced in a free market). Content companies are increasingly adopting copy protection and other digital rights management tools in the marketplace, without any government intervention. iTunes' Fairplay DRM is perhaps the most well known, but other services that use DRM include MSN music and video, Napster, Yahoo Music, Walmart, Movielink, CinemaNow and MovieBeam. Consumers—not the government—decide which restrictions best meet their needs.

DVDs are the best example of the market working. There, a government mandate—the Digital Video Recording Act—was rejected and an industry-agreed upon, yet fairly weak, "keep honest people honest" protection system was adopted. Despite the fact that enterprising programmers defeated the protection system long ago, the DVD market has grown at an astounding rate—from zero in 1997 to \$25,000,000,000 in sales and rentals last year. Today, as described above, other new digital music and video distribution models, developed with content industry support and industry-agreed upon content protection, are emerging in the market. These efforts make government intervention in the free market unnecessary.

32. See Videotape: Keynote Address of Edgar Bronfman Jr., Chairman and CEO of Warner Music (The Progress & Freedom Foundation 2005), available at <http://www.tvworldwide.com/showclip.cfm?ID=6067&clip=2> ("The Music Industry, like almost every industry faced with massive and rapid transformation first reacted too slowly and moderately, inhibited by an instinctive and reflexive reaction to protect our current business and business models.").

CONCLUSION

The 2006 Consumer Electronics Show demonstrated that the content and technology industries are moving forward, together, to provide the digital content and the digital machinery that consumers are buying and enjoying. Technology mandates like the broadcast flag and radio content protection are a step backward from this progress, limiting both innovation and consumer choice while increasing costs to innovators and consumers. Based on recent marketplace developments, government action here would do far more harm than good.

THE 99¢ QUESTION

CHRISTOPHER SPRIGMAN*

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I. INTRODUCTION

In the short time since it opened for business on April 28, 2003, Apple Computer's iTunes music download service has sold over one billion songs worldwide,¹ and it has already become one of the ten biggest U.S. music retailers, moving ahead of long-established retail chains such as Tower Records and Sam Goody.² This is an astonishing achievement in itself, and we might expect iTunes to outpace its early success in the next several years, for the business of paid downloads is growing robustly,³ especially in comparison with anemic sales of music

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1. See Apple, iTunes, <http://www.apple.com/itunes/store/music.html> (last visited Sept. 20, 2006).

2. Brian Hiatt & Evan Serpick, *Music Biz Laments "Worst Year Ever,"* ROLLING STONE (Jan. 13, 2006), available at <http://www.rollingstone.com/news/story/9147118/>.

3. The Recording Industry Association of America (RIAA), a trade association controlled by the major record labels, reports that the number of single tracks downloaded grew by 163.3% between 2004 and 2005, and the number of albums downloaded grew by

on CD.⁴

Moreover, iTunes is not alone—a number of rival music download services have emerged over the past two years, and their businesses are growing along with the overall surge in paid downloads. What we have seen thus far likely represents only the early stages of a much more profound shift in the way we consume music. We are moving toward “pure digital” consumption, unencumbered by physical media like the CD or the comparatively ancient cassette tape and vinyl LP. And as more Americans access the Internet with high-speed connections, the speed with which users can download music will increase, and sales of downloads will increase concomitantly.

This shift is in its early days, yet it has already taken some unexpected turns. One has to do with price. Take a tour through the most heavily trafficked music download services and you will quickly notice a pattern. The price for most songs is the same—typically 99¢. The most popular songs are 99¢—take, for example, “Control Myself,” from LL CoolJ’s 2006 album *Todd Smith*, which recorded the highest total sales on the particular day of this writing (April 15, 2006), on the most popular download site, Apple’s iTunes. And so are a huge number of songs that might not have sold a single copy on iTunes (or on any other download service) that same day—for example, “A Spoonful Weighs a Ton”, from a 1999 album, *The Soft Bulletin*, released by the Oklahoma City band The Flaming Lips. That song is also 99¢ on iTunes, despite the fact that it might sell many more copies, and yield more revenue (and profit, since the marginal cost of providing a download is near zero) at a lower price. These examples—and all the examples I use in this paper—involve popular music (“popular” in the sense of the musical style, not necessarily in terms of consumer appeal). But much the same is true of classical, jazz, and other styles of music offered online—download prices tend markedly toward uniformity.

This is a puzzle. Why would we see a hit song priced the same as one that is unpopular? Typically, we expect pricing of goods and services to vary according to demand, and demand for songs varies widely. Yet prices for songs—more specifically, for song downloads—don’t vary much at all. And failure to price according to demand likely means that both the download services and the major record labels are leaving money on the table. In 2003, the Rhapsody download service

198.5%. Recording Indus. Ass’n of Am. 2005 Year-End Statistics, <http://www.riaa.com/News/newsletter/pdf/2005yrEndStats.pdf> (last visited July 7, 2006) [hereinafter RIAA Year-End Statistics].

4. The RIAA reports that CD sales declined by 8% in unit terms between 2004 and 2005, and revenue from CD sales declined by 8.1%. The 2004-2005 figures are not anomalous: RIAA data report revenue from CD sales declining in excess of 20% from 2000 to year-end 2005. *Id.*

conducted a brief but suggestive experiment.⁵ For six weeks the service offered tracks at 99¢, 79¢, and 49¢. The prices do not appear to have been differentiated according to quality—each category contained some hit and non-hit tracks. Somewhat surprisingly, Rhapsody sold three times as many of the 49¢ tracks as the 99¢ tracks. Given that the marginal cost of selling each track is virtually zero, the 49¢ price yielded greater revenue. What is the lesson here? Many consumers were willing to pay the lower 49¢ price for tracks they would not purchase at the 99¢ standard. Had Rhapsody sorted the tracks by quality (measured by demand at the previous uniform 99¢ price), it could have enjoyed additional sales for the lower-quality tracks (sales that would be profitable if the price Rhapsody pays to the major record labels for licenses to particular tracks were also varied to track demand), and maintained its margins for the higher-quality ones. But for some reason the music industry hasn't absorbed this lesson. Rhapsody's current service is based on a subscription model—a fee for unlimited *rental* of music downloads that cease to function once the consumer stops paying. But for the small portion of Rhapsody's service that remains dedicated to a la carte downloads, prices remain uniform.

In addition to price, we see a number of other non-price characteristics of the download product—audio fidelity, for example, which can change along with the bitrate at which the digital file is encoded—that could vary but do not. We might expect download services to offer downloads of varying fidelity, with more expensive high-fidelity versions for audiophiles willing to pay for quality, and cheaper standard versions for the iPod-wearing masses. Yet we see little product differentiation of this kind. Is there some explanation for this puzzling price and non-price uniformity? That is the 99¢ question that this paper attempts to answer.⁶

5. See Amy Harmon, *What Price Music?*, N.Y. TIMES MAG., Oct. 12, 2003, at 1.

6. Writing about download services has long focused on the possibilities such platforms offer to more flexibly measure and respond to consumer demand. For example, Stanford law professor Paul Goldstein, writing in 1994, speculated about the advent of a kind of super-download service he called the “Celestial Jukebox” (which he described as something functionally very like the current download services, albeit distributing not only music, but an Alexandrian collection of every imaginable form of creative content). Goldstein emphasized the promise of the Celestial Jukebox in making a huge library of content available to everyone, everywhere. He also noted, however, efficiencies that might arise from technology's ability to better track consumer demand for particular works:

From today's vantage point, the celestial jukebox may seem to offer only a convenient new way to disseminate works that were initially conceived as—and are already available in retail outlets for—books, records, or videocassettes. But soon it may be more like a warehouse filled with fragments of recorded sound, visual images, and printed material that electronically cruising subscribers can combine and recombine to their own tastes and purposes. If that happens, the celestial

Part II of this paper briefly examines the price and non-price uniformity that characterizes the selling of music on the download services. Part III then considers several possible explanations for the high degree of uniformity we observe currently in the market for music downloads. I review a number of explanations related to consumer behavior in the market for music downloads, but find that none of the behavioral explanations sufficiently account for current uniform pricing or elements of product quality such as audio fidelity. Part IV considers industry structure—in particular, the existence of substantial bilateral market power (exercised by the “big 4” (as I will refer to them throughout this paper) record companies, acting jointly, on one side, and Apple, with its dominant iTunes download service, on the other)—as a possible explanation for uniform download pricing and product characteristics. This final part provides an account, at this early point necessarily tentative, of how the competitive interaction of the big 4 record labels and the dominant download service, Apple’s iTunes, leads to an inefficient regime of uniform pricing and product quality.

II. MUSIC DOWNLOADS: A QUICK LOOK AT PRICING AND OTHER TERMS OF DEALING OFFERED BY CURRENT SERVICES

A. *Why 99¢?*

Although paid download services have been operating for just over three years, they have fundamentally changed the way in which music is consumed. In the not-so-long-ago world before downloads, songs were almost always sold as part of a larger bundle—i.e., individual tracks were packaged with other songs on an album, and marketed together in a variety of formats, including vinyl records, cassettes, and, latterly, CDs. A substantial market for single songs—i.e., the “45” format—existed in the days of vinyl records, but once CDs took over as the dominant format the singles market withered.⁷ The singles market has revived as the

jukebox will bring copyright closer than ever to its historic economic objects . . . [which are] aimed at subjecting the production of literary and artistic works to the discipline of market forces[.] [B]ecause the celestial jukebox can keep a record of every selection a subscriber makes, and the price he paid for it, copyright owners will have a far more precise measure of the demand for their products than they do today. This capacity should enable them to channel their investments more precisely to meet these newly articulated patterns of demand.”

PAUL GOLDSTEIN, COPYRIGHT’S HIGHWAY 199-200 (1994).

7. In 2003, the last year before paid downloads became widely available, CD singles comprised less than 2% of total sales, in unit terms, for recorded music in the CD format. Of course, by 2002 illegal downloading, undertaken with the assistance of various services associated with the FastTrack and Gnutella peer-to-peer networks, was flourishing and

download services grew. Consumption in the world of downloads is more like the early era of vinyl than the past quarter century of CDs, as it turns out.

This ongoing rebirth of the singles markets should have significant implications for music pricing. When songs are sold in a bundle, it is difficult for a consumer to tell exactly what portion of the price charged can be assigned to the album's hits, versus the portion assigned to the album's filler songs. But in the current environment of download services, the songs have been unbundled, and consequently prices are now more transparent. Transparency means that pricing is more likely to visibly reflect demand for particular songs. Yet we see little variation in pricing for downloads.

Viewed another way, the puzzle is deeper still. The unbundling we see on download services, where songs are sold singly, is in itself a response to demand. Many consumers who desire to purchase a particular band's hit songs do not wish to purchase other songs from that band that are not hits. This desire for disaggregation was difficult to satisfy with music distributed on CDs, for both the cost of the medium (i.e., the plastic disk and associated packaging) and the cost of selling (i.e., shipping expenses, as well as the inventory and retail space required) do not vary much between CD singles and albums on CD, and therefore distribution costs made the CD single uneconomic. In contrast, the cost structure of the download format is largely indifferent to whether music is sold as a bundle or not. The cost of storing and transmitting digital code is insignificant compared to the cost of distributing those same ones and zeros encased within the medium of plastic disks, and it does not vary significantly depending on the size of the digital file.

So we see that download services have responded to consumer demand by disaggregating music formerly sold in bundles. Distribution via downloads makes this disaggregation possible. But the shift to downloads makes other innovations possible as well, and we might expect both record labels and the retailers to start thinking about new approaches to music pricing. Here's a good first question: why are the diamonds priced the same as the dross? Why doesn't the industry move toward pricing that varies to reflect demand?

The puzzle is not limited to pricing. Once we begin inquiring whether uniform pricing is sensible, we notice in this new model of music distribution other instances of uniformity that appear odd. On the whole, we don't see new songs priced differently from old, although hit

therefore the number of CD singles purchased may well have declined substantially relative to the number of units that would have been sold absent illegal file sharing. Nevertheless, RIAA data for 1997 show that even prior to the rise of illegal file sharing, CD singles at most comprised 8.1% of total sales, in unit terms, for recorded music in the CD format. See RIAA Year-End Statistics, *supra* note 3.

songs are typically new songs. We don't see differential pricing based on the quality (i.e., the bitrate) of the digital file, even though audio enthusiasts might be willing to pay for a version encoded in a bitrate higher than the relatively low-fidelity offerings typically encountered on download services. (Obversely, casual listeners or samplers might be responsive to a discount for a lower-fidelity copy.) And we don't see songs for new artists priced differently from those of established artists, even though lower prices for new artists might help build future demand (and permit more sales down the road at a higher price) by tempting consumers who might otherwise be unwilling to pay for music unknown to them.

In a competitive market, we ordinarily would expect firms to respond to these different forms of demand. Indeed, the flexibility and cost advantages offered by online distribution might provide an excellent platform for variable pricing and the many approaches to product differentiation that may attend variable pricing. There are anecdotes that suggest that the music industry would benefit from variable pricing and more elaborate product differentiation. When the BBC briefly posted versions of Beethoven's symphonies online for free, they were downloaded over 1.4 million times.⁸ An executive of the classical music label of Warner Music Group, one of the four major record labels, commented that it would take a commercial CD recording of the complete Beethoven symphonies "upwards of five years" to sell as many downloads as were distributed through the BBC website in two weeks.⁹ The huge number of Beethoven downloads in such a short period suggests that a significant demand exists for this music among consumers who are unwilling to pay the prevailing price, but may be willing to pay something.

Why don't we see an attempt to expand the commercial market for classical music by offering cheap downloads? Or, for that matter, to expand the market for other types of music that currently find only a limited audience? It is tempting perhaps to conjecture that low-priced classical music downloads are shunned because they threaten to cannibalize the sale of high-priced CDs. But this isn't a particularly compelling explanation. Downloads could be more heavily exploited as a price discrimination mechanism—expensive, high-quality classical CDs or premium downloads for the enthusiast; cheap, lower-quality classical downloads for the neophyte. Is the music industry simply missing an opportunity to satisfy unmet demand? Or is there some other

8. Charlotte Higgins, *Beethoven (1.4m) Beats Bono (20,000) in Battle of the Internet Downloads*, GUARDIAN UNLIMITED, July 21, 2005, available at <http://technology.guardian.co.uk/online/news/0,12597,1532890,00.html>.

9. *Id.*

explanation for the uniformity in both pricing and product offerings that we see on the download services?

Recent news reports suggest that the major record labels may want to move away from uniform pricing. Warner CEO Edgar Bronfman, Jr. reportedly stated that “[w]e want, and will insist upon having, variable pricing.” But Apple’s Steve Jobs, whose opinions matter given iTunes enormous share of download sales, counters that the major labels are “greedy,” and that their interest in variable pricing is limited to charging more for hits.¹⁰

The Bronfman and Jobs statements evidence a standoff between powerful firms at different levels of the market for downloads. On the one hand we find the major music labels. Due to their substantial market power, these firms have traditionally exercised control over their prices and terms of dealing. On the other hand we find an upstart retailer. Because of its first-mover advantage and the technological lock-in that users experience once they commit to the iTunes platform (more on this later), Apple exercises substantial market power of its own. Is market power responsible for the uniform pricing of downloads?

We’ll consider that possibility in Part IV of the paper, but it’s worth pausing here to make clear that the explanation offered later can’t simply be that Apple is dominant in the download market and insists on 99¢ pricing. There is an important antecedent question that any explanation must address: *why* would Apple insist on uniform pricing? That’s the biggest piece of the puzzle, for even if Apple owned 100% of the download market, variable pricing might still make sense for them. By better reflecting demand, a variable pricing strategy (at least one not limited to higher prices for hits) might produce higher revenues in the download market. Apple is the leading firm in this burgeoning market, and is likely to remain so for some time. If it implemented a variable pricing strategy that made its download service even more attractive to consumers, the record companies might well be willing to pay Apple more for the opportunity to distribute their songs on Apple’s platform. So the answer has to be something more than Apple’s dominance. There must be some other explanation, perhaps arising from the behavior of download consumers or perhaps a longer-term strategic interest, that is linked to uniform pricing. What might that be? We will return to these questions in Parts III and IV. First, however, a brief look at the download services.

10. Hiatt & Serpick, *supra* note 2.

FIGURE 1: COMPARISON OF MUSIC DOWNLOAD SERVICES

Music Download Service	Per Song, Album, or Subscript..	Number of Songs	File Type	DRM	Download Bit Rate	Price Per Song	Price Per Album	Subscription Price	Playable on Other Computers?	Playable on portable Devices?	Burn to CD
Apple iTunes	Song/Album	> 2.0MM	AAC	Yes	128 Kbps	99¢	\$9.90-\$13.99	NA	5 CPUs	iPods only (unlimited)	7 times/ unique playlist
Napster	Subscript.	> 1.5 MM	WMA	Yes	192 Kbps	99¢	\$9.95-\$13.95	\$9.95/mo or \$14.95/mo w./ portable	3 CPUs	ToGo Subscribers (25 devices)	No
Rhapsody	Subscript	> 1.3 MM	RAX (Harmony)	Yes	192 Kbps	99¢	\$8.99-\$9.99	\$9.99/mo or \$14.99/mo w/ portable	3 CPUs	ToGo Subscribers (17 devices)	Add'l fee/ song 7x/ unique playlist
Yahoo! Music	Subscript.	> 1.0 MM	WMA	Yes	192 Kbps	79¢ (w/ sub.)	NA	\$6.99/mo or \$11.99/mo w/ portable	TBD	ToGo Subscribers (32 devices)	Add'l fee/song # bums TBD
MSN Music	Song/Album	> 1.0 MM	WMA	Yes	192 Kbps	99¢	\$7.90-\$9.90	NA	5 CPUs	Secure WMA devices	7 times/ unique playlist
Musicmatch (Yahoo)	Song/Album	> 900 K	WMA	Yes	160 Kbps	99¢	\$7.49-\$12.79	\$6.99/mo	5 CPUs	Secure WMA devices	7 times/ unique playlist
WalMart Music	Song/Album	> 500 K	WMA	Yes	128 Kbps	88¢	\$8.80-\$9.94	NA	Backup on 2 CPUs, per license/terms	Secure WMA	10 times /song
BuyMusic	Song/Album	> 800 K	WMA	Yes	128 Kbps, 256 Kbps on select songs	99¢, some at 79¢	\$9.49-\$11.99	NA	Waries w/ licenser	Secure WMA, limited # xfers	Based on licenser terms
Virgin Digital	Song/Album	> 2.0 MM	WMA	Yes	128 Kbps	99¢	\$6.99	\$7.99/mo	3 CPUs	Secure WMA devices	Add'l fee/song # bums TBD
Sony Connect	Song/Album	> 700 K	ATRAC3	Yes	132 Kbps	99¢	\$9.99-\$10.99	NA	5 CPUs (playback on 4)	ATRAC3 devices, 5x/ unique list	7 times/ unique playlist
eMusic	Subscript.	> 900 K	MP3	Yes	VBR (192-320 Kbps)	25¢ (40/m) 23¢ (60/m) 22¢ (90/m)	(see per-song pricing)	(see per-song pricing)	Yes	Yes	Yes
Audio Lurchbox	Song/Album	> 350 K	MP3 & OGG	No	192 Kbps	99¢ or less (25¢ or less w/ sub.)	\$9.99 or less (25¢/song or less w/ sub.)	\$9.99-24.99/mo based on use	Yes	Yes	Yes

B. *The Download Services*

To begin to understand the possible reasons why we might find uniform pricing and limited product differentiation in the provision of music downloads, it is helpful to look closely at the leading download services. Figure 1 presents data regarding the available content, pricing, and terms of service for the ten largest paid music download services—Apple’s iTunes, the retooled (legal) Napster, Real Networks’ Rhapsody, Yahoo! Music, Microsoft’s MSN Music, Musicmatch (recently acquired by Yahoo!), Wal-Mart Music Downloads, Buy.com’s BuyMusic, Virgin Digital, and Sony Connect.¹¹

Of these services, iTunes is by far the largest, comprising approximately 83% of the U.S. music download market, according to Apple. And just as the retail side of the market for downloads is concentrated, so is the wholesale side: all of the services mentioned directly above offer downloads from a catalog comprised mostly of music from the four major record labels that dominate the production of recorded music—Universal Music Group, Sony BMG Music Entertainment, EMI Group, and Warner Music Group. Taken together, these four major labels control over 70% of the sales of recorded music globally, and over 85% of sales in the U.S.¹² The catalog offered by the big 4 via the download services is, for the most part, also available on CD, although we do see some music that is offered for exclusively for download.¹³

11. See also WILLIAM M. FISHER III, PROMISES TO KEEP: TECHNOLOGY, LAW AND THE FUTURE OF ENTERTAINMENT 199-258 (2004). (To be clear, I am focusing on a subset of the means currently available for obtaining digital music files online. Most importantly, I focus on the “paid” services – e.g., Apple’s iTunes, Real Networks’ Rhapsody, and the “new” Napster – that offer downloads or “streams” of digital audio files. I do not include peer-to-peer (p2p) networks, such as Grokster or BitTorrent, in my analysis. P2P services, which typically involve unauthorized access to copyrighted works, might in the future serve as a platform for some form of alternative compensation system, perhaps of the type recently described by Terry Fisher.); see also *iMesh, MusicNet Officially Announce Partnership*, Digital Music News, Jan., 2005, <http://www.digitalmusicnews.com/results?title=iMesh> (describing plans for paid p2p services, with two firms, iMesh and Snocap, having obtained licenses to the major labels’ digital catalog of over two million songs); see also Chris Marlowe, *Early Peer-to-peer Music Site Gets Back in Game*, HOLLYWOOD REP., Jun. 12, 2006, available at http://news.yahoo.com/s/nm/20060612/tc_nm/qtrax_dc_2 (describing a p2p sampling service, to be offered through the Qtrax network and limited, at the moment, to tracks from major label EMI. Paid p2p has, however, not yet launched and we cannot therefore gauge whether, and to what extent, paid p2p would offer a service meaningfully different, in terms of the music available, the prices charged, or the terms of use offered, from the paid download services.).

12. Press Release, International Fed. of the Phonographic Indus., 12th Annual Recording Indus. in Numbers (Aug. 2, 2005), http://www.ifpi.org/site-content/publications/rin_order.html.

13. See, e.g., Walmart, Music Downloads, <http://musicdownloads.walmart.com/catalog/servlet/AlbumServlet?id=130276> (last visited July 8, 2006) (two tracks available exclusively for download on WalMart.com); see generally, Walmart, Music Downloads, <http://musicdownloads.walmart.com/catalog/servlet/AlbumMerchServlet?albummerchsubjecti>

Figure 1 also presents data for eMusic and Audio Lunchbox, two of the many smaller services that offer music downloads from a large number of independent record labels. These “independent” download services enjoy only a small share of the market, likely less than 5%. As a result, we will focus mostly on the services offering music from the big 4 major labels.

Download purchase vs. download rental. It is important to note that our focus is on download *purchases*, and not download *rentals*. One important fact that jumps out from Figure 1 is that download services have introduced an important innovation—music “subscription” services—that has been unavailable in the CD market since Congress amended the copyright law to proscribe the unauthorized rental of sound recordings (an activity that would otherwise be permissible under copyright’s “first sale” doctrine).¹⁴

Music “subscription” is a marketing term for a rental service: i.e., a model wherein the customer pays a fee, usually set as a price paid per month, for the right to download as much music as he desires. The music files are wrapped in a digital rights management (DRM) scheme that directs that the downloaded files disappear from the customer’s computer or portable music player once the customer stops paying rent. These services operate only with certain computer media players and portable music devices configured to respect the DRM rules associated with the downloaded files. In a model that allows unlimited downloading for a fixed monthly price, variable pricing is by definition impossible—consumption is unlimited (or limited only by the amount of data that could conceivably be downloaded) and therefore although subscribers do incur costs for their downloading, individual downloads are not priced. Of course, a service could offer variable pricing within the subscription model by calibrating its monthly fees to a maximum number of downloads. The independent eMusic service offers something like this, charging \$9.99/month for up to 40 downloads, \$14.99/month for 65, and \$19.99/month for 90. But one might question whether eMusic is really offering a “subscription” service, or merely a form of volume discount on *purchased* downloads. Unlike the true subscription services offered by Yahoo! Music and several of its rivals, the downloads distributed by eMusic are not wrapped in DRM, do not disappear when the customer stops paying monthly fees, and so are owned rather than rented.

Although they are mostly irrelevant to the question of variable pricing, it is worth pausing a moment to consider the role of true subscription services, which are another form of product differentiation

d=50 (last visited July 8, 2006).

14. See Record Rental Amendment Act of 1984, 17 U.S.C. § 109(b)(1)(A) (2000).

that responds to demand. These services are especially attractive to “samplers”—those who prefer to listen to a large amount of music but purchase only the fraction that they particularly like. Subscription services may also be a sensible choice for consumers who tend to treat music as a disposable good, listening to a particular song or album for a period and then rarely or never returning to it. Neither samplers nor “disposers” are addressed particularly well by music marketed on CDs.

It is also important to notice that “all you can eat” subscription services are possible only because of the use of DRM technologies that enforce the rental terms and prevent (or hinder) further unauthorized distribution by the user. DRM is a form of electronic self-help that content owners use to limit the uses that are made of their works distributed in digital form. The scope of permissible use of a non-DRM-protected CD is restricted, of course, by copyright law. But the restrictions imposed on “pure-digital” files purchased from online music download services often are more exacting than what the default rules of copyright law would otherwise mandate.

Functional and enforceable DRM is often said to be a predicate to content owners’ willingness to offer their properties over digital networks—because digital files can be copied endlessly without degradation. Somewhat awkwardly for the record labels, most CDs—although also a digital medium that allows perfect serial copying—are not subject to DRM restrictions. The major record labels have tried, and thus far failed, to design an effective DRM scheme for CDs. That effort is likely to continue, as part of a broader push to apply copy protection technologies to all forms of digital music. DRM, in the industry’s view, is the key that unlocks all the potential that digital distribution can offer. Why? Because it replaces copyright enforcement via expensive lawsuits with enforcement through inexpensive code. Moreover, it can encode different terms of dealing that respond more flexibly to different types of demand. DRM would, of course, be an important tool in implementing certain forms of variable pricing—e.g., one that charged different prices for a short-lived “sampling” download versus a standard persistent download, or one that varied prices based on the number of devices on which a particular consumer wished to play the download.

C. Uniform Pricing Amidst Variable Demand

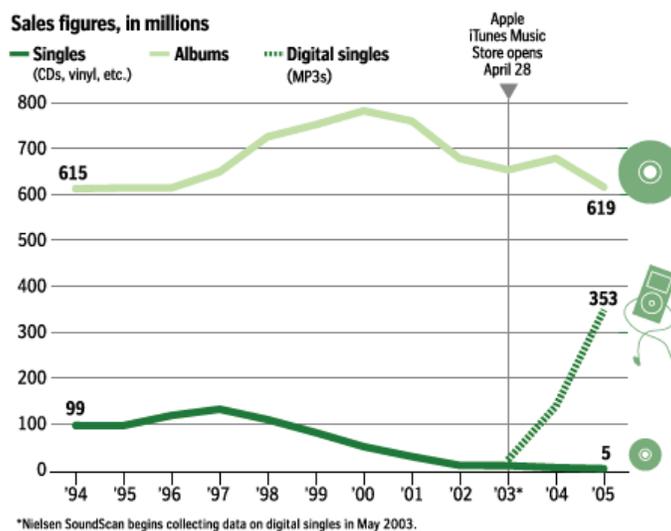
Online services distribute music as naked digital files, rather than as files encoded on a physical medium, like a CD. Accordingly, distribution of music via download services avoids the cost of the physical medium itself, and also the costs (transport, inventory, etc.) associated with the distribution of the physical medium. By virtue of these avoided costs, we might expect to see lower pricing for music

offered via the download services, compared with the same music offered on CDs. And we do observe lower pricing, albeit not dramatically lower.

Price reduction via disaggregation. The most important source of lower pricing offered by the download services inheres, of course, in the services' disaggregation of music that formerly was sold only as a bundle (i.e., as a group of songs on a CD), but are now offered a la carte. This means that consumers who value the hits from a particular release, but not the lesser-known tracks, can choose to consume only the hits and pay less. This flexibility prices in some consumers who are willing to pay 99¢ for a hit song, but not ten times that amount or more for the associated CD. And a la carte pricing increases consumer surplus for those who would be willing, absent disaggregation, to pay for the CD, but would prefer to purchase the CD's hits and direct the balance of their \$9.99 toward other purchases.

Disaggregation has led already to a substantial change in the industry's product mix, as illustrated by Figure 2, a graphic, taken from an article in the *Washington Post*, which sets out data from Nielsen SoundScan. Figure 2 shows an accelerating shift from consumption of albums, which fell by 7.2% in 2005, to consumption of single tracks, which rose by more than 150% in the same year.¹⁵ This shift in consumption reflects demand focused on single tracks, rather than

FIGURE 2: NIELSEN SOUNDSCAN DATA



15. J. Freedom du Lac, *Downloads Make Singles a Hit Again: But Popularity of MP3s Has a Flip Side: Fewer Album Sales*, WASH. POST, Feb. 8, 2006, at A1.

albums. Some share of this demand was almost certainly unmet prior to the disaggregation re-introduced by the download services.¹⁶ In sum, we see significant consumer welfare arising from disaggregation. That said, there is potentially much more consumption to be unlocked. What we do not yet see is disaggregation of previously bundled music into a la carte offerings, accompanied by variable pricing for the disaggregated tracks. If demand for hits exceeds substantially demand for less popular tracks (which it almost certainly does), pricing all or almost all tracks at 99¢ is not optimal. There is no legal rule preventing variable pricing. The question remains to be answered, therefore, why we do not see much more differentiation in prices charged for individual tracks.

Price reduction without disaggregation. Aside from the gains realized from disaggregation, we see evidence that download services have generally lowered prices, at least for albums. The market for CD singles is very small, and pricing is highly idiosyncratic (many CD singles are imports and rarities that typically are specially valued by collectors and therefore sell for a higher price), so price comparisons are difficult. Comparison between download and CD prices for albums is more revealing.

As Figure 1 illustrates, most sites offering downloads charge around \$9.99 per album. There is some small variation in price: a few of the services (e.g., MSN and Musicmatch) offer a small number of albums for less than the standard \$9.99 rate, and another, somewhat larger number, at a rate higher than the standard.

The typical \$9.99 price for an album download is often somewhat less than what the same CD costs at retail. For example, WalMart charges \$11.88 (plus approximately \$2.00 in shipping costs) for the latest album (*Plans*) by Death Cab for Cutie, whereas WalMart.com charges \$9.44 and BuyMusic.com \$9.99 for the same album in download form. CD prices in retail stores vary widely, but tend to be higher than the lowest prices available online. Plan9 music on University Avenue in my hometown of Charlottesville, for example, charges \$17.07 plus tax for Death Cab's *Plans*.

So for this particular album, purchasing the download yields a savings of approximately \$4 including avoided shipping costs versus ordering the CD online, and more than \$8.00, not including tax, versus purchasing the music at a local brick-and-mortar retailer. This particular example is merely suggestive—a full survey of download versus CD

16. We can see this process at work at the level of individual musical works. Recently the Washington Post reported on a particular instance of disaggregated consumption involving a hit song, "Laffy Taffy," from the Atlanta hip hop band D4L. "The song has been downloaded—legally, and for a fee—more than 700,000 times from iTunes, Yahoo! Music and other online music outlets since its release in late October . . ." *Id.* By comparison, total sales for the album, "Down for Life," on which the song appears, is only 304,000 copies. *Id.*

pricing is far beyond the scope of this paper, which is concerned about price variability and not absolute price levels. Of course this raw price comparison is necessarily imprecise because the Death Cab album obtained via download is in some important ways a different product than the same album on a CD. The downloaded music is available for use almost immediately, whereas the customer must wait for the CD purchased online. Conversely, the music purchase offered via a download service does not include the physical media, usually does not include the artwork and liner notes, and is of lower sound quality than music sold on a CD. And, perhaps more importantly, the download is usually subject to DRM rules that govern usage—including restrictions on how many copies can be made of the digital file, and often on the number and type of devices on which the music can be downloaded. The data on the CD, by comparison, is almost always “in the clear”—i.e., unencrypted (and therefore subject to copying) and also playable on any device that adheres to the CD standard. Accordingly, one’s ownership of a download subject to DRM rules is much less complete than the same music packaged on a CD. The product we think about as “music” turns out to be a bundle of digital code and legal rights, and whereas the code may be the same, the rights differ. For many individuals, willingness to pay will vary along with the rights conveyed in a particular bundle.

Price variation. Despite these factors that make a precise reckoning difficult, it is clear that download services offer at least some price advantage over online and, especially, brick-and-mortar purchases of CDs. But when we look not at the price of a particular song or album, but at the incidence of *price variation* between different songs or albums, we observe a high degree of uniform pricing in the offerings of the download services. Indeed, we arguably see less price variation for downloads than for CDs, which is strange given the increased pricing transparency brought about by disaggregation, and also the relative ease with which prices can be varied online versus for inventory sitting in the shelves of a record store.

The typical price for a downloaded single is, as the title of this article suggests, currently 99¢. That price is typical, but not inevitable: WalMart, for example, charges somewhat less (88¢) for a download, and Rhapsody and BuyMusic.com offers a limited selection of singles at 79¢. So we see some direct price competition among the download services, but little evidence of demand-based variable pricing within the offerings of any particular download service. To wit:

Thirteen of the fourteen tracks on Mariah Carey’s 2005 album *The Emancipation of Mimi* are priced at 99¢ each on BuyMusic.com (the remaining track, “We Belong Together,” is offered at 79¢). The same fourteen tracks are available on WalMart.com, each priced at 88¢.

The thirteen tracks on Bruce Springsteen’s 2006 album, *We Shall*

Overcome: The Seeger Sessions, are uniformly priced on WalMart.com for 88¢ per track; the same tracks cost 99¢ each at Sony's Connect.

The twelve tracks of Toby Keith's self-referentially titled 2006 album, *White Trash With Money*, are uniformly priced at 99¢ each on Sony's Connect; the same tracks cost 88¢ each on WalMart.com.

So we see some price competition among download services, but little variable pricing among individual tracks on the same album. That pattern continues when we look at pricing for the albums themselves. Indeed, the degree of differential pricing for downloaded albums may in some cases even be *less* than what we find for albums distributed on CDs.

On Amazon.com, for example, the single-CD albums offered for sale by Chicago band Wilco range from \$8.97 for 1999 release *Summerteeth* to \$14.98 for the band's 2004 studio release *A Ghost is Born*. Wilco's latest (2005) release, *Kicking Television: Live in Chicago*, a double album, is priced at \$22.98. On BuyMusic.com, available Wilco single-CD album downloads are priced uniformly at \$9.99, except for *Kicking Television*, which costs \$18.99. On WalMart.com's download site, available Wilco single-CD albums are uniformly priced at \$9.44; *Kicking Television* costs \$17.44.

The same pattern persists when we examine pricing for the albums of a better-selling band, the Black-Eyed Peas. On Amazon.com, prices for non-import CDs from this band range from \$9.76 for 2005 release *Monkey Business* to \$11.98 for 2004 release *Elephunk*. On BuyMusic.com, all available Black-Eyed Peas albums are priced at \$9.99. On WalMart.com's download site, Black-Eyed Peas albums are priced at \$9.44, except for the 2000 release *Bridging the Gap*, which is priced at \$5.88.

Again, this data is merely suggestive, and a full survey of download pricing is beyond the scope of this paper. Yet if space permitted, we could multiply examples endlessly, and the data would continue to illustrate a high degree of pricing uniformity in the offerings of the download services, more than we would expect based on what intuition suggests is a wide variation in demand between hits and non-hits.

Is there perhaps something wrong with this baseline intuition—i.e., is it possible that demand for hit songs is not meaningfully different, at least for music in the form of downloads, than demand for non-hits? The nomenclature itself—the identification of certain songs (both within the industry and by the broader public) as “hits”—suggests that the intuition is correct, but of course the language used is not itself definitive. Data about demand for individual tracks is available from Nielsen's SoundScan division. SoundScan maintains an information system that tracks sales of music and music video products throughout the United States and Canada and that provides data for the music charts, like those

published weekly in Billboard. The SoundScan data is, however, available only via a very expensive subscription, so for our purposes we are obliged to rely on rough proxies for measuring differential demand.

An interesting window into the variation in demand between hits and non-hits is provided by data collected by LastFM,¹⁷ a service which describes itself as providing a platform for music communities. Among other things, LastFM distributes software that identifies all music files contained on a user's computer and periodically reports back to the service all music the user has played on that computer. This authorized electronic snooping allows users to build a personalized music profile, which in turn permits LastFM to make personalized music recommendations (i.e., to identify music a particular user might enjoy, based largely on the record of the music that user has listened to). The service produces, as a byproduct, a record of how many LastFM users have listened to each particular track from a large number of popular music albums. LastFM makes these numbers visible for each track.

LastFM users are generally technologically savvy and as a group likely pay attention to and consume music at a rate above the norm. One might suspect, therefore, that as a group LastFM users may have deeper knowledge of music and focus less on hit songs relative to music consumers as a whole. Nevertheless, LastFM data suggest that users listen to hits significantly more often than non-hits from the same album. For example, 279 LastFM users have listened to "Laffy Taffy," a hit song from the 2005 album *Down for Life* by hip-hop band D4L, while only 3 have listened to "Diggin' Me," from the same D4L CD. 18,082 people have listened to "Frozen," from Madonna's 1999 release *Ray of Light*. That song hit #2 on the Billboard charts. In contrast, only 2,008 people have listened to "Shanti/Ashtangi", a non-hit from the same album.

Variation in demand among different tracks by the same artist is perhaps stronger for music with a fanbase heavily oriented toward hits. Nevertheless, LastFM data suggests that demand varies even for tracks from artists whose fans are more likely to be interested in the artist's output as a whole, rather than individual hit songs. 100,678 people listened to "Such Great Heights," a relatively well-known song (albeit not a chart topper) from the 2003 release *Give Up* by The Postal Service, while 19,820 people have listened to "There's Never Enough Time", from the same album. 1,552 people have listened to "Lake Swimming," from Laura Viers' 2005 album *Year of Meteors*; whereas 3,142 people have listened to "Galaxies," the song that has attracted the most attention from that same album.

17. See generally Last.fm, The Social Music Revolution, <http://www.last.fm/> (last visited Sept. 6, 2006).

Again, this data is only suggestive, but it aligns with an intuition that the entire structure of the music industry also supports. The record labels promote hits in part via payments (estimated in the hundreds of millions of dollars annually) to “independent record promoters” who, in turn, pass money along to radio stations that play songs the record companies are promoting as hits.¹⁸ This system is different from illegal “payola” only because the payments are made through a middleman (the independent promoters) rather than directly from record company to radio station. While that is enough of a difference to evade the law, the effect of the system is the same – i.e., to increase the public’s exposure to certain favored songs in order to spark (and to some extent reflect) demand for those songs. Until recently, consumers who wished to purchase songs they heard on the radio were, for the most part, forced to buy those songs as part of a bundle. The mechanism for spurring consumer demand was (and is), however, still directed toward hits, rather than toward the bundle as a whole. The industry’s significant investment in this strategy speaks to its perception that demand is directed disproportionately toward hits.

D. Non-Price Uniformity: Quality and Usage Rules

Uniform audio quality. Aside from different prices based on the popularity of individual albums or tracks, firms might also discriminate among different types of demand by offering music downloads at different levels of quality, with price adjusted accordingly. This type of differentiation would take advantage of firms’ ability to offer files of higher or lower bit-rate resolution (and hence of higher or lower fidelity) within the same file format, such as MP3, WMA, AAC, etc. Or, since media players may be configured to support more than one format, firms might also discriminate by offering files encoded in different formats, employing different compression-decompression algorithms (codecs). Compression reduces the size of digital files, thereby speeding downloading and minimizing the share of the user’s hard drive occupied by the downloaded file. Most codecs are “lossy”—i.e., they reduce file size by removing data in a way that affects fidelity. Other codecs are lossless; they remove data by using techniques that produce no audible changes. Audiophiles may be attracted to downloading in a lossless format, such as the Free Lossless Audio Codec, or FLAC, while ordinary listeners, who are relatively insensitive to audio quality, may favor a lossy format, such as MP3, which results in a smaller file that occupies less disk space and which is compatible with a larger number of music

18. Eric Boehlert, *Pay for Play*, SALON, Mar. 14, 2001, <http://archive.salon.com/ent/feature/2001/03/14/payola/index.html>.

players.

Because they deal in pure digital code, download services can introduce all these forms of product differentiation at low cost relative to those attending physical media. This flexibility offers music download services a significant potential advantage over distribution via CDs, a standard now more than two decades old and which supports only one (not particularly high-quality) format.¹⁹ Firms offering downloads of varying fidelity might be able to charge different prices based on consumers' differing demand for sound quality. The audiophile who listens to music on his \$10,000 home stereo may be willing to pay considerably more for a high-resolution digital file (which could easily offer better-than-CD-quality sound) compared with the casual listener who experiences music mostly through the cheap headphones of an iPod.

While product differentiation by varying the bitrate of audio files might be a promising price discrimination strategy, we see little evidence of it. Referring back to Figure 1, the services offer downloads at between 128 kilobits per second (kbps) and 192 kbps. It is difficult to compare the fidelity of some of the different services directly, because they are using different file formats, including different compression algorithms, which differ in the fidelity they produce at a given bitrate. Nonetheless, all of the services are clustered around a roughly comparable level of audio quality. Two of the services, BuyMusic.com and eMusic, do offer some higher-resolution files, but do not charge extra for them.

Variation in DRM usage rules. In addition to varying sound quality, firms might also use DRM code to vary usage rules, and charge differential prices based on the nature of the permitted uses. Firms might, for example, identify a class of consumers who treat music as a "disposable" item—i.e., those who listen to the latest hits, and then forget them once they are no longer hits. We see some effort to address these customers via the music subscription services, described above. Use of a subscription service allows a "disposer" to constantly cycle through the latest hits and simply record over what they no longer use. But it may be difficult to induce a casual listener to commit to a subscription service. First, he may not plan to consume enough music to make an "all you can eat" subscription service worthwhile. Second, even if he does, the necessity of paying monthly fees and (if he wishes to take his music with him) of purchasing a portable music player compliant with a particular service's DRM scheme, is a deterrent.

19. Recently, the CD format's poor audio quality came under fire from music legend Bob Dylan, who noted that the songs on his latest (2006) album, *Modern Times*, "probably sounded ten times better in the studio when we recorded 'em. CDs are small. There's no stature to it." Jonathan Lethem, *The Genius of Bob Dylan*, ROLLING STONE, Sept. 7, 2006, available at <http://www.rollingstone.com/news/story/11216877/>.

A better solution for many casual disposers may be the opportunity to make a la carte purchases of tracks that are subject to “disappearance” via DRM after some period calculated to track the duration of a track’s appeal to the average disposer. If, at the end of this period, the disposer wishes to retain access to the track, he can simply pay to remove the portion of the DRM that applies the time limitation. As a further development along this path, firms might cater to adventurous listeners by offering a “sampling” price; i.e., a lower (even near-zero) price for downloads that persist for just a few days to allow a consumer to decide whether to purchase, perhaps by making an additional payment for the removal of the DRM.

We see no evidence that these strategies are followed by any of the major download services. We do, however, see some evidence of variation in the rules that apply to burning downloaded tracks to a CD. Referring again to Figure 1, we see a number of services offering DRM rules which allow burning a particular download to a CD seven times, so long as it is burned each time as part of a unique playlist—i.e., the services do not want multiple copies of the same compilation being produced, probably because they are afraid that multiple copies of the same thing are more likely to be sold. But Rhapsody, Yahoo! Music, and Virgin Digital have implemented a form of variable pricing by making users pay extra to burn tracks, up to a maximum number of allowed burns.

III. SOME POSSIBLE BEHAVIORAL EXPLANATIONS FOR UNIFORM DOWNLOAD PRICING

There are several potential explanations for the uniform pricing of music downloads. These can be divided into two broad categories. First are a number of related potential explanations that arise from consumer behavior, and, specifically, consumer reaction to pricing schemes that renders seemingly rational variable pricing inefficient. Second is industry structure—i.e., is uniform pricing an artifact of an exercise of market power at either the wholesale or retail level? This section will consider possible behavioral explanations.²⁰

Fairness. Consumers sometimes react unfavorably to prices that they perceive as unfair, even if the prices are themselves driven by supply and demand. For example, consumers were angered when Coca-Cola introduced vending machines that raised the price of cold drinks in

20. See generally Barak Y. Orbach & Liran Einav, *Uniform Prices for Differentiated Goods: The Case of the Movie-Theatre Industry* (NYU Law & Econ. Research Paper No. 04-02, Jan. 2006), available at <http://ssrn.com/abstract=871584> (an interesting and insightful paper that lays out the scheme followed by the analysis in this section).

response to rising temperatures.²¹ It seems reasonable that demand for cold drinks would rise along with temperatures, and therefore demand-based soft-drink pricing based on temperature would be efficient. And yet consumers perceive demand-based price increases for soft-drinks as unfair and opportunistic.

Consumers are believed to judge the fairness of prices relative to an industry “reference” transaction, which is typically a common transaction that provides the baseline against which consumers judge alternative terms and conditions.²² The reference transaction for the recorded music industry has long been the CD, which, as we have seen, involves the purchase of a bundle of songs that are now offered separately on download services. Because the CD is a different product from a downloaded track, it is not a particularly powerful referent. Consumers do not compare download prices to CD prices directly—rather, if they treat the CD as a referent, they must interpret the price of a download as a percentage of the average CD bundle. Pricing individual tracks uniformly at 99¢ produces a rough approximation of the price of an average 12-track CD. But it is not self-evident that consumers identify “fairness” as requiring that hits and non-hits should, when unbundled, each be priced as equivalent contributors to the cost of the reference product.

The fairness question is further muddled by the various differences between music downloads and music on physical media. Consumers are accustomed to paying more for immediate access to media content. A good example is the price premium charged for hardcover books, versus the price charged to those willing to wait for the paperback, or the price premium for movies in their theatrical first release, versus the price paid by those willing to wait until the film moves to second-run theatres and from there to the rental market. Unlike the CD, the download is available immediately without having to travel to a store or wait for a postal delivery.

Similarly, consumers are accustomed to paying more, in general, for higher-quality products. The hardcover book is again a good example—both the binding and the paper are more durable than those used in a paperback, and book publishers demand and receive a large premium for hardcovers. As has been noted above, quality differentiation is almost unknown in the market for music downloads. That fact is especially curious when one considers that the CD is a dinosaur by the standards familiar in almost every other corner of our digital environment,²³ where

21. Constance L. Hays, *Variable-Price Coke Machine Being Tested*, N.Y. TIMES, Oct. 28, 1999, at C1.

22. Daniel Kahneman et. al., *Fairness as a Constraint on Profit Seeking: Entitlements in the Market*, 74 AM. ECON. REV. 728, 729-730 (1986).

23. The technical specifications for the Compact Disk format, typically referred to as the

the ever-falling cost of processing power has resulted in ever-rising performance. Downloads could be made sonically superior to CDs, and also could be packed with data—such as artist information, photos, sheet music (e.g., guitar tabulations), etc.—that are for the most part unavailable in the CD format. As currently marketed, most downloads are differentiated from CDs, but as *inferior* products (i.e., of lower sound quality and without the desirable packaging (lyrics, artwork) included with many CDs).

Perhaps the 99¢ download is itself serving as a referent, thereby raising a risk that the introducing demand-based pricing for hits would be perceived as unfair (assuming that pricing according to demand would yield a price significantly higher than 99¢ for some hits). But even if we assume that the 99¢ download has been established long enough to serve as a referent, the industry can overcome consumer perception that a higher, demand-based price for a hit song is unfair. For example, download services could move higher-priced downloads away from the reference transaction by bundling additional content with the hit song. If the gap in demand between a hit song and a non-hit by the same artist is wide enough that the optimal price for the non-hit is low, the download service might seek to address consumers' unfairness perceptions by bundling a "b-side" with the higher-priced download. Alternatively, the download service could justify the higher price by bundling the hit song with a track from a less well-known artist that the service believes will be attractive to fans of the hit. Or, the download services could employ framing strategies, such as transitioning toward full demand-based pricing by first introducing prices for non-hits or older music below the 99¢ standard. Introducing prices for some tracks that consumers will perceive as "discounts" is a useful first step toward eroding the expectation of uniform pricing. In any event, download services could pursue a number of strategies to move away from uniform pricing, and thereby alter consumer perceptions regarding the fairness of download prices. Although it is possible that fairness concerns play some role in download services' pricing decisions, fairness does not in itself provide a persuasive justification for uniform pricing of music downloads.

Demand Instability/Uncertainty. Uniform pricing is sometimes justified as a response to the concern that demand for a good is sufficiently unstable or uncertain that consumers would perceive price cuts as a negative signal about quality and therefore be deterred from consuming low-price goods.²⁴ These arguments do not apply particularly well to uniform pricing for music downloads, for at least two

"Redbook," were issued in 1980 by a taskforce composed of engineers from Philips and Sony. The first CD players appeared in 1982 in Asia and 1983 elsewhere.

24. See Orbach & Einav, *supra* note 20, at 17-18.

reasons.

First, we can deal with consumers' questions about quality by allowing sampling, specifically via streaming (i.e., by sending the audio file to a media player specially configured to prohibit storage of the data), or via DRM (i.e., by allowing storage, but with encoded rules that cause the data to become inaccessible after a set period). Sampling likely works better for individual tracks than for albums, but even for the larger works sampling is useful in diminishing consumer concerns about quality. Toward that end, we see online CD retailers like Amazon.com using sampling widely to allow consumers to assess quality before purchase.²⁵

Second, even in the absence of sampling, consumers will often possess some information about low-priced non-hits that would help to address their quality concerns. In particular, when a consumer considers the purchase of an unknown low-priced song from a particular artist, he will often own or have otherwise experienced a performance (via radio or television) of other songs by that artist, and from that information draw some conclusions regarding the likely quality of the unknown song. Considering the small investment required to purchase the low-priced non-hit, knowledge of other songs by the same artist may be enough to address quality concerns in many cases. This is an empirical question, but the discussion directly above suggests, at the least, that strategies exist whereby the download services could implement variable pricing while minimizing the impact on consumers' perceptions of likely product quality.

Menu and Monitoring Costs. Variable pricing might not make sense if it would result in substantial "menu costs" arising either from the expense associated with the frequent adjustment of prices or from the creation of consumer confusion significant enough to deter consumption. But menu costs are not a persuasive reason to adhere to uniform pricing for downloads. First, technology could enable the download services to make frequent adjustments to prices almost costlessly. Download services could avoid significant menu costs by using variable pricing engines, such as Digonex's Digital Online Exchange System.²⁶ These technologies continually calculate and implement variable prices based on a number of factors, including consumer demand and content owners' desired margins, that can be customized to adhere to the business models of a particular service. So, for example, new releases could be priced at \$1.99, and then prices could be allowed to vary depending on the pricing

25. See, e.g., Amazon.com, Fox Confessor Brings the Flood, <http://www.amazon.com/gp/product/B000CS4L1E/> (last visited July 8, 2006) (webpage that includes samples for 2006 release by Neko Case, Fox Confessor Brings the Flood).

26. See *Digonex Pushes Variable Download Pricing Technology*, DIGITAL MUSIC NEWS, Jan. 23, 2006, <http://www.digitalmusicnews.com/yesterday/january2006#012305variable>.

engine's calculation of demand and the resulting predicted optimum.

The risk that variable pricing will impose menu costs by confusing consumers is similarly slight. The download services are capable transparently of associating a price with any particular download; ensuring that patrons are able to locate the music they wish to purchase and understand the price of any particular download is a straightforward question of site design. This is especially true because the number of potential products offered by any download service is so large—even the smaller services offer hundreds of thousands of songs—that it makes no sense to confront consumers with a complicated menu of prices. Rather, it makes sense to design an interface that allows consumers to access music that interests them, and then associate a price with the particular tracks or albums on which the consumer wishes to focus.

Variable pricing might also prove inefficient if it creates the necessity of monitoring consumption to make sure that consumers do not purchase a low-priced product and then surreptitiously consume a higher-priced one. An example of potentially significant monitoring costs would be variable pricing in the movie theatre industry, which, if adopted, would raise the likelihood that consumers would purchase a ticket for a lower-priced movie and then sneak into a higher-priced film showing on a different screen in the same theatre.²⁷ There is, however, no directly analogous story to be told for downloads—cheap and effective technological means are available to ensure that download services deliver to consumers only those songs for which they have paid. There is, of course, a much larger problem of music piracy—i.e., downloading music without payment from peer-to-peer networks and elsewhere. Piracy poses a somewhat different monitoring costs problem; one that affects downloads whether prices are variable or uniform, but that might be worsened if prices vary. I'll discuss piracy and its relationship to uniform pricing later in the paper.

IV. SUBSTANTIAL BILATERAL MARKET POWER AS A POSSIBLE EXPLANATION FOR UNIFORM DOWNLOAD PRICING

If behavioral explanations don't appear to explain uniform pricing for music downloads, can we understand the phenomenon as arising from an exercise of market power held at one or more levels of the distribution chain for downloads? In particular, is uniform pricing for downloads related to the dominant share of sales of recorded music held by the big 4 labels? Or perhaps, does it relate to the equally dominant share of sales of downloads enjoyed by Apple and its iTunes download

27. See Orbach & Einav, *supra* note 20, at 18-19 (Orbach and Einav ultimately conclude that monitoring costs are not a persuasive explanation for uniform pricing in the movie theatre industry.).

service? Or perhaps both?

We see conduct that reflects substantial market power on both the wholesale and retail sides of the download business. On the wholesale side, the four major record labels together comprise more than three-quarters of industry sales in the U.S. Barriers to entry in the recording business—related mostly to the expense involved in promoting acts (including, importantly, payments made via the modified payola system described earlier) and gaining retail distribution for releases—remain substantial even as music retailing migrates away from brick-and-mortar stores and toward downloads.

The big 4's possession of substantial share protected by barriers to entry suggests indirectly that they possess market power, which they may exercise either through explicit collusion (illegal under the antitrust law) or via tacit collusion and oligopoly pricing (lawful). There have long been allegations, as yet unproven, that the big 4 are acting collusively to raise wholesale prices over time. Recently, the Digital Media Association, an organization that represents several music download services, reported that several major labels have insisted on including in their agreements with download services "most-favored nation" (MFN) clauses designed to ensure that if one label negotiates a higher wholesale price with a download service, the other major labels immediately obtain the higher price.²⁸ Federal and New York antitrust prosecutors are examining whether the big 4 have included MFNs in their contracts, and whether these provisions function as an avenue for collusion.²⁹

In addition to indirect evidence of market power arising from high share and significant barriers to entry, we find direct evidence of market power in the big 4's pricing. The big 4 labels distribute their electronic catalog through a common wholesaler, MusicNet. The labels' agreements with MusicNet are not publicly available, and so discussion of the details of the big 4's relationship with MusicNet is necessarily tentative. Nevertheless, what we do know adds to the picture of significant producer market power. First, the big 4 appear to offer their catalogs through MusicNet at approximately 70¢ for a track (on a per download basis)—a price which varies little either among the different companies or for different tracks contained in any single company's

28. See Dawn C. Chmielewski & Charles Duhigg, *Online Music Deals Probed*, L.A. TIMES, Jan. 12, 2006, at C2.

29. See Brian Garrity, *Spitzer Spawns Scrutiny*, BILLBOARD RADIO MONITOR, Jan. 12, 2006, http://www.billboardradiomonitor.com/radiomonitor/search/article_display.jsp?vnu_content_id=1001843241; see also Warner Music Group Corp., Quarterly Report (Form 10Q), at 52 (May 5, 2006), available at http://sec.gov/Archives/edgar/data/1319161/000119312506101164/d10q.htm#tx30929_13 (disclosing NY and U.S. antitrust investigations relating to download pricing).

catalog.³⁰ Are these prices substantially above a competitive level? If so, the big 4's prices would be direct evidence of market power.

The big 4's wholesale prices may readily be compared to the retail price charged by eMusic, a service which, as we have previously seen, offers downloads from a large number of independent recording firms. eMusic charges \$10 per 40 songs, or 25¢ per song—a retail price significantly below the *wholesale* price obtained by the big 4. On average, major-label tracks likely are of higher perceived quality compared with tracks from independent labels, and would thus command a higher price, even were pricing more competitive. Nonetheless, the wide disparity in pricing between major label and independent tracks suggests that the big 4 together exercise potent market power, not least because some high-quality independent tracks clearly are more valuable than lower-quality tracks from the big 4, and yet the big 4's wholesale pricing even for the lowest-quality tracks substantially exceeds the retail price charged for tracks from the independent labels. Of course, the independent download services, like the major services, employ uniform pricing strategies, and this is in itself a puzzle.

On the retail side, Apple's iTunes currently enjoys a share of download sales even higher than the big 4 enjoy of total music sales. In addition, Apple's share is protected by barriers to entry at least as formidable as those that shield the big 4. First, because Apple provides vastly more downloads than all its commercial rivals combined, it is in a better position than its rivals to negotiate favorable wholesale pricing. As a result, it is difficult for any of Apple's rivals to compete by significantly undercutting the dominant iTunes service on price. We do see some services, such as WalMart.com, offering marginally cheaper downloads than Apple's 99¢ standard. These minor price breaks have not induced Apple to respond, at least not by lowering iTunes prices.

Second, and perhaps more importantly, Apple's iTunes is linked to the dominant portable music player, Apple's iPod, which accounts for approximately 78% of all sales of portable music players.³¹ Apple's tight linkage of its download service and its music player creates an exceptionally tricky problem for Apple's rivals. The iPod will play only unencrypted files encoded in the MP3 format, such as those offered by independent download sites like eMusic, or encrypted files encoded in Apple's proprietary AAC format, which incorporates Apple's FairPlay DRM rules. And the iTunes service delivers music files only in the AAC/FairPlay format, with which only iPods are compatible.

30. See generally Alex Veiga, *Apple Likely to Prevail in Music-Pricing Dispute*, SEATTLEPI.COM, Apr. 3, 2006, http://seattlepi.nwsourc.com/business/265259_apple03.html (discussing the desire by record labels to move away from fixed pricing).

31. See MacNN, *Apple's Music Biz, iPod Shares Grow*, Apr. 20, 2006, <http://www.macnn.com/articles/06/04/20/apples.music.business>.

Accordingly, rivals who wish to attack Apple's share of the download business – at least with respect to downloads from the catalogs of the big 4, which are not, generally, available in unencrypted form—must compete effectively and simultaneously on two levels. They must differentiate their download product offerings, either in terms of price (difficult, given Apple's purchasing power) or along various measures of quality (audio quality, ease-of-use, DRM rules, etc). Apple's rivals must also, for the large and fast-growing number of customers who use download services in conjunction with portable music players, compete at the *platform* level—i.e., their online services must appeal to consumers and must work with attractive portable devices.

At the moment, Apple's platform is composed of the iTunes download service, the iPod player, and the AAC file format/FairPlay DRM rules. This platform faces only one major platform competitor—Microsoft. As can be seen from Figure 1, a number of rivals to iTunes, including Yahoo! Music, BuyMusic, and WalMart.com, use Microsoft's WMA file format and associated DRM. And the proliferation of services employing Microsoft's WMA suggests that the unfolding strategies of Apple and Microsoft in the market for digital music platforms are coming to resemble the strategies each firm employs in the market for personal computers. In both markets, Apple offers a closed system—it owns the hardware (iPods for music; Apple Macintosh computers) and the software (the iTunes service and associated AAC file format for music; the MacOS operating system for personal computers), and it does not license these elements to others but bundles them together in an integrated offering. Microsoft tends more toward openness, but of course only in a limited sense. In the market for personal computer operating systems, Microsoft exercises significant power through its control of the dominant operating system, Windows. Unlike Apple, however, Microsoft does not deploy Windows only bundled with its own computer hardware. Rather, it licenses Windows widely to a large number of firms that make personal computers.

The difference between the markets for music downloads and personal computers is, of course, that the positions of Apple and Microsoft are reversed—Apple, a marginal firm in the personal computer market, is the dominant firm in the provision of music downloads. Operating from this position of strength, Apple is able to exert substantial leverage. The ubiquity of its iPods has generated a rich market for iPod complements—cases, speakers, headphones, car accessories, software, and a huge variety of other gadgets specially designed to work with the iPod and iTunes.³² The iPod's dominance has

32. One interesting recent example is the Nike+ iPod Sport Kit, a product created jointly by Nike and Apple that consists of a sensor that fits inside Nike running shoes and a small

also created opportunities for Apple to forge business relationships that could help entrench their leading position and disadvantage rivals. An example is Apple's recent agreement with General Motors, Ford, and Mazda whereby these car manufacturers will offer an easy connection between the iPod and the car stereos installed in most of their models, allowing iPod owners to listen to songs through the stereo, select songs on the iPod using the car stereo's controls, and charge their iPods using the car's electrical system. Apple claims that pursuant to this agreement, more than 70 percent of 2007-model U.S. automobiles will offer iPod integration.³³ Germany's BMW already offers this type of iPod integration, and Apple is reported to have signed similar deals with Acura, Audi, Ferrari, Honda, Nissan, and Volkswagen.³⁴

These developments make the iPod more attractive to consumers, and strengthen consumers' commitment to the Apple platform. Additionally, Apple's control over its proprietary file format gives it significant power over its own customer base. Once a consumer purchases an iPod and begins to amass a library of downloaded music from iTunes, he is hooked, or, more formally, he is locked in. He cannot defect from Apple's iPod players without losing the ability to play music purchased on iTunes on a portable device, for no rival's device is compatible with the AAC format. And he cannot defect from iTunes to a rival commercial service offering files in the WMA format without also investing in a new portable music player for newly-purchased music, and retaining his iPod as a second player for mobile listening to his iTunes collection. There are, as always, technical means to strip the Apple DRM coding from the iTunes tracks and convert them to MP3 format, thus making them freely usable on a large number of portable players. But such work-arounds are beyond the technical knowledge of most consumers, and in any event removing DRM code may constitute a violation of the anti-circumvention provisions of the Digital Millennium Copyright Act.³⁵

Back to the pricing of downloads. Negotiations between the big 4

receiver that plugs into an iPod. The sensor monitors a runner's time, distance, pace, and calories burned, and sends that data to the iPod, which provides the data to the runner via a synthesized voice sent through the runner's headphones. The data can also be downloaded to the Nike website, which will maintain a record of the runner's workouts. See Nike, Nike+ Experience, <http://www.nike.com/nikeplus/> (last visited July 9, 2006).

33. Michele Gershberg, *Apple in Deals to Connect iPod in New Car Models*, REUTERS, Aug. 3, 2006, http://today.reuters.com/news/articlebusiness.aspx?type=ousiv&storyID=2006-08-03T155431Z_01_WEN3256_RTRIDST_0_BUSINESSPRO-APPLE-AUTOMAKERS-DC.XML.

34. See May Wong, *Apple's iPod Sweetens its Ride with Top Automakers*, USA TODAY, Aug. 3, 2006, http://www.usatoday.com/tech/products/gear/2006-08-03-ipod-automakers_x.htm.

35. See 17 U.S.C. § 1201(a)(1)(A) (2000) ("No person shall circumvent a technological measure that effectively controls access to a work protected [by copyright].").

and Apple set the industry benchmark for download pricing, and the parties on both side of this negotiation exercise substantial market power. Does this observation help us understand why we find uniform wholesale and retail pricing for music downloads? Perhaps. Here is an argument, necessarily tentative both because the market is changing quickly and because information is sketchy, for how substantial bilateral market power has resulted in a regime of inefficient uniform pricing.

Apple. Variable pricing doesn't matter much to Apple—at least not at the moment—because iPod sales, not iTunes downloads, currently are the main driver of Apple's music revenues. In Apple's fiscal first quarter of 2006 (i.e., the three months ending December 2005), the firm reported iTunes revenue of \$491 million. That figure, however, includes revenues both from sales of songs and also from sales of iPod accessories. Apple CEO Steve Jobs stated at Macworld that the company was selling three million songs a day.³⁶ At 99¢ per song, that would produce revenue of about \$273 million per quarter. Based on that figure, the iTunes revenue figure that Apple reports for the first quarter of 2006 is about 56% songs and 44% accessories, which makes the disaggregated figure for iPod accessories (revenues which are more properly associated, for the purposes of our analysis, with iPod hardware sales rather than iTunes content sales) approximately \$216 million. In contrast, in the second quarter of 2006, Apple reported revenues from iPod sales (not including iPod accessories) of approximately \$1.7 billion.³⁷ Adding to this figure sales for iPod accessories, Apple's latest-figure quarterly revenues from total iPod hardware sales (players and accessories) approach \$2 billion—more than seven times Apple's quarterly revenues from song downloads.

And the disparity in revenues doesn't fully capture Apple's incentives, because margins on iPods are wider than those for downloads. One source puts margins on iTunes downloads at 5-10%, compared with margins on iPods that may exceed 25%.³⁸ Using a top of range (10%) margin for downloads yields first quarter 2006 profits of approximately \$27 million for the iTunes download business—a tidy sum, but hardly significant to a company the size of Apple (\$13.93

36. See Gavin Clarke, "If you can find a better iPod, buy it," says Apple's Jobs, THE REGISTER, Jan. 10, 2006, http://www.theregister.co.uk/2006/01/10/apple_itunes_market_share/.

37. See Jeff Malester, *Apple iPod Unit Movement Soars 61%*, THIS WEEK IN CONSUMER ELECTRONICS, Apr. 24, 2006, <http://www.twice.com/article/CA6327470.html>.

38. See *iTunes Margins Seen Surging in 2006 and Beyond*, FORBES, Mar. 2, 2005, <http://www.forbes.com/business/services/2005/03/02/0302automarketscan13.html> (discussing margins for iTunes downloads of 5-10%); Martyn Williams, *How Much Should an iPod Shuffle Cost?*, PC WORLD, Feb. 24, 2005, <http://www.pcworld.com/news/article/0,aid,119799,00.asp> (discussing for iPod Shuffle of 35-40%); *A Look Inside the iPod Nano and Apple's Margins*, APPLE INSIDER, Sept. 22, 2005, <http://www.appleinsider.com/article.php?id=1283> (discussing margins for iPod Nano of approximately 50%).

billion total revenues in 2005, and \$1.335 billion in net profit in that year).³⁹ This number is also tiny compared with profits from iPods and iPod accessories, which, using a conservative margin of 15%, would total approximately \$300 million for the second quarter of 2006. And this disparity is likely to persist for some time, even as the market for Apple's iPod matures. Portable music players are, like cell phones, frequently replaced, both because of hard usage and changes in technology and style.

As a result, although the growth of Apple's iPod business will eventually level off, demand for portable players is likely to remain strong for the foreseeable future. And this means that Apple reasonably focuses its music strategy, at least for now, on maintaining the iPod's dominance, which, in turn, protects the dominance of its iTunes/iPod integrated platform. For these reasons, Apple would benefit only modestly, at least in the short run, from variable pricing—the gains from more efficient pricing would be incremental compared with returns from close focus on designing and selling new and better iPods and related accessories. And so long as Apple's platform remains dominant, it need not worry too much about its rivals introducing variable pricing before it does. It is unlikely that Apple's smaller rivals will obtain more favorable wholesale pricing that would allow them to lower prices significantly for non-hits. More importantly, it makes no sense for Apple's rivals unilaterally to price hits above Apple's 99¢ baseline, for such a strategy would simply drive more consumers to iTunes and the iPod.

The Major Labels. The big 4 are said to want variable pricing, though perhaps not "true" variable pricing where prices vary in both directions from the current 99¢ standard. The industry's public statements predictably focus on higher prices for hits, rather than lower prices for non-hits. Setting this issue aside for the moment, the allure of some form of variable pricing is clear: disaggregation of tracks, combined with variable pricing for tracks with varying demand, would allow the labels to price discriminate much more intensely in the market for downloads, thereby shifting large amounts of surplus away from consumers and to themselves. Most notably, higher initial pricing for hits, followed by lower pricing as demand slackens, would create price discrimination markets that would isolate high-demand consumers (i.e., those who need the hit soon after its release), and oblige them to pay more to satisfy their demand.

Variable pricing is, however, also a potential hazard to the big 4, because raising prices for hits above the 99¢ threshold may drive some who would otherwise be paying customers to unauthorized peer-to-peer

39. See Daniel Drew Turner, *Apple Hits \$1 Billion in Profit for 2005*, EWEEK.COM, Oct. 11, 2005, <http://www.eweek.com/article2/0,1895,1870027,00.asp>.

downloading. Some consumers willing to pay 99¢ for a hit song will rather download for free using BitTorrent than pay \$1.99 for the same hit song. This last point creates a large area of uncertainty for the major labels, but is less of a concern for Apple. iPod sales are tied, in part, to the vitality of the download market, but the relationship is not iron-bound—consumers who want their music to be portable are likely to purchase an iPod whether they are downloading from a peer-to-peer (p2p) service (most p2p content is encoded in the MP3 format, with which the iPod and all other portable players are compatible) or from iTunes, or indeed simply filling their portable player with tracks ripped from their own CD collection.

At this point, it is impossible to say how powerful a constraint the threat of piracy exerts on download pricing, especially as the market develops over the next several years. A particularly important but unknown factor in determining the future of the digital music market is the fate of the music industry's litigation campaign against unauthorized p2p downloading. The industry has thus far succeeded in shutting down three of the most popular and user-friendly p2p services (Napster, Grokster, and Kazaa⁴⁰) and in stopping a number of individuals who were active uploaders to p2p networks (on the theory, of course, that without uploads, there can be no downloads).⁴¹ These lawsuits have,

40. See generally *Metro-Goldwyn-Mayer Studios Inc. v. Grokster*, 545 U.S. 913 (2005); *A&M Records v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001). Because the Napster service was based on Napster's centrally-maintained index system, the Napster p2p network died along with the Napster firm. The same is not true, of course, of true p2p networks such as Grokster. The Grokster software and the FastTrack p2p network constructed by the use of that software continue to exist, and are still used for unauthorized downloads, even though the Grokster website has been shut down – as a visit www.grokster.com somewhat heavy-handedly makes clear. See Grokster, <http://www.grokster.com> (last visited July 9, 2006) (“The United States Supreme Court unanimously confirmed that using this service to trade copyrighted material is illegal. Copying copyrighted motion picture and music files using unauthorized peer-to-peer services is illegal and is prosecuted by copyright owners. There are legal services for downloading music and movies. This service is not one of them. YOUR IP ADDRESS IS 137.54.151.217 AND HAS BEEN LOGGED. Don't think you can't get caught. You are not anonymous.”). The Kazaa service has been shut down pursuant to an agreement between its corporate parent, Sharman Networks Ltd., and the major record labels, in settlement of the lawsuit filed against Sharman and StreamCast Networks Inc., owner of the Morpheus file-sharing service. See Aisha Phoenix & Susan Decker, *Kazaa Agrees to Pay \$100 Million to Music Companies*, BLOOMBERG.COM, July 27, 2006, http://www.bloomberg.com/apps/news?pid=20601088&sid=ac5d_C6HSwE. Previously distributed copies of the Kazaa software are still operative, of course, and file sharing continues over the FastTrack network which the Kazaa and Grokster services share.

41. See generally Grant Gross, *RIAA Files 762 New File-Trading Lawsuits*, INFO WORLD, Oct. 1, 2004, http://www.infoworld.com/article/04/10/01/HNriissuits_1.html (discussing the number of lawsuits filed by the RIAA). The recording industry has now sued approximately 18,000 individuals for engaging in unauthorized downloading, with approximately 4,500 settling for about \$4,000 per case.” See Jefferson Graham, *RIAA Chief Says Illegal Song Sharing “Contained,”* USA TODAY, Jun. 12, 2006, http://www.usatoday.com/tech/products/services/2006-06-12-riaa_x.htm.

however, hardly stopped the growth of p2p—rather, early post-*Grokster* data suggests that usage is mostly shifting to other services, most notably BitTorrent and eDonkey.⁴² These ascendant p2p services are built on a mostly (BitTorrent) or fully (eDonkey) decentralized architecture, and so would be difficult to shut down even if the music industry succeeds in having them declared unlawful.⁴³ Still, because decentralized p2p architectures make content more difficult to find (networks such as BitTorrent and eDonkey lack the central content index of Napster, or the index “nodes” of Grokster’s FastTrack network, that help direct users to content), the music industry’s litigation campaign has succeeded in making the p2p experience less user-friendly, and that effect has, in all likelihood, led some unauthorized downloaders to the commercial services.⁴⁴

The major labels’ interest in variable pricing suggests that they have, at least in their own estimation, succeeded in containing the threat from unauthorized p2p—and indeed industry executives are now saying as much.⁴⁵ If the recording companies believe that, via their legal campaign, they will shut down popular p2p services and limit unauthorized downloading, then they would be free to take the first step in implementing a variable pricing regime. Of course, even if the industry has succeeded in suppressing the threat from p2p, it surely has not been eliminated. Accordingly, the record labels must proceed cautiously—if they attempt to charge too high a price for premium content, they risk re-invigorating the p2p threat.

Assume for the moment that the industry’s campaign to suppress unauthorized p2p is likely to succeed. Why would the big 4 want variable pricing only above 99¢? Perhaps to defend the legacy product—the CD—that remains the only significant means of

42. See CacheLogic, CacheLogic Research: A True Picture of P2p Filesharing, http://www.cachelogic.com/home/pages/studies/2004_09.php.

43. The music and motion picture industries may continue, of course, to target individuals who upload content to these decentralized networks. See Tony Smith, *MPAA to Serve Lawsuits on Bittorrent Servers*, THE REGISTER, Dec. 14, 2004, http://www.theregister.co.uk/2004/12/14/mpaa_vs_bittorrent.

44. It is exceedingly difficult to measure p2p traffic, and rival studies issued since the decision in *Grokster* argue that p2p usage is declining, or that usage has shifted to lesser-known networks but continues to grow. See Nate Anderson, *P2P Use is Up, Down*, ARSTECHNICA, Dec. 15, 2005, <http://arstechnica.com/news.ars/post/20051215-5773.html>. Recent data suggests, however, that even as p2p traffic grows, an increasingly large share of that traffic consists not of music, but of larger files including motion pictures and software. See CacheLogic, CacheLogic Research: A True Picture of P2p Filesharing, http://www.cachelogic.com/home/pages/studies/2004_10.php.

45. See Graham, *supra* note 41. See also Alex Veiga, *File Sharing Still Thrives After Ruling*, FORBES, Jun. 30, 2006, available at <http://www.forbes.com/home/feeds/ap/2006/06/30/ap2852783.html> (quoting RIAA head Mitch Bainwol: “We don’t suggest that (unauthorized file-sharing) has been conquered, far from it. But it’s not fundamentally decapitating the legal marketplace from growing in a pretty robust fashion.”).

distribution for those who do not yet consume downloads and which will for many years continue to produce the lion's share of the labels' revenue.⁴⁶ In a variable pricing regime limited to premium prices for hits, the industry can capitalize on "hot" markets for a particular type of product—i.e., music for which consumers tend to focus on the individual song rather than a song collection by the artist, and which enjoys a short period of intense popularity during which demand is particularly high. The industry can price discriminate for these products, charging high prices during the period of high demand, and lowering prices later.

This "asymmetric" form of variable pricing does not fundamentally threaten the existing CD business. The industry can offer hits during their period of high demand both as a premium-priced download single and on CD as part of a bundle priced above the amount charged for downloads of the single or singles contained in the bundle. Consumers who are focused on the hit will choose the download single. Others may choose the CD bundle, depending on how they value the non-hits contained in the bundle. As demand declines, price for both the download and the CD may decline as well. Importantly, prices for non-hits need not be adjusted to reflect demand—they may remain at the 99¢ floor. As a result, consumers focused on non-hits will not experience any additional incentive to switch from CDs to downloads beyond what the disaggregation of tracks in the download market already provides. Similarly, consumers focused on an artist's output, rather than on particular songs, will face no significant additional incentive to migrate from CDs to album downloads.

Why does that matter? Because although we tend to focus on consumer demand for hits, non-hits are far more numerous, and comprise a substantial share of total demand—a phenomenon one writer has characterized as the "long tail."⁴⁷ Of course, because download services do not bear the storage and retailing costs of brick-and-mortar music retailing, they can keep a far deeper catalog of music and may thereby economically offer consumers a larger portion of the long tail. For this reason, as well as the generally superior economics of downloading and the consumer benefits of disaggregation, music consumers are almost certain to continue to migrate toward downloads. The key question for the record labels is the speed at which this migration occurs.

The Threat of Disintermediation. To understand this threat, we must consider the longer-term threat that the growth of downloads poses

46. According to the RIAA, 2005 revenues from sales of music on CDs and other physical media (cassettes, vinyl, DVD Audio, etc.) exceeded \$10.47 billion. Revenues from download sales (including single tracks, albums, and music videos) in 2005 totaled approximately \$503 million. See RIAA Year-End Statistics, *supra* note 3.

47. See Chris Andersen, *The Long Tail*, WIRED, Oct. 2004, <http://www.wired.com/wired/archive/12.10/tail.html>.

to the big 4, the corresponding long-term opportunity for Apple, and the role of variable pricing in the development of the business of music downloads. Artists compete to sign contracts with the major labels because those firms excel at the business of developing, promoting (via payola-induced radio airplay and other marketing expenditures) and ensuring distribution for (via long-established relationships with a large number of music retailers) recorded music. For these services, the major labels claim for themselves a significant share of total revenues (excluding retailing and distribution costs) from the sale of recorded music. Exactly how big a share is disputed—the industry does not discuss its internal accounting—but rough estimates have been made. In an appendix to his 2004 book *Promises to Keep: Technology, Law, and the Future of Entertainment*,⁴⁸ Harvard law professor Terry Fisher reviews a number of studies estimating the share of music revenues enjoyed by record companies, manufacturers, distributors, retailers, and artists, and he provides a consolidated revenue allocation estimate based on this previous work. Fisher's analysis suggests that retailers collect approximately 39% of the retail price of a CD, distributors 8%, manufacturers 8%, artists 16% (a composite of both performance and composition royalties), and the record labels 28%.⁴⁸

If downloads continue to grow, and if the music download eclipses the CD as the primary medium for the distribution of recorded music, Apple may have an intriguing proposition for artists. Rather than distribute their music through record companies, they can do so directly through Apple and keep a much larger share of revenues. This possibility of disintermediation would be enticing to artists and Apple, and frightening to both large and small record labels. Apple is said to pay about 70¢ per download to the major labels (and, recently, to independent labels as well).⁴⁹ Artists are paid approximately 15% of revenues, a figure that is approximately the same (as a percentage of revenues, not as a gross payment, of course) for both CD and download sales. That would mean that artists receive approximately 15¢ per download, the label keeps approximately 55¢, and Apple gets the remaining 29¢ (some portion of which is used to pay composition royalties to music publishers and to cover other costs, such as infrastructure and marketing).

The record companies' large share of total download revenues must be tempting to both artists and Apple. If Apple's dominance in music downloads proves durable, iTunes will be well placed to provide the kind of marketing that record companies provide now, for a large share of

48. See Fisher, *supra* note 11, at 259-62.

49. See *More Indies: Payouts Grow Online, Radio Rotation Shrinks*, DIGITAL MUSIC NEWS, May 4, 2006, <http://www.digitalmusicnews.com/yesterday/may2006#050406indie2>.

consumers will be trafficking the iTunes website in search of music. Artists and Apple might make a deal to cut out the middleman and distribute the revenue currently taken by record companies. Even if this type of disintermediation doesn't occur, as consumption shifts to downloads, the position of the record companies looks increasingly endangered and the labels' share of download revenues is likely to shrink in future negotiations with Apple, but *only if Apple's iTunes remains the dominant retailer of downloads.*

We can see that disintermediation is a real threat to the big 4, because the process is already underway. Country singer Garth Brooks—one of the most successful recording artists of all time—terminated his agreement with big 4 label EMI and agreed to distribute his entire catalog exclusively through Wal-Mart stores and Wal-Mart's online download service.⁵⁰ Recently, Thom Yorke, frontman for the popular alternative band Radiohead, declined to renew his expired contract with EMI and released a solo album on an independent label. Yorke's album was promoted on the iTunes homepage and became the No. 2 record on the Billboard 200 charts.⁵¹ These developments suggest that major artists no longer need a contract with a big 4 label in order to sell songs on a major scale. If download services continue to surge, and if Apple's iTunes remains a dominant player, then the same may become true for less established artists.

All of this raises questions about the reasons for Apple's current resistance to variable pricing. I suspect that Apple doesn't want variable pricing now, because it anticipates that the labels want only to use 99¢ as a floor and have prices for hit tracks go up. That would slow the CD to download transition somewhat, as some consumers who would have consumed a hit song a la carte at 99¢ will choose to purchase the CD bundle, or perhaps the album download—or, alternatively, forego consumption of the hit altogether. Apple is in effect using its market power to force the record labels to hasten the transition from CDs to downloads—a strategy that Apple apparently has the power, at the moment, to implement.⁵² Apple would benefit if the transition proceeds quickly, while it still controls a large share of download sales. Once the sale of downloads as a percentage of total music consumption passes a certain threshold, Apple may begin the process of disintermediation by offering both a greater share of total revenues and more efficient variable

50. Paul Farhi, *Garth's New Friends in Wal-Mart Places*, WASH. POST, Aug. 20, 2005, at C1.

51. Devin Leonard, *Big Musicians Flex their Muscle with Record Labels*, FORTUNE, Aug. 7, 2006, available at http://money.cnn.com/magazines/fortune/fortune_archive/2006/08/21/8383597/.

52. See generally *Apple Holds Labels to \$0.99*, RED HERRING, May 2, 2006, <http://redherring.com/Article.aspx?a=16714>.

pricing to artists that sign directly with them. The threat of complete disintermediation would give Apple substantial additional power to redistribute revenues even for content it receives through agreements with the record companies. Some of this revenue will be re-directed to artists; more is likely to end up enriching Apple.

Once Apple begins to disintermediate the major labels, the firm will have a number of options. First, Apple could license its roster of artists to other download services, thereby tolerating some rivalry for its own content but being in a position to control it. This strategy would also allow Apple to continue to extract rents via sales of iPods, and would also maintain the tight integration of the iPod and iTunes. This latter point is important because Apple's dominance in the download market, on which the promise of disintermediation depends, is powerfully reinforced by the ubiquity and exclusivity of the iTunes/iPod platform.

Second, Apple could pursue a strategy of licensing its AAC/FairPlay format. This second strategy could unfold in a number of ways. Apple might license AAC/FairPlay to manufacturers of rival portable devices, which would open competition in the hardware market in favor of extracting rents via iTunes and licensing of the file format and DRM standard necessary for computers and portable devices to interoperate with iTunes. This might be a rational strategy as growth of the hardware market slows. Alternatively Apple might license AAC/FairPlay to rival download services, thus permitting these services to sell to iPod owners but retaining an advantage in the market for portable devices. Or Apple might conceivably employ both of these variations of the AAC/FairPlay licensing strategy, an approach that would open up both the service and hardware markets. This third variation seems far more unlikely—Apple would be abandoning its current leverage in the service and hardware markets to become, in effect, a record label.

The Big 4 vs. Disintermediation. It would be surprising if the big 4 (and indeed the independent labels) do not already understand the disintermediation threat. What steps might they take to forestall it?

One obvious counter-strategy would be to invest in a portable player attractive enough to succeed as an “iPod killer.” Microsoft has recently announced plans to release under the “Zune” brand its first portable player and accompanying software. Early reports suggest that Microsoft will mimic Apple's strategy and position Zune as an integrated platform—i.e., a player, an associated file format and DRM software package, and a linked download service (or services),⁵³ and that

53. Dai Wakabayashi, *Microsoft Music Player to Take on Apple's iPod*, REUTERS, Jul. 23, 2006, http://today.reuters.com/news/articlenews.aspx?storyid=2006-07-23T152253Z_01_WEN1695_RTRUKOC_0_US-MICROSOFT-MUSIC.xml.

Microsoft is planning to implement some sort of variable pricing regime.⁵⁴

It would be in the big 4's interest to see Zune succeed, and to have two well-established integrated platforms competing head-to-head for both consumer patronage and licensing deals with the record labels. Such competition would diminish the prospect of disintermediation by Apple—especially if, as has been reported, Microsoft attacks Apple's installed base by offering Apple customers free downloads to match those the customer has already purchased from iTunes (this is a strategy aimed at minimizing "lock-in" to Apple's platform).⁵⁵ Microsoft would have to pay something to the big 4 for the right to replicate the customer's existing library of downloaded music in the proprietary Microsoft format. The big 4 might facilitate competition in the market for downloads—which simultaneously blunting Apple's ability to attack the big 4's own exercises of market power—by licensing these "replacement copies" at a low royalty rate.

Even in the absence of an iPod killer, the big 4 can find other ways to subsidize Apple's rivals, on either the service or hardware level, or both. If the labels are successful at shifting share from the iTunes/iPod platform to the Windows WMA-based platform or some other platform, then Apple's dominance may not last long enough to support a disintermediation strategy.

There are several ways the labels could pursue the subsidy counter-strategy. First, the labels could subsidize rivals to iTunes by granting them lower prices or better non-price terms for access to content. One possible example of this is the recent announcement by Universal Music Group, the largest of the big 4 labels, that it would be backing SpiralFrog, a new music download service offering free songs in exchange for users' willingness to view "non-intrusive, contextually-relevant, targeted advertising."⁵⁶ News reports suggest that SpiralFrog paid Universal "up front" for access to its catalog, but no information has yet been released regarding how much SpiralFrog is paying. It remains to be seen whether the ad-supported model will produce substantial revenues. But if Universal is interested in heading off the possibility of disintermediation, propping up advertising-supported services like

54. See *Insiders See Variable Pricing Ahead, New Technologies Enter*, DIGITAL MUSIC NEWS, July 19, 2006, <http://www.digitalmusicnews.com/yesterday/july2006#071906digionex>.

55. Peter Rojas, *Microsoft Planning WiFi-enabled Portable Media Player, Working on MVNO for Next Year*, ENGADGET, Jul. 6, 2006, <http://www.engadget.com/2006/07/06/microsoft-planning-wifi-enabled-portable-media-player-working-o/>.

56. Yinka Akegoko & Mark McSherry, *SpiralFrog, Universal in Free Music Download Deal*, REUTERS, Aug. 29, 2006, available at http://today.reuters.com/news/articleinvesting.aspx?storyID=2006-08-29T112933Z_01_N29265656_RTRIDST_0_TECH-SPIRALFROG-UPDATE-2.XML.

SpiralFrog as a popular alternative to iTunes may prove a good long-term strategy.

In addition (or perhaps alternatively) to stoking iTunes rivalry, the labels could subsidize rivals to the iPod, possibly by partnering with manufacturers to produce something that only the labels are able to authorize—portable players that come pre-loaded with a large sampling of tracks from whatever musical genre is preferred by an individual consumer. Even more ambitiously, the labels could vertically integrate into the manufacture of portable devices, thereby directly subsidizing competition to the iPod.

In addition to these subsidy counter-strategies, the big 4 may attempt to use the antitrust and competition laws, both in the U.S. and abroad, to force Apple to open up the iTunes/iPod platform. There has already been significant movement in this direction outside the U.S. In early August 2006 a law went into effect in France that allows competition regulators in that country to force Apple to open up iTunes access to rival portable players. Similar proposals for regulation have been discussed in the U.K., Sweden, Denmark, Norway, and Poland.⁵⁷ Of these jurisdictions, the Norwegian government appears at the moment to have moved closest to a decision to regulate, having publicly revealed that they are considering suing Apple, possibly to seek an injunction banning operation of iTunes in Norway.⁵⁸ It is unclear whether, and to what degree, the big 4 are involved in any of these legal attacks against iTunes/iPod integration. Whether or not the record labels are actively involved, however, if governments succeed in prying open the iTunes/iPod platform, the big 4 will have little cause to worry about disintermediation.

All of these strategies are possible, but it is too early to predict whether they are likely to work or what the outcome will be in the struggle to gain the upper hand as consumption shifts toward downloads. But if the possibility of disintermediation is real, it may be the force that is preventing the introduction of variable pricing, at least for now. And that point brings me to a final question, which I can only raise in this paper but not explore. This paper argues that uniform pricing for music downloads is indeed linked to a competitive struggle that points toward the possibility of disintermediation of the big 4 labels by Apple. Is disintermediation an outcome that we should fear or welcome?

My tentative answer—formed at this early stage of the game and subject to revision—is that the prospect of disintermediation is more

57. *French iTunes Law Goes Into Effect*, USA TODAY, Aug. 3, 2006, available at http://www.usatoday.com/money/industries/technology/2006-08-03-iPod_x.htm.

58. Jaime Espantaleon *Apple Defends iTunes-iPod Compatibility*, ASSOCIATED PRESS, Aug. 2, 2006, available at http://biz.yahoo.com/ap/060802/europe_apple_itunes.html.

likely to prove a boon than a threat to consumers. I would predict, at least for now, that the most likely outcome of the disintermediation struggle will not be the displacement of the big 4, but diversion of a portion of the big 4's revenue as a result of competition with Apple for deals with recording artists. Apple's current dominance means that the big 4 cannot simply continue their current direction, but the record labels also have significant counter-strategies, which have been described. As the thrust and parry plays out, the prospect of disintermediation is more likely to result in intensified competition (for deals with artists, as well as to attract consumers to online music platforms) rather than the consolidation of Apple's market power. In any event, it is far too early for antitrust intervention in the market for online music—regulators may succeed only in thwarting the re-introduction of fierce competition in a market where the big 4 have long enjoyed a quiet and cosseted existence at the expense of both artists and consumers.

CONCLUSION

Uniform pricing for music downloads is a puzzle. Prices are ordinarily based on demand, and demand for songs varies widely. Yet prices for music downloads do not. The usual behavioral explanations for uniform pricing do not offer a persuasive explanation of uniform pricing for music downloads. Perhaps an explanation can be found in the struggle between firms that exercise substantial market power—the big 4 record labels on the one hand, and Apple on the other. At the moment, it appears that Apple has the upper hand. Whether that will remain so is unclear, but the opportunities are opening for Apple, and the big 4 face a growing threat.

This paper has offered an explanation for the puzzle of uniform pricing, an explanation that is linked to a set of much broader and ultimately more interesting questions about the future of the music business. Will the threat of disintermediation force the major labels to cede ground on pricing? If Apple's iTunes/iPod platform maintains its dominance, is disintermediation an unstoppable force? And if Apple successfully pursues a disintermediation strategy, what would that mean for consumers? If downloads continue to grow at anything like the rate we've seen over the past three years, we will be facing these questions squarely very soon. For now, I have raised them and hope that others will join me in watching this market closely.

FROM WIFI TO WIKIS AND OPEN SOURCE: THE POLITICAL ECONOMY OF COLLABORATIVE PRODUCTION IN THE DIGITAL INFORMATION AGE

MARK COOPER

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INTRODUCTION

In August 2005, *Wired* magazine's cover story stated that collaborative production is the near future's "main event."¹ *Wired*, marking the 10th anniversary of the initial public offering of Netscape, also declared that a revolution was occurring that penetrates to the core of daily life with the transformation of consumers into producers.² Among the evidence of this transformation is hyperlinking, which creates the electricity for "ordinary folks to invest huge hunks of energy and time into making free encyclopedias, creating public tutorials for changing a flat tire, or cataloging the votes in the Senate."³ *Business Week* confirmed this transformation when it ran a similar story a month later with the headline, "It's A Whole New Web."⁴

In the presence of digital computer/communications platforms, the dramatic growth of collaborative activities constitutes the emergence of a new mode of information production based on the superior economics of collaborative production. This new mode of production challenges fundamental concepts of the role and function of property and commercial relationships in the production of information goods. However, to develop definitions of and describe the success of collaborative production, the definition of public goods and common pool resources must be extended.⁵ This is because although public goods and common pool resources exhibit traits of non-rivalry and non-excludability, collaborative goods exhibit characteristics of anti-rivalry and inclusiveness.⁶ In addition, concepts such as commons and non-commodified relations must be included to understand fully the dynamics of collaborative production.

The dramatic success of collaborative networks poses a challenge, not only to the dominant economic paradigm, but also to a broad range of received social science thinking.⁷ Traditional economic analysis hy-

1. Kevin Kelly, *We Are the Web*, WIRED, August 2005, at 132.

2. See Yochai Benkler, *From Consumers to Users: Shifting the Deeper Structure of Regulation Toward Sustainable Commons and User Access*, 52 FED. COMM. L.J. 561, 562 (2000) (providing an early, scholarly discussion of the transformation of consumers into producers).

3. Kelly, *supra* note 1, at 132.

4. Robert D. Hof, *It's a Whole New Web*, BUS. WK., Sept. 26, 2005, at 79.

5. The most prominent example of open source software, Linux, "ought to be at the worse end of the spectrum of public goods because it is subject additionally to 'collective provision.'" STEVEN WEBER, *THE SUCCESS OF OPEN SOURCE* 5 (2004).

6. *Id.* at 154 (introducing the concept of antirivalrousness).

7. Peter Levine, *The Internet and Civil Society: Dangers and Opportunities*, in *THE INTERNET IN PUBLIC LIFE* 79 (2004) (expressing concern over the decline of face-to-face relations); Peter Levine, *Can the Internet Rescue Democracy? Toward an ON-Line Commons*, in *DEMOCRACY'S MOMENT: REFORMING THE AMERICAN POLITICAL SYSTEM FOR THE 21ST CENTURY* (Ronald Hayuk & Kevin Mattson eds., 2002); STEPHEN COLEMAN & JOHN GÖTZE, *BOWLING TOGETHER* (2001) (regarding social relations), available at <http://www.bowlingtogether.net/bowlingtogether.pdf>.

pothesized that large producers would reap the benefits of network externalities by tracking usage and targeting users with a form of cyberspace direct mail on steroids combined with instant point and click gratification that would deliver sales of large, bundled packages.⁸ Sociologists feared an acceleration of isolation in the *Bowling Alone* syndrome,⁹ as the focal point of interaction shifted from the face-to-face physical world to the anonymous, fleeting interactions in cyberspace.¹⁰ Political scientists, applying the *Logic of Collective Action*, expected collaborative processes to break down under the weight of free riders.¹¹

There is mounting evidence, however, that they were all wrong, as new forms of collaboration bind people together in productive, social, and economic relations to produce and self-supply an increasing array of micro-products that meet their needs.¹² The ever-declining costs of digital production and distribution have thwarted the predicted dominance of large bundles of information goods.¹³ Large numbers of producers have seen increasing returns by hooking up with large numbers of consumers to sell differentiated products in two-sided markets or, better still, by consumers becoming producers in technology-facilitated environments.¹⁴ People are no longer passive participants in the economy, as they were in the media available in the 20th century.¹⁵ When offered the opportunity to participate and communicate in the digital information age, people quickly accept.¹⁶ The potential for collective action was far greater than anticipated.¹⁷ As a result, group formation has been widespread due to the high value of heterogeneity and the ability of people to see and act on shared interests in a non-commodified digital space that facilitates communication.¹⁸

To fully understand the emergence of collaborative production, this paper extends familiar economic concepts to make an adjustment of the

8. Yannis Bakos & Erik Brynjolfsson, *Bundling and Competition on the Internet: Aggregation Strategies for Information Goods*, 19 *MARKETING SCI.* 63 (2002).

9. See ROBERT D. PUTNAM, *BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY* (2000) (arguing that isolation and solitary activities had diminished the value of social capital).

10. Levine, *supra* note 7, at 2.

11. See MARCUR OLSEN, *THE LOGIC OF COLLECTIVE ACTION* (1965).

12. See Arthur Lupia & Gisela Sin, *Which Public Goods Are Endangered? How Evolving Communications Technologies Affect The Logic of Collective Action*, 117 *PUB. CHOICE* 315 (2003) (regarding collective action); see also COLEMAN & GÖTZE, *supra* note 7.

13. Hal R. Varian, *Copying and Copyright*, 19 *J. ECON. PERSP.* 121, 122 (2005).

14. Glenn Ellison & Sara Fisher Ellison, *Lessons about Markets from the Internet*, 19 *J. ECON. PERSP.* 139, 140 (2005).

15. Kelly, *supra* note 1; Hof, *supra* note 4.

16. See COLEMAN & GÖTZE, *supra* note 7.

17. See Lupia & Sin, *supra* note 12, at 315.

18. The phenomenon includes everything from AOL buddy lists to MySpace friends, to the wikis and collaborative activities. Kelly, *supra* note 1; Hof, *supra* note 4.

existing economic rationale for bringing information “under a legal regime of property rights” to accommodate the notion of collaborative production.¹⁹ Information products, in the traditional framework of market structure, are not simple private goods. Spectrum is a common pool resource and communications facilities are public goods.

In the structural view of industrial organization²⁰ and the institutional view of economics²¹ adopted in this paper, transaction costs play a key role. Structural analysis teaches that when basic economic conditions change as dramatically as they have in the past couple of decades, society should not be surprised to find fundamental changes in economic structure, conduct, and performance. Institutional economics focuses on cooperation and transaction costs as a challenge to economic systems.²² Institutional analysis argues that in addition to the costs of production—the supply-side transformation costs in the economy—transactions are a central part of the total cost. Indeed, transaction costs are of equal, if not greater, importance than the transformation costs of production processes, especially when services become the focus of the economy. Above all, humans struggle “to solve the problems of cooperation so that they may reap the advantages not only of technology, but also of all the other facets of human endeavor that constitute civilization.”²³

I. ANALYTIC FRAMEWORK

A. *Traditional Public Goods*

1. Characteristics of Traditional Public Goods

Economic analysis recognizes that under certain conditions competitive markets do not produce socially desirable outcomes.²⁴ In the

19. This article uses the definition of intellectual property created by William Landes and Richard Posner: “ideas, inventions, discoveries, symbols, images, expressive works (verbal, visual, musical, theatrical), or in short any potentially valuable human product (broadly, ‘information’) that has an existence separable from a unique physical embodiment, whether or not the product has actually been ‘propertized,’ that is, brought under a legal regime of property rights.” WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 1 (2003).

20. See *generally* FREDERIC SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* (3d ed. 1990).

21. DOUGLASS C. NORTH, *INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE* 3 (1990).

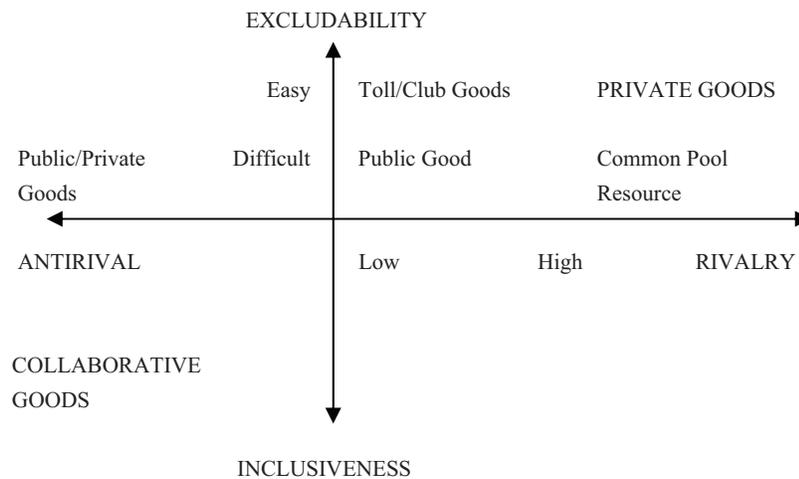
22. Both sides of the debate over spectrum governance claim Coase as a forefather, in part because of his critique of the Federal Communications Commission management of spectrum. See R.H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1 (1959).

23. NORTH, *supra* note 21, at 118-33.

24. DAVID BESANKO & RONALD R. BRAEUTIGAM, *MICROECONOMICS: AN INTEGRATED APPROACH* 727 (2002).

case of public goods and externalities, the problem is not a lack of competition, but the inability of profit-driven market transactions to produce the goods or capture the values that best serve society. Markets with externalities and markets with public goods are “not likely to allocate resources efficiently, even though they might otherwise be competitive.”²⁵ Externalities occur when the market price does not reflect the costs or benefit to the consumer, producer, or others not party to the transaction.²⁶ Public goods benefit all consumers, “even though individuals may not pay for the costs of production.”²⁷ Both externalities and public goods affect the invisible hand theory in that it “may not guide the market to an economically efficient amount of production.”²⁸

EXHIBIT 1: CHARACTERISTICS OF COLLABORATIVE GOODS



These market failures occur where goods lack the critical characteristics that enable transactions in private property. (See Exhibit 1). In the neoclassical paradigm, scarcity is about rivalry and property is about exclusion. As Landes and Posner note, “[a] property right is a legally enforceable power to exclude others from using a resource.”²⁹ A private good is **rivalrous** since “consumption by one person reduces the quantity that can be consumed by another person”³⁰ and **exclusive** since “consumers may be denied access.”³¹

25. *Id.*26. *Id.*27. *Id.*28. *Id.*29. LANDES & POSNER, *supra* note 19, at 12.30. BESANKO & BRAEUTIGAN, *supra* note 24, at G-7.31. *Id.*

The central claim for the superiority of private goods is that where resources are rivalrous or subtractable, efficiency requires they be devoted to their highest valued use.³² Exclusion gives the owner of the resource the incentive to husband the resource, especially where investment is necessary to replenish it.³³ Market allocation solves the subtractability problem by directing resources to their highest value uses.³⁴ The classic “tragedy of the commons” is the case where the failure to grant rights of exclusion leads to either under investment in the resource or overuse.³⁵

When rivalry and excludability conditions are absent, the provision of goods in markets becomes problematic, particularly for private firms. **Nonrivalry** occurs where increased consumption of a good by one person does not decrease the amount available for consumption by others.³⁶ Here allocation does not promote efficiency, since consumers do not consume anything in the traditional sense and there is no scarcity to allocate. **Nonexcludability** means the consumers are not economically prevented from consumption either because the producer surplus is eaten up by the difficulty of exclusion or compensation cannot be extracted from “free riders.”³⁷ Exclusion is valueless and there is little incentive to invest.

This gives rise to the familiar typology of goods shown in the upper right hand quadrant of Exhibit 1. Note that I present the two characteristics as continua to underscore the absence of sharp dividing lines. Goods are more or less rivalrous and excludable. There is no precise point where they pass from being a private good to a public good.

A public good exhibits *nonrivalry in consumption* and *nonexcludability*.³⁸ When producers cannot exclude individuals from consuming their good, the individuals using the good for free may withhold their support for the good, seeking a free ride. Where the costs of exclusion are high, the cost may outweigh the value of the good. This prevents producers from providing public goods, even when those goods are beneficial to the public.

There are additional problems in private provision. Transactions may not take place for a variety of reasons such as excessive transaction costs or the inclination to try to “hold-up” transactions, seeking a larger share of the rents.³⁹ There is the “tragedy of the anti-commons” – the

32. JOHN B. TAYLOR, *ECONOMICS* 184 (1998).

33. *Id.* at 48.

34. *Id.* at 184.

35. *Id.* at 481.

36. *Id.* at 407.

37. *Id.*

38. *Id.* at 406.

39. ERIK G. FURUBOTN & RUDOLF RICHTER, *INSTITUTIONS AND ECONOMIC THEORY*:

excessive fragmentation of property rights preventing transactions from taking place.⁴⁰ In this case, which might be considered a condition of excessive rivalry, producers and consumers cannot execute transactions as the institutional arrangement creates such huge transaction costs and problems.

Common pool resources (CPR) and their associated governance rules have also received increasing attention.⁴¹ These resources are non-excludable, but they are rivalrous. The solution to the problems associated with common-pool resources is not necessarily private property, though. “If exclusion costs are comparatively high, common ownership solutions may be preferable.”⁴² The possibility of co-existence of different governance regimes is particularly important for common-pool resources because many CPRs incorporate characteristics of private and public goods.⁴³ In some instances, this is known as the “comedy of the commons.”⁴⁴ The “comedy of the commons” is the opposite of the “tragedy of the commons” – the notion that users of commonly held property such as forests, fisheries, and most notably air, work together to ensure that overexploitation does not occur.⁴⁵

2. Traditional Goods and the Technology Sector

Traditional public goods have played a particularly large role in the communications space. For centuries, society has treated communications networks as infrastructural, public goods. However, the distinctively American approach to the provision of these projects was to blend private capital with public interest obligations. Deemed to be “affected with the public interest,” privately built communications networks first took the form of common carrier regulation and later took on price, quantity, and entry regulation.

Typically, infrastructure is a large investment that affects many aspects of the economy and exhibits substantial economies of scale.⁴⁶ Costs decline as more people use the infrastructure and the value of the economic activity it supports expands. Given the size of the investment

THE CONTRIBUTION OF THE NEW INSTITUTIONAL ECONOMICS 131, 139 (2000).

40. Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 622 (1998).

41. See, e.g., Charlotte Hess & Elinor Ostrom, *Artifacts, Facilities, and Content: Information as a Common-Pool Resource*, 66 J.L. & CONTEMP. PROBS. 111 (2001).

42. FURUBOTN & RICHTER, *supra* note 39, at 101.

43. *Id.* at 102.

44. See Carol Rose, *The Comedy of the Commons: Commerce, Custom and Inherently Public Property*, 53 U. CHI. L. REV. 711 (1986).

45. ELINOR OSTROM ET AL., RULES, GAMES & COMMON-POOL RESOURCES bookjacket (1994).

46. ALFRED E. KAHN, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS 11 (1988).

and the need to expand consumption over a long period, it is difficult for private developers to realize an adequate return on such projects. The number of suppliers is likely to be limited. A natural monopoly, or at best a duopoly, develops—that is if any producer enters the market.

As an empirical matter, there are five clear linkages between communication infrastructure and public goods. First, infrastructure generates positive externalities by stimulating economic activity; public goods capture externalities that private, market transactions cannot.⁴⁷ Second, as a practical matter, for most of their economic life, infrastructure projects tend to be un-congested and non-rivalrous, especially in low-density, low-income areas.⁴⁸ Third, traditionally, society makes communications infrastructure a matter of public policy because private developers are unlikely to provide needed communication infrastructure adequately.⁴⁹ Fourth, because communications infrastructure networks connect people, the value of the network grows as more people connect to it.⁵⁰ Finally, communications networks traditionally receive special treatment from the government with franchises, subsidies, or special contracts.⁵¹

B. Collaborative Goods

Although it is certainly possible to analyze communication and information goods in the traditional framework of public goods, in the emerging information economy there must be an expansion of the underlying economic concepts used to define these goods.⁵² The emergence of collaborative production on a large scale suggests something more, something different from common-pool resources and public goods.

Similar to public goods which represent a collective decision to provide an input for communications infrastructure, collaborative production entails a production process in which private appropriation of shared resources is accomplished.⁵³ However, collaborative production is a continuous direct relationship between producers outside the traditional market place. It is genuine joint production, not the collective supply or management of an input for private appropriation.

47. TAYLOR, *supra* note 32, at 598.

48. Brett M. Frischmann, *An Economic Theory of Infrastructure and Commons Management*, 89 MINN. L. REV. 917, 952 (2005).

49. *Id.*

50. BESANKO & BRAEUTIGAM, *supra* note 24, at 200.

51. For an account of the early history of the telegraph and telephone in America which includes examples of various types of special treatment, see ALAN STONE, *PUBLIC SERVICE LIBERALISM: TELECOMMUNICATIONS AND TRANSITIONS IN PUBLIC POLICY* (1991).

52. See Mark Cooper, *Making the Network Connection*, in *OPEN ARCHITECTURE AS COMMUNICATIONS POLICY* (Mark Cooper ed., 2004).

53. WEBER, *supra* note 5.

Collaborative production goods exhibit traits of anti-rivalry and inclusivity. The key characteristics of collaborative production goods occur where having numerous producers participate in the production of the goods increases its value and where the value of the good goes up as the number of people who use it increases. The three examples, discussed in greater detail later in this paper, of wireless mesh networks, open source software, and peer-to-peer networks exhibit these characteristics.⁵⁴

Anti-rivalry occurs when the use and/or sharing the production of the good by one person increases the value of the good to others.⁵⁵ **Inclusiveness** occurs when the value of a good increases as the number of people using and/or producing the good increases.⁵⁶ Eric von Hippel's work on user driven innovation and free revealing reinforces the distinction between anti-rivalry and inclusiveness.⁵⁷ He identifies a **private/collective** good as a good for which individuals volunteer to support the supply of the good to the community of producers.⁵⁸ This provides a nuanced difference from a common pool resource in that an independent private action produces the resource for the community.⁵⁹ Innovators freely reveal private effort because they can "*inherently* obtain greater private benefits than free riders."⁶⁰

In the information economy, just as it is necessary to distinguish between anti-rivalry and inclusiveness, it is also necessary to distinguish between inclusiveness and **network effects**. Network effects, also known as demand side economies of scale, occur when the costs of producing or the benefits of consuming a good spill over onto those who are producing or consuming the good, beyond the transaction.⁶¹ The benefits of the network effect accrue to members of the network, directly or indirectly. The classic example of a direct network effect is a telephone. The value of the telephone grows as the number of people on the network increases due to the increasing number of reachable people. The classic example of an indirect network effect is software. The value of an operating system goes up as the number of people using it increases because more companies produce applications for it. Although there is no direct connection between the members of the network, the benefits still accrues to network members.

54. Although I believe the two characteristics are separate, some believe the two are the same. *See id.*

55. *Id.*

56. CARL SHAPIRO & HAL VARIAN, INFORMATION RULES 178-84 (1999) (emphasizing demand side economies of scale and network externalities, which drives toward the concept of inclusiveness argued here).

57. ERIC VON HIPPEL, DEMOCRATIZING INNOVATION 91 (2005).

58. *Id.*

59. *Id.*

60. *Id.*

61. BESANKO & BRAEUTIGAM, *supra* note 24, at 199-200.

Frischmann argues for an additional distinction “between network effects and infrastructure effect.”⁶² The externalities of public and social infrastructures are diffuse because they “positively affect the utility of nonusers, that is, members of society who are not using the infrastructure itself also benefit.”⁶³ Frischmann gives both a social and economic example of these diffuse externalities.⁶⁴ Socially, the increase in political discourse among Internet users also benefits non-users.⁶⁵ Economically, the increase of fertilizer due to an irrigation project increasing agricultural output affects distant fertilizer plants.⁶⁶

David Reed describes two characteristics of adaptive network architectures in the spectrum that parallel the concepts of anti-rivalry and inclusiveness.⁶⁷ The first characteristic, cooperation gain, is the focal point of his analysis.⁶⁸ Cooperative gain, much like the anti-rivalry principle identified earlier, is the phenomenon where “[c]ompared to systems of dedicated, isolated links, networks provide much more transport capacity at much greater transport efficiency. . . [creating] major economic benefits.”⁶⁹ The second characteristic is network optionality.⁷⁰ Network optionality, much like the inclusiveness principle discussed above, comprises two network externalities.⁷¹ First, the “system-wide option value of flexibility in a network scales proportionally to the square of the number of nodes.”⁷² Second, “the option value that accrues due to the ability to dynamically assign capacity depending on shifting demand can increase superlinearly as the number of cooperating nodes in a network.”⁷³ Yochai Benkler illustrates this when he states that the sharing of spectrum points toward the gain from network optionality by stressing the value of expanding “the set of usable combinations.”⁷⁴ Property rights are inefficient in the dynamic allocation of spectrum, Benkler argues, be-

62. Frischmann, *supra* note 48, at 973.

63. *Id.* at 973-74.

64. *Id.*

65. *Id.*

66. *Id.*

67. Comments of David P. Reed to the *Public Notice* in Spectrum Policy Task Force Seeks Public Comment on Issues Related to Commission’s Spectrum Policies, ET Dkt. No. 02-135, 10 (July 8, 2002), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513201195.

68. *Id.*

69. *Id.*; Spectrum is a highly developed example analyzed in detail by Reed. He identifies how, as opposed to property rights that are to combat the “tragedy of the commons” by preserving property, “spectrum capacity increases with the number of users, and if proportional to N, each new user is self-supporting!” David P. Reed, Remarks at the Silicon Flatirons Telecommunications Program: The Future of Spectrum Management (Mar. 5, 2002).

70. Reed, *supra* note 67.

71. *Id.*

72. *Id.*

73. *Id.*

74. YOCHAI BENKLER, OPEN SPECTRUM POLICY 23 (manuscript on file with author).

cause “[p]roperty rights in bandwidth inefficiently fence a sub-optimal resource boundary.”⁷⁵

Exhibit 1 locates these characteristics of anti-rivalry and inclusiveness as extensions of the existing dimensions. In the rivalry dimension, we start at private goods that exhibit high rivalry, which means that use by one subtracts from the use by another. We move to public goods, which exhibit low rivalry, where use by one does not subtract from use by the other. For anti-rivalry goods, we hypothesize the opposite effect, use by one adds to the potential for use by another. In the excludability dimension, we start with private goods, where it is easy to keeping people out. We move to public goods, where excludability is difficult. For inclusive goods, we hypothesize to the opposite effect—the benefit of pulling people in.

Information goods are extremely good candidates to be collaborative goods because information is “an extreme nonrival good” and an “unusually” non-exclusive good.⁷⁶ A person can only own information if that person keeps the information to himself; once that information has been released to the public the person who distributed cannot control who else gains the information.⁷⁷

Although information is hard to control, that alone does not guarantee collaboration. Collaborative production is not successful just because of weak property rights; there must also be benefits to those that participate.⁷⁸ Collaborative production must increase value to the group. Collaborative production must motivate individuals to participate voluntarily as the individuals capture non-rivalrous benefits. It must allow free revealers to recognize that the potential gains of opportunistic behavior will evaporate if the cooperative behavior breaks down. Cooperation becomes the rule, rather than the exception.

The challenges to collaborative goods are also greatly different from those of public goods. In the world of private goods, the problem is the inclination to free ride, to withhold payment or support for the provision of public goods, or to overuse the common pool resource, even though that may be bad for the public. In the world of collaborative goods, the challenge is to understand the willingness of producers to support or freely reveal innovations that enhance shared benefits, even though they do not appear to capture as much private value as they could by withholding.

75. *Id.*

76. Rishab Aiyer Ghosh, *Why Collaboration is Important (Again)*, in CODE: COLLABORATIVE OWNERSHIP AND THE DIGITAL ECONOMY 1-2 (Rishab Aiyer Ghosh ed., 2005).

77. *Id.*

78. OSTROM ET AL., *supra* note 45, at 220.

II. SOURCES OF ECONOMIC ADVANTAGE FOR COLLABORATIVE PRODUCTION IN THE DIGITAL AGE

A. Technological Conditions

In order for anti-rivalry and inclusiveness to dominate, communications and information must be available; for example, the areas examined in this paper have been deeply affected and benefited mightily from the revolution in computer and communications capacity. Of equal importance are the principles that organize interconnected computers into powerful networks; for example, distributed computer capacity able to communicate at high speeds and low cost is a platform that allows more readily for collaborative production.⁷⁹

Historically, dramatic changes in communications and transportation technology have affected society deeply.⁸⁰ However, the convergence of a highly interrelated set of activities in the communications, computer, and information industries in the late twentieth century created not merely a new environment in which information is produced and distributed, but also a revolutionary change in a wide range of economic activities.⁸¹ The digital communications platform “links the logic of numbers to the expressive power and authority of words and images. Internet technology offers new forms for social and economic enterprise, new versatility for business relationships and partnerships, and a new scope and efficiency for markets.”⁸²

Because society can distribute computing intelligence widely and quickly, society has transformed interactivity.⁸³ “As rapid advances in computation lower the cost of information production and as the cost of communications decline, human capital becomes the salient economic good involved in information production.”⁸⁴ Users become producers as

79. MANUEL CASTELLS, *THE INTERNET* 28 (2001).

80. *See generally* FRANCES CAIRNCROSS, *THE DEATH OF DISTANCE* (2001).

81. We can track the technological transformation across all dimensions of society, including the economy, the workforce, the polity, and civic institutions. *See generally* Mark Cooper, *Inequality In Digital Society: Why The Digital Divide Deserves All The Attention It Gets*, 20 *CARDOZO ARTS & ENT. L. J.* 73, 93 (2002); BRIE-IGCC ECONOMY PROJECT, *TRACKING A TRANSFORMATION: E-COMMERCE AND THE TERMS OF COMPETITION IN INDUSTRIES* (2001); Ida H. Simpson, *Historical Patterns Of Workplace Organization: From Mechanical To Electronic Control And Beyond*, 47 *CURRENT SOC.* 47 (1999); BARRY BLUESTONE & BENNETT HARRISON, *GROWING PROSPERITY: THE BATTLE FOR GROWTH WITH EQUITY IN THE TWENTY-FIRST CENTURY* (2001); THE BROOKINGS INST., *GOVERNANCE.COM: DEMOCRACY IN THE INFORMATION AGE* (Elaine Ciulla Kamarck & Joseph S. Nye, Jr. eds., 2002); ANDREW SHAPIRO, *THE CONTROL REVOLUTION* (1999).

82. *UNDERSTANDING THE DIGITAL ECONOMY 1* (Erik Brynjolfsson & Brian Kahin eds., 2000).

83. CASTELLS, *supra* note 79.

84. Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm* 2 (Oct.

their feedback rapidly influences the evolution of information products. Society has also been transformed as the ability to embody knowledge in tools and software lowers the cost of transfer dramatically.⁸⁵

Recent analyses of technological innovation have also provided strong evidence that the digital communications platform transformed the very fabric of the innovation process.⁸⁶ The technological revolution altered the information environment to make distributed solutions more feasible by fostering the uniquely user-focused character of the communications-intensive Internet solution. Technological advance is also making user-based design an attractive option.⁸⁷ It allows individuals to participate in task portioning and decision-making.⁸⁸

The very technologies at the core of this revolution reinforce the dynamic of this change because they are platforms within networks. “A platform is a common arrangement of components and activities, usually unified by a set of technical standards and procedural norms around which users organize their activities. Platforms have a known interface with respect to particular technologies and are usually ‘open’ in some sense.”⁸⁹ They are important because there are strong complementarities between the layers and each layer sustains broad economic activity in the layer above it.⁹⁰

Communications and computer industries have always exhibited network effects and strong economies of scale.⁹¹ Digitization reinforces these economic characteristics because economies of scope reinforce economies of scale. The embedded architecture of the network is at least as important as the technological characteristics. The technologies themselves would not be as powerful nor would the effect on the rest of society be as great if the platform had not evolved as an “ultrarobust” network.

2001) (early manuscript), http://www.law.duke.edu/pd/papers/Coase's_Penguin.pdf.

85. “Advances in scientific understanding decrease the costs of articulating tacit and context-dependent knowledge and reduce the costs of technology transfer. Further, such knowledge can be embodied in tools, particularly software tools, which make the knowledge available to others cheaply and in a useful form.” ASHISH ARORA ET AL., *MARKETS FOR TECHNOLOGY: THE ECONOMICS OF INNOVATION AND CORPORATE STRATEGY* 112, 113 (2001).

86. This is also called “the changing technology of technical change.” *Id.* at 112.

87. Eric von Hippel, *Economics Of Product Development By Users: The Impact Of ‘Sticky’ Local Information*, 44 *MGMT. SCI.* 629, 642 (1998).

88. ARORA ET AL., *supra* note 85.

89. Shane Greenstein, *The Evolving Structure of the Internet Market*, in *UNDERSTANDING THE DIGITAL ECONOMY*, *supra* note 82, at 155.

90. See SHAPIRO & VARIAN, *supra* note 56, at 9-15.

91. *Id.* at 22-23.

B. Economic Advantages

In the digital environment, as described in Exhibit 2, there are three economic advantages created by collaborative production: 1) a higher level of sharing resources lowers the transformation costs of production; 2) transforming consumers into producers reduces the gap between consumers and producers; and 3) there is a greater value on the demand-side as participants facilitate and tap the energy of groups forming networks.

EXHIBIT 2: SOURCES OF COMPARATIVE ADVANTAGE OF COLLABORATIVE PRODUCTION

<i>Activity</i>	<i>Shared Resource</i>	<i>Process</i>	<i>Benefit</i>
SUPPLY SIDE TRANSFORMATION RESOURCE SAVINGS			
Mesh Networks	Spectrum	Embedding Coordination Algorithms	Dynamic occupation of spectrum
Open Source software	Code	Embodied knowledge in software	Exploiting rich information in real time
Peer-to-peer	Storage, Bandwidth, Content	Torrenting Viral communications	Reduction in cost and expansion of throughput Broad exchange, Collaboration
TRANSACTION COST REDUCTION			
All	Local Knowledge	Consumer as Producer	Fit between consumer needs and output
DEMAND-SIDE VALUE CREATION			
All	Network	Self-organizing	Increased option value

1. Supply-Side Transformation Resource Savings

The advantage in the transformation process rests on two factors. First, each set of activities accomplishes greater coordination by applying a combination of technological and human coordination.⁹² For instance, mesh wireless communications rely more on embedding cooperation in the technology: the algorithms and protocols of communications devices. Open source, in contrast, relies more on human cooperation, greatly enhanced by digital communications. Peer-to-peer networks made up of non-technologists stand between the two. Technology does much of the work, but the functioning of the network requires the cooperation of the people using it. Most importantly, these networks survive with varying levels of human cooperation and skill.

92. See *infra* Part III.

Second, in each case, networks share critical resources: spectrum, code, storage, and bandwidth.⁹³ Sharing requires a process, a principle of cooperation that organizes the critical factors of production. The sharing of resources creates significant efficiencies for the networked activities and confers benefits to the collaborating parties. The capacity of the network expands. When the benefits are larger, the cost is lower. When it is easy to communicate, collaboration is more likely.

2. Transaction Cost Reductions

Collaborative production also produces an economic advantage because it transforms consumers into producers.⁹⁴ Reducing or removing the distinction between user and producer results in substantial transaction cost savings. The distance shortens between what producers produce and what consumers consume because the consumer turned producer knows what he wants more than a producer who is not a consumer. The consumer's and producer's interests are identical as they are the same person.

Users know what they need and want. Transferring that knowledge to producers creates inefficiency. Producers who are also users and volunteer for tasks that interest them inherently understand the production problem more clearly and can produce for their needs more easily instead of for the masses. They have the locally specific knowledge necessary to solve problems.⁹⁵ There is also an agency problem when consumers are not producers.⁹⁶ When producers are separate from consumers, the producer may not be able to meet the needs of individual consumers precisely. However, when the developer is also the consumer, he will act in his own best interest when producing a product.⁹⁷

3. Demand-Side Value Creation

Collaborative production creates economic advantage on the demand-side due to group formation.⁹⁸ This is the demand-side since the size of the network, the number of network members that are reachable, and the pattern of interactions dictate the value of the network to the members. As the value of the network increases, the possibilities for

93. *Id.*

94. *Id.*

95. *See generally* ERIC VON HIPPEL, OPEN SOURCE SOFTWARE PROJECTS AS USER INNOVATION NETWORKS (2002); PERSPECTIVES ON FREE AND OPEN SOURCE SOFTWARE 271 (Joseph Feller et al. eds. 2005).

96. *Id.* at 277.

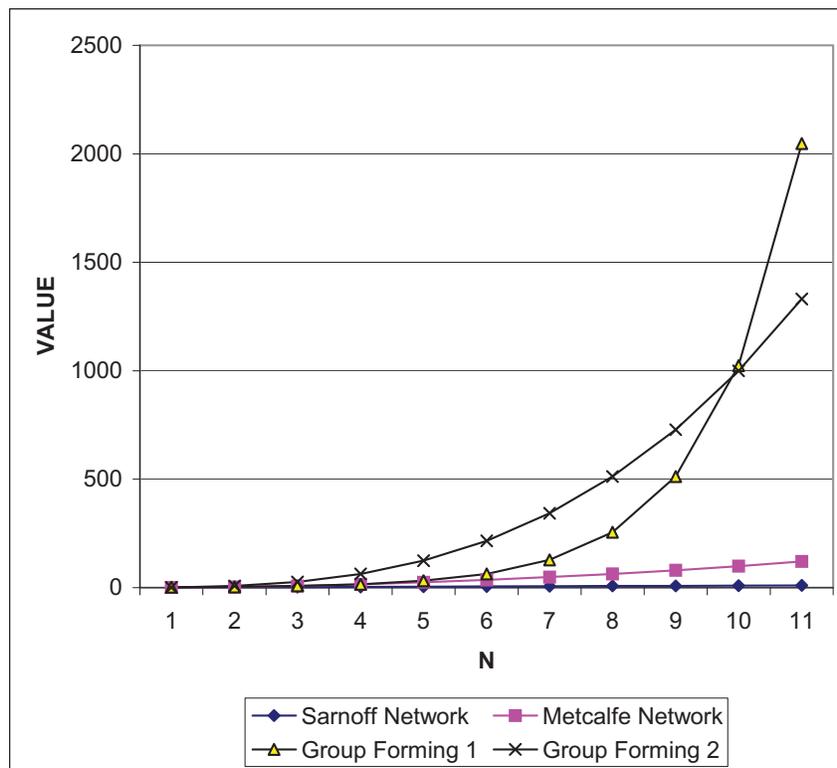
97. VON HIPPEL, *supra* note 57, at 276-77.

98. *See infra* Part III, describing the value of group formation in each of the three areas studied in this paper.

communications (and therefore commerce) also increase. As consumers decide which group, and therefore network, to join they also change the group to fit their needs. This increases the value of the group to the consumer even more.

Reed identifies three types of networks that create value (see Exhibit 3).⁹⁹ First, there are one-way broadcast networks.¹⁰⁰ Also known as the Sarnoff “push” network, the value of one-way broadcast networks is equal to the number of receivers that a single transmitter can reach.¹⁰¹

EXHIBIT 3: VALUE OF TRADITIONAL AND GROUP FORMING NETWORKS¹⁰²



99. See David P. Reed, *That Sneaky Exponential – Beyond Metcalfe’s Law to the Power of Community Building* (1999), <http://www.reed.com/Papers/GFN/reedslaw.html>.

100. *Id.*

101. *Id.*

102. *Id.*

An example of a one-way broadcast network is the wire service.¹⁰³ Second, there are Metcalfe networks.¹⁰⁴ In a Metcalfe network, the center acts as an intermediary, linking nodes.¹⁰⁵ Classified advertising is an example of the Metcalfe network.¹⁰⁶ Third, there are Group Forming Networks, also known as Reed Communities.¹⁰⁷ In this network, collateral communications can take place.¹⁰⁸ The nodes can communicate with one another simultaneously.¹⁰⁹ Chat groups are the classic example of this type of network.¹¹⁰

Collateral communications expands the possible connections dramatically. Network optionality, when realized in group formation, generates much greater value than traditional models. As more people join the network, the value of the network increases.¹¹¹ In addition, networks that “support the construction of communicating groups create value that scales *exponentially* with network size, i.e. much more rapidly than Metcalfe’s square law. . . [called] Group Forming Networks.”¹¹²

Exhibit 3 shows how the value of being part of the network scales as the number of members increases. The Sarnoff value is N . The Metcalfe value is N^2 . The Reed community value is 2^N . The key difference between the Metcalfe network and the Group Forming Network is multi-way communications. Group Forming Networks use group tools and technologies such as chat rooms and buddy-lists that “allow small or large groups of network users to coalesce and to organize their communications around a common interest, issue, or goal.”¹¹³ The exponentiation increases value very quickly and may cause the number of connections/communications to exceed the ability of individuals to maintain them. Thus, it is a theoretical upper limit. On the other hand, as Reed points out, the formation of even a small subset of the theoretically possible groups would dramatically increase the value of the network - N^3 in Exhibit 3. Even if not all groups form, the potential value in the option to form groups is higher. The critical point is that to capture the value of group forming networks, the members of the network must have the freedom to self-organize groups. With that freedom, they create the groups of greatest value to the users.

103. *Id.*

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.*

108. *Id.*

109. *Id.*

110. *Id.*

111. *Id.*

112. *Id.*

113. *Id.*

C. Cooperation In A New Age Of Collective Action

Since cooperation lies at the core of the emerging mode of production, it is important to understand why a new solution to the challenge emerges. Conventional collective action arguments say that a large group is less likely to generate collective goods because each member would receive such a small fraction of the benefit that they would lose their desire to produce collectively.¹¹⁴ However, with the emerging collaborative production the opposite is true as seen in open-source software: the larger the group connected by the Internet, the more likely it is to have the motivation and resources to create code.¹¹⁵ User-driven innovation causes individuals to volunteer, particularly the core group of lead users.¹¹⁶

The existence of heterogeneous resources available in the network definitely improves the efficiency of collaborative responses, but this may not be a necessary condition. The critical condition is the ease of communications. The Internet, for instance, spawned innovation, as participants of group projects were able to work together over long distances and share their specific skills in a “seamless process.”¹¹⁷

New communication technologies allow for reduction in cost of sending information long distances, increase “noticeability, and make ineffective communicative networks effective.”¹¹⁸ Communications technology allows large numbers of people with common interests to interact and share information “in a way that undermines many widely held beliefs about the logic of collective action.”¹¹⁹

It may well be that the literature on collective action was always too pessimistic.¹²⁰ For example, the literature that stresses the tragedy of the commons assumes “individuals do not know one another, cannot communicate effectively, and thus cannot develop agreements, norms, and sanctions” was never correct in physical space and certainly is not correct in cyberspace.¹²¹ The ability to communicate changes everything—especially when a collective payoff flows from cooperation.

In addition, the recognition of shared interest plays a key role in establishing the necessary cooperation. When a monitored and sanctioned system is agreed upon, it “enhances the likelihood that agreements will be sustained, and that they are capable of setting up and operating their

114. WEBER, *supra* note 5, at 155.

115. *Id.*

116. *See generally* VON HIPPEL, *supra* note 57.

117. WEBER, *supra* note 5, at 83-84.

118. Lupia & Sin, *supra* note 12, at 329.

119. *Id.*

120. *See generally* OSTROM ET AL., *supra* note 45, at 319.

121. *Id.*

own enforcement mechanism.”¹²² Due to the benefits received from cooperation, the effect of breaking those agreements may deter those inclined to break the agreements, as it will affect not only the individual, but also the group as a whole.¹²³ Thus, even prior to the advent of digital communications platforms, the ability to communicate and exchange information was central to the ability to organize around shared interests and take collective action, but the capacity to do so has been fundamentally enhanced by the recent technological revolution.

III. INTERNAL ORGANIZATION OF DIGITAL PRODUCTION

A. Supply-side Resource Savings

1. Open Mesh Networks

Mesh networks in the spectrum commons exhibit the advantages of collaborative production on the supply side.¹²⁴ As people add devices, the total capacity of the system increases due to those devices routing communications throughout the network (see Exhibit 4).¹²⁵ Depending on how well these devices share the network traffic, the capacity of each device may decline, but at a slower rate than if they did not share communications.¹²⁶ If the graph showed a cost curve, it would show that the cost per unit of capacity is lower for both total capacity and on a per station basis in the repeater network.¹²⁷

The technologies at the heart of the digital revolution are also at the heart of the deployment of open wireless networks in the spectrum commons. The potential spectrum carrying capacity has been the direct beneficiary of the convergence of progress in digital technology and the institutional development of networks.¹²⁸ When users add radios that help by cooperating in receiving and forwarding signals, i.e. act as repeaters, carrying capacity of the network increases.¹²⁹ Smart nodes get their expanding brainpower from decentralized computational capacity to

122. *Id.* at 220.

123. *Id.* at 296.

124. Reed, *supra* note 69.

125. *Id.*

126. *Id.*

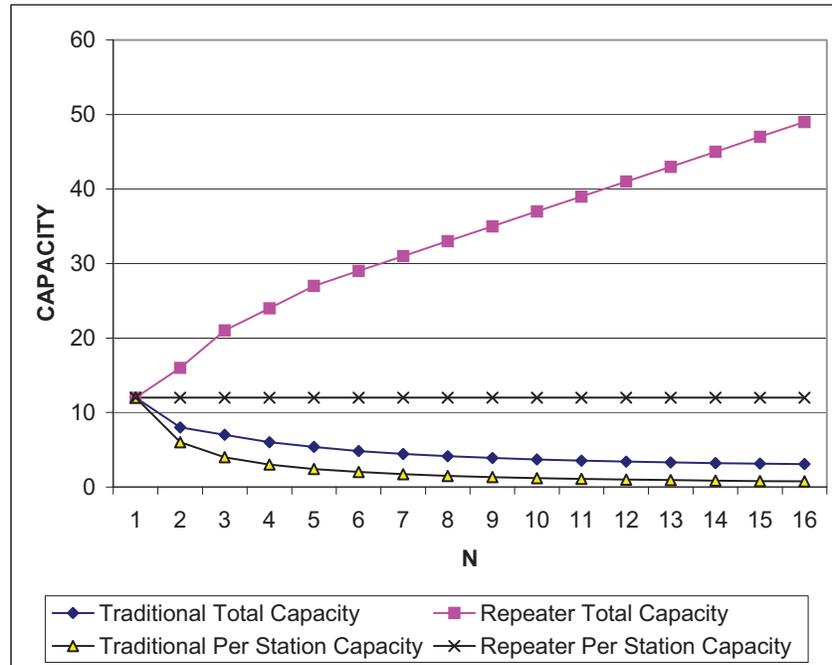
127. *Id.*

128. “There is a ‘new frontier’ being opened up by the interaction of digital communications technology, internetworking architectures, and distributed, inexpensive general purpose computing devices.” Reed, *supra* note 67, at 2.

129. ROBERT J. BERGER, CTR. FOR GLOBAL COMM’NS, NO TIME FOR A BIG BANG: TOO EARLY TO PERMANENTLY ALLOCATE SPECTRUM TO PRIVATE PROPERTY 7 (2003).

communicate seamlessly, utilizing embedded coordination protocols.¹³⁰

EXHIBIT 4: SPECTRUM CAPACITY IN TRADITIONAL AND REPEATER NETWORKS¹³¹



Smart technologies in mesh networks cooperating to deliver messages also show the beginning of anti-rivalry characteristics.¹³² The ability of each node to receive and transmit messages, even when they are neither the origin nor the destination, expands the capacity of the network. This intelligence is the key to mesh networks' immense capacity.¹³³

The spectrum commons in which these networks exist exhibits the characteristic of inclusiveness, since the more nodes on the network, the greater the value to users.¹³⁴ The denser the nodes in the commons, the greater the commons' communications capacity.¹³⁵ The combination of digital technology and network organization has turned the old logic

130. Reed, *supra* note 67.

131. David P. Reed, Address at the Silicon Flatirons Telecommunications Program: The Illusion of Spectrum Scarcity (Mar. 5, 2002), at 10, 14.

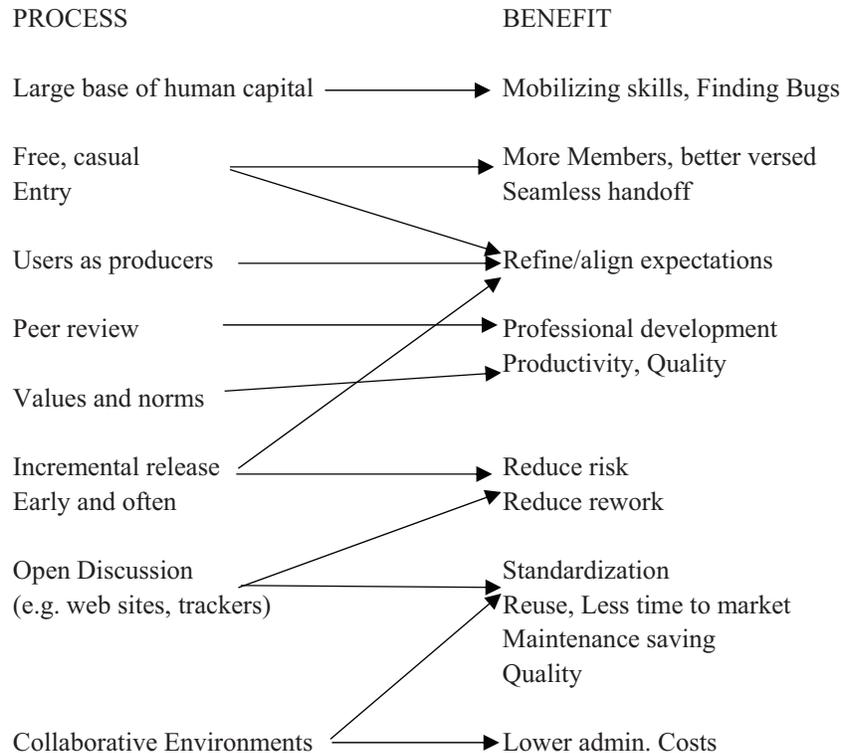
132. Reed, *supra* note 69.

133. Lars Berlemann et. al., *Policy-based Reasoning for Spectrum Sharing in Cognitive Radio Networks*, IEEE Int'l Symp. on New Frontiers in Dynamic Spectrum Access Networks (Nov. 8-11, 2005).

134. See Reed, *supra* note 99.

135. Reed, *supra* note 67.

EXHIBIT 5: BENEFITS OF OPEN SOURCE



on its head; adding users on a mesh network improves performance.¹³⁶ Mesh networks allow devices to share their resources dynamically, allowing more communications to take place with less power.¹³⁷

However, even with new technology, there is still the challenge of how to ensure cooperation among users. Since cooperation is the key to the capacity gain, to the extent that users chose not to cooperate, the mesh network will degrade.¹³⁸ Therefore, more devices are transitioning to “embed coordination” to ensure cooperation.¹³⁹ For example, radios become smart by embedding intelligence – algorithms – that take on the functions necessary to transmit a signal after listening to the spectrum

136. *Id.*

137. Reed, *supra* note 69.

138. Timothy X. Brown, *An Analysis of Unlicensed Device Operation in Licensed Broadcast Service Bands*, IEEE Int’l Symp. on New Frontiers in Dynamic Spectrum Access Networks (Nov. 8-11, 2005) (noting the superior characteristics where participation is broad); Lehr and Crowcroft, *Managing Shared Access to a Spectrum Commons*, IEEE Int’l Symp. on New Frontiers in Dynamic Spectrum Access Networks (Nov. 8-11, 2005) (emphasizing the importance of requiring participation).

139. Berleman, et al., *supra* note 133.

and finding available frequencies to use and determining the power necessary.¹⁴⁰

2. Open Source

The digital environment is particularly challenging for the production of goods used to produce other goods and services, called functional information goods, such as software. This is due in part to people not consuming functional goods for their intrinsic value, like viewing a movie, but to meet other needs, like writing a document with word processing software. Because software is a tool that will be used by different people in different ways under different circumstances, it is more difficult to design and build than cultural goods.¹⁴¹

Just as mesh networks defy the conventional wisdom of collaboration, so does open source. “[T]he sharing of rich information in real time” deeply affects the basis for collective action “because (a) constituents have symmetry of absorptive capacity, and (b) software itself is a capital structure embodying knowledge.”¹⁴² The capacity of groups to produce open source software increases due to the sharing and exchange of information between humans much as occurs between devices in mesh networks: collaboration increases capacity and lowers cost (see Exhibit 5).¹⁴³

The increase in low cost communications and distributed computer intelligence has a particularly powerful impact on the ability to produce information products where users are technically savvy.¹⁴⁴ With a vast array of diverse individuals available to address the complex problems of producing software, the human resource pool is expanded. By drawing from this pool, there is an increase of the chances that someone, somewhere will have the necessary skills to solve a problem. By keeping systems open and promoting interoperability, the chances increase that the project will have a solution to any problems encountered. While the decentralized approach encourages multiple attempts to solve a problem, there is also the advantage of quickly communicating solutions so that

140. Reed, *supra* note 67.

141. Srdjan Rusovan et. al., *Open Source Software Development: Future or Fad?*, in PERSPECTIVES ON FREE AND OPEN SOURCE SOFTWARE (Joseph Feller et al. eds., 2005) (describing the complexity problem facing software); see also WEBER, *supra* note 5, at 61-62.

142. Giampaolo Garzarelli, *Open Source Software and the Economics of Organization*, ii (April 30, 2002), available at <http://opensource.mit.edu/papers/garzarelli.pdf>.

143. WEBER, *supra* note 5, at 81.

144. Josh Lerner & Jean Tirole, *Some Simple Economics of Open Source*, 50 J. OF INDUS. ECON. 197, 202 (2002) (describing “the third era” of open source as “the widespread diffusion of Internet access early in the 1990s that led to a dramatic acceleration of open source activities.”).

everyone can move to the next problem after a solution is found.¹⁴⁵

3. Peer-to-Peer Networks

As hardware and communications costs declined and larger, faster PC's penetrated the market and larger, video files began to move over broadband connections, both the central servers and backbone capacity of the Internet quickly became economic bottlenecks.¹⁴⁶ The evolving infrastructure of the Internet made it inevitable that users would eventually develop software to escape this bottleneck by tapping into the abundant resources available on the network's edges.¹⁴⁷ By building a multi-level redundancy and additional communication points into the network, the network becomes more robust and scalable.¹⁴⁸

Peer-to-peer networks are part of the evolving communications infrastructure.¹⁴⁹ The immense carrying capacity of current peer-to-peer networks exists precisely because those networks are decentralized.¹⁵⁰ The value of decentralized communicating nodes is realized when the nodes directly communicate with one another as they allow peer-to-peer networks to be efficient, robust, and scalable.¹⁵¹ This open architecture allows for efficient solutions when there are scarce resources by exploiting resources that are more abundant.¹⁵² Peer-to-peer network spread the distribution costs among millions of computers giving "content owners far more flexibility in making their works available to the public" and spawning "new business applications that utilize distributed computing technology."¹⁵³

While open source software is the collaboration of a few highly skilled individuals working together, peer-to-peer networks represent a broader phenomenon. They draw in both technical and non-technical par-

145. JOSEPH FELLER & BRIAN FITZGERALD, UNDERSTANDING OPEN SOURCE SOFTWARE DEVELOPMENT 86 (2002).

146. See Brief of American Civil Liberties Union as Amicus Curiae Supporting Respondents at 12-13, *MGM Studios Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005) (No. 04-480) (noting the volume of material moving).

147. See Brief of Computer Science Professors Harold Abelson et al. at 10, *MGM Studios Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005) (No. 04-480); Brief of Creative Commons at 11, *MGM Studios Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005) (No. 04-480) (on sharing of capacity at the edges).

148. DUNCAN J. WATTS, *SIX DEGREES* (2003) (identifying the superiority of multiscale, ultrarobust networks); see generally Cooper, *supra* note 52, at 117-26 (describing the structure of the Internet).

149. See Brief of Sixty Intellectual Prop. & Tech. L. Professors et al. at 28, *MGM Studios Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005) (No. 04-480).

150. See Albelson, *supra* note 147; Brief of Creative Commons, *supra* note 147.

151. See Albelson, *supra* note 147, at 10-11.

152. See Creative Commons, *supra* note 147.

153. Brief of Distributed Computing Indus. Ass'n at 15, *MGM Studios Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005) (No. 04-480).

ticipants because of the widespread deployment of devices and software capable of simple deployment of peer-to-peer networks allowing non-technical people an easy way to join peer-to-peer networks.¹⁵⁴ As with open source software, people must be willing to participate, but the level of engagement is much more variable and potentially lower in peer-to-peer networks. However, the level of engagement varies. On the passive end of engagement are peer-to-peer file sharing networks. These networks only require that participants put up and take down files. At the other extreme, very active collaboration is possible. Wikis require that participants co-produce a document by sequentially editing and or commenting on an emerging product.¹⁵⁵

B. Transaction Cost Reductions

1. Open Mesh Networks

As technology advances, smart technologies will allow for more transmissions in open mesh network due to changes in the frequency, timing, and spacing of transmissions.¹⁵⁶ Due to the way the network is organized, when transmitters leave the network, the work they were doing can be taken over by other transmitters regardless of whether the transmitters are repeaters or not.¹⁵⁷ Seamlessness is essentially already built into devices, as it is a matter of technical protocol.¹⁵⁸ As carrying capacity is developed, the full set of physical transactions must take place in all cases for the open mesh networks to become dynamic environments. The embedding of coordination protocols in a commons approach avoids the costs and challenges of negotiating, clearing, billing, and enforcing rights that will make transactions more costly.¹⁵⁹

A traditional analysis of such a common-pool resource would focus

154. LEE RAINEE & MARY MADDEN, PEW INTERNET AND AMERICAN LIFE PROJECT, THE STATE OF MUSIC DOWNLOADING AND FILE SHARING ONLINE 2 (2004) (estimating 34 million KaZaa Media Desktop File Sharing Applications actively running in June of 2003); Lerner & Tirole, *supra* note 142, at 204 (estimating, "Computer system administrators, database administrations, computer programmer, and other computer scientists and engineers represent about 2.1 million jobs in the United States.").

155. However, it is interesting to note that it is the activities that require little participation that are getting the most attention, especially as far as legal attention such as with file sharing.

156. Arnon Tonmukayal & Martin B.H. Weiss, *An Agent-Based Model for Secondary Use of Radio Spectrum*, IEEE Int'l Symp. on New Frontiers in Dynamic Spectrum Access Networks (Nov. 8-11, 2005).

157. Brown, *supra* note 138.

158. John Giacomoni & Doug Sicker, *Difficulties in Providing Certification and Assurance for Software Defined Radios*, IEEE Int'l Symp. on New Frontiers in Dynamic Spectrum Access Networks (Nov. 8-11, 2005).

159. Berger, *supra* note 129, at 4.

on the allocation costs, external benefits of different rules, and transaction costs. However, as open mesh networks are non-depletable, the only relevant allocation cost is the congestion cost. Unlike traditional common-pool resources, when dealing with open mesh networks, any rules urging a restriction of capacity should be suspect and any promoting increases in capacity should be preferred. As discussed above, because open mesh networks are dynamic, the transaction costs associated with negotiating clearance rights to transmit are high.¹⁶⁰ This challenge will become even greater as more transmitters and receivers become mobile. Solving the transaction problem at the physical level and avoiding haggling over rights is the most attractive solution.¹⁶¹

2. Open Source

At the institutional level of open source projects, there is a large base of contributors because entry into open source development is easy, free, and casual,¹⁶² which allows open source participants to tackle complex and diverse projects.¹⁶³ Many of the programmers of open source are also the users of the products. At the individual level, there are a large number of motivations for participating in open source development¹⁶⁴ and open source projects allow for self-selection of tasks.

Two aspects of open source help reduce transaction costs. First, the demand-side advantage to open source is that programmers are also consumers.¹⁶⁵ This increases the value of the product and the “willingness to pay” in a non-commodified sense of contributing time and effort to the collaborative.¹⁶⁶ Second, the agency costs of separating users from producers discussed in the case of open source are, of course, transaction costs.¹⁶⁷ In open source, the technical skills of the programmer community play an important role.¹⁶⁸ von Hippel underscores the potentially

160. Benkler, *supra* note 74.

161. Nobuo Ikeda, *The Spectrum as Commons: Digital Wireless Technologies and the Radio Policy*, Research Institute of Economy, Trade and Industry, at 10 (2002).

162. Lerner & Tirole, *supra* note 144 (noting the dramatic increase in participation in open source projects in the 1990s); WEBER, *supra* note 5, at 65-72 (describing the wide range of participation in projects).

163. WEBER, *supra* note 5, at 59-65 (discussing “distributed” work).

164. Karim R. Lakhani & Robert G. Wolf, *Why Hackers Do What They Do: Understanding Motivation and Effort in Free/Open Source Software Projects*, in PERSPECTIVES ON FREE AND OPEN SOURCE SOFTWARE (Joseph Feller et al. eds., 2005); Rishab Aiyer Ghosh, *Understanding Free Software Developers: Findings from the FLOSS study*, in PERSPECTIVES ON FREE AND OPEN SOURCE SOFTWARE (Joseph Feller et al. eds., 2005).

165. VON HIPPEL, *supra* note 95.

166. WEBER, *supra* note 5, at 74 (emphasizing the importance to programs of participation to solve a problem that concerns them in the suggestion that programmers “scratch and itch.”).

167. VON HIPPEL, *supra* note 95, at 276.

168. *Id.*

revolutionary development that flows from the transformation of users into producers because users can “build, consume, and support innovations on their own, independent of manufacturer incentives” and allows for a “diffusion of innovation by and for users. . . to get what they really want.”¹⁶⁹

3. Peer-to-Peer Networks

When looking at the transaction cost advantages of peer-to-peer networks, the production and distribution of music continue to be the focal point.¹⁷⁰ The costs involved with searching for music decreases and the information quality received improves.¹⁷¹ This, in turn, reduces the total costs and increases demand for music.¹⁷² In addition, especially important for the artists, peer-to-peer networks change how music is produced and distributed.¹⁷³

Distribution of recorded music over the Internet decreases the costs of producing, manufacturing, and distributing music because there is no longer a cumbersome centralized distribution system.¹⁷⁴ Peer-to-peer networks further reduce costs by lowering record company overhead and marketing, which currently account for approximately a quarter of the cost of music.¹⁷⁵ This eliminates up to three-quarters of the costs; one author notes that while the average price per CD in 2001 was about \$17.99, the production cost was about fifty cents and the artists only received about twelve cents.¹⁷⁶ While some say artists receive more, even those authors do not place the amount much higher than a dollar, net of costs.¹⁷⁷ Thus, the costs of music decrease dramatically by reducing, or even eliminating, the role of intermediaries. Distribution of music over peer-to-peer networks allows this decrease as producers of goods and services find new ways to deal directly with consumers. In addition,

169. *Id.*

170. WILLIAM W. FISHER III, PROMISES TO KEEP 18-31 (2004).

171. Brendan M. Cunningham, Peter Alexander & Nodir Adilov, *Peer-to-Peer Sharing Communities*, INFO. ECON. & POL’Y, 16 (2004).

172. FISHER, *supra* note 170, app.

173. See Mark N. Cooper, Time for the Recording Industry to Face the Music: The Political, Social and Economic Benefits of Peer-to-Peer Communications Networks (2005), *available at* <http://cyberlaw.stanford.edu/blogs/cooper/archives/BENEFITsofPEERtoPEER.pdf>.

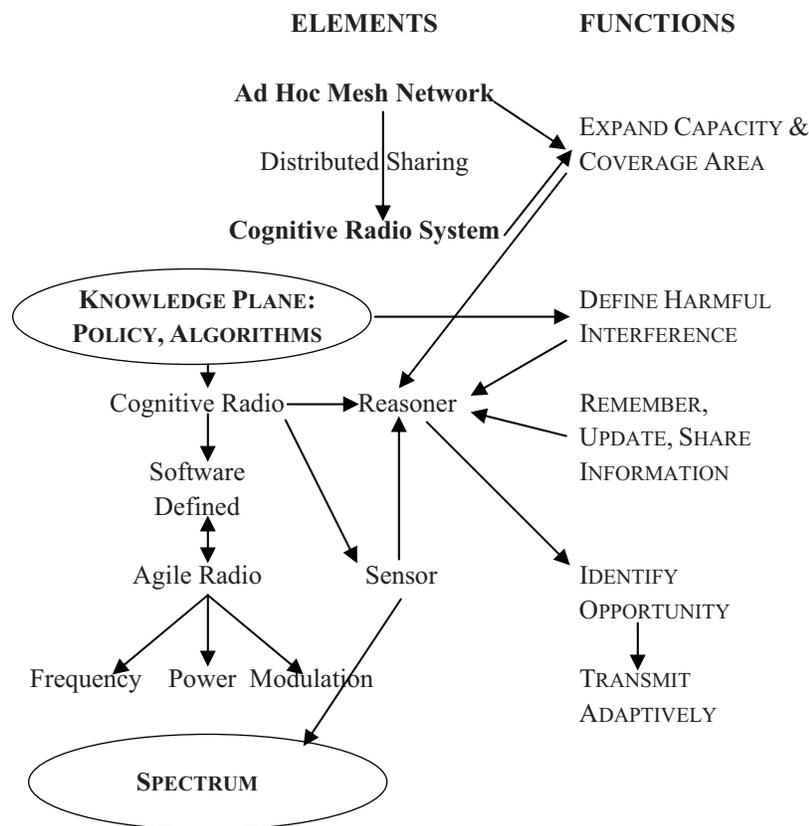
174. FISHER, *supra* note 170, 260, app. tbl.A.1 (2004); DERECK SLATER ET AL., BERKMAN CTR. FOR INTERNET & SOC’Y, HARVARD LAW SCHOOL, CONTENT AND CONTROL: ASSESSING THE IMPACT OF POLICY CHOICES ON POTENTIAL ONLINE BUSINESS MODELS IN THE MUSIC AND FILM INDUSTRIES I (2005), http://cyber.law.harvard.edu/media/files/content_control.pdf.

175. *Id.*

176. Bill Wittur, *Selling Minor Chords in Exchange for a Happy Tune*, MUSIC DISH, (Dec. 12, 2001) *available at* <http://musicdish.com/mag/index.php?id=4859>.

177. FISHER, *supra* note 170, at 260, app. tbl.A.1.

EXHIBIT 6: MESH NETWORK ELEMENTS AND FUNCTIONS



consumers also are able to establish relations with one another, or to become producers in their own right.

C. The Demand-Side Value Enhancement

1. Open Mesh Networks

Although the benefit of open wireless networks lies primarily on the supply-side, there are benefits to the demand-side. In order to capture the full benefits of a spectrum commons, people must form ad hoc mesh networks.¹⁷⁸ To appreciate this, we must understand the devices used in and the creation of ad hoc mesh networks (see Exhibit 6).¹⁷⁹

Devices used for open wireless networks will need to detect use of the spectrum, assess the quality of service it needs for its own transmis-

178. Giacomoni & Sicker, *supra* note 158.

179. Berleman et al., *supra* note 133.

sion, and ascertain whether transmitting in the space available and in the necessary manner can be done without interfering with other devices.¹⁸⁰ These devices become cognitive as they “identify, remember, update, share opportunity information, and exploit the opportunity information with adapted transmission to avoid causing harmful interference.”¹⁸¹ Exhibit 6 illustrates this concept starting on the bottom left and working to the top right: each of the concepts subsumes construction of the one below as a complex network.

To make a cognitive device, one starts with the basic building block of the network: a device that uses software, as opposed to hardware, to change its frequencies, power, and modulation.¹⁸² When one adds sensors and a reasoning system to the device, the device becomes cognitive and aware of the rules of the network.¹⁸³ Embedded logic systems allow them to decide when to transmit without breaking the law, adding intelligence to the network.¹⁸⁴ Mesh wireless networks then integrate these devices as access points and relay nodes (repeaters) used to support any communication meant for any destination.¹⁸⁵

The group forming value emerges as ad hoc network allow radios to join and leave the network. Therefore, they adapt as necessary, since the “connections are transient and formed in an ad hoc as-needed basis” allowing for the development of a “self-healing networking in which routing continues in the face of broken nodes or connections.”¹⁸⁶ Unlike the networks that existed in the spectrum during the twentieth century, cognitive devices in ad hoc networks show the ability of human intelligence to build incredibly complex, replicable networks that embed coordination. At the core of the network is the reasoner—“a software process that uses a logical system to infer formal conclusions from logical assertions.”¹⁸⁷ It works by “inferring statements from other statements. . . represented in a machine understandable way. . . that allows not only first-order logic, but also higher-order, class-based reasoning.”¹⁸⁸

2. Open Source

The demand-side values are enhanced with open source because at the core of its success is peer-review at both the institutional and individ-

180. *Id.* at 4.

181. Robert J. Degroot et al., *A Cognitive-Enabled Experimental System*, IEEE Int'l Symp. on New Frontiers in Dynamic Spectrum Access Networks (Nov. 8-11, 2005).

182. Berleman et al., *supra* note 133.

183. *Id.*

184. *Id.*

185. *Id.* at 4-8.

186. Giacomoni & Sicker, *supra* note 158.

187. Berleman et al., *supra* note 133.

188. *Id.*

ual levels. Individually, peer review among programmers promotes professional development and motivates participation.¹⁸⁹ Institutionally, peer review promotes quality by vetting output across a large audience. The reliance on open communication through mail lists, websites, wikis, and collaborative tools helps create an environment inductive to peer review.¹⁹⁰

In addition, there is a clear set of group values and norms used to evaluate programs. Standardization and reuse are important.¹⁹¹ Communication is important among all members of the community shown by project administrators making frequent releases and builds of programs available.¹⁹² Social commitment—a broad category that includes altruism—and ideological motives, such as personal motivation to do a good job or a dislike of proprietary code, also come into play.¹⁹³

3. Peer-to-Peer

The demand-side of peer-to-peer networks encourages three different forms of relationships between individuals: exchange, viral communications, and collaboration.¹⁹⁴ Peer-to-peer networks foster exchange between equals by the search capability of the network and the direct relationships between nodes. As the capacity for networks to communicate increases, peer-to-peer networks exhibit classic demand-side economies of scale. Viral communications and collaboration enhance the ability to market and expand the ability to innovate as shown with the new emerging relationship between artists and fans.¹⁹⁵ In addition, peer-to-peer collaboration can be anonymous, where individuals sequentially add to or modify a product,¹⁹⁶ and they can be interactive co-production.¹⁹⁷

The demand-side is also changed because the relationship between artists and audiences changes. The hold of the recording companies weakens and their ability to make stars decreases, as “there is a greater probability of discovering other high quality music items by lesser known artists with the new technology.”¹⁹⁸ The ability to sample “is an information-pull technology, a substitute to marketing and promotion, an

189. FELLER & FITZGERALD, *supra* note 145, at 88.

190. WEBER, *supra* note 5, at 81 (putting it simply, “Talk a lot.”).

191. *Id.* at 75.

192. *Id.* at 80.

193. Lakhani & Wolf, *supra* note 164.

194. Brief of Sovereign Artists at 6-7, *MGM Studios Inc. v. Grokster Ltd.*, 545 U.S. 913 (2005) (No. 04-480).

195. See Brief of Distributed Computing Indus. Ass’n, *supra* note 153, at 19.

196. Brief of Sovereign Artists, *supra* note 194.

197. *Id.* at 38.

198. Ram D. Gopal et al., *Do Artists Benefit from Online Music Sharing?*, 79 J. OF BUS. 1503, 1530 (2006).

information-push technology.”¹⁹⁹ The cost structure of the industry changes as it adopts digital technologies. Performance improves, as “variable costs relative to fixed costs are more important for music downloads than for CDs.”²⁰⁰ The ability for lesser-known artists to succeed increases due to “a less skewed distribution of sales among artists.”²⁰¹ In fact, we do observe this pattern. The payoff for artists and society is increasing diversity.²⁰² In addition, it creates the opportunity for the artists to gain more from “piracy” than the publishers as illegal recordings may create a larger demand for live performances as an artist’s popularity increases.²⁰³

CONCLUSION

There is a twilight zone in economics between market failure and market success inhabited by public goods and externalities. Collaborative production, and the goods it creates, will play a key role in filling this zone and creating economic growth in the digital age. The location of these goods with respect to traditional economic analysis is clear. In the industrial economy of the 20th century, economic analysis grappled with goods that were non-rivalrous and non-excludable.²⁰⁴ However, in the digital economy of the 21st century, computer and communications technologies expand the challenge of economic analysis. Anti-rivalry and inclusiveness are critical economic conditions. The value of anti-rival and inclusive goods increases as more users participate freely in their production, consumption, and distribution.²⁰⁵ By failing to implement policies that allow collaborative production to thrive in group-forming networks, society will suffer greatly.

To avoid this pitfall, it is necessary to understand the broad policy implications of choosing a mode of production. Developing specific policies in a number of areas will promote the efficient expansion of collaborative production. Broad policy goals must be developed with a clear understanding of what implications these goals will have for the telecommunication world.

199. MARTIN PEITZ & PATRICK WAELEBROCK, FILE-SHARING, SAMPLING, AND MUSIC DISTRIBUTION 5 (Int’l U. in Germany, Working Paper No. 26, 2004), available at <http://ssrn.com/abstract=652743>.

200. Martin Peitz & Patrick Waelbroeck, *An Economist’s Guide to Digital Music* 35 (CESifo Working Paper No. 1333, 2004), available at http://ideas.repec.org/p/ces/ceswps/_1333.html.

201. *Id.*

202. Gopal et al., *supra* note 198, at 1525-29.

203. Amit Gayer & Oz Shy, *Publishers Artists and Corporate Enforcement*, INFO. ECON. & POL’Y (forthcoming 2006) (manuscript at 2-3, on file with author).

204. TAYLOR, *supra* note 32; *see generally*, OSTROM, *supra* note 45.

205. *See supra* part II.

A. Broad Policy Goals

Several characteristics of the collaborative mode of production give policymakers reasons to support it, including five economic and socio-political characteristics. First, there is accommodating uncertainty. Decentralized user driven focus has clear advantages in flexibility.²⁰⁶ It is less dependent on small numbers of network owners guessing what the demands on the network will be. It avoids large lumpy investment. It helps to lower the cost of updating and versioning. Flexibility enhances the ability of the structure to accommodate uncertainty.

Second, there is innovation. The decentralized end-user driven innovation is likely to accommodate far more experimentation and innovation.²⁰⁷ As I have shown, the experience of unlicensed spectrum in the age of digital technology shows that networked platforms exhibit the fundamental characteristic of user-driven innovation and aggressive atomistic competition because of its decentralized nature.

Third, there are incentives and infrastructure. Centralized networks give network operators an incentive and ability to exercise market power, to reduce or control communications to maximize private profits.²⁰⁸ The social cost of the exercise of market power in communications networks grows because it retards the ability to achieve collaborative gains.²⁰⁹ In collaborative production systems with embedded coordination, decentralized investment, and cooperation gain, this ability to abuse market power is reduced.²¹⁰

Fourth, there is the democracy principle. Although this paper has focused on economic issues, there is no doubt that decentralized open networks have desirable political characteristics.²¹¹ The licensing regime that protected broadcasters excluded people from projecting their voices, thus limiting their right to speak.²¹² Because of the one-way broadcast nature of twentieth century electronic mass media, the First Amendment concentrated on the ability to hear diverse points of view, also known as listeners' rights.²¹³ Open wireless and peer-to-peer networks expand the ability to speak and help ensure First Amendment rights by returning

206. William Lehr, *Economic Case for Dedicated Unlicensed Spectrum Below 3 GHz*, 8 (2004), available at http://itc.mit.edu/itel/docs/2004/wlehr_unlicensed_doc.pdf.

207. *Id.*

208. Reed, *supra* note 67.

209. Lehr, *supra* note 206, at 16-23.

210. *Id.* (arguing unlicensed spectrum provides a check on market power).

211. See Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354 (1999); Yochai Benkler, Property Commons, and the First Amendment: Towards a Core Common Infrastructure (2001), <http://www.benkler.org/WhitePaper.pdf>.

212. Mark Cooper, Spectrum is Speech in the 21st Century (2006), transcript available at <http://cyberlaw.stanford.edu/blogs/cooper/archives/spectrum%20is%20speech.pdf>.

213. *Id.*

them more closely to their original formulation.²¹⁴

Fifth, there is the idea of creativity. There is a socio-cultural benefit in the growth of collaborative production independent of the aspect of political expression.²¹⁵ The pleasure in creativity, attributed to the open source coder, is simply an example of the broader principle that self-expression through creative production is satisfying. Similarly, the desire to contribute without compensation is strong. People want to participate in the production of culture.

B. Communications Policy

This analysis has broad implications for many areas of public policy (see Exhibit 7). The key principle of expanding the flow of information from the ends of the network, the end-to-end principle, is the cornerstone of the value creation. The unimpeded flow of communications is the key to collaboration on the supply-side and group formation on the demand-side. Future allocative and adaptive efficiency will depend upon a pervasive computing environment in which the endpoints are mobile.

Open wireless networks in the spectrum commons are better able to support such activity. Massive mobile computing is the future; the Sarnoff broadcasting networks are the past. A progressively expanding swath of unlicensed spectrum should be the main policy. Unlicensed spectrum is not the exception; it should be the rule. If unlicensed space becomes congested, it is necessary to move licensed applications out of the way, especially in the lower frequencies.

Network neutrality is vital to supporting the economics of collaboration. Tollgates and barriers restrict the flow of information and the ability of groups to form. Policymakers must resist the efforts of incumbents to throttle down the flow of information in the digital communications platform. As long as wire owners have leverage over last mile, middle mile, or backbone facilities, they cannot be allowed to undermine innovation in applications and content by withholding network functionality or discriminating against content or applications. Ironically, the torrent has barely begun and the oligopoly network owners are already complaining about bandwidth hogs consuming too much capacity, which will set off a campaign to restrict communications by price, or profit maximizing discrimination. Differentiation that utilizes enhanced network functionality is fine; discrimination that denies access to network functionalities is not. Open interfaces that promote seamless communications must remain the organizing principle of the network. The unfettered, many-to-many quality of the network must be preserved.

214. LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE (1999).

215. See Brief of Creative Commons, *supra* note 147.

EXHIBIT 7

PRESERVE EXISTING USER RIGHTS
Preserve nondiscriminatory Interconnection and carriage (network neutrality) in communications networks Protect fair use and fight to preserve routine, unregulated uses.
REFORM THE CURRENT SYSTEMS OF PROPERTY RIGHTS
Include broadband connectivity in the definition of universal service Defend and expand community broadband Liberate orphaned and dormant (out of print) works Reduce the burden of search costs to discover existing rights
PREVENT EXTENSION OF RIGHTS THAT IMPAIR COLLABORATION
Oppose discrimination in communications networks Resist copyright holders defining communications architecture to protect their rights Refuse to create new transmission privileges (e.g. the webcaster treaty) Oppose technology mandates that undermine functionality (e.g. the broadcast flag) Oppose excessive enforcement measures (e.g. criminalization or expansion of secondary or vicarious liability)

Telecommunications is infrastructure in the digital information age. More than ever, a ubiquitous and adequate communications network that is available, accessible, and affordable for all should be the objective of public policy. Because communications are so central to this economy, it is absurd not to have an industrial policy to ensure the achievement of this public policy. Universal service is more important in the 21st century than it was in the 20th because it creates a large market. In this network the sources of efficiency and innovation are dispersed and, frequently, accidental or surprising. The next big thing is not likely to come from the research and development departments of the incumbents.

There is a wide range of intellectual property issues that swirl around collaborative production, too many to address in this paper. From the point of view of information flow and communications, content owners should not dictate network architecture. If Hollywood and the music companies have their way, they will tag every file, fingerprint every user, and monitor every transaction. They will do so by forcing transactions back through a central server, which undermines the efficiency of exploiting distributive resources in peer-to-peer networks.

TELECOMMUNICATIONS: THE TRANSITION FROM REGULATION TO ANTITRUST*

ALFRED E. KAHN**

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INTRODUCTION

It has become increasingly clear in recent years that whether or not to proceed with the deregulation of telecommunications is or should no longer be an active issue. For the majority of subscribers, service is no longer a natural monopoly because the competition among diverse platforms is sufficiently ubiquitous for us to envision deregulated competition as the general rule and continued regulation the exception. By the same token, we need a basis for deciding when and where that process has advanced sufficiently to justify deregulation: in Part I, I propose a comparatively simple, objective criterion.

In Part II, I discuss how to give substance to the role of the antitrust laws, to which in principle falls the responsibility for protecting and preserving the competition that makes deregulation feasible. (In view of the mammoth mergers in the industry during the last several years—including mergers across platforms—it is worth underscoring that that responsibility *precedes* as well as succeeds deregulation, both logically and chronologically. In a very real sense the different technologies embodied in different platforms may be said to compete with one another in a way that is real and highly beneficial. But to the extent that “competi-

* I should like to dedicate this paper, which reflects throughout his influence and our collaborations over the last seventy years, to the memory of Joel B. Dirlam, whose recent death I continue to mourn. I also want to acknowledge the generous advice I have received over the last few years from Professor Philip Weiser, the patient suggestions of Charles A. Zielinski and Timothy Tardiff, the research assistance of Trung Lu and the extraordinary efforts of Martha Ullberg and Marilyn Pettinga.

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tion” takes place only *within* the firm, it is merely metaphorical; it is not a sufficient substitute for competition between or among firms, as an authentic basis for deregulation.)

Finally, in Part III, I apply these considerations to the increasingly politicized and emotional issue of “network neutrality,” cutting through the reasoning-by-metaphor and sloganeering to disclose that the logical core of these arguments consists in part—but only in part—in differing responses to the issues I discuss in Parts I and II. The other part is, for want of a better term, ideological—which probably explains the increasing shrillness of the debate: while talking the language of competition and monopoly, regulation and deregulation, its proponents and proposals go beyond the limits of what constitutes an effectively functioning competitive, market economy—which is not to say that they are for this reason illegitimate. To these views, I attempt to offer a bridge—or, for what it may be worth, a *partial* bridge—consistent with my views of the proper role of government in a competitive, market economy.

I. THE CASE AND TRIPPING POINT FOR DEREGULATION

According to the FCC,¹ 19 percent of all switched subscriber access lines in mid 2005 were served by competitive local exchange carriers (CLECs). Cable companies represent a prominent and a rapidly increasing share of these: although they have only begun offering telephony on a large scale, they already account for about 4 percent of all residential lines. In addition, more subscribers actually have cell phones than traditional landline telephone service: that ratio will almost certainly increase as we octogenarians and nonagenarians pass from the scene. These national data hardly suggest instantaneous and ubiquitous deregulation;²

1. Local Telephone Competition: Status as of June 30, 2005, *Report*, 2006 WL 927328 (Apr. 2006).

2. For example, according to the same FCC survey, the CLECs’ share of all switched subscriber access lines ranges between 6 to 8 percent, in Hawaii and Montana, and 40 percent in Rhode Island; their share of residential between 0 to 4 percent in Hawaii, Montana, Nevada, and West Virginia and 32.6 percent in Rhode Island; and their share of business lines, between 12 to 18 percent in Wyoming, Mississippi, Missouri, Montana, Hawaii, Indiana, and Idaho and 40 to 60 percent in the New England states, New York, Pennsylvania, Delaware and the District of Columbia. *Id.* at 11.

Vinton Cerf, Vice President & “Chief Internet Evangelist” of Google, Inc., has asserted that as of 2004 only 53 percent of Americans had a choice between cable modem and DSL service and those two provided 99.5 percent of all broadband service to consumers. *Reconsidering Our Communications Laws: Ensuring Competition and Innovation: Hearing Before the S. Comm. on the Judiciary*, 109th Cong. (June 14, 2006) (statement of Vinton G. Cerf, Vice President & Chief Internet Evangelist, Google Inc) [hereinafter Cerf]. The 53 percent figure seems, however, to substantially underestimate the actual or directly potential facilities-based competition. For example, the FCC’s latest broadband report, High-Speed Services for Internet Access: Status as of June 30, 2005, *Report*, 2006 WL 927327, at *3 (Apr. 2006), states that as of June 2005, cable modem service was available to 91 percent of households to whom ca-

but they also fail dismally to reflect how dramatic the turnaround and dissolution of the local landline-based telephone monopolies have been. In December 1999, incumbent local telephone companies served 181.3 million land lines; by June 2005, that number had declined to 144.1 million;³ in the first quarter of 2006, it was dropping by 150,000 a week—7,500,000 a year.⁴

Newspaper reports capture these dramatic changes more quickly—and breathlessly—than official annual statistics:

In 2005, the number of subscribers to Internet-based calling services nearly tripled from the year before, to 5.5 million . . . By 2010 [estimates are that] Internet phone providers [will have won] about a quarter of the traditional local phone business . . .

In New York, Verizon recently sent letters to customers offering a calling plan that includes unlimited phone service for \$35 a month, instead of \$60 . . . For people signing up for service through its web site, AT&T now offers unlimited local and long distance service for \$40, down from \$50 a year ago.⁵

These numbers signal a dramatic change, already in process, that calls for a radical reconsideration of our inherited regulatory institutions, at once in some places and soon in others.

In 2005, the Canadian incumbent local exchange carrier (ILEC), TELUS, proposed to its regulators (the Canadian Radio-television and Telecommunications Commission—CRTC) an objective “bright-line” test, satisfaction of which would automatically call for regulatory forbearance: whenever and wherever a second, facilities-based carrier has taken over some specified percentage of the subscriber access lines of an incumbent telephone company, in a market geographically defined by the reach of the facilities of the (presumably cable) competitor.⁶

In TELUS’ proposal, the “bright-line” was 5 percent—a figure that would at first glance seem absurdly low, as the CRTC indeed ultimately decided:⁷ one would not ordinarily expect a market 95 percent of which

ble TV service was available and DSL was available to 76 percent of households served by ILECs. Since both ILEC and cable TV are nearly ubiquitous, this would suggest that households with a choice would be somewhere in the 70 percent range.

3. Local Telephone Competition: Status as of June 30, 2005, *supra* note 1, at 4.

4. Matt Richtel & Ken Belson, *Online Calling Heralds an Era of Lower Costs*, N.Y. TIMES, July 3, 2006, at A11.

5. *Id.*

6. Comments of TELUS Communications Inc., in *Forbearance from Regulation of Local Exchange Services*, Telecom Public Notice CRTC 2005-2, 28 April 2005 (Public Notice 2005-2).

7. Expressing the opinion that “it is the loss of customers to competitors by an applicant ILEC which best demonstrates that . . . [its] market power may be diminished,” the CRTC de-

is served by a single incumbent to be effectively competitive. Justifying so small a “bright-line,” however, were the following considerations:

- A. the achievement of a 5 percent share of a market so long served entirely by incumbent telephone companies would be clearly reflective of a major competitive effort;
- B. the process would be just beginning;
- C. its perpetuation and expansion within the market already reached by their facilities *would be ensured by the very large sunk investments and consequent low marginal costs*⁸ of both parties in that region.⁹

In supporting testimony, I recommended adding the requirement of a third, competitive platform independent of the ILECs, presumably wireless, the presence of which was implicit in the TELUS proposal. This calls attention once more to the need for a careful assessment of widespread mergers in recent years, both among wireless companies and between them and local telephone companies.¹⁰ In these circumstances, it

creed, conservatively, that the applicant ILEC would have to demonstrate a loss of 25 percent of the market to be accorded regulatory forbearance. *Forbearance from the Regulation of Retail Local Exchange Services*, Telecom Decision CRTC 2006-15, 6 April 2006 ¶¶246 (Telecom Decision 2006-15).

8. As I learned first from John Maurice Clark, the high ratio of fixed to variable costs of both competitors tends further to hold down the profit-maximizing level of their charges by increasing the “margin” elasticity of demand for their respective services: the lower volume of sales associated with higher prices being only slightly offset in their effect on profits by savings in variable costs, the greater volumes associated with lower prices only slightly offset or discouraged by higher variable costs biases the choice in the direction of the latter. JOHN MAURICE CLARK, COMPETITION 148-50 (1961); *see also* Jerry A. Hausman, *Regulated Costs and Prices in Telecommunications*, in INTERNATIONAL HANDBOOK OF TELECOMMUNICATIONS ECONOMICS, VOLUME 2: EMERGING TELECOMMUNICATIONS NETWORKS 226 (Gary Madded ed., 2003); *From 2-G to 3-G: Wireless Competition for Internet-Related Services*, in BROADBAND: SHOULD WE REGULATE HIGH-SPEED INTERNET ACCESS, 126-27 (Robert W. Crandall & James H. Alaman eds., AEI-Brookings Joint Center for Regulatory Studies, 2002); Dennis L. Weisman, *When Can Regulation Defer to Competition For Constraining Market Power?: Complements and Critical Elasticities*, 2 J. COMPETITION L. & ECON. 101 (2006).

9. For essentially this reason, Bell Canada, another participant, argued that “if it were proposing a market share test for the purposes of measuring market power, measuring shares on the basis of *capacity* the ability to provide service, would be more relevant . . .” *Forbearance from the Regulation of Retail Local Exchange Services*, *supra* note 7, at ¶ 174 (emphasis supplied).

10. *See AT&T and BellSouth Merger: What Does It Mean for Consumers? Before the Subcomm. on Antitrust, Competition Policy, and Consumer Rights of the S. Comm. on the Judiciary*, 109th Cong. (2006) (testimony of Jonathan L. Rubin, Senior Research Fellow, American Antitrust Institute) [hereinafter Rubin]; *see also* Robert W. Crandall & Clifford Winston, *The Breakdown of ‘Breakup,’* WALL ST. J., Mar. 9, 2006, at A14 (generally dismissing any concerns about the AT&T/BellSouth merger). Partly contributing to the complacency of the latter two may have been the fact that that merger does not in itself involve any repression of

seems to me important to assess the competition of non-affiliated providers of wireless services—including municipalities—and, as Jonathan Rubin, Robert Hahn and Scott Wallsten emphasize, freeing up the spectrum for others, service providers and users.¹¹

Such an objective test would have many advantages. It would seem to be easily administrable: the geographic scope of the market, the definition of the services, and the tipping point market share achieved by challengers would all be determined by observation, the first two by the overlapping reach of the facilities of both competitors in which effectively competitive behavior already prevails and, because of the large sunk investments required, is highly likely to persevere; and the last by a count of subscriber lines. And it would avoid the full-fledged adversarial expert testimonies openly invited by strictly “economic” tests, such as the U.S. Horizontal Merger Guidelines—calling for attestations of economic expert witnesses to the presence of market power sufficient to “impose at least a ‘small but significant and nontransitory’ increase in price” as the basis for geographic and product market definitions.¹²

wireless as a third competitor, since the two merging companies were already co-owners of Cingular. On the other hand, the apparent intention of two major cable companies, Comcast and Cox, to set up some sort of joint venture with Sprint Nextel, the largest remaining unaffiliated wireless provider, raises once again the specter, which Crandall and Winston do not consider, of three competing platforms reducing to two in the areas in which they overlap. See Ken Belson, *Cable Companies, Taking Aim at the Bells, Bulk Up in Wireless Phone Services*, N.Y. TIMES, Apr. 10, 2006, at C4.

How that last plan will relate to Sprint Nextel’s exciting later announcement of a joint venture with Intel to spend up to three billion dollars over a two year period constructing a mobile WiMax network remains to be seen, John Markoff & Ken Belson, *Sprint Will Build an Intel-Backed Network*, N.Y. TIMES, Aug. 9, 2006, at C7; but it reminds us once again of both the dynamic competitive potential of telecom technology—see the optimistic interpretation of the *Wall Street Journal* and the Progress and Freedom Foundation, in the latter’s blog of August 9, 2006—and the importance of keeping that competition inter- rather than merely intra-firm.

Crandall and Winston’s lone argument is that this last step in the re-integration of the “long-distance” and local business of the Bells demonstrates the futility of the original dissolution of AT&T—a contention with which I agree. That proposition, however, in no way minimizes, nor could it, the enormous benefits to the public from the dissolution of the AT&T *franchised monopoly*, originally protected from competition in all aspects of its business, from consumer premises equipment to “vertical services” and long distance—a dissolution reaching back some quarter of a century before dissolution of the Company itself under the Consent Decree in the antitrust case.

11. See Rubin, *supra* note 10; Robert W. Hahn & Scott Wallsten, *The Economics of Net Neutrality*, 3 ECONOMISTS’ VOICE 8 (2006), <http://www.bepress.com/ev/vol3/iss6/art8/>. For a sobering contention of the limitations of wireless as a competitor of land-line Internet service, because of the limitation of its capacity and the consequent necessity of those carriers either limiting subscriber usage or charging very high rates—something like \$80 a month for unlimited data downloads, see Amol Sharma & Dionne Searcey, *Cell Carriers to Web Customers: Use Us, but Not Too Much*, WALL ST. J., May 11, 2006, at B1.

12. U.S. DEPT. OF JUSTICE AND FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES 4 (April 2, 1992). See also *infra* notes 24-25 and accompanying text.

In my testimony, I observed the coincidence of the TELUS proposal with my own consistently expressed preference for an interpretation of the antitrust laws as prohibiting anti-competitive *behavior* and the intent that can reasonably be inferred from it, as opposed to economic evaluations of either the *structure* of the markets involved or of their economic *performance* or results.¹³ In the present context, the only “performance” called for would be active competitive behavior, reflected in substantial market penetration by rivals. The pertinent geographic market would be defined, objectively, by the overlapping reach of the existing facilities of the two competitors, and the only relevant results would be the achievement by the challenger of a stipulated minimum share of subscriber lines.¹⁴

I find it impossible to read the 535-paragraph CRTC decision—which is on the critical subject of when, where, and under what protective conditions to deregulate—without comparing it with the course of airline deregulation and also without considerable introspection: Even though in that earlier case we trod the path from “regulatory reform” to complete deregulation over a period of eighteen months, without instruction from Congress,¹⁵ why am I uncertain that I would have written a decision different from that of the CRTC in this case—carefully balancing representations by incumbent companies, competitors and interveners, splitting differences, reaching “reasonable”—yet also clearly conservative—resolutions?

One answer is that airline regulation was government cartelization, plain and simple: the only sensible reform, it rather quickly became evident, was disassembly and abandonment. The regime of telecommunications regulation, in contrast, has been much more directly aimed at the protection of captive customers from putatively natural monopolies; and, correspondingly, the introduction of competition has necessarily required regulatory intervention to ensure competitors access to putatively essen-

13. See generally Alfred E. Kahn, *Standards for Antitrust Policy*, 67 HARV. L. REV. 28 (1953); see also discussion *infra* Part II; see also *infra* note 48 and accompanying text. For an extended, congenial exposition, see Ronald A. Cass & Keith N. Hylton, *Antitrust Intent*, 74 S. CAL. L. REV. 657 (2001).

14. Alfred E. Kahn, *Appendix 3 to Comments of TELUS Communications Inc., in PN 2005-2: Economic Justification for TELUS' Two-Facilities Bright-Line Forbearance Test*, June 22, 2005, at 23-31, available at http://nera.com/image/TELUS_JUNE2005.pdf. In a painfully detailed discussion, the CRTC rejected TELUS' proposed market definition and raised its proposed tripping point for forbearance from 5 to 25 percent. The proffered reasons for the first of these were largely administrative—including the availability of the requisite information. See *Forbearance from the Regulation of Retail Local Exchange Services*, *supra* note 7, at ¶¶ 24-168.

15. See Alfred E. Kahn, *Deregulation of Air Transportation-Getting from Here to There*, in REGULATING BUSINESS: THE SEARCH FOR AN OPTIMUM 37 (Chris Argyris ed., 1978); Alfred E. Kahn, *Applications of Economics to an Imperfect World*, 69 AM. ECON. REV. 1, 5-15 (1979).

tial facilities: simple deregulation has seemed neither feasible nor prudent.

If there is any sector of the economy most fully characterized by dynamic, technological Schumpeterian competition, however, it is this one. Technological innovation is, surely, the most powerful and productive kind of competition and underminer of thoroughgoing economic regulation. Wherever and whenever it prevails, it demands deregulation, no less sweeping than decartelization of transportation.

II. THE EXPANDED ROLE OF ANTITRUST

It is a truism—proclaimed by The Digital Age Communications Act (DACA) Project and reflected in the DeMint bill¹⁶—that the abandonment of direct economic regulation shifts to the antitrust laws responsibility for protecting consumers. That truism leaves indeterminate the locus of responsibility for administering those injunctions: should it be state or federal regulatory agencies, or the antitrust enforcement agencies, and if both, with what division of responsibilities and subject to what substantive interpretations of the laws?

The June 2005 DACA *Proposal of the Regulatory Framework Group* recommends an “FTC Act model”—emphasizing the Act’s Section 5 prohibition of unfair methods of competition and entrusting enforcement to an administrative agency, armed with the power to order interconnection of public communications facilities in situations in which denials “pose a substantial and non-transitory risk to consumer welfare”¹⁷ Authority over mergers would be vested exclusively in the antitrust agencies in deference to their superior expertise, a recommendation likely inspired in part by the FCC’s objectionable extension of its own vague “public interest” authority in the SWB/Ameritech and Verizon/GTE mergers to exact all sorts of extraneous “public interest” requirements.¹⁸

16. Digital Age Communications Act of 2005, S. 2113, 109th Cong. (2005).

17. PROGRESS & FREEDOM FOUND., PROPOSAL OF THE REGULATORY FRAMEWORK WORKING GROUP RELEASE 1.0, 25 (2005), <http://www.pff.org/issues-pubs/other/050617regframework.pdf>. The entire discussion of interconnection authority makes clear that the recommendation reflects a compromise between an anxiety on the part of some members that the imposition of any such requirement might dilute investment incentives and an apparently stronger concern about the possible denial of interconnection as an impediment to competition.

18. See Alfred E. Kahn, *An Illustration of the Comparative Propensities of the Antitrust Agencies and a Regulatory Agency to Meddle, in WHOM THE GODS WOULD DESTROY, OR HOW NOT TO DEREGULATE* 39-45 (2001) (citing the dissents of Chairman Michael Powell and Commissioner Harold Furchtgott-Roth), available at <http://www.aei-brookings.org/admin/authorpdfs/page.php?id=112>. The FCC similarly attached certain “voluntary” commitments to its approval of the SBC/AT&T and Verizon/MCI mergers. SBC Comm. Inc. and AT&T Corp., Applications for Approval of Transfer of Control, *Memoran-*

I find these recommendations highly congenial. The central substantive emphasis on “unfair methods of competition” accords exactly with the intention of the title Joel Dirlam and I gave to our book on anti-trust policy fifty-plus years ago.¹⁹ It also accords with the clear intention of the Sherman Act itself.²⁰ Lodging enforcement of that injunction in the FCC responds directly (though unconsciously) to my expression of dismay at the prospect raised by *Trinko* of the re-litigation before juries of endless administrative proceedings during the previous seven years under Sections 251 and 271 of the Telecommunications Act, in which the CLECs and would-be CLECs exercised their right to complain to the Commission of asserted acts of noncompliance.²¹

That reaction was, however, in the context of continuing direct regulation rather than deregulation; and it did not take into account the far larger penalties and, presumably, deterrent effects on ILEC obstructionism provided by the treble damages remedy in the Sherman Act than

dum Opinion & Order, 20 FCC Rcd. 18,290, app. F (2005); Verizon Comm. Inc. and MCI, Inc., Applications for Approval of Transfer of Control, *Memorandum Opinion & Order*, 20 FCC Rcd. 18,433, app. G (2005). I understand that some state public utility commissions have emulated the FCC’s practice with respect to mergers involving subsidiaries subject to their jurisdiction.

19. See generally JOEL B. DIRLAM & ALFRED E. KAHN, FAIR COMPETITION: THE LAW AND ECONOMICS OF ANTITRUST POLICY (1954).

20. See HANS B. THORELLI, THE FEDERAL ANTITRUST POLICY, ORIGINATION OF AN AMERICAN TRADITION 226-27 (1955), referring only to the Sherman Act:

The government’s natural role in the system of free private enterprise was that of a patrolman policing the highways of commerce. It is the duty of the modern patrolman to keep the road open for all . . . [T]his means that occupations were to be kept open to all who wished to try their luck . . . and that hindrances to equal opportunity were to be eliminated . . .

There can be no doubt that the Congress felt that the ultimate beneficiary . . . was the consumer . . . The immediate beneficiary legislators had in mind, however, was in all probability the small business . . . whose opportunities were to be safeguarded from the dangers emanating from those recently-evolving elements of business . . . strange, gigantic, ruthless and awe-inspiring.

This is one reason why it was natural to adopt the old doctrines of the common law, doctrines whose meaning had been established largely in cases brought by business or professional people dissatisfied with the behavior of competitors.

Perhaps we are even justified in saying that the Sherman Act is not to be viewed exclusively as an expression of economic policy. In safeguarding rights of the ‘common man’ in business ‘equal’ to those of the evolving more ‘ruthless’ . . . the Sherman Act embodies what is to be characterized as an eminently ‘social’ purpose.

21. ALFRED E. KAHN, LESSONS FROM DEREGULATION: TELECOMMUNICATIONS AND AIRLINES AFTER THE CRUNCH 42 (2004). My corresponding relief when that CCA Decision was overturned by the Supreme Court was thoroughly dissipated by the controlling opinion of Justice Scalia, speaking for six Justices (although the decision was unanimous), in which he used the occasion to examine and prejudge the result of an antitrust inquiry, in effect dismissing it with reasoning borrowed from *Matsushita*. See *Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko LLP*, 540 U.S. 398 (2004); see *infra* text accompanying notes 38 and 40.

were available to the FCC and state commissions.²²

On the other hand, I have deep concern about the intention of the Report to define “unfair competition” as

[P]ractices that present a threat of abuse of significant and non-transitory market power . . . consistent[ly] with the application of jurisprudential principles grounded in market-oriented competition analysis such as those commonly employed by the Federal Trade Commission and the United State Department of Justice in enforcing . . . the antitrust laws²³

As applied to mergers or FCC-ordered interconnection, this prescription seems unexceptionable. But as applied to “unfair methods of competition”—the exclusion of other service providers from the opportunity to compete on the basis of the relative attractiveness of their offerings—it seems to suggest an intention to confine its application to actions that would violate the Sherman Act, rather than as a separate, additional occasion for regulatory intervention—suggesting thereby that the enactment of the FTC Act, 24 years after the Sherman, was or should have been superfluous; and that its prohibitions of “unfair methods of competition”—or refusals to interconnect²⁴—would apply only if a “market-oriented competition analysis” demonstrated a “significant and non-transitory risk” to consumer welfare—an open invitation to combat by opposing economic consultants.

My own intention would be better conveyed by attaching to “practices” in the DACA proposal “that present a threat of substantially impairing competition”²⁵ and *stopping there*—in keeping with my continuing conviction, to which I have already referred, that competition is most usefully conceived of as a *process*, a kind of behavior, and that the antitrust laws were as much intended to preserve fair opportunities for com-

22. See Roger D. Blair & Christine Piette, *The Interface of Antitrust and Regulation: Trinko*, 50 ANTITRUST BULL. 665, 681 n.52 (2005). ILEC obstructionism was surely intensified by the FCC’s ill-advised prescription of TELRIC pricing of unbundled network elements—far below not only the historical or embedded costs, but also the long run incremental costs of the incumbents. Looking to the future, as I will point out below, a resurrection of that prescription may still be proposed, when and if, as I recommend, antitrust enforcement involves prominent recourse to the essential facilities doctrine.

23. See PROGRESS & FREEDOM FOUND., *supra* note 17, at 23.

24. See discussion *supra* note 17.

25. I had originally qualified this statement by inserting the adjective “efficient” after “impairing,” in order to disavow any intention to have the antitrust laws protect less efficient competitors from—in economic terms deserved—extinction, but eventually realized how thoroughly I agree with the original intention of the antitrust laws (see *supra* note 20) to protect competitors from exclusionary tactics, and my disagreement with the increasing tendency in recent years of courts deciding whether the disadvantaged or excluded competitors were or were not deserving of survival—specifically, in cases of claimed predation. See discussion *infra* at notes 37-47.

petitors as to forestall demonstrable likelihood of injury to consumers. What antitrust should condemn is competitive acts or policies betraying an intent either to suppress competition or deprive rivals unfairly of the opportunity to compete—the very rule of reason explicitly declared and applied in the Supreme Court’s Standard Oil decision in 1911.²⁶

This distinction is, once again, illuminated by the controversies in the middle of the last century over the proper competitive standard, once it was widely recognized that neither pure nor perfect competition is either achievable or desirable—least of all in the presence of rapidly changing technology. The literature in the industrial organization and the antitrust fields at that time—inspired, in important measure, by a number of decisions of the U.S. Supreme Court that seemed to have been guided by the pure competition standard, condemning business size, integration or monopoly power *per se*—was replete with efforts to define the controlling characteristics of an attainable standard of “workable” or “effective” competition.²⁷ In this quest, some commentators stressed:

- A. the *structure* of the markets in question—the number of competitors in a relevant market, later defined specifically in terms of a gap in the chain of substitutes sufficient to permit a single seller to set prices above cost, their relative concentration or market shares, the possibilities of competitive entry and the like—others;
- B. the *behavior* of producers and suppliers, guided by the maxim that competition describes observable and meaningful rivalry, in ways beneficial to consumers; still others; and
- C. the economic *performance* of the markets in question, guided by the principle that what is ultimately important and should be controlling is the observable economic results—the relation of prices to costs, the level and continuity of profits, the level of costs over time, product and process innovation.²⁸

In these continuing controversies, as I have already pointed out, I have consistently expressed preference for the criterion of behavior and the intent that may reasonably be deduced from it.²⁹ While in no way denying the logic of the proposition that if a market is not *structurally* competitive—i.e., does not contain competitors, either actual or on the

26. See *infra* text accompanying note 47.

27. The classic statement was J.M. Clark, *Toward a Concept of Workable Competition*, 30 AM. ECON. REV. 241 (1940), reprinted in AM. ECON. ASS’N, READINGS IN THE SOCIAL CONTROL OF INDUSTRY 452 (1942).

28. See DIRLAM & KAHN, *supra* note 19, at chs. 1-2.

29. See *id.*, and, for an explicit explanation that the inference of intent does not call for an exercise in psychoanalysis, Kahn, *supra* note 13, at 48-54.

very top step to an unlocked door—it is not going to be effectively competitive, I pointed out that concentrated or oligopolistic markets—from cigarettes to automobiles (before and after imports became a powerful constraining force) to electronics—could show widely diverging kinds of performance;³⁰ and that the definition of the relevant market would itself be subject to controversies over the relevant elasticities of demand and supply. As to the performance test, I have cited the virtual impossibility of knowing to what extent an apparently “good” performance was actually explicable by effective competition or, instead, the inherent potential of the industry’s technology and, conversely, the unpredictability of the results that effective competition would produce or would have produced.

Professor George J. Stigler sagely advised us how to make such assessments:

To determine whether any industry is workably competitive . . . simply have a good graduate student write his dissertation on the industry and render a verdict. It is crucial to this test, of course, that no second graduate student be allowed to study the industry.³¹

I do not read this sardonic observation as excluding the possibility of a rational basis for regulatory forbearance. On the contrary, it merely excludes the necessity for a thoroughgoing economic appraisal of the presence or absence of market power posing a “significant and non-transitory risk to consumer welfare.” Competition is a *process*, a kind of *behavior* of participants in a market. Its results are inherently unknowable, unpredictable—hence my consistent response thirty years ago to the question, “What is the structure of the airline industry going to look like after you have deregulated it?” or, today, in view of the profound financial difficulties of the major hub-and-spoke carriers and the increasingly successful competition of the more or less point-to-point low-cost carriers, “What is the structure of the industry likely to be in, say, five

30. See also A.D.H. Kaplan, *Big Business in a Competitive Society*, FORTUNE, Feb. 1953.

31. George J. Stigler et al., *Report on Antitrust Policy: Discussion*, 46 AM. ECON. REV. 496, 505 (1956). Similarly, reflecting my own skepticism of the usefulness of an essentially “economic” standard—whether in appraisals of market structure or economic performance, such as was sought by some of its economist members—see my comment about chapter VII, “Economic Indicia of Competition in Monopoly,” of the Report of the Attorney General’s National Committee to Study the Antitrust Laws (of which I was a member):

The ironic fact is that chapter VII is where it is because that is as close as the lawyers could with propriety put it to the back door, through which most of them were quite prepared to throw it. Even there, it is thoroughly hedged with statements—sometimes italicized for good measure—to the effect that any relationship between its economic discussions and the law, living or dead, was strictly coincidental.” *Id.* at 500.

years?": "If the answer to that question were knowable, there would have been no reason or need to deregulate."³²

I do not suggest unqualified disagreement with the DACA Report's recommendation of a demonstrable threat to consumer welfare as the essential basis for regulatory intervention, however difficult and judgmental it would be. As I have already observed, it seems the only possible standard applicable to mergers, in which the action itself cannot flatly be labeled "fair" or "unfair," "competitive" or "anti-competitive": the judgment has to be whether the consequent change in market *structure* is or is not likely to pose a threat to the competitive process and to consumers. But it does seem to me that grafting that same standard on Section 5 of the Federal Trade Commission Act's simple prohibition of "unfair methods of competition" would defeat the valid, independent purpose of that Act.

To be sure, any suggestion that antitrust scrutiny concentrate on "unfair" or "exclusionary" methods of competition that deny competitors the opportunity to prosper or fail on the basis of their efficiency must confront the consideration that such practices may themselves—just as mergers, price discriminations, tie-ins³³ and exclusive dealing³⁴—be efficient, a form of competition or conducive or promotive of it. No economist who has been involved with the airline industry can fail to recognize the essentiality as well as inevitability of price discrimination in the ubiquitous presence of fixed and common costs—including possible *rationing* of low price options—without necessarily producing monopoly profits overall, just as J.M. Clark did almost a century ago.³⁵ No

32. Kahn, *Applications of Economics to an Imperfect World*, *supra* note 15, at 6:

Our uncertainty about the outcome of the competitive struggle is no reason to prevent its taking place; the only sensible prescription is to give competitors freedom to slough off their artificial handicaps by entering and leaving markets, as they please. Moreover, if we cannot *predict* how these offsetting advantages and handicaps of the several carriers are likely to work out under a regime of free entry, it seems to me even less likely that we can hope to achieve the most efficient performance of the transportation function by *prescribing* how the thousands of markets should be served, as the proponents of the status quo would have us do. I find it difficult to see how these uncertainties tilt the balance in the direction of a reliance on predictably ignorant regulation in preference to an uncertainly predictable market process.

33. Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 *YALE L.J.* 19 (1957).

34. I make no effort here to summarize adequately the "University of Chicago" view that vertical integrations cannot be anticompetitive and the "post-Chicago" critics of that proposition. See, as one example of the latter, Joseph Farrell, *Deconstructing Chicago on Exclusive Dealing*, (Competition Policy Ctr., Working Paper No. CPC05-053, 2005), available at <http://repositories.cdlib.org/iber/cpc/CPC05-053>, and, in particular relation to telecommunications, Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age*, 17 *HARV. J.L. & TECH.* 85 (2003).

35. J.M. CLARK, *STUDIES IN THE ECONOMICS OF OVERHEAD COSTS* (1923). See also

student of Schumpeter can fail to appreciate the legitimate role of price discrimination—or of tie-ins, as a specific form of it—in exploitation of the monopoly power (judged by the standard of pure competition) that he taught us is an essential part of the innovation process. The necessity for drawing such distinctions is inescapable.³⁶

But only the economically brainwashed can deny that price discrimination has also been used as a means of predation, to the ultimate injury of consumers, however frequent routine allusions to McGee's proffered—and later refuted—demolition of the contentions of the populists about the tactics used by John D. Rockefeller³⁷ or the scriptures of *Matsushita*³⁸ and *Brooke Group*.³⁹ More fundamentally, I find myself on

A.E. Kahn, *Deregulation of Air Transportation*, *supra* note 15; Michael E. Levine, *Price Discrimination Without Market Power*, 19 YALE J. ON REG. 1 (2002); WILLIAM J. BAUMOL, REGULATION MISLED BY MISREAD THEORY 29-30 (2006).

In anticipation of my discussion of the hotly contested current issue related to “network neutrality,” in Part III below, it is worth emphasizing here that a very important part of the complicated price differentiations that the major air carriers introduced into their fare structures after deregulation were not discriminatory at all. The comparative unavailability of highly discounted fares at crowded airports and at times of congestion; the greater downward taper in per mile fares with greater distance, larger planes and higher load factors—as on vacation flights—are in major part not discriminatory, but reflect genuine differences in marginal (and marginal opportunity) costs thitherto suppressed by regulation. Alfred E. Kahn, *Deregulation: Looking Backward and Looking Forward*, 7 YALE J. ON REG. 325, 343-44, 346, 349 (1990).

36. See JONATHAN L. RUBIN, AM. ANTITRUST INST., DISCUSSION PAPER ON THE APPLICATION OF ARTICLE 82 OF THE TREATY TO EXCLUSIONARY ABUSES (Mar. 30, 2006), <http://www.antitrustinstitute.org/recent2/491.pdf>.

37. John S. McGee, *Predatory Price Cutting: The Standard Oil (N.J.) Case*, 1 J.L. & ECON. 137 (1958); John S. McGee, *Predatory Pricing Revisited*, 23 J.L. & ECON. 289 (1980); James A. Dalton & Louis Esposito, *Predatory Pricing and Standard Oil: A Re-Examination of the Trial Record*, 20 RES. L. & ECON. 22 (2006); *infra* note 39.

38. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 589-90 (1986).

[T]here is a consensus among commentators that predatory pricing schemes are rarely tried, and even more rarely successful. *Id.* at 589.

[M]istaken inferences [and the resulting false condemnations] . . . are especially costly, because they chill the very conduct the antitrust laws are designed to protect. *Id.* at 594.

39. *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209 (1993). Patrick Bolton et al., *Predatory Pricing: Strategic Theory and Legal Policy*, 88 GEO. L.J. 2239 (2000); Richard O. Zerby, Jr. & Michael T. Mumford, *Does predatory pricing exist? Economic theory and the Courts After Brooke Group*, 41 ANTITRUST BULL. 949, 982 (1996) (“The courts have relied too heavily on the idea that predation is rare and even more rarely successful. This judgment is supported by neither theory nor fact. Rather it is supported by some rather *ad hoc* theorizing and a misreading of a number of important cases and instances of strategic behavior.”); Malcolm R. Burns, *Predatory Pricing and the Acquisition Costs of Competitors*, 94 J. POL. ECON. 266 (1986) (an impressive empirical study); Janusz A. Ordovery & Garth Saloner, *Predation, Monopolization, and Antitrust*, in HANDBOOK OF INDUSTRIAL ORGANIZATION (R. Schmalensee & R.D. Willig eds. 1989); Joel B. Dirlam, *Marginal Cost Pricing Tests for Predation: Naïve Welfare Economics and Public Policy*, 26 ANTITRUST BULL. 769 (1981). See also Kenneth G. Elzinga & David E. Mills, *Predatory Pricing and Strategic Theory*, 89 GEO. L.J. 2475 (2001); Patrick Bolton et. al, *Predatory Pricing: Response*

the verge of supporting the proposition that, contrary to respectable economic opinion and Supreme Court dicta:

- A. false predation positives or condemnations are *not*, in the words of Justice Scalia quoting *Matsushita*, “especially costly [i.e. worse than false negatives], because they chill the very conduct the antitrust laws are designed to protect”⁴⁰—a bromide that fails to differentiate the *initiation* of price competition from the response that punishes and *suppresses* it and restores the status quo ante;
- B. predation may well have *occurred, and succeeded*, even if the incumbent, while successfully restoring the pre-competitive-entry prices, failed to restore them long and high enough to earn back in excess profits what it earlier gave back in its putatively predatory prices—*with interest*.⁴¹

In my reckoning, a dollar of producer surplus gained or lost is *not* fully equivalent to a dollar of consumer surplus lost or gained, particularly—but not only—in terms of the purpose of the antitrust laws.⁴²

As to the putative equivalence of false positives and negatives,⁴³ I would have it suffice for a successful charge of predation that:

- A. the entrant or challenger offer some group or subgroup of customers service on terms that a sufficient number initially find attractive enough to ensure its ability to continue to offer it—thereby demonstrating that those customers were not previously enjoying service at the stand alone costs of serving them;⁴⁴

to *Critique and Further Elaboration*, 89 GEO. L.J. 2495 (2001); Alvin K. Klevorick, *The Current State of the Law and Economics of Predatory Pricing*, 83 AM. ECON. REV. 162 (1993); Aaron S. Edlin & Joseph Farrell, *The American Airlines Case: A Chance to Clarify Predation Policy* (Competition Policy Ctr., Paper CPC02-33, 2002), available at <http://repositories.cdlib.org/iber/cpc/CPC02-033>; Alfred E. Kahn, *Thinking About Predation—A Personal Diary*, 6 REV. INDUS. ORG. 137 (1991).

40. *Law Offices of Curtis V. Trinko, LLP*, 540 U.S. at 414 (quoting *Matsushita Elec. Indus. Co.*, 475 U.S. at 594).

41. “In order to recoup their losses, [predators] must obtain enough market power to set higher than competitive prices, and then must sustain those prices long enough to earn in excess profits what they earlier gave up in below-cost prices.” *Brooke Group Ltd.*, 509 U.S. at 225-26 (quoting *Matsushita Elec. Indus. Co.*, 475 U.S. at 590-91).

42. See, e.g., Richard O. Zerby, Jr. & Donald S. Cooper, *An Empirical and Theoretical Comparison of Alternative Predation Rules*, 61 TEX. L. REV. 655, 680, 688 (1982).

43. See Paul L. Joskow & Alvin K. Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 YALE L.J. 213 (1979).

44. See WILLIAM J. BAUMOL ET AL., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* 508-09 (1982), on this rule, at least at one time purportedly expatiating

- B. the incumbent respond with similarly sharp reductions, pinpointed at the specific market niche that has been invaded, and especially if it also increases its capacity, demonstrating an intention to leave no room for the intruder in the market—a market expanded—only momentarily, alas—by the latter’s challenge,
- C. driving out the intruder or forcing it to withdraw its consumer-attracting offerings, following upon which
- D. the incumbent restores its previous price levels (and presumably resumes rationing its low-price offerings).⁴⁵

It is only by a trick of rhetoric, however frequently repeated, that the incumbent is identified as a practitioner and advocate of “hard,” the repulsed intruder of “soft” competition: in the immortal words of John McEnroe, “[Justices Kennedy and Scalia], you *can’t* be serious!”

Confronting just such a history in the treble damages suit of Spirit against Northwest Airlines, the District Court resolved the hotly contested, unfortunately still-critical issue of the pertinent measure of marginal costs—complicated enormously by the incumbent’s sharp (and temporary) increase in capacity on the contested route—in favor of the defendant, and dismissed the suit; the Circuit Court of Appeals reversed, sending the case back for retrial.⁴⁶ One can only hope that the jury to which the Circuit Court has consigned the case will be presented with the

on the suggestion in ALFRED E. KAHN, *THE ECONOMICS OF REGULATION* 142-43 (1971).

45. This definition of the offense accords in spirit precisely with William J. Baumol’s proposed remedy—and preventive—fully 27 years ago, supplementing the Areeda/Turner test: that incumbent firms engaging in such patterns of behavior be—and be so informed in advance—required to maintain their predatory offerings “quasi-permanently”—which I have generally interpreted as a year or two following the departure of the object of the predation. William J. Baumol, *Quasi-Permanence of Price Reductions: A Policy for Prevention of Predatory Pricing*, 89 *YALE L.J.* 1 (1979). I take additional personal satisfaction from the fact that the Baumol article referred specifically to the concerted response of the major international air carriers to the Sky Train offered by Laker Airlines beginning in 1977, which I had previously persuaded my colleagues at the Civil Aeronautics Board to disallow as predatory—for which “regulatory” intervention I was widely criticized by deregulatory purists less supportive than I of the antitrust laws. See my fuller description of this case and of what ensued in Kahn, *Thinking About Predation—A Personal Diary*, *supra* note 39, at 138-39.

I have always been amused by the defense of accused airline parties in such circumstances that they had to increase capacity in order not to have to turn away all the customers newly attracted by their drastically reduced fares (see, e.g., Levine, *supra* note 35, at 32, 34) and, correspondingly, to reduce their capacity when that demand abated—as though, despite their justly self-proclaimed skills in yield management, they were taken wholly by surprise by those changes and had no choice but to do whatever necessary to accommodate them. Manifestly, the fare reduction was much greater than needed to defend their previous levels of traffic and predatory in both intent and effect.

46. Spirit Airlines, Inc. v. Northwest Airlines, Inc., 431 F.3d 917 (6th Cir. 2005). See also Alfred E. Kahn, *Comments on Exclusionary Airline Pricing*, 5 *J. AIR TRANSPORT MGMT.* 1 (1999).

question in plain English of which side represented preservation of the competitive process, which its suppression, whether in intent or effect.

Speaking for the Supreme Court in affirming a lower court's determination that Standard Oil of New Jersey had violated Section 2 of the Sherman Act, Chief Justice White delivered the classic enunciation of the rule of reason: that the antitrust laws condemn

All contracts or acts . . . unreasonably restrictive of competitive conditions, either from the nature . . . of the contract or act or where the surrounding circumstances were such as . . . to give rise to the inference or presumption that they had been entered into or done with the intent to do wrong to the general public and to limit the right of individuals, thus restraining the free flow of commerce⁴⁷

As to the judicially asserted primacy of Areeda/Turner, one aspect of its logic is compelling—that if the competition-meeting or beating prices of the incumbent exceeded its marginal costs, yet drove the intruder out, it must mean that the former was more efficient, and productive efficiency would therefore be better served by the incumbent carrying the traffic than the challenger. BUT—setting aside the sometimes extreme uncertainty about the pertinent measurements of marginal cost—if the sequence of events clearly betrayed a predatory intent and the end result was without question a huge loss of consumer surplus, that test is either superfluous or perverse.⁴⁸

Having said all this about the airlines case, I must concede that there seems to be ample basis in the airline experience of the last decade, with the dramatic increase in the market share of low-fare competitors, for the proposition that while there may be plenty of instances in which predation was *proximately* successful, there is at least one major respect in

47. *Standard Oil Co. v. United States*, 221 U.S. 1, 58 (1911). Observe the convergence of this last evidence of predatory intent with the remedy proposed by Baumol, *supra* note 45, which I have endorsed as a means of bypassing or resolving the issue of predatory intent, see ALFRED E. KAHN, *WHOM THE GODS WOULD DESTROY, OR HOW NOT TO DEREGULATE* 70 n.80 (2001), <http://www.aei-brookings.org/admin/authorpdfs/page.php?id=112>.

48. The other part of the Areeda/Turner logic is that if the incumbent priced below its marginal costs, suffering out-of-pocket losses on those sales, it could only have been with predatory intent—that is, in the expectation of recouping them after it had succeeded in eliminating the competition. As a teacher of elementary economics some 40 years ago, I am embarrassed to have had to be reminded by Aaron Edlin and Joseph Farrell that in the presence of impure or imperfect competition, that test would be excessively lenient: a profit-maximizing seller would offer service only up to the earlier—i.e., lower—point at which not *price*—as under Areeda/Turner—but *marginal revenue* was equated to marginal cost. In other words, a competition-meeting or -beating price equal to marginal cost—the Areeda/Turner test to the contrary—would involve actual out-of-pocket losses if, as would almost certainly be typical, sales at the competition-meeting level would cannibalize—i.e., be at the expense of—sales that could otherwise have continued to be made at or closer to pre-entry prices, as was clearly the case in Northwest Airlines' response to Spirit. Edlin & Farrell, *supra* note 39, at 14-16.

which it has been ultimately unsuccessful.

The essence of the rule of reason is its recognition that the ultimate, unexceptionable goal of antitrust—preservation of the *competitive process*—demands a distinction between essentially beneficent competitive advantages or market power stemming from a firm’s “superior product, business acumen, or historical accident,” from ones deriving from its “willful acquisition or maintenance ... by unlawful or exclusionary practices.”⁴⁹

In the next section I appraise the sufficiency of the prior conditions for deregulation that I advocate in Part I and of antitrust enforcement thereafter, as conceived in Part II, to resolve the intensely contested issue of network neutrality.

III. “NETWORK NEUTRALITY”

These conflicting views of the proper focus of the antitrust laws in an industry increasingly subject to deregulation are evidently coming into focus in the legislative and public arena in demands of a wide diversity of interested parties, along with a large segment of the press, for “network neutrality.” I was for a long time far from having a satisfactory grasp of what exactly that means or why its advocacy has taken on an almost messianic ardor.⁵⁰

That advocacy has apparently coalesced around the explicit concern—set off by the FCC’s decision in the Brand X case⁵¹ to exempt cable companies from common carriage obligations—that the competition among providers of broadband access, predominantly ILECs and cable companies, might be insufficient to protect either subscribers, at one end, or providers of programming or content, at the other.⁵² Or to protect

49. *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966); *see also* *United States v. United Shoe Machinery Corp.*, 110 F. Supp. 295, 343-45 (D. Mass. 1953), *aff’d*, 347 U.S. 521 (1954).

50. I take some solace from the fact that at a recent conference on telecom policy, others far more at ease than I with matters pertaining to the Internet proclaimed a similar uncertainty, if not mystification, suggesting to me that the earlier confusion may have been attributable to an excess of exposition by metaphor. *But see*, more recently, contributing to my progressive enlightenment, Hahn & Wallsten, *supra* note 11; Paul Ganelly & Ben Allgrove, *Net Neutrality: A User’s Guide*, 22 *COMPUTER L. & SECURITY REP.* (forthcoming 2006), available at <http://ssrn.com/abstract=925693>; Robert D. Atkinson & Philip J. Weiser, *A ‘Third Way’ on Network Neutrality*, May 30, 2006, <http://www.innovationpolicy.org/pdf/netneutrality.pdf>; *see also* Kim Hart & Sarah Kehaulani Goo, *Tech Faceoff: Net Neutrality in the Eye of the Beholder*, *WASH. POST*, July 2, 2006, at F4.

51. The FCC’s decision was on appeal voided by a Circuit Court of Appeals, then ultimately sustained by the U.S. Supreme Court in *Nat’l Cable & Telecomm. Ass’n. v. Brand X Internet Servs.*, 543 U.S. 1185 (2005).

52. *See, e.g.*, Cerf, *supra* note 2, at 2-10. Also, however, a (recently discovered) full-scale rationalization in terms at least partly of the perceived inadequacy of competition between duopolists, Michelle Chen, *Activists Bring the Digital Frontier to New Communities*,

content providers from anticompetitive vertical price squeezes, exclusion from access, or denials (or, once again, excessive charges for) the priority transmission that their signals may require—all of which practices have already been condemned by the regulatory authorities in both Canada and the United States and emphatically *should* be condemned also under the antitrust laws.⁵³ I understood Professor Lawrence Lessig—a most prominent advocate—to have assured an audience of which I was a member, however, that the advocacy of network neutrality is concerned with neither the effectiveness of antitrust policy nor issues of regulation and deregulation—that framing the debate in either of those terms is “counterproductive”—an assurance amply reflected in his writings.

But either that is exactly what it is or should be about or—their rhetoric of “monopoly” and “discriminations” and squeezes notwithstanding—the advocates are really talking about social goals that cannot be achieved by a market economy, however perfectly functioning—uses of resources and distributions of income in their opinion properly subject to extra-market, political determination.

As to the first of these conceptions—I will return eventually to the second—whatever else is involved, broadband access to the Internet is a scarce good or service; priority in transmission required for such uses as voice over the Internet and telemedical diagnosis and treatment even more so. And they can be provided in the short run only by lower priority transmission of other signals and, in the longer term, by investment. Society cannot avoid deciding in one way or other to what extent its resources are to be deployed in this way, and how the services they create are to be allotted, rationed or prioritized among potential users, at one end or the other.⁵⁴ This necessarily involves evaluation of the adequacy

MEDIACHANNEL.ORG, Jan. 3, 2005, and *supra* notes 10-11 and accompanying text.

53. *Forbearance from the Regulation of Retail Local Exchange Services*, *supra* note 7, at ¶¶265-68; Atkinson & Weiser, *supra* note 50, at 3 (citing Madison River Communications LLC, *Consent Decree*, 20 FCC Rcd. 4,295 (2005)); *see also infra* text accompanying notes 81-83.

54. *See, e.g.*, Robert E. Litan, *Catching the Web in a Net of Neutrality* (AEI/Brookings Joint Center, Policy Matters 06-10, May 2006), available at <http://www.aei-brookings.org/policy/page.php?id=252>.

Professor Susan P. Crawford's analogy between the control over high-speed Internet access by the telephone and cable companies and the private ownership of ocean-shore property, in a position to block access to the “ocean commons,” is evocative but also revealing of the ambiguities in the goal and logic of network neutrality. Susan P. Crawford, *Network Rules*, 69 DUKE J.L. & CONTEMP. PROBS. (forthcoming 2006), available at <http://scrawford.net/display/061406%20network%20rules.doc>. “Ocean-shore property” might refer merely to the beachfront *land*, Henry George's condemnation of the private *appropriation* of the benefits of which remains impeccable. I am, for example, a strong advocate of public beaches.

In contrast, the networks that writers such as she and Professor Lessig would render “neutral” represent *capital*, which has to be created by real investment—the taxation of which George opposed. High-speed Internet access clearly falls in the latter category, not the former. The beachfront analogy is therefore either totally inapt—or it is a variant of the proposition,

of our present institutions for making those decisions—unregulated competition, subject to the antitrust laws, direct regulation or extra-market, political determination.

Indeed, the very specters Professor Lessig evokes if Congress fails to mandate network neutrality—that cable and phone companies will be free to

discriminat[e] against content providers . . . create different tiers of online service . . . sell access to the express lane to deep-pocketed corporations and relegate everyone else to the digital equivalent of a winding dirt road . . . earn huge profits . . . slow or even block the Websites and services of their competitors or those who refuse to pay up⁵⁵—

are, despite his assurances to the contrary, precisely specters raised by deregulation and reflect the assumption that competition subject to antitrust will be incapable of forestalling such “discriminations.”

Moreover—as my use of quotation marks is intended to suggest—these dire predictions betray a failure to understand the difference between price discriminations, such as *might* be taken to reflect inadequacies of competition, and differentiations on the basis of differences in costs, such as would unequivocally be reflective of effective competition. The opposition to “tiering” as such—extra charges for “access to the express lane,” “guarantee [of] quality delivery,”⁵⁶ prohibitions of which are already embodied in bills introduced by Representative Markey and Senators Wyden, Snowe and Dorgan—is economically ignorant. The costs—both short-run (the opportunity costs of giving priority to the higher-speed uses) and long-run (the costs of the investments to provide additional broadband capacity, to relieve that congestion)—are, presumably, higher for the users requiring the “express lane.” It is therefore not discriminatory for those costs to be levied on the services requiring their incurrence—provided only, once again, that there be no discrimination against the independent providers in favor of the corresponding

which deserves consideration on its own merits, that, even though broadband access requires real investment, its availability to the public should not be determined exclusively by the latter’s ability and willingness to pay (*see infra* text accompanying notes 66-67). (This last is, however, evidently not the conception of Mark Cooper, a strong proponent of net neutrality—*see infra* notes 59 and 66.) That consideration apart—and that, precisely, is how it should be handled—the pertinent question would be whether the charges to end users or to providers of programming or content are or will be sufficiently constrained by competition.

55. Lawrence Lessig & Robert W. McChesney, *No Tolls on The Internet*, WASH. POST, June 8, 2006, at A23; *but see* Kyle D. Dixon, *Rhetoric vs. Reality: Lessig and McChesney on Network Neutrality*, 2006 PROGRESS & FREEDOM FOUND. PROGRESS SNAPSHOT RELEASE 2.14, http://www.pff.org/issues-pubs/ps/2006/ps_2.14_netneut_lessig.pdf.

56. Lessig & McChesney, *supra* note 55, at A23.

competing retail services of the broadband providers themselves.⁵⁷

It is difficult for an economist to understand why if, as a *New Republic* editorial supporting a Congressional mandate of net neutrality points out, without apparent disapproval, that

Content providers from Google and Amazon to Daily Kos and TNROnline currently pay Web-hosting companies to put their content on the Internet [and] still make money by charging homes and businesses higher fees for faster or more dependable services,

its editors should consider it objectionable that the providers of broadband Internet access

[W]ill be able to charge content providers a fee to deliver their content to consumers and, in particular, an additional surcharge to deliver their content to consumers more quickly . . . [and] even charge lucrative fees to companies for exclusive access to the fast lane at the expense of their competitors.⁵⁸

Or why, analogously, newspapers should not then be required to recover all of their common costs from readers, or radio and television broadcasters from listeners and viewers: yet that is exactly what some network neutrality proponents explicitly advocate.⁵⁹

Equally ignorant, though perhaps understandable, has been the

57. See Christopher S. Yoo, *Network Neutrality and the Economics of Congestion* (Vanderbilt University Law School, Working Paper Number 05-28, 2005), available at <http://ssrn.com/abstract=825669>.

58. Editorial, *Open Net*, NEW REPUBLIC, June 26, 2006, at 7. Setting aside the possibility that the fees will be—by implication, excessively—“lucrative,” that is, reflective of a failure of deregulation to satisfy the precondition of effective competition; or that “exclusive access to the fast lane” might constitute an unreasonable restraint on competition properly subject to condemnation under the antitrust laws, it is difficult to understand why it would be improper or inconsistent with effective competition for those fees to vary with the quality and quantity—hence in the short run the opportunity costs and in the long run the investment costs of providing such services, about which advocates of network neutrality express particular concern, as

[v]ideo and voice pictures, which take up more room in the Internet pipeline, clog the networks and decrease the speed for everyone.

Hart & Goo, *supra* note 50, at F4 (emphasis added). Query: is this a good so “public” in nature as to justify its subsidization?

59. For example, Mark Cooper, Director of Research of the Consumer [sic] Federation of America: “Let the consumer pay—it is the consumer that uses the network.” LARRY DARBY, AM. CONSUMER INST., CONSUMER WELFARE, CAPITAL FORMATION AND NET NEUTRALITY 6 (2006), <http://www.theamericanconsumer.org/Net%20Neutrality%20Study.pdf>. See Darby’s comprehensive assessment of the (negative) welfare effect of that implicit proposal to prohibit the common practice in other such two-sided markets of charging both sets of customers—such as advertisers, on the one side, and purchasers of media services containing those messages, on the other. See generally David S. Evans & Richard Schmalensee, *The Industrial Organization of Markets with Two-sided Platforms* (Nat’l Bureau of Econ. Research, Working Paper No. 11603, 2005).

widespread indignation provoked by the impolitic assertion by Ed Whitacre, CEO of SBC, that

[W]hat [Google and other Internet content providers] would like to do is use my pipes free, but I ain't going to let them do that because we have spent this capital that we have to have a return on it . . . Why should they be allowed to use my pipes?⁶⁰

Both more politic and more illuminating was the explanation of Richard Notebaert, CEO of Qwest,

that he views Google and Amazon as valued customers whose applications enhance the value of Qwest's DSL to consumers. He proceeded to explain that Qwest should also be able to [offer] premium services, for additional fees, that guarantee certain levels of service (such as Federal Express offers L.L. Bean for holiday shipping).⁶¹

As to the danger of those suppliers exploiting any residual monopoly power they may enjoy by virtue of their essential duopoly (or monopoly⁶²), the pragmatic, most readily available remedy would be the ubiquitous deployment of wireless broadband services, in addition to, and independent of, telephone and cable companies—the assessment of which belongs in the domain of the decision whether or not to deregulate in the first place.

What Mr. Notebaert was emphasizing, entirely correctly, was the essential congruence of the interest of his company with that of independent offerers of content in competing for subscribers to its broadband transport service—the same congruence as between the movie houses and producers of motion pictures, between broadcasters and suppliers of programs⁶³—subject, to be sure, to the possible need for government intervention to preclude vertical squeezes or other unreasonably exclusionary practices by parties with monopoly power. A provider of broadband service needs Google and e-Bay as much as they need it: consider the likely effect on the willingness of subscribers to pay a cable or phone company for broadband service if one or the other could not come to terms with those suppliers of popular content.

Analogously to the current demands for network neutrality, I recog-

60. Atkinson & Weiser, *supra* note 50, at 6 (quoting Patricia O'Connell, *At SBC, It's all about "Scale and Scope,"* BUS. WK. ONLINE, Nov. 7, 2005, http://www.businessweek.com/@@n34h*IUQu%207KtOwGA/magazine/content/05_45/b3958092.htm).

61. *Id.* at 7.

62. See *supra* note 2 and accompanying text.

63. See James B. Speta, *Handicapping the Race for the Last Mile?: A Critique of Open Access Rules for Broadband Platforms*, 17 YALE L. ON REG. 39, 43, 87 (2000); Atkinson & Weiser, *supra* note 50, at 6-9.

nized some 23 years ago the logic by which cable television companies might, as beneficiaries of exclusive territorial franchises, be subjected to common carrier obligations, in order to ensure unaffiliated suppliers of programming access to audiences equal to that of affiliated ones; but recognized even at the time that such a requirement would on balance be anticompetitive.⁶⁴ By a similar logic, I was for a time sympathetic with the FCC rules—later abandoned, however, with my support—denying broadcasters the right to have a financial interest in the programs they carried and in their subsequent syndication, once again to avoid a temptation on their part to discriminate against independent suppliers in favor of their own. I eventually recognized, however—consistently in principle with the position I espouse here—that both of those policies were undermined by the increasing competition for programming among the several broadcast networks, including cable systems, and the positive competitive benefits of vertical integration—in this case the especial interest of broadcasters in ensuring the flow of “quality” programming by directly investing in its development.⁶⁵

64. [W]hile I have argued for substantial deregulation of the rates charged by cable TV operators, I confess to some uneasiness about the effect of their ability to produce their own programs, coupled with their comparative freedom from common carriage obligations, on the access of independent program producers to the market. . . .

The rationale for deregulation, however, is the growing variety of alternatives available to viewers; and the case for integration of programming or program production, on the one side, and transmission, on the other, is the special incentive that a cable company has to develop an adequate flow of supply—adequate in quantity, reliability, quality, and diversity—to fill those burgeoning yawning gaps that it is its obligation to fill. In view, moreover, of the fact that the cable companies face intensifying competition from the networks, suppliers of pay TV programming like HBO and Showtime, direct satellite broadcasters, and the rest, it is difficult to see any danger that non-integrated producers will be foreclosed from a fair opportunity to market their wares.

The suggestion that cable companies become mere common carriers of programs supplied by others—like the proposed confinement of the Bell Operating Companies to the provision of local exchange service and the exclusion of AT&T, after divestiture, from the origination, control, or financial participation in the information transmitted over its Long Lines—has the attraction of tidiness and the benefit of maximizing the insurance against unfair competition. But it is also anticompetitive, because it excludes the cable operator from programming, and to that extent sacrifices the dynamic benefits of integration. In the cable context, the dangers of integration seem to me insufficient to justify its prohibition.

Alfred E. Kahn, *The Passing of the Public Utility Concept: A Reprise*, in TELECOMMUNICATIONS REGULATION TODAY AND TOMORROW 24-25 (Eli M. Noam ed., 1983). It has of course been the FCC's recent confirmation of its exemption of cable broadband facilities from such an obligation, sustained by the Supreme Court in 2005, that has set off the network neutrality movement. See *Brand X Internet Servs.*, 543 U.S. at 1185.

65. See Comments of Alfred E. Kahn to *Notice of Proposed Rulemaking* in Amendment of 47 CFR § 73.658(j)(1)(i) and (ii), the Syndication and Financial Interest Rules, BC Dkt. No. 82-345 (1983).

This is not to exclude the possibility that—in contrast with television broadcasting or motion picture exhibition—broadband access is best treated as a public good. But public goods, strictly, are ones the use of which has a zero marginal cost and that are for this reason most efficiently subjected to no usage charges. Demonstrably, however, broadband facilities have to be created by investment, and applications requiring priority transmission impose opportunity costs on others; except as subsidized by government—a possibility I do not exclude⁶⁶—those costs must be collected from users—subscribers to broadband services, providers of programming or content, or some combination of the two.

In the light of those realities, the advocacy of network neutrality seems at times poetic or metaphorical: it is apparently a successor or complement to the ideal of a “Commons,” open and used without social cost or, therefore, charge to anyone who wishes to use it. Manifestly, Internet access does not satisfy that definition. The case for treating it nevertheless as a public good, deserving of direct governmental subsidy or provision, must rest instead on the proposition, by no means unreasonable, that it provides benefits to the public at large—external to the direct transactors—sufficient to justify public subsidy. Entirely logically, therefore, one part of Atkinson and Weiser’s three-part, “Third Way” resolution of the network neutrality issue is that Congress provide financial incentives to private investments in broadband networks.⁶⁷

Each passing day, the views and demands of the network neutrality advocates have become more hysterically apocalyptic, violently splitting the historical—and, alas, perhaps ephemeral—coalition of eighteenth and twentieth century liberals that produced the deregulations of air and surface transportation. On June 9th, the *New York Times* carried a full-page advertisement sponsored by the unlikely trio, MoveOn, a liberal advocacy organization, the Christian Coalition of America and the Gun Owners of America, “joining together to keep AT&T from controlling what you see and do on-line.”⁶⁸ Presumably proceeding on the assumption

66. That, I presume, is the logic behind Philadelphia’s and San Francisco’s (among others’) municipal WiFi systems, which—though still of limited capacity—might be the model for a much-needed third competitor of what might otherwise be a duopoly, especially if and as wireless service providers merge with ILECs or cable companies. See *supra* notes 10 and 53. Alternatively, or additionally, such ventures are obviously being advocated as a means of extending broadband service to members of the public who could not otherwise afford it: see the excellent summary of “grassroots” initiatives to “bridge the digital divide and network low-income communities.” Chen, *supra* note 52. I am not prepared to resolve the obvious ideological question of whether broadband access to the Internet has in the short space of a decade become such a necessity as to justify its public subsidization—or appraise the possibility that such taxpayer-subsidized offerings will significantly impair the incentives of private parties to invest in broadband facilities—that is, to answer the question of whether the two systems can coexist.

67. Atkinson & Weiser, *supra* note 50, at 14.

68. Advertisement, N.Y. TIMES, June 9, 2006, at A17.

that the specter of AT&T (which, as the provider of “the best telephone service in the world,” would have been a positive factor many decades ago) would be more frightening than Verizon, Qwest, Comcast or Time Warner, the advertisement raises the inevitable question, among the even moderately informed: why would any of those offerers of broadband Internet service to end users be in a position, or find it in its interest, to limit its offerings by blocking access of non-affiliated offerers of content to its subscribers, except as would clearly invoke antitrust liability? This seems to me clearly necessary: a cable or telephone company provider of Internet access might well have the motive of “blocking access of non-affiliated offerers of content” in preference to its own; but clearly that would and should bring quick condemnation under the antitrust laws.⁶⁹

In these controversies, the opinion of respectable economists, once the conditions for deregulation are satisfied, is necessarily one of opposition to any mandate of common carrier obligations—which would presumably have to involve also regulation of the rates charged by telephone, cable and wireless companies for use of their respective Internet access facilities—or, as the advocates of network neutrality would evidently have it, flat prohibitions of charges—or of charges for priority transmission—to suppliers of content.⁷⁰

69. See *infra* p. 175; see also *supra* pp. 187-188.

70. For example, from my own, moderately liberal local newspaper:

Since the beginning of the 20th century ‘common carriage’ rules have required phone companies to treat all users alike. No one gets a better connection based on how much they’re willing to pay It is a neutral network.

Since the birth and rise of the Internet almost two decades ago, that same concept applied. Known as ‘network neutrality,’ the people who provide your Internet connection were barred from arbitrarily saying where you could surf. It also means all connections work the same, so the site run by some community news blogger can load just as fast as the Gannett-backed site you may be reading this editorial on today. That electronic liberty and democracy is the reason the Internet has exploded and changed American and world culture

Until now.

In mid 2005, the Federal Communications Commission redefined how it regulates the Internet, ending the common carriage policy for this medium. A major telecommunications overhaul making its way through Congress . . . contains no provision that secures network neutrality. The bill . . . would allow phone and cable companies to create a multi-tiered system where site operators pay more for higher speed and better service. Companies could also inhibit or block access to certain sites—say, those of a commercial competitor or some troublesome political group

For the preservation of the Internet—for its own sake and in the name of the free and equal exchange of ideas that has been . . . its greatest gift to American democracy—Internet network neutrality must be preserved.

Editorial, *Internet neutrality: U.S. must defend democracy online*, ITHACA JOURNAL, May 25, 2006, at 7A, available at <http://www.theithacajournal.com/apps/pbcs.dll/article?AID=/20060525/OPINION01/605250312/1014>. Of course the *Journal*’s first sentence is incorrect: subscribers—particularly business subscribers—have always paid different rates for different

But this is where we came in—the consensus of most economists that that kind of regulation is in essential conflict with and obstructive of the developing dynamic competition among technologically different platforms and, in particular, the heavy investments of the ILECs in fiber-to-the-premises, which will enable them to offer video, in direct competition with the hitherto franchised cable companies.⁷¹ That kind of dynamic market is the least suited for public utility-style regulation. As Christopher Yoo perceptively observes, the demand for “network neutrality” could in this way discourage the achievement of the ultimately more important “network diversity”—in particular the aforementioned competition between local telephone and cable companies in the offer of video service.⁷² In that view the advocates of network neutrality are pro-

capacities of their lines; and that is exactly the logic of the unchallenged separate charge for DSL.

See also Editorial, *supra* note 58, at 7 (an editorial to the same effect in the similarly moderately liberal *The New Republic*); and

Congress is going to hand the operation of the Internet over to AT&T, Verizon and Comcast . . . It's a shame

Telephone and cable companies own 98% of the high-speed broadband networks the public uses to go online for reading news, shopping, listening to music, posting videos or any of the thousands of other uses developed for the Internet. But that isn't enough. *They want to control what you read, see or hear online.* The companies say that they will create premium lanes on the Internet for higher fees, and give preferential access to their own services and those who can afford extra charges. The rest of us will be left to use an inferior version of the Internet.

Art Brodsky, *Congress Is Giving Away the Internet, and You Won't Like Who Gets It*, TPM CAFÉ, Apr. 23, 2006, <http://www.tpmcafe.com/node/29086> (emphasis supplied).

The staid *New York Times* has been scarcely less apocalyptic. See Editorial, *Keeping a Democratic Web*, N.Y. TIMES, May 2, 2006, at A24; Adam Cohen, *Why the Democratic Ethic of the World Wide Web May Be about to End*, N.Y. TIMES, May 28, 2006, at D9. Cohen states:

This democratic Web did not just happen. Sir Tim Berners-Lee, British computer scientist who invented the Web in 1989, envisioned a platform on which everyone in the world could communicate on an equal basis. But his vision is being threatened by telecommunications and cable companies, and other Internet service providers, that want to impose a new system of fees that could create a hierarchy of Web sites. Major corporate sites would be able to pay the new fees, while little-guy sites could be shut out

Corporations that stand to make billions if they can push tiered pricing through have put together a slick lobbying and marketing campaign

Internet service providers would like to be able to charge Web sites for access to their customers. Web sites that could not pay the new fees would be accessible at a slower speed, or perhaps not be accessible at all

Customers who are used to the robust, democratic Web may not pay for one that is restricted to wealthy corporate content providers.

71. See ALFRED E. KAHN, LESSONS FROM DEREGULATION: TELECOMMUNICATIONS AND AIRLINES AFTER THE CRUNCH 43-45 (2004), available at <http://www.aei-brookings.org/admin/authorpdfs/page.php?id=303> (supporting the FCC decision in February 2003 to exempt the ILECs from the obligation to share such facilities).

72. Christopher S. Yoo, *Beyond Network Neutrality*, 19 HARV. J.L. & TECH. 1, 48 (2005); see also Speta, *supra* note 63, at 43.

posing in effect to equalize the regulatory status of the competing ILECs and cable companies by bringing the latter in under the former's public utility regulatory tent—just the opposite of what turbulent Schumpeterian competition demands.⁷³ The advocates of regulated—or zero—charges to the providers of Internet content must respond to the challenge: by what reasoning can they justify such a proscription applied to cable and telephone companies in the process of constructing extremely expensive broadband highways—except as they are prepared to advocate government financing (such as used to be described as “taxpayer-financed,” before a feckless Federal Administration found a magical way of hugely reducing taxes and increasing expenditures at the same time).

Their assumption is, evidently, that competition among Internet access providers is inadequate to protect both the consuming public and suppliers of content. There is clearly room therefore for agreement between proponents and opponents that, as I have already proposed, deregulation be conditioned on sufficient, independent competition from at least a third mode—presumably wireless, assured by freeing up more of the spectrum—while hoping for successful entry also of broadband over the ubiquitous power lines. Both the *Statement on U.S. Broadband Policy*, issued in March 2006 by 27 prominent economists,⁷⁴ and the several DACA reports add the very sensible recommendation that Congress preempt and eliminate the thousands of local franchising regulations that restrict competitive entry and provisioning of broadband access services.⁷⁵

Ironically, more or less simultaneously with adding to the present tsunami of demands for immediate passage of legislation to preserve a

73. See *Net Neutrality: Hearing Before the S. Comm. on Commerce, Science and Transportation*, 109th Cong. (2006) (statement of Kyle D. Dixon, Senior Fellow & Director, Federal Institute for Regulatory Law & Economics, Progress & Freedom Foundation); see *On H.R. ___, a Committee Print on the Communications Opportunity, Promotion, and Enhancement Act of 2006: Before the Subcomm. on Telecomm. & the Internet of the H. Comm. on Energy & Commerce*, 109th Cong. (2006) (statement of Randolph May, Senior Fellow & Director, of Communications Policy Studies, Progress & Freedom Foundation).

74. Elizabeth E. Bailey et al., *Economists' Statement on U.S. Broadband Policy* (AEI-Brookings Joint Center for Reg. Stud., Related Publication 06-06, March 2006), <http://www.aei-brookings.org/admin/authorpdfs/page.php?id=1252> (last visited Aug. 4, 2006); see also Hahn & Wallsten, *supra* note 50; Thomas W. Hazlett, *Cable TV Franchises as Barriers to Video Competition* (George Mason University Law and Economics Research Paper Series 06-06, March 2006), available at <http://ssrn.com/abstract=889406>.

75. Since those local franchises typically impose public utility-type obligations to serve on the franchised entities—specifically, that they build out their facilities throughout the franchise territory at regulated rates typically diverging from interregional differences in cost, it would clearly be politically necessary to add some alternative competitively neutral methods of providing the requisite subsidies, all subsumed under the goal of “universal service”—no small matter, to be sure. See RAYMOND L. GIFFORD ET AL., PROGRESS & FREEDOM FOUND., DECEMBER, PROPOSAL OF THE UNIVERSAL SERVICE WORKING GROUP RELEASE 2.0 (2005), <http://www.pff.org/issues-pubs/books/051207daca-usf-2.0.pdf>.

“robust, democratic web”⁷⁶ to protect independent contributors to the “free and equal exchange of ideas,” the *New York Times* has run a number of separate, lengthy stories describing diverse contemporaneous efforts to finance just such ventures, to expand the competing offerings of the requisite broadband access:

In an ambitious proposal, a Silicon Valley company has asked the government to give it a band of radio spectrum for a free high-speed wireless Internet network that would cover most of the country and be supported by advertising.⁷⁷

And

Google is taking its first steps to go after the huge market for television advertising this week with a new service that will place video commercials on the many Web sites where it sells advertising.⁷⁸

76. Cohen, *supra* note 70, at D9.

77. Matt Richtel, *Company Asks U.S. to Provide Radio Space for Free Internet*, N.Y. TIMES, May 23, 2006, at C3.

78. Advertisers have been eager to buy the relatively limited supply of spaces for online commercials at prices that equal and sometimes exceed the rates charged by major networks, as measured by cost per thousand viewers

Google’s announcement came a week after AOL said that it had acquired Lighteningcast, a company that sells video advertisements on about 150 sites

Google has become a powerhouse in advertising largely by selling short text advertising closely associated with topics people are researching or reading about on the Web. But it is increasingly looking to place more elaborate advertisements that are more attractive to marketers promoting product brands. Last year, it started allowing advertisers to bid to place advertisements using graphics and animation on sites it represents.

Saul Hansell, *Google Moves to Sell Space for Video Spots on Network of Web Sites*, N.Y. TIMES, May 23, 2006, at C3.

And, some two weeks later,

Testers who volunteer to offer feedback for the Mountain View project will be able to sign up for Wi-Fi starting sometime this summer, and the service will be widely available to the public later this year, Chris Sacca, head of special initiatives at Google, said Wednesday. . . . Meanwhile, Google’s free Wi-Fi service in San Francisco may or may not have advertisements, he said. ‘If we get to the point that we decide that providing ads to end users is a benefit, then we might do it,’ he said. Ads are ‘not driving this. . . . For us it is much more of an experiment and a lofty social benefit’ Last year, San Francisco began a process of soliciting bids from potential providers of a free Wi-Fi service that would blanket the city’s nearly 49-square miles. City officials announced in April that they had chosen the Google-EarthLink bid.

Elinor Mills, *Google forging ahead with Wi-Fi efforts*, CNET NEWS.COM, June 7, 2006, http://news.zdnet.com/2100-1035_22-6081264.html.

The excited stories continue. See Belson, *supra* note 10 (referring to Sprint-Nextel’s planned \$3 billion construction of a nationwide mobile WiMAX network); E-mail from pawlowski@telegeography.com to Professor Alfred E. Kahn, (Aug. 29, 2006) (listing more than

And, referring to Vonage,

An Internet phone pioneer, poised to go public, has rivals at its heels Vonage still leads, but others offer attractive cut rate deals.⁷⁹

CONCLUSION

In all of this, it would be foolish to imply a greater certitude than I actually feel. I suggest, however, that the following components of an integrated position are fully justified by recent experience:⁸⁰

- A. a strong belief in deregulation and the Schumpeterian competition that both prompts and is best served by it;
- B. an equally firm belief in the importance of ensuring the availability of at least a third, independent broadband access option—presumably wireless—whether by application of the antitrust laws to intermodal mergers, opening up additional spectrum, subsidization or direct governmental provision—as a necessary protector of both subscribers and providers of content;
- C. an unwillingness to jettison the essential facilities antitrust doctrine⁸¹—recalling, in particular, that the dominance of in-

200 other such ventures in TeleGeography Update) (on file with author); Matt Richtel, *A World Beyond Dial-Up, EarthLink Hurls Itself Into a Heady New Telecom Universe*, N.Y. TIMES, Aug. 18, 2006, at C1-2.

79. Ken Benson & Matt Richtel, *An Internet Phone Pioneer, Poised to Go Public, Has Rivals at Its Heels*, N.Y. TIMES, May 23, 2006, at C1.

80. There would be little point in my protesting that I had drafted these conclusions before receiving the exemplary Atkinson-Weiser article, since Professor Weiser has been my mentor in these matters during the last few years. See Atkinson & Weiser, *supra* note 50.

81. REZA R. DIBADI, RESCUING REGULATION 94-98 (forthcoming October 2006) (citing MCI's successful suit against AT&T, *MCI Commc'ns Corp. v. AT&T Co.*, 708 F.2d 1081 (7th Cir. 1983), which might well have provided injunctive relief sufficient to make dissolution unnecessary). In brief, I think the decision in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985), was the right one and would have been so even if there had not been a previous history of the Aspen Corporation's offering all-hills two-week tickets embracing the subsequently excluded Highlands. Aspen's abandonment of that collaboration clearly was a major factor convincing the Supreme Court of its attempt to monopolize that market—a market in my view sufficiently defined by its own behavior. See also *supra* note 10 and accompanying text.

Eleanor M. Fox provides powerful (and unwitting) support of my point here, in her withering contradiction of the controlling Supreme Court opinion in *Law Offices of Curtis V. Trinko, LLP*, 540 U.S. at 398, which dismissed the *Aspen Skiing* precedent on the ground that it hinged on the defendant's abandonment of its previous willingness to deal with Highlands. See Elinor M. Fox, *Is There Life In Aspen After Trinko? The Silent Revolution of Section 2 of the Sherman Act*, 73 ANTITRUST L.J. 153 (2005).

I am compelled to confess, I am unable to offer a complete reconciliation of this view with my severe criticism of the FCC's overly expansive definition of the network elements the

cumbent telephone and cable companies in the broadband Internet access market traces back to their original respective monopoly franchises;⁸² and

- D. an especial alertness to the possibility of anticompetitive denial of access or vertical squeezing of independent suppliers of content.

As to the former, I have already alluded to the FCC and CRTC orders explicitly requiring ILECs to continue to permit competitors such as Vonage to offer VoIP over their broadband facilities.⁸³ As to the latter, the proponents of network neutrality may in effect be raising the familiar danger of a vertically-integrated monopolist using its control of the monopoly horizontal stratum to subject non-integrated rivals to one or another form of squeeze.⁸⁴ But the condemnation of such exclusionary tactics is part of historical antitrust doctrine, as is the corresponding requirement that suppliers of essential inputs comply with the dictates of competitive equity or (what comes to the same thing) the efficient component pricing rule: both of these hold that, whatever the *level* of the charge for the essential input, the vertically integrated monopolist must incorporate that same charge, along with its own marginal cost of performing the downstream function, in the prices it charges for the downstream product or service in the supply of which it competes with non-integrated rivals.⁸⁵

ILECs were to be obliged to unbundle and the price it required them to charge and especially its prescribed TELRIC prices, except to observe that ensurance of competitive parity—the enforcement of which would clearly be the obligation of the agency or agencies vested with antitrust enforcement responsibilities—does not depend on the absolute level of the charge for the input: see the text immediately following. See Alfred E. Kahn et. al., *The Telecommunications Act At Three Years: An Economic Evaluation of Its Implementation by The Federal Communications Commission*, 11 INFO. ECON. & POL'Y 319 (1999); see also *infra* note 81 and accompanying text.

82. This was the basis for my original defense of mandatory line sharing by the ILECs. See, e.g., Alfred E. Kahn, *Regulatory Politics as Usual* (AEI-Brookings Joint Center, Policy Matters 03-3, Mar. 2003), available at <http://www.aei.brookings.org/policy/page.php?id=127>; Atkinson & Weiser, *supra* note 50, at 9-10 (citing the continuing employment in countries such as France and Japan of a “line-sharing model,” which facilitates the emergence of multiple DSL competitors and the presence of which largely moots the issue of net neutrality “because consumers ... enjoy both a greater level of competition and more band width than in the United States.”).

83. See *supra* note 51 and accompanying text.

84. See Philip J. Weiser, *Toward a Next Generation Regulatory Strategy*, 35 LOY. U. CHI. L.J. 41, 66-85 (2004); see generally Farrell & Weiser, *supra* note 34, at 85.

85. See *Telecom Corp. of New Zealand Ltd. v. Clear Commc'ns Ltd.*, [1995] 1 N.Z.L.R. 385 (P.C.) (referring to my testimony on behalf of New Zealand Telecom in an antitrust proceeding before the High Court of New Zealand involving terms of interconnection with Clear, a competitive provider of local transport, April 27, 1992). In the aforementioned testimony, I stressed the corollary of that proposition—namely, that determination of the absolute level of that charge was the proper function of the regulatory (as distinguished from the antitrust) au-

In brief, the proponents of network neutrality are talking either nonsense or the—prosaic—prose of competition and monopoly, regulation, deregulation, antitrust, market efficiency and failure, for all of which there are reasonable, non-ideological resolutions amply confirmed by experience in the last half century. In any event, above all else, this period of the most welcome turbulence, both technologically and institutionally, is absolutely no time for new regulatory proscriptions or prescriptions.

thorities. *See also* William J. Baumol & J. Gregory Sidak, *The Pricing of Inputs Sold to Competitors*, 11 YALE J. ON REG. 171 (1994); Alfred E. Kahn & William E. Taylor, *The Pricing of Inputs Sold to Competitors: A Comment*, 11 YALE J. ON REG. 225 (1994); William J. Baumol & J. Gregory Sidak, *The Pricing of Inputs Sold to Competitors: Rejoinder and Epilogue*, 12 YALE J. ON REG. 177 (1995).

Timothy Tardiff reminds me that this is in effect the Areeda/Turner test, which I have demoted to non-essentiality as a test for predation. The difference is that the inference of predatory intent—and effect—may be drawn from the course of behavior and events in the latter situation, whereas margins below marginal costs are the essence of a squeeze and can be demonstrated only by some form of Areeda/Turner comparison.

REPRESENTING VALUE AS DIGITAL OBJECTS: A DISCUSSION OF TRANSFERABILITY AND ANONYMITY*

ROBERT E. KAHN & PATRICE A. LYONS**

This article discusses the use of “digital objects” to represent “value” in the network environment. Deeds of trust, mortgages, bills of lading and digital cash can all be represented as digital objects. The notion of “transferable records” structured as digital objects is introduced, along with references to its application in real financial situations. Even in a formal information system, anonymity reflects the desire of a holder of value to remain incognito, except as he or she wishes to be made known. The use of unique, persistent identifiers and a resolution mechanism to fashion such a capability for anonymity and transferability is presented.

I. BACKGROUND

A basic element in commerce is the representation of “value” by a writing, or more generally, a “data structure,” fixed in a tangible form such as paper. The use of such instruments is so ubiquitous that they are often taken for granted in daily life. A business will take delivery of a new computer, desk, photocopy machine or some other good and sign a

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document acknowledging receipt without a second thought about the validity of the process being used. This is not a recent development. For example, data structures such as “bills of lading” were used in the thirteenth century.¹

A promise to carry loads of produce to a country fair centuries ago may differ from a promise to perform “operations” on material in digital form to produce a required informational result. Additionally, promises of centuries ago may also differ from a promise to deliver a digital object, embodying a literary or musical work. Even so, the instruments evidencing the contract of carriage, the right to possession of the goods, or the receipt by a customer of the product or service, have basic elements in common. The issue addressed in this paper is whether and how such elements may be appropriately represented in a way that frees the transaction from the need for a physical manifestation, while allowing for both anonymity and transferability.

Representing a transaction in the form of a digital object does not preclude the production of a corresponding physical artifact upon demand. However, whether such artifacts are in fact necessary at all would depend more on the perceived needs of the participants than on the validity and reliability of the underlying mechanisms that can produce it. Transferability is achieved if the data structure may be transferred with authenticity from the party in possession to another party using verifiable techniques. While transferability would require a third-party trusted system to facilitate the transaction, the third-party system would only serve as an intermediary in a technical sense, but would not need to know who the current holder of the object is or maintain any information about the transaction. Anonymity is achieved where the party currently deemed the “holder” of a data structure is not generally known, or cannot be known, without the consent of that party. With such a third-party system in place, each party to a transaction can demonstrate a legitimate claim to the data structure before and then after the transaction has taken place. If an adequate confirmation of legitimate possession after the transaction cannot be made, the second party would normally reject the transaction.

Although a tangible fixation of an object provides a relatively easy means of displaying the data structure representing the intangible “value” being provided, we consider here only the case where the need for such a physical artifact is no longer present. As discussed in a report prepared

1. See, e.g., PAUL HALSALL, *MEDIEVAL SOURCEBOOK: BILL OF LADING 1248* (1998), <http://www.fordham.edu/halsall/source/1248billoflading.html>; SPYROS M. POLEMIS, *THE HISTORY OF GREEK SHIPPING*, http://www.greece.org/poseidon/work/articles/polemis_one.html (last visited Oct. 1, 2006) (noting similar mechanisms employed in ancient Greek and Roman times); *RULES FOR ELECTRONIC BILLS OF LADING* (Comite Mar. Int'l [CMI]), <http://www.comitemaritime.org/cmidoocs/rulesebla.html> (last visited Oct. 1, 2006) (recent effort by the Comité Maritime International to develop Rules for Electronic Bills of Lading).

for the United Nations Commission on International Trade Law (UNCITRAL) Working Group on Electronic Commerce,² there have been many attempts over the last few years to replace traditional paper-based bills of lading by electronic messages, and more generally, what was termed the “dematerialization of documents of title,” particularly in the transportation industry.³ It was thought useful to expand such efforts beyond maritime bills of lading to encompass other modes of transportation, as well as issues involving “dematerialized securities.”

In the United States, efforts to develop alternatives to paper-based documents have given rise to the concept of a “transferable record.” Initially, this work was carried out under the umbrella of the National Conference of Commissioners on Uniform State Laws (“NCCUSL”). Section 16 of the Uniform Electronic Transactions Act (“UETA”) was approved and recommended for enactment by NCCUSL in all States in 1999, and sets forth the general parameters of the “transferable record.” In essence, this section provides for the creation of “a record created, generated, sent, communicated, received, or stored by electronic means,”⁴ i.e., an “electronic record” as defined for purposes of UETA, “which may be controlled by the holder, who in turn may obtain the benefits of holder in due course and good faith purchaser status.”⁵

A more restricted definition of a “transferable record” was enacted into law by the U.S. Congress.⁶ Title II, sec. 201(a) of what has become known as the ESIGN Act provides that the term “transferable record” is limited to specific types of “electronic records” such as loans secured by real property. As experience is gained in this area, and technical systems and processes are developed to support electronic equivalents of paper-based loan documents, steps may be taken to expand the scope of the law to encompass other representations of “value” in commerce.

The digital object architecture has been under development by Corporation for National Research Initiatives (“CNRI”) for a number of years and is currently being implemented in several commercial contexts. This architecture may be of relevance to the evolution of the notion of a transferable record for purposes of the ESIGN Act, as well as the ongoing discussions in the United Nations relating to the transfer of rights in

2. U.N. Comm’n on Int’l Trade Law [UNCITRAL], Working Group on Elec. Commerce, Note by the Secretariat, *Legal Aspects of Electronic Commerce 2*, U.N. Doc. A/CN.9/WG.IV/WP.93 (March 2001), available at <http://daccessdds.un.org/doc/UNDOC/LTD/V01/812/31/PDF/V0181231.pdf>.

3. U.N. Comm’n on Int’l Trade Law [UNCITRAL], *Report of the United Nations Commission on International Trade Law on its Thirty-Fourth Session*, ¶ 288, U.N. Doc. A/56/17 (June 25, 2001).

4. UNIF. ELEC. TRANSACTIONS ACT § 2(7) (1999).

5. *Id.* at § 16.

6. Electronic Signatures in Global and National Commerce Act, Pub. L. No. 106-229, 114 Stat. 464 (codified as amended in scattered sections of 15 U.S.C. and 47 U.S.C.).

tangible goods and other rights.

II. PHYSICAL ARTIFACTS

Many applications involving physical artifacts, such as health records fixed on paper, often raise the notion of an original or authentic copy. In fact, in many cases there may be multiple originals of the same document like a contract that is signed in duplicate originals. In other cases, only one original record may exist, as in bearer bonds or in deeds to real property. For some applications there is no requirement of anonymity. The holder of the original record may be known by any of several means. In other cases, the holder may be completely unknown unless and until he or she produces the physical artifact. This is the case for issued paper money such as a dollar bill. Although the issuer of the official record or document is generally known to the holder and to anyone else who is permitted to inspect it, there can, but need not be, any record of the actual holders in due course of the record over time. Furthermore, it is generally understood that physical artifacts such as paper or other material objects are not required to maintain certain official records. For example, the issuer of an official document may retain a computer record of the issuance. This might be known by any of several terms such as a book entry, or journal entry and the official record is kept by the issuer or a known designated agent of the issuer. The issuer may also maintain a record of the "chain of title" to the entry. Various registries maintain this kind of information, such as a typical Recorder of Deeds, although the actual deed may be retained by others. Still, the prevailing mode of operation is to issue paper for many, if not most, of these applications.

In each of the above cases where only computer records are used, there is usually a trusted party that maintains the records, as well as the linkages between each record and the party to whom the record is currently "attached." Absent the maintenance of accurate records by the trusted party, proof of ownership may be compromised, perhaps fatally. Even though an official computer-based record may be kept by a trusted party, normally the issuing party or its agent, a copy of the record may be available in digital form at other locations. In order for the record to be negotiable, the bearer may be required to provide the record in digital form, but the authenticity of the holder as well as the record can be separately validated if the appropriate records are available.

The discussion below focuses generally on the case where a record of linkages is not kept, and thus, no equivalent "chain of title" is maintained by the trusted party. It also assumes that a generalized record-keeping capability need not be in existence, but that a trusted means of authentication is available. The digital object architecture described generally below can play a key role in facilitating the authentication process.

III. DIGITAL OBJECTS AND THEIR IDENTIFIERS

The term “digital object” is used to denote an identifiable item of structured information in digital form within a network-based computer environment. Generally speaking, a digital object is a set of sequences of bits or elements, each of which constitutes structured data interpretable by a computational facility, at least one of the sequences denoting a unique, persistent identifier for that object. Information of virtually any kind that is represented in digital form may be structured as a digital object. The identifier of a digital object may be of any form, as long as it may unequivocally be de-referenced to the digital object. The Handle System[®] is an example of such an identifier system.⁷ Some known part of the identifier could contain a cryptographic hash or fingerprint of the identified object, which could be used to help to authenticate the object.

The Handle System being developed by CNRI, serves as a “resolution system” and would typically contain “resolution information” sufficient to resolve an identifier to the “location” of the computational facility containing the object. However, the resolution information, nominally state information about the digital object, may not necessarily be publicly available in its entirety. Indeed, portions of the state information may be available only to the party that is the current owner or “holder” of the object. The resolution system is also assumed to be secure from tampering. This is achieved through a combination of mechanisms including the use of public key infrastructure, backup procedures, and protected physical equipment. It need be no less secure than, for example, other parts of an on-line banking system.

The location, if designated in the state information, may be merely the service point for obtaining the digital object. In fact, there may be multiple locations that can produce the digital object, and for informational purposes, any of these will suffice. However, it is assumed that only one of these objects is the official version, and the rest merely replicas. This leads to an important consideration: given the ease by which information can be replicated by computer and on a network, how can the official version be distinguished from the other identical versions?

IV. TRANSFERABILITY OF DIGITAL OBJECTS

In this section, the focus is on the transfer of an authentic version of a record or document in the form of a digital object. We begin by considering how a given digital object accessible on the network can be authenticated as having the proper information from the original issuer and possibly contain additional chain of title information where appropriate. The

7. The Handle System, <http://www.handle.net> (last visited Sept. 17, 2006).

possibility of encrypting each digital object may indeed be desirable for all of or parts of a digital object, especially where classified information comes into play. However, this capability is not essential to the basic system in which it is only assumed that the digital object is signed by its issuer using a strong encryption mechanism such as the U.S. federal digital signature standard. The authenticity of the digital object can then be verified directly from the digital object and its signature, if the signature can be assured. The use of a trusted public key infrastructure is one, but not the only way to achieve this result.

The Handle System can store digital object signatures to be used for authentication, and even bind the signatures tightly to the identifiers. The digital object will generally contain other information that can be used to show authenticity, but this is not necessarily required. For example, the inclusion of a sequence number, date-time stamp and/or the length in bytes would inhibit attempts to tamper with even weak signatures, or strong signatures made weak over time with increased computer power.

The question of determining which of *N* authentic digital objects is the original is, in some sense, an epistemological question since there is no way for a computer to know where a party providing bits to it "obtained them." If all instances of a digital object are identical and since bits are themselves fundamentally incorporeal there is really no notion of original bits. For purposes of illustration, four transferability mechanisms are identified below. The first two are equivalent to physical artifacts embodying data structures. The third is a hybrid situation. Only the fourth will be discussed in any detail.

Mechanism one is a tamper-proof device provided by the original issuer that contains the original information. It is assumed that the issuer only issues one such device, that others cannot replicate the device without destroying some critical part of it, and that no means exist to change the original information (although it may be possible to incorporate additional signatures to reflect chain of title). The device thus assumes the role of paper and ink and, for most purposes, can be viewed as equivalent to paper and ink. One transfers the data structure by transferring the physical device. Mechanism two is like mechanism one, in that the above assumptions apply except that the internal information may be read out of the original device and into another device. Assuming a means by which there is no possibility for corrupting the information in the transfer process (e.g., the receiving device will reject corrupted information), this leads to the issue of whether the receiving or sending device can insure that only one such transfer can occur. There may be cases where, in fact multiple transfers might be appropriate, but this possibility is not addressed here. Mechanism three is like mechanism two, except that one of the devices is not tamper proof. This would have to be assumed if one of the devices were a general-purpose computer. The techniques for ad-

mechanism three are essentially the same as those that would be used if all the devices were general-purpose computers; and so we go directly to the fourth case.

V. DISTINGUISHING ORIGINAL INFORMATION ON THE NET

Mechanism four assumes that the original information is structured as a digital object and stored in a general-purpose computer or other computational facility on the net. The notion of “holder” is tied to the notion of unambiguously designating the computational facility that purports to hold the original digital object. For example, a transferable record such as a deed of trust could be the original digital object held at a particular moment in time in such a computational facility (referred to in this paper as the “holder facility”). While recognizing that this is a logical construct, the holder facility may be deemed generally equivalent to the evidentiary role played by a physical object. The evidentiary showing could entail demonstrating how the system works. For example, the showing could identify the particular holder facility as the authorized holder at a particular moment in time and producing the relevant digital object using the system. The identifier uniquely identifies the data structure stored within the designated holder facility. For an individual to claim to be the holder in due course of an electronic record structured as a digital object, the holder facility must be able to present the record to the appropriate party or parties for inspection on demand. It is asserted that only the authorized holder of the original digital object will be able to cause the desired object to be produced by the holder facility (unless, of course, it was trusted for safekeeping with untrustworthy associates). For example, if the holder was untrustworthy, it could present the material to a third party and claim it was holding the digital object on behalf of someone other than the party who is the authorized possessor.

The holder facility must be known to the resolution system, or a means of determining the holder facility must be uniquely derivable from the resolution system. While information about the holder of a transferable record need not be made available to others, the actual holder facility containing the object may also not be known publicly. However, it is mandatory that each holder facility only provide the original digital object to the bearer or his agent and in a form that allows the authenticity of the information to be verified. This can be achieved without the resolution system knowing the identity of the holder. In this case, the agent of the bearer might be a trusted computer system or its operator. A compromise of this trusted system would be equivalent to a loss of say a bearer document. A compromise of the resolution system could also result in a loss of such a document, but the latter compromise must be addressed on a system-wide basis. The former compromise (of a specific

trusted system) would be the responsibility of the bearer that selected it.

Each digital object can be validated by use of its fingerprint or signature, which is maintained by the issuer or its agent. The issuer may also elect to retain a replica of the original object, or only certain archival information about it such as its digital signature, length, date-time stamp of original issue, and possibly other non-personal identification information, such as sequence numbers. A transferable record itself consists of the original digital object and its signature, possibly along with additional information such as chain of title information added each time the object is transferred to another party. Certain elements of the additional information would be necessary for some objects and not for others. For example, bearer bonds would not usually have chain of title information, nor would digital cash. At the time of transfer, an instance of the digital object would be formed in a new holder facility corresponding to the new holder and the system would require that a change in the state information indicating the then valid holder facility be entered into the resolution system.

The Handle System has all the attributes necessary to provide the functionality of a trusted third party system. Specifically, system responses may be "signed" by the system upon request and each signature may be authenticated by a built-in certificate authority, if desired. The built-in certificate authority may itself be certified on a system-wide basis, and the cryptographic strength of the certificate authority increases as its purview widens. For example, the system-wide authority has the longest and strongest key. Each entry into the Handle System requires the use of a private key known only to the owner or its authorized agent. Further, various cross-checks carried out regularly within the system are designed to detect anomalies with respect to replication and mirroring of data. The top level of the Handle System is known as the Global Handle Registry and consists of a number of servers and services managed by a single trusted authority.

Entries in the Handle System for a newly designated holder facility would be made by the authorized holder at the time of transfer; the identifier for the data structure need not change, but the corresponding information in the Handle System would be changed to indicate that the data structure is now accessible from the new holder facility. It is not required that the entire Handle System be trustworthy in order to implement this capability. It is only required that a subset of the system be trusted, namely, a subset separately cordoned off to manage objects of value in which transferability and/or anonymity are needed.

VI. DIGITAL OBJECTS SENT VIA E-MAIL AND/OR AGENTS

Digital objects structured as mobile programs or software "agents"

may serve as their own transport mechanism or be used to transport other digital objects with appropriate access procedures to effect the authorized disseminations. Existing mechanisms such as email may also be used for the same purpose. Specifically, both email and agents may be viewed as ways to move the separately identifiable information contained within them, but these would not be an integral part of the Handle System *per se*. While in transit, the information may or may not have any status of value until and unless it arrives at its proper destination and is validated. Alternatively, the use of identifiers, such as handles, can obviate the need for an actual data structure to be communicated as the data structure can be retrieved independently if the ability to access it at a remote holder facility is enabled. If desired, a synchronization mechanism, familiar in distributed data base technology, may then be invoked to insure the designated object is moved from one holder facility to another and that only one such facility is the newly designated one. The Handle System can also provide the equivalent of this function. At that point, an email reply could go back to the sender confirming the transaction. For audit purposes, the reply itself could be structured as a digital object with its own unique identifier.

The case of network-based agents is in many ways the more interesting and also more complex topic. In this case, the value represented by a digital object may be present entirely in a mobile context, with the object never stopping at any computational facility for more than a transitory period of time. Interactions involving value transactions may thus take place in arranged meetings and rendezvous situations. Validation of the agents as well as their contained data structures and/or identifiers would be necessary. This could be carried out using the same techniques as for any other type of digital object, whether stationary in a repository or in transit on the net.

This paper does not purport to fully describe, much less specify, an entire system for representing value. There are many other issues remaining to be worked out on the way toward creating a viable system for identifying value based on the notion of a digital object. A starting point down this road would be the development of a general “type framework” for transferable records. The capability for such a mechanism exists in the current implementation of the Handle System. The notion of typed data, inherent in a digital object, is deliberately intended to be an open and extensible attribute of the system. If the digital object architecture were introduced in various areas of commerce, it would be possible to agree on specific “types” that are meaningful for specific subjects or industries. There may be multiple types for representing “value,” such as a category called “bill of lading” or “deed of trust.” A data structure would be assigned a “type” for purposes of resolution of digital objects that are designated by an issuer as conforming to the particular type. Types may

also be defined dynamically and resolved by the resolution system. Once agreement is reached on the use of “types” in such a system, consideration may be given to identifying possible standard operations allowed to be performed on a given type. For example, where dealing with the type: “transfer of copyright ownership,” there may be a permitted operation: deposit for recordation in the Copyright Office.

While various notions concerning “value” and “typed data” require additional study in the network environment, the basic underlying resolution system, already in operation in Internet commerce, may be used directly to resolve typed data and to manifest value. The flexibility of a system based on the notion of a digital object may serve to open new avenues of commerce in a networked environment and contribute efficiencies and cost savings to existing methods of doing business.

VIDEO KILLED THE FRANCHISE STAR: THE CONSUMER COST OF CABLE FRANCHISING AND PROPOSED POLICY ALTERNATIVES

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Congress, state legislatures, and the Federal Communications Commission are all considering proposals to reform local video franchising to promote competitive entry. Consumers should welcome such reforms. We estimate that consumers pay an extra \$8.4 billion annually in the form of higher rates and fees as a result of video franchise regulations. In addition, these price increases generate \$2 billion in “deadweight loss,” or value that consumers forego annually because higher prices induce some consumers to go without cable television. Unlike previous studies, our estimates include the cost of “nonprice concessions” (such as PEG channels) and franchise fees, in addition to the market power effect of cable franchising. We analyze a variety of options federal and state officials have to reduce these costs, including exemption of telephone companies from cable franchise regulations, FCC pre-emption of “unreasonable” franchising practices, and federal or state adoption of “open entry” laws to replace local franchising.

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INTRODUCTION

Congress, state legislatures, and the Federal Communications Commission are all considering initiatives to reform local video franchising to encourage competitive entry. Local franchising has been a mainstay of cable television regulation. Under federal law, a cable company cannot operate without a franchise, and only a local franchising authority may grant a franchise. In the early days of cable, franchises were seen as regulatory tools to deal with what was perceived as a natural monopoly. To that end, most municipalities would grant only one franchise to a monopoly cable provider. They would then try to mitigate the monopoly's market power by using the terms of the franchise. Municipal governments also found that by granting favorable franchise terms and protecting the incumbent from competitive entry, they too could share in the monopoly rents. More than two decades of historical data and academic research, however, have shown consistently that wireline video service is not a natural monopoly, and that cable rates are lower in areas that allow direct competition.

Acknowledging the benefits of competition, Congress in 1992 sought to eliminate the franchising barrier to entry by prohibiting local franchising authorities from unreasonably refusing to award more than one franchise. Nevertheless, most jurisdictions continue to be served by only one wireline video provider. Today, telephone companies and other utilities have begun to roll out video service, just as cable companies have begun to offer telephone service. The major obstacle to new video competition, however, is the thousands of franchises that must first be negotiated and acquired.

Part I of this Article reviews the economics literature related to cable franchising and demonstrates that there is no reasonable economic justification for monopoly video franchising today. Consumer rates are lower in areas where there is wireline video competition. Costs passed directly to consumers in the form of higher rates for service, fees, and equipment as a result of video franchise regulations total approximately \$8.4 billion annually. We also find \$2 billion annually in "deadweight loss," or value that consumers forego because higher prices induce some consumers to go without cable television. The total cost to consumers of franchise regulation thus equals about \$10.4 billion annually.

Part II analyzes the options available to the Federal Communications Commission to deal with the franchising barrier to entry. These include exempting telephone companies from cable franchising regulations, as well as preempting local franchising laws and rules that act as unreasonable barriers to entry. Part III discusses the options available to state and federal legislators, concluding that local

franchises should be eliminated in favor of simple open entry rules.

I. ECONOMIC ANALYSIS OF CABLE FRANCHISING

Franchise regulation typically involves several different factors. No competitor can offer video service without the local government's permission.¹ Local authorities can regulate the price of "basic" cable service unless the FCC determines the local video market is competitive. Franchise authorities often impose regulatory mandates requiring franchisees to provide a variety of services for free or at below-cost charges, such as channels for public, educational, and government access; studios for creation of public access programming; and wiring of various public facilities. These are often called "nonprice concessions." Finally, franchisees must pay the local government a fee that is limited by federal law to five percent of gross revenues.

Rates for "expanded basic" and premium channels have been regulated under a variety of regimes since the 1970s.² Prices for expanded basic are no longer regulated. Since 90% of cable customers choose to buy expanded basic,³ cable rates are effectively deregulated for most consumers. Even when most cable rates were regulated, it was doubtful that price regulation fully prevented cable companies from exercising market power and raising prices. Indeed, many studies find that price regulation ultimately had little effect on rates, and when rate regulation was effective cable companies responded by increasing other charges or reducing quality.⁴

Entry regulation, nonprice concessions, and franchise fees, on the other hand, have always existed in most localities. In contrast to price regulation, these other forms of regulation have been quite effective in limiting entry, requiring cable firms to provide free or subsidized services, and raising revenue for local governments.

1. The 1984 Cable Act mandated that local governments must franchise cable companies; prior to that, some states and localities—such as San Diego, California; Tucson, Arizona; and the entire state of Montana—required cable firms to have only a general business license. See Thomas W. Hazlett, *Cable TV Franchises as Barriers to Video Competition* 17 (2006), <http://ssrn.com/abstract=889406>.

2. The federal government preempted local rate regulation in the 1984 Cable Act, reimposed rate regulation in the 1992 Cable Act, and removed most of it in the 1996 Telecommunications Act. *Id.* at 29-30.

3. Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, *Report on Cable Industry Prices*, 20 FCC Rcd. 2,718 (2005) [hereinafter *Report on Cable Industry Prices*].

4. Hazlett, *supra* note 1, at 29. ("Suppressing nominal rates prompts cable operators to renege, charge for additional (previously complimentary) services, tighten credit rules, tack on 'late fees,' and lower service quality. The latter is achieved by hiring fewer customer service representatives and repair technicians, while reducing expenditures for programming."). *Id.*

A. Franchise regulation in theory could promote the public interest

Franchise regulation could potentially promote consumer welfare in three ways. First, if video is an “unsustainable” natural monopoly with substantial sunk costs that prevent competitive entry, then competition is inefficient, and regulation of entry and prices could promote consumer welfare. Second, protecting a cable company from competition might lower its cost of capital by lowering the risk it faces, and price regulation could pass these savings on to consumers. Third, since local governments typically control the rights-of-way used by wireline video providers, some regulation of construction and placement of wires, along with a fee that compensates the public for use of the rights-of-way, can safeguard the public’s property.

1. Natural monopoly

Price and service regulation can improve consumer welfare if the regulated industry is a “natural monopoly”—that is, if the relationship between costs and demand makes it possible for a single firm to serve the entire market at lower cost than multiple firms—and if sunk costs eliminate the potential for entry. “Sunk costs” are costs that cannot easily be recovered if the firm decides to exit the market. If there is a natural monopoly with sunk costs, price and service regulation may mitigate the monopolist’s market power.

The existence of market power, however, does not by itself justify entry regulation. In most cases, if the market is a natural monopoly, then monopoly occurs without regulation. Entry regulation can improve consumer welfare only if a natural monopoly is “unsustainable”—that is, if a peculiar set of cost conditions would lead to the presence of more than one firm in the market even though a single firm can serve the entire market at lowest total cost.⁵ When a natural monopoly is unsustainable, competitive entry may increase total costs and lead to higher average prices than if the market was monopolized and the monopolist was forced to sell at cost-based prices.

Even if the natural monopoly is unsustainable, however, competition can have two different effects on total costs. On the one hand, competitive entry could increase total costs if a single firm, operating efficiently, could serve the entire market at lower cost. On the other hand, competitive entry might also help decrease total costs by prompting the incumbent monopolist to become more efficient in order to compete more vigorously.

The concept of sustainability must be interpreted with care because

5. See WILLIAM J. BAUMOL ET AL., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* 192-208 (1982).

it provides an easily abused piece of rhetoric to justify restrictions on competition that benefit incumbent firms. The fact that competition may lead some firms to incur losses need not signify that the market is an unsustainable natural monopoly. Losses are entirely consistent with a competitive market; they may simply signify that a firm is not as competent a competitor. Alternatively, losses may signify that the market is a *sustainable* natural monopoly—and losses are the incentive that ultimately drives the less efficient firms out of the market. Therefore, losses are not sufficient evidence to demonstrate that a market is an unsustainable natural monopoly.

If entry regulation promotes consumer welfare, one would expect to see it imposed only where local governments have determined that (1) video is a natural monopoly, (2) the natural monopoly is “unsustainable,” (3) the monopoly will not waste the cost savings by becoming lax, and (4) price regulation will effectively pass the cost savings through to consumers. If all of those conditions hold, prices and service quality in markets where franchise regulation prevents competition should be at least as good as in markets where competition exists. If any of those conditions do not hold, however, franchise regulation of entry is at best superfluous and at worst a source of market power and increased consumer costs.⁶

2. Risk reduction

A second, distinct argument for entry regulation is that it can lead to lower prices for consumers when producers must invest in long-lived, specialized capital equipment that has little resale value. An industry or market requiring such investments need not be a natural monopoly. The price depends in part on the producer's cost of capital, which in turn depends on risk. Partially or fully protecting the producer from competition could reduce its risk, thereby lowering the cost of capital.⁷ Effective price regulation could pass these cost savings through to consumers. If these price savings are sufficiently large, consumers might be better off with competition limited by entry regulation than they would be if competition were unrestricted.⁸

Under this theory, two conditions must hold if entry regulation is to

6. For a sample of the economics literature outlining the perverse incentives created when economic regulation substitutes for competition, *see, e.g.* Thomas W. Hazlett, *Competition vs. Franchise Monopoly in Cable Television*, 4 CONTEMP. POL'Y ISSUES 80 (1986); Thomas W. Hazlett, *Prices and Outputs Under Cable TV Reregulation*, 12 J. OF REG. ECON. 173 (1997); Thomas W. Hazlett, *The Demand for Regulated Franchise Monopoly: Evidence from CATV Rate Deregulation in California*, 29 ECON. INQUIRY 275 (1991).

7. *See* Victor P. Goldberg, *Regulation and Administered Contracts*, 7 BELL J. ECON. 427, 432 (1976).

8. *See id.* at 435.

improve consumer welfare. First, the potential price reductions that result from the reduction in the cost of capital due to the suppression of competition must be larger than the expected cost reductions that would occur as a result of unrestricted competition and innovation. It is unclear whether this is possible even in theory.⁹ Second, price regulation or some form of binding contract must effectively pass these cost reductions through to consumers.

Empirically, the “specialized capital” theory implies that if entry regulation benefits consumers, we should observe lower cable prices or better service quality in jurisdictions where entry is controlled than in jurisdictions where competition was unrestricted at the time cable systems were first built or substantially upgraded.

3. Rights-of-way management

A third reason that franchise regulation might promote the public interest is that it gives local authorities a mechanism to manage the public rights-of-way.¹⁰ The economic justification for public management of the rights-of-way is that it reduces transactions costs that might otherwise make certain uses of those rights-of-way unfeasible.¹¹ Municipal control over the rights-of-way, for example, allows utilities to more cheaply secure rights to use them than if the utility had to negotiate with many individual property owners. Additionally, unitary public control avoids hold-up problems.

The public rights-of-way are a scarce resource. If there are no restrictions on the way that utilities may make use of that resource, then there may be congestion.¹² Such congestion can impose significant costs on the public or other users in forms as diverse as misallocation of space, crowded utility ducts, or blight. Congestion can be addressed by instituting a cost-based charge calibrated to prevent overuse. The existence of scarcity by itself, however, does not justify limiting entry

9. See, e.g., Robert B. Ekelund, Jr. & Richard S. Higgins, *Capital Fixity, Innovations, and Long-Term Contracting: An Intertemporal Economic Theory of Regulation*, 72 AM. ECON. REV. 32, 44 (1982) (finding that the *expected* price consumers pay under entry regulation is no better than the expected price they pay under unrestricted competition, and therefore regulation is preferred only if consumers are risk-averse).

10. In fact, Title VI of the Communications Act of 1934, which regulates video, limits the obligation to obtain a franchise to those operators that use a “public right-of-way.” 47 U.S.C. § 522 (7)(B) (2000). The Act’s legislative history further states that “[t]he premise for the exercise of . . . local jurisdiction over cable systems continues to be [the] use of local streets and rights of way.” S. REP. NO. 97-518, at 5 (1982).

11. George L. Priest, *The Origins of Utility Regulation and the “Theories of Regulation” Debate*, 36 J.L. & ECON. 289, 306 (1993).

12. See Harold Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55, 62 (1968); Gardner F. Gillespie, *Rights-of-Way Redux: Municipal Fees on Telecommunications Companies and Cable Operators*, 107 DICK. L. REV. 209, 220-21 (2002).

through franchising to only one firm.

Nevertheless, franchise regulation is one method by which a locality can regulate access to the public rights-of-way and impose congestion pricing. A franchise fee would be justified if it were “reasonably calculated to cover the cost that a given use of the public way imposes on either the municipality or the other users of the public way.”¹³ However, the efficient management of the public ways does not justify the imposition of a franchise fee that exceeds the costs that result from a franchisee’s use of the rights-of-way. A franchise fee that merely maximizes revenues for the local government could easily exceed the cost-based charge needed to prevent congestion of the rights-of-way.

Neither does rights-of-way management justify government control over the content, quality, or price of video service, because such regulation would have nothing to do with either transaction costs or congestion. There may be many reasons to impose these types of regulations, but management of public rights-of-way is not one of them.

B. Franchise regulation in practice has harmed consumers

In theory, well-designed franchise regulation might promote consumer welfare under certain circumstances. In practice, franchise regulation has fostered monopoly and raised cable rates, with local governments sharing in the monopoly profits. As Hazlett has noted:

Municipal governments discovered that they could extract substantial rents by awarding licenses on favorable terms to the applicant. In the 1960s, New York Mayor John Lindsay proclaimed cable franchises “urban oil wells beneath our city streets.” This produced a decided bias in favor of monopoly, which would improve expected returns and so raise the “bid” from prospective applicants.¹⁴

Entry regulation by local franchising authorities is, of course, just one factor that might hamper wireline video competition. A Government Accountability Office (GAO) case study of new competitive broadband service providers (BSPs), which offer both video and Internet service, identified several factors that influence these new entrants’ decisions to compete in a given market.¹⁵ Among other factors, the BSPs said they tend to choose cities where local officials actually welcome competition

13. *Diginet, Inc. v. W. Union A.T.S., Inc.*, 958 F.2d 1388, 1399 (7th Cir. 1992).

14. Thomas W. Hazlett, *Cable Television*, 2 HANDBOOK OF TELECOMMUNICATIONS ECONOMICS: TECHNOLOGY EVOLUTION AND THE INTERNET 214-15 (Sumit K. Majumdar et al. eds., Elsevier Science 2006).

15. GOVERNMENT ACCOUNTABILITY OFFICE, TELECOMMUNICATIONS: WIRE-BASED COMPETITION BENEFITED CONSUMERS IN SELECTED MARKETS 20-21 (2004), available at <http://www.gao.gov/new.items/d04241.pdf>.

and make the franchising process easy. Key barriers identified by the competitors include lengthy processing times for franchise applications, franchise fees, the cost of construction permits, and state “level playing field” laws, which require new franchisees to agree to terms and conditions at least as onerous as those imposed on the incumbent.¹⁶ Cities eager to see new competition have approved franchise agreements in as little as 120 days, whereas competitors have abandoned their applications in other cities after waiting two and one-half years.¹⁷ Even seemingly symmetric requirements can actually disadvantage competitors. For example, requiring a competitor to meet the same buildout schedule in the entire service area as the incumbent ignores the fact that the incumbent likely fulfilled this requirement when the metropolitan area was smaller, and then gradually added facilities as population grew.¹⁸ New competitors clearly view restrictive franchising as one significant factor that discourages market entry.

Other potential entrants into the video market—such as telephone companies using fiber optic or DSL, or electric utilities employing broadband over powerlines—are much less likely to face the non-franchise difficulties identified by the BSPs. Phone and power companies are not startups. They already have substantial facilities in place, and they likely have much better access to capital than the BSPs. Phone and power companies can surmount many barriers affecting the BSPs—but the franchising barrier remains.

Franchise regulation has harmed consumer welfare by excluding competitors, forcing cable companies to offer “nonprice concessions” that increase consumer costs, and imposing franchise fees that also increase consumer costs.

1. Anticompetitive exclusion

Entry regulation was not surgically applied to remedy proven market failures, but rather adopted as a general policy almost everywhere. The result was to create market power and entrench cable monopolies.

If entry regulation is a remedy for unsustainable natural monopoly or reduces cable companies’ costs, then monopolized video markets should have lower costs, lower prices, and perhaps better quality than competitive markets. Several decades of studies reveal that precisely the opposite is the case.

16. *Id.*

17. *Id.*

18. *Id.* at 25.

TABLE 1: CABLE RATES FOR BASIC, EXPANDED BASIC, AND EQUIPMENT RENTAL

	Monthly Rate of Basic + Expanded Basic + Equip't		Channels		Price Per Channel	
	Non- Compet.	Wire Compet.	Non- Compet.	Wire Compet.	Non- Compet.	Wire Compet.
2002 % difference	\$39.97	\$34.89 -12.71	NA	NA	NA	NA
2003 % difference	\$43.14	\$37.22 -13.72	67.3	71.2 5.79	\$0.657	\$0.528 -19.63
2004 % difference	\$45.56	\$38.80 -14.84	70.1	74.9 6.85	\$0.665	\$0.523 -21.35

Source: *Report On Cable Industry Prices*, *supra* note 3, at attachments 7-9.

One need look no further than the FCC's February 2005 report on cable prices for some highly suggestive evidence. As Table 1 shows, during the past several years, the price of a package including basic, expanded basic, and equipment rental has been between 12 and 15% lower in markets where the FCC has determined the incumbent faces effective competition from another wireline video provider. Since competition also spurs cable companies to include more channels in the expanded basic package, the difference in the price consumers pay per channel is even larger—between 19 and 22%.

Statistics on digital cable, shown in Table 2, tell a similar story. During the past several years, the price of the digital tier has been three to six percent lower in markets with wireline video competition, and the price per channel has been six to 13% lower. In 2004, several other charges were also lower on average in markets with wireline video competition: reconnection (\$26.76 vs. \$28.71) and installation in an unwired residence (\$43.00 vs. \$45.19). Only installation in a previously wired residence was less expensive in markets without wireline competition—by 33¢ (\$31.57 vs. \$31.24).¹⁹

TABLE 2: DIGITAL CABLE RATES

	Monthly Rate of Digital Tier		Channels		Price Per Channel	
	<i>Non-Compet.</i>	<i>Wire Compet.</i>	<i>Non-Compet.</i>	<i>Wire Compet.</i>	<i>Non-Compet.</i>	<i>Wire Compet.</i>
2002	\$14.56	\$13.68	NA	NA	NA	NA
<i>% diff.</i>		-6.04				
2003	\$15.29	\$14.56	27.3	28.8	\$0.686	\$0.641
<i>% diff.</i>		-4.77		5.49		-6.56
2004	\$16.09	\$15.64	31.4	33.8	\$0.588	\$0.513
<i>% diff.</i>		-2.80		7.64		-12.76

Source: *Report on Cable Industry Prices*, *supra* note 3, at attach.12-14.

These average price comparisons may be vulnerable to two criticisms. First, the categories are based on past FCC determinations of whether the incumbent faces effective competition from various sources, including wireline, wireless, and direct broadcast satellite. Incumbents have to petition for these findings, and a finding of effective competition releases the incumbent from regulation of basic cable rates.²⁰ It is possible, therefore, that some markets where the incumbent faces competition are in the “noncompetitive” category because they have never petitioned for a finding that they face effective competition.

19. *Report on Cable Industry Prices*, *supra* note 3, at attach.11.

20. 47 C.F.R. § 76.905-07 (2005).

Alternatively, the FCC might classify some markets as “competitive” even if the competitor has disappeared. For these reasons, the raw price comparisons may either under- or overstate the effect of wireline video competition on rates.²¹

A more fundamental criticism is that the raw data do not control for other factors affecting cable rates. If, for example, markets with multiple competitors have population patterns or geography that make them less expensive to serve, then those underlying factors might be responsible both for the lower rates and for the presence of competitors. Econometric analyses that control for other factors, however, consistently find that video markets with more competition have lower prices and better service packages.

In April 2005, the GAO released an analysis of 2004 cable rate data that corrected for both potential problems. GAO’s econometric analysis found that wireline cable competition reduced cable rates by 15.6%. The cable rate measure in GAO’s study was the total price of basic, extended basic, and converter box rental—similar to the figure listed in Table 1 above.²² GAO omitted franchise areas with competition from a municipal cable company;²³ thus, the analysis avoids confusing the effects of competition with the effects of possible municipal subsidies. GAO’s analysis found that private wireline competition had an even bigger effect on prices than the FCC’s raw data might indicate. In addition, GAO found that regulation of basic cable rates has no

21. *Report on Cable Industry Prices*, *supra* note 3, at 2. For elaboration of this criticism and the FCC’s response, see GOVERNMENT ACCOUNTABILITY OFFICE, TELECOMMUNICATIONS: ISSUES RELATED TO COMPETITION AND SUBSCRIBER RATES IN THE CABLE TELEVISION INDUSTRY 16-18, 70-79 (2003), available at <http://www.gao.gov/new.items/d048.pdf>.

22. GOVERNMENT ACCOUNTABILITY OFFICE, TELECOMMUNICATIONS: DIRECT BROADCAST SATELLITE SUBSCRIBERSHIP HAS GROWN RAPIDLY, BUT VARIES ACROSS DIFFERENT TYPES OF MARKETS 31 (2005), available at <http://www.gao.gov/new.items/d05257.pdf>. The results are very similar to those found in previous runs of GAO’s model, such as its October 2003 report. GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 21. An earlier version of our analysis reported that GAO found a 16.9% price difference due to wireline cable competition; this resulted from an erroneous interpretation of one of GAO’s regression coefficients. We interpreted the coefficient on the competition dummy variable as the percentage price change due to competition. Because the variables in the GAO model were in logarithms, the price effect is actually equal to $(\exp(-0.1694)-1)$, or 15.6%. See Comments of Jerry Brito & Jerry Ellig to the *Notice of Proposed Rulemaking* in Implementation of Section 621(a)(1) of the Cable Communications Policy Act of 1984 as amended by the Cable Television Consumer Protection and Competition Act of 1992, MB Dkt. No. 05-311 (Feb. 13, 2006), http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518327082. For an explanation of the econometric interpretation issue, see Robert Halvorsen & Raymond Palmquist, *The Interpretation of Dummy Variables in Semilogarithmic Equations*, 70 AM. ECON. REV. 474 (1980). We are grateful to George Ford for pointing out the error—which fortunately did not affect our estimate of the total effect on consumer welfare very much.

23. GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 22, at 29.

statistically significant effect on rates,²⁴ which suggests that rate regulation is largely ineffective at controlling monopoly pricing.²⁵

These kinds of results are consistent with findings of numerous earlier studies. A monograph on the economics of cable TV cites 11 different studies or surveys conducted between 1984 and 1992 that find wireline cable competition reduces cable prices by between 8% and 34%.²⁶ The FCC's own 2002 econometric study found that the presence of wireline video competition reduces cable rates by 5.4%.²⁷ The seminal empirical studies of cable competition, by Thomas Hazlett, found that in areas with two or more overlapping cable systems, monthly bills for basic cable and HBO were about \$1.82 lower than in localities with only one cable franchisee.²⁸ Once regarded as heresy, the notion that cable competition leads to lower prices must now be accepted as documented fact.

Incumbent cable operators responded to competition with more than just price reductions. Faced with competition from direct broadcast satellite in the mid-1990s, which offered a digital signal, cable operators nearly doubled their bandwidth, from 450 MHz to 750 MHz, and offered their own digital service.²⁹ When direct broadcast satellite carries local broadcast channels, and hence becomes a closer substitute for cable, cable operators offer about 5% more channels than elsewhere.³⁰ The FCC data in Tables 1 and 2 demonstrate that cable companies offer more channels, on average, when they face wireline video competition. Consistent with these raw figures, the most recent run of GAO's cable/satellite competition model finds that cable systems tend to offer more channels where satellite has a higher market share and where wireline video competition is present.³¹ The GAO case study of

24. *Id.* at 31.

25. Further evidence comes from a 2004 GAO case study that compared six markets having competing broadband service providers with six similar markets lacking such competition. GAO found that in five of the six competitive markets, expanded basic cable rates were lower than in similar markets without such competition. Rate differences ranged from 15 to 41%. Telephone service cost between 4 and 33% less in five of the markets, and about the same in the remaining one. High-speed Internet service cost 20 to 38% less in three of the markets with competition, and about the same in the other three. On average, rates for a package of cable, high-speed Internet, and telephone service were 15% lower in the markets with competition. See GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 15, at 12, 15-16.

26. THOMAS W. HAZLETT & MATTHEW L. SPITZER, PUBLIC POLICY TOWARD CABLE TELEVISION: THE ECONOMICS OF RATE CONTROLS 30 (1997).

27. See *Report on Cable Industry Prices*, *supra* note 3, at 29.

28. Hazlett, *Competition vs. Franchise Monopoly in Cable Television*, *supra* note 6, at 80, 91.

29. Hazlett, *supra* note 14, at 208.

30. GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 21, at 59-61.

31. GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 22, at 31. The presence of a wireline video competitor increases the number of channels offered by the incumbent cable company by about eight percent.

broadband service providers, meanwhile, found that cable companies tend to respond to these new competitors by lowering prices, expanding service offerings, and improving customer service.

These findings undercut the natural monopoly justification for entry regulation, which posits that the market can be served at lowest cost by a single firm. They also cast doubt on the “specialized capital” justification. Even when cable was first deployed in major population centers, jurisdictions with open entry policies had rates no higher than state or national averages, and jurisdictions with competing cable systems had rates lower than monopolized jurisdictions. Open entry and competitive jurisdictions often had much higher cable penetration rates, suggesting that cable service was deployed faster or was of higher quality than in monopoly jurisdictions.³²

Finally, the fact that different scholars using different data and different methods have reached the same conclusion over the course of two decades also undermines any claims that the competition and low prices are transitory, “unsustainable” phenomena. The benefits of video competition are conclusive.

2. Nonprice concessions

Regulatory mandates in franchise agreements increase costs, and possibly prices. Franchises granted by local authorities often include many “nonprice concessions” by the cable operator. These include such things as channels devoted to public, educational, and government use (“PEG” channels), free wiring and connection of local public institutions, community programming capacity that includes studio space and equipment for local government use, institutional networks linking different government facilities such as the fire department and city hall, excess channel capacity, and other perquisites. Such mandates are potentially dangerous for consumers because, unlike franchise fees, they are not effectively regulated by federal legislation. Indeed, even though the 1984 Cable Act now prevents localities from charging franchise fees in excess of five percent, a local franchising authority can now simply demand more in-kind services instead.³³

Several studies reveal that nonprice concessions significantly raise cable costs. Examining data from the early 1980s, Hazlett found that total annualized costs of uneconomic investments made due to franchising were equal to 16-19% of annual cable revenue. Annualized costs of lobbying for the franchise equaled about 4% of annual

32. Hazlett, *Competition vs. Franchise Monopoly in Cable Television*, *supra* note 6, at 84-87, 90-91.

33. Hazlett, *supra* note 14, at 216

revenues.³⁴ Similarly, a 1984 survey of cable operators by Mark Zupan showed that nonprice concessions significantly raise cable costs. Nonprice concessions accounted for 26% of building costs and 11% of operating expenses.³⁵ Zupan's econometric analysis found that the monthly rate for basic cable would have been an average of 49¢, or about 5.2%, lower in the absence of nonprice concessions.³⁶ Additionally, the survey found that much of the capacity created as a result of the nonprice concessions goes largely unused, and operators indicated that they would never freely invest in such systems.³⁷ PEG channels, the local community programming very often required by franchisors, have little or no effect on demand for cable. "Televised city council meetings and local high school football games simply do not sell many subscriptions for an operator."³⁸

It is especially difficult to discern how much of the cost of nonprice concessions is passed through to consumers, because many of these concessions are fixed and sunk costs. As such, they should have no effect on current cable prices unless the prices are effectively regulated and the regulator permits the firm to pass the costs through to consumers. At the time of Zupan's survey, many localities regulated cable rates. Franchise agreements may well have involved tradeoffs in which the cable firms received the right to charge higher prices if they provided more free or discounted services that local governments wanted. Today, the regulatory situation is different. Since most consumers face deregulated cable prices, cable companies would presumably charge the same profit-maximizing prices regardless of how nonprice concessions affect their fixed or sunk costs. This is just an application of the tried-and-true economic principle that in the absence of price regulation firms tend to set prices based on a comparison of marginal costs and marginal revenues.

There is one circumstance in which nonprice concessions might affect consumer prices by affecting the firm's perceived marginal costs. If local governments require cable companies to provide larger nonprice concessions (or more funding for nonprice concessions) as the number of subscribers or revenues rise, then the cable company is likely to perceive that funding requirement as a marginal cost. In effect, it is a tax that varies with revenues or with the number of subscribers. Comments filed

34. Thomas W. Hazlett, *Private Monopoly and the Public Interest: An Economic Analysis of the Cable Television Franchise*, 134 U. PA. L. REV. 1335, 1401 tbl.3 (1986).

35. Mark A. Zupan, *The Efficacy of Franchise Bidding Schemes in the Case of Cable Television: Some Systematic Evidence*, 32 J.L. & ECON. 401, 405 (1989).

36. *Id.* at 417. Percentage calculated by dividing 49¢/month by the average monthly rate for basic service of \$9.35. *Id.* at 442.

37. *Id.* at 405-6.

38. *Id.* at 406.

by nearly 200 local governments in the FCC's video franchising proceeding reveal that many franchising authorities require or authorize cable companies to impose a specific fee on each subscriber each month, usually to support PEG channels.³⁹ Thus, PEG fees are the most likely nonprice concessions to affect prices paid by consumers.

3. Franchise fees

Franchise regulation also involves fees, the costs of which are passed through to consumers. Federal regulation limits franchise fees to five percent of a cable company's gross revenues from the sale of video services. The five percent franchise fee acts as an excise tax on services sold by companies that hold cable franchises. To the extent that this fee merely reimburses the local government for costs associated with the video provider's use of the public rights-of-way, it provides an accurate price signal that makes cable firms take these costs into account. To the extent that the fee exceeds the actual costs, then it simply forces the price of video service higher and gives the local government a stake in higher prices.

The data on cable rates gathered in FCC surveys do not include the cost of franchise fees.⁴⁰ Thus, the maximum five percent fee imposes an additional cost on consumers over and above the price increases identified in the GAO studies.

C. An estimate of the total costs of franchise regulation

Anticompetitive exclusion, cost-increasing mandates, and franchise fees all affect consumer welfare. They do so in two distinct ways. The price increases transfer wealth from consumers to cable firms and local governments. In addition, consumers purchase and use less cable service in response to the price increase. Fewer consumers subscribe to cable, and the consumers in areas without direct cable competition tend to receive a lower-quality package because it has fewer channels. The value consumers forego because less or lower-quality service is purchased is an important, but hidden, cost of regulation.

39. We searched for every comment filed by a city, county, town, village, or township using the FCC's Electronic Comment Filing System, http://gulfoss2.fcc.gov/prod/ecfs/comsrch_v2.cgi. Approximately 175 local entities are represented. The most common form of PEG fee mentioned was a monthly per subscriber charge. In a few cases the fee is expressed as a percentage of gross revenues—as high as three percent in the case of Bowie, Maryland.

40. Telephone Interview with John Scott, Industry Analysis Division, Media Bureau, Federal Communications Commission, in Washington, D.C. (Jan. 27, 2006). This is also implied by the fact that the federal law allows cable operators to list the franchise fee as a separate line item on cable bills. 47 U.S.C. § 542(c) (2000).

1. Price increases and wealth transfers

The price increase transfers money from consumers to cable companies and/or local governments. Economists call this effect the “wealth transfer.” It is equal to $\Delta p \cdot q$, where Δp is the price increase caused by regulation and q is the amount of service purchased.

For cable franchising, Δp is the sum of three costs: (a) the price increase that occurs because of market power, (b) the price increase caused by the increased costs created by nonprice concessions demanded by local franchising authorities, and (c) the five percent franchise fee.

a. Price increase due to market power

We can calculate (a) from data and studies that assess the effect of wireline video competition on cable rates. The most recent and careful study appears to be the 2005 GAO study, which uses 2004 data to estimate that wireline video competition reduces monthly cable rates by about 15.6%.⁴¹ In 2004, the monthly rate for basic, expanded basic, and equipment rental in markets without wireline competition was \$45.52—virtually identical to the weighted average of \$45.56 in all markets the FCC designated as “noncompetitive.”⁴² A 15.6% reduction equals \$7.10 per month.

According to FCC data, 3.09% of cable subscribers are in markets with wireline video competition.⁴³ Total cable subscribership stood at 66.1 million in 2004.⁴⁴ Therefore, approximately 2 million cable subscribers were in markets with wireline video competition, leaving about 64 million in markets without wireline video competition. If these 64 million consumers paid an average of \$7.10 more per month than they would have paid in the presence of wireline video competition, the

41. GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 22, at 31. GAO’s statistical approach draws upon, and is consistent with, best practices in the scholarly literature.

42. Calculated from figures in the *Report on Cable Industry Prices*, *supra* note 3, at attach. 1, and subscribership information in the Federal Communications Commission’s Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Twelfth Annual Report*, 21 FCC Rcd. 2,503, tbl.B-1 (2005) [hereinafter CABLE COMPETITION REPORT]. Other markets the FCC deemed competitive were those where the incumbent was found to face adequate competition from DBS or wireless cable, or where the incumbent had a penetration rate below a designated threshold. The weighted average price for all of these markets lacking wireline competition is about the same as in noncompetitive markets because prices in markets with competition from wireless cable are actually higher than prices in noncompetitive markets.

Since the FCC averages may suffer from inaccuracies identified in *supra* note 21 a more accurate calculation would use averages for noncompetitive and wireline competition markets derived from the GAO’s (2005) data set. Unfortunately, GAO’s data set includes some proprietary data that are not available to the public, so the FCC figures are the best available to us.

43. *Report on Cable Industry Prices*, *supra* note 3, at attach.1.

44. CABLE COMPETITION REPORT, *supra* note 42, at app.B, tbl.B-1.

wealth transfer from the price increase on basic, extended basic, and equipment rental totaled \$5.5 billion in 2004.

FCC data also permit a rough estimate of the wealth transfer that occurs because incumbents who do not face wireline video competition can charge higher prices for digital cable. The weighted average price of the digital tier in markets lacking wireline video competition equals \$16.06 per month, versus \$15.64 in the markets with wireline video competition. The \$5.00/year difference, multiplied by an estimated 22.5 million digital subscribers, yields a wealth transfer in 2004 of \$113 million.⁴⁵

We have found no data from recent years that would let us assess whether franchising restrictions allow incumbent cable operators to charge higher prices for premium channels. To the extent that they can do so, our calculations understate the effects of market power on prices paid by consumers.

b. Nonprice concessions

The cost of nonprice concessions is more difficult to peg, as the FCC does not systematically gather data on the costs, and few studies examine their effect on rates. Earlier studies identified very large costs associated with nonprice concessions, especially uneconomical investments.⁴⁶ One systematic survey, conducted by Mark Zupan in 1984, suggests that nonprice concessions equal between one percent and 6.45% of costs.⁴⁷

Another clue about the cost of nonprice concessions comes from Comcast's assertion that it spends \$100 million annually to support PEG channels.⁴⁸ According to Comcast's 2004 annual report, the company

45. Calculated from data on total subscribership, digital subscribership, and digital tier price in REPORT ON CABLE INDUSTRY PRICES, *supra* note 22, at attach. 12, 16, and CABLE COMPETITION REPORT, *supra* note 42, at app.B, tbl.B-1. The price difference for digital is based on a comparison of raw averages compiled by the FCC, not econometric analysis that controls for other factors affecting rate differences. Nevertheless, GAO's statistical analysis of basic plus extended basic rates finds that competition led to a 2004 rate differential (15.6%) slightly larger than that identified in the FCC's comparisons of average price data in Table 1 (14.82%). If the same relationship exists between raw averages and the results that an econometric analysis of digital cable would find, our calculation may slightly understate the wealth transfer.

46. Hazlett, *supra* note 34.

47. Zupan classifies franchise fees as nonprice concessions; the figures cited above omit franchise fees. Zupan lists a category of "other" operating costs associated with franchising that are equal to about 1.1% of revenues from basic service. An additional category of "non-operating" costs associated with franchising amount to about 2.8% of revenues from basic service. Another table in Zupan's study calculates that operating costs associated with nonprice concessions account for about 6.45% of costs. Figures are calculated from data in Zupan, *supra* note 35, at 406, 442-43.

48. CABLE COMPETITION REPORT, *supra* note 42, at ¶ 136.

had 21.5 million cable subscribers in that year⁴⁹, which implies an expenditure on PEG channels equal to \$4.65 per subscriber. That equals 38.75 cents per subscriber per month, or just under one percent of the price of basic, extended basic, and equipment rental.

In response to the FCC rulemaking, about 175 cities, counties, and other local governments filed comments describing their franchising processes.⁵⁰ Approximately 40 mentioned that they assess a fee on cable bills to support the operating costs of PEG channels (and sometimes other public access mandates). These fees ranged between 5 cents and \$1.25 per subscriber per month. The fees identified by larger cities tended to be between 40¢ and \$1.00. A few local authorities state the PEG fee as a percentage of gross revenues – in one case as high as three percent. Numerous other local franchising authorities stated that the cable company supported PEG channels and other government-mandated services through mandatory or voluntary contributions of a specified dollar amount. Since they did not provide subscribership numbers, it is not possible to convert these dollar amounts into per-subscriber figures. PEG channels, of course, are not the sole form of nonprice concession.

It is clear that the costs of nonprice concessions are substantial, but it is unclear how much of these costs are passed on to consumers. We conservatively assume that nonprice concessions add one percent per year to the price consumers pay for cable, which is consistent with the Comcast figures and the lower range of the PEG fees in larger cities. As noted above, the PEG fee on cable bills is the cost most likely to be passed on to consumers, because it is the type of PEG cost that cable operators are most likely to perceive as an increase in marginal cost. A one percent PEG fee would raise approximately \$350 million from cable subscribers in markets that lack wireline video competition.⁵¹ An additional \$16 million comes from the 2 million cable subscribers in markets with wireline video competition and the 1.4 million BSP subscribers, which the FCC does not include in its count of cable subscribers.

c. Franchise fee

The franchise fee applies to all cable consumers, not just those in the markets that lack wireline video competition. Formally, cable companies pay the fee, but they usually add a separate charge for the fee

49. COMCAST, 2004 ANNUAL REPORT 22 (2004), *available at* <http://ccbn.mobular.net/ccbn/7/981/1039>.

50. Method used for gathering these data is described *supra* note 39 and accompanying text.

51. A one percent PEG fee times a \$45.52 average monthly cable bill equals a price increase of 46¢/month, or \$5.52 per year. Multiplying this figure times 64 million subscribers yields \$350 million/year.

onto the consumer's bill. The add-on by itself, however, does not tell us whether the total price paid by the consumer actually rises by an amount equal to the fee. One of the most well-known tenets of the economics of taxation is that the party that formally "pays" a tax does not necessarily bear the burden of the tax. The incidence of the tax—who really pays—depends on the elasticities of supply and demand, as well as the competitiveness of the market.

As a percentage of gross revenues, the franchise fee is a product-specific *ad valorem* tax. Economic theory shows that when a product is supplied in a competitive market at constant marginal cost, a tax on that product is fully passed through to consumers.⁵² If marginal cost is not constant, then the extent of pass-through depends on the relative elasticities of supply and demand.⁵³ There is little reason to believe that a cable company's supply curve is not highly elastic; indeed, in the short run marginal cost may even be falling due to economies of density. Thus, cable companies in competitive markets are likely to pass the costs of the franchise fee through to consumers. If the firm has some market power—which may be the case in markets with two cable companies and is surely the case in markets with only one cable company—then the tax incidence is less clear. Economic theory suggests that a firm with market power could pass all or only some of the cost through to consumers – or it may even be able to raise prices by more than the amount of the tax.⁵⁴ The actual result depends on the behavior of costs, characteristics of consumer demand, and the competitiveness of the market. Thus, whether the cable companies with market power pass the entire franchise fee through to consumers is an empirical question.

Most empirical studies of cable markets report results consistent with a complete pass-through of the franchise fee to consumers. Several of the most recent studies find that the franchise fee has no statistically significant effect on cable prices.⁵⁵ This finding is consistent with full

52. See, e.g., EDGAR BROWNING & JACQUELINE BROWNING, *PUBLIC FINANCE AND THE PRICE SYSTEM* (1979).

53. See John F. Walker, *Do Economists Ever Agree? The Case of the Teaching of Excise Tax: Shifting and Incidence*, 27 NAT. TAX. J. 351 (1974).

54. See Simon P. Anderson, et al., *Tax Incidence in Differentiated Product Oligopoly*, 81 J. PUB. ECON. 173 (2001); Paul G. Barnett, et al., *Oligopoly Structure and the Incidence of Cigarette Excise Taxes*, 57 J. PUB. ECON. 457 (1995); Jeremy I. Bulow & Paul Pfleiderer, *A Note on the Effect of Cost Changes on Prices*, 91 J. POL. ECON. 182 (1983).

55. T. Randolph Beard, et al., *Fragmented Duopoly: A Conceptual and Empirical Investigation* 78 J. BUS. 2377, 2390 (2005) (1991-92 data); Richard O. Beil, Jr., et al., *Competition and the Price of Municipal Cable Television Services: An Empirical Study*, 6 J. REG. ECON. 401, 410 (1993) (1989 data); Austan Goolsbee & Amil Petrin, *The Consumer Gains from Direct Broadcast Satellites and the Competition with Cable TV*, 72 ECONOMETRICA 251, 372 (2004) (2001 price data).

One study that finds franchise fees have a statistically significant effect on basic cable prices is John W. Mayo & Yasuji Otsuka, *Demand, Price Regulation, and Regulation:*

pass-through of the costs to consumers, because the cable rate data used in these studies does not appear to include franchise fees; companies add the franchise fees onto the customer's bill along with taxes and other regulatory charges. If cable companies were not fully passing through the franchise fee to consumers, then a higher franchise fee would be associated with lower cable rates, since the company would reduce the price of cable somewhat to compensate for the franchise fee.⁵⁶

Prior to the 1992 Cable Act, which capped franchise fees at five percent, franchise fees ranged from zero to as high as nine percent.⁵⁷ The Cable Act appears to have made franchise fees much more uniform. Out of approximately 175 local governments that filed comments in the FCC's video franchising proceeding, only three reported franchise fees substantially different from five percent. Montrose, CO, White, SD, and Esopus, NY each charge three percent.⁵⁸ Therefore, we assume a franchise fee equal to five percent of gross cable revenues.

If cable operators did not have to pay a five percent franchise fee, and if competition forced them to pass this cost saving through to consumers, then the final price of basic, extended basic, and equipment rental is \$2.28 per month higher in markets without wireline video competition and \$1.94 higher in markets with wireline video competition.⁵⁹ The fee, multiplied by 64 million subscribers in markets

Evidence from the Cable TV Industry, 22 RAND J. ECON. 396, 408 (1991). Using data from the early 1980s, they find that a one percent increase in the franchise fee is associated with an 8.1 cent/month increase in basic cable rates, which is approximately a one percent increase. They do not specify whether their cable rate data are pre- or post-fee prices. If post-fee, their result suggests 100% passthrough of the cost of franchise fees to consumers. If pre-fee, their result suggests that the franchise fee prompts cable companies to increase prices by more than the amount of the fee. However, a study by one of the same authors using the same data finds that the effect of franchise fees on basic cable prices disappears after controlling for the quality of service. See Yasuji Otsuka, *A Welfare Analysis of Local Franchise and Other Types of Regulation: Evidence from the Cable TV Industry*, 11 J. REG. ECON. 157, 176 (1997).

The other principal study that finds franchise fees may have a statistically significant effect on cable prices is Zupan's empirical study, based on 1984 data gathered via a telephone survey. Zupan appears to include franchise fees in the cable price. He finds that basic cable rates would have been 49¢ (or 5.2%) lower in the absence of nonprice concessions including franchise fees. Zupan, *supra* note 35, at 417. The costs most likely to affect cable rates would be the costs that are not fixed: franchise fees and "other operating costs" associated with franchising. His data imply an average franchise fee of about 3.1% of gross revenues and "other operating costs" of franchising equal to 1.1% of the price of basic service, for a total of 4.2%. *Id.* at 442-43. Zupan's price effect, therefore, implies that the franchise fee and increased operating costs associated with franchising are fully passed through to consumers.

56. We cannot, however, be 100% certain that the fee is fully passed through, because the studies might also find no effect if franchise fees are relatively uniform across jurisdictions.

57. See, e.g., Mayo & Otsuka, *supra* note 55, at 400.

58. Method used for gathering these data is described in *supra* note 39.

59. In an earlier version of our analysis, our calculation assumed that the observed prices of cable service equals the price without the fee times 1.05. Hence, we calculated that the price without the fee would equal the observed price divided by 1.05, which is equivalent

without wireline video competition, yields an annual wealth transfer of \$1.75 billion. We multiply the \$1.94 fee times 3.4 million, which represents the 2 million cable subscribers in markets with wireline video competition plus 1.4 million BSP subscribers, which are not included in the FCC's count of cable subscribers. The wealth transfer from the subscribers in these more competitive markets equals \$79 million.

These calculations show the wealth transfer just for basic, extended basic, and equipment rental. The franchise fee, however, applies to cable companies' gross video service revenues, which include premium channels. The National Cable & Telecommunications Association (NCTA) estimates that cable companies paid \$2.4 billion in franchise fees in 2004.⁶⁰ We use this figure as our estimate of franchise fees paid by the cable companies that do not face wireline video competition.

d. Total wealth transfer

Table 3 shows the total wealth transfers in both types of markets. For each type of market, the figures in each row are cumulative, adding the effect of the new factor identified in each row. (The one exception is the digital price change and the number of digital subscribers; those

TABLE 3: WEALTH TRANSFERS

Effect	Monthly Price Change	Subscribers	Wealth Transfer
<i>Markets without wireline competition</i>			
Market Power – Basic, extended, equipment	\$7.10	64 mil.	\$5.5 bil.
+ Nonprice concessions	\$7.56	64 mil.	\$5.8 bil.
+ Franchise fees	\$9.83	64 mil.	\$8.2 bil.
+ Market Power – Digital	\$5.00 (digital)	22.5 mil. (digital)	\$8.3 bil.
<i>Markets with wireline competition</i>			
Nonprice concessions	\$0.39	3.4 million	\$16 mil.
+ Franchise fees	\$2.33	3.4 million	\$96 mil.
<hr/>			
TOTAL ALL MARKETS	N.A.	67.4 MIL.	\$8.4 BIL.

to multiplying the observed price by .952. We have since learned that the FCC cable rate data do not include franchise fees, so pass-through of a five percent fee would raise the price to the consumer by five percent.

60. NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION, 2005 MID-YEAR INDUSTRY OVERVIEW 22 (2005), available at http://i.ncta.com/ncta_com/PDFs/CableMid-YearOverview05.pdf.

figures are for digital only.) By far the largest effect stems from market power, which leads to a \$5.5 billion increase in consumer costs. Nonprice concessions and franchise fees raise the total wealth transfer to \$8.4 billion. Most of these costs occur in the markets lacking wireline video competition, simply because the vast majority of cable subscribers are located in these markets.

2. Forgone consumer benefits

In addition to redistributing money from consumers to cable companies and local governments, the price increase caused by franchise regulation leads to changes in consumer behavior. Consumers are worse off when they purchase less of a service because prices are higher than they would otherwise be. Theoretically, their loss can be measured by the difference between the value of the service to them and the price they would have paid. Economists call this difference the “consumer surplus” forgone as a result of the price increase.

In cable markets, franchise regulation leads to forgone consumer surplus in two ways. First, price increases for cable service lead to lower subscription levels. Second, the absence of wireline video competition reduces quality by reducing the number of channels the cable operator offers as part of its extended basic package.

In general terms, the value of the forgone consumer surplus can be calculated as $.5 \cdot \Delta p \cdot \Delta q$.⁶¹ The term Δp refers to the price increase caused by franchise regulation, and Δq is the reduction in quantity sold due to the price increase. In other words, the forgone consumer surplus equals approximately one-half of the change in price induced by regulation times the change in quantity induced by the price change.

The trickiest aspect of these calculations—aside from actually getting the relevant data—is ascertaining how much of a change in quantity occurs as a result of a regulation-induced price change. The change in quantity can be calculated from the change in price with the aid of an estimate of the price elasticity of demand. The price elasticity of demand measures how responsive quantity is to price. It is equal to the percentage change in quantity divided by the percentage change in price. The elasticity of demand is defined as $(\Delta q/q)/(\Delta p/p)$. If one has an estimate of the elasticity and also the values of p , Δp , and q , then one can solve algebraically for Δq and estimate the forgone consumer surplus.

Virtually every study of cable television subscription demand finds that demand is very responsive to price. During the past 25 years, studies have produced demand elasticity estimates ranging from -1.5 to as high

61. See Jerry Hausman & Howard Shelanski, *Economic Welfare and Telecommunications Regulation: The E-Rate Policy for Universal-Service Subsidies*, 16 YALE J. ON REG. 19, 40 (1999).

as -5.9. Most fall in the range between -2.4 and -3.⁶² The most recent study, published by GAO in 2005, found an elasticity of -2.63, which is very close to the -2.7 figure calculated by Hazlett using data on the cable industry's 2001 cash flow margin.⁶³ We assume a demand elasticity equal to -2.

All of the relevant data on monthly cable rates and subscribership can be found in either FCC reports or independent scholarly studies. Unfortunately, the available data cover only basic, extended basic, and equipment rental—the “monthly cable rate” discussed in FCC surveys and the GAO studies. Our estimate will therefore understate the forgone consumer surplus, perhaps by a great deal, because it will not include any forgone consumer value due to reduced purchases of digital cable or premium channels that may result from franchise regulation.

The forgone consumer surplus must be calculated separately for markets that have wireline video competition and markets that lack wireline video competition. For the markets that lack wireline video competition, the Δp that affects cable subscriptions is the sum of three costs: (a) the price increase that occurs because franchising gives incumbent cable companies market power, (b) the cost of nonprice concessions, and (c) the five percent franchise fee.

The absence of wireline video competition also affects quality by reducing the number of channels offered as part of the extended basic package. Quality affects only the forgone consumer surplus, not the wealth transfers. To estimate the size of forgone consumer surplus due to fewer channels in markets that lack wireline video competition, we start by comparing the average price per channel in markets with and without wireline video competition, using FCC data from Table 1. The difference between these prices, multiplied by 12 months, is our Δp per channel per year. The lower price per channel in competitive markets is associated with a larger number of channels in the extended basic package, and so the difference between the number of channels in each market provides our Δq for channels. The formula $.5 \cdot \Delta p \cdot \Delta q$ gives us the forgone consumer surplus due to quality reduction for an “average” consumer in markets that lack wireline video competition. Multiplying this figure times the predicted number of subscribers in such markets

62. GEORGE S. FORD & THOMAS M. KOUTSKY, FRANCHISE FEE REVENUES AFTER VIDEO COMPETITION: THE “COMPETITION DIVIDEND” FOR LOCAL GOVERNMENTS 8 (Phoenix Policy Center, Bulletin No. 12, Nov. 2005), available at <http://www.phoenix-center.org/PolicyBulletin/PCPB13Final.pdf>. The FCC's 2002 econometric analysis found an elasticity of -2.19. See *Report on Cable Industry Prices*, *supra* note 3, at 29.

63. See GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 22, at 31; Hazlett, *supra* note 14, at 211.

TABLE 4: FORGONE CONSUMER SURPLUS AND TOTAL CONSUMER COST

Effect	Δ in no. of subscribers	Forgone consumer surplus	Wealth Transfer	Total consumer cost
<i>Markets without wireline competition</i>				
Market Power – Basic, extended, equipment	20 mil.	\$850 mil.	\$5.5 bil.	\$6.3 bil.
+ Nonprice concessions	21 mil.	\$964 mil.	\$5.8 bil.	\$6.8 bil.
+ Franchise fees	28 mil.	\$1.6 bil.	\$8.2 bil.	\$9.8 bil.
+ Market Power – Digital	NA	\$1.6 bil.	\$8.3 bil.	\$10 bil.
+ Quality effect	4.8 (channels)	\$2 bil.	\$8.3 bil.	\$10.3 bil.
<i>Markets with wireline competition</i>				
Nonprice concessions	69,000	\$160,000	\$16 mil.	\$16.2 mil.
+ Franchise fees	413,000	\$5.8 mil.	\$96 mil.	\$102 mil.
TOTAL ALL MARKETS	28.1 MIL.	\$2 BIL.	\$8.4 BIL.	\$10.4 BIL.

provides an estimate of the total consumer surplus forgone due to the lower number of channels in the markets with less competition—about \$375 million annually.⁶⁴

For markets that have wireline video competition, Δp includes only the cost of nonprice concessions and the franchise fee. There is no forgone consumer surplus due to the quality effect, because these competitive markets provide the quality baseline against which the less competitive markets are compared.

Table 4 shows the forgone consumer surplus, wealth transfer, and total cost to consumers that result from various aspects of franchise regulation. As in Table 3, the figures in each row for each type of market are cumulative, with the exception of the change in quantity numbers for digital and channels. Inclusion of the forgone consumer surplus raises the total cost to consumers substantially—by about \$2 billion.

3. Caveats and sensitivity analyses

Table 5 presents sensitivity analyses showing how the results change if various assumptions change. Dollar figures are carried out to more decimal places in this table because some of the differences in results that stem from different assumptions are relatively small. Estimates of forgone consumer surplus depend on the assumed elasticity of demand for cable service. The total wealth transfer remains unchanged, since it results from the increased prices paid by existing

64. This is a very rough, back-of-the-envelope calculation. It may be a conservative estimate, for several reasons. First, GAO's model finds that the presence of wireline video competition is associated with an 8.4% increase in the number of cable channels, which works out to an increase of 5.9 channels instead of the 4.8 channels implied by the FCC data in Table 1. See GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 22, at 31. Second, previous analyses of the value of additional cable channels find that one additional channel is worth about \$1.00 per month (on average) to consumers. See ROBERT W. CRANDALL AND HAROLD FURCHTGOTT-ROTH, CABLE TV: REGULATION OR COMPETITION? 56 (1996). If wireline video competition increases the average number of channels by 4.8, that makes the average consumer better off by $\$4.80 \times 12$ months = \$57.60 per year, for a total of \$5.2 billion annually when summed over the predicted number of cable customers. Crandall and Furtchgott-Roth's study, however, uses data from 1992, and the media number of channels in the cable systems in their sample appears to be about 32. *Id.* at tbl.B-1 (summing the mean values of BASAT, the number of satellite-transmitted channels offered on the cable system, and OFFAIR, the number of broadcast and microwave channels offered on the cable system). Since channel capacity has expanded greatly since then, the marginal value to consumers of additional channels may be lower now. Consistent with this hypothesis, studies attempting to measure the marginal value of particular channels find that this value is statistically indistinguishable from zero for many channels. See, e.g., Noel D. Uri & Keith Brown, *Cable Service and Its Implicit Marginal Valuation*, 16 TECH. ANAL. & STR. MGMT. 539 (2004); Diane Bruce Anstine, *How Much Will Consumers Pay? A Hedonic Analysis of the Cable Television Industry*, 19 REV. INDUS. ORG. 129 (2001).

subscribers. When the elasticity of demand ranges from -1.5 to -2.5, the forgone consumer surplus varies from \$1.58 billion to \$2.45 billion, and so the total cost to consumers varies from \$9.99 billion to \$10.87 billion.

TABLE 5: SENSITIVITY ANALYSES

	Δ in no. of subscribers	Forgone consumer surplus	Wealth Transfer	Total consumer cost
Baseline	28.1 mil.	\$2.01 bil.	\$8.42 bil.	\$10.43 bil.
<i>Change in assumption</i>				
Elasticity = -1.5	21.1 mil.	\$1.58 bil.	\$8.42 bil.	\$9.99 bil.
Elasticity = -2.5	35.1 mil.	\$2.45 bil.	\$8.42 bil.	\$10.87 bil.
<i>Mutatis mutandis</i>				
11.5% price effect	32.1 mil.	\$1.91 bil.	\$7.62 bil.	\$9.53 bil.
<i>All MVPD subscribers</i>				
11.5% price effect	30.1 mil.	\$1.95 bil.	\$8.48 bil.	\$10.43 bil.

Regardless of the elasticity, the total costs to consumers of video franchising are large.

Another key variable is the size of the price effect from wireline video competition. The 15.6% figure we use is derived from the coefficient on the wireline competition variable in the cable price equation in GAO's 2005 study. In economic terminology, this the "ceteris paribus" effect of the price change, holding all other factors constant. However, the GAO model involves multiple equations, and the dependent variables predicted by each equation also appear as independent variables in the cable price equation.⁶⁵ In addition to its direct effect on cable prices, wireline video competition affects the number of cable subscribers, the number of cable channels, and direct broadcast satellite penetration, and these in turn affect cable prices. Thus, wireline video competition has both direct and indirect effects on cable prices. The net effect of the price change after all factors adjust—what economists call the "mutatis mutandis" effect—may be different from the ceteris paribus effect. The direct effect is a 15.6% reduction. After accounting for all of the indirect effects, wireline video competition reduces cable prices by about 11.5%⁶⁶—a figure that implies smaller wealth transfers and deadweight losses than we calculated.

It would be a mistake, however, to simply substitute 11.5% for

65. The generic problem of interpreting coefficients in multi-equation systems is addressed in George S. Ford & John D. Jackson, *On the Interpretation of Policy Effects from Estimates of Simultaneous Systems of Equations*, 30 APPLIED ECONOMICS 995 (1998).

66. Ford & Koutsky, *supra* note 62, at 10.

15.6% in our calculations, because the resulting figures would dramatically under-estimate the full effects of wireline competition. Wireline competition has an indirect effect on cable prices through its effects on the number of cable subscribers, the number of cable channels, and direct broadcast satellite penetration. This price effect, in turn, has an effect on the number of cable subscribers. In addition, wireline competition has other, indirect effects on the number of cable subscribers—most importantly via its effect on direct broadcast satellite penetration. GAO's model implies that direct broadcast satellite penetration declines by about 40% in the presence of wireline video competition,⁶⁷ presumably because the lower price makes cable a more attractive option compared to satellite. These satellite customers shift to cable. Therefore, a complete calculation of competition's effect on the number of cable subscribers must include both the price effect and the effect of reduced satellite subscription. We use this net effect of competition on cable subscribership as our Δq . Table 5 shows that, for a demand elasticity equal to -2, the *mutatis mutandis* calculation leads to a relatively small change in the results. Compared to the *ceteris paribus* calculation, the wealth transfer under the *mutatis mutandis* calculation is about \$800 million less, the forgone consumer surplus is \$100 million less, and the total cost to consumers is \$900 million less. Obviously, the cost of video franchising is still substantial.

One objection to both the *ceteris paribus* and the *mutatis mutandis* calculations is that they assume satellite providers will leave their prices unchanged and simply allow cable competition to erode their market share. This may be a reasonable assumption under current arrangements, where only three percent of cable subscribers are in markets with direct wireline competition. Satellite providers likely regard the price of cable in markets without wireline competition as the principal price they compete against in their nationwide pricing plans. A substantial increase in wireline video competition would likely change the competitive dynamic and prompt satellite companies to lower their prices in order to retain subscribers they would otherwise lose.

The GAO model does not permit us to examine the effects of satellite price reductions in response to cable price reductions, because the price of satellite service is not a variable in the model. Since it is a cross-sectional model (all data come from the same time period) and satellite companies set nationwide prices, there is no variation in satellite prices that could be incorporated into the model. However, we can roughly approximate the effects of satellite price reductions by treating satellite subscribers as if they were customers in cable markets that lack wireline competition. This implicitly assumes that satellite providers

67. *Id.*

lower their prices to the same extent that cable companies do in response to increased competition. This is an admittedly arbitrary assumption, but arguably more realistic than assuming that satellite firms do not lower their prices at all.

The final entry in Table 5 shows the results when we add satellite subscribers to cable subscribers and then perform the calculations. The results are virtually the same as our original calculations. More consumers would remain satellite subscribers, but they would benefit from lower prices.

Another “reality check” on our calculations involves comparing our projections of subscribership under ubiquitous wireline video competition to the total number of households and housing units in the nation. The Census Bureau estimates that there were 112 million households in 2004.⁶⁸ A single household may, of course, have more than one cable subscription, either because some family members subscribe separately or because the household has more than one residence. The Census Bureau estimates that there were about 121 million housing units in the United States in 2003, the most recent figure available.⁶⁹ Our calculations imply that ubiquitous wireline video competition would increase total cable plus broadband service provider subscriptions from 67 million to between 89 and 103 million, depending on the elasticity of demand. The higher estimate implies close to universal cable subscription.

4. Comparison to previous studies

We know of three other economic studies that have estimated the effects of widespread cable competition on consumers: Thomas Hazlett (2005), George Ford and Thomas Koutsky (2005), and Robert W. Crandall and Robert Litan (2006). The first two studies calculate only the effects of widespread wireline video competition on consumer welfare via price reductions, though Hazlett offers ample documentation of the inefficiencies associated with quality differences, nonprice concessions and franchise fees.⁷⁰ Crandall and Litan also include the effects of improved quality.

The Hazlett study develops a model in which market concentration (as measured by the Herfindahl-Herschman Index (HHI), a commonly-used measure of concentration) affects prices, and competitive entry

68. U.S. CENSUS BUREAU, CURRENT POPULATION SURVEY, 2004 ANNUAL SOCIAL & ECONOMIC SUPPLEMENT (2004), available at <http://www.census.gov/population/socdemo/hh-fam/cps2004/tabH1-all.csv>.

69. U.S. CENSUS BUREAU, AMERICAN HOUSING SURVEY FOR THE UNITED STATES (2003), available at <http://www.census.gov/hhes/www/housing/ahs/ahs03/tab1a1.htm> (last visited August 2006).

70. Hazlett, *supra* note 1, at 12-36.

affects the HHI. National data on market shares of MVPD providers are combined with plausible estimates of demand elasticity. Hazlett estimates that widespread wireline video competition would create approximately \$9 billion in consumer benefits annually. About \$3 billion of this amount is a pure efficiency gain, rather than a transfer from cable companies to consumers.⁷¹

Ford and Koutsky estimate the cost to consumers of a one-year delay in competitive wireline video entry. They develop a model of the likely speed and extent of competitive entry over time, then calculate the present value of the reduction in consumer surplus that results from a one-year delay. Employing GAO's estimated 15% price reduction from wireline video competition and a demand elasticity of -1.5, Ford and Koutsky find that a one-year delay would reduce this net present value by \$8.2 billion.⁷²

Crandall and Litan rely on elasticity estimates and regression coefficients estimated in several academic studies, rather than the GAO study. They calculate that introducing wireline video competition in markets that currently lack such competition would initially reduce prices by 18.4%.⁷³ Improvements in quality (the number of channels) would reduce the price savings somewhat by increasing the demand for video service, but also increase consumer value. For a demand elasticity between -1.5 and -2, they conclude that competition would increase consumer surplus by between \$7.46 billion and \$13.99 billion annually.⁷⁴

Like our estimates, the Hazlett and Crandall/Litan studies are "comparative static" analyses that assesses the effect of competition by comparing actual cable prices with those that would exist in a counterfactual case at a single point in time, after all wireline entry occurs and all market adjustments occur. Ford and Koutsky's estimate, on the other hand, assumes that entry occurs gradually over time. Since they model the effects of entry over multiple years, they need to calculate the net present value of consumer benefits over a multi-year time horizon in order to identify the full effects of a one-year delay.

At \$6.3 billion, our estimate of the market power effect is somewhat lower than in any of these other studies, but still in the same neighborhood. We take some comfort in the fact that three different studies employing different models have estimated consumer benefits

71. *Id.* at 65-66.

72. George S. Ford & Thomas M Koutsky, *In Delay There is No Plenty: The Consumer Welfare Cost of Franchise Reform Delay 1* (Phoenix Policy Ctr., Policy Bulletin No. 13, Jan. 2006), available at <http://www.phoenix-center.org/PolicyBulletin/PCPB13Final.pdf>.

73. ROBERT W. CRANDALL AND ROBERT LITAN, CRITERION ECONOMICS, THE BENEFITS OF NEW WIRELINE VIDEO COMPETITION FOR CONSUMERS AND LOCAL GOVERNMENTS 16 (2006).

74. *Id.* at 20.

from entry that are the same order of magnitude as ours. Our unique contribution lies in the inclusion of other costs of franchising, such as its effect on quality (number of channels), nonprice concessions, and franchise fees.

II. THE FCC'S OPTIONS

The FCC might address the anticompetitive effects of local franchising in two ways. First, it could declare that local telephone companies (telcos), which are now entering the video market, are not subject to the regulations that apply to cable operators and therefore need not acquire franchises. Second, the FCC could preempt local franchising laws to the extent that they unreasonably deny franchises to new entrants.

A. Exempting telcos from cable franchise regulations

Title VI of the Communications Act of 1934 governs cable communications.⁷⁵ However, what the average consumer understands simply as “cable TV” is subdivided by the statute into a series of components. The Act applies different regulatory treatment to each of these components. Therefore, how a new service is classified—that is, how it is found to fit within the existing statutory definitions—determines the regulatory obligations that apply. The FCC is effectively the ultimate arbiter of how a new service is classified and thus regulated.⁷⁶

Pay television services are provided by what the statute calls “multichannel video programming distributors” (MVPDs). These include cable television operators, direct broadcast satellite service providers, “wireless cable” providers, and generally any other entity that “makes available for purchase, by subscribers or customers, multiple channels of video programming.”⁷⁷ Any telco that makes a video offering will be considered an MVPD.⁷⁸

All MVPDs are subjected by the Act to a number of regulations. These include closed captioning mandates,⁷⁹ retransmission consent

75. 47 U.S.C. § 521 (2000).

76. 47 U.S.C. § 151 (2000). This is doubly true after the Supreme Court held in *Brand X* that an agency has the ultimate interpretative authority over the statute it administers if that statute is ambiguous, even when a court has previously interpreted the same statute. See *Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967 (2005).

77. 47 U.S.C. § 522(13) (2000).

78. In a filing arguing that its video offering is not subject to franchise regulation, SBC (now AT&T) nevertheless accepts that it will be subject to regulations that apply to MVPDs. See Comments of SBC Commc'ns Inc. to the *Notice of Proposed Rulemaking* in IP-Enabled Services, WC Dkt. No. 04-36 13 (Sept. 14, 2005) [hereinafter *SBC Memo*], http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518157935.

79. 47 C.F.R. § 79.1 (2005).

rules,⁸⁰ and equal employment opportunity standards⁸¹ among others. However, not all MVPDs are subject to franchising regulations. Only “cable operators,” a subset of all MVPDs, must acquire a local franchise before they can provide service.⁸² They must also pay franchise fees and meet other franchise obligations.⁸³ Therefore, if the FCC finds that telcos offering video service do not fit the statutory classification of “cable operators,” they will not be obligated to acquire a local franchise before they are allowed to provide service.

A “cable operator” is defined by the Act as someone who provides “cable service” over a “cable system.”⁸⁴ Therefore, if a telco does not provide “cable service,” or if it does but not over a “cable system,” then it will not be considered a “cable operator” and will thus not be subject to franchise regulations under Title VI.

Additionally, some have suggested that, under the statute, telcos can only offer video services in a few enumerated ways.⁸⁵ Part V of Title VI is entitled, “Video Programming Services Provided by Telephone Companies.” It states in section 651,

To the extent that a common carrier is providing video programming to its subscribers in any manner other than [via radio under Title III or as a common carrier under Title II] . . . , such carrier shall be subject to the requirements of [Title VI], unless such programming is provided by means of an open video system[.]⁸⁶

The claim is that, putting aside radio and common carriage delivery, which the telcos do not plan to employ, the only two ways they may offer video is as a cable operator or as an open video system (OVS).⁸⁷ The FCC expressed a similar point of view when it recently stated,

80. 47 U.S.C. § 325 (2000).

81. 47 U.S.C. § 554(h)(1) (2000).

82. 47 U.S.C. § 541(b) (2000).

83. *Id.*

84. 47 U.S.C. § 522(5) (2000).

85. See Comments of the National Cable & Telecommunications Association to the *Notice of Proposed Rulemaking in IP-Enabled Services*, WC Docket No. 04-36 6-7 (Sept. 9, 2005) (“The 1996 Act offered phone companies four ways in which to enter the cable business. Telcos may provide transmission of video programming [as a common carrier, via radio, or via OVS.] . . . Finally, the statute made clear, by adding Section 651(a)(3)(A) to the Communications Act, . . . that the telcos’ only other option was to provide video programming as a cable operator subject to Title VI.”) [hereinafter *NCTA Memo*], http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518156130.

86. 47 U.S.C. § 571(a)(3)(A) (2000).

87. See *NCTA Memo*, *supra* note 85, at 6-7. An open video system (OVS) is a hybrid classification, created by the 1996 Telecom Act and meant to replace “video dialtone,” which combines elements of common carrier and cable regulation. See Kimberly Auerbach, *OVS: A Platform Worth Investing In?*, 5 MEDIA L. & POL’Y 15 (1996).

The Communications Act provides new entrants four options for entry into the MVPD market. They can provide video programming to subscribers via radio communication, a cable system or an open video system, or they can provide transmission of video programming on a common carrier basis. Any new entrant opting to offer “cable service” as a “cable operator” becomes subject to the requirements of Title VI [and its franchising regulations].⁸⁸

It should first be noted that section 651 is only operable “[t]o the extent that a common carrier is providing video programming.” If the FCC finds that telco offerings are not “video programming” as defined in the Act, then section 652 does not apply. Secondly, even if a telco is offering video programming, the binary choice posed by section 651 is not between OVS and “cable operator” status, but between OVS and “being subject to the requirements of [Title VI].”⁸⁹ As we have seen, if telcos offer video programming, they will be subject to the Title VI regulations that apply to all MVPDs. It does not follow, however, that simply because Title VI applies to telcos that they must necessarily be cable operators. Therefore, nothing in section 651 obliges the FCC to regulate telcos that provide video programming as cable operators subject to franchise regulations.

B. FCC preemption of local franchising rules

The second way the FCC could address the problem of franchising is by preempting local franchising laws to the extent that they unreasonably deny franchises to new entrants. Section 621 of the Communications Act prohibits operators from offering cable service without a franchise.⁹⁰ It also gives local franchising authorities (LFAs) the power to grant those franchises.⁹¹ However, the Act goes on to state in section 621(a)(1) that an LFA “may not grant an exclusive franchise and may not unreasonably refuse to award an additional competitive franchise.”⁹² The only remedy provided by the Act for parties who feel they have been unreasonably denied a franchise is review by a court.⁹³

88. See Implementation of Section 621(a)(1) of the Cable Communications Policy Act of 1984 as amended by the Cable Television Consumer Protection and Competition Act of 1992, *Order*, 21 FCC Rcd. 2,293, ¶ 2 (2005) [hereinafter *Franchising NPRM*].

89. 47 U.S.C. § 571(a)(3)(A) (2000). The legislative history shows no intent of creating a binary choice between OVS and cable operator. H.R. REP. NO. 104-458, at 172 (1996) (Conf. Rep.).

90. 47 U.S.C. § 541 (2000).

91. *Id.*

92. 47 U.S.C. § 541(a)(1) (2000).

93. 47 U.S.C. §§ 541(a)(1), 555 (2000). It should be noted that simply because the Act makes a remedy available to would-be franchisors, it does not follow that Commission enforcement of the section is precluded. See *infra*, note 105 and accompanying text.

The FCC recently began a rulemaking that, if adopted, would allow it to preempt “any law or regulation of a State or LFA that causes an unreasonable refusal to award a competitive franchise in contravention of section 621(a).”⁹⁴ In effect, the FCC would strike down local laws that would, in its judgment, inevitably result in unreasonable denial of franchises. Because the salient economic justifications for franchising are (1) the regulation of natural monopoly, (2) the protection of “specialized capital,” or (3) the management of the public rights-of-way, any local franchising laws or regulations that are inconsistent with these goals, or with some other statutorily granted power, would be good candidates for preemption.

1. The FCC’s preemption authority

The FCC has several sources of authority to preempt local franchising rules that hinder competition. First, Congress has explicitly delegated preemption power to the FCC in section 636(c), which states that “any provision of law of any State, political subdivision, or agency thereof, or franchising authority, or any provision of any franchise granted by such authority, which is inconsistent with this Act shall be deemed to be preempted and superseded.”⁹⁵ Therefore, to the extent that local franchising laws and regulations act to “unreasonably refuse” competitive franchises,⁹⁶ they are preempted by section 636(c). The FCC need only determine which local franchising rules are offending and preempt them subject to its section 1 charge to “execute and enforce the provisions of [the Act].”⁹⁷

Secondly, even if the Commission did not have an express delegation of preemption power, the Supreme Court has held that “a federal agency acting within the scope of its congressionally delegated authority may pre-empt state regulation’ and hence render unenforceable state or local laws that are otherwise not inconsistent with federal law.”⁹⁸ As the Supreme Court explained last year in its *Brand X* decision, “Congress has delegated to the Commission the authority to ‘execute and enforce’ the Communications Act, § 151, and to ‘prescribe such rules

94. *Franchising NPRM*, *supra* note 88, at ¶ 15.

95. 47 U.S.C. § 556(c) (2000).

96. 47 U.S.C. § 541(a)(1) (2000).

97. 47 U.S.C. § 151 (2000).

98. *City of New York v. FCC*, 486 U.S. 57, 63-64 (1988) (quoting *Louisiana Public Serv. Comm’n v. FCC*, 476 U.S. 355, 369 (1986)). The Court concluded that in cases involving preemption by federal regulation, “a ‘narrow focus on Congress’ intent to supersede state law [is] misdirected,’ for ‘[a] preemptive regulation’s force does not depend on express congressional authorization to displace state law.’” *Id.* at 64 (quoting *Fidelity Federal Sav. and Loan Ass’n v. de la Cuesta*, 458 U.S. 141, 154 (1982)). *See also* *Capital Cities v. Crisp*, 467 U.S. 691 (1984) (holding that regulations have no less preemptive effect than federal statutes when Congress has authorized the regulator to exercise its discretion).

and regulations as may be necessary in the public interest to carry out the provisions' of the Act, § 201(b). These provisions give the Commission the authority to promulgate binding legal rules[.]”⁹⁹ Additionally, the FCC has specifically been found to have authority to interpret section 621 and regulate pursuant to it.¹⁰⁰

In preempting local rules that result in unreasonable denials of competitive franchises, the FCC would be acting consistent with the Act and within its delegated authority. The 1984 Cable Act created section 621, which then read, “A franchising authority may award, in accordance with the provisions of this title, 1 or more franchises within its jurisdiction.”¹⁰¹ The 1992 Cable Act amended the section by adding the limitation: “except that a franchising authority may not grant an exclusive franchise and may not unreasonably refuse to award an additional competitive franchise.”¹⁰² The legislative history explains that the purpose of this preemption of local prerogative was to promote competition among two or more cable systems in local franchise areas.¹⁰³ If the FCC finds that localities have enacted laws or rules that result in the unreasonable denial of competitive franchises, then it may preempt those laws in order to give effect to Title VI’s purpose, stated in section 601, to “promote competition in cable communications and minimize unnecessary regulation that would impose an undue economic burden on cable systems.”¹⁰⁴

Unlike applicants who must wait to be “denied [a franchise] by a final decision” of the LFA before they can appeal in court, the FCC need not wait for such a final decision before it can enforce the prohibition on unreasonable refusals. The “final decision” language in section 621(a)(1) applies only to applicants, not the Commission. On the contrary, the Commission is charged with executing and enforcing the provisions of the Act.¹⁰⁵ That includes section 621(a)(1)’s provision that LFAs “may not unreasonably refuse to award an additional competitive franchise.”¹⁰⁶ *Refusing to award* a franchise is not the same thing as *denying* a franchise. The latter implies an affirmative act turning down the request, while the former can be achieved by omission. An LFA can fail to make

99. *Brand X Internet Servs.*, 125 S.Ct. at 2699.

100. *City of Chicago v. FCC*, 199 F.3d 424 (7th Cir. 1999) (holding that FCC has regulatory authority to interpret § 621 and regulate subject to it).

101. Cable Communications Policy Act of 1984, Pub. L. No. 98-549, 98 Stat. 2779.

102. 47 U.S.C. § 541(a)(1) (2000).

103. S. REP. NO. 102-92, at 14 (1991) (“[I]t is clear that there are benefits from competition between two cable systems. Thus, the Committee believes that local franchising authorities should be encouraged to award second franchises. Accordingly, S. 12 as reported, prohibits local franchising authorities from unreasonably refusing to grant second franchises.”)

104. 47 U.S.C. § 521(6) (2000).

105. 47 U.S.C. § 151 (2000).

106. 47 U.S.C. § 541(a)(1) (2000).

a final decision and still be said to have refused to award a franchise if it simply never makes a decision or takes so long to do so that it becomes a moot point. Additionally, an LFA can be said to have refused to award a franchise if the terms it sets out are so onerous that a new entrant could not possibly meet them. Therefore, the Commission has the authority to enforce section 621(a)(1) by preempting state and local policies and practices that result in *de facto* refusals to award competitive franchises.

Another source of FCC preemption authority can be found in section 703 of the 1996 Telecommunications Act, which mandates the FCC and the states to “encourage the deployment . . . of advanced telecommunications capability to all Americans . . . by utilizing . . . regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.”¹⁰⁷ As Levin and Meisel explain, “[n]o discussion of cable television and telecommunications can take place without reference to broadband” because both cable and telephone companies are converging in their plans to offer similar and competing broadband services.¹⁰⁸ To the extent that current franchising policies and practices are retarding the deployment of advanced telecommunications service, the FCC has the authority to preempt those policies and practices. Additionally, competition is the purpose of Title VI as stated explicitly in section 601, and given effect by section 621(a)(1). Therefore, policies and practices that act as anticompetitive barriers to entry, and that lack countervailing effects to offset the harm of lost competition, may be preempted in order to fulfill that purpose.

The FCC also has the authority to adopt rules to implement section 621(a)(1). As noted above, section one of the Act gives the Commission authority “to execute and enforce the provisions” of the Act, and according to the Supreme Court, this includes the authority to “promulgate binding legal rules[.]”¹⁰⁹ Section four of the Act further states that “[t]he Commission may perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this Act, as may be necessary in the execution of its functions.”¹¹⁰

2. Limitations to FCC authority

The FCC may not preempt local laws or rules explicitly sanctioned by the Act or consistent with the express provisions of the Act.¹¹¹ For

107. Telecommunications Act of 1996 § 706, 47 U.S.C. § 157 (2004).

108. Stanford L. Levin & John B. Meisel, *Cable Television and Competition: Theory, Evidence and Policy*, 15 TELECOMM. POL’Y 519, 519-20 (1991).

109. *Brand X Internet Servs.*, 125 S.Ct. at 2699.

110. 47 U.S.C. § 154(i) (2000).

111. 47 U.S.C. § 556(a) (2000) (“Nothing in this title shall be construed to affect any authority of any [locality] regarding matters of public health, safety, and welfare, to the extent

example, the Act gives LFAs the power to require as part of the franchising process that a certain amount of a cable operator's channel capacity be dedicated to public, educational, and government (PEG) use.¹¹² Therefore, the FCC may not preempt local policies that require cable operators to dedicate channel capacity to PEG channels, even if such a requirement results in the denial of a competitive franchise. Other nonprice concessions that the Act allows LFAs to require as conditions for franchising include facilities and financial support for the operation of PEG channels,¹¹³ the creation and maintenance of an institutional network,¹¹⁴ and assurances that the would-be franchisee is financially and technically qualified to operate a cable system.¹¹⁵

However, if the statutory power to impose certain conditions on franchises is exercised in such a way that results in the *unreasonable* denial of franchises, then the Commission may preempt consistent with the Act. For example, in accordance with its statutory power to require channel capacity for PEG channels, an LFA might condition a franchise on a cable system dedicating 50% of its capacity to PEG channels. While the Act does not cap the number of PEG channels an LFA may require, some amounts will no doubt rise to the level of unreasonable and will act as a *de facto* unreasonable denial of a franchise in contravention of section 621(a)(1). Using its authority to interpret section 621, the FCC may determine what qualifies as unreasonable.¹¹⁶

Legislative history lends support to this interpretation. Examples of reasonable grounds on which a competitive franchise could be denied were considered and excluded from the 1992 Cable Act. The House version of section 621 included a list of examples of reasonable bases on which a franchise could be denied,¹¹⁷ but they were removed from the final bill. The list included "inadequate assurance that the cable operator will provide adequate [PEG] channel capacity, facilities, or financial support," "inadequate assurance that the cable operator will, within a reasonable period of time, provide universal service throughout the entire franchise area," and "inadequate assurance that the cable operator has the

consistent with the express provisions of this title.").

112. 47 U.S.C. § 531 (2000). LFAs must nevertheless establish procedures under which the cable operator may utilize unused PEG channel capacity for other services. 47 U.S.C. § 531(d)(1).

113. 47 U.S.C. § 541(a)(4)(B) (2000).

114. 47 U.S.C. § 541(b)(3)(D) (2000). Zupan has reported that institutional networks go largely unused and quotes on cable operator who describes them as "just an expensive toy for the local politicians that was necessary to win the franchise." Zupan, *supra* note 35, at 405.

115. 47 U.S.C. § 541(a)(4)(C) (2000).

116. The FCC has authority to interpret § 621. *City of Chicago v. FCC*, 199 F.3d 424 (7th Cir. 1999) (holding that FCC has regulatory the authority to interpret § 621 and regulate subject to it). *See also Nat'l Cable & Tel. Ass'n v. FCC*, 33 F.3d 66 (D.C. Cir. 1994) (upholding an FCC interpretation of § 621(b)(1)).

117. H.R. REP. NO. 102-628, at 9 (1992).

financial, technical, or legal qualifications to provide cable service.”¹¹⁸ The Senate version of section 621 included the provision that “refusal to award a second franchise on the grounds of technical infeasibility shall be deemed not to be unreasonable.”¹¹⁹ That clause was also excluded from the final Act. Because specific examples of reasonable grounds on which a franchise could be denied were considered and omitted by Congress, there is reason to believe that its final intent was to leave reasonableness up to agency and court interpretation.

3. What qualifies as an “unreasonable refusal”?

At least broadly, it is not difficult to identify the types of LFA policies and practices that would result in *de facto* refusals to grant competitive franchises. As we saw earlier, Congress chose not to explain what would qualify as an unreasonable refusal of a franchise. We do know, however, that a franchise refusal that would have the effect of subverting Title VI’s stated purpose to “promote competition in cable communications and minimize unnecessary regulation that would impose an undue economic burden on cable systems”¹²⁰ would necessarily be unreasonable.

Given the pro-competitive goals of the Communications Act, and Title VI specifically, refusal of a competitive franchise would be reasonable only if it was justified as a step taken to enhance consumer welfare by limiting entry. As Part I explained, the only plausible rationales for limiting entry are regulating unsustainable natural monopolies and facilitating investment in “specialized capital.” However, as we have seen, two decades of research and historical data show conclusively that competition consistently leads to lower prices and improved quality. It would therefore be unreasonable to refuse a competitive franchise on those grounds. Additionally, to effectively manage the public rights-of-way a locality does not need to limit entry, so that refusal on that ground would be unreasonable as well. All other rationales for limiting entry serve only to protect an incumbent from competition and are thus unreasonable.

a. Rights-of-way

Local control of the public rights-of-way has traditionally been the source of authority that has allowed LFAs to control entry into the cable market through franchising.¹²¹ Today, the source of LFA franchising

118. *Id.*

119. S. REP. NO. 102-92, at 112 (1991).

120. 47 U.S.C. § 521(6) (2000).

121. Hazlett, *supra* note 14, at 214.

power is the express grant of that authority by Title VI of the Communications Act.¹²² The Act stipulates that an award of a franchise “shall be construed to authorize the construction of a cable system over public rights of way[.]”¹²³ Therefore, it would be reasonable to refuse a franchise on rights-of-way grounds only when the public rights-of-way could not support construction of a second cable system. That, however, is not a credible concern.

First, in the rare case that underground and aerial utility ducts are at capacity, they can always be expanded. As Hazlett and Ford note, “The [only] policy question is: who pays?”¹²⁴ The answer to crowding is not to limit entry, but to allocate space through a congestion price mechanism. Second, management of public inconvenience caused by construction cannot reasonably require the denial of a franchise. Today, utility companies, including telcos, are subject to regulations of general applicability controlling construction on public ways. Through such regulations utilities are made to internalize the costs they impose on the public, and localities are allowed to recover the cost of policing compliance and making repairs.¹²⁵ Telcos already have access to the public rights-of-way that they would use to provide video services and, in fact, they already provide other broadband services over these same facilities. Therefore, refusal of a franchise on rights-of-way grounds would be unreasonable.¹²⁶

b. Unsustainable natural monopoly and “specialized capital”

The history of overbuilding in the cable industry gives lie to the notion that cable television is a natural monopoly. So does intermodal competition from DBS. As Hazlett points out, “while overbuilding an existing cable system can lower the profitability of the incumbent operator, it unambiguously improves the position of consumers who face prices determined not by historical costs, but by the interplay of supply and demand.”¹²⁷ The economics literature shows that franchising has not been employed to remedy unsustainable natural monopoly or a

122. 47 U.S.C. § 621(a)(1) (2000). *See supra*, note 10.

123. 47 U.S.C. § 621(a)(2) (2000).

124. Thomas W. Hazlett & George S. Ford, *The Fallacy of Regulatory Symmetry: An Economic Analysis of the ‘Level Playing Field’ in Cable TV Franchising Statutes*, 3 BUS. & POL. 21, 30 (2001).

125. Gillespie, *supra* note 12, at 215-16.

126. It should be noted that the Act provides for the regulation of access to, and rates for, rights-of-way owned by utilities. 47 U.S.C. § 224 (2000). To the extent that franchise fees are used to recover the costs of using rights-of-way, they would only be justified to recover the costs imposed on the locality.

127. Thomas W. Hazlett, *Duopolistic Competition in Cable Television: Implications for Public Policy*, 7 YALE J. ON REG. 65, 69 (1990).

“specialized capital” problem, but instead has entrenched local cable monopolies.¹²⁸ Posner has explained that, through franchising, local authorities seek to obtain the monopoly rents for themselves.¹²⁹ This is apparent in the nonprice concessions LFAs extract from franchisees that have nothing to do with addressing any such problems.¹³⁰

Competition in the cable industry is the clear policy of both Congress and the FCC. Therefore, unless an LFA can show that the cable system in its jurisdiction is an unsustainable natural monopoly or faces a “specialized capital” problem, it cannot reasonably refuse a second franchise on those grounds. Baumol et al. explain that while preventing entry is one way to address an unsustainable monopoly problem,

[O]ne must proceed with caution. As long as any doubt remains about the unavailability of sustainable solutions, one must hesitate before bowing to the pressures for the encouragement of barriers to entry. It is understandable and natural for the incumbent firms in an industry who are fearful of enhanced competitive pressures to seek the erection or toleration of protective umbrellas against entry. But those who have the task of protecting the interests of society must resist such demands until the evidence for them is all but incontrovertible. We have seen again and again the sorts of benefits that unrestricted freedom of entry can bring. It is dangerous to risk those benefits on the basis of imperfect evidence indicating that, in a particular case, the market mechanism is likely to function badly.¹³¹

While it is theoretically possible that an LFA could reasonably refuse a second franchise in order to address a natural monopoly concern, in practice the rationale is very limited—especially without effective rate regulation. Historical evidence and academic research show that it is only in the rare case, if ever, that preventing the entry of a competitive cable system would increase consumer welfare. As a result, the default

128. See *supra* Section II.B.

129. Richard A. Posner, *The Appropriate Scope of Regulation in the Cable Television Industry*, 3 BELL J. OF ECON. & MGMT. SCIENCE 98, 113 (1972).

130. In a recent filing with the FCC, AT&T complained about the concessions localities attempt to extract from would-be entrants. “One city required a multi-stage application process with public hearings, an additional 2% of gross sales tax on top of the five percent franchise fee, a \$500,000 payment for local producers, a set-aside of 10% of the channel capacity for a local public access corporation and a substantial payment to support the corporation. . . . One city had the audacity to demand that Ameritech pay for a new recreation center and pool.” Comments of AT&T Inc. to *Notice of Proposed Rulemaking in Implementation of Section 621(a)(1) of the Cable Communications Policy Act of 1984 as amended by the Cable Television Protection and Competition Act of 1992*, MB Dkt. No. 05-311, 24 (Feb. 13, 2006), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518328493.

131. WILLIAM J. BAUMOL ET AL., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE*, 472-73 (1982).

bias should be to doubt the reasonableness of franchise refusals in the absence of great evidence to the contrary.

c. "Level playing field" laws and other barriers to entry

Given Congress's and the Commission's paramount goals of encouraging competition and broadband deployment, all LFA practices and policies that produce barriers to entry should be preempted because they result in *de facto* unreasonable franchise refusals. Many state "level playing field" (LPF) laws are a case in point. They were enacted to ensure regulatory parity between incumbents and new entrants in the cable market by imposing on new cable systems franchise terms at least as burdensome as those shouldered by the incumbent. However, these laws have no other effect than to protect incumbents from competition. As Hazlett and Ford have shown, "rules that ostensibly mandate fairness can create barriers to entry."¹³²

LPF laws create *de facto* franchise refusal in several ways. First, LPF laws often require new entrants to match the capital expenditures of incumbents, with the result that "incumbents and franchise authorities can force entrants to incur sunk costs considerably in excess of what free market conditions would imply."¹³³ This means that while a second cable operator will have to make the same unrecoverable investment previously made by the incumbent, it will not have the benefit a monopoly over which to amortize it. Because the new system will have to compete against the incumbent, it can expect revenue from fewer subscribers and at lower rates than the incumbent previously enjoyed. In addition, capital expenditure requirements ignore the possibility that new technology may allow some new entrants to build their systems at a lower inflation-adjusted cost than the incumbent. Would-be new entrants will therefore often find the large up front investment required by LPF laws to be a prohibitive barrier to entry.¹³⁴

Another way that LPF laws present a barrier to entry is by requiring that competitors match the entire area served by the incumbent. Such an obligation prevents new entrants from competing in just a subset of the jurisdiction.¹³⁵ This keeps out competitors that might find it cost-effective to compete only partially with the incumbent, or to phase in its service by serving the most lucrative customers first. By foreclosing competition, the obligation precludes subscribers in the potentially

132. Hazlett & Ford, *supra* note 124, at 22.

133. *Id.* at 25.

134. *Id.*

135. Although an LFA may require it, there is nothing in Title VI that requires a new entrant to serve an entire jurisdiction. For example, Texas's statewide franchising system allows for "service area footprint[s]" smaller than the municipality in which they are located. TEX. UTIL. CODE ANN. § 66.003 (b)(4) (Vernon 2005).

competitive areas from enjoying lower rates.

A common justification for requiring new entrants to serve all markets served by an incumbent firm is that "cream-skimming" in the most lucrative markets would erode the profits that subsidize prices in less lucrative markets. The less lucrative markets may be higher cost, or they may consist of consumers who buy only a basic service package. According to this theory, if the new entrant takes the "cream," the incumbent will have to raise prices to its remaining customers, or perhaps even discontinue service to the unprofitable customers.

Whatever the merits of the cream-skimming argument in theory, there are several practical reasons that it is not applicable to contemporary cable markets.

First, the cream-skimming theory requires that some customers pay prices that are below the incremental cost of serving them. These are the customers in danger of paying higher prices or losing service if the incumbent loses some of its profits from the more lucrative customers. It is by no means clear, however, that cable companies currently sell service to any subscribers at prices that fail to cover the incremental costs of serving those subscribers. As long as prices cover the incremental costs of serving a subscriber or a group of subscribers, they make a contribution to covering the fixed costs of the cable system. These customers may be *less* profitable than other customers, but they are not *unprofitable*. As a result, there is no reason for the cable company to stop serving them just because it loses some of its more profitable customers. Indeed, if the less profitable customers are willing to pay a price that covers the incremental cost of serving them, then there is no reason that new entrants would not also eventually extend service to them, and competition would likely lower their cable rates too.

Second, the theory that the incumbent deprived of the "cream" will raise prices to other customers makes sense only if regulation effectively constrains the prices these customers pay. An incumbent unconstrained by regulation will charge whatever price it believes the market will bear (taking into account concerns such as its reputation for fair dealing and the possibility that a higher price might attract competition). Such an incumbent is already charging its customers the most profitable price. A cable incumbent that lost customers to competition and then tried to increase prices on remaining customers would see its profits fall even further. Given the extensive evidence that cable rate regulation has little effect on cable rates, it is unlikely that cable companies are using profits from lucrative markets to subsidize the prices paid by customers in less profitable markets. Therefore, no consumers are harmed if new competitors are permitted to serve only part of the incumbent cable company's customers. Because noncompetitive portions of the jurisdiction will not see higher rates as a result of competition elsewhere,

there is no reasonable justification for forcing new competitors to serve the incumbent's entire territory.

New entrants are also sometimes required to *quickly* serve the entire area that an incumbent has built out over many years—and without the benefit of a monopoly position.¹³⁶ This can serve as a barrier to entry because it reduces the time a new entrant has to become profitable. However, Title VI requires that franchise authorities allow new entrants “a reasonable period of time to become capable of providing cable service to all households in the franchise area.”¹³⁷ The legislative history of this provision states that its purpose is to ensure that section 621(a)(1)'s prohibition on unreasonable refusals of competitive franchises not be thwarted.¹³⁸ Therefore, to the extent that LPF laws and LFA policies mandate build-out schedules that are unreasonable and serve as barriers to competitive entry, they frustrate the Act's goal of competition as well as its clear directive to grant competitors time to deploy their services.

Another local practice that raises a competitor's cost of entry is long delay by LFAs in approving a second franchise.¹³⁹ Delays allow the incumbent to prepare itself for aggressive and targeted competition based on what it has learned of the new competitor's plans from the public franchise proceedings.¹⁴⁰ They also make it difficult for competitors to secure capital investment, programming or subscribers. While certainly not codified anywhere, delays are a feature of LPF laws, which often require LFAs to duly consider a laundry list of factors and conduct in-depth studies before a competitive franchise can be granted. In some cases entrepreneurial firms have had to abandon their quest for a competitive franchise after years of delays. Because interminable delays are barriers to entry, they can amount to *de facto* unreasonable refusals.

Finally, nonprice concessions demanded by LFAs are what Posner has termed taxation by regulation.¹⁴¹ By threatening to withhold a

136. It should be noted that such a requirement places an onerous obligation on the new entrant that the incumbent never faced, giving lie to the idea that “level playing field” laws create parity.

137. 47 U.S.C. § 541(a)(4)(A) (2000).

138. S. REP. NO. 102-92, at 91 (1991). The report goes on to state, “The provision requires local franchising authorities to grant the second or third cable system in a community sufficient time actually to construct its system and provide service. For purposes of this section, a reasonable period of time would include a period of time comparable to that taken for the incumbent cable operator to construct its cable system for a comparably sized franchise area.” *Id.*

139. The GAO has reported that delays have caused some potential entrants to “withdraw their applications and seek more receptive markets.” GOVERNMENT ACCOUNTABILITY OFFICE, *supra* note 15, at 21.

140. Thomas W. Hazlett, *Predation in Local Cable TV Markets*, 40 ANTITRUST BULL. 609, 616-17 (1995).

141. Richard A. Posner, *Taxation by Regulation*, 2 BELL J. OF ECON. & MGT. SCIENCE

franchise, local authorities can extract an in-kind tax from prospective cable operators. Nonprice concessions can serve as anti-competitive barriers to entry not only because they can be individually onerous in each locality, but because competitors whose successful business plan depends on rolling out service regionally or nationally will have to negotiate and deliver thousands of such concessions.¹⁴² Nevertheless, Title VI expressly permits some of these types of concessions if they are related to the provision of PEG channels or the establishment or operation of a cable system.¹⁴³ However, many requested nonprice concessions seem to be of dubious authority and likely serve only as barriers to entry. As the *Wall Street Journal* recently reported,

Budget-strapped local officials, who have the final say over granting cable-TV-service franchises, are greeting [Verizon] with expensive and detailed demands. In New York State, Verizon faces requests for seed money for wildflowers and a video hookup for Christmas celebrations. Arlington County, Va., wants fiber strung to all its traffic lights so it can remotely monitor traffic flow. Holliston, Mass., is seeking free television for every house of worship and a 10% video discount for all senior citizens. Others want high-speed Internet for sewage facilities and junk yards, flower baskets for light poles, cameras mounted on stop lights and Internet connections for poor elementary students.¹⁴⁴

The legislative history of Title VI shows that section 624, in which LFAs find their authority to require nonprice concessions unrelated to PEG channels, “is intended to provide procedures for and impose limitations on a franchising authority regarding the establishment of requirements related to services, facility, and equipment provided by a cable operator.”¹⁴⁵ It goes on to say that an LFA “cannot enforce or impose requirements for services, facilities or equipment which are not related to the operation of a cable system.”¹⁴⁶ Therefore, nonprice concessions extracted by LFAs that are not directly related to the establishment or operation of a cable system are not permitted by the Act

22 (1971).

142. *SBC Memo*, *supra* note 78, at 9 (explaining that developing region-wide networks are necessary to achieve economies of scale).

143. LFAs have the authority to require “services, facilities, or equipment” related to use of PEG channel capacity. *See* 47 U.S.C. §§ 531(c), 541(A)(4) (2000). This allows LFAs to require in-kind benefits such as cameras, studios, and other production facilities. LFAs also have the authority to require facilities and equipment “to the extent related to the establishment or operation of a cable system....” 47 U.S.C. § 544(b) (2000).

144. Dionne Searcey, *As Verizon Enters Cable Business, It Faces Local Static; Telecom Giant Gets Demands as it Negotiates TV Deals*, *WALL ST. J.*, Oct. 28, 2005, at A1.

145. H.R. REP. NO. 98-934, at 68 (1984).

146. *Id.*

and certainly contribute to unreasonable refusals of franchises.

C. The FCC should issue rules preempting local barriers to entry

As explained above, the FCC has the authority to adopt rules to implement section 621(a)(1), and it should exercise that authority. By clarifying what state and LFA policies result in *de facto* unreasonable franchise refusals it can give effect to Congress's intent to prohibit such practices. It should also identify local practices that not only result in unreasonable franchise refusals, but are also expressly forbidden by Title VI.

Only by issuing rules—as opposed to simply nonbinding guidelines—can the Commission ensure that section 621(a)(1) is enforced, and enforced consistently. If the Commission were merely to issue guidelines, nothing much would change. Dissatisfied would-be franchisees would still have to wait for a final LFA decision—perhaps after long delays—before they could litigate a refusal. Additionally, guidelines alone would not address policies that discourage potential new entrants from ever attempting to seek a franchise.

Because unreasonable delays in awarding a franchise can amount to a *de facto* unreasonable refusal, the Commission should set the maximum amount of time an LFA may take to make a decision after a franchise application is filed. While the appropriate amount of time to be set should be studied carefully, it ought to be noted that a GAO study on wireline competition reports that LFAs receptive to competition have issued franchises in 120 days.¹⁴⁷ Similarly, Title VI requires LFAs to decide within 120 days whether to approve the sale or transfer of a cable system.¹⁴⁸

If a final decision is not reached within the allotted time, the franchise should be deemed granted on a set of default terms. These default terms should also be the subject of close study, but two possibilities suggest themselves. First, default terms for a new franchise could be the same terms as those of the incumbent, but only as they apply to the franchise fee and PEG channel capacity. Alternatively, default terms could simply be set as the maximum franchise fee of five percent and a predefined PEG channel capacity.¹⁴⁹

If it refuses to award a competitive franchise, an LFA should be required to explain in writing why its refusal is not unreasonable.¹⁵⁰ It is

147. GOVERNMENT ACCOUNTABILITY OFFICE, *supra*, note 15 at 20-21.

148. 47 U.S.C. § 541 (2000).

149. For example, Texas's statewide franchising law requires franchisees to provide "(1) up to three PEG channels for a municipality with a population of at least 50,000; and (2) up to two PEG channels for a municipality with a population of less than 50,000." TEX. UTIL. CODE ANN. § 66.009(c) (Vernon 2005).

150. Today, federal law requires local zoning authority decisions to deny placement of

important that LFAs be required to provide not just theoretical or anecdotal support for their refusal, but systematic empirical proof to show why entry should be restricted. Former FTC Chairman Tim Muris has explained the vital need for empirical evidence in FTC rulemakings, and the same logic applies here,

Theories alone are not enough....for creative theoreticians can fashion a convincing rationale for nearly any scheme. Thus, a proposal should not become a rule until systematic evidence has been collected to test its factual premises. Anecdotes, the commission's own expertise, and the testimony of experts can rarely, if ever, provide the necessary confirmation. Such evidence may be consistent with the theory, but cannot test it. And an untested theory should not be imposed on society at large.¹⁵¹

Given that competition is at the heart of Title VI, that the purpose of section 621(a)(1) is to promote competitive entry in the video market, and that historical data and academic research have repeatedly shown that there is no plausible economic justification for restricting entry into local video markets—except to create monopoly—a high standard of proof is warranted.

The Commission should issue a definition of reasonableness that excludes monopoly, “special capital,” and rights-of-way rationales unless they can be shown conclusively and empirically by the LFA. If an LFA wished to cite unsustainable natural monopoly as a reason for refusing a franchise, it should have to prove that its jurisdiction is subject to such conditions. If an LFA were to cite rights-of-way concerns as a reason for denying a franchise, it should have to show why local ordinances regulating the use and occupation of public ways would not suffice to address those concerns. Additionally, if a franchise applicant already has access to the rights-of-way, that rationale should be unavailable to the LFA.¹⁵²

A potential entrant that is nevertheless refused a competitive franchise would still have the option, per statute, to appeal the decision in

mobile phone towers and other facilities “shall be in writing and supported by substantial evidence contained in a written record.” 47 U.S.C. § 332(b)(7)(B)(iii) (2000).

151. Timothy J. Muris, *Rules Without Reason: The Case of the FTC*, 6 REGULATION 20, 26 (1982).

152. As Copple has pointed out, courts in the 1960s that considered the question of whether telcos had to acquire a franchise before they could offer cable service “uniformly held that because the telephone companies had already been granted a franchise (either by state or local authorities) to erect utility poles and string wire, the transmission of cable signals did not constitute an additional use of the public ways requiring a separate franchise.” Robert F. Copple, *Cable Television and the Allocation of Regulatory Power: A Study of Government Demarcation and Roles*, 44 FED. COMM. L.J. 1, 21 (1991).

court.¹⁵³ If the Commission adopts rules enforcing section 621(a)(1), however, a court will be able to gauge an LFA's actions against the FCC interpretation of "reasonableness" in that section. Also, if the time an LFA may take in rendering franchise decisions is capped, appealing a "final decision" as the statute requires will become a much more practicable option for potential new entrants that are refused a franchise.

State "level playing field" laws serve no purpose other than to erect barriers to entry that protect incumbents from competition. As a result, they are in contravention of Title VI's purpose to "promote competition in cable communications[.]"¹⁵⁴ Also, as shown above, the roadblocks posed by LPF laws result in *de facto* franchise refusals that are unreasonable because they limit competition without producing any offsetting increase in consumer welfare. The aspects of these laws discussed above should therefore be preempted by the FCC as inconsistent with the spirit and letter of Title VI.

Section 621(a)(4)(A) requires that LFAs give a new franchisee "a reasonable period of time" to build out its system.¹⁵⁵ The FCC should define what is reasonable in this context as well. One measure of reasonableness is the time the incumbent took to complete the same buildout. However, in setting guidelines for that comparison, the FCC should take the lead of courts that have interpreted the parity requirements of "level playing field" laws. Courts that have looked at the issue have uniformly held that a reasonable buildout time for a new cable system.¹⁵⁶

1. should be judged by looking at the buildout requirement in the incumbent's original franchise—when the incumbent's situation more closely resembled the entrant's current situation—not its renewal franchise.

153. 47 U.S.C §§ 541, 555 (2000).

154. 47 U.S.C. § 521(6) (2000).

155. 47 U.S.C. § 541(a)(4)(A) (2000).

156. See David P. Kerr, *Local Cable Overbuilding Issues: The Search for a Level Playing Field*, presented to the Law Seminars International Fourth Annual Local Telecommunication Infrastructure seminar, Aug. 24, 2001, at http://www.watoa.org/Level_Playing_Field.pdf (last visited Feb. 8, 2006); *United Cable Television Servs. Corp. v. Dep't of Pub. Util. Control*, 663 A.2d 1011 (1995) (stating that a comparison between an incumbent and a new entrant is properly made based on the "entire package of terms and conditions required of both cable providers[.]"); *Cable Sys. of Southern Connecticut, Ltd. v. Connecticut DPUC*, 1996 WL 661818 (Conn. Super. Ct. 1996) (differentiating a new buildout from an incumbent's system upgrade); *Comcast Cablevision of New Haven, Inc. v. Connecticut DPUC*, 1996 WL 661805 (Conn. Super. Ct. 1996) (comparing a new entrant's buildout schedule to the actual buildout schedule of the incumbent and its predecessors in interest and taking into consideration the benefits of incumbency); *New England Cable Television Ass'n, Inc. v. Dept. of Pub. Util. Control*, 717 A.2d 1276 (Conn. 1998) (holding that the comparison to be made is to the incumbent's original franchise and its actual performance).

2. should be based on the actual time that the incumbent took to complete its buildout, not on the buildout requirement listed in the franchise agreement.
3. should never be compared to the time an incumbent takes to simply upgrade an existing system.
4. should take into account the risks associated with new entry against an entrenched competitor, as well as the benefits of incumbency.

Although LFAs often require it, nothing in Title VI obligates new entrants to serve the entire area within an LFA's jurisdiction. As we have seen, restricting partial entry only serves as a barrier to entry that hinders competition. Therefore, the FCC should preempt such franchise terms.¹⁵⁷

Similarly, franchise terms that require new entrants to build out unprofitable or sparsely populated areas first, before they can wire other areas, only serve to raise the costs of entry and should also be preempted.

Finally, the FCC should address the barrier to competitive entry posed by the unreasonable nonprice concessions that are often demanded by LFA's. It should issue rules interpreting narrowly the sections of Title VI that allow LFAs to require such concessions. Congress, after all, intended to limit the authority of LFAs to require in-kind contributions not directly related to the operation of PEG channels or the cable system.¹⁵⁸ A reasonable nonprice concession consistent with Title VI must be related to an essential aspect of providing cable service and PEG channels, and cannot include items that are merely tangential to that purpose.

III. LEGISLATIVE OPTIONS

More comprehensive reform of the franchising process can only be achieved through legislation. The most direct way to address the franchising barrier to entry would be for Congress to amend Title VI itself. States, however, can address the balkanized nature of franchising by consolidating and streamlining the process on a statewide level.

157. Allowing partial entry is not inconsistent with section 621(a)(3), which prohibits cable systems from discriminating among subscribers based on income. 47 U.S.C. § 541(a)(3) (2000). LFAs can allow partial entry and still ensure that cable systems do not deny service to potential subscribers solely based on "the income of the residents of the local area in which the group resides." *Id.* For example, Texas's statewide franchising system allows for "service area footprint[s]" smaller than the municipality in which they are located. TEX. UTIL. CODE ANN. § 66.003(b)(4) (Vernon 2005).

158. *See supra* text accompanying note 143.

A. Statewide franchising

As we have seen, the anticompetitive aspects of franchising that should be reformed include municipal delays in granting a franchise, unreasonable nonprice concessions and buildout obligations, and “level playing field” requirements. The purpose of any state law that seeks to address these problems should therefore be to create an environment that is as close as possible to open entry. In 2005, Texas enacted a statewide franchising law that streamlines the franchising process and removes many of the barriers to entry common in traditional municipal franchising.¹⁵⁹ That law can serve as a model for state franchising reform.¹⁶⁰

The Texas law strips municipalities of their franchising authority and vests it in the state public utility commission.¹⁶¹ To acquire a franchise, a new entrant only needs to file an affidavit with the commission agreeing to comply with state and federal laws and regulations, including local rights-of-way rules.¹⁶² It must also provide other ministerial information, such as specifying the area of a municipality that it will serve, its place of business, and the name of its officers.¹⁶³ If the affidavit is filed correctly, the entrant is automatically awarded a franchise,¹⁶⁴ and the state commission must grant the franchise within 17 business days of the filing.¹⁶⁵

A statewide franchise allows a new entrant to offer service and make use of the public rights-of-way.¹⁶⁶ Municipalities retain the ability to manage their public rights-of-way, but they must do so through regulations that are nondiscriminatory and competitively neutral.¹⁶⁷ New entrants may not be required to build out their networks in any particular manner,¹⁶⁸ and partial entry of a municipality is allowed.¹⁶⁹

159. TEX. UTIL. CODE ANN. § 66.001 (Vernon 2005).

160. Other states have also recently enacted statutes to address cable franchising. Unlike Texas, Virginia did not enact a statewide franchise. Instead, video providers may opt for a standardized state franchise only if franchise negotiations with a locality go on for more than 45 days without agreement. VA. CODE ANN. § 15.2-2108.19 (2006). Indiana has enacted a statewide franchising law similar to Texas'. IND. CODE § 8-1-34 (2005). Other states considering franchise reform legislation include New Jersey, Kansas, Missouri, California, Florida and South Carolina. Jay Sherman, *Indiana Passes Statewide Video Franchise Law*, TVWeek.com (Mar. 14, 2006), at <http://www.tvweek.com/news.cms?newsId=9546>.

161. TEX. UTIL. CODE ANN. § 66.001 (Vernon 2005).

162. § 66.003.

163. *Id.*

164. § 66.003(b).

165. *Id.*

166. § 66.003(c).

167. §§ 66.010, 66.013.

168. § 66.007.

169. This is implied by section 66.003's requirement that an application for a statewide franchise include “a description of the service area footprint to be served within the municipality, if applicable, otherwise the municipality to be served[.]” § 66.003(b)(4).

The Texas law allows municipalities to require new entrants to provide as many PEG channels as the incumbent does under the municipal franchise agreement.¹⁷⁰ It also sets out a procedure for the new entrant to reclaim any channel capacity that is unused by the municipality.¹⁷¹ Additionally, the new entrant is not required to do anything beyond transmitting the PEG channel signal.¹⁷²

New entrants must pay the municipality in which they operate the maximum allowable franchise fee of five percent of gross revenues.¹⁷³ In addition to this fee, they must also match the nonprice concessions and other payments the incumbent is forced to make. However, in lieu of in-kind contributions, the new entrant is only required to make a periodic cash payment based on the number of subscribers it has.¹⁷⁴

Under the Texas law, incumbent municipal franchisees are not eligible for statewide franchises until their existing municipal franchise expires.¹⁷⁵ Ideally, however, all service providers should be subject to the same kind of franchise regulation.¹⁷⁶ Although probably very disruptive to the status quo, this could be accomplished by allowing all existing franchisees to terminate their agreements and acquire state franchises that included a set franchise fee and a fixed peg channel requirement.¹⁷⁷ This would eliminate the unreasonable nonprice concessions that many incumbent franchisees are now saddled with. Although it falls short of this ideal, the Texas law does much to ensure regulatory parity and envisions a full transition to state franchises once existing franchises expire.

Texas did not have a “level playing field” statute when its new video franchising law was enacted. However, other legislatures seeking to reform franchising should repeal any such law. This would ensure regulatory parity among video providers not by saddling new entrants with costly franchise obligations, but by removing those burdens from

170. § 66.009.

171. § 66.009(d).

172. § 66.009(f).

173. § 66.005.

174. § 66.006.

175. § 66.004(b). An existing municipal franchisee that is not the incumbent and that serves fewer than 40% of the municipalities video customers may terminate their existing franchise agreement and acquire a state franchise. *Id.*

176. The Texas cable industry has challenged the statewide franchising law in federal court. Among other claims, they allege that the law unconstitutionally discriminates between existing cable operators and telcos by perpetuating legacy regulation for incumbent cable operators but creating streamlined regulations for the new telco entrants. *See Texas Cable & Telecomm. Ass'n v. Perry*, No. A-05-CA-721-LY (W.D. Tex. filed Sept. 8, 2005), available at http://www.txcable.com/PDF/TCTA_vs_Governor-of-Texas.pdf.

177. An immediate change, however, will likely give rise to other costs. Many municipalities would immediately find themselves in financial situations that they had not anticipated. A politically realistic reform will transition out of municipal franchises more slowly.

incumbent operators.

B. Federal legislation

Finally, the most comprehensive way to address the franchise barrier to entry would be to amend Title VI itself. Congress seems poised to do this. The Senate has held hearings on video franchising and reform bills have been entered in both the Senate and the House.¹⁷⁸

Congress has it within its power to aggressively remove the barriers to entry posed by local franchising by doing away with the franchise requirement altogether.¹⁷⁹ In its place, Congress could establish an open entry regime that allows providers to offer video service without first seeking the permission of government as long as they abide by rules of general applicability. Easy entry to the video market will foster the dynamic competition that is the goal of Title VI and that will benefit consumers.

The power of localities to manage their public rights-of-way should of course be preserved. As we have seen, however, franchising is not necessary to do this effectively. Without franchising, however, municipalities will be limited to local laws that are competitively neutral. Providers should also be required to reimburse municipalities for costs imposed on the municipality by its use of the public rights-of-way. However, this payment should be just that—reimbursement. It should not be a source of revenue for the locality because raising revenue for localities is not the proper purpose of the Communications Act. Municipalities, however, should always be free—as a local matter—to impose a tax on all video providers, but it should not be disguised as a charge for the public rights-of-way.¹⁸⁰

To this end, municipalities should only be allowed to collect a *reasonable* fee from video providers to cover its rights-of-way management costs. To prevent abuse, the fee should be capped—perhaps at five percent of gross revenues, just as franchise fees are capped today.¹⁸¹ However, this should not mean that municipalities

178. See Video Choice Act of 2005, H.R. 3146, 109th Cong. (2005); Video Choice Act of 2005, S. 1349, 109th Cong. (2005); Broadband Investment and Consumer Choice Act, S. 1504, 109th Cong. § 13 (2005); Digital Age Communications Act of 2005, S. 2113, 109th Cong. (2005).

179. States and localities should not be allowed to require that video providers acquire a franchise before they may offer video service. For example, see Broadband Investment and Consumer Choice Act, S. 1504, 109th Cong. § 13(a)(1) (2005).

180. If the goal of Title VI is to promote competition, then this necessarily means that it also promotes increased use of the rights-of-way. Use of the public rights-of-way is a good thing and should therefore not be discouraged by attaching a revenue-generating tax to it. Instead, a use fee set at cost should be used only to reimburse the municipality and to act as a congestion price to prevent overuse.

181. 47 U.S.C. § 542(b) (2000).

should be allowed to automatically require the maximum fee. The reasonable charge should be assessed periodically and a mechanism for appeal should be created. Additionally, if a new entrant is already a user of the rights-of-way and is already making payments for access, these should be taken into consideration when determining a reasonable fee.

Given the spread of the Internet, the need for PEG channels has been greatly undermined. Using the worldwide web, individuals now have the ability to cheaply and effectively reach a potential audience of millions. The web is especially suited to local and niche information because it can be found and accessed by just the small number of persons that are interested. Local governments can narrowcast their meetings cheaply and effectively online without taking up valuable channel space on video systems.¹⁸² Communication online is also two-way, allowing interested citizens to participate and not merely listen in.

Nevertheless, the political reality is that Congress will likely find it difficult to do away with the PEG channel requirement. It should nonetheless set some limits on what municipalities can require from video providers. The Texas statewide franchising law suggests a good rule of thumb: video providers could be required to carry no more than a fixed number of PEG channels. If an incumbent does not provide PEG channels, the Texas statute has set the maximum number PEG channels that a new entrant can be required to provide at three channels for a municipality with a population of at least 50,000, and two channels for a municipality with a population of less than 50,000.¹⁸³ Such a simple formula ensures certainty and regulatory parity.

If franchises are eliminated, so are franchise fees and nonprice concessions. PEG channels have relied on these fees and in-kind payments for their funding. If the municipal governments are to fund these channels, they should do so explicitly through taxation, not by indirectly raising consumers' cable rates. By having to rely on a local tax on video services, municipalities will be forced to purchase only the amount PEG service the locality's constituency will bear, not some inflated quantity attained through higher consumer rates. It is quite possible that the number of PEG channels today is excessive from a consumer point of view. As Posner has explained,

A troubling characteristic of the internal subsidy is its low visibility, which impedes responsible review. The amounts and recipients of

182. Cities like Des Moines, Iowa, and Boston, Massachusetts, already webcast their city council meetings on the Internet. City of Des Moines, *Live and Archived Streaming Video*, <http://www.infoweb.state.ia.us/dsm/> (last visited Feb. 21, 2006); City of Boston, *Boston City Council Television*, <http://www.cityofboston.gov/citycouncil/live.asp> (last visited Feb. 21, 2006).

183. TEX. UTIL. CODE ANN. § 66.009(c) (Vernon 2005).

direct subsidies are ordinarily specifically stated, but this is not the case with internal subsidies. Since information is not a free good, a subsidy program whose magnitude requires computation is less apt to be challenged than one whose magnitude is patent.¹⁸⁴

By making a tax used to fund PEG channels explicit, local authorities and proposed programs will be more accountable to constituents. If viewers truly value the programs on public access, or municipal information on government access channels, they should be happy to pay a tax to support that programming.¹⁸⁵

The elimination of franchises will also eliminate buildout requirements and “level playing field laws.”¹⁸⁶ Entry into the video market—even if partial—should be encouraged, as it will benefit consumers with increased choices and lower rates. Without buildout requirements, competitors will be able to get a foothold in a community before expanding their service.

Lastly, any franchising reform by Congress should be made applicable not just to new entrants, but to incumbents as well. Competition can be promoted by removing regulatory burdens that now keep entrants away. However, new entrants should not be granted a competitive advantage, and those same regulatory burdens should be removed from incumbent cable operators.

CONCLUSION

The potential consumer benefits of robust video competition are huge. Widespread video competition could create \$6.3 billion in consumer benefits annually. The benefits take two forms. On average, current cable subscribers in markets without wireline video competition would see their rates fall by about \$86 annually, for a total of \$5.5 billion.¹⁸⁷ Consumers who do not currently subscribe would find it worthwhile to do so at the lower, competitive price. These new subscribers would be better off by an average of about \$43 annually, the difference between what they would pay for cable service and what the service is worth to them. The total value of this benefit to these

184. Posner, *supra* note 141, at 43.

185. The same logic applies to institutional networks and other in-kind concessions that LFAs extract from franchisees today. Many of these perquisites go unused and are therefore wasteful. See *supra* note 37 and accompanying text. By requiring localities should to pay for the services they use, waste will be reduced and accountability increased.

186. States and localities should not be allowed to require that video build out their systems in any particular way. For example, see Broadband Investment and Consumer Choice Act, S. 1504, 109th Cong. § 13(a)(2) (2005).

187. Our estimate in Table 4 shows that wireline cable competition would reduce cable rates by about \$5.5 billion in markets that currently lack such competition. Dividing that figure by the 64 million subscribers in these markets yields \$86.

consumers is approximately \$850 million annually.¹⁸⁸

The total cost to consumers of franchise regulation is even larger than these figures imply, for two reasons. First, wireline video competition also improves quality by increasing the number of channels—a benefit we estimate is worth about \$375 million annually to consumers. Second, franchising allows local government to impose costly nonprice concessions and collect franchise fees. Taking all of these factors into account, cable franchising costs consumers a total of \$10.4 billion annually in higher prices and the value of forgone services.

The policy of the United States has long been one of competition in communications markets. Franchise regulation may not be the only barrier to entry that new video competitors face, but most evidence suggests that it is a significant one. The FCC, states, and Congress have it within their power to address this problem to varying degrees and to bring competition to bear on video services. Consumers have much to gain—in lower rates and more options—by such action.

188. Our estimate in Table 4 shows that consumers who do not currently have cable service are better off by approximately \$850 million when competition lowers the price and more consumers choose to subscribe. The calculations that generated this figure imply that cable subscribership would increase by about 19.5 million. Dividing \$850 million by 19.5 million yields \$43.

SHEDDING TIERS FOR A LA CARTE? AN ECONOMIC ANALYSIS OF CABLE TV PRICING

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A new regulatory debate has sprung up around the pricing of TV networks on cable and satellite systems. Many argue that bundling networks on tiers, rather than selling channels individually, is anti-consumer and forces families to purchase programming they don't value and often find offensive. The Federal Communications Commission, after issuing sharply conflicting reports on the subject, is considering measures to enforce a la carte pricing. This paper explains the economics of multi-channel video distribution, showing that network cost conditions dictate reliance on bundling. Consumers do, in fact, purchase programs they find valuable, with operators effectively throwing in additional content for free. This outcome is dictated not by market power, as competitive entrants bundle just as aggressively as do incumbents, but by the underlying economic conditions: cable TV networks are distributed to additional households at zero marginal cost. Restricting the basic tier from, say, 60 channels to just those, say, 20 channels a given subscriber prefers is actually more expensive than providing the large tier to all. The upshot is that the goal of reduced retail prices under a la carte is a chimera.

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INTRODUCTION

A. A New Regulatory Debate

The government regulation controversy is perhaps the longest running show on cable television. In the 1960s, federal regulators enacted rules blocking cable TV operations in major markets, protecting broadcast TV stations from upstart competitors.¹ When such rules were swept away in the "deregulation wave" of the mid-to-late 1970s, a cable "gold rush" ensued in which the country was wired for multi-channel video service. The policy momentum for cable operators was topped off by rate deregulation in the 1984 Cable Act, which pre-empted municipal franchise authorities. Yet, complaints were soon heard about monopoly power and rising rates, and the political winds shifted. Numerous

1. Stanley Besen & Robert Crandall, *The Deregulation of Cable Television*, 44 L. & CONTEMP. PROBS. 77, 78 (1981).

hearings were held in Congress starting in 1989, and rate re-regulation was enacted in the 1992 Cable Act. The controls proved unworkable, however, as operators re-tiered offerings, shifted charges, and lowered service quality. Rate regulation was first relaxed by the Federal Communications Commission (FCC) in late 1994, and then formally eliminated, again, pursuant to the 1996 Telecommunications Act.

Yet controversy over rate regulation rages anew. This time, headlines trumpet consumer frustration over bundled basic cable tiers. Many, including Sen. John McCain (R-AZ), criticize cable operators for restricting customers' choices, offering all-you-can-eat buffets instead of a la carte menus. Cable subscribers are typically given a take-it-or-leave-it purchase decision for an "expanded basic tier."² This allows households to buy a large package of basic cable channels—such as USA, WTBS, ESPN, Lifetime, TNN, CNN, Fox News, and MTV—but not to customize their order.³

It appears that, were consumers to select their own mix of channels, they would improve their position because they wouldn't be forced to pay for TV shows they have little or no interest in viewing. *If shoppers can choose between apples and oranges at the grocery store, rather than a big bag of both, why shouldn't they be allowed to pick their own cable networks?*

It is a good question. Instead of providing households a basic tier, with, say, 50 cable networks for \$50 a month, why don't operators allow subscribers to check-off their choices, from among the 50 (or 100) individual networks, charging \$1 or \$2 each? The fact that they do not suggests an anti-consumer bias, prompting calls for stricter federal rules.

The logic appears so obvious that a formidable political coalition has formed to support regulation mandating that cable operators promote just this outcome. Groups such as Consumers' Union and the Consumer Federation of America allege that monopoly power has resulted in current cable industry pricing policies, and that only government controls can remedy the harm.⁴ "Religious Right" organizations such as the Parents' Television Council simultaneously demand a la carte pricing

2. By law, cable TV systems must offer a bundle of video networks as a "basic tier," this package including local TV stations. This tier is a bare bones offering often called "limited basic." The controversy over bundling of cable networks relates to tiers above this, generically called "expanded basic." These larger tiers do not include premium channels, typically sold a la carte, or pay-per-view.

3. Premium channels are offered on an individual basis, but after the basic channels are purchased as a bundle.

4. Mark Cooper, *Time to Give Consumers Real Cable Choices*, in Comments of the Consumers Union and Consumer Federation of America to the *Public Notice in A La Carte and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems*, MB Dkt. No. 04-207 (July 15, 2004) http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284073.

mandates, motivated by a desire to enhance parental control over programming.⁵ These groups see network bundling in the basic cable package as forcing parents to subsidize programs that their kids should not be allowed to watch and that they find offensive.

The FCC is being petitioned to enact rules mandating that cable operators offer channels a la carte. Interestingly, the Commission has recently switched sides in the controversy. In Nov. 2004, an agency report found that a la carte rules would harm consumers, and FCC Chairman Michael Powell refused to take regulatory action. In Nov. 2005, however, Powell's successor, Kevin Martin, condemned the FCC report for containing "problematic assumptions" and incorrect and, at times, biased analysis,⁶ promising that a new agency study would demonstrate how a la carte rules could increase consumer welfare. Martin was lauded by pro-regulation groups.⁷

When the new study was released on Feb. 9, 2006, it argued that consumers could obtain 20 channels of their favorite programming (including six broadcast TV stations) at cost savings of between 3% and 13% under various scenarios.⁸ Political leaders hailed the findings as a rationale for mandating a la carte.⁹ The Parents Television Council, lobbying for a la carte rules, stated the case thusly:

We applaud the FCC and Chairman Martin for bringing the truth to an issue where only lies and deceit had gone before. Cable choice will help, not hurt, consumers. Consumers—and especially

5. Press Release, Parents Television Council, *PTC Promotes Benefits of A La Carte Cable Television Programming; Senator John McCain and Diverse Group of Public Policy Organizations Join the PTC in Demanding Cable Choice for American Families*, (May 5, 2004), <http://www.parentstv.org/ptc/publications/release/2004/0505.asp> (last visited August 1, 2006). Interestingly, Christian Right television programmers—those trying to market content to the evangelical community—largely oppose a la carte regulation. See, e.g., Jerry Falwell, *Don't Charge for Religious Shows as we Limit Smut*, TENNESSEAN, Jan. 1, 2006, available at <http://www.ncta.com/DocumentBinary.aspx?id=100>. This split within the Christian Right reflects a difference between economic and ideological interests, and offers insight into the effect of such rules.

6. Ted Hearn, Martin: *New FCC Study Favors a la Carte*, MULTICHANNEL NEWS, <http://www.multichannel.com/article/CA6287703.html?display=Search+Results&text=Powell> (last visited July 27, 2006). See also Arshad Mohammed, *Cable By the Channel Favored, FCC Chairman Aims to Limit Indecency*, WASH. POST, Nov. 30, 2005, at D1.

7. Paul Davidson & Laura Petrecca, *A la carte Cable Could Be a Tough Sell*, USA TODAY, Nov. 29, 2005, at 3B.

8. See *infra* Part V. CHARLES B. GOLDFARB, CONGRESSIONAL RESEARCH SERVICE, THE FCC'S "A LA CARTE" REPORTS (2006) http://www.opencrs.com/rpts/RL33338_20060330.pdf.

9. "If a la carte is not more expensive for consumers, I will support an effort to take such an approach, subject to discussions with providers on the downside of such a process," Senate Commerce Committee Chairman Ted Stevens (R-Alaska) said in a prepared statement." Ted Hearn, *FCC Study Boosts A La Carte Pricing*, MULTICHANNEL NEWS, <http://www.multichannel.com/article/CA6305989.html> (last visited July 27, 2006).

families—must be afforded the ability to pick and choose and pay for only those networks they want in their homes.¹⁰

Hence, the underlying economics of cable TV pricing are central to a raging policy controversy. In fact, the economics of channel bundling are both interesting and informative, and when combined with institutional factors, produce a policy conclusion: a la carte pricing rules will not be likely to improve consumer choice, increase efficiency, or lessen market power in the video marketplace.

B. The Economics of A La Carte Pricing

While the common interpretation of a la carte is that consumers benefit when they get to choose one channel at a time, unbundling basic cable networks saves neither the cable operator nor the cable network a penny. In fact, costs for both operators and subscribers *increase* when basic cable tiers are customized. This is distinct from the corner grocery store, and renders an oft-repeated comparison highly misleading.

A household subscribes to basic cable if and only if the value they place on the programming they *desire* to watch exceeds the retail price. That is true even though no customer watches every channel, but only their own customized sub-set of programs. Effectively, the consumer subscribes to realize their individual preferences, and the cable company tosses in the additional channels for free. The practice is highly efficient. It dramatically reduces transaction costs and it prices marginal viewing choices at zero—exactly their marginal cost.

This is the socially efficient result, and it offers a creative market solution to an age-old theoretical problem in welfare economics. Social losses result when public goods—those that require investments to create but then require no additional costs for marginal units to be consumed—carry positive (per unit) prices. This squanders benefits that could be obtained were investments by producers to be recouped in a manner that did not restrict product availability. Some economists have advocated subsidizing investments in public goods to compensate producers and then imposing price controls (at price = \$0.00 per unit) to distribute services to the widest possible audience. Yet, the government does not know which projects are worth their costs, and this is crucial for ensuring efficient outcomes.

Bundling basic cable programs on an “expanded basic tier” offers a solution to this dilemma. Costs of the network provider (the cable operator) are largely recouped through a fixed monthly fee to access a large block of programming. Consumers then select the programs they

10. *Id.* (quoting prepared statement of L. Brent Bozell, Parents Television Council).

wish to watch. If they do not obtain sufficient value from those programs, then they choose not to subscribe. Importantly, were a la carte pricing to be imposed, and (say) attach a \$1 fee for an additional network, it would deprive any access to customers who value the additional network at \$0.95. This constitutes a dead-weight loss to society, as no costs are saved by depriving the customer of access to the program channel, which is a classic example of a non-rivalrous good.¹¹ These losses are eliminated by large basic tiers which allow consumers to select programs, using the remote control and an array of blocking devices to eliminate channels deemed to be of zero (or negative) value.

The program bundling practices in the cable TV industry are far from unique. Not only is bundling common throughout the economy, creating substantial efficiencies in production and distribution of goods and services, but bundling is pronounced in network industries like cable TV. This is why new entrants into the multi-channel video program distribution (MVPD) space, such as satellite TV and broadband service providers (BSPs), typically elect to offer even larger bundles to compete with cable incumbents. This strongly suggests that efficiency, not market power, drives the practice.

Policy proposals to require “a la carte pricing” actually cover a broad range of possibilities, from mandatory per-channel sales options (complete unbundling) to the offering of additional, “theme tiers” (which, e.g., would give families options that exclude programming inappropriate for children). Yet, with each approach, a practical reality dominates: such rules are entirely irrelevant in the absence of rate regulation. That is because a mandate to price channels (or additional, smaller tiers) individually is thwarted by video providers by simply pricing the new content such that customers universally opt for a bundled package. Forcing cable operators to price each channel separately, but failing to cap that price, renders the constraint non-binding.

But cable TV price regulation is a question that has been “asked and answered”—definitively. In multiple episodes of regulation and deregulation, both nationally and within state level regimes, rate regulation on cable TV systems is a demonstrated failure. The complexities of the video marketplace rendered price regulation unworkable; when rates were capped by authorities, cable operators and cable networks responded to these constraints by altering the nature, packaging, and quality of video programming services. Ultimately, video service quality is beyond the control of regulators both because service is exceedingly difficult to monitor, and because content quality is

11. “Nonrival goods may be consumed by one consumer without preventing simultaneous consumption by others.” Wikipedia, <http://en.wikipedia.org/wiki/Non-rivalrous> (last visited July 27, 2006).

determined by private firms exercising their First Amendment rights.¹² No party today makes a serious attempt to resuscitate this regulatory corpse. Yet, without this enforcement structure, a la carte pricing rules constitute an inchoate policy idea.¹³

Still, a la carte pricing remains politically popular, and offers what equity analysts call “headline risk” for sector investors. Some measures may be enacted, introducing regulatory uncertainty even as pro-consumer outcomes fail to result.¹⁴ Cable operators have announced plans to introduced “family tiers” in response to the controversy.¹⁵ These packages will attract virtually no unique audiences; subscribers will add other tiers, ending up with similar services and comparable rates. For instance, Time Warner’s “Family Choice” service consists of 15 channels: “Boomerang, Discovery Kids, Disney Channel, Toon Disney and Nick Games & Sports. . . The Science Channel, DIY Network, Fit TV, Food Network, Home & Garden Television, La Familia, The Weather Channel, C-SPAN-2, C-SPAN 3 and Headline News.”¹⁶ To get this tier costs \$32.98 per month (which includes limited basic cable and a digital set top box, necessary tie-ins).

The trick is that this package would satiate video network demand only in a household headed by an 8-year old. Adult subscribers, which

12. See Thomas W. Hazlett, *Private Monopoly and the Public Interest: An Economic Analysis of the Cable Television Franchise*, 134 U. PA. L. REV. 1335 (1986); THOMAS HAZLETT & MATTHEW L. SPITZER, PUBLIC POLICY TOWARD CABLE TELEVISION (1997).

13. The incompleteness of the a la carte policy solution does not render reform irrelevant. The path lies in the direction of policies that increase competitive pressure among service providers. This has been observed both with respect to satellite TV entry into MVPD markets, and with the introduction of head-to-head cable TV rivalry in specific markets. Either has been shown to lower retail rates. See William M. Emmons & Robin Prager, *The Effects of Market Structure and Ownership on Prices and Service Offerings in the U.S. Cable Television Industry*, 28 RAND J. ECON. 732 (1997); General Accounting Office, *Issues Related to Competition and Subscriber Rates in the Cable Television Industry*, GAO-04-8 (Oct. 2003); David Reiffen, Michael Ward & John Wiegand, *Duplication of Public Goods: Some Evidence on the Potential Efficiencies from the Proposed Echostar/DirecTV Merger* (Univ. of Tex. at Arlington Dept. of Econ., Working Paper 03-006, 2004), available at <http://www.uta.edu/faculty/mikeward/dbspaper.pdf>; Austan Goolsbee & Amil Petrin, *The Consumer Gains From Direct Broadcast Satellites and the Competition with Cable TV*, 72 ECONOMETRICA 351 (2004); Thomas Hazlett, *Cable Television*, in THE HANDBOOK OF TELECOMMUNICATIONS ECONOMICS: VOLUME II, (Martin Cave, et al., eds., 2005).

14. This mirrors the experience in 1991-94, when cable TV shares (and bonds) were adversely impacted by re-regulation, even as the episode resulted in decreased subscriber growth, a perverse outcome for price controls designed to increase output. See HAZLETT & SPITZER, *supra* note 12, at 163-169.

15. “National Cable & Telecommunications Association president Kyle McSlarrow told a Senate committee Monday that Comcast Corp., Time Warner and other MSOs [multiple system operators] serving about 50% of all cable subscribers will offer a Family Choice tier, probably in the first quarter of next year, as their response to concerns about indecent content across the cable dial.” R. Thomas Umstead, *Time Warner Spells Out Family Tier*, MULTICHANNEL NEWS, Dec. 15, 2005, <http://www.multichannel.com/article/CA6291783.html>

16. *Id.*

number at least one per household, demand cable to (at a minimum) access such programming as ESPN, CNN, Fox News, Lifetime, USA, Discovery, WTBS, TNT, TMC, Oxygen, Comedy Central, CourtTV, A&E, TNN, MTV, and so on.¹⁷ Purchasing additional tiers to regain news, entertainment, and sports channels quickly elevates the monthly bill up to the level extracted via “expanded basic” alone.¹⁸ It is also ironic that the cable operator is forced to include the full complement of local broadcast TV signals on any package sold to subscribers, while these channels offer the most widely offending programs.

Nonetheless, there exists robust support within the communications regulatory framework to regulate cable TV. This is observed in the historical pattern by which various rate regulation schemes have been tried, eliminated, and then tried again. The process affords policy makers the opportunity to gain valuable publicity, staking out high-profile positions as opponents of the cable industry standing up for consumer rights. Framing hearings, proposed legislation, or advancing FCC regulation to “hold cable’s feet to the fire”¹⁹ identifies policy makers as advocates for the public interest.

Two beneficial outcomes result for regulators. First, concessions can be extracted for entirely unrelated purposes. Current reports suggest that FCC Chairman Kevin Martin is pursuing an “indecent agenda,” with the thought that he may return to North Carolina to run for a Senate

17. It should also be noted that the “Family Choice” tier pointedly does not include some of the most popular and valuable children’s programming, including Nickelodeon, Animal Planet, and PBS Kids.

18. The mean cable subscriber bill, in 2003, was \$45.32 FCC, Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, *Report on Cable Industry Prices*, 20 FCC Rcd. 2,718, 2,720 (2005). While these are the most recent FCC data on cable bills, the data can be updated by simply assuming annual increases of 5.4% (the rate of increase in 2003). This implies that the mean 2006 cable bill equals \$53.07, for which the customer receives access to 79.3 channels on expanded basic cable. (Since the package size—counted as number of channels—was increasing at 4.1% in 2003, the 70.3 channels received via expanded basis in 2003 is projected to grow to 79.3 in 2006.) According to the FCC, the typical U.S. household can receive about 13 over the air broadcast TV signals, which are included on the limited basic tier. The “family tier” offered in this instance, then, results in an average bundle about 28 channels, and costs about \$33 monthly, or \$1.18 per channel. The typical subscriber, who receives expanded basic plus additional services (including premium channels), now accesses something more than 79 channels for about \$53 a month, or \$0.67. It is true that there are a good many channels in the expanded basic tier that are not important to this typical subscriber (with these unimportant channels changing from house to house), but it is equally true that the channels that are most important to the typical household’s adult viewers are outside the “family tier.” This will drive the overwhelming majority of customers to existing market offerings.

19. This is an oft-heard phrase in regulatory discussions and newspaper reports. See, e.g., Comments of the National Cable and Telecommunications Assoc. to *Order & Further Notice of Proposed Rulemaking* in Implementation of Section 304 of the Telecommunications Act of 1996, CS Dkt. No. 97-80, 14 (Feb. 19, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6515782885.

seat.²⁰ Regulatory threats can be made by legislators who seek to gain support for other legislation, campaign contributions, or illegal bribes.²¹ Cable executives lobbying regulators believe that cooperating on the FCC's a la carte initiative by offering family-friendly programming tiers constitutes payment for Commission approval of a pending merger (Comcast and Time Warner acquiring Adelphia) and for slowing competition from telephone companies.²²

Second, the failure of proposed remedies will not be likely to prove a liability to policy makers. Neither the statutory abandonment of cable rate regulation in the 1984 Cable Act, nor the similar policy enacted in the 1996 Telecommunications Act incurred costs for those legislators that had advanced ultimately unsuccessful rate regulations.²³ In fact, policy failures can yield additional opportunities for favorable publicity, as long-time champions will again issue pronouncements as to the severity of the problem, this time warning that sterner measures are needed to "hold cable's feet to the fire."

While the politics are fascinating, so are the economics of a la carte. Throughout the video marketplace, indeed throughout network industries generally, product bundling is a key marketing strategy. With the rise of the "network economy," understanding the role of multi-product packaging offers essential insights. This understanding, in turn, can better inform both future policy debates in far-flung product markets, and the current policy debate raging over a la carte pricing in cable television.

20. "The scuttlebutt inside the Beltway is that Kevin Martin has political aspirations beyond being chairman of the FCC. Now when he campaigns for Senate in North Carolina (as he's expected to), he can say that he held cable's feet to the fire and made it take real steps toward solving the indecency issue." John P. Ourand, *Executive Editor's Letter: A Decent 2006*, CABLE WORLD, Jan. 9, 2006, available at http://www.cable-accessintel.com/cgi/cw/show_mag.cgi?pub=cw&mon=010906&file=executiveeditors.htm.

21. See, e.g., FRED MCCHESENEY, MONEY FOR NOTHING: POLITICIANS, RENT EXTRACTION, & POLITICAL EXTORTION (1997).

22. FCC Chairman "Martin has made clear in closed-door meetings that he would like Time Warner and Comcast to help advance his anti-indecency agenda. The companies are seeking to acquire Adelphia Communications Corp. for \$17.6 billion. . . . Cable operators are not eager to pick a fight with the FCC. Although the agency lacks the authority to make new rules, it does have the power to rein in the industry on several fronts. For example, it will determine the speed at which phone carriers can enter the pay-TV business." Sallie Hofmeister, *Cable TV Pressured to Clean Up Offerings*, L.A. TIMES, Dec. 9, 2005, at A1.

23. On the lack of success of rate regulation, see generally HAZLETT & SPITZER, *supra* note 12.

I. THE BASICS OF BUNDLING

A. Grocery Stores v. Amusement Parks

The marketplace yields consumers a limited number of supplier-selected options. Customized products, when available, generally incur premium prices; “boutiques” cater to such preferences, charging higher prices relative to mass market goods. Packaging is one of the competitive margins on which firms attempt to attract customers. The benefits of a greater number of specially tailored choices are often offset by cost efficiencies derived from uniformity. A new car dealer offers buyers some options but not others: a Ford “bundle” is limited—don’t bother asking for a Chevy engine in your new Mustang. And buyers typically face lower prices when they choose among the few items in inventory (cars on the lot) rather than ordering their personal favorites from the factory.

In video, some critique the market as insufficiently responsive to consumer preferences. In a paper filed with the Federal Communications Commission, Mark Cooper argues the following:

In fact, cable operators give consumers almost no choice. If I really need two pounds of tomatoes for my spaghetti sauce, I have to take all five pounds and most of the other fruits and vegetables, even though the rest are of little value to me. My next door neighbor, who really needs two pounds of apples for her pie, is forced to buy five pounds of apples and the tomatoes and all the other fruits and vegetables, too. We both end up paying a higher price and, given the nature of the commodity, we cannot recapture the surplus through trade.²⁴

This approach ignores two basic facts. First, the grocery store itself stocks a limited number of items and “forces” its shoppers to choose among the discrete options it offers. Indeed, some very popular stores selling groceries—for example, Costco—markedly depart from the selections provided elsewhere. A Costco customer who desires just “two pounds of tomatoes” would be likely to “have to take all five pounds”—or more.²⁵ Given efficiencies in selling larger quantities (and stocking

24. Cooper, *supra* note 4, at 39-40 (footnotes omitted).

25. A facile response would note that, with groceries, the competitive retail market still yields many different package choices even if a given supplier offers only a select few. That is true and fully supports the conclusion offered: suppliers restrict the packaging choices they offer customers even under highly competitive conditions. The extensive use of expanded basic tiers by entrants in MVPD markets, discussed below, will also make this point. The market structure issue (retail grocery competition vs. MVPD rivalry) is shown to be distinct from the product packaging question involved in the a la carte controversy.

fewer distinct packages), some shoppers happily capture this discount-for-volume trade-off. Second, the cost structure of retailing groceries is distinct from that of delivering video programs via cable or satellite TV systems. In the case of the former, total costs are largely accounted for by the costs of goods sold. In the latter, network infrastructure costs (both for distribution plant and programming) are largely invariant to the number of units sold.

This latter factor fundamentally alters pricing decisions, as seen in a better analogy to cable television (than grocery stores): theme parks. A visitor to Disney World pays a fixed fee to enter the entertainment park, and does not receive a rebate should she simply ride *It's a Small World After All* before exiting. The die-hards who show up at dawn and experience every ride, exhibit, and show they can take in before closing pay exactly the same fee as selective tourists who partake of only their favorite attraction. The theme park has a cost structure more resembling that of the “video entertainment park” delivered by cable and satellite operators, who similarly charge customers a fixed entry fee for admission to a wide variety of attractions.

This is an apt example in light of Dr. Cooper's argument: “[t]he GAO reports that the typical household watches only 17 channels. People are being forced to buy a lot of programs they don't watch to get the ones they want.”²⁶ Surely, the typical Disney World patron visits only a limited subset of the park's total attractions on a given visit, even as they are charged a flat fee permitting access to every attraction. Yet, this pricing structure has proven efficient relative to alternatives, including the original Disneyland pricing scheme that featured both a fixed entry fee and special tickets (sold in bundles with admission fees) for particular rides.²⁷

The sharp distinction in cost structures between grocery retailing and multi-channel video programming distribution masks a more fundamental pricing reality. Grocery store customers could also be viewed as being charged for services they do not consume, as when the 3 P.M. shopper is charged the same price as the 3 A.M. shopper in a 24-hour supermarket. This results in the low-cost (business hour) customer effectively assisting the high-cost (graveyard shift) shopper by paying the cost of conveniences they do not consume. Twenty-four hour grocery stores operate this way because, given that they are open during the day, they can profitably serve night customers—even if they would not serve those customers on a stand alone basis (i.e., by being open *only* at night).

26. Cooper, *supra* note 4, at 39.

27. See Walter Y. Oi, *A Disneyland Dilemma: Two-Part Tariffs for a Mickey Mouse Monopoly*, 85 Q.J. ECON. 77 (1971).

This tends to go unnoticed because the common costs being apportioned are relatively small. The issue becomes more visible in the cable television business where a far higher percentage of total expenses do not vary with sales. This fact is of key significance in devising efficient pricing rules. Cable and satellite systems must first build distribution networks to carry video signals to subscribers, and a large part of the subscriber's monthly bill compensates for these investments. Infrastructure costs, conversely, are only a small fraction of the cost of groceries sold.

If Subscriber A were to order just one channel, while Subscriber B orders 100, the cost of delivering service to the rival customers would be still about the same. No material savings are realized when the first subscriber decides to receive just one channel and to forego the other 99. Indeed, to the extent that the cable operator has to customize A's service by eliminating programs on a package popular with B and other subscribers, A imposes *greater* costs.

TABLE 1. BASIC TIERS OFFERED BY MVPD ENTRANTS

<i>MVPD Operator</i>	<i>Delivery System</i>	<i>No. of Cable Channels on Basic Tier</i>	<i>Price of Basic Tier</i>	<i>Minimum Contract Period</i>	<i>A La Carte Option for Basic Tier?</i>
DirecTV ^{*28}	Satellite	97	\$41.99	One Year	No
EchoStar ^{*29}	Satellite	72	\$31.99	Month	No
RCN (WDC) ³⁰	Overbuild	90	\$43.00	Month	No
USDTV ^{*31}	Wireless	26	\$19.95	Month	No

* Without local broadcast channels.

Issues of monopoly power commonly enter this discussion, as it is claimed that cable operators would have to offer greater choice in creating service tiers were there more competitors.³² But additional rivals have already entered this product space, and they reliably offer a choice

28. See DirecTV, <http://www.directv.com> (last visited Jan. 11, 2006). DirecTV states that there are over 155 channels on the basic tier, listing just 146 (of which 49 are XM music channels).

29. See DISH Network, <http://www.dishnetwork.com> (last visited Jan. 11, 2006). DISH Network lists America's Top 60 as having 72 channels (none of which are music channels).

30. See Star Power, <http://www.starpower.net> (last visited Jan. 11, 2006). RCN customers are served by Starpower in Washington, DC.

31. See USDTV, <http://www.usdtv.com> (last visited Jan. 11, 2006).

32. See, e.g., Cooper, *supra* note 4.

of tiers, not individual channels, much as do incumbent cable operators.

Four such entrants are noted in Table 1. With both satellite TV providers, the nation's largest "overbuilder" (a head-to-head wireline cable competitor), and a new entrant leasing digital TV channel bandwidth to deliver basic cable networks to subscribers, basic service is sold via bundles. Moreover, with some satellite services *one year contracts* may be necessary in order for customers to obtain advertised service rates (bundling an entire year of programming).³³ This is often tied to the satellite TV operator's investment in the customer's receiving equipment, an upfront cost invariant to the amount of viewing time it provides thereafter.

When substantial costs are *fixed*, cost savings from fewer subscribers are trivial or non-existent. Here it is highly efficient for suppliers to encourage additional use through sharp volume discounts. In cable television, this results in perhaps one or two "expanded basic" tiers as the standard entry-level purchase.³⁴ This marketing structure exists irrespective of market power, observed both where incumbent cable operators realize considerable monopoly rents and where entrants possess none.³⁵

Tier pricing in MVPD markets can be broken down into two components: (1) a charge to obtain access to the network; (2) additional charges for programming. With the expanded basic tier selected by the overwhelming majority of consumers, a flat monthly fee gains access to the network *and* to dozens of basic cable networks. In addition, premium services are then purchased, such as pay-per-view or pay channels such as HBO and Showtime.³⁶ Rather than being charged extra for cable networks that they do not want, subscribers are charged a monthly connection fee that comes with lots of zero-priced (after the subscription

33. One year contracts are required, as noted in Table 1, for DirecTV's basic package. EchoStar offers a "no commitments" service agreement, but extends a \$49.99 rebate to with an 18-month contract. This effectively charges extra for the unbundled (month to month) service.

34. Note that all cable TV systems must offer a limited "basic tier" as the entry-level purchase due to regulatory mandates. These force the customer to purchase an initial bundle of video channels, including all over-the-air broadcast TV stations in the local market, in order to access any other programming.

35. RCN, e.g., declared bankruptcy in 2004. Having "restructured" its debt, it continues to operate, but cannot be said to enjoy monopoly pricing power given its evident lack of supra-competitive returns.

36. Additional (non-video) services are also offered by cable and satellite operators, including high-speed Internet access and (with cable systems) voice telephony. It is noteworthy that these services are offered in large bundles—broadband is priced at a flat fee for unlimited monthly use, e.g. These ancillary services are also bundled with video subscription service via highly discounted pricing for the "triple play" of voice, video, and data service. Indeed, the bundle may grow to include mobile phone service—a "quadruple play." Michael Grebb, *Cable Wants to Cut the Cord*, WIRED NEWS, July 7, 2005, <http://www.wired.com/news/technology/wireless/0,68324-0.html>.

fee) programming. They then select what they desire to watch: their remote control customizes their viewing choices.

This is the theme park model. A basic admission price is exacted; those paying this entry fee then determine what attractions they wish to enjoy. Ancillary services are also available for purchase. No rebates are given to those who eschew particular amenities, or desire to purchase a smaller “tier” of services than is offered by the operator.

Customer segmenting to reduce negative externalities is an issue. A family consuming Disney World’s amenities would find its utility decreased were Adults-Only revues to be located, with graphic billboard advertisements, adjacent to the *Dumbo* ride, or were *Pirates of the Caribbean* to be slightly (or significantly) more bawdy. As a theme park owner, Disney has strong economic incentives to boost demand by controlling both the quality of individual attractions (aligning content with demand) and costly spillovers, notably those that lower other patrons’ enjoyment. In practice, park owners take substantial measures to homogenize Disney World as a “family friendly” environment. Theme parks catering to adult tastes (e.g., Treasure Island) are physically removed, providing buffers demanded by consumers.

Cable and satellite TV operators have similar incentives and additional options. Given their electronic “amusement park” service, MVPD suppliers supply large bundles and cede viewing choices to subscribers. Consumers tailor their viewing experiences by multiple technologies. In a home without children, a simple channel selector is a sufficient control mechanism. With children, rules limiting kids’ viewing to prescribed channels is a crude but common method of reducing exposure to inappropriate content. A more precise and reliable solution is imposed by programming the cable or satellite set-top box, blocking certain channels electronically. Alternatively, it is possible to employ a filter such as the V-chip, which blocks certain programming by ratings code.³⁷ Also, cable TV operators offer to remove certain channels upon request of the subscriber,³⁸ while satellite television providers have used their relatively easy-to-use blocking methods as a competitive tool since launching service in the mid-1990s.³⁹

37. All TV sets 13 inches and larger sold in the United States (since Jan. 1, 2000) contain a V-chip, as per a provision in the 1996 Telecommunications Act. This is a filter that works with a rating system, allowing parents to set the level of protection desired (the TV set will not display programs with ratings that exceed the level set). Federal Communications Commission, How to Prevent Viewing Objectionable Television Programs, <http://www.fcc.gov/cgb/consumerfacts/objectionabletv.html> (last visited July 27, 2006).

38. National Cable & Telecommunications Assoc., Control Your TV, <http://www.controlyourtv.org/faq.php#q8> (last visited July 27, 2006). See also About.com, Parental Control Technology, <http://kidstvmovies.about.com/od/parentalcontroltools/a/parentcontrol.htm> (last visited July 27, 2006).

39. DirecTV, the largest satellite TV operator, features the following information on its

B. Paying for Overhead

Shopping at a grocery store, a customer underwrites the fixed cost of operations (store rent, electric costs, personnel) implicitly in prices charged for individual items. Overhead costs (incurred for the benefit of all shoppers) are paid via charges tucked into product prices. This means that the customer buying \$100 of groceries generally pays a lot more of the electricity bill than does the customer buying just \$25. Because the common costs are a relatively small part of the total costs of the grocery store, however, the differences are not large. The \$100 shopper costs the grocery store nearly \$100 in the cost of goods sold, and the \$25 shopper costs the store only about one-quarter as much. Even so, stores try to reward \$100 shoppers through loyalty clubs and volume discounts.

The situation is markedly different when large upfront investments in infrastructure, such as are required to create an MVPD system, constitute the major expense in delivering service. This makes it efficient to price the supply of services differently than in the case of the grocery store, where customers are charged, more or less, for what they consume. In fact, it is commonly said that the cable operator's customers are "subscribers," whereas the grocery store's customers are "shoppers." To support a network, companies establish ongoing relationships with consumers—selling not spot services, but *subscriptions*.⁴⁰

A la carte pricing involves purchases of very small increments—implicitly, one network for one month. It is revealing that in the public debate the a la carte unit is assumed to be a monthly subscription to a single program network, or a small group of channels lumped together thematically.⁴¹ But unbundling could also be applied to the purchase of program networks for shorter intervals (a day, an hour, a minute), or to

website: "DIRECTV offers access to over 225 channels of programming entertainment. If you are a parent, you may want to limit the channels that your children are watching. . . . The Locks & Limits feature built into your equipment allows you to restrict unsupervised television viewing however you want to. You can block specific movies based on their MPAA rating, lock out entire channels, set limited viewing hours, or even establish spending limits on pay per view programming. . . . With the Locks & Limits feature, you can protect your children from flipping to channels that are inappropriate for their age group. There is no limit to the amount of channels that you can lock out from your children's view, and when it's time to watch what you want to watch, you can easily access the programming you like by entering your personal identification (PIN) number (see your owner's manual for details)." DirecTV, Parental Controls Explained, http://www.expertsatellite.com/exp_page.php?pg=faqs.php (last visited Aug. 1, 2006).

40. Of course, magazines and newspapers also distribute their product via subscriptions, for similar economic reasons: the cost of selling that service to one given customer is small relative to the cost of serving customers generally.

41. This relates to the "a la carte light" policy suggestion that cable operators offer, if not individual channels for sale, then a larger number of tiers on which cable networks are clustered according to genre—news, family, sports, etc. The analysis of a la carte extends seamlessly to this alternative to expanded basic tier bundling.

the purchase of individual programs. Pay-per-view has long been offered by MVPD operators, at relatively high per-hour prices, but forms a very small part of the market, whether measured by revenues or (even less) by viewing time. Consumers much prefer the larger bundles.

In some situations, it appears controversial *not* to offer all-you-eat buffet pricing. This is the case with cable modem service, where broadband connections are priced such that subscribers generally pay the same monthly fee without respect to how much content they download from the Internet. Interestingly, this form of bundling has been widely popular, crowding out earlier pricing plans (like used originally with AOL's dial-up access) that charged users according to how many online hours they used. Both consumer preferences and supply-side efficiencies are important to consider in evaluating pricing strategies.

II. THE CASE FOR A LA CARTE

Proponents of a la carte pricing make two distinct cases for rules requiring cable operators to make individual channels available to consumers. Allowing consumers to pick and choose

1. Will reduce consumer cable bills (the *economic* justification).
2. Will end the flow of unwanted programming, with offensive content, into subscribers' homes (the *social* justification).

These rationales are theoretically independent of one another. The elimination of unwanted programming may provide a valuable service, such that cable subscribers would be willing to pay *more* for service with *fewer* (unwanted) channels. Yet, in practice, the arguments tend to converge. Those who espouse the social justification for a la carte also argue that prices for reduced bundles should be lower.

A. The Economic Rationale

The reasoning that leads from a la carte pricing to lower cable bills stems from a belief that consumers are charged for basic tier channels that they rarely, if ever, watch. As summarized by Senator John McCain (R-AZ), then chairman of the Senate Commerce Committee:

A la carte pricing would enable consumers to pay for only those channels they want to watch. It would undoubtedly benefit those consumers who watch only three or four cable channels or who may be on a limited budget. It may also have the effect of disciplining

cable rates overall.⁴²

This reasoning connects to the claim that a la carte pricing would allow consumers to reveal what programming is most popular. The current bundling practice is used by cable operators, according to regulatory advocates, to favor their preferred programming (which they enjoy financial interests in) over what customers demand:

The [cable] companies never offer channels on an a la carte basis to determine if consumer demand exists. Consumers are forced to pay for the added, low value channels because they do not want to give up the whole bundle. Since there is little competition and the competitors offer bundles too, there is no real alternative. Cable industry claims that its prices should be evaluated on a per channel basis must be rejected by policymakers for the simple reason that they do not allow consumers to buy its services that way.⁴³

B. The Social Rationale

Some proponents of a la carte pricing argue that families should not be forced to support programming they find objectionable. It is not sufficient that these households do not watch, or may block, the channel. As put forth by L. Brent Bozell, III of the Parents Television Council:

The cable industry argues that parents have the option of blocking channels they don't want. But what kind of a choice is that, when they still have to pay for those channels? There is something terribly and fundamentally wrong with requiring consumers to pay for a product they don't want, and may even find offensive, in order to get something they do want. It's like a grocery store telling you that in order to buy a gallon of milk; you also have to buy a six-pack of beer and a carton of cigarettes. But that is exactly what the cable industry has been forcing cable subscribers to do for years.⁴⁴

This perspective suggests that an alternative cable menu, one offering subscribers the opportunity to create their own customized tiers, would allow individuals to determine what kinds of programming their purchases support. This new marketing approach would then quarantine the video viewing purchases made by Household A, interested in only

42. Letter to the Honorable Michael Powell (Chairman, Federal Communications Commission) from Senator John McCain (May 19, 2004).

43. Cooper, *supra* note 4, at 40.

44. Press Release, Statement of L. Brent Bozell, III, Founder and President of the Parents Television Council on Cable Choice, May 5, 2004, <http://www.cwfa.org/images/content/bozell-cc.pdf>.

watching the Family Channel, PBS Kids, Fox News and Animal Planet, from those of Household B, which is interested in MTV, Speedway, E! and Bravo. Consumers would succeed in customizing their viewing fare such that the channels coming into their home were, all things considered, more valuable to them.

This brings the social perspective into conformity with the economic rationale. The confluence is affirmed when proponents of the social view extend the argument (as seen in the passage above) to suggest that consumer charges would then be lower for channel bundles of reduced size.

C. Economic Analysis

The actual economics are quite different from how they are portrayed in the popular argument for regulation. Customers pay a standard fee for access to a given package of channels, but because each places a distinct value on the services within the package, each pays a different price for the component parts. This is an effective way to share the costs of the fixed infrastructure necessary to create and distribute cable programs. Household A—with family-oriented viewers—subscribes to get access to its favorite channels, while Household B pays to gain access to its racier choices. *Neither pays for the other's selection, but for the network infrastructure from which they jointly gain advantage.* Two implications emerge:

1. No cost savings would be realized if either A or B were to receive a smaller package of channels, as the marginal cost of video transmissions equals zero.
2. Neither A nor B would benefit from being served by a separate network, as they each benefit by sharing overhead costs with other users—including those with dramatically different tastes and preferences.

When all subscribers *pay one price* to receive a standard package of channels, they will nonetheless *watch a different mix* of shows. Some households may desire to block certain networks—less may indeed be more, particularly where children are concerned. That customization provides incremental value because those who desire to block do so, and because the costs of eliminating specific networks in targeted households is not large. This allows an important economic efficiency: support payments for network infrastructure capable of serving diverse sources of demand.

While it appears that subscribers are being charged for programs they *do not* demand, the fact is that they only pay the subscription fee if

the value of the programs they *do* demand exceeds the fee. In reality, they only pay for the tier programs they desire to receive, and the cable operator throws the additional channels in for free. Some may not be wanted, and will not be watched. If inconvenience or irritation are involved in avoiding such programming, these costs are internalized by profit-maximizing MVPD suppliers, which seek to make their services desirable to potential subscribers. But these costs will be weighed against the benefits to consumers of including extra channels. Consumers generally prefer more options, while basic cable networks, which can more effectively compete for audience share when included in the basic tier of programming, lower license fees in exchange.

While both the economic and social arguments for regulation suggest that knocking unwatched channels off the basic tier will result in cost savings, the premise is false. Video program networks are public goods, and limiting access by infrequent viewers, or even never-time viewers, does not conserve scarce resources.

In fact, constraining the size of the expanded basic tier imposes costs on both subscribers and program networks. Asking households to select exactly those channels they will watch later in the month (or year) is a demanding, time-consuming request. It is expensive, requiring company staff personnel and, in most cases, digital set-top boxes. And because nothing is saved by eliminating a program network from a given cable TV connection, the dividend promised by a la carte fails to materialize.⁴⁵

While customers see one price for a standard package, economists identify this situation as involving price discrimination because consumers effectively pay *different* prices for the *same* channel. The practice is common. A well known, and more visible, example involves airline tickets. The airlines know that business travelers are typically willing to pay more for a given seat than a vacation traveler. By charging higher prices for trips that do not include a Saturday night stay-over or are made without a 21-day advance purchase, the business traveler (placing large value on flexibility) is charged a high price, while the tourist (willing to change plans to travel when fares are cheap) is charged much less. Price discrimination also exists in hotels, movie theaters, and restaurants, all examples where an inventory (rooms, seats,

45. While cable operators routinely pay cable network license fees on a per-subscriber basis, this does not change that argument that zero economic savings are associated with reduced network coverage. First, license fees are transfers between businesses; historical program costs are invariant to the incremental consumer's decision. Second, these payments can and would be restructured were wide coverage on basic tiers removed. This is seen in the case of premium channels, which carry far higher per-subscriber license fees. It is also seen in a la carte price schedules offered in the C-Band satellite TV market and, for a small number of services, the DBS market. See discussion below.

or tables) is worthless if not utilized. This parallels the situation in multi-channel video programming, where marginal channels have no value withheld from basic cable subscribers.⁴⁶

When customers with distinct tastes purchase a basic tier of cable programming, they do so for different reasons. The cable operator gains little by sorting out which channels they have expressed a desire for; viewers are quite capable of manipulating their own remote controls, and most do not desire to limit their options. Moreover, the transactions that take place allow rival consumers to pay for the programming they value—whether it be 17 channels⁴⁷ or 97⁴⁸—and to pay a lower price for what they want because other households are helping to support the fixed costs common to all services.

This contribution to infrastructure funding yields investors the incentive to create both physical distribution networks and programming, and is particularly crucial to inducing competitive entry. This is seen in the manner in which the new entrants typically offer very broad, diverse bundles (See Table 1), and in the allegation that actions limiting the ability of entrants to assemble such large basic tiers (say, when exclusivity agreements with incumbents limit access to particular programs) undermine market rivalry.⁴⁹

The economic explanation of basic cable tiers, then, undercuts the charge that customers who do not wish to receive a channel are subsidizing that channel by receiving it in their basic subscription. A household exclusively populated by sports fans rightly views its cable bill as the price of admission to televised sports events, while a household composed only of classic movie buffs correctly views its subscription as a ticket to old motion pictures. They pay for what they demand, and either payment is less than what it might otherwise be if less efficient marketing mechanisms were used to enlist subscribers and to finance common costs.

A simple numerical example illustrates. Suppose the market consists of four viewers, Tom, Dick, Harry and Moe, and two cable networks, ESPN and Discovery. Costs do not depend on the number of subscribers, as network infrastructure and cable programming costs are sunk. These assumptions mimic actual markets. Each individual's willingness to pay, summarized in Table 2, reflects the following.

Tom and Dick like ESPN more than Discovery

46. On the economics of price discrimination, see JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 133-168 (1989).

47. "The GAO reports that the typical household watches only 17 channels." Cooper, *supra* note 4, at 39.

48. See *tbl.1*.

49. "Bundling is critical to entry into the emerging digital multimedia market." Cooper, *supra* note 4, at 32 (omitting footnote).

Harry and Moe prefer Discovery to ESPN

Tom and Harry are willing to pay more for TV service than Dick and Moe

TABLE 2. CONSUMER DEMAND FOR CABLE NETWORKS

	<i>ESPN</i> (\$)	<i>Discovery</i> (\$)	<i>Total Willingness to Pay</i> (\$)
Tom	6	2	8
Dick	4	1	5
Harry	2	6	8
Moe	1	4	5
Total Value	13	13	26

Suppose the cable company charges a single price for each channel –a la carte. The firm then maximizes its revenue by charging each subscriber \$4 per channel. At this price, two customers subscribe to ESPN (Tom and Dick), while two subscribe to Discovery (Harry and Moe). Total revenue equals \$16 (4 x \$4). The value created is represented by consumers' surplus, the difference between what a consumer is willing to pay and what it does pay (price). Here, Tom gains \$2, as he is willing to pay \$6 for ESPN, which he buys for \$4. The same holds for Harry with respect to Discovery. The other channel purchases produce no value above their cost to consumers. In aggregate, consumer surplus is \$4. (Note that total consumer value equals \$20, while total revenue equals \$16.) Charging a different price for either channel does not increase the cable operator's revenue.⁵⁰

Now suppose that the cable company abandons a la carte, bundling both networks on a tier priced at \$5. All four consumers subscribe, because each potential customer values the bundle at \$5 or more. In aggregate, consumers now pay \$20, and receive \$26 worth of viewing. Consumers as a whole realize a surplus of \$6 (= \$26 - \$20), or \$2 more than under a la carte. This gain comes from the efficiency of allowing all programs to go to all customers, the "expanded basic" approach. When this obtains, content is distributed even to marginal demanders with modest desires. This is precisely the efficient result, of course, because it cost nothing to allow additional viewers to enjoy existing video programs.

The result of bundling in MVPD markets, then, is that consumers gain (through increased viewing choices) while program producers gain

50. Charging *different* prices for the *same* channel could increase profits, posting a high price to high-demand customers, lower prices to others. The cable operator, however, does not know how who to charge extra, and does not anticipate being able to rely on high-demand customers to volunteer their identity.

(through an increase in revenues). Ultimately, the payments made to programmers also create new value for customers, as competition to produce popular video content intensifies. Moreover, transaction costs are dramatically reduced under basic cable bundling, as discussed below.

III. COSTS AND BENEFITS OF BASIC TIERS

The marketing of bundles solves a potentially difficult economic problem: how to achieve efficient distribution of services that entail substantial costs to create, but virtually no additional costs to share. This has historically been referenced, in fact, as the “marginal cost controversy.”⁵¹

A. The “Marginal Cost Controversy”

Economist Harold Hotelling long ago pointed out that the provision of public goods (such as TV programming)⁵² entails a fundamental economic problem.⁵³ The cost of providing a public good to an additional consumer is effectively zero. To deny that additional customer the enjoyment of that good or service, then, is inefficient: greater social value could be generated (as measured by consumers) at no extra cost. This is an extension of a basic postulate that any price above marginal cost creates economic waste by restricting access to goods even when consumers are willing and able to pay the incremental costs of their consumption.

The problem that arises is that pricing a public good at its marginal cost, while efficient once the good is created, will not compensate the supplier for creating the product in the first place. To create a cable TV distribution grid is expensive, as is the creation of cable TV programming. If private investors are to provide valuable public goods, like cable TV systems and cable TV programming, then prices (above zero) must be charged.

Hotelling suggested that markets would fail to efficiently provide the valuable services demanded by consumers, and that government subsidies and/or regulations would be necessary. Without such policies, markets would under-provide the services customers demanded. Ronald Coase responded that markets could provide such services efficiently—relative to government provision, subsidy, or regulation—via pricing strategies that would both allow firms to recover their investments and

51. R. H. Coase, *The Marginal Cost Controversy*, 13 *ECONOMICA* 169 (1946), reprinted in R. H. COASE, *THE FIRM, THE MARKET AND THE LAW* 75-93 (1988).

52. See Paul Samuelson, *Public Goods and Subscription TV: Correction of the Record*, 7 *J.L. & ECON* 81, 81-83 (1964).

53. See Harold Hotelling, *The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates*, 6 *ECONOMETRICA* 242 (1938).

permit consumers to efficiently utilize the public goods produced.

The key innovation was multi-part pricing. If the fixed costs incurred by suppliers could be compensated with, say, subscriber fees that gave each paying customer access to the public good—in this case, a cable TV network—then additional services could be priced at their (low) incremental costs. This approach retains the efficiencies of competitive markets, wherein new networks (for distribution or content) are constructed by investors who risk capital based upon their assessment of long run consumer demand. The alternative, relying on government to value competing investments, is likely less efficient.

The adaptation of MVPD markets to multi-part pricing is straightforward. Subscribers pay an entry-level fee in the form of the expanded basic tier subscription. This supports the outlay of fixed costs that create the underlying distribution network. They also support the fixed costs of an array of programming choices, choices which give value to the underlying distribution grid.⁵⁴ These investments are largely invariant to the number of customers who purchase service. Once a subscriber has purchased access, a large bundle of services are supplied to the customer at marginal cost—zero. In this way, a two-part tariff collapses to a standard monthly subscription fee.

The solution to the “marginal cost controversy” enables cable and satellite firms to provide service, recover their costs, and capture market efficiencies. The subscriber pays a monthly fee if and only if the value of the service package exceeds the basic tier price. For the U.S. market today, MVPD subscribers constitute about 86% of total TV households,⁵⁵ suggesting that relatively few customers are deterred by this entry fee.

When consumers enjoy public goods, they enjoy the benefits of *joint production*. This means that people are able to efficiently obtain goods or services when costs are shared between many users. As millions of households subscribe to MVPD services, and view programs created for cable TV networks, the economic burden of creating these choices is spread across millions of audience members. Given the diverse tastes and viewing habits of the population, this sharing is undertaken for different reasons. And the reasons may even conflict, as when one viewer objects to the content viewed by another. But each cooperates because it advances *their* interests, bringing them programming that they value, and which would otherwise (without such

54. Note the complementary values of conduit and content. Either is worth considerably less without the other.

55. See Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Tenth Annual Report*, 19 FCC Rcd. 1,606, app.B, tbl.B-1 (2004) [hereinafter *FCC Tenth Annual Report*].

cooperation) cost them more.

Market forces based on bundling have improved networks and upgraded service. Direct broadcast satellite (DBS) operators have, since their mid-1990s entry, offered a large number of channels in their competitive basic tier. Cable operators responded with huge capital improvements to provide additional services (including digital program tiers and high-speed internet access). The largest U.S. cable operator, Comcast, has alone spent \$40 billion over the last eight years upgrading its systems, reportedly to better compete with satellite television services.⁵⁶

The burgeoning of platform-based competition has encouraged a vast assortment of innovative programming. Since the emergence of DBS, the number of networks has tripled, with Fox News, History International, National Geographic, Spike, Oxygen, Logo, and Biography added to MVPD line-ups.⁵⁷ Discovery, which began as a single network, has blossomed into 14 domestic U.S. networks, including Discovery Health, Discovery Times, and Discovery Kids.⁵⁸ Individual consumers are not likely to watch each of these, but the expanded choice affords valuable options.

B. Competitive Entrants Bundle

The marketing choices made by DirecTV and EchoStar illustrate the efficiencies involved in multi-channel video distribution. Here, entrants into the market—and firms having little or no financial interest in program networks⁵⁹—offer very large basic tiers. It is additionally noteworthy that DBS service is provided via digital set top boxes, where (distinct from cable TV systems) subscribers' programming services can be customized using standard equipment already in use. DirecTV's smallest package consists of over 90 video channels.⁶⁰ EchoStar's consists of 72 channels.⁶¹ Cable operators offer, on average, 62.7 channels in their basic tier.⁶² Given that over 22 million households

56. Derek Caney, *Facing Competition, Comcast Fights Back*, REUTERS, June 30, 2004.

57. See launch dates given for these channels on the website of the National Cable & Telecommunications Association. National Cable and Telecommunications Association, <http://www.ncta.com/Organizations.aspx?type=orgtyp2> (last visited Sept. 3, 2006).

58. Discovery Communications, Inc., <http://corporate.discovery.com> (last visited Feb. 23, 2006).

59. A substantial interest in DirecTV has recently been sold to the News Corporation, which owns Fox Television and other programming networks. Yet DirecTV launched and grew rapidly from 1994-2003, prior to this integration. The ownership change appears to have virtually no impact on the question of how DirecTV bundles basic services. And the practices of (non-integrated) EchoStar are similar.

60. See *supra* tbl.1.

61. *Id.*

62. Implementation of Section 3 of the Cable Television Consumer Protection and

have been attracted to the new, larger channel packages, the evidence is that many customers attach value to the additional channels. It also suggests that the market power of cable companies is not driving the all-you-can-eat menu. Rather, competitive market forces are expanding the size of the tier.

Similar observations emerge from the market for audio programming. Two companies, XM Satellite Radio Holdings and Sirius Satellite Radio, have recently begun to transmit radio programming by satellite. XM and Sirius face a difficult challenge in charging subscription fees for radio broadcasts. Further, each has incurred substantial sunk costs. Neither, however, offers radio channels on an a la carte basis.⁶³ Both XM and Sirius offer more than one hundred channels in their entry-level package.⁶⁴ XM offers 160 channels while Sirius offer over 120 channels.

Competitive pressures to offer programming in packages is also faced by those that provide music over the internet. RCN Corporation, an “overbuilder” (which has emerged from a 2004 bankruptcy)⁶⁵ provides phone, cable and high speed internet services in direct competition with cable and phone operators. RCN offers subscribers a premium service called Interaction Music.⁶⁶ For \$7.95 per month, customers have unlimited access, including the ability to stream, download, and copy any of the more than 1.2 million songs available through MusicNet and Synacor.

Efficiencies associated with bundling are evident in other sectors, as well. Like cable networks, newspaper and magazine producers face high fixed costs and low marginal costs. The standard sale, then, bundles a large amount of product for a fixed fee, and large discounts are given to subscribers—those who buy a large number of such basic bundles. Subscribers to the *New York Times* are not given a choice between the columns of Paul Krugman (a noted liberal commentator) or David Brooks (a conservative), or allowed to buy just the *Times*' international news while omitting business and sports.⁶⁷ All subscribers receive the

Competition Act of 1992, *Report of Cable Industry Prices*, 18 FCC Rcd. 13,284, ¶ 4 (2003).

63. They do offer premium services after the purchase of the basic service, analogous to cable or satellite TV operators.

64. See XM Satellite Radio, Service & Subscription, http://www.xmradio.com/service_subscription/service_subscription.jsp (last visited Feb. 21, 2006), SIRIUS Satellite Radio, <http://www.sirius.com> (last visited Feb. 21, 2006).

65. See RCN Corporation, Investor Relations, <http://investor.rcn.com/faq.cfm> (last visited Sept. 3, 2006).

66. See RCN Corporation, <http://www.rcninteraction.com/music/signup.jsp> (last visited Feb. 21, 2006).

67. This practice of bundling was apparent in the traditional print newspaper, and has been adopted in marketing for online content. The *New York Times Select* feature, which gives subscribers access to certain editorial content, does not permit buyers to customize their

same content, and then make their own choices about what stories, columns, or sections to read.⁶⁸

It is stunning that newspapers are sometimes offered as analogies for an unbundled business model. Writing in NATIONAL REVIEW, one advocate of a la carte pricing for cable TV systems writes:

[C]able consumers face an all-or-nothing choice. This would be analogous to requiring consumers to purchase the Sunday edition of the *Washington Post* with a *Penthouse* magazine insert. . . If cable operators unbundled their programming, parents could buy the Discovery Channel, Nickelodeon, and other family-friendly fare without being forced to pay for objectionable material. . . [O]perators could offer a “block and reimburse” option to consumers. Currently, cable providers have the technological capability to block individual channels, and many already provide this service to consumers. It’s only fair that consumers be reimbursed the per-channel fee of the channels they choose to block.⁶⁹

But the *Washington Post* Sunday edition comes with a *Washington Post Magazine*, and consumers that would prefer a *New York Times Magazine* or *Parade* or, for that matter, *Penthouse*, are not given “block and reimburse” options. They then decide to either buy the *Post*—all its sections and features—and, if so, which parts of the paper to enjoy. If the expected value of the parts they plan to enjoy exceed the price, they will rationally elect to purchase. Customers with distinct preferences will end up purchasing the bundle, gaining utility from different features. The model precisely tracks that employed by cable TV systems.⁷⁰

C. Cost Savings from Bundling Basic Cable TV Networks

Both consumers and cable system operators reduce their transaction costs when networks are sold as a bundle. Consumers do not have to make complex decisions over future viewing choices when they sign up for cable service. Instead of evaluating each channel before subscribing to it, consumers can browse the expanded basic package at their leisure. A broad bundle of channels also eliminates the need to reconfigure selections as tastes or program networks change. In lieu of placing

subscriptions by, e.g., paying for David Brooks’ columns but not Paul Krugmans’.

68. Increasingly, newspapers attempt to charge for individual articles in online archives. This mirrors cable TV system pricing patterns for premium channels or pay per view.

69. Cesar V. Conda, *Cable, à la Carte?*, NATIONAL REVIEW (Jan. 12, 2006), available at <http://article.nationalreview.com/?q=MWQ3Nzg5OWZiZDZjYTY1MTAxNGI5MzEzOTJhMTQwMmE>.

70. Other examples of bundled subscription prices (and heterogeneous consumer valuations) are found in health clubs, ski resorts, and theme parks, all of which are characterized by large sunk costs and low marginal costs.

orders, subscribers merely use their remote control.

The cable system operator also enjoys transactional savings in order processing, a task that is greatly complicated when the number of distinct packages delivered increases from a limited number of standard tiers to all possible channel combinations. The MVPD would have to track these idiosyncratic menus in its operations and billing systems, incurring increased expense.

Implementing an a la carte pricing mandate could create significant new infrastructure and operating costs for cable TV operators.⁷¹ The devices needed to control a la carte channel access at each cable customer's home are not ubiquitously deployed, nor are the billing or customer support systems. Deploying these capabilities would create additional costs, both for operators and their customers.

Customizing cable packages sent by cable systems can generally be done in one of two ways. For channels that are broadcast through the cable system in analog format, traps block individual channels. Traps are relatively expensive to install because they must be placed on the cable conduit near the customer's home by a cable company employee. Current trap technology implies that the quality of untrapped channels could be degraded when more than a few channels are blocked.

The more sophisticated way to customize basic cable program packages is by use of addressable digital set-top boxes, the equipment now commonly used to supply mini-tiers, such as sports packages, and pay-per-view. This requires programming to be digitally formatted. To implement a la carte pricing, cable operators could either convert their systems to all-digital formats (abandoning analog), or duplicate analog programming on digital channels.

Today, about 50% of cable households have at least one addressable digital set-top-box.⁷² Converting a cable system to all-digital services would require all subscribers to have a digital set-top box, regardless of their programming choices. The Congressional Research Service notes that such devices "rent for approximately \$4.50 per television set" per month.⁷³ The imposition of a la carte would incur this fee for all sets in the 50% of U.S. cable households that do not yet subscribe to digital cable, as well as for cable-connected sets in digital cable households that still receive analog feeds. This involves very substantial costs. Given that satellite systems already using all-digital formats choose not to offer

71. Other suppliers, such as DBS, have network infrastructure that may better accommodate a la carte.

72. This assumes that each digital cable subscriber has a digital box, and that each non-digital cable subscriber does not. Nat'l Cable & Telecomm. Ass'n., Statistics, <http://www.ncta.com/Docs/PageContent.cfm?pageID=86> (last visited Sept. 3, 2006).

73. GOLDFARB, *supra* note 8, at 16.

a la carte, however, suggests that the benefits would be insubstantial.

In truth, such transaction costs pale beside those that would be imposed on cable TV networks themselves. A la carte regulation would severely tax both existing and new cable program networks, because it would undermine fundamental marketing efficiencies—subtle and unseen in the public debate—that make it possible for cable TV to effectively compete in the entertainment marketplace. This accounts for universal condemnation of a la carte rules by cable TV programmers, which itself constitutes key evidence. If a la carte pricing dissipated monopoly power exercised by system operators and empowered consumers, it would predictably increase demand for cable TV programs. Instead, programmers see a la carte as a threat to their very businesses, as seen in the following sub-section.

D. Cable TV Networks Vigorously Resist A La Carte

Consumers Union and the Consumer Federation of America characterize present marketplace opportunities for innovative new networks as grim, largely due to bundling practices, and illustrate with the following:

Stephen Cunningham, CEO and president of start-up channel JokeVision, summed up his network's fate with a morbid sense of humor: "Have you heard the one about the cable programmer who paid no attention to a Comcast suggestion? He's not around any more."⁷⁴

The CU/CFA Comment embraces the argument that MVPD operators bundle networks to both force additional channels on victimized consumers, and to deny channel space to independent programmers. Instead of allowing new competition, operators simply fill slots with less worthwhile programming in which they maintain a financial interest. The CFA's Mark Cooper writes:

Because the current system is so discriminatory against independent programming, we believe that a la carte could expand the opportunity for independent programming.⁷⁵

The argument is extended to niche programming and, particularly,

74. Comments of the Consumers Union and Consumer Fed'n of Am. to the *Public Notice* in A La Carte and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, MB Dkt. No. 04-207, 5 (July 15, 2004), http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284073.

75. Cooper, *supra* note 4, at 8.

to content targeted for underserved socio-economic groups: “[n]ow if we had a la carte, more African-American themed and owned channels could be created and offered to consumers of color.”⁷⁶

This assertion is rejected by evidence in the record. Program networks virtually unanimously oppose a la carte, as seen in Comments filed with the FCC. This opposition encompasses established networks, such as Discovery, fledgling networks, such as Bloomberg News, and start-ups, such as Altitude Sports & Entertainment. It applies to programmers affiliated with cable companies, such as Turner Broadcasting, to networks owned by companies with TV broadcasting interests, such as Viacom, to independent networks, such as the Weather Channel, and to non-profit networks, such as C-SPAN.

And as for the specific assertion that “more African-American themed and owned channels could be created and offered to consumers of color” under a la carte, the MBC Gospel network writes: “[t]he end result of such government intervention would be the death of independent programmers and fewer programming choices for consumers, particularly African-American viewers who already receive disproportionately few services.”⁷⁷ TV One, a recently initiated African-American program venture, adds that a la carte requirements “would shrink the audience base for newly launched networks and networks intended for minority tastes, seriously eroding the advertising base needed to sustain programming efforts.”⁷⁸ According to *actual* African-American program networks trying to get established in the video marketplace, a la carte would impose substantial barriers to entry.

The overwhelming opposition of programmers is based on a crucial economic consideration: *each cable network needs to get its programs to where viewers can see them, and imposing a la carte will make that harder*. Providing customers with a large bundle of channels for a standard monthly fee delivers exceedingly important efficiencies, and forcing customers to order one network at a time would eliminate those advantages.

Consider the simple calculus of a new basic cable network. Launching a venture typically requires upfront investment of about \$85

76. Comments of the Consumers Union and Consumer Fed'n of Am., *supra* note 74, at 6.

77. Comments of MBC Network to the *Public Notice* in A La Carte and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, MB Dkt. No. 04-207, 9 (July 16, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284298.

78. Supplemental Comments of TV One to the *Public Notice* in A La Carte and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, MB Dkt. No. 04-207, 2 (July 15, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284034.

million to \$150 million.⁷⁹ These capital outlays create programs, mold them into a branded product, and arrange delivery to viewers. Of course, the start-up entrepreneur studies existing networks, observes viewing preferences, and conducts extensive market research in creating this additional option. But the key link connecting this creative opportunity with market success is *information flow*. Consumers are not aware of this new viewing choice, and will not gain utility from its presence until they are made aware of the value it delivers.

Gaining carriage on a popular basic tier is the economical way to bridge that informational gap. By successfully marketing to a finite number of cable and satellite operators, the start-up launches its product to a potential audience of millions. Having accessed the viewer's TV set-top box, the new network can easily be sampled by potential customers who may previously possess little or no information about this new viewing option. This constitutes a low cost method of delivering both the product, and valuable information about the product, to millions of households.⁸⁰

Extremely low cost, in fact, relative to the relevant alternative: *a full-blown national marketing campaign to enlist the active support of 110 million households*—this being the practical implication of a la carte, where government rules would require that each customer individually evaluate each network *ex ante* (i.e., prior to seeing it in their local cable system), and then make an affirmative decision to order it.⁸¹ For a niche

79. Declaration of Larry D. Gerbrandt, Attachment to Supplemental Comments of TV One to the *Public Notice* in A La Carte and Themed Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, MB Dkt. No. 04-207, 2 (July 15, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284034.

80. In a Comment to the FCC, A&E Television Networks (AETN) writes: "Current research demonstrates the importance of such sampling. It shows that consumers have difficulty recalling even the best-known multichannel programmers without a reminder of their availability. Among subscribers to cable systems that carry A&E and The History Channel® [owned by AETN], fewer than one in five, on average, are able to name either channel through unaided recall as a network available to them. This is the case even though The History Channel® had the fourth-highest unaided recall score among major networks, and A&E was not far behind. With aided awareness of the channels, however, nearly nine out of ten recognize A&E and The History Channel® as available programming choices. This is a strong indicator that viewers 'surfing' bundled channels and finding an AETN network are likely to recognize it and, if interested in the programming they encounter, tune in, whereas it is unlikely that viewers lacking access to an AETN will think to seek it out, even if AETN were to substantially increase its marketing budget." Comments of A&E Television Networks to the *Public Notice* in A La Carte and Themed-Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, MB Dkt. No. 04-207, 12 (July 15, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284083.

81. This also applies to "a la carte light" mandates, forcing MVPD systems to offer smaller tiers than the current expanded basic, because it would block the low cost transactions path connecting excluded program networks and viewers. A similar outcome would ensue

network that hopes to reach ½ million homes each day with specialty programs, the goal pursued by many start-ups, one national ad campaign designed to reach this universe could swamp the *entire* allotment of risk capital. Moreover, the vast majority of advertising expense would predictably be wasted, because viewers are currently dispersed across existing audiences—precisely the rationale for creating a new niche. And presenting an even higher barrier to success is the fact that each potential viewer has to process the information conveyed, evaluate it, and then act on it, calling up his/her cable or satellite operator and then ordering a channel they have never seen.

On the one hand, cable and satellite operators aggregate content. On the other, consumers desire to use an agent to assemble and deliver a diverse program menu. Operators are compensated by how well they meet subscribers' expectations, and seek to provide popular choices. To select among potential program channels, they employ complex metrics, evaluating customer value by investing heavily in survey information, viewer ratings, and economic analysis of subscription differentials. The joke cited as representative of the industry dynamic is, in fact, deeply revealing: It *ought* to be difficult for a new service provider to ignore what a large customer (i.e., Comcast) thinks. Indeed, cable and satellite operators have strong views about what programming will best generate subscribers, and their ability to convey this information to the market, transacting with those new and existing networks that meet customers' needs, is an efficiency *destroyed* by a la carte.

This explanation is not mere theorizing; it can be seen in the explicit arguments against a la carte rules filed by program networks. Programmers fear the cost of national mass marketing campaigns required by a la carte, preferring the present system as the more efficient alternative. It is based, as the comments make clear, on the economic waste that would accompany a la carte. As Bloomberg (a network delivered to about one-third of MVPD households) writes:

Such requirements would. . . impose high marketing and other costs on BTV as it tried to compete with dozens, if not hundreds, of other programming services vying for new subscribers. It would be difficult for BTV to survive in such an environment. . . The net effect of mandatory a la carte or themed tiering would then be to drive BTV and similarly situated programmers out of business, thereby harming program diversity and consumers.⁸²

from "voluntary a la carte," which would involuntarily limit contracts between program networks and MVPD operators, potentially forcing networks into far more costly (and less effective) marketing efforts in order to gain access to TV households.

82. Comments of Bloomberg Television to the *Public Notice* in A La Carte and

Virtually every other program network filing Comments regarding a la carte with the FCC makes the same point, and opposes a la carte.⁸³ Pointedly, these networks include Oxygen Media (launched in March 2000, now reaching about 65 million households with programming aimed at female audiences), Univision (Spanish language programming), the International Channel (offering programs in 16 languages), and C-SPAN (a non-profit public affairs channel that does not sell advertising).

The testimony of program networks is crucial in two key respects. First, it directly reveals what's good for programmers. In a contest between bundling and a new regime requiring a la carte, cable program networks leave no doubt which would leave them better off. According to these parties—industry experts who are reliably expressing a self-interested policy preference—a far more diverse and valuable array of programming is available with bundling. Second, this programmer-based argument is compelling evidence that *consumers* are better off with bundling. That is not only because consumers value program choice and diversity, but because the program networks' conclusion strongly indicates that a la carte will not achieve promised benefits.

Consider the argument put forth: *cable operators now force households to subscribe to programs they do not want, and a la carte will improve the ability of households to access just the shows they truly desire to watch.* If that were the case, a la carte rules would work as advertised, and many program networks would benefit—in particular those that produce the content that consumers *truly desire*. Those networks would then welcome rules unlocking consumer choice, directing additional demand in their direction. In fact, cable networks loudly reject this view, achieving overwhelming consensus. The clear implication is that a la carte will fail to deliver consumers the benefits promised.

E. The Relatively Low Cost of Blocking

Individual subscribers can remove unwanted programming from appearing on their home television screens. This responds to the concerns of families finding certain networks offensive. Customizing individual packages in this manner can be done at far lower cost, because the standard tiering arrangements stay in place, yielding scale economies. On a targeted basis, individual households are able to remove programming, gaining utility and incurring only modest costs. Billing systems are not affected, nor are ordering transactions, system

Themed-Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, MB Dkt. No. 04-207, 3 (July 15, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284099.

83. See *infra* app. and accompanying text.

operations, or program network monitoring tools.

Channel blocking is relatively simple when using a television set with a digital set-top box. This includes approximately 26.6 million DBS households⁸⁴ and about 27.6 million digital cable households.⁸⁵ Digital boxes typically have the ability to block channels by date and time and by TV and MPAA ratings. Advanced analog set-top boxes also have channel blocking capabilities and the cable industry has committed to providing one if a household requests one.⁸⁶

IV. PRICE EFFECTS OF A LA CARTE

The impact of an a la carte mandate would vary with specific rules. Prominent advocates propose a mandate that 1) unbundles channels beyond the “broadcast tier;” and 2) does not restrict cable operators from offering whatever package pricing options they choose (overruling carriage agreements with programmers that require networks to be placed on the most popular tiers).⁸⁷ Both logic and experience suggest that implementing such a mixed regime (in that channels are offered in packages as well as a la carte) would result in per-channel rates some generous multiple of the mean channel price offered in tiers. One should not expect, for example, that each of the 60 channels in a \$40 tier would be priced at 67¢ per month, but at so high a level that consumers would rarely if ever substitute for the standard tiers.

The essential logic is straightforward. If household demand for cable TV services is such that a cable operator maximizes profits by charging \$40 for a 60-channel tier, the same operator—when forced to price each channel alone, as in an a la carte mandate—will devise a price schedule to protect these revenues. The operator’s motivation is clear. Since no social costs are conserved by reducing distribution of signals, lost receipts go directly to the operator’s bottom line as lost profits. This means that the operator will price to avoid such outcomes. And given that customers are seen to be willing to spend as much as \$40 for the 60-channel tier, marketplace evidence implies that the operator will be

84. LEICHTMAN RESEARCH GROUP, RESEARCH NOTES 6 (2005), http://www.leichtmanresearch.com/research/notes12_2005.pdf.

85. National Cable & Telecommunications Association, Statistics, <http://www.ncta.com/Docs/PageContent.cfm?pageID=86> (last visited Feb. 23, 2006).

86. This is how cable companies choose to fulfill the mandate of the Cable Act that any cable “subscriber can prohibit viewing of a particular cable service during periods selected by that subscriber.” See Cable Communications Policy Act of 1984, Pub. L. No. 98-549, 98 Stat. 2779 (codified as amended at 47 U.S.C. § 544(d) (2000)). The Telecommunications Act of 1996 also mandated television sets 13 inches and larger include V-Chip technology. All programming, other than sports or news, must be transmitted with a ratings code the television set can read. Users can then block programs above a set ratings level.

87. Comments of Consumers Union and Consumer Fed’n of Am., *supra* note 74, at 7.

successful. Households are willing to expend \$40 for the 60-channel

TABLE 3. C-BAND CABLE PROGRAM NETWORK A LA CARTE PRICES⁸⁸

Channel	Package	1 Month	3 Month	6 Month	12 Month
Arts & Entertainment	Combo	\$2.49	\$6.49	\$10.99	\$15.49
	Price	\$3.99	\$8.49	\$14.49	\$19.99
BET	Combo	\$1.99	\$5.49	\$10.99	\$14.49
	Price	\$4.49	\$8.99	\$14.49	\$19.99
Country Music Television	Combo	\$2.49	\$6.49	\$10.99	\$15.49
	Price	\$3.99	\$8.49	\$14.49	\$19.99
Cartoon Network Pack	Combo	\$2.49	\$6.49	\$10.99	\$15.49
	Price	\$3.99	\$8.49	\$14.49	\$19.99
CNBC	Combo	\$2.49	\$6.49	\$10.99	\$15.49
	Price	\$3.99	\$8.49	\$14.49	\$19.99
CNN	Combo	\$3.99	\$10.99	\$19.99	\$32.99
	Price	\$4.99	\$12.49	\$21.99	\$35.49
Denver Networks + FOX (KDVR-Denver)	Price	\$18.49	\$51.99	\$102.99	\$202.99
Denver Networks (KUSA, KMGH, KCNC, KWGN)	Combo	\$13.99	\$38.99	\$77.99	\$153.99
	Price	\$18.49	\$51.99	\$102.99	\$202.99
Discovery Network	Combo	\$2.49	\$6.49	\$10.99	\$15.49
	Price	\$3.99	\$8.49	\$14.49	\$19.99
Disney Channel	Combo	\$10.99	\$30.99	\$60.49	\$109.99
	Price	\$12.49	\$32.99	\$65.99	\$120.99
ESPN	Combo	\$5.49	\$15.49	\$27.49	\$54.99
	Price	\$6.99	\$18.99	\$32.99	\$65.99
FOX (KDVR, Denver)	Combo	\$5.49	\$14.99	\$29.99	\$59.99
	Price	\$6.99	\$19.99	\$38.99	\$76.99
FOX News	Combo	\$2.49	\$6.49	\$10.99	\$15.49
	Price	\$3.99	\$8.49	\$14.49	\$19.99

88. SuperStar, http://www.superstar.com/alacarte_index.asp (last visited Feb. 22, 2006).

package, and will reject alternatives that are individually priced (correctly, from the operator's perspective) as inferior substitutes.

A. Marketplace Experience

Consider the experience of the Disney Channel, today one of basic cable's most popular networks. The Disney Channel was launched in 1983 as a premium a la carte service.⁸⁹ In the mid-1990s, the Disney Channel began its migration to expanded basic.⁹⁰ Before the transition, subscribers paid an estimated \$10 to \$16 per month for the channel, much higher than the average channel price in most expanded basic tiers.⁹¹ The incremental cost to customers with Disney in expanded basic was a small fraction of this rate.

A la carte prices are also observed in C-Band programming transmitted to "big dish" satellite receivers.⁹² The Superstar/Netlink Group (Superstar), the most popular provider of C-Band programming, offers channel-by-channel sales. However, a la carte prices are substantially higher than the average channel prices when networks are purchased in bundles.⁹³ Customers can choose to subscribe to just one channel at prices ranging from \$2.49-\$12.49 per month. Choosing five or more a la carte channels qualifies a subscriber for discounted "combo" rates for each channel.⁹⁴

The Superstar/Netlink Group also offers several bundles of networks that offer subscribers further discounts. Both the Choice 15 and the SuperPak Basic are offered for (the same price of) \$28.99 per month, and include 15 and 27 basic cable channels, respectively.⁹⁵

Large pricing differentials are also seen in the small number of channels that DBS operators (with all-digital, addressable systems) offer a la carte. DISH customer service representatives (contacted Feb. 23, 2006) detail that, of their basic networks, only Bloomberg and the Outdoor Channel can be ordered a la carte. DirecTV personnel (also

89. Comments of The Walt Disney Co. to the *Public Notice* in A La Carte and Themed-Tier Programming and Pricing Options for Programming Distribution on Cable Television and Direct Broadcast Satellite Systems, MB Dkt. No. 04-207, 18 (July 15, 2004), http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516284079.

90. *Id.* at 19.

91. *See id.*

92. C-Band subscribers, using different frequencies and technology than DBS subscribers, rely on 4 to 8 foot satellite dishes for reception. Subscribership has sharply declined with the advent of "small dish" networks (e.g., DirecTV and DISH). By the end of 2002, just over half a million households subscribed to C-Band programming. *FCC Tenth Annual Report*, *supra* note 55, at ¶ 74.

93. It should also be noted that C-Band services are pure programming; subscribers independently purchase their own equipment.

94. *See supra* tbl.3, at 286.

95. *See infra* tbl.4, at 288.

TABLE 4. C-BAND CABLE PROGRAM NETWORK PACKAGE OPTIONS⁹⁶

<i>Package</i>	<i>Channels</i>	<i>Monthly</i>	<i>Quarterly</i>	<i>Annually</i>
Choice 15	Choose 15 of 30 basic cable channels	\$28.99	\$80.99	\$318.99
Super Pack Basic	27 Basic Cable channels	\$28.99	\$80.99	\$318.99
Choice 15 with 2 movie networks	19	\$44.99	\$125.99	\$494.99
Choice 15 with 4 movie networks	23	\$57.99	\$161.99	\$637.99

TABLE 5. A LA CARTE OFFERINGS ON ECHOSTAR AND DIRECTV⁹⁷

ECHOSTAR			
<i>Network</i>	<i>A La Carte Price (per month)</i>	<i>Price/Channel: America's Top 180</i>	<i>A La Carte Price Increase</i>
Bloomberg	\$1.50	\$0.29	517%
Outdoor Channel	\$1.50	\$0.29	517%
DIRECTV			
<i>Network</i>	<i>A La Carte Price (per month)</i>	<i>Price/Channel: Total Choice Premier</i>	<i>A La Carte Price Increase</i>
Outdoor Channel	\$1.99	\$0.58	343%

96. SuperStar, http://www.superstar.com/pkgpricing_index.asp (last visited Feb. 22, 2006).

97. Telephone Interview with DISH Network Customer Service Operator (Feb. 23, 2006) (discussing a la carte offerings and prices obtained from call to customer service). DISH Network charges \$49.99 for its America's Top 180 package. This package consists of 171 channels not including music channels. America's Top 180, unlike the America's Top 120 and Top 60 packages, includes the Bloomberg, Disney and Outdoor channels. See DISH Network, <http://www.dishnetwork.com> (visited Feb. 23, 2006). Telephone Interview with DirecTV Customer Service Operator (Feb. 23, 2006) (discussing DirecTV a la carte offerings and prices). DirecTV charges \$93.99 for its "over 205 channel" Total Choice Premier (without local channels) package. Excluding music channels, this package consists of 168 channels. Total Choice Premier, unlike the Total Choice and Total Choice Plus packages, includes the Golf and Outdoor channels along with additional sports channels and the movie networks. See DirecTV, <http://www.directv.com> (visited Feb. 23, 2006).

contacted Feb. 23, 2006) indicate that just the Outdoor Channel is available this way. (Both operators require basic tier subscriptions before selling the a la carte networks.) The retail a la carte prices, listed in Table 5, are about *four to six times* the mean price per month of a basic network purchased in the largest expanded basic tier.

When consumers have the option of purchasing a la carte off the menu, they overwhelmingly decide to forego such choices in favor of bulk purchases.⁹⁸ In fact, those C-Band subscribers who have invested in receiving equipment are abandoning their a la carte choices, and 34-channel basic tier, to subscribe to the much larger packages offered by DBS operators.⁹⁹ Among C-band survivors, a la carte offerings have not proven popular, either. Turner Networks reports that of nearly 250,000 households that subscribed to CNN through C-Band provider Superstar in April 2004, only 798 subscribed on an a la carte basis that did not qualify them for a package discount. The same is true for 1,297 of the 195,000 Cartoon Network subscribers and 235 of the 187,000 Turner Classic Movie subscribers.¹⁰⁰

Rogers Communications, Canada's largest cable operator, offers a similar experience. The company sells dozens of cable networks a la carte, but first requires a \$C24.00 monthly subscription to a basic package and leasing a digital set-top box for \$C8.95.¹⁰¹ After those charges are incurred, channels can be purchased a la carte starting at \$C2.49 monthly.¹⁰² Such a small number of people purchase channels individually that the company does not tabulate the total.¹⁰³

B. FCC Projections

In a fascinating game of regulatory "gotcha" played as solitaire, the Federal Communications Commission has issued sharply conflicting reports projecting exactly how a la carte rules would change pricing for cable TV services. The first FCC report, issued in Nov. 2004,¹⁰⁴

98. Bloomberg TV, for instance, reports just 7,000 a la carte subscribers on the DISH Network, while serving about 9 million basic subscribers. See Comments of Bloomberg Television, *supra* note 75, at 8.

99. "The decline in subscribership is caused principally by HSD [home satellite dish] subscribers switching to DBS because of the smaller, less expensive and easier to use equipment, and the advent of local-into-local programming. . . ." *FCC Tenth Annual Report*, *supra* note 55, at ¶ 74.

100. These data were supplied to me by Turner Broadcasting executives.

101. Ted Hearn, *A La Carte Lives, Up North*, MULTICHANNEL NEWS (June 14, 2004), at <http://www.multichannel.com/article/CA426120.html?display=Top+Stories>.

102. *Id.*

103. *Id.*

104. FED. COMM. COMM'N, REPORT ON THE PACKAGING AND SALE OF VIDEO PROGRAMMING SERVICES TO THE PUBLIC (Nov. 19, 2004), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-254432A1.pdf.

predicted that a la carte pricing would generally increase the cost of cable service, using assumptions about the price of individual channels and the number of channels households would order supplied by a cable industry sponsored White Paper by management consultants Booz Allen. The second FCC report, issued in Feb. 2006,¹⁰⁵ uncovered numerical errors in the Booz Allen study. The second FCC report concludes that “The corrected calculations show that a subscriber could receive as many as 20 channels, including six broadcast signals, without seeing an increase in his or her monthly bill.”¹⁰⁶

This recalculation provides entrée for the FCC to make a possible empirical case for a la carte as a pro-consumer regulatory policy, stating that “the current industry practice of bundling programming services *may* drive up retail prices. . . . Some type of a la carte option *could* prove better than today’s bundling practices in fostering diverse programming responsive to consumer demand. A la carte *could* make it easier for programming networks valued by a minority of viewers to enter the marketplace.”¹⁰⁷ Indeed, estimating prices to be charged in the future, along with the number of channels to be purchased, *may* produce pro-consumer outcomes—by assumption. Yet, it violates the underlying economics for reasons stated above.

Were cable TV consumers willing to purchase “as many as 20 channels, including 6 broadcast signals” for prices approximating expanded basic tier rates, cable operators would undo such an outcome by (a) discouraging a la carte by re-pricing channels at prohibitively high rates; (b) encouraging the full panoply of expanded basic channels by pricing bundles at relatively favorable rates. The determinative facts are, first, that consumers already express demand for tiers that indicate the profit-maximizing outcome for cable operators and, second, without rate regulation authority—ended in the Telecommunications Act of 1996 (and phased out as of March 31, 1999)—the government is powerless to impose rules that deter cable TV operators from achieving this outcome. The non sequitur in mandating a la carte without effective rate regulation in place haunts any policy discussion; for this reason, the failure of previous rate controls is discussed in more detail in the following section.

105. FED. COMM. COMM’N, FURTHER REPORT ON THE PACKAGING AND SALE OF VIDEO PROGRAMMING SERVICES TO THE PUBLIC (Feb. 9, 2006), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-254432A1.pdf.

106. Press Release, Fed. Comm. Comm’n, FCC Media Bureau Report on Substantial Consumer Benefits in A La Carte Model of Delivering Video Programming (Feb. 9, 2006), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-263741A1.pdf.

107. *Id.* (emphasis added).

C. Family Tiers as *Quid Pro Quo*

In an effort to achieve compromise with regulators, major cable TV operators are now offering “family tiers.” These are an attempt to answer conservative critics who argue that families with children want access to video services without viewing, or paying for, programming inappropriate for kids. Comcast, the nation’s largest operator, announced in Dec. 2005, that it will sell a package of 16 networks for about \$31.20 monthly, including limited basic (retransmitting off-air TV stations). The cable networks included on the Family Tier are: Disney, Toon Disney, PBS KIDS Sprout, Discovery Kids, Science (Discovery), Nickelodeon/Nick Too, Nickelodeon Games and Sports, TBN (Trinity Broadcasting), HGTV (Home and Garden), Food, Do-It-Yourself, CNN Headline News, The Weather Channel, National Geographic, C-SPAN and C-SPAN2.¹⁰⁸ Similarly, Time Warner announced its “Family Choice Tier,” a \$12 package (on top of limited basic), that requires a monthly rental of limited basic plus a digital set top box (for each TV receiving the tier). A pricing comparison supplied by Time Warner is displayed in Table 6.

TABLE 6. TIME WARNER’S BASIC TIER COMPARISON¹⁰⁹

BASIC TIER		
<i>Includes: Local broadcast stations, public/educational and government access channels mandated by local cable franchise authorities and other select channels.</i>		
Price: \$12	Number of channels: 15-20	Price per channel: 60-80¢
FAMILY CHOICE TIER		
<i>Includes: Boomerang, C-SPAN 2, C-SPAN 3, CNN Headline News, The Science Channel, Discovery Kids, Disney Channel, DIY Network, FIT-TV, Food Network, HGTV, La Familia, Nick Games & Sports, The Weather Channel and Toon Disney</i>		
Price: \$12.99	Number of channels: 15	Price per channel: 87¢
	Set-top box required: Digital	Added cost: \$7.99
EXPANDED BASIC TIER		
<i>Includes: National and regional cable networks, superstations, local news channels.</i>		
Price: \$41.00	No. of channels: 70-80	Price per channel: 51-58¢

108. Reid Kanaley, *Comcast offers G-rated “Family-Tier” Package*, PHIL. INQUIRER, Dec. 23, 2005, at C6.

109. R. Thomas Umstead, *Time Warner First In a Family Way*, MULTICHANNEL NEWS, at <http://www.multichannel.com/article/CA6292379.html?display=Top+Stories> (quoting Time Warner Cable).

The reality is that such packages, while offering a potential political solution, would be rarely used by actual consumers. Households subscribe to cable or satellite TV services to obtain a range of programming for adults and, where present, children. The family tiers are not designed to satisfy that consumer demand. Not only are some of the most popular children's networks omitted—including Nickelodeon, PBS Kids, and Animal Planet—but virtually every adult-oriented network is excluded. Heads of households are extremely unlikely to spend \$33 per month for cable service, and *not* receive CNN, MSNBC, CNBC, Fox News, ESPN, Discovery, A&E, CourtTV, Lifetime, USA, History, TMC, TNT, TBS, or TNT. The option of getting access to all of these channels, and scores more, for \$41—as shown in the Time Warner menu in Table 6—is the alternative that will overwhelmingly dominate, rendering “family tiers” irrelevant.

Pro-regulation groups are alert to this outcome, and have attacked the “family tiers” as an insufficient substitute for price per channel menus.¹¹⁰ The approach has been called “a product that is designed to fail.”¹¹¹ This is an accurate assessment, but it applies far more generally. A la carte would likewise be priced so as to protect cable system revenues. Without effective rate regulation, the policy of a la carte is also “designed to fail.” And not only does federal law ban rate regulation, institutional constraints and marketplace realities prevent adoption of a plausibly effective regime, as shown in Section III.

D. The Irony of Must Carry

The vast majority of Americans are sick and tired of the sewage pouring out of their airwaves, or on cable programs they are being forced to underwrite,” said L. Brent Bozell, president of the Parents Television Council. PTC-led efforts account for the majority of indecency complaints filed with the FCC in recent years.¹¹²

The campaign for a la carte regulation is driven by parental concerns over suggestive or raunchy programming inappropriate for kids. Many feel that they are being forced to pay for—and to receive — inappropriate video fare largely due to current corporate practices of

110. *Decency in Broadcasting, Cable, and Other Media: Before the S. Comm. On Commerce, Science, and Transportation*, 109th Cong. 61 (2006) (statement of Lanier Swann, Dir. of Gov't Relations, Concerned Women of America).

111. Kanaley, *supra* note 108, at C6 (quoting Dan Isett, director of corporate and government affairs for the Parents Television Council).

112. Brooks Boliek, *Martin Leads FCC with Firm Hand*, HOLLYWOOD REP. (Feb. 10, 2006), available at http://www.hollywoodreporter.com/thr/article_display.jsp?vnu_content_id=1001994988.

cable and satellite operators, and that simple changes in those practices, by government regulation if need be, will improve their options. Policy makers in Congress are sympathetic, and several have pledged to push mandates for a la carte.

A central irony is that the greatest problem with unwanted indecency appears to stem from broadcast TV content, and these programs are mandated for carriage on the most basic cable TV tier. That is to say, cable operators must carry TV stations serving their locality, without charge.¹¹³ Hence, inappropriate content appearing on broadcast television—“the sewage pouring out of their airwaves”—cannot be eliminated from “family tiers” or even cable a la carte offerings.

Thus, the driving force behind a la carte aims toward a cul-de-sac. Even if a la carte were implemented, households subscribing to cable or satellite¹¹⁴ would not achieve a reasonable solution to the problem of indecent content. From Fox Television’s *Family Guy*, to the now infamous Janet Jackson nano-nudity flap during halftime of Super Bowl XXXVIII, complaints about broadcast television content dominate those relating to cable TV networks.¹¹⁵ This makes sense in that cable TV channels serve niche audiences, and it is the wide “broadcast” audience that is offended by unexpectedly crude programming.

This shows up in FCC complaint data. As of September 2005, the FCC had received 319 formal complaints about broadcast TV programs, as opposed to just 84 for cable TV shows.¹¹⁶ This is a stark differential, tilting nearly four-to-one in favor of broadcasting. Moreover, the disparity is ever sharper when it is noted that cable TV programming now enlists a larger number of viewers, in aggregate, and offers a vastly larger quantity of programming. The opportunity for offense is vastly greater with increased supply, yet broadcasting’s relatively parsimonious programming hours dominate.

Hence, families subscribing to just those cable networks that they deem appropriate will yet be forced to use additional measures to block

113. Alternatively, stations can elect “retransmission consent,” negotiating fees for retransmission by cable operators. Network affiliates and larger independent stations typically adopt this course. But, should such negotiations fail, every station would have the opportunity for zero-priced cable carriage.

114. Satellite “must carry” rules are different from those governing cable systems. Satellite subscribers need not receive TV broadcast stations; however, if their satellite operator offers them, the operator must offer them as a bundle—i.e., a la carte, or any tier less than the full set of all over-the-air signals, is illegal. See Ted Hearn, *4th Circuit Upholds DBS Must-Carry*, MULTICHANNEL NEWS, <http://www.multichannel.com/article/CA185699.html>.

115. R. Thomas Umstead & Linda Haugsted, *Cracks in the Tier*, MULTICHANNEL NEWS, Jan. 30, 2006, <http://www.multichannel.com/article/CA6302824.html>.

116. *Id.* The article does not define the period over which such FCC complaints have been accumulated.

offensive content. These may include blocking devices filtering out programs or entire channels, or may consist of increasing in-person monitoring of the shows their children watch. But under the current must-carry regime, neither family tiers nor a la carte afford anything approaching parental “sewage” control.

VI. CABLE RATE REGULATION

Rate regulation must enter the a la carte policy discussion, for the simple reason that MVPD operators would logically respond to an a la carte mandate by pricing individual channels with rates rendering the a la carte choice irrelevant. Only by regulating cable rates generally could an a la carte mandate have the opportunity to constrain price menus. It is a fatal flaw of the FCC’s Second Report that it fails to consider this crucial aspect of a la carte rules.

Not only is cable rate regulation illegal under the terms of the 1996 Telecommunications Act, it is not a viable option to implement. U.S. experience with rate regulation in the cable sector is extensive, and the lessons are clear: rate controls are counter-productive. By capping rates, the 1992 Cable Act, for example, led cable operators to reconfigure programming menus, reduce their demand for new and high-quality basic tier programming, and to alter marketing practices such that subscriber growth (and viewer ratings) suffered substantial declines from long-run trends.¹¹⁷ This evidence—showing that subscribers felt they were worse off even as rates declined, given the value of the services received—led policy makers to relax rate caps beginning in late 1994, and ultimately to the statutory deregulation of rates in the 1996 Telecommunications Act.¹¹⁸

While the federal and state regulators found that they could lower the nominal price of cable television subscriptions, and did so in the September 1992 to October 1994 period, they could not control the quality of the product. Once investors saw retail prices squeezed by regulators, capital fled and service improvements stopped. As reported in late 1994:

For weeks, senior [FCC] officials have struggled to reconcile two somewhat incompatible goals. They wanted to preserve the billion-dollar rate reductions they imposed earlier this year. But they also

117. See HAZLETT & SPITZER, *supra* note 12; Thomas W. Hazlett, *Prices and Outputs under Cable TV Reregulation*, 12 J. REG. ECON. 173, 173-95 (1997).

118. This experience mirrored that of a generation earlier, prior to federal pre-emption of local rate regulation in the Cable Act of 1984. See Thomas W. Hazlett, *The Demand to Regulate Franchise Monopoly: Evidence from CATV Rate Deregulation in California*, 29 ECON. INQUIRY 275 (1991); Thomas W. Hazlett, *Cable Television Rate Deregulation*, 3 INT’L J. ECON. BUS. 145 (1996).

sought to encourage new programming services and investment in more sophisticated networks by cable operators.¹¹⁹

Regulators decided to permit generous price increases, effectively eliminating rate regulation. As then FCC chairman Reed Hundt was to write: “What indeed was the point of the regulation if the beneficiaries were neither thankful nor economically better off?”¹²⁰ Even the Consumers Union and the Consumer Federation of America, both champions of cable re-regulation in 1992, today concede that price controls failed, offering a la carte regulation as an alternative:

We reject the claim that *a la carte* will fail to discipline cable behavior, like rate regulation did in the early 1990s. The 1992 Cable Act gave regulators a weak set of tools; *a la carte* rests on a much more powerful force, consumer sovereignty in the marketplace.¹²¹

Yet rate controls enacted in 1992 were far more powerful regulatory devices, allowing government to cap basic subscription fees and to regulate tiering.¹²² The failure of those regulations to advance consumer interests imply that, not only are rate controls currently illegal under federal law, they are not a viable option for imposing a la carte under a new statute.

CONCLUSION

Cable and satellite TV systems face a challenge increasingly common in the Information Economy: How to efficiently price products that have high “first copy” costs, and are thereafter very cheap. Cable TV networks are costless to distribute to additional households once heavy investments have been sunk to create the necessary software (the content) and hardware (the cable TV system). Operators select a widespread strategy: provide a high-volume product for a fixed, monthly fee. This approach has led to rapidly expanding choices in video content.

A wide range of video service providers use similar bundling approaches. Satellite operators offer even larger tiers than do cable systems, and do so to offer a competitive alternative appealing to the widest segment of the consuming public. Consumers gain both through access to more programs, but also because transactions are far less

119. Edmund L. Andrews, *F.C.C. Approves New Rate Rises for Cable TV*, N.Y. TIMES, Nov. 11, 1994, at D1.

120. REED HUNDT, YOU SAY YOU WANT A REVOLUTION 56 (2000).

121. Cooper, *supra* note 4, at 8.

122. For instance, Adelphia Cable was fined by the FCC for using an a la carte pricing scheme to escape rate regulation. Ted Hearn, *MSOs Were Once A La Carte Fans*, MULTICHANNEL NEWS, July 20, 2004, <http://www.multichannel.com/article/CA437528.html>.

costly. Information about what programs are available is simple to acquire; the channel surfing experience facilitated by the remote control allows for instant and continuous sampling. This, in turn, allows both new and old networks a path to attract new viewers, encouraging programmers to continually experiment with new ways to attract (fickle) viewers.

If a la carte were efficient, both incumbents and competitive entrants lacking market power would have strong incentives to offer such menus, sharing gains with subscribers. Instead, the marketplace converges on bundles. This outcome is particularly important to cable programmers, both popular, established networks and new, independent upstarts. These interests strongly argue that a la carte would hamper efforts to compete for viewers, making it far more expensive to market their programs to interested customers.

Experience in the U.S. C-Band market, DBS, and in the Canadian cable market, suggests that a la carte pricing results in higher prices and attracts few customers, even when subscribers can select between a la carte and bundled channels. Experience in other markets suggests that services are efficiently bundled under cost conditions similar to those prevailing in multi-channel video. Competitive entry by two satellite radio firms has been achieved by 100-channel bundles. Similar buffet style pricing occurs in theme parks, ski resorts, and in health clubs. In the market for broadband Internet access, all-you-can-eat is popular with the consuming public; per-hour access fees have achieved little success in attracting customers. And a la carte rules cannot plausibly constrain cable operators' behavior without concomitant imposition of rate regulation. Not only are such controls currently ruled out via federal statute, they have proven unworkable through multiple episodes—precisely because operators react to controls by changing investments, marketing, and pricing, rendering the constraints impotent. Moreover, the video indecency that drives many to support regulation of cable pricing will not be confronted in any event: broadcast television, prompting by far the strongest outrage, is mandated to be included on all cable tiers, with or without a la carte pricing.

Nonetheless, the illusion remains that prices for bundles are unfair when users believe that they are paying to support channels they do not value. There is an important sense in which network users come together to support the joint costs of creating video services. But it is equally true that this support is actually garnered because different users pay for different uses of the network. Subscribers only pay for the basic tier when the value of the *service they receive* exceeds the *cost they pay*. This is the economic interpretation of bundling. It allows individual customers with diverse tastes to support efficient production of a wide range of services, and to realize their own value from that system.

Still, it appears to many that their subscription fee supports programming that they neither wish to watch nor desire to support. That perspective is one-half illusion: in truth, subscribers are motivated to *pay for* only that programming *they value*. Operators simply throw in additional content for free, as it is far costlier for systems to customize packages when subscribers are capable of channel selection. The sense in which the perception is true stems from the reality that heterogeneous consumers economize by sharing network costs with others. By establishing subscription fees entitling customers to access a wide variety of programs on the expanded basic tier, cable and satellite operators cater to diverse consumer tastes. Limiting this relatively efficient marketing arrangement will discourage productive investments, depriving customers, video distributors, and content creators of gains from trade.

APPENDIX

TABLE 7. POSITIONS TAKEN ON A LA CARTE REGULATION IN FCC COMMENTS FILED BY CABLE PROGRAM NETWORKS¹²³

<i>Programmer (Earliest Launch)</i>	<i>Networks Owned (2003 subscribers)</i>	<i>A La Carte: For/Against?</i>	<i>Comment</i>
A&E Television Network (Feb-84)	A&E (87.7m) The History Channel (85.8m) The Biography Channel The History Channel en español The History Channel International	Against	"A la carte regulations would not lower prices for most consumers, would reduce consumer choice by driving some networks out of business, and would imperil much family programming that can exist only because it is part of a bundled package." p. vi
Altitude Sports & Entertainment et al (N/A)	Altitude Sports and Entertainment Casino & Gaming Television (1.7m) Comcast Sportsnet Comcast Sportsnet Mid-Atlantic E! Entertainment Television (83.6m) G4TechTV(14.0m) The Golf Channel (58.4m) Inspiration Life Television The Inspiration Network (20.7m) Martial Arts Channel Outdoor Life Network (56.2m) SiTV(4.2m) The Tennis Channel (7.0m) Wisdom Television (7.9m)	Against	"Commenters do not believe that either the Congress or the Commission intend to eliminate the enormously valuable and diverse programming options created by niche networks, although such may be the effect of a governmentally imposed a la carte mandate." p. vi
Bloomberg Television (Feb-94)	Bloomberg (30.5m)	Against	"Proponents of mandatory <i>a la carte</i> or themed tiering claim that such regulations will deliver more consumer choice and lower prices. In reality, such regulations would deliver neither." p. 1

123. Networks owned by each programmer from programmer websites and FCC filings in MB Docket No. 04-207 (July 15, 2004). Subscriber Data and Earliest Launch Date from KAGAN RESEARCH, LLC, ECONOMICS OF BASIC CABLE NETWORKS 30-32, 95-453 (11th ed. 2005). A La Carte opinions from FCC filings in MB Docket No. 04-207 (July 15, 2004).

<i>Programmer (Earliest Lanch)</i>	<i>Networks Owned (2003 subscribers)</i>	<i>A La Carte: For/Against?</i>	<i>Comment</i>
Carolina Christian Broadcasting, Inc. (Oct-72)	W65DS	Against	“This system would damage organizations like our own. We depend on a wide variety of audiences to help support our charity work. . .If an ‘a la carte’ system were put in place it would be more difficult to help our community. Our program audience would decline and it would cause our response rate to decrease. There are people that depend on us for assistance and spiritual guidance.” p. 1
Christian Faith Broadcasting	WGGN-TV (Ohion)	Against	“We are a small broadcasting company and a la carte would make us even smaller - thus drying up our advertising revenue to a point where we would fail. Surely this is not the intention of a la carte proponents or the FCC. . . What more perfect example of the law of unintended consequences? An effort to restore more child-friendly programming should not result in the loss of Christian broadcasting.” p. 1
Christian Television Network (N/A)	Christian Television Network	Neither	“Let me emphasize that National Religious Broadcasters has not yet taken a position to support or oppose <i>A La Carte</i> outright. . . .If an <i>A La Carte platform</i> will give other religious and minority networks greater access, then that’s what we need.” pp. 3-4
Courtroom Television Network (Jul-91)	Court TV (79.0MM)	Against	“Such rules [a la carte] also would undermine the way in which programming channels are marketed to subscribers, and thus drive up costs. . . .New and niche programmers that grew up under cable’s prevailing business model would be stillborn in such an environment.” p. iv-v

<i>Programmer (Earliest Launch)</i>	<i>Networks Owned (2003 subscribers)</i>	<i>A La Carte: For/Against?</i>	<i>Comment</i>
Crown Media United States (Sep-88)	Hallmark Channel (56.3m) Hallmark Movie Channel	Against	“The likely result of such regulation would be higher prices to consumers, lower quality programming, and a reduction in the diversity of programming available to viewers.” p. 1
Discovery Communications (Oct-80)	Discovery Channel (88.6m) TLC (87.0m) Animal Planet (84.7m) Discovery Health Channel (50.4m) Travel Channel (74.2m) BBC America (37.9m) Discovery Kids (34.2m) The Science Channel (34.2m) Discovery Times Channel (32.7m) Discovery Wings Channel (33.2m) Discovery Home Channel (32.7m) Discovery en Español (8.1m) FitTV (32.8m) Discovery HD Theater	Against	“Yet the a la carte proposals at issue in this proceeding would make Discovery’s networks significantly more expensive for consumers and could result in some of them being forced off the air.” p. iii
Eternal Word Television Network (N/A)	EWTN	Against	“A La Carte would also dramatically reduce EWTN’s ability to carry out its mission of service to the community.” p. 3
Fox Cable Networks Group (Jun-94)	FX (83.0m) Fox Sports Net (75.2m) 12 owned and operated regional sports networks Speed Channel (60.3m) National Geographic Channel (46.9m) Fox Movie Channel (27.6m) Fox Sports World Fox Sports en español Fuel Fox Reality Channel	Against	“If the government were to upset this model by imposing mandatory a la carte or themed tier services, consumers would quickly face the prospect of less choice and more cost.” p. iv

<i>Programmer (Earliest Lanch)</i>	<i>Networks Owned (2003 subscribers)</i>	<i>A La Carte: For/Against?</i>	<i>Comment</i>
GoodLife TV Network (May-86)	GoodLife TV Network	Against	“While a la carte mandates would alter the business model upon which all cable program networks are based, independents like GoodLife would bear the brunt of the harm.” p. 3
GSN (Dec-94)	GSN (16.6m)	Against	“Viewers would pay more for fewer networks with scaled-back programming budgets. Media concentration would increase more rapidly and diversity would be lost.” p. 10
International Cable Channels Partnership Ltd. (Jul-90)	The International Channel (11.5m)	Against	“. . . a la carte carriage will jeopardize the viability of niche networks like the International Channel which already face significant challenges in expanding distribution and increasing advertising revenues in the current marketplace.” p. 1
Lifetime Entertainment Services (Feb-84)	Lifetime Television Network (87.5m) Lifetime Movie Network (41.5m) Lifetime Real Women (5.0m)	Against	“[A]ny system of required a la carte or themed tier service offerings would have serious adverse consequences on the diversity, cost and quality of cable and satellite programming available to the American audience.” p. 1
MBC Gospel Network (Fall-99)	MBC Network (9.8m)	Against	“The end result of such government intervention would be the death of independent programmers and fewer programming choices for consumers, particularly African-American viewers who already receive disproportionately few services.” p. 9
NBC Universal, Inc. (Apr-80)	USA (88.1m) CNBC (86.2m) MSNBC (81.3m) Bravo (75.0m) SciFi Channel (82.7m) Trio (22.7m)	Against	“[A]n a la carte mandate increases the likelihood that viewers, because of the transaction burdens inherent in an a la carte mandate, will lose, or never gain, access to programming they would prefer to watch.” p. 4

<i>Programmer (Earliest Lanch)</i>	<i>Networks Owned (2003 subscribers)</i>	<i>A La Carte: For/Against?</i>	<i>Comment</i>
Oxygen Media Corp (Mar-00)	Oxygen (50.2m)	Against	“It would also decrease advertising and subscriber fee revenues while substantially increasing costs, making it far more difficult for existing programmers to survive and virtually impossible to create and launch new programming services.” p. 1
Scripps Networks (Dec-94)	HGTV (84.5m) Food Network (83.0m) Do-It-Yourself Network (26.0m) Fine Living Network (20.0m)	Against	“Furthermore, Scripps Networks could not commit capital to invest in new networks and services in the uncertain and turbulent environment that <i>a la carte</i> pricing would create.” p. 4
Starz Encore Group (N/A)	Starz! Starz! Theater Black Starz! Starz! Kids Starz! Cinema Starz! Family Encore Action Westerns Mystery Love Stories True Stories WAM! MOVIEplex	Against	“Rather than potentially stifling investment in new programming services by reducing distribution and advertising revenues and driving up costs for programmers and cable operators through a la carte carriage, the Commission should leave it to the marketplace to create and develop alternative services.” p. 9
The America Channel (Early ‘05)	The America Channel	Neither	Against A La Carte as currently proposed.
The C-SPAN Networks (Mar-79)	C-SPAN (88.1m) C-SPAN2 (73.2m) C-SPAN3	Against	“Now, the prospect of an a la carte pricing regulation promises to repeat that history by undermining the only business model in the television industry that allowed pure public affairs programming to pay for itself.” p. 5
The Walt Disney Co. (1977)	ESPN (88.4m) The Disney Channel (83.4m) ABC Family (86.8m) Toon Disney (43.7m) SoapNet (35.8m)	Against	“A La Carte or Tiered offering would drain advertising revenues from the system and decrease competition for advertising. A La Carte or Tiered offerings also would precipitate increased equipment, marketing and transaction costs.” p. 2

<i>Programmer (Earliest Lanch)</i>	<i>Networks Owned (2003 subscribers)</i>	<i>A La Carte: For/Against?</i>	<i>Comment</i>
The Weather Channel, Inc. (May-82)	The Weather Channel (87.5m) Weatherscan	Against	“Broad Distribution of TWC is the Foundation for its Low Subscriber Fees.” p. 2
Turner Broadcasting System (Dec-76)	TBS (88.1m) TNT (88.2m) Cartoon Network (85.8m) Turner Classic Movies (67.2m) Turner South Boomerang CNN (88.2m) CNN Headline News (86.5m) CNN International CNN en español CNNfn (22.1m)	Against	“Based upon its nearly 30 years of experience, Turner strongly believes the imposition of any governmental requirements to lead to a la carte and themed tier programming and pricing options will adversely affect consumers and consumer prices, will reduce diversity of programming, and will inhibit development of new and original programming.” p. 1
TV One (Jan-04)	TV One (8.0m)	Against	“An a la carte requirement would have a devastating effect on the continued viability of these services and would likely sound the death knell for many new service offerings.” p. 1
Univision Communications (N/A)	Univision Network Telefuturo Network Galavisión (25.2m)	Against	“... a la carte carriage would undermine the three fundamental mandates of the Commission—localism, diversity and competition—while providing no countervailing public benefit.” p. i
Viacom (Apr-79)	Nickelodeon/Nick at Nite (87.9m) MTV (86.7m) MTV2 (55.2m) VHI (86.3m) CMT (72.8m) Comedy Central (84.9m) Spike TV (87.2m) TV Land (82.1m) Noggin (37.7m) BET (78.0m) BET Jazz (9.9m) BET Gospel BET Hip-Hop MTV Español (7.4m) VHI Uno Showtime The Movie Channel Flix	Against	“These adverse economic effects ultimately would be borne to consumers, who would be faced with both a sharp increase in monthly fees and a reduction in the diversity and quality of program offerings.” p. 2

IPTV: PUBLIC INTEREST PITFALLS

MICAH SCHWALB*

There is no set recipe for accurately seasoning present-day realities with a dash of the past and a pinch of the future.

—Former FCC Commissioner Kathleen Q. Abernathy

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PROLOGUE

Howard County, Maryland, an affluent locale situated between Baltimore and Washington DC, rang in 2006 by unanimously approving a company’s request to commence multi-channel video programming distribution (MVPD) within Howard’s borders.¹ Though Comcast, whose cable television service is subject to MVPD-specific obligations, already serves the area and likewise received the required approvals from

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1. Larry Carson, *Verizon given nod in Howard*, BALTIMORE SUN, Jan. 4, 2006, available at <http://www.baltimoresun.com/news/local/howard/bal-md.ho.smoking04jan04,1,1599537.story>.

the County Council, the new provider plans to compete directly with the cable giant, hoping to offer wireline (i.e. cable-like) service to 90 percent of Howard's television-watching population within three years.² Suggesting confidence in the new entrant's ability to contend with such a strong incumbent, a local regulatory official noted that the company's entry "could reduce. . .television bills for county residents by as much as 15 percent."³ Indeed, despite the specter of competition from cable, satellite, and broadcast television, the identity of the new entrant largely supports the official's confidence. That new MVPD provider is Verizon Communications, the nation's second largest telecommunications carrier.⁴

INTRODUCTION

Verizon Communications obtained a local franchise in a quest to directly compete with cable in the MVPD market, thereby allowing the local exchange carrier (LEC) to offer its FiOS TV service in Howard County, Virginia.⁵ This approval builds upon other local wins in areas of California, Texas, Florida, Massachusetts and Virginia.⁶ Verizon's franchising victories signal the renewed interest of telephone companies in MVPD, a market predominantly occupied by cable and direct broadcast satellite (DBS) television operators like Echostar and DirecTV.⁷ To be sure, the larger legacy Bell operating companies (RBOCs) already offer MVPD service via joint ventures with DBS providers and over fiber in limited areas.⁸ However, the Federal Communications Commission's (Commission) recent acknowledgment

2. *Id.*

3. *Id.*

4. See Peter Svensson, *The Call of Video*, ASSOCIATED PRESS, Mar. 28, 2006.

5. Larry Carson, *Comcast Asks Council to Delay Cable Deal*, BALTIMORE SUN, Dec. 23, 2005, available at <http://www.baltimoresun.com/news/local/howard/bal-ho.cable23dec23,1,7130966.story>; Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Eleventh Annual Report*, 20 FCC Rcd. 2,755, ¶ 125 (2005) [hereinafter *11th Media Competition Report*]; Marguerite Reardon, *Verizon's TV dreams*, CNET NEWS.COM, Oct. 13, 2005, http://news.com.com/2102-1034_3-5894645.html.

6. Reardon, *Verizon's TV Dreams*, *supra* note 5.

7. See, e.g., Michael Totty, *Who's Going to Win The Living-Room Wars?*, WALL ST. J., Apr. 25, 2005, at R1. See also *11th Media Competition Report*, *supra* note 5, at ¶ 124; Comments of SBC Communications Inc. to the *Notice of Proposed Rulemaking* in IP-Enabled Services, WC Dkt. No. 04-36 (Sept. 14, 2005), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518157935 [hereinafter *AT&T IPTV Comments*]; Comments of National Cable & Telecommunications Association to the *Notice of Proposed Rulemaking* in IP-Enabled Services, WC Dkt. No. 04-36 (July 29, 2005), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6518110131 [hereinafter *NCTA IPTV Comments*].

8. See Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Notice of Inquiry*, FCC 05-155, MB Dkt. No. 05-255, 2005 WL 1939218, ¶ 54 (Aug. 12, 2005) [hereinafter *12th Media Report Notice*].

of a RBOC push to extensively deploy wireline video services foreshadows a burgeoning legal conflict in telecommunications reminiscent of that recently experienced in the market for cable modem and digital subscriber line (DSL) service.⁹ Indeed, the two largest RBOCs, AT&T (formerly SBC and BellSouth) and Verizon, recently announced plans to deploy Internet Protocol Television (IPTV) on a scale comparable to that of existing cable installations.¹⁰

As in the fight over wireline broadband resolved by *Brand X*, cable operators and LECs stand poised to litigate and lobby over the application of an outdated statutory scheme to a novel technology.¹¹ Recognizing a brewing storm, the Commission recently requested comments on whether it should regulate “video provided via IP broadband (also known as IPTV)” under the lesser burdens of Title I, like cable modems, or under the more restrictive mandates of Title VI, like cable television.¹² In response, AT&T supports the former, suggesting that the Commission retrofit the deregulatory thrust of the *Wireline Broadband* and *VoIP* proceedings to IPTV, imposing select obligations of Title VI to IPTV via the Commission’s ancillary authority.¹³ The National Cable and Telecommunications Association (NCTA), a cable industry lobbying group, naturally argues in favor of the latter, pointing to select provisions of the *Cable Modem*¹⁴, *Vonage*¹⁵, *Video Dialtone*¹⁶, and *Over-the-Air Reception Devices (OTARD)*¹⁷

9. *Id.*; see generally Dionne Searcey, *The Price War for Broadband Is Heating Up*, WALL ST. J., June 29, 2005 (noting that AT&T’s lowering of DSL rates to \$14.95 has spawned similar reductions by cable providers).

10. *11th Media Competition Report*, *supra* note 5, at ¶ 125; AT&T IPTV Comments, *supra* note 7. On January 5, 2006, AT&T deployed service in San Antonio, Texas. Dionne Searcey, *AT&T Rolls Out Net-Based TV*, WALL ST. J., Jan. 5, 2005, at D3.

11. See, e.g., Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities, *Declaratory Ruling & Notice of Proposed Rulemaking*, 17 FCC Rcd. 4,798 (2002), *aff’d*, 125 S.Ct. 2688 (2005) [hereinafter *Cable Modem Order*]; Nat’l Cable & Telecomms. Ass’n v. *Brand X Internet Servs.*, 545 U.S. 967 (2005); *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, Report & Order & Notice of Proposed Rulemaking*, 20 FCC Rcd. 14,986 (Sept. 23, 2005) [hereinafter *DSL Deregulation Order*]. I collectively refer to this progression hereinafter as the *Wireline Broadband Proceedings*. See also Dionne Searcey & Peter Grant, *Cable vs. Phone, Giants Escalate Fierce Turf War*, WALL ST. J., Nov. 23, 2005, at B1.

12. *12th Media Report Notice*, *supra* note 8, at ¶¶ 55, 63 (Aug. 12, 2005) (“[S]hould IPTV be considered a separate service, or simply a different means of video programming distribution?”).

13. See AT&T IPTV Comments, *supra* note 7, at 15-19. Katherine Q. Abernathy, Comm’r, Fed. Commc’ns Comm’n, *The Nascent Services Doctrine*, Remarks at the Meeting of the New York Chapter of the Fed. Commc’ns Bar Ass’n (Jul. 11, 2002), <http://www.fcc.gov/Speeches/Abernathy/2002/spkqa217.html>.

14. *Cable Modem Order*, *supra* note 11.

15. Vonage Holdings Corporation Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission, *Memorandum Opinion & Order*, 19 FCC Rcd. 22,404, ¶ 20 (2005) [hereinafter *Vonage Order*].

16. Telephone Company-Cable Television Cross-Ownership Rules, Sections 63.54-

Orders, as well as several *Annual Video Competition* reports for support¹⁸ Both sides, however, ignore an important piece of the puzzle.

In focusing on the orders enumerated above, multiple system operators (MSOs) and LECs rightly emphasize efficiency-related objectives, but wrongly ignore public interest regulation.¹⁹ To be sure, any regulation of IPTV, like wireline broadband and VoIP, will ultimately reflect the pro-competitive, pro-consumer policies recently pursued in broadband-based markets, including transport, applications, and content.²⁰ But television, whether delivered over the air or via wireline, remains subject to Congressionally-mandated public interest regulations.²¹ The *Wireline Broadband* proceedings, however, focused solely on economic regulations in the now (somewhat) commoditized transport market.²² The *VoIP Proceeding* likewise concerned economic regulations for transport-dependent VoIP applications in a context divorced from the Commission's non-efficiency-related mandates.²³ In other words, one competition policy proceeding concerned the *platform*, the other *applications*.²⁴

I argue, in four parts, that the role of public interest regulation in MVPD must supplement any analogies between IPTV and the Commission's economic policies towards wireline broadband and VoIP. Part I therefore reviews the *Wireline Broadband* and *VoIP* proceedings. Part II presents the digital television transition as a paradigmatic example of public interest and efficiency-related regulations combining with mixed effects. Part III frames cable MVPD offerings and the Bells' proposed IPTV services against the backdrop of slowing broadband

63.58, *Second Report & Order & Recommendation to Congress & Second Further Notice of Rulemaking*, 7 FCC Rcd. 5,781 (1992).

17. Implementation of Section 207 of the Telecommunications Act of 1996, *Order on Reconsideration*, 13 FCC Rcd. 18,987 (1998).

18. NCTA IPTV Comments, *supra* note 7, *passim*.

19. Philip J. Weiser, *The Ghost of Telecommunications Past*, 103 MICH. L. REV. 101, 110 (2005).

20. JONATHAN E. NEUCHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS 358 (2005) [hereinafter DIGITAL CROSSROADS]; Joseph Farrell & Philip J. Weiser, *Modularity, Vertical Integration, and Open Access Policies*, 17 HARV. J.L. & TECH. 85, 86 (2003) (describing vertical relations as "how a firm relates to other firms in adjacent markets and whether it integrates into those markets.").

21. See 47 U.S.C. § 301 (2005); *CBS v. Democratic Nat'l Comm.*, 412 U.S. 94, 103 (1973).

22. JONATHAN E. NEUCHTERLEIN & PHILIP J. WEISER, DIGITAL CROSSROADS xix (2d ed. 2006), available at <http://spot.colorado.edu/~weiserpj/dc/newpreface.pdf>. See also *DSL Deregulation Order*, *supra* note 11, at ¶ 3.

23. DIGITAL CROSSROADS, *supra* note 20, at 359.

24. While "[a]ntitrust commentators discuss the 'primary' (or 'bottleneck') market and the 'secondary' (or 'complementary') market," and "[i]n telecommunications, participants talk of 'conduits' and 'content[.]' here I employ the terminology offered by Farrell and Weiser. Farrell & Weiser, *supra* note 20, at 88.

adoption, showing that IPTV, as both the next great driver of broadband adoption and a television platform, necessarily requires a broader view than solely competition policy. Part IV concludes with an examination of how public interest and competition policy concerns have already combined in the budding controversy over national and statewide franchising. In short, I conclude that competition policy cannot be the sole lens through which the MSOs and LECs frame their filings. Rather, both parties must reflect upon the role of the public interest standard as a driving historical force of change (or lack thereof) in telecommunications policy.²⁵ Indeed, when viewed in light of a demonstrable slowing in the digital broadband migration, recent leadership changes at the Commission, and distinctions between the networks involved, one must necessarily cast a wider net than solely the competition policy concerns discussed in filings from either side.

I. ECONOMIC POLICY

The *Wireline Broadband* and *VoIP* proceedings encompass a significant aspect of the Commission's efforts to address the "central communications policy objective of the day," facilitating national broadband deployment.²⁶ Faced with projections touting the economic value of high-speed Internet access,²⁷ the promise of a novel technological platform enabled by converging technologies,²⁸ and judicial calls for a more rational regulatory policy,²⁹ the Commission has encouraged competition in wireline broadband, believing that "expanded

25. See LORI A. BRAINARD, TELEVISION: THE LIMITS OF DEREGULATION 5 (2004) ("Economic regulatory agencies usually operate under broad and vague statutory mandates to regulate 'in the public interest.'").

26. Michael K. Powell, *Preserving Internet Freedom: Guiding Principles for the Industry*, 3 J. ON TELECOMM. & HIGH TECH. L. 6 (2003). See Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Notice of Proposed Rulemaking*, 17 FCC Rcd. 3,019 (2002); 47 U.S.C. § 157 (a) (2000); FCC, Broadband, Sep. 30 2005, <http://www.fcc.gov/broadband/>; Remarks of President Bush on Innovation, U.S. Department of Commerce, Washington, D.C., June 24, 2004, available at <http://www.whitehouse.gov/news/releases/2004/20040624-7.html>; *DSL Deregulation Order*, *supra* note 11, at ¶ 3.

27. See ROBERT W. CRANDALL & CHARLES L. JACKSON, CRITERION ECONOMICS, THE \$500 BILLION OPPORTUNITY 2001 (Allan L. Shampine, ed., 2003), http://www.criterioneconomics.com/docs/Crandall_Jackson_500_Billion_Opportunity_July_2001.pdf (projecting that pervasive broadband use would inject \$350 billion dollars into the economy); Appropriate Framework for Broadband Access to the Internet over Wireline Facilities, *Notice of Proposed Rulemaking*, 17 FCC Rcd. 3,019, ¶ 1 (2002) (describing potential technological benefits of increased broadband penetration).

28. ITHIEL DE SOLA POOL, TECHNOLOGIES OF FREEDOM 27 (1983) (explaining convergence).

29. Farrell & Weiser, *supra* note 20, at 89 (noting "judicial demands for a better economic explanation of [the Commission's] regulatory policies.").

choices. . . result in lower prices and higher value.”³⁰ But years of litigation and lobbying long delayed the competition policies embodied in the *Wireline Broadband* proceedings—that is, until the Supreme Court’s recent landmark *Brand X* case affirmed the Commission’s efforts to promote network deployment through deregulation of broadband facilities.³¹ Nevertheless, as I explain below, the Commission’s approach to wireline broadband and VoIP, with two limited exceptions, remains focused upon competition policy and not the public interest.

A. The Wireline Broadband Proceedings

Brand X reviewed the *Cable Modem Order*, an economic regulation in which the Commission perpetuated structural separations imposed solely on the RBOCs by the *Computer Inquiries*.³² The *Computer Inquiries*, undertaken in the 1980s, initially banned Bell entry into the information services market entirely.³³ By the time the Court granted certiorari to *Brand X*, however, the Commission had softened these strictures to allow entry through structurally separated affiliates, and then again to lift the structural separations in favor of requirements forcing Bells into offering the underlying transmission component of “last mile” data transport services on a common carrier basis to Internet Service Providers (ISPs).³⁴ The latter formulation allowed companies like EarthLink to purchase access to the Bells’ wireline broadband networks, but made no similar allowance for access to wireline broadband delivered by cable companies.³⁵

The structural separations imposed upon the Bells could be justified by the one monopoly profit principle and Baxter’s Law, among other economic theories.³⁶ The former posits that monopolies encourage competition in complementary markets in order to increase profiteering

30. Powell, *supra* note 26, at 6.

31. *DSL Deregulation Order*, *supra* note 11, at nt. 14.

32. *Brand X Internet Servs.*, 125 S.Ct. at 2,697-98 (citing *Cable Modem Order*, *supra* note 11, at ¶ 38.). In essence, the *Computer Inquiries* studied BOC provision of data transmission services over common carrier facilities. The Commission mandated certain structural separations upon the BOCs, in essence restricting the means by which they could enter that market, and in what fashion, in large part based upon a suspicion that such entry would generate another case study of Baxter’s Law, discussed *infra*. For an excellent discussion of the *Computer Inquiries*, refer to Farrell & Weiser, *supra* note 20, at 129-33.

33. Weiser, *supra* note 19, at 111. See also DIGITAL CROSSROADS, *supra* note 20, at 16-21 (describing monopoly leveraging concerns in the voice market).

34. See Amendment of Section 64.702 of the Commission’s Rules and Regulations, 77 F.C.C.2d 384, 475 (1980) [hereinafter *Computer II*].

35. *Cable Modem Order*, *supra* note 11, at ¶ 44.

36. *Litton Syss., Inc. v. AT&T Co.*, 700 F.2d 785 (2d Cir. 1983); *MCI Commc’ns Corp. v. AT&T Co.*, 708 F.2d 1081, 1105 (7th Cir. 1983); *United States v. AT&T Co.*, 552 F. Supp. 131 (D.D.C. 1982), *aff’d sub nom. Maryland v. United States*, 460 U.S. 1001 (1983); DIGITAL CROSSROADS, *supra* note 20, at 17-19 (2005).

in the platform market.³⁷ The latter, an exception to the one monopoly profit principle, holds that price controls in a platform market force the monopolist into complementary markets and encourage anti-competitive behavior.³⁸ With these principles in mind, in the 1980s the Commission imposed unbundling obligations on the Bell system in a prospective attempt to prevent monopoly leveraging. With the emergence of wireline broadband, competition, and the Bell divestiture, however, the Commission could not justify the continued maintenance of *Computer II* obligations in the 1990s. Moreover, without price controls, Baxter's Law did not operate in wireline broadband.³⁹

The Commission also could not ignore new thinking regarding vertical integration.⁴⁰ Indeed, the Commission's actions in the *Cable Modem Order* could not only find support in the emergence of vigorous competition and the inherent benefits of internalizing complementary externalities,⁴¹ but also in the notion that "the efficiencies from vertical integration counsel for greater sympathy to it in analyzing how to regulate[.]"⁴² (Indeed, Posner suggests that such efficiencies "may well counsel a tolerant regulatory stance, at least in conjunction with a system of oversight or protective measures.")⁴³ The *Wireline Broadband* proceedings, therefore, also reflect the notion that vertical integration is unobjectionable unless, on a factual basis, investigation proved otherwise.⁴⁴

When presented with the question of whether cable broadband should be regulated under Title II, initially the "Commission concluded that broadband Internet service provided by cable companies [was] an 'information service' but not a 'telecommunications service' under the [96] Act, and therefore not subject to mandatory Title II common-carrier regulation."⁴⁵ In other words, to encourage wireline broadband build-out through competition, the Commission perpetuated a temporary double-standard whereby MSOs remained free from unbundling obligations in order to allow achievement of competitive parity with the still-regulated RBOCs through the leveraging of vertical integration. Notwithstanding

37. AUGUSTIN COURNOT, RESEARCHES INTO THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH 103 (Macmillan, Nathaniel T. Bacon trans. 1927) (1838).

38. See Paul L. Joskow & Roger G. Noll, *The Bell Doctrine: Applications in Telecommunications, Electricity, and Other Network Industries*, 51 STAN. L. REV. 1249, 1249-50 (1999); see also *supra* note 36.

39. DIGITAL CROSSROADS, *supra* note 20, at 190.

40. See *Cable Modem Order*, *supra* note 11, at ¶¶ 90-91.

41. For a brief discussion of internalizing complementary externalities, see Farrell & Weiser, *supra* note 20 at 89.

42. Weiser, *supra* note 19, at 110.

43. *Id.* at 111 (citing RICHARD A. POSNER, ANTITRUST LAW 200-02 (1976); Olympia Equip. Leasing Co. v. W. Union Tel. Co., 797 F.2d 370, 374 (7th Cir. 1986) (Posner, J.)).

44. See Farrell & Weiser, *supra* note 20, at 87.

45. *Brand X Internet Servs.*, 125 S.Ct. at 2,694.

judicial analogies between the Commission's actions and pizza parlor ownership,⁴⁶ the *Order* perpetuated the *Computer Inquiries* because of two key pro-competitive, pro-consumer antitrust concerns: monopoly leveraging and vertical integrative efficiencies. Once MSOs achieved competitive parity, and soon after the Supreme Court's decision on the *Cable Modem order*, the Commission relaxed the RBOC's *Computer Inquiry* obligations and ended the regulatory asymmetry.⁴⁷ In so doing, the *DSL Deregulation Order* enhanced investment incentives undermined by common carrier obligations, and superseded regulations set forth under the 1980s-era *Computer Inquiries* with a new set of prerogatives.⁴⁸ It did not, however, pursue policies in accordance with a larger public interest mandate.

Rather, the *Computer Inquiries* obligations under consideration in the *Wireline Broadband Proceedings* addressed key economic issues, in particular the Commissions' dominating concern of motivating facilities-based competition in the platform market; at issue in the *Wireline Broadband Proceedings* was a pipe able to "erase distances, dissolve geographic isolation and link citizens to government services."⁴⁹ That pipe allows interconnection with an open-access facility regulated largely without price controls, enabling access to a public, standardized network owned and operated by private players—the Internet.⁵⁰ In time, that pipe will eclipse old notions of traditional telephone service with "an environment characterized by broadband and wireless services."⁵¹

While today's *zeitgeist* suggests that "technological determinism and market ordering" bear sole responsibility for the subsequent surge in broadband build-out, in truth the growth of wireline broadband owes much to the Commission's pro-competitive efforts.⁵² Such efforts have largely succeeded in stimulating development for those locales in which wireline broadband is now available.⁵³ Notably, recently released studies

46. *Id.* at 2714 (Scalia, J., dissenting) ("even though we bring the pizza to your house, we are not actually 'offering' you delivery, because the delivery that we provide to our end users is 'part and parcel' of our pizzeria-pizza-at-home service and is 'integral to its other capabilities.'" (internal citations omitted)).

47. *DSL Deregulation Order*, *supra* note 11, at ¶¶ 1, 4.

48. The Honorable Kathleen Q. Abernathy, Former FCC Commissioner, *A Regulatory Framework for Convergence and Competition* (Sept. 29, 2005), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-261501A1.pdf [hereinafter Abernathy Convergence Speech]; *DSL Deregulation Order*, *supra* note 11, at ¶¶ 1, 4.

49. Abernathy Convergence Speech, *supra* note 48.

50. See, e.g., Markus Müller, *Who Owns the Internet?*, 15 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 709 (2004), available at <http://ssrn.com/abstract=605104>.

51. Philip J. Weiser, *The Behemoth is Dead. Long Live the Behemoth*, *WASH. POST.*, Feb. 27, 2005, at B3, available at <http://www.antitrustinstitute.org/recent2/388.cfm>.

52. See Weiser, *supra* note 19, at 102-03 (citing PAUL STARR, *THE CREATION OF THE MEDIA* (2004)).

53. WILLIAM H. LEHR, ET. AL., *MEASURING BROADBAND'S ECONOMIC IMPACT 16* (2005) (stating that "between 1998 and 2002. . . communities in which mass-market broadband

demonstrate that communities with mass-market broadband access demonstrate increased employment, business growth, and IT-specific business volume.⁵⁴ But the key take-away is that the *Wireline Broadband Proceedings*, at baseline, primarily concerned competition policies governing the *platform*.

B. The VoIP Proceedings

The *VoIP Proceedings* likewise removed geographic constraints, though in the application layer.⁵⁵ Voice over internet protocol (VOIP), the technology at issue in the *VoIP Proceedings*, relies upon wireline broadband and the “session initiation protocol” (SIP), a technological standard which corrects latency problems normally associated with the delivery of telephony over the Internet.⁵⁶ Whereas the public switched telephone network (PSTN) relies upon a user to connect a telephone to a wall jack and dial a number to reach another party, VoIP piggy-backs on a broadband connection using specialized customer premises equipment (CPE), but some variants allow their users to reach customers of conventional and wireless telephone carriers.⁵⁷ Perhaps most importantly, VoIP allows a user to retain a number issued through the North American Numbering Plan (NANP), and to use that number anywhere in the world.⁵⁸ A friend of mine in the Foreign Service, for example, retains a number from the 312 area code to allow friends from Chicago to reach him overseas.

Given the ability of VoIP subscribers to traverse borders with offerings like Vonage, VoIP poses a significant concern to state and local officials responsible for regulating telephony. The Minnesota Department of Commerce filed a complaint in the Minnesota Public Utilities Commission (PUC) in an attempt to force Vonage into complying with state rules requiring telephone companies “to obtain operating authority, file tariffs, and provide and fund 911 emergency

was available by December 1999 experienced more rapid growth in (1) employment, (2) the number of businesses overall, and (3) businesses in IT-intensive sectors.”), http://cfp.mit.edu/groups/broadband/docs/2005/MeasuringBB_EconImpact.pdf.

54. *Id.*

55. *Vonage Order*, *supra* note 15; Petition for Declaratory Ruling that pulver.com’s Free World Dialup is Neither Telecommunications Nor a Telecommunications Service, *Memorandum Opinion & Order*, 19 FCC Rcd. 3,307 (2004) [hereinafter *Pulver Ruling*]; Petition for Declaratory Ruling that AT&T’s Phone-to-Phone IP Telephony Services are Exempt from Access Charges, *Order*, 19 FCC Rcd. 7457 (2004) [hereinafter *AT&T VoIP Ruling*] [hereinafter, collectively, *VoIP Proceedings*].

56. SCOTT CLELAND ET. AL., PRECURSOR RESEARCH, SIP HAPPENS: HOW VOIP TECHNOLOGY “RE-UNBUNDLES” TELECOM, (2004); *Vonage Order*, *supra* note 15, at ¶ 5.

57. *Vonage Order*, *supra* note 15, at ¶ 8.

58. *Id.* at ¶ 9.

services.”⁵⁹ Likewise, the New York Public Services Commission tried to force Vonage to obtain state certification and to file tariffs.⁶⁰ The Commission, however, preempted both PUCs on the grounds that “the characteristics of [VoIP] preclude any practical identification of, and separation into, interstate and intrastate communications for purposes of effectuating a dual federal/state regulatory scheme[.]”⁶¹ Indeed, because Vonage has customers like my friend that maintain local telephone numbers for use in foreign countries, and because of the near impossibility of identifying the geographical transmission paths of packets used in VoIP,⁶² the Commission deemed Vonage (and, by extension, VoIP carriers of a similar nature) a jurisdictionally mixed service,⁶³ and therefore subject to exclusive Commission jurisdiction.⁶⁴

The Commission’s actions in the *VoIP Proceedings*, as in the *Wireline Broadband Proceedings*, emerged from the larger policy goal of promoting broadband deployment.⁶⁵ Indeed, as with the *Wireline Broadband Proceeding*, again the Commission referenced congressional directives requiring it to “encourage the deployment of advanced telecommunications capability to all Americans by using measures that ‘promote competition in the local telecommunications market’ and removing ‘barriers to infrastructure investment.’”⁶⁶ To be sure, with the *VoIP E911 Order*,⁶⁷ there were additional public interest considerations unique to VoIP’s status as an application.⁶⁸ But the *VoIP E911 Order*

59. *Id.* at ¶ 10.

60. *Id.* at ¶ 13.

61. *Id.* at ¶ 14.

62. Federal and local officials collaboratively regulate wireline telephony based upon where a call is originated and terminated. Federal power to regulate telephony principally derives from Congressional power to regulate interstate commerce under the Commerce Clause of the United States Constitution, as well as the 1934 Communications Act. For a more detailed discussion of this relationship, see Philip J. Weiser, *Federal Common Law, Cooperative Federalism, and the Enforcement of the Telecom Act*, 66 N.Y.U. L. REV. 1692 (2001).

63. See *Louisiana Pub. Servs. Comm’n v. FCC*, 476 U.S. 355, 368 (1986) (citing *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132 (1963)).

64. *Vonage Order*, *supra* note 15, at ¶ 18.

65. *Id.* at ¶ 1 (“For such services, comparable regulations of other states must likewise yield to important federal objectives”).

66. *Id.* at ¶ 2 (citing 47 U.S.C. § 157 nt. (2005)).

67. E911 Requirements for IP-Enabled Service Providers, *First Report & Order & Notice of Proposed Rulemaking*, 20 FCC Rcd. 10,245 (2005) [hereinafter *VoIP E911 Order*].

68. In essence, because of public complaints concerning an inability to reliably dial 911 from VoIP-enabled services, the Commission imposed certain obligations on a subset of VoIP carriers. Specifically, those services which allow consumers to both receive calls from the PSTN, and to make calls to the PSTN, were affirmatively required to comply with the Commission’s E911 order. That is, if a person were to subscribe to Vonage, Vonage would need to provide certain data to public safety answering points (PSAPs) in the event of a 911 call, such that first responders would be able to determine the location of that caller, as well as the telephone number of that caller in the event of a dropped or otherwise malfunctioning connection (as in the case of cellular telephones).

simultaneously demonstrated the Commission's intent to avoid burdensome federal and state regulations that might impede VoIP's growth, while remaining mindful of significant public safety issues.⁶⁹

In the *VoIP E911 Order* the Commission mandated that Interconnected Voice over Internet Protocol Providers ("IVPs") provide enhanced 911 ("E911") services.⁷⁰ The Commission defined IVPs as those VoIP services capable of both terminating and originating calls on the PSTN.⁷¹ Most importantly, for our purposes, is the following statement:

Although the Commission is committed to allowing these services to evolve without undue regulation in accord with our nation's policies for Internet services, we are, at the same time, aware of our obligation to promote "safety of life and property" and to "encourage and facilitate the prompt deployment throughout the United States of a seamless, ubiquitous, and reliable end-to-end infrastructure" for public safety.⁷²

That is, in this smaller instance, non-efficiency-related goals spurred the Commission to regulate IVP in a way inconsistent with traditional antitrust principals. The Commission continued to perpetuate safety regulations of this type, most recently by extending CALEA obligations to VoIP.⁷³ Such regulation, however, can be viewed as an outgrowth of a specific contingency; namely, the war on terror and the September 11 attacks.⁷⁴ To be sure, the Commission's attention to public safety in the context of broadband deployment suggests a less market-focused approach. But the Commission's actions also suggest that public interest concerns and notions of public choice theory will also bear heavily upon

69. Joelle Tessler, *Net Calls Put Regulators in a Quandary: FCC Considers Whether They Are Telecom or Information Service*, STAR-LEDGER, Sept. 19, 2004, available at <http://www.vonage-forum.com/printout1167.html>.

70. *VoIP E911 Order*, *supra* note 67, at ¶ 23 ("If a VoIP service subscriber is able to receive calls from other VoIP service users *and* from telephones connected to the PSTN, and is able to place calls to other VoIP service users *and* to telephones connected to the PSTN, a customer reasonably could expect to be able to dial 911 using that service to access appropriate emergency services.") (emphasis in original).

71. If the *VoIP E911 Order* and judicial precedent can be taken as signals of future intent, it seems likely that the Commission will label VoIP as an information service, but will exercise its ancillary jurisdiction to impose a select set of regulations traditionally applied to common carriers of telecommunications services upon IVPs, given IVP's use of collocated network equipment. PERKINS COIE LLP, FCC DECISIONS ON VOIP CLASSIFICATION WILL AFFECT THE FUTURE OF THE SERVICE (2005), <http://www.perkinscoie.com/content/ren/updates/tc/060605.htm>.

72. *Id.* at ¶ 4 (citing 47 U.S.C. § 151 (2005); Wireless Communications and Public Safety Act of 1999 § 2, 47 U.S.C.A. § 615 nt. (2006)).

73. Communications Assistance for Law Enforcement Act and Broadband Access and Services, *First Report & Order & Further Notice of Proposed Rulemaking*, 20 FCC Rcd. 14,989 (2005).

74. BRAINARD, *supra* note 25, at 8 (discussing the "contingency theory" of regulatory policy, which suggests that "policy outputs are mere possibilities conditional on factors that are themselves fluid and uncertain").

IPTV.⁷⁵

II. PUBLIC INTEREST REGULATION

The story of the digital television transition, as it relates to must carry and retransmission consent, best demonstrates the role of non-efficiency-related objectives in television and cable regulation alike. The most contentious issues of the DTV transition are must carry (“a subsidy by a different name”)⁷⁶ and its cousin, retransmission consent. But delving into must carry and retransmission consent requires a brief overview of the DTV transition’s desired endpoint.

A. The Digital Television Transition

The digital television transition began in the sunset of Reagan’s second term. However, opinions differ as to its motivation: some state that broadcasters, faced with an allotment of unused UHF spectrum to burgeoning cellular carriers, inspired the DTV transition by arguing that the spectrum in question should be used for “future television services.”⁷⁷ Others assert that foreign technological advances spurred the FCC’s creation of the Advanced Television Services Committee (“ATSC”) in 1987 to oversee the development of an American digital broadcasting standard.⁷⁸ Whatever the motivation, however, the Commission charged the ATSC with ensuring that digital television (“DTV”) would permit high definition signals, use over-the-air spectrum, and be simulcast with old analog signals.⁷⁹ And ultimately only the first two goals were ultimately realized by the selected standard.⁸⁰ Moreover, somehow each television broadcaster received “a license for a second six megahertz in addition to the license for the six megahertz of spectrum already used for each existing analog signal.”⁸¹

The so-called “great giveaway” saw mixed reviews from policymakers and pundits alike. Some believe that Congress and the Commission gave away “a national resource to an affluent industry in return for abstract gains.”⁸² Others assert that “the transition is too

75. See generally Jim Rossi, *Public Choice Theory and the Fragmented Web of the Contemporary Administrative State*, 96 MICH. L. REV. 1746 (1998).

76. Daniel Patrick Graham, *Public Interest Regulation in the Digital Age*, 1 COMMLAW CONSPECTUS 97, 117 (2003).

77. See, e.g., *id.*, at 98-99.

78. Symposium, *The Journey to Convergence: Challenges and Opportunities*, 12 COMMLAW CONSPECTUS 183 (2004).

79. DIGITAL CROSSROADS, *supra* note 20, at 396.

80. Graham, *supra* note 76, at 101.

81. Joel Timmer, *Broadcast, Cable, and Digital Must Carry: The Other Digital Divide*, 9 COMM. L. & POL’Y 101 (2004).

82. Benton Foundation, *The Transition to Digital Television*, <http://www.benton.org/>

expensive and that a subsidy, in the form of a free license, is necessary to preserve advertiser-supported, over-the-air television from elimination.”⁸³ In essence, however, the “great giveaway” argument concerns whether “broadcast television, digital or not, is in the public interest and deserving of government subsidy.”⁸⁴

Upon completion, an idealized DTV transition will allow the transmission of both high-definition television (“HDTV”), standard-definition television (“SDTV”), and ancillary “program-related” content (“ITV”) over the six megahertz of electromagnetic spectrum allocated to each television channel.⁸⁵ HDTV programs consume most of that spectrum with high-resolution images, a cinematic aspect ratio, and CD-like sound quality.⁸⁶ SDTV programs, however, have the same features as existing analog broadcasts and, with digital transmission and compression, consume less bandwidth, allowing television broadcasters to offer multiple channels of programming, expanded advertising, or even to simulcast multiple camera angles of the same sporting events.⁸⁷ ITV, alternatively, will allow broadcasters to use their spectrum to supplement sports programs with statistics, business news with detailed financial information, or even television itself with interactivity akin to the Internet.⁸⁸

The key take-away, however, is that initially “[t]he fundamental policy driving the transition to digital television [was] the determination that over-the-air broadcast of DTV [was] in the public interest.”⁸⁹ In essence, policymakers believed that better picture and sound quality, in and of itself, would benefit the public.⁹⁰ Moreover, while cable then served only 66 percent of American households, the Commission believed that broadcasters, who had 99 percent market penetration, could better ease the transition.⁹¹ That is, the Commission felt that in order to maintain free over-the-air television and all its regulatory accoutrements, broadcasters would have to lead the charge of the transition.⁹² As the Commission stated, “unlike many other countries, the United States has a strong and independent system of privately-owned and operated broadcast stations,” which suggested that the DTV framework must

publibrary/policy/TV/atv.html (last visited Oct. 1, 2006).

83. Graham, *supra* note 76, at 116.

84. *Id.* at 117.

85. Timmer, *supra* note 81, at 101.

86. *Id.* at 101-02.

87. *Id.* at 102.

88. See Carriage of Digital Television Broadcast Signals, *First Report & Order & Further Notice of Proposed Rulemaking*, 16 FCC Rcd. 2,598, ¶ 122 (2001).

89. Graham, *supra* note 76, at 99.

90. *Id.* at 100.

91. *Id.*

92. *Id.*

preserve the benefits of the existing system.⁹³ DTV, then, is fundamentally a creature of public interest regulation, and not economic considerations, which in some part led to an ongoing battle between broadcasters and MSOs.

B. Must Carry and Retransmission Consent

Much of the tension between broadcasters and cable operators within the DTV transition debate, aside from twenty years of butting heads over the subject with Congress and the Commission, surrounded the question of cable transmission facilities; that is, would cable operators have to carry both the new and improved DTV signals and outmoded analog signals during the transition, or would cable be able to down-convert the digital signals to analog before transmission over cable wires, thereby delaying inevitable upgrades to cable facilities?

Broadcasters understandably saw the technological possibilities of the transition as an avenue for increased revenue, but faced equally understandable opposition from cost-averse cable operators and satellite television providers who feared the intersection of the DTV mandate and the Cable Television Consumer Protection and Competition Act of 1992. (“CTCPA”) The CTCPA forces cable operators to retransmit broadcasters’ programming under either “must carry” or “retransmission consent” arrangements.⁹⁴ “Must carry” requires cable providers (and, in limited circumstances, direct broadcast satellite service providers)⁹⁵ to rebroadcast the primary signals of television broadcasters within a specific marketplace, while “retransmission consent” arrangements allow cable providers and broadcasters to negotiate the terms of retransmission.⁹⁶

Must carry was designed to serve three interests: “(1) preserving the benefits of free, over-the-air local broadcast television, (2) promoting the widespread dissemination of information from a multiplicity of sources, and (3) promoting fair competition in the market for television programming.”⁹⁷ Congress mandated these arrangements because it feared that cable operators would freeze out local broadcasters, thereby sounding the death knell for local television broadcasting.⁹⁸ Likewise, the National Association of Broadcasters (“NAB”) argues that “cable operators will not carry broadcasters’ digital signals unless required to do so by law.”⁹⁹ In sum, must-carry concerns both economic and public

93. *Id.* at 114.

94. *See* Timmer, *supra* note 81, at 104-05.

95. 47 U.S.C. § 338 (2006).

96. *See* Timmer, *supra* note 81, at 104-05.

97. *Turner Broadcasting Sys. v. FCC*, 520 U.S. 180, 189 (1997).

98. DIGITAL CROSSROADS, *supra* note 20, at 366.

99. *See* Timmer, *supra* note 81, at 115.

interest policies.

As in the wireline broadband and VoIP proceedings, however, the courts got involved as well. With regards to digital television, the Supreme Court ruled that cable operators' "must carry" obligations only encompassed broadcasters' analog signals.¹⁰⁰ That is, under then-existing regulations, if ABC wanted Comcast to carry its HDTV or SDTV programming, it could only do so via retransmission consent agreements; in the *Turner* cases, the Supreme Court found the current must carry arrangement a permissible burden on free speech.¹⁰¹ But in the second *Turner* case, a 5-4 split, "only two of the interests must carry [was] meant to serve were found to justify the burden must carry places on speech by a majority of the court: preserving free, over-the-air broadcasting and promoting the dissemination of information from a multiplicity of sources."¹⁰² In other words, the Court hung its hat on public interest regulations.

In short, the DTV transition encapsulates efficiency and non-efficiency-related objectives. Congress hoped to enable the digital television transition to achieve objectives thought to be in the economic and public interest. However, the digital television transition also ultimately embodied the distortions of cross-subsidies in communications, and an attempt to eliminate them for the sake of improved competition.

III. IPTV TECHNOLOGY

The *Wireline Broadband and VoIP Proceedings* demonstrate the Commission's particular attention to modernizing our national communications infrastructure while limiting the impact of outmoded regulations, though some may label the *VoIP E911 Order* an example of industry protectionism.¹⁰³ With the *Wireline Broadband Proceedings*, however, the Commission largely eliminated structural separations in the face of emerging competition, though potentially at an earlier than ideal stage, given emerging duopoly concerns.¹⁰⁴ The *VoIP Proceedings* demonstrate the Commission's intent to avoid burdensome Federal and state regulations that might impede VoIP's growth, while simultaneously remaining mindful of significant public safety issues.¹⁰⁵ The Digital

100. See *Turner Broadcasting Systems*, 520 U.S. at 180.

101. *Id.* at 224-25.

102. *Id.* at 225-26 (Breyer, J., concurring in part).

103. Grant Gross, *FCC Backs off E911 Requirement for VoIP Providers*, NETWORK WORLD, Nov. 8, 2005, <http://www.networkworld.com/news/2005/110805-fcc-e911.html> ("It's the FCC picking and choosing which technologies they want to support and which technologies they want to succeed.").

104. Weiser, *supra* note 51.

105. Joelle Tessler, *Net Calls Put Regulators in a Quandary: FCC Considers Whether*

Television transition shows the role of public interest regulation in television, and some of the distortions it can cause in marketplace. The question with regards to MVPD and IPTV, however, is whether similar concerns will prevail in governmental attitudes towards IPTV as a hybrid of political volatility and the last great hope of the Digital Broadband Migration. Indeed, as Congress and the Commission look to regulate IPTV, the historical role of public interest regulation in the broadcast and cable context suggests a more active period is ahead.

Analyzing legal aspects of the MVPD market requires a brief description of the technologies and business considerations at hand. LECs face far different shareholder pressures than MSOs. "Unlike cable firms, Bells, valued as producers of free cash flow and dividends, must justify their multibillion dollar investments in that light. . ."¹⁰⁶ Because cable providers are not subject to the same level of regulation as telecommunications carriers, the Act in many ways is seen as favoring one form of communications over another. By providing IPTV services, however, Bells will be able to bundle services at a lower rate than their partnerships with DBS providers have thus far allowed.¹⁰⁷

To date, both the Bells and the MSOs have continued to upgrade their facilities in a so-called "FTTx" approach, involving the extension of fiber-optic cable either to the node, to the curb, or to the premises.¹⁰⁸ For the MSOs, while the coaxial ports in most living rooms suggest an underlying stagnation in cable platforms, providers have expended a considerable amount of capital upgrading transmission facilities to include fiber-optics, enabling services like video on demand, broadband internet, and VoIP.¹⁰⁹ Regulatory treatment of all the Bell offerings, however, will likely hinge upon whether the television service can be separated from the ancillary functionality highlighted thus far in

They Are Telecom or Information Service, STAR-LEDGER, Sept. 19, 2004, available at <http://www.vonage-forum.com/printout1167.html>.

106. *Telco, Cable Incumbents Getting Policy Boost, But Investors Aren't Swayed, Analyst Says*, WASH. INTERNET DAILY, Sept. 29, 2005. (stating "Cable has an advantage in the bundling wars, since it's far cheaper for MSOs to add voice than for telcos to provide pay TV, Glenchur said. Cable's weakness is lack of a wireless piece in its bundle, he said.").

107. Rethink Research, *MS's IPTV Strategy in Tatters*, THE REGISTER, June 1, 2005, http://www.theregister.co.uk/2005/06/01/ms_iptv_strategy_in_tatters/.

108. Carl Kandutsch, *The Case for Municipal FTTx*, 2005 BROADBAND PROPERTIES 40 (2005) (Stating that "FTTx" encompasses "a variety of fiber-based architectures including fiber-to-the-home, fiber-to-the-curb, fiber-to-the-premises, fiber-to-the-business, fiber-to-the-node, and so on.").

109. *How Internet Protocol-Enabled Services are Changing the Face of Communications: a Look at Video and Data Services: Before the Subcomm. on Telecommunications and the Internet of the H. Comm. on Energy and Commerce*, 109th Cong. 8 (2005) (statement of Lea Ann Champion, Senior Executive Vice President, IP Operations and Services, SBC Communications Inc.), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi? dbname=109_house_hearings&docid=f:20748.pdf [hereinafter *AT&T Testimony*].

company road shows.

AT&T has led the “integration” drum beat, highlighting the “new level of interactivity and integration” presumably available in its offering.¹¹⁰ AT&T is therefore investing \$4 billion in its “Project Lightspeed” architecture, an IP-enabled, closed system built by Alcatel and Scientific-Atlanta on Microsoft technologies.¹¹¹ AT&T is deploying approximately 40 thousand miles of new fiber optic cable to within an average of 3 thousand feet of each potential customer in what is known as a “Fiber to the Node” (FTTN) approach.¹¹² The system also involves a set-top box with an integrated digital video recorder that allows both time- and place-shifting of recorded materials.¹¹³ Moreover, AT&T has sought to include a multitude of ancillary features, such as picture-in-picture viewing, web content, and on-demand video programming, presumably in an attempt to avoid the “toaster with pictures”¹¹⁴ treatment thus far applied to cable systems exhibiting many of the same features.¹¹⁵ It plans to reach 18 million customers within the United States in five years.¹¹⁶

Verizon is investing \$6 billion in its FiOS TV project to deploy fiber to as many as sixteen million homes in its service areas.¹¹⁷ Unlike AT&T, Verizon plans to extend fiber all the way to the premises in what is known as a “FTTP” approach. Verizon’s network will deliver programming more like a cable system, broadcasting all channels simultaneously, with additional on-demand offerings.¹¹⁸ As such, Verizon’s offering more resembles a traditional cable television package coupled with a broadband connection than AT&T’s offering in that interactive television services remain segmented from the set-top television box.¹¹⁹ Nevertheless, “Verizon aims for a 30 percent market share within five years of introducing its television service FiOS to a particular region.”¹²⁰

110. *AT&T Testimony*, *supra* note 109, at 7.

111. *Id.*

112. *How Internet Protocol-Enabled Services Are Changing the Face of Communications: a Look at Video and Data Services: Before the Subcomm. on Telecommunications and the Internet of the H. Comm. on Energy and Commerce*, 109th Cong. 17 (2005) (statement of David L. Cohen, Executive Vice President, Comcast Corporation) (stating that the cable industry has spent \$100 billion upgrading its platform with fiber-optic technology) [hereinafter *Comcast Testimony*].

113. *See, e.g., AT&T Testimony*, *supra* note 109, at 9.

114. C. EDWIN BAKER, *MEDIA, MARKETS, AND DEMOCRACY* 3 (2002).

115. *See AT&T Testimony*, *supra* note 109, at 8-9.

116. *Id.* at 8.

117. Michael Totty, *Who’s Going to Win the Living-Room Wars*, *WALL ST. J.*, Apr. 25, 2005, at R1.

118. *Id.*

119. Drew Clark, *Verizon Executive Criticizes House Draft Telecom Bill*, *NAT’L J.*, Sept. 22, 2005, <http://www.njtelecomupdate.com/lenya/telco/live/tb-USVF1127346400334.html>.

120. Eric Auchard, *Telco, Cable TV Fight to Spark Ad War*, *REUTERS*, Aug. 11, 2005,

However, Bell entry in the IPTV market should not be viewed as a novel expansion of the service. Rather, members of the European Union have benefited from IPTV for years.¹²¹ But whereas the European entrants in Italy, the United Kingdom, and Scandinavia have seen relatively smooth deployments, “Swisscom, the one company that Microsoft managed to convince to go with its proprietary vision, is delayed.”¹²² Critics point to the fact that Microsoft’s architecture is fundamentally at odds with Telco billing systems, relying upon a closed, proprietary standard that, curiously, requires the purchase of substantial complementary Microsoft products, such as Windows 2003 Video-on-Demand servers, problematic .NET extensions, and other client-server technologies deemed so anti-competitive that European Commission anti-trust authorities have already fined Microsoft for their use.¹²³ It should also be noted that the set top boxes required for IPTV by Verizon and AT&T will require licenses for Microsoft’s TV Foundation Edition.¹²⁴ This flies in the face of traditional cable systems, which thus far have relied upon open standards developed by the cable industry’s Bell Labs equivalent, Cable Labs.¹²⁵ To be sure, the Cable industry recently began the migration to a Microsoft-dominated architecture, but the transition thus far has been slow.¹²⁶

Regardless of the architectural distinctions, however, the Bells and MSOs look to both the *Wireline Broadband* and *VoIP Proceedings* as precedent. The Bells urge the Commission to look upon IPTV as simply another internet-enabled service worthy of the same regulatory treatment afforded to both wireline broadband and VoIP.¹²⁷ The MSOs, for their part, discount those proceedings, noting that “*nothing* the Bell companies have proposed—video offerings, IP transmission, switching technology, interactive applications—is any different from what cable companies now provide[.]”¹²⁸ Indeed, the MSOs, per the NCTA, state that “[a]ll of these ‘IPTV’ features that the Bells tout. . .cable companies provide today or will provide in the future.”¹²⁹

Comcast assumes a slightly different posture, arguing that IPTV should either be regulated under Title VI, or that the Commission should

available at <http://today.reuters.com/summit/BreakingNews.aspx?name=TelecomSummit05>.

121. Rethink Research, *supra* note 107.

122. *Id.*

123. *Id.*

124. *Id.*

125. *See, e.g.*, Cable Labs, www.cablelabs.com (last visited Oct. 1, 2006).

126. Rethink Research, *supra* note 107.

127. AT&T IPTV Comments, *supra* note 7, at 2 (“Just as voice-VoIP is transforming the paradigm of person-to-person communications, video-VoIP promises to do the same for video-based communications.”).

128. NCTA IPTV Comments, *supra* note 7, at 1 (emphasis in original).

129. *Id.* at 2.

forbear from applying Title VI mandates to all providers.¹³⁰ Comcast also argues that “the issues raised by IP video have no parallel in IP voice. . . .”¹³¹ Citing to the *Cable Modem Order*, the MSOs point to the fact that, “for years the phone companies have protested the disparity between the way the law treats their DSL service and the way it treats cable’s high speed Internet service.”¹³²

Any variant of the argument hinges on the distinct treatment of cable services and information services under the 96 Act. Under the 96 Act, information services are classified as

the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service.¹³³

Under Title VI, cable services are classified as “the one-way transmission to subscribers of . . . video programming” over a “cable system,” which is in turn defined as a “set of closed transmission paths and associated signal generation, reception, and control equipment that is designed to provide cable service[.]”¹³⁴ This definition contains several exceptions, most notable an exception for facilities regulated under Title II (i.e. wireline telephony) or Open Video Systems.¹³⁵

The final regulatory treatment will likely depend upon the specific architectural and technical choices made by the Bells. The decision will also turn on whether or not the service is predominantly two-way or not, given the definition of a cable service.¹³⁶ As such, Verizon has highlighted the two-way nature of their architecture.¹³⁷ Regardless of the

130. *Comcast Testimony*, *supra* note 112, at 18.

131. *Id.* at 19.

132. *Id.* At 20.

133. 47 U.S.C.A. § 153 (20) (2005).

134. *Id.* at § 522 (6) *et. seq.* (2005).

135. *Id.* at § 522 (7)(D) (2005); *See also* Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Eleventh Annual Report*, 20 FCC Rcd. 2,755, ¶¶ 70-75 (2005) (noting that open video systems are subject to reduced regulation under Title VI, including a presumption that rates are just and reasonable where one or more unaffiliated video programming providers occupy channel capacity on the system at least equal to that of the open video system operator and its affiliates).

136. 47 U.S.C.A. § 522 (6) *et. seq.* (2005).

137. *How Internet Protocol-Enabled Services Are Changing the Face of Communications: a Look at Video and Data Services: Before the Subcomm. on Telecommunications and the Internet of the H. Comm. on Energy and Commerce*, 109th Cong. 20 (2005) (statement of Robert Ingalls, Jr., President, Retail Markets Group, Verizon Communications), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_house_hearings&docid=f:20748.pdf [hereinafter *Verizon Testimony*] (“What we think customers are really going to like about FiOS is the upstream capacity of the system that will connect them to a world of multimedia and interactive

ultimate regulatory classification, however, the NCTA and the Bells cannot afford to ignore or discount the role of “non-efficiency-related objectives in the television world[.]”¹³⁸ Such an oversight would obscure the largest variable in the coming regulatory framework for IPTV. Indeed, while one can arguably characterize the *Wireline Broadband* and *VoIP* proceedings as efficiency-focused, one cannot extend that label alone to MVPD regulation. Historically, as shown through the DTV transition, far more so than wireline broadband policy, MVPD regulation reflects the idea that “there are certain core social policy goals that are not market-driven and probably cannot be achieved without governmental urging, and perhaps mandates.”¹³⁹ Further, the *E911 Order*¹⁴⁰ suggests that “even as the FCC emphasizes the need to keep the Internet free of traditional common carrier regulation, it will impose non-economic regulation of Internet-based services in the name of particular social welfare objectives.”¹⁴¹ It is for these reasons that Lawrence Lessig concisely stated that “[t]he Internet is not cable television.”¹⁴²

IV. FRANCHISES: ECONOMICS, PUBLIC INTEREST, & TECHNOLOGY

Again, the LECs will rely upon technological distinctions between MSO platforms and the new IPTV facilities in order to gain preferential treatment from the Commission. Moreover, the Bells will likewise focus on those regulations deemed more or less helpful to their cause. These include franchising, must-carry and retransmission consent, horizontal and vertical ownership limits, as well as Title-specific privacy strictures. To demonstrate how efficiency and non-efficiency related objectives already prevail in IPTV, however, one need only examine the question of franchises.

The IPTV debate, as of this writing, mostly concerns the role of local franchising authorities in slowing the roll-out of IPTV. Historically, governments used franchises to deter excessive rent-seeking, limit anti-competitive behavior, impose common-carrier-like obligations on regulated firms, and limit market power.¹⁴³ In the United States, before the Cable Acts of 1984 and 1992, local franchising authorities (LFAs)

possibilities.”).

138. DIGITAL CROSSROADS, *supra* note 20, at 359.

139. The Honorable Kathleen Q. Abernathy Commissioner, Disruptive Technologies and Opportunities for Service Providers Panel 2005 Telecoms Transition World Summit (June 27, 2005), at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-260480A1.pdf.

140. *VoIP E911 Order*, *supra* note 67, at ¶¶ 3-5, 36-53.

141. NÜECHTERLEIN & WEISER, *supra* note 22, at xix.

142. Lawrence Lessig, *Re-Marking the Progress in Frischman*, 89 MINN. L. REV. 1031, 1042 (2005).

143. See Richard A. Posner, *Taxation by Regulation*, 2 BELL J. ECON. & MNGT. SCI. 22, 37-38 (1971); *Lassman Testimony*, *infra* note 156.

regulated cable by exercising or withholding franchising rights, and the Commission deferred to those actions.¹⁴⁴ With *Southwestern Cable* and the Cable Acts, however, the Federal government entered the franchising fracas with full force.¹⁴⁵ The Cable Act of 1992, for instance, established standards for local rate regulation of basic cable, thereby limiting the extent to which local regulators had interfered with cable pricing schemes and other economic forces.¹⁴⁶ Moreover, “[c]able companies now have approximately 12,000 such franchise pacts, which earn municipalities a total of about \$3 billion a year.”¹⁴⁷

Today, Section 621(a)(1) of the Communications Act states that cities “may not unreasonably refuse to award an additional competitive franchise.” Localities use such franchises to impose affirmative and negative burdens upon facilities-based providers seeking to provide service in a particular jurisdiction.¹⁴⁸ That is, local regulators rely upon franchises to ensure universal service (known as “redlining” in the MVPD context) and impose pricing restrictions on basic service tiers.¹⁴⁹ “Quite simply, franchise regulation is an opportunity to achieve social goals through regulation.”¹⁵⁰ Indeed, “[e]very cable operator in business today. . . has built out its systems to avoid redlining.”¹⁵¹ AT&T, however, plans to focus “most of its initial investment on affluent neighborhoods, where households would be willing to pay from \$110 to \$200 a month for a package of video, telecom, and data services.”¹⁵² Cable operators have seized upon this “cream-skimming” in their efforts to obtain statewide or national franchises.¹⁵³

Competition, however, undermines the cross-subsidies involved in universal service.¹⁵⁴ Given the difficulty of justifying franchises on an anti-monopolistic premise in the face of growing cross-platform

144. See Jerry Brito & Jerry Ellig, *Video Killed the Franchise Star: The Consumer Cost of Cable Franchising and Proposed Policy Alternatives*, 5 J. ON TELECOMM. & HIGH TECH. L. 199, 202 (2006); *Frontier Broadcasting v. Collier*, 24 FCC Red. 251 (1958).

145. See *United States v. Sw. Cable Co.*, 392 U.S. 157 (1968); 47 U.S.C. § 543 (2000); see, e.g., Brito & Ellig, *supra* note 144, at 212.

146. 47 C.F.R. § 76.905 (2003); Brito & Ellig, *supra* note 144, at 214; see Posner, *supra* note 143, at 33.

147. Bara Vaida, *The Clash of the High Tech Titans*, NAT’L J., Sept. 28, 2005, <http://www.njtelecomupdate.com/lenya/telco/live/tb-ZLCM1127945542869.html>.

148. One should also note that “franchise authority and fees are legally and intellectually distinct from right-of-way authority and fees.” *Lassman Testimony*, *infra* note 156.

149. Ray Gifford, *Franchising Détente: Is It Possible?*, 2005 PROGRESS SNAPSHOT 1.25 (2005), <http://www.pff.org/issues-pubs/ps/1.25franchising.htm> (stating that “these franchising obligations are analogous the [sic] provider of last resort and universal service obligations that the Bells assumed under state public utility laws”).

150. *Lassman Testimony*, *infra* note 156.

151. *Comcast Testimony*, *supra* note 112, at 2.

152. Vaida, *supra* note 147.

153. *Id.*

154. See Posner, *supra* note 143, at 34.

competition, regulators and commentators instead premise their continued use under the guise of public interest regulation. Indeed, in an antemortem editorial, civil rights activist C. Delores Tucker likened telephone and television service to a civil right that would be disserved by the relaxation of franchising obligations.¹⁵⁵

In practice, franchises comprise a significant portion of local tax revenue.¹⁵⁶ Under the 96 Act, municipalities may collect franchise fees of up to 5% of gross revenues from cable providers for use of public rights of way.¹⁵⁷ Likewise, the Commission itself collects certain regulatory fees, as approved by Congress on an annual basis to fund the Commission's enforcement activities.¹⁵⁸ As a result, rough estimates indicate that local franchises allow localities to collect almost \$3 billion in additional tax revenue they would not otherwise receive.¹⁵⁹ Indeed, almost fifteen percent of the municipal general funds for some communities in Nevada come out of franchise fees.¹⁶⁰ And while the 96 Act does include certain exceptions to rate regulation for competitive entrants, the same title would reduce rate regulation on cable providers.¹⁶¹

With the RBOCs' successes in obtaining local franchises and government threats to create a national franchise, local regulators worry that the Commission will usurp both authority and revenue.¹⁶² As of 2004, at least 25 percent of the average phone bill consisted of taxes, when including implicit carrier access and other charges.¹⁶³ Indeed, some have even argued that, by creating a nationwide franchise, the Commission would violate the Takings Clause of the United States Constitution.¹⁶⁴ Carriers and Cable operators, alternatively, assert that

155. C. Delores Tucker, *Civil Rights Unplugged*, WASH. POST, Oct. 15, 2005, at A19 (arguing that the potential benefits of IPTV "should not transform our elected officials into marionettes for two monopolies that want to trample our civil rights traditions.").

156. See Brito & Ellig, *supra* note 144, at 219; *Statewide Video Franchise Authority: Before the H. Comm. on Regulated Industries*, (Tx. 2005) (statement of Kent Lassman, Research Fellow, The Progress & Freedom Foundation) [hereinafter *Lassman Testimony*].

157. 47 U.S.C.A. § 542(b) (2005).

158. 47 U.S.C.A. § 159 (2005); see, e.g., Assessment and Collection of Regulatory Fees for Fiscal Year 2004, *Notice of Proposed Rulemaking*, 19 FCC Rcd. 5,795, ¶ 1 (2004).

159. Vaida, *supra* note 147.

160. *Lassman Testimony*, *supra* note 156.

161. See *Comcast Testimony*, *supra* note 112, at 2.

162. Leslie Cauley, *FCC Chief Considers Forcing Cable TV Competition*, USA TODAY, Aug. 22, 2005, http://www.usatoday.com/money/industries/telecom/2005-08-22-telecom-usat_x.htm.

163. Robert E. Entman, *Reforming Telecommunications Regulation*, 2005 ASPEN INST. 11.

164. See, e.g., Comments of the National Association of Telecommunications Officers and Advisors and the Alliance for Community Media to the *Notice of Inquiry* in Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment

“[s]ome municipalities have subjected them to long processing delays and overly burdensome application processes, and some have charged excessive fees.”¹⁶⁵ Still others assert that statewide franchises “would be a welcome change from the status quo and an opportunity to reduce regulatory costs on all providers of IP based services.”¹⁶⁶ The Telcos, meanwhile, have raised the flag of regulatory parity. “Public policy should reduce any roadblocks and unnecessary rules to encourage new entry into the video services market. In particular, new entrants should not be saddled with the legacy regulation applicable to incumbent providers.”¹⁶⁷

The Bells, for their part, point regulators and Congress to the fact that they already retain franchises for delivering telephone service, and that their IPTV services will use the same rights of way.¹⁶⁸ Whatever the resolution of the controversy, however, both efficiency and non-efficiency purposes pervade the ongoing franchise debate.

CONCLUSION

IPTV will remain a contentious issue for years to come. As a creature of broadband, IPTV will evince some of the pro-consumer, pro-competition regulations typical of the wireline broadband and VoIP proceedings. As purveyors of a new form of television, however, the LECs likely also run afoul of public interest regulations that, historically, have slowed and distorted market adoption and uptake. The franchising case suggests that the Commission will take a more active role in determining the ultimate conclusion to the IPTV story. Regardless of the epilogue, however, MSOs and LECs would do well to consider the role of public interest regulations in their future interactions with telecommunications regulators.

Pursuant To Section 706 of the Telecommunications Act of 1996, GN Dkt. No. 04-54, ex. 4 (May 10, 2004), http://www.natoa.org/public/articles/NATOA-ACM_706_Comments_04.pdf.

165. Jennifer Manner, *Emerging Communications Technologies: Wireless Developments and Beyond*, 3 J. ON TELECOMM. & HIGH TECH. L. 417, 423 (2004).

166. *Lassman Testimony*, *supra* note 156.

167. *AT&T Testimony*, *supra* note 109.

168. *Verizon Testimony*, *supra* note 137, at 4.

