## TABLE OF CONTENTS

**INTRODUCTION** ..............................................................

**I. THE ROLE OF LAW IN ENTRENCHED INCUMBENTS** ...........

A. Wireless Broadband ....................................................... 
   1. The Evolution and Consolidation of Wireless Broadband ...... 
   2. The Role of Law ........................................................ 
      i. Spectrum Allocations ........................................... 
      ii. Special Access ................................................ 
      iii. Roaming ......................................................... 

B. Municipal Broadband ................................................... 
   1. The Rise and Fall of Municipal Broadband .................... 
   2. The Role of Law ................................................... 

C. VoIP ........................................................................... 
   1. The Rise and Fall of Independent VoIP ....................... 
   2. The Role of Law ................................................... 

D. OBJECTIONS ............................................................. 

**II. THE ROLE OF SIZE IN ENTRENCHED INCUMBENTS** ...........

A. Increased Political Power .............................................. 
B. Amplifying Barriers to Entry ........................................ 
C. Implicit Doctrinal Transformation ................................ 

**III. THE POLICY IMPLICATIONS OF ENTRENCHMENT EFFECTS** ..... 

A. Implications for Regulatory Policy ................................. 
B. Implications for Deregulatory Policy Advocates ............... 

**IV. RECOMMENDATIONS FOR THE FUTURE** ......................... 

A. Structural Remedies .................................................... 
B. Alternative Remedies ................................................ 

**CONCLUSION** ................................................................

---

87
89
90
91
94
101
103
104
107
115
116
117
121
124
124
128
131
133
134
139
140
140
144
146
DEATH OF THE REVOLUTION: THE LEGAL WAR ON COMPETITIVE BROADBAND TECHNOLOGIES

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ABSTRACT

This Article examines the role that law has played in entrenching incumbents in the communications industry, with a particular focus on broadband services. Earlier this decade, several new “revolutionary” broadband technologies threatened to fundamentally disrupt industry structures. This revolution, however, never arrived. The reason, I argue, is that industry consolidation transformed law into a powerful and versatile entrenchment mechanism that stifled these emerging competitive threats. Simply put, the sheer size superiorities enjoyed by today’s incumbent companies has created new and self-reinforcing opportunities to use law to entrench their market position. My focus, however, is not upon consolidation itself, but upon the “entrenchment effects” that result from these dynamic intersections of law and consolidation. My analysis implies that many of the current regulatory reforms being considered by the new Obama Administration may be futile. Consolidation has created entities that are, in many respects, more powerful than the law’s ability to regulate them. The ultimate implication is that only more aggressive reforms—such as comprehensive structural remedies—can undo this deep entrenchment.

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INTRODUCTION

The early 2000s was an exciting time for new broadband technologies. A new technological age seemed at hand—one that promised to reshape the communications industry in fundamental ways. In 2000, the future of the wireless market looked bright—it was richly competitive and growing rapidly.1 In 2004, the city of Philadelphia made history by announcing an ambitious plan to construct a public citywide WiFi service that would compete with incumbent broadband providers like Verizon and Comcast.2 Several other large cities followed suit.3 At the same time, innovative companies like Vonage and SunRocket threatened the century-old telephone network by offering new Internet-based voice services.4

Today, at the decade’s close, the landscape looks much different. The revolution, it seems, never really arrived. The wireless market is rapidly consolidating, and is increasingly dominated by AT&T Mobility and Verizon Wireless, which are themselves affiliates of the nation’s two largest—and newly consolidated—wireline companies.5 Philadelphia’s public WiFi project collapsed in 2007, along with many other cities’ municipal broadband projects.6 Vonage has staggered along for years on the verge of bankruptcy, while SunRocket no longer exists.7

In sum, the excitement and possibility of the early 2000s has given way to consolidation, concentration, and the entrenchment of incumbent providers. This Article examines why these developments have happened—why did these new technologies fail to materialize as expected? The failure, I argue, resulted less from market realities than from policymakers’ legal and regulatory choices.

In this Article, I examine the role that law has played in entrenching incumbents in the communications industry, with a particular focus on broadband services. More specifically, I examine how law has helped prevent various new technologies from evolving into fully viable competitors to incumbent services.

To illustrate these dynamics, I focus on three technologies that pose (or once posed) competitive threats to incumbent

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1 See infra text accompanying notes 18-19.
3 Rob Pegoraro, Going to Town with WiFi, WASH. POST, Apr. 19, 2007, at D1.
4 See infra text accompanying notes 160-165.
5 See infra text accompanying notes 26-28.
6 Richard Martin, EarthLink’s Cutbacks Cast Cloud over Muni Wi-Fi Nets, INFO. WEEK, Sept. 3, 2007, at 40; see also infra text accompanying notes 99-102.
7 See infra p. 29.
services: (1) wireless broadband; (2) municipal broadband, and (3) Voice-over-Internet Protocol (VoIP). While these technologies obviously remain quite common, I argue that they could have developed into far greater competitive threats to incumbents than they currently are. Rather than disrupting modern communications industry structures, law has instead channeled these technologies in directions that reinforce and entrench the status quo.

The Article’s first objective, then, is to delineate the role law has played in entrenching these incumbents, and in preventing new competitive technologies from reaching their potential. I next offer a broader descriptive theory explaining why law has developed into an entrenchment mechanism in these contexts. In short, I argue that industry consolidation has transformed law into a powerful and versatile entrenchment mechanism. The sheer size superiorities enjoyed by today’s major incumbent companies have created new and self-reinforcing opportunities to use law to entrench their market position.

My focus is not upon consolidation itself, but upon the dynamic effects that result from the intersection of law and consolidation. I refer to the results of these intersections as “entrenchment effects,” which can occur through (1) concentrations of political power; (2) amplifications of barriers to entry such as economies of scale and network effects; and (3) “implicit doctrinal transformation”—the transformation of facially neutral legal doctrine into a pro-incumbent entrenchment device.

My Article advances existing scholarship in several ways. First, it focuses closely on how the dynamic intersections of size and law have stifled competition, as opposed to focusing on either size or law in isolation. Second, it applies this analytical framework to new communications technologies—thus expanding upon previous scholarship that has criticized communications regulations from an agency capture or public choice perspective.

My analysis also has important and timely policy implications for today’s most pressing policy debates. To begin, it

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8 As I explain infra p. 28, the Article focuses primarily upon independent VoIP services, rather than upon facilities-based VoIP services.

undermines the notion that these debates are binary fights between “regulatory” and “deregulatory” policies. In reality, incumbents have used both regulation and deregulation to achieve their policy objectives. Thus, today’s debates are better understood in terms of whether the policies at issue tend either to maintain or to undermine incumbents’ market positions.

Another important and novel implication is that many of the current regulatory reforms proposed by the new Obama Administration and its FCC may be futile.\(^{10}\) Consolidation has created entities that are, in many respects, more powerful than the law’s ability to regulate them. For instance, even if Congress enacted a network neutrality requirement tomorrow, that law would have no effect on Verizon’s ability to weaken Vonage with patent litigation, or to successfully lobby state governments to ban municipal broadband. Those advantages are functions of size. The ultimate implication is that more aggressive reforms—such as comprehensive structural remedies—will be required to undo this deep entrenchment.

Part I describes the role that law has played in stifling competitive broadband technologies, and in entrenching incumbent providers. Part II describes how law and size have intersected to create various types of entrenchment effects in several contexts. Part III considers the implications of this analysis to advocates of both deregulatory and regulatory communications policies. Part IV offers new policy recommendations, and urges today’s policymakers to “think bigger” as they develop new reforms that protect and promote competition.

I. THE ROLE OF LAW IN ENTRENCHING INCUMBENTS

This Part provides specific examples of how law has helped stifle new types of broadband access and Internet technologies. Specifically, it examines three such technologies: (1) wireless broadband; (2) municipal broadband; and (3) VoIP.

These three technologies were selected because they all represent potential competitive threats to existing incumbent services. Municipal broadband, for instance, competes with private companies’ broadband access services. Wireless broadband access potentially competes with “landline” broadband access services such as cable or DSL. VoIP is an Internet voice service that competes with traditional telephone voice service.\(^ {11}\)

\(^{10}\) See infra Section III.A.

In most instances, however, the technology has not been prohibited. Indeed, technologies like VoIP and wireless broadband are growing increasingly common.\textsuperscript{12} Instead, I show how legal and regulatory choices have weakened these technologies and incorporated them into existing industry structures. As a result, the "revolutionary" technologies that once had the potential to structurally disrupt the status quo are now reinforcing and entrenching it.

A. Wireless Broadband

The story of wireless broadband differs from the "rise and fall" of municipal broadband and independent VoIP (to be described in the next sections). Unlike those services, wireless broadband is growing and has never been more popular. The success of Apple's iPhone, for instance, illustrates the increasing popularity of, and demand for, wireless broadband services.

The story of wireless broadband, then, is one of unfulfilled potential. The service could have developed into a faster, cheaper, and more innovation-friendly service than what exists today. It could have also developed into a more viable competitor to wireline broadband. Its slow speeds and unreliability, however, are no substitute for wireline broadband—either now, or in the foreseeable future.\textsuperscript{13} Instead, wireless broadband’s current trajectory is to become a permanent inferior complement to wireline broadband, rather than into a substitute.

\textsuperscript{12} For instance, the number of mobile broadband users (defined as a service that is greater than 200 kbps in one direction) has gone from four hundred thousand in 2005 to nearly sixty million today. INDUS. ANALYSIS & TECH. DIV., FED. COMM’NS COMM’N, HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF JUNE 30, 2008 5 (2009), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-292191A1.pdf. The number of estimated VoIP users is also growing, with an estimated twenty million users today. Some analysts predict this number will double by 2014. Telecom Notes, COMM. DAILY, Oct. 16, 2008.

\textsuperscript{13} Even the most cutting-edge smartphones, such as the iPhone, are plagued by complaints about sluggish data speeds. Brad Reed, Six Common Complaints about Apple's iPhone 3G; Dropped Calls, Slow Data and MobileMe Follies, NETWORK WORLD, Sept. 5, 2008. More generally, recent statistics released from the Organisation for Economic Co-operation and Development (OECD) show that the average advertised speed for wireless broadband is around 3 MBit/second, which is one-quarter of advertised DSL speeds, one-fifth of advertised cable speeds, and 1/22 of advertised fiber speeds. ORG. FOR ECON. CO-OPERATION & DEV., OECD COMMUNICATIONS OUTLOOK 108-09 (2009). In reality, these speeds are even lower when multiple users are present on the networks. See Brian X. Chen, Verizon Leads, AT&T Runs Last in Wired.com's 3G Speed Test, WIRED, July 10, 2009, http://www.wired.com/gadgetlab/2009/07 /3g-speed-test.
Looking ahead, wireless broadband is trending toward a national duopoly consisting of AT&T Mobility and Verizon Wireless, which creates numerous concerns for the future competitiveness of wireless broadband markets. One concern is that, once dominant, these carriers may “warehouse” spectrum—particularly in non-urban areas—thereby limiting the ability of new companies to enter the market. An additional concern is that a wireless duopoly will stifle various innovations in the wireless application market. One recent controversy that illustrates these concerns is AT&T and Apple’s alleged blocking of Google Voice on the iPhone. Some analysts have argued AT&T had anticompetitive motives, in that Google Voice is a potential competitor to AT&T’s wireless voice service.

In any event, the larger and clear trend in the wireless industry has been toward steady consolidation, with fewer and fewer competitors. As I explain, this development prevents wireless broadband (at both the access and application levels) from being what it could become in a more competitive market. This consolidation, I argue, stems not from market forces, but from historical legal policy choices.

1. The Evolution and Consolidation of Wireless Broadband

Arguments that the wireless industry is increasingly uncompetitive may surprise casual observers. Just a few years ago, the industry enjoyed robust competition. In 2000, for instance, virtually every metric indicated a competitive, growing market. The number of subscribers skyrocketed in the 1990s. In 1990, there were approximately 5.3 million wireless subscribers whose average monthly bill was around eight dollars. In 2000, by contrast, there were 109 million subscribers whose average monthly bill had dropped to forty-five dollars.

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15 “Warehousing” here refers to owning spectrum licenses that are not used to provide communications services. Smaller carriers routinely criticize larger carriers for failing to use the large valuable blocks of spectrum that larger carriers own in rural areas. See, e.g., Howard Buskirk, Need for New Spectrum Cap Disputed in Filings at FCC, COMM. DAILY, Dec. 29, 2008.
Critically, customers also had a wide range of choices in a market that was no longer concentrated. In 1997, for instance, there were six legitimate “national” carriers. The largest two carriers commanded roughly 21% of the market, while the top four commanded less than half (49%).

The story is much different today. Since 2000, the industry has rapidly consolidated in a wave of mergers of all sizes. Indeed, the industry has experienced over a dozen major mergers since 2004 alone. These mergers include: NextWave/Cingular (2004); Cingular/AT&T Wireless Services, Inc. (AT&T) (2004); Alltel/Western Wireless Corp. (2005); Nextel/Sprint (2005); AT&T/BellSouth Corp. (2007); AT&T/Dobson (2007); T-Mobile/SunCom Wireless (2008); AT&T/Aloha Partners (2008); Verizon Wireless/Rural Cellular (2008); Verizon/Alltel (2008); AT&T/Centennial (2009) (announced).

The most recent mergers indicate that consolidation is not showing any signs of slowing. Verizon’s 2009 acquisition of Alltel combined the second- and fifth-largest carriers in the country. AT&T—which has acquired several companies in the past two years—recently announced plans to acquire Centennial, which has over a million subscribers and is the nation’s eleventh largest carrier.

These mergers have created a much different world than existed at the beginning of the decade. Following the Alltel merger, the top four carriers now command roughly 87% of

19 Competition in the Commercial Mobile Broadband Radio Services Second Annual Report, In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 tbs. 1-2, 12 FCC Rcd. 11,266 (1997); see also Initial Comments of Frontline Wireless, LLC, In re Service Rules for the 698-746, 747-762 and 777-792 MHz Bands at 9-10, WT Docket No. 06-150 (Fed. Commc’n’s Comm’n May 23, 2007). As a disclaimer, I was a (very) junior attorney for a firm that represented Frontline at the time.

20 Initial Comments of Frontline Wireless, supra note 19.

21 Adam Bender, Small, Big Carriers at Odds on Spectrum Cap Revival, COMM. DAILY, Dec. 4, 2008 (“Since the FCC lifted the last spectrum cap in 2001, more than a dozen wireless mergers or acquisitions have occurred . . .”); Howard Buskirk, Public Interest Groups Say Wireless Market Is Getting Less Competitive, COMM. DAILY, June 18, 2009 (outlining public interests groups’ critiques).

22 For a comprehensive list of these mergers and their approvals by the FCC, see Rural Telecomms. Group, Inc. Petition for Rulemaking To Impose a Spectrum Aggregation Limit at 8-10, In the Matter of Rural Telecommunications Group, Inc., RM-11498 (Fed. Commc’n’s Comm’n July 16, 2008).


subscribers (compared to less than half a decade earlier). The largest two carriers—AT&T Mobility and Verizon Wireless—now command around 60% of the market, and are growing rapidly. These two carriers are also gaining a higher percentage of new subscribers, while companies like Sprint (the third-largest carrier) have recently experienced significant customer loss.

The wireless industry’s growing concentration is also evident in the Herfindahl-Hirschman Index (HHI), an index commonly used by policymakers to measure market concentration. The most recent FCC Competition Report found that the wireless industry had an index of 2674. To put that score in perspective, the Department of Justice considers any industry that scores above 1800 to be “highly concentrated.” While the HHI has its critics, it does at least indicate trends. And the concentration levels have grown progressively higher in recent years—from 2151 in 2004 to 2674 today.

The combined effect of these mergers has triggered scrutiny from government officials who fear the industry is excessively concentrated and is engaging in various anticompetitive practices. In June 2009, for instance, Senator Herb Kohl, Chairman of the Senate’s antitrust subcommittee, expressed concern about the “concentrated nature of the cell phone marketplace,” and demanded a federal investigation of alleged anticompetitive practices including exclusivity agreements with handset manufacturers. According to news reports, the Department of Justice’s Antitrust Division is scrutinizing the industry as well. These fears of excessive concentration have also

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25 Id. (calculating Alltels’ subscribers as Verizon’s).
26 See Jeffrey Silva, Wireless Policies Scrutinized Under Obama Advisers, RCR WIRELESS NEWS, Dec. 1, 2008 (“The market clout of Verizon Wireless and AT&T Mobility—which towers over weaker rivals Sprint Nextel Corp. and T-Mobile USA—even has prompted other competitive concerns . . . .”)
27 Initial Comments of Frontline Wireless, LLC, supra note 19, at 9-10.
29 Id. at 6212-13.
32 Amol Sharma, Telecoms Face Antitrust Threat; Wireless Market, Generic Drugs Reviewed as Justice Department Steps Up Enforcement, WALL ST. J., July 7, 2009 (“AT&T and Verizon have become the two dominant players and have a great deal of clout with equipment makers. Combined, they have ninety million land-line customers and 60% of the 274 million U.S. wireless subscribers.”).
led the FCC to pursue more aggressive regulatory reforms on several fronts recently.\textsuperscript{33}

The ultimate fear underlying these interventions is that the wireless industry’s consolidation will stifle competition, which will lead to slower deployment, inferior speeds, higher prices, less openness, and less choice. These fears are compounded by the fact that the emerging duopoly consists of two carriers who are affiliated with the largest two Bell Operating Companies (AT&T and Verizon) who both have extensive wireline infrastructures that all wireless carriers depend upon.\textsuperscript{34}

Indeed, consumers are already experiencing some of these effects. In recent years, for instance, prices have stabilized, and are no longer dropping.\textsuperscript{35} Various public interest organizations have also documented various practices that allegedly illustrate a lack of competition, including parallel pricing regimes, limitations on terms of service, early termination fees, and other high switching costs.\textsuperscript{36}

2. The Role of Law

In this Section, I argue that the wireless industry consolidation’s was driven largely by regulatory policy choices. I group these regulatory choices into three broader categories: (1) spectrum allocations; (2) special-access deregulation; and (3) roaming regulations. Collectively, these categories of policies transformed the wireless industry into its present consolidated state.

i. Spectrum Allocations

The two most important facts about spectrum are that it is an essential input for wireless broadband, and that not all ranges of spectrum are created equal. In other words, carriers not only need spectrum, they need good spectrum. Generally speaking, lower

\textsuperscript{33} These various interventions are outlined in detail \textit{infra} Section III.A.

\textsuperscript{34} Jeffrey Silva, \textit{Wireless Policies Scrutinized Under Obama Advisers}, RCR \textbf{WIRELESS NEWS}, Dec. 1, 2008 ("Verizon Communications Inc. and AT&T Inc. dominate a special access market that the General Accountability Office—Congress’ watchdog arm — said is not competitive in major U.S. cities.").

\textsuperscript{35} Gene Kimmelman, Mark Cooper & Magda Herrera, \textit{Failure of Competition Under the 1996 Telecommunications Act}, 58 \textbf{FED. COMM. L.J.} 511, 515 (2006) ("[I]n the past several years, as market shares have stabilized, so too has pricing.").

\textsuperscript{36} \textit{See}, e.g., Comments of Consumer Fed’n of Am., Consumers Union, Free Press, Media Access Project, New Am. Found., & Public Knowledge at 7-19, \textit{In re} Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, WT Docket No. 09-66 (Fed. Commc’ns Comm’n June 15, 2009) [hereinafter Public Interest CMRS Comments].
frequency spectrum is better suited for wireless broadband service than higher frequency spectrum. At lower frequencies, radio waves travel further and have better ability to penetrate obstacles such as buildings and hills.  

The fact that spectrum quality varies explains the importance of the most recent spectrum auction in 2008 (700 MHz Auction). That auction not merely offered more spectrum, it offered extremely valuable low-frequency spectrum—so-called “beachfront” spectrum. Most of this spectrum had originally been allocated to television broadcasters decades ago. The 700 MHz Auction reallocated a portion of this beachfront spectrum to other uses, though many scholars think the allocation remains woefully insufficient.

To provide historical perspective, the structure of the wireless industry has always turned sharply on congressional and regulatory decisions about spectrum allocations. Policymakers have made the industry both more and less competitive over the years through their decisions.

It is well known, for instance, that the FCC singlehandedly stifled the cellular industry for decades. Although the technology had arrived by the 1960s, the FCC dragged their feet for years and did not actually authorize cellular service until 1981 (1981 Order). Even then, however, the FCC made a critical decision to authorize only two wireless carriers in each designated geographic area, with each carrier being awarded a 20 MHz block of

37 Martin Defends FCC’s 700 MHz Auction Rules as Pro-Consumer, WASH. INTERNET DAILY, Aug. 3, 2007 (“Referring to the 700-MHz band as ‘beachfront property,’ Martin called the spectrum ‘particularly valuable’ because the radio signals ‘can penetrate walls very easily and can carry lots of information at very low power.’”); Initial Comments of Frontline Wireless, LLC, supra note 19, at 7.

38 See, e.g., Joan Engebretson, Public Safety Eyes 700 MHz Spectrum, TELEPHONY, Apr. 9, 2007 (“Often likened to ‘beachfront property,’ the 700 MHz band not only can support 4G mobile broadband services, it also has excellent propagation characteristics and could enable broad geographic coverage . . . ”).


40 See, e.g., Stuart Minor Benjamin, Roasting the Pig To Burn Down the House: A Modest Proposal, 7 J. ON TELECOMM. & HIGH TECH. L. 95, 96 (2009); Philip J. Weiser & Dale N. Hatfield, Market Regulation and Innovation: Policing the Spectrum Commons, 74 FORDHAM L. REV. 663, 668-70 (2005).

41 Benjamin & Rai, supra note 9, at 49-51; Hazlett, supra note 9, at 407-52.

spectrum. In essence, the FCC set up a duopoly from the very beginning, although this duopoly was eventually abandoned in the early 1990s (as I explain below).

The FCC’s 1981 Order, however, made one decision that has had a more lasting impact that we continue to feel today. Specifically, it gave away one of these two blocks of spectrum to the local incumbent telephone carrier for free. Following the breakup of AT&T, this decision meant that wireless affiliates of the Regional Bell Operating Companies generally obtained the licenses for this spectrum. This gift provided an enormous competitive advantage in several respects, particularly in later years as demand rose sharply. First, it allowed these companies to obtain an essential input for free. Second, it provided them with critical low-frequency spectrum, which is comparatively better than the higher-frequency spectrum the FCC reallocated in later years.

The consequences of this decision remain evident nearly thirty years later. Today, this low-frequency spectrum is controlled mostly by AT&T Mobility and Verizon Wireless, who have acquired, or merged with, the incumbent carriers who originally inherited this spectrum. The spectrum that companies like Sprint, by contrast, control is higher-frequency, and thus comparatively inferior. Higher-frequency waves do not travel as far, and are less resilient. Accordingly, carriers using higher-frequency spectrum must build more towers and infrastructure to provide equal ranges of service. In short, the higher the frequency, the higher the business costs.

In 1981, FCC Commissioner Mark Fowler wrote what has proved to be a prescient dissent predicting this development. He warned:

I regretfully dissent from the majority’s decision to continue the automatic “set aside” for wireline carriers of half the spectrum available for

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45 Chen, supra note 44, at 1367 (providing general summary of regulatory history reallocating the higher-frequency spectrum).
46 Initial Comments of Frontline Wireless, LLC, supra note 19, at 7-8 (“It is no accident that the two largest wireless carriers today were handed (for free) the low-frequency 800 MHz spectrum in the early days of cellular. These incumbents enjoy significant competitive advantages which stem from decades-old grants of low-frequency spectrum.” (footnote omitted)).
47 Id. at 7.
establishment of cellular radio services. . . . in light of the anticompetitive difficulties it creates.

. . . .

Non-wireline carriers . . . will be irreparably injured because . . . the wireline carriers will have a “headstart” that will enable them to capture most of the interested cellular customers before a non-wireline carrier can be certified . . . .

. . . . We have been warned by the Department of Justice (DOJ) that “this licensing scheme assures the dominance of AT&T in what might otherwise be a highly competitive industry.”

. . . . [T]he successful applicants will in all likelihood remain the providers of cellular service for decades into the future.\textsuperscript{48}

The next dramatic shift in the wireless industry structure came in 1993, when Congress decided to open up substantial amounts of new spectrum, and to allocate it via auctions.\textsuperscript{49} Critically, the FCC also adopted a spectrum cap, which limited the amount of spectrum (at 45 MHz) that any one carrier could possess in a designated geographic area.\textsuperscript{50} The FCC explained that the spectrum caps would “promote diversity and competition in mobile services” because carriers “might [otherwise] exert undue market power or inhibit market entry by other service providers if permitted to aggregate large amounts of spectrum.”\textsuperscript{51} The diverse competitive landscape of the late 1990s and early 2000s stems directly from these policy decisions, and from the spectrum cap in particular.

Following the change of presidential administrations, the FCC revisited the spectrum caps in 2001. It ultimately decided to eliminate the spectrum caps, effective in 2003.\textsuperscript{52} The FCC

\textsuperscript{48} 1982 Order, \textit{supra} note 43, at 105-06 (Fowler, Comm’r, dissenting in part).
\textsuperscript{50} For a general historical overview of these initial allocations, see Ari Q. Fitzgerald & R. Clark Wadlow, \textit{The Year in Wireless: October 2001-September 2002}, 731 \textit{PRACTICING L. INST.} 87 (2002). The 45 MHz figure was for metropolitan service areas. For rural service areas, the cap was soon raised to 55 MHz. \textit{Id.} at 94-95.
\textsuperscript{51} Third Report and Order, \textit{In re} Implementation of Sections 3(n) and 332 of the Communications Act, 9 FCC Rcd. 7988, 8100 (1994).
reasoned the caps were no longer necessary "in light of the strong growth of competition in [wireless] markets."\(^{53}\)

As predicted at the time, the lifting of the spectrum caps triggered a rapid wave of consolidation within the industry from 2003 to the present, as documented above.\(^{54}\) Regardless of one’s view of the policy merits of spectrum caps, their elimination opened the door to today’s consolidation.

More recently, spectrum auctions that originally held out the promise of new competitive entry have instead resulted in further consolidation. AT&T Mobility and Verizon Wireless, for instance, were the “big winners” in the 700 MHz auction.\(^{55}\) Together, the two companies accounted for over 80% of the revenues raised, and Verizon Wireless also purchased virtually all of the ten largest regional “C-Block” licenses, which can be aggregated to create a national network.\(^{56}\) Further, some of the next largest winners, such as EchoStar, won spectrum licenses that are not well suited to create new national broadband competitors.\(^{57}\) Indeed, these overall results make it virtually impossible for a new national wireless competitor to emerge, given the limited amount of spectrum currently available.

Although any company with greater resources has an advantage at an auction, critics claimed that the regulatory service rules and procedures governing the auctions helped prevent new competitive entry. They argued, for instance, that the FCC should have prevented large companies from bidding on certain blocks of spectrum, or should have provided more incentives for smaller carriers (known as “designated entities”) to obtain spectrum.\(^{58}\)

\(^{53}\) Id. at 22,670-71. As critics noted, however, the caps helped fuel the competition that was ultimately cited to eliminate the caps. Id. at 22,738 (Copps, Comm’r, dissenting) (“The wireless industry has been tremendously successful. I believe that this is due, in part, to the spectrum cap.”).

\(^{54}\) In dissent, Commissioner Copps accurately predicted this consolidation. See id. at 22,737 (“It is interesting to note that in anticipation of the cap being lifted financial and industry experts are reporting on a large set of potential mergers, predicting significant consolidation and labeling smaller competitors as ‘munch bait’ if the cap is eliminated. This should give us pause.”).

\(^{55}\) Nick Wood, *Incumbents Victorious in FCC Auction*, TOTAL TELECOM, Mar. 25, 2008 (“Verizon Wireless and AT&T, the two dominant U.S. mobile players, last week emerged as the big winners from the Federal Communications Commission’s recently ended spectrum auction.”).

\(^{56}\) Jeffrely Silva, *700 MHz Auction Ends*, RCR WIRELESS NEWS, Mar. 24, 2008. The remaining regional C-Block licenses covered more geographically distant areas like Alaska and the Gulf of Mexico. Id.

\(^{57}\) Id. (discussing EchoStar’s spectrum winnings).

\(^{58}\) A company named Council Tree actually sued, seeking to invalidate the auction on these grounds. See Wireless, COMM. DAILY, Feb. 20, 2009 (“Council Tree argued that the designated entity rules approved for the 700 MHz auction nearly guaranteed that the largest carriers won almost all licenses for sale in the auction.”).
Although spectrum allocations are arguably the most important regulatory force driving consolidation, the next sections examine two more policy choices that have also contributed to these trends.

ii. Special Access

Wireless broadband only works if mobile users and their devices can actually connect to the broader communications network. When a mobile user places a phone call or attempts to access a web page, the information must first travel from the mobile device to a receiver of some kind. These receivers are often located on towers or on the roofs of buildings. From there, however, the information must somehow travel from the receiver to the larger telephone and Internet networks. "Special access" facilities make this transfer of information possible.

Broadly speaking, special access refers to voice and data lines (i.e., the physical infrastructures) that are dedicated to an individual user and that connect the user to the larger network. To use a rough analogy, special access lines are similar to individual off-ramps that would connect you—and only you—to an interstate highway from a local road. The types of customers who need these dedicated lines tend to be large businesses, hospitals, universities, and wireless cell towers. Any structure with a wireless receiver (tower, building, etc.) must generally have its own dedicated access line to transfer data from mobile phones to the global network.

Special access lines are therefore a critical input for wireless service. The potential problem, however, is that special access infrastructure is overwhelmingly owned by the Regional Bell Operating Companies—Verizon, AT&T, and (the much smaller) Qwest. This poses a particularly difficult problem for national carriers such as Sprint and T-Mobile, for instance, who lack wireline affiliates that own special access infrastructure. Accordingly, these two carriers must obtain the overwhelming majority of their special access services from incumbent wireline

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60 Comments of Sprint Nextel Corp. app. at 2, In re Special Access Rates for Price Cap Local Exchange Carriers, WC Docket No. 05-25 (Fed. Commc'ns Comm'n Aug. 8, 2007) ("Special access facilities are a significant input in the provision of both Commercial Mobile Radio Services . . . and wireless broadband services.").
61 See GAO REPORT, supra note 59.
62 Buskirk, supra note 21.
carriers like AT&T and Verizon (whose wireless affiliates compete with Sprint and T-Mobile). 63

The lack of competition in the special access market has roots in the monopoly era, when the national telephone network was constructed with public subsidies and protections from competition. Given the enormous barriers to entry, it is unrealistic to expect that any private company could replicate the ubiquity of the national phone network today. 64 While the special access market can potentially be more competitive in densely populated urban and commercial areas, the potential revenues are too small throughout most of the country to engage in such massive construction projects.

Because it was largely a monopoly, special access services were historically regulated. In 1999, however, the FCC decided that the market was sufficiently competitive—or at least sufficiently capable of new entry—that it deregulated wide segments of special access services (effective in 2001). While I have provided a detailed description of this process in a previous article, 65 the general concern is that the FCC’s deregulation has led to increasing prices. Indeed, a recent report from the General Accounting Office (GAO) has documented these price increases, concluding that prices are rising in areas that have been the most thoroughly deregulated (and thus theoretically most subject to competition). 66

These sharp price increases pose significant problems to competitive wireless carriers. Because special access (like spectrum) is a critical input, paying more for this service increases the costs of providing service. The rising prices thus pose barriers both to new entrants, and to existing companies who wish to expand. 67

The larger point is that special access deregulation has fueled consolidation by making the input relatively more expensive

63 Comments of Sprint Nextel Corp., supra note 60, at iii (stating that Sprint purchases between 97% and 99% of its DS1 and DS3 circuits in Chicago, Boston, and San Francisco from incumbents); Reply Comments of T-Mobile USA, Inc. at 4, In re Special Access Rates for Price Cap Local Exchange Carriers, WC Docket No. 05-25 (Fed. Commc’ns Comm’n Aug. 15, 2007) (stating that T-Mobile purchases 92% of its DS1 channel terminations—and 90% of its interoffice transport—from incumbents).
64 GAO REPORT, supra note 59, at 1 (“The incumbent firms have an essentially ubiquitous local network that generally reaches all of the business locations in their local areas.”).
65 John Blevins, A Fragile Foundation: The Role of “Intermodal” and “Facilities-Based” Competition in Communications Policy, 60 ALA. L. REV. 241, 271-74 (describing proceedings that deregulated special access).
66 GAO REPORT, supra note 59, at 13-14, 28-29.
67 Buskirk, supra note 21 (noting criticisms that “[s]pecial access prices present a barrier to growth”).
for wireless carriers who lack special access infrastructure. Indeed, it is no accident that the two largest wireless carriers today are affiliated with the two companies that possess the nation’s most extensive special access infrastructure. The money that AT&T Mobility, for instance, pays for special access is essentially a payment to itself.\(^6^8\)

### iii. Roaming

The FCC’s regulatory choices on roaming have also contributed to consolidation. Generally speaking, roaming refers to a mobile customer’s use of a wireless network with which she has no preexisting relationship.\(^6^9\) When you roam, you are using some other company’s network facilities. Wireless companies therefore enter into roaming agreements with one another that dictate the terms and conditions of calls that one carrier’s subscribers place on another carrier’s network facilities. The smaller and more limited a company’s network facilities are, the more critical that roaming agreements become.

The FCC distinguishes between “manual” and “automatic” roaming.\(^7^0\) Manual roaming, which is less common today, refers to situations where a mobile user’s wireless company has no existing arrangement with the company whose network the user is trying to access. In these circumstances, the user generally must provide a credit card number before the wireless provider will complete the call.\(^7^1\)

Automatic roaming, by contrast, occurs when a user’s wireless company does have a preexisting arrangement with the company the user is trying to access.\(^7^2\) This type of roaming is far more common, and it allows calls to be made more quickly and easily.

Traditionally, the FCC has considered manual roaming to be a regulated common carrier service under Title II of the Communications Act of 1934.\(^7^3\) Because of this classification,

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\(^6^8\) Public Interest CMRS Comments, supra note 36, at 25.


\(^7^0\) Id. at 15,819-20.

\(^7^1\) Indeed, automatic roaming has been more common for some time. See Cingular Opposes Automatic Roaming Requirement, CT WIRELESS, Nov. 16, 2000 (noting a source as saying that automatic roaming is “extremely common” today).

\(^7^2\) 2007 Roaming Order, supra note 69, at 15,819-20.

carriers must complete manual roaming calls in a nondiscriminatory manner, and cannot charge “unreasonable” rates.

The FCC has traditionally declined, however, to impose a similar requirement on automatic roaming.74 The agency’s failure to do so has generated intense criticism for years from smaller and mid-sized carriers who claimed that larger carriers’ roaming practices were hurting competition. These carriers argued, for instance, that roaming rates have spiked in recent years as the industry has consolidated.75

Another complaint that smaller carriers raise is that consolidation has reduced the number of potential roaming partners available to them.76 This problem is compounded by the fact that wireless carriers have traditionally used different—and incompatible—digital protocols, or standards. Some carriers use a standard known as CMDA, while others use a standard called GSM. Roaming arrangements, however, are only feasible with carriers who share the same digital format.77 For these reasons, small and mid-sized carriers have found it increasingly difficult to “shop around” for reasonable roaming agreements as the number of roaming options has steadily dwindled and prices steadily increased.

In 2007, the FCC responded to these concerns by classifying automatic roaming as a regulated common carrier service.78 Critically, however, the FCC imposed two important exceptions that significantly limited the scope of its new regulation. First, it concluded that the automatic roaming rule does not apply to data, but only to voice calls.79 Thus, smaller carriers

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76 Buskirk, supra 62 (noting the concern that “disappearance of several former roaming partners as a result of the recent market consolidation has made it much more difficult for small, rural and regional carriers to negotiate reciprocal roaming agreements”).
77 For a discussion of this compatibility problem, see Comments of MetroPCS Commc’ns, Inc. at 6, In re Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, WT Docket No. 09-66 (Fed. Commc’ns Comm’n June 15, 2009) [hereinafter MetroPCS Comments].
78 2007 Roaming Order, supra note 69, at 15,818.
79 Id. at 15,819 (“We note that roaming, as a common carrier obligation, does not extend to services that are classified as information services or to services that are not CMRS.”).
are now entitled to reasonable roaming agreements for voice calls, but not for wireless broadband services. This exception will become increasingly significant as wireless broadband usage increases in the future.

The second exception is the “in-market” exception. Under this rule, automatic roaming protections do not apply in areas where carriers already own spectrum. Thus, if a smaller carrier has rights to spectrum but has not yet constructed its own network, it cannot obtain roaming rights within this area. The FCC’s rationale was that a roaming rule in this context would discourage smaller carriers from constructing their own facilities. Critics, however, argued that rule prevents carriers from gradually building a customer base that would allow them to construct facilities over time.

In any event, the inability to secure favorable roaming agreements has limited, and will continue to limit, the competitive strength of smaller and mid-sized carriers. The growth of mid-sized carriers, in particular, is important given that they have the most potential to eventually grow into national competitors. As described above, however, these mid-sized carriers have been disappearing lately, and carriers’ inability to get more favorable roaming agreements has played an important role in their disappearance.

B. Municipal Broadband

“Municipal broadband” refers broadly to efforts by municipal governments to provide broadband service to their residents. The term encompasses a diverse range of network types, and includes both wireless and wireline networks. The term also encompasses various types of ownership models,

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80 Id. at 15,834-36 (“We determine that our automatic roaming obligation does not include an in-market or home roaming requirement.”).
81 Id. at 15,835 (discussing “incentive[s] to build-out”).
82 Jeffrey Silva, In-Market Roaming Debate Hangs over Carrier Mergers, RCR WIRELESS NEWS, Sept. 1, 2008 (quoting smaller carriers’ argument that in-market roaming “would promote spectrum acquisition and system expansion by assisting carriers in acquiring a customer base”).
83 Bender, supra note 21.
84 FED. TRADE COMM’N, MUNICIPAL PROVISION OF WIRELESS INTERNET 6 (2006) [hereinafter 2006 FTC REPORT].
85 As detailed below, examples of municipal wireline networks include the high-speed fiber networks constructed in cities like Lafayette, Louisiana and Bristol, Virginia. The more common choice, however, is to use wireless networks. The high-profile examples of municipal broadband projects in Philadelphia and San Francisco involved citywide wireless coverage. See infra p. 18.
including everything from complete government control to public-private partnerships.

1. *The Rise and Fall of Municipal Broadband*

Just a few years ago, municipal broadband promised to be the next big thing in broadband access. In the first half of this decade, municipal projects seemed to be popping up everywhere. During this short time, literally hundreds of cities announced plans for various types of municipal broadband projects—most of them wireless networks. Commentators noted the “spiraling” growth of municipal networks nationally. The high point seemed to come in the idealistic days of 2004, which Andrea Tapia calls “the year of municipal planning.”

In addition to increasing in number, municipal projects also grew more ambitious. Several large cities announced plans to create expansive citywide wireless networks. The most famous—and infamous—project was Philadelphia’s joint venture with Earthlink, a private Internet service provider. This ambitious project, announced with great fanfare, promised to bring affordable, high-speed broadband to the entire city. Speaking with grand rhetoric, Philadelphia Mayor John Street declared that “just like roads and transportation were keys to our past, a digital infrastructure and wireless technology are keys to our future.” Philadelphia, however, was not alone in these ambitions. Other

87 Dingwall, supra note 86, at 81 (“[M]unicipal-provided telecommunications services have spiraled over the past few years . . . .”); see also John Cox, Municipal Wi-Fi 2.0, NETWORK WORLD, Apr. 21, 2008, at 22 (“In the 2004-2006 time period, scores of municipalities of every size were writing up requests for proposals for something that had never been deployed before: large-scale, Wi-Fi mesh networks.”).
89 Earthlink is an Internet service provider that contracted with multiple cities to provide public WiFi service.
91 Christensen, supra note 90, at 695.
cities—including Houston and San Francisco—soon followed with equally bold proposals to offer citywide service.92

Although wireless networks were the most common form of municipal broadband, some local governments opted to construct “wireline” networks consisting of high-speed fiber lines.93 Fiber networks offer several advantages over wireless networks, including far greater speeds, better reliability and increased scalability.94 Fiber networks, however, are also far more expensive to build because they require extensive digging and wiring.95 Some of best-known examples of municipal fiber projects are Lafayette, Louisiana; Bristol, Virginia; and the “UTOPIA” consortium of cities in Utah.96

Across the country, local government officials hailed these new network projects as innovative, and promised that they would help bridge the “digital divide.”97 Other officials argued that municipal projects were necessary because residents’ choices were limited, and incumbents had delayed network upgrades for years.98 In short, the future looked bright.

Municipal broadband’s good times, however, were not to last. The excitement and promise of municipal broadband earlier in the decade gave way to a series of expensive and spectacular failures. Virtually every one of the most ambitious citywide projects has either collapsed or been scaled back drastically.

The woes of the various Earthlink municipal projects illustrate this broader decline. Earthlink was at the heart of the revolution that municipal broadband had promised earlier this decade. The company had contracted and negotiated with various large cities including Philadelphia, Houston, Chicago, Anaheim, Corpus Christi, and San Francisco to provide ambitious citywide

92 Rob Pegoraro, Going to Town with WiFi, WASH. POST, Apr. 19, 2007, at D1.
94 WiMax Offers Less Bang Than Fiber, Panelists Say, COMM. DAILY, Mar. 31, 2009; 2006 FTC REPORT, supra note 84, at 2, 6, 34; BALHOFF & ROWE, LLC, supra note 86, at 92-93, 99.
95 WiMax, supra note 94.
96 BALHOFF & ROWE, LLC, supra note 86, at 35-50.
98 See How Internet Protocol-Enabled Services Are Changing the Face of Communications: A View from Government Officials: Hearing Before the Subcomm. on Telecommunications and the Internet of the H. Comm. on Energy & Commerce, 109th Cong. (2005) (statement of Lewis K. Billings, Mayor, Provo, Utah) (“in many cases, the private sector has responded that it did not have immediate plans to provide broadband service or upgrade existing services to meet the bandwidth needs of businesses and residents. Smaller communities have two choices—wait until an incumbent provider decides to provide service, if it does so at all, or build the network themselves.”).
WiFi networks, which would have been the largest projects in the country. In 2007, however, citing financial problems, Earthlink began formally withdrawing from these projects. In the same year, it ended projects in Houston, San Francisco, and Chicago, announcing it was seeking “strategic alternatives” to municipal broadband. It formally terminated its Philadelphia network in 2008. Following the collapse of these high-profile projects, a “pall of disappointment” descended on municipal broadband.

Of course, hundreds of municipal broadband networks still exist across the country. These networks, however, tend to be smaller in scope and far less ambitious than the networks proposed earlier this decade. Cities such as Miami that once had ambitious citywide plans ultimately settled for scattered public hotspots. Chicago has done the same, abandoning its proposed citywide networks for isolated wireless zones under its Digital Excellence Initiative.

99 Richard Martin, Earthlink’s Cutbacks Cast Cloud over Muni Wi-Fi Nets, INFO. WEEK, Sept. 3, 2007, at 40; Dan Meyer, Low-Fi, RCR WIRELESS NEWS, Sept. 3, 2007, at 10 (“These appear to be dark days for municipal Wi-Fi. The once-promise way to bring wireless broadband to the masses has hit that hard wall separating hype from reality.”). Earthlink was in serious negotiations with Chicago, but had not formalized in agreement. Id.


101 Deborah Yao, Earthlink To Pull the Plug on Wi-Fi in Philadelphia, ASSOC. PRESS, May 13, 2008.

102 Stimulus Stimulates Old Fight over Municipal Networks, COMM. DAILY, May 5, 2009 (“Many of those undertakings, such as in San Francisco and Philadelphia, fizzled. Revenue proved elusive. Carriers like EarthLink woke up, smelled the balance sheet and, as fast as they’d signed on, pulled out. A pall of disappointment descended on muni broadband.”).

103 Estimates vary and depend on how one defines municipal broadband, but the most current and comprehensive list of municipal wireless networks is Esme Vos, Muniwireless Updates List of Cities and Counties with Large Wi-Fi Networks, Mar. 28, 2009, http://www.muniwireless.com/2009/03/28/muniwireless-list-of-cities-with-wifi. Tapia writes that over four hundred municipalities have entered the arena. Tapia, supra note 88, at 223.

104 New Business Models Said Key to Successful Municipal Wi-Fi, COMM. DAILY, June 30, 2008 (“In Miami Dade County, the original full coverage network of over 2,000 miles was shrunk to a few hot spots . . . ”).

105 John Pletz, City Launches New Push for Broadband; Seeks $100 Million from Feds for Wireless Network, CRAIN’S CHI. BUS., June 22, 2009; Public Spaces: Loop Wireless Network Map, http://egov.cityofchicago.org (search “WiFi”); then follow “WiFi Hot Spots”; then click “Public Spaces” hyperlink) (last visited Sept. 6, 2009) (illustrating isolated public WiFi hotspots in Chicago).
In short, municipal broadband has failed to develop into a viable competitor to incumbent broadband access providers. Instead of becoming a substitute, it has become (at most) a complementary service (e.g., it allows you use your laptop in a park, but it does not allow you to terminate your cable or DSL broadband subscription). This state of affairs, however, was not inevitable, but instead resulted largely from policy choices. And while there is plenty of blame to go around, I argue that law was the primary cause of municipal broadband’s failure. Simply put, incumbent broadband providers used law to stifle municipal broadband in its infancy.

2. The Role of Law

The argument that law has stifled municipal broadband is supported by a rather strong piece of evidence—namely, state laws that explicitly stifle municipal broadband. These restrictions, which are described below, have been sharply criticized by scholars.106 I argue here, however, that scholars’ criticisms have been somewhat misdirected. Specifically, the legislative restrictions are important for different reasons than the literature has emphasized. In fact, a close review of these restrictions shows that they are relatively limited in both scope and number.

Instead, the restrictions’ true harm stems from their signaling effect. Essentially, incumbents have used these laws as signals that they will increase municipalities’ cost of entry into the broadband market. This signaling not only dissuades municipalities from entering the market, it persuades them either to adopt ownership models that are more likely to fail, or to adopt less ambitious networks that do not pose significant threats to incumbents.

To provide background, the traditional narrative adopted by critics of municipal broadband restrictions begins with the Telecommunications Act of 1996107—and more precisely, with the


alleged betrayal of the 1996 Act’s pro-entry policy goals.\textsuperscript{108} One example of these pro-entry provisions is § 253, which explicitly preempts state and local barriers to entry in order to promote competition. The statute reads: “No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.”\textsuperscript{109}

Immediately after the 1996 Act was adopted, this provision was put to the test. Several states adopted laws—at the urging of incumbent telephone companies—to prevent municipalities from providing “telecommunications services.”\textsuperscript{110} The laws were viewed by contemporary skeptics as attempts by well-resourced incumbent telephone carriers to prevent municipal utilities such as power companies from entering the telecommunications market.\textsuperscript{111}

The State of Missouri enacted this type of restriction in 1997.\textsuperscript{112} In 1998, several municipalities and utility companies in the state petitioned the FCC to preempt Missouri’s law under § 253(a), claiming it represented an unlawful barrier to entry.\textsuperscript{113} The FCC initially rejected the petition,\textsuperscript{114} but the Eighth Circuit reversed, holding that § 253 preempted the state law.\textsuperscript{115} In 2004, however, the Supreme Court reversed in Nixon v. Municipal League.\textsuperscript{116} The Court held that, although § 253(a) preempted laws that prohibited “any entity” from entering the market, the term “any entity” did not encompass municipal governments.\textsuperscript{117}

\textsuperscript{108} Feld et al., supra note 106, at 11-12 (“The campaign of the incumbents to persuade state legislatures to ban municipal networks is directly contrary to the stated policy goals of the federal government.”).


\textsuperscript{110} U.S. Telecom Giants Oppose Cities on Web Access, TOTAL TELECOM, Nov. 23, 2004 (“After Congress passed the landmark Telecom Act in 1996, . . . several municipalities, including some municipal power companies, sought to offer telephone service. After extensive lobbying by the Bell telephone companies, roughly a dozen states passed laws prohibiting municipalities from offering telecommunications services.”).


\textsuperscript{112} MO. REV. STAT. § 392.410 (1997).


\textsuperscript{114} Id. at 1158.

\textsuperscript{115} Mo. Mun. League v. FCC, 299 F.3d 949, 951 (8th Cir. 2002).

\textsuperscript{116} 541 U.S. 125, 128-29 (2004).

\textsuperscript{117} Id. The Court emphasized the practical difficulties of applying preemption to local governments, who are in many respects indistinguishable from the state
The significance of *Nixon*, then, is that the Court both upheld the legality of the states’ post-1996 Act restrictions on municipal entry, and opened the door for new legislative restrictions. *Nixon*’s significance was not lost on state legislatures, nor upon incumbent carriers. Seizing the opportunity *Nixon* provided, incumbent carriers immediately launched an intensive lobbying effort in multiple states to enact further restrictions on municipal entry into the broadband market. 118 Several states ultimately enacted new restrictions, while others came very close to doing so. 119 These restrictions came at a critical, and vulnerable, time for municipal broadband. Indeed, at the very moment most municipal broadband projects were being proposed and financed, *Nixon* had handed incumbent carriers a potent new weapon to stifle them.

The actual scope of these new restrictions varied in severity, but they all effectively raised the costs for municipalities to provide broadband service. 120 Some states, such as Nebraska, flatly banned municipal broadband. 121 The more common approach, however, was to raise entry costs by requiring municipalities to meet various procedural requirements before they could offer service. These requirements included everything from seeking the permission of the local incumbent (Pennsylvania), 122 to developing elaborate business plans (Florida), 123 to holding local referenda prior to initiating a project (Louisiana and Colorado). 124

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118 FELD ET AL., supra note 106, at 11 (“[Following Nixon,] lobbyists for the incumbent cable and telecom industries have descended on state capitolis.”); Varona, supra note 106, at 98 (“[Nixon] emboldened cable and telephone broadband carriers to enforce existing anticompetitive state statutes and pursue new enactments in states without such statutes.”); see also LOCALITIES WEIGHING BROADBAND CONFRONT MORE STATE BILLS TO BAN THEIR ENTRY, STATE TELEPHONE REGULATION REPORT (2005) (describing legislative efforts in Colorado, Illinois, Nebraska, Florida, and Texas).

119 2006 FTC REPORT, supra note 84, at 3 (“At least eight of those nineteen states passed such legislation in the 2004-2006 period; similar bills were introduced in at least nine other states during that time.”).

120 2006 FTC REPORT, supra note 84, at 38-40 (outlining various categories of restrictions); Michael H. Botein, Regulation of Municipal Wi-Fi, 51 N.Y.L. SCH. L. REV. 974, 983-85 (2006); see also Tapia & Ortiz, supra note 88, at 4-6 (same).


122 66 PA. CONS. STAT. § 3014(h) (2009).

123 FLA. STAT. § 350.81 (2009).

Other restrictions were placed upon funding mechanisms. The state of Florida, for instance, imposed various financial limitations such as prohibiting cross-subsidies, and requiring project revenues to ultimately cover operating costs.\(^{125}\)

Estimates vary, but the most recent government statistics provide that nineteen state legislatures have enacted some sort of barrier to entry on municipal broadband.\(^{126}\) These same reports note that an additional sixteen state legislatures have at least considered bills that would impose further restrictions.\(^{127}\)

Although scholars and activists have criticized these restrictions,\(^{128}\) the restrictions themselves are not as severe and widespread as the literature describes. For one, the restrictions only apply in roughly a third of the states, even assuming the most common estimates are correct (as I explain below, they are likely overstated). While this number is problematic, most states have not enacted these restrictions. The failures of municipal broadband, however, are national—they are not limited to those states that adopted restrictions.

In addition, scholars have generally overstated the scope of these legislative restrictions. Indeed, several of the state laws never applied to broadband, or stopped applying after the FCC reclassified broadband access as an “information service,” which the Supreme Court upheld in the \textit{Brand X} case.\(^{129}\) This regulatory

\(^{125}\) \textsc{Fla. Stat.} \(\S\) 350.81(2)(f).

\(^{126}\) These numbers vary both because of date, and because of different calculation methods. \textit{See}, e.g., \textit{Varona}, \textit{supra} note 106, at 96 \& n.470 (listing restrictive statutes in “at least fifteen” states); \textit{Fed. Commc’ns Comm’n, Bringing Broadband to Rural America: Report on a Rural Broadband Strategy} 53 n.308 (2009) (“At least 19 states have enacted legislation specifically addressing municipal broadband.”) \textit{[hereinafter 2009 Rural Broadband Report]}; 2006 FTC \textit{Report}, \textit{supra} note 84, at 3 (“At least nineteen states have some kind of legislation that defines the extent to which municipalities may provide Internet service.”).

\(^{127}\) 2009 \textit{Rural Broadband Report}, \textit{supra} note 126, at 53 n.308 (“We note that at least 35 states have considered limiting municipal broadband, and at least 19 states have enacted legislation specifically addressing municipal broadband.”). For a description of some of the failed efforts, see Memorandum from \textit{James Baller, The Baller Herbst Law Group, on Proposed State Barriers to Public Entry (June 8, 2006), http://www.baller.com/pdfs/Baller\_Proposed\_State\_Barriers.pdf}.\(^{128}\)

\(^{128}\) \textit{See supra} note 106.

\(^{129}\) \textit{Nat’l Cable \\& Telecommn’s Ass’n v. Brand X Internet Servs.}, 545 U.S. 967 (2005). The FCC has traditionally classified broadband access—the physical transport of data over physical infrastructure—as a regulated “telecommunications service.” The data services themselves, however, were classified as deregulated “information services.” Today, however, the FCC has reclassified all broadband access services as “information services.” Report and Order and Notice of Proposed Rulemaking, \textit{In re Appropriate Framework for Broadband Access to the Internet over Wireline Facilities}, 20 \textit{FCC Rcd.} 14,853, 14,857 (2005) (“We . . . determine that . . . the transmission component of
reclassification arguably limits the scope of some states’ restrictions on municipal broadband. The reason is that some of these statutes impose restrictions on “telecommunications services.” Prior to Brand X, these provisions would have clearly applied to municipal broadband access offerings. Today, however, because these access offerings are considered “information services” under the 1996 Act, some state statutes may no longer apply at all.

Arkansas, for instance, is commonly cited in the lists of states that restrict municipal broadband. The Arkansas prohibition, however, does not seem to apply to broadband. Passed in 1997 (years before Nixon), it applies only to local exchange service (i.e., local telephone service). The statutory text does not explicitly encompass municipal broadband, nor has it prevented Arkansas cities such as Bentonville and Springdale from experimenting with municipal WiFi.

The larger point here is not to downplay the importance of the state barriers to entry. To the contrary, I agree with critics who believe that these restrictions have played a key role in stifling municipal services. Instead, my point is to explain more precisely how the restrictions accomplished this entrenchment. Even though the state restrictions may be limited in both number and scope, they nonetheless remain important for their signaling effects. Specifically, incumbents’ signals have created a credible threat that municipal entry will be opposed, and thus will be more expensive to construct. In this respect, the proposed legislation has arguably been as consequential as the actual enacted restrictions.


See, e.g., Varona, supra note 106, at 97 & n.470; 2009 Rural Broadband Report, supra note 126, at 53 n.308.


For instance, the Utah Senate’s bill proposing to restrict municipalities’ ability to borrow money for networks came a crucial time, and arguably played a role in persuading Salt Lake City officials not to join a municipal fiber consortium. Zack Van Eyck, Three More Cities Back UTOPIA, Deseret...
The implicit threat of opposing municipal broadband can have effects even in states without municipal restrictions. Julio Ortiz and Andrea Tapia describe these effects as “phantom legislation.” They explain:

We have coined the term phantom legislation to describe the actions taken by these cities within states that have no current restrictive legislation. By phantom legislation, we mean legislation enacted in one jurisdiction, which may have power to influence the behavior of organizations in other jurisdictions even though there is no legal requirement to do so.

These legislative threats have been compounded by the litigation and regulatory challenges that incumbent providers have filed against individual municipal projects (often simultaneously with legislative efforts). Interestingly, these challenges have been particularly intense when municipalities have proposed new fiber networks. One of the most well-known examples is BellSouth’s legal attack on Lafayette’s proposed municipal fiber network.

Here, the city of Lafayette announced plans to significantly expand an existing fiber network, following years of frustrations with incumbent providers. The project, however, was held up for years in litigation directly primarily by BellSouth, which attacked various aspects of the project’s capital and operations funding.

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MORNING NEWS, Feb. 9, 2004 (“The [proposed] bill would prevent cities from doing exactly what UTOPIA is trying to do now—borrow money inexpensively by pledging future sales tax revenues.”).

135 The failures of many of these bills to get enacted is therefore only a mixed success. For a description of some of these failed legislative efforts, see Cathy Swirbul, State Broadband Battles, AM. PUB. POWER MAG., Sept.-Oct. 2006, at 24-32, http://www.appanet.org/newsletters/ppmagazinedetail.cfm?ItemNumber=17441.


137 Id.

138 Telecom Carrier Court Tactics Slow Municipal Wi-Fi, ST. TELEPHONE REG. REP., Aug. 8, 2008 (“Telecom companies are using varied tactics in a growing number of lawsuits aimed at stopping or slowing municipal wireless and broadband projects in small and midsized cities.”).

139 Michael J. Santorelli, Rationalizing the Municipal Broadband Debate, 3 INFO. SOC’Y J.L. & POL’Y 43, 65-66 (2007) (“[i]n the few cases where [these] municipal broadband projects have been proposed, they have attracted vehement reactions from incumbent service providers.”).

140 Id.

141 State Telecom Activities, COMM. DAILY, Nov. 8, 2005. For the general factual history, see generally the Louisiana Supreme Court case that ultimately
After years of litigation, and multiple adverse rulings in the intermediate appellate court, the Louisiana Supreme Court finally dismissed the challenges in 2007, thus allowing the network to proceed.\textsuperscript{142}

Other proposed fiber networks have faced similar challenges from local incumbents. The project proposed by the city of Bristol, for instance, was contested both in court and before the state of Virginia’s administrative agency.\textsuperscript{143} Bristol ultimately prevailed, but not before being required to do expensive cost studies and to incur other costs.\textsuperscript{144}

In Utah, the incumbent provider Qwest adopted a different approach. A consortium of cities had agreed to collaborate on a municipal fiber project, known as Utah Telecommunication Open Infrastructure Agency or UTOPIA.\textsuperscript{145} Qwest, however, successfully lobbied the government of Salt Lake City (the state’s largest city) to stay out of the consortium.\textsuperscript{146} It also subsequently sued the consortium, claiming that it improperly used Qwest’s utility poles and that it represented unfair competition.\textsuperscript{147}

The combined strategies of legislation and litigation have limited the competitive potential of municipal broadband in several important respects. First, many of the laws imposed substantive limits and even prohibitions on the services. While many of these restrictions are not as strict as the literature often assumes, the restrictions are nonetheless real in many cases.

Second, raising the costs of entry caused municipalities to adopt projects that were less threatening to incumbents. Some cities like Miami and Chicago have scaled their projects down to a series of wireless hot spots.\textsuperscript{148} Others have increasingly begun pursuing options with the local incumbents themselves (or their affiliates) to provide public-sponsored wireless broadband.\textsuperscript{149}

More interestingly, however, the incumbents’ threats have caused municipalities to shift not only to less threatening networks, but to less threatening ownership models for their proposed

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\textsuperscript{142}Id. at 659.
\textsuperscript{143}BALHOFF & ROWE, LLC, supra note 86, at 41-43.
\textsuperscript{144}Id.
\textsuperscript{145}Id. at 43-46; Utah, ST. TELEPHONE REG. REP., June 17, 2005 (outlining allegations in Qwest suit against UTOPIA).
\textsuperscript{146}David Passmore, Truly Neutral Nets, BUS. COMM. REV., Sept. 1, 2006 (“Significant opposition to UTOPIA emerged from Qwest (the incumbent telco), which managed to keep Salt Lake City from joining.”).
\textsuperscript{147}BALHOFF & ROWE, LLC, supra note 86, at 43-46.
\textsuperscript{148}See supra text accompanying notes 104-105.
\textsuperscript{149}Amol Sharma, Companies That Fought Cities on Wi-Fi, Now Rush To Join In, WALL ST. J., Mar. 20, 2006.
\end{flushright}
projects. “Ownership model” is a broad term that refers to how municipalities have chosen to fund, build, and offer their services. Policymakers and scholars have identified several types of ownership models, and have provided detailed descriptions of these various models and their costs and benefits.\textsuperscript{150}

For purposes here, however, the key point is that certain ownership models are more inherently threatening to incumbents than others. Consider, for instance, the model of pure government ownership. Under this model, the government (or its utility) constructs its own network and then acts like a retail Internet service provider that competes with local incumbents.\textsuperscript{151} One of the most well-known municipal fiber projects—Lafayette—adopted this model. Unsurprisingly, it has also faced some of the most intense legal challenges.\textsuperscript{152}

A less threatening type of ownership model is the “public-private” partnership model. Here, the government’s involvement is much less involved. The extent of government involvement can vary—for instance, the private provider might own and operate the network, while the government might provide rights-of-way or negotiate lower rates.\textsuperscript{153} Regardless of its exact form, the public-private model poses far fewer risks to municipalities and taxpayer revenues. The largest municipal broadband projects tended to adopt this model.\textsuperscript{154} Houston and Philadelphia, for instance, contracted with Earthlink in public-private partnerships.

Public-private ownership models, however, are inherently less threatening to incumbents in several respects. Most importantly, public-private partnerships shift risks and expenses to private capital. The companies most able to bear these risks are large incumbent providers that already have extensive infrastructure and a large customer base. They are therefore obvious candidates to win the contracts, and they have had more success on that front in recent years.\textsuperscript{155}

Even when incumbents do not win the contract, however, public-private ownership models still poses less of a threat because they are unlikely to succeed when smaller companies assume these risks. Indeed, one of the primary reasons why the major municipal projects failed was because the cities shifted too much risk upon smaller private companies with less infrastructure and revenues.\textsuperscript{156}

\textsuperscript{150} See, e.g., 2006 FTC REPORT, supra note 84, at 13-18 (outlining and defining various ownership models that municipalities have adopted).
\textsuperscript{151} Id. at 17.
\textsuperscript{152} Santorelli, supra note 139, at 65-66.
\textsuperscript{153} 2006 FTC REPORT, supra note 84, at 15-16.
\textsuperscript{154} Id.
\textsuperscript{155} Sharma, supra note 149.
Earthlink, for instance, was an extremely risky foundation on which to base such large capital projects. It lacked the resources of incumbent providers such as AT&T and Verizon (and their wireless affiliates).

The larger point here is that law heavily influenced the decision to adopt ownership models that were inherently less stable. By raising the costs of entry through threats of legislation and litigation, incumbents created incentives for municipalities to outsource the risk to private companies. Ortiz and Tapia have recently provided some empirical support for this claim, documenting that one of the most common municipal responses to legislative efforts to block entry was to shift to a public-private ownership model.157

In sum, law played a significant role in the decline of municipal broadband. Although the state legislative restrictions are the most obviously culprit, they stifled municipal broadband in different ways than the literature has generally stressed.

C. VoIP

Voice-over-Internet-Protocol, or VoIP, is essentially a phone service that works over an Internet connection. It transmits human voices by converting them into digital packets and then routing them like any other data over standard Internet protocols. Critically, VoIP services allow consumers to send calls to—and receive calls from—the traditional phone network. To provide this service, however, VoIP systems must “interconnect” with the traditional network in various places. As explained below, this need for interconnection ultimately rendered VoIP companies vulnerable to legal attacks by incumbent telephone and wireless carriers.

In analyzing these issues, this Section focuses primarily on “independent” VoIP, which refers to VoIP companies who do not own the underlying broadband access infrastructure that carries their service.158 Cable companies, by contrast, offer VoIP over their own “last mile” facilities.159 While incumbent cable companies are currently the main source of VoIP’s growth (as opposed to independent VoIP), this Section argues that

157 Tapia & Ortiz, supra note 136, at 14.
158 These services are also known as “over the top” VoIP. See Memorandum Opinion and Order, In re SBC Commc’ns, Inc. & AT&T Corp. Applications for Approval of Transfer of Control, 20 FCC Rcd. 18,290, 18,338 (2005) (“This type includes those providers that require the end user to obtain broadband transmission from a third-party provider . . . .”).
159 Id. at 18,337 (“[W]e define facilities-based VoIP providers, such as certain cable VoIP providers, as providers that own and control the last mile facility . . . .”).
independent VoIP could have been a much more disruptive technology than it is today.

1. The Rise and Fall of Independent VoIP

A few years back, VoIP was the hottest thing in town. New independent VoIP companies like Vonage and SunRocket were “brave” trailblazers that represented the wave of the future. In 2004, FCC Commissioner Copps hailed VoIP as the “new and hot and disruptive technology of the moment.”

Contemporary scholars echoed this excitement, and celebrated VoIP’s disruptive potential. Using terms like “revolutionary,” scholars and journalists explained that VoIP could help usher in a “fundamental transformation in industry structure” in traditional wireline voice service. Because VoIP operated over the Internet, it had the power to “bypass” incumbents in voice markets historically “dominated by regulated monopolies.” Several famous business leaders such as Rupert Murdoch and Meg Whitman predicted that phone calls would soon be free. Another writer predicted that “consumers will pay little or nothing for a large portion of their voice services by 2010.” It was, in short, an exciting time for the new technology.

Today, however, the story is much different. Instead of debating whether VoIP is “revolutionary,” the more common question is whether VoIP is “dead.” Independent VoIP companies like SunRocket have gone out of business since the

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160 Tim Wu, The Broadband Debate, A User’s Guide, 3 J. ON TELECOMM. & HIGH TECH. L. 69, 71-72 (2004) (“But everyone was watching the wrong companies, for where broadband operators were timid, a company named Vonage was brave.”).

161 Michael J. Copps, Disruptive Technology . . . Disruptive Regulation, 2005 Mich. St. L. Rev. 309, 311. To their credit, both Wu and Copps warned that VoIP’s success will also depend on policy.

162 Daniel F. Spulber & Christopher S. Yoo, On the Regulation of Networks as Complex Systems: A Graph Theory Approach, 99 NW. U. L. Rev. 1687, 1688 (2005) (stating that VoIP has helped render “a sector that has long been dominated by regulated monopolies more competitive than ever before”); Stephen H. Wildstrom, At Last, You Can Ditch the Phone Company, BUSINESSWEEK, May 17, 2004 (“We are going through a telecommunications revolution. . . . The disruptive technology—voice over Internet protocol (VOIP)—simply uses data networks to deliver voice conversations.”).

163 Spulber & Yoo, supra note 162, at 1688.


165 Id.

heady days of 2004.\textsuperscript{167} Skype has had more success, but even it will soon be spun off by eBay, and intellectual property fights loom over potential buyers.\textsuperscript{168} The largest and most famous company—Vonage—has been on the verge of bankruptcy for years.

In short, it appears that independent VoIP companies are no longer viable competitors to incumbent services. Instead, the growth in VoIP services has primarily come from large incumbent cable (and, to a lesser extent, telephone) companies that own their own last-mile facilities. While the competition between incumbent cable and telephone companies in the voice market is an important development, it is hardly the sort of structural revolution that seemed possible just a few years earlier.

\subsection*{2. The Role of Law}

Several causes have contributed to the downfall of independent VoIP companies. Many of the companies made poor business decisions. Vonage’s IPO, for instance, was famously bungled, and led to a shareholder suit.\textsuperscript{169} As Professor Susan Crawford has written, new VoIP companies were also saddled with legacy regulatory requirements that imposed unnecessary costs.\textsuperscript{170}

I argue, however, that the most significant cause was patent law—and in particular, the patent litigation against Vonage, the largest independent VoIP company. As I show, Vonage became a proxy for independent VoIP more generally in that the attacks on Vonage were viewed as having implications on the viability of independent VoIP.\textsuperscript{171}

To provide context, the patent litigation against Vonage stemmed from the company’s need to interconnect with the traditional telephone network. Although Vonage services operate over a customer’s broadband connection, Vonage customers must reach telephones that are not connected to the Internet. Accordingly, Vonage’s service must be able to interface with the

\begin{footnotesize}
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\item \textsuperscript{167} Adam Bender, \textit{Vonage Narrows Losses, but Churn Hurt by Verizon Litigation, ‘Inconsistent’ Service}, \textit{COMM. DAILY}, Aug. 10, 2007 (discussing SunRocket’s failure).
\item \textsuperscript{169} See infra pp. 31-32.
\item \textsuperscript{170} Crawford, \textit{supra} note 9, at 883-84 (“One key market-protection move is to pile destructive regulations on new competitors.”).
\item \textsuperscript{171} Adam Bender, \textit{AT&T Joins Crowd Filing Patent Suits Against Vonage}, \textit{COMM. DAILY}, Oct. 23, 2007 (“An AT&T lawsuit against Vonage may be more a strategic move to hurt the top independent VoIP carrier than a ‘me too’ case following Verizon’s and Sprint’s legal success”); Ian Martinez, \textit{Verizon Patent Win Could Cripple Vonage}, \textit{COMM. DAILY}, Mar. 9, 2007 (“Vonage and independent VoIP providers in general took a hit in this case, [analysts said].”).
\end{itemize}
\end{footnotesize}
traditional telephone network to complete these calls. Without this interconnection ability, Vonage would be at a tremendous competitive disadvantage because its service would not reach most of the country’s wireline and wireless phones. This interconnection required not only physical hardware connection, but also software connections that, among other things, translated and processed traditional phone numbers in order to route calls.

The ultimate patent litigation against Vonage focused primarily on these interconnection points. Beginning in 2006, Verizon, Sprint, and AT&T (which are all large incumbent carriers) filed multi-million dollar patent infringement claims against upstart Vonage. The Verizon and Sprint claims focused on various patents covering technology that facilitated interconnection with the traditional telephone network.\(^{172}\) The AT&T claim, by contrast, focused on technology that allowed consumers to use standard phone devices to make VoIP calls.\(^ {173}\)

The stakes of the litigation could not have been higher for Vonage. Indeed, for much of 2007, it was unclear whether the company would survive.\(^ {174}\) The most significant danger Vonage faced was a potential injunction ordering it to halt service.\(^ {175}\) In fact, this threat was far from hypothetical. Following an initial order finding that Vonage had infringed Verizon’s patents, a federal district court issued an injunction that would have (devastatingly) required Vonage to halt its service. Before the injunction could take effect, though, the court issued a partial stay, but still prohibited Vonage from signing up new customers.\(^ {176}\) Although the Federal Circuit ultimately granted a full stay,\(^ {177}\) the threat of a new injunction (in either the Verizon or Sprint


\(^{173}\) Brad Reed, *Vonage Reaches Tentative Settlement with AT&T*, NETWORK WORLD, Nov. 8, 2007.

\(^{174}\) Leslie Cauley, *Is Vonage’s Time Running Out? Firm Says No, but Some Analysts Think Patent Ruling Could Be End*, USA TODAY, Apr. 4, 2007; Jim Duffy, *Sprint Suit vs. Vonage Expected*, NETWORK WORLD, Mar. 13, 2007 (“If Vonage loses the suit with Sprint in addition to the recent loss with Verizon, this causes us to wonder whether Vonage will be able to survive . . . ”).

\(^{175}\) Adam Bender, *SunRocket Suit Is “Noise,” but Other Cases Could Kill Vonage*, COMM. DAILY, Aug. 1, 2007 (discussing potential harm of injunctions to Vonage’s business).


litigations) loomed heavy throughout 2007, and would have likely been fatal.

Even though Vonage dodged the injunction bullet, unfavorable court decisions ultimately forced it to pay large settlements, which further threatened its financial viability. In late September 2007, Vonage suffered two unfavorable decisions almost simultaneously—a jury in Kansas City found that Vonage had infringed various Sprint patents, and the Federal Circuit upheld most of the district court’s earlier ruling that Vonage had infringed Verizon’s patents. News of these decisions drove Vonage’s stock to around one dollar, its historic low at the time. The decisions also triggered liquidity concerns and put the company’s future in doubt.

Vonage has managed to survive the litigation, but permanent damage was done both to Vonage and to independent VoIP more generally. In addition to the sheer amount of damages Vonage had to pay, the litigation sent a significant and cautionary signal to the market. Like all new startups, independent VoIP companies relied on attracting investors. The litigation, however, substantially increased the risks of investing in any independent VoIP company. Indeed, Verizon filed its litigation almost immediately after Vonage went public. The lack of investment plagues Vonage even today. In July 2009, Vonage was trading at around thirty-seven cents—a sharp fall from the glory days of 2006.

There are, of course, other potential explanations for Vonage’s struggles (and those of independent VoIP more generally). The first is simply that Vonage offered an inferior product. The company was plagued, for instance, by service quality complaints and by the inability to bundle voice with other services like cable or broadband the way incumbent providers

178 *Wireline*, COMM. DAILY, Nov. 16, 2007 (outlining amounts of settlements and stating that Vonage “soon may face a liquidity crisis”).
183 Vonage initially opened at around thirteen dollars per share, but quickly leveled off to around seven dollars per share for most of 2006.
could.\textsuperscript{184} In addition, Vonage's IPO was sharply criticized by financial analysts and led almost immediately to a shareholder suit following an initial decline in stocks.\textsuperscript{185} A separate potential explanation has been raised by Susan Crawford, who argued that VoIP has been unnecessarily saddled with various regulations including intrusive E911, CALEA, and universal service compliance requirements.\textsuperscript{186}

While these problems certainly contributed to Vonage's problems, the patent litigation threat posed a more serious and even existential threat. The strongest evidence for this argument is simply timing—in short, Vonage's most serious signs of weakness tended to correlate closely in time with Vonage's fortunes in the patent litigation.

Consider, for instance, Vonage's trading price. Although Vonage's stock dropped immediately after its public offering, its price had held steady between $6 and $7 for months. Vonage's stock dropped sharply, however, in March 2007—from $5.22 on March 2 to $3 by March 23.\textsuperscript{187} Although Vonage had recently released an unfavorable earnings report in February, the stock only spiraled downward after an unfavorable patent decision came down on March 8, 2007.\textsuperscript{188} In addition, Vonage's CEO resigned in April, on the very same day the federal district court announced that it would institute a partial injunction barring Vonage from using technology that infringed on Verizon patents.\textsuperscript{189}

During this same time, Vonage had actually received a favorable decision from the Eighth Circuit in late March, which upheld the FCC's preemption of state legacy regulation of VoIP.\textsuperscript{190} The market, however, did not seem to care. Patent rights went to the very heart of Vonage's operations, and losing these rights was

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\footnotetext{184}{See Laurie J. Flynn, \textit{Vonage Posts Smaller Loss but Says Subscriber Growth Is Off}, N.Y. TIMES, Feb. 16, 2007.}
\footnotetext{185}{Mariam Fam, \textit{Verizon, Vonage Rumble over Patents; Web-Phone Firms Fear Suit May Spur Others, Curb Industry's Growth}, WALL ST. J., Feb. 22, 2007, at B4 (noting Vonage's "botched" IPO); Yuki Noguchi, \textit{Vonage Shareholders File Lawsuit over IPO}, TECHNEWS, June 6, 2006.}
\footnotetext{186}{See generally Crawford, supra note 9.}
\footnotetext{187}{\textit{Vonage Hit with Injunction in Verizon Case}, NETWORK WORLD, Mar. 23, 2007 (noting the fall in Vonage's stock price).}
\footnotetext{188}{\textit{Jury Says Vonage Violated Verizon Patents}, WASH. TELECOM NEWSWIRE, Mar. 8, 2007.}
\footnotetext{189}{Martinez, supra note 176.}
\footnotetext{190}{\textit{Court Upholds FCC VoIP Order Against PUC Challenge}, WASH. TELECOM NEWSWIRE, Mar. 21, 2007 (noting favorable Eighth Circuit decision preempting state regulation of VoIP).}
\end{footnotesize}
therefore a much more pressing concern than the potential imposition of state regulations.\textsuperscript{191}

The next sharp drop in Vonage’s stock came in late September. The trigger here was back-to-back unfavorable decisions in both the Verizon and the Sprint cases. In the latter, a jury found that Vonage had infringed six of Sprint’s patents on September 25, 2007. The next day, the Federal Circuit partially upheld the patent infringement decision. The decisions renewed speculation about Vonage’s future.\textsuperscript{192}

Although Vonage is only one company, it was generally seen as a proxy for independent VoIP. Throughout 2007, analysts routinely used the attacks on Vonage to speculate on the future of independent VoIP.\textsuperscript{193} Admittedly, these companies had certain market disadvantages, particularly the lack of physical infrastructure. In time, perhaps the ultimate result would have been the same even without the patent litigation. The point, however, is that independent VoIP never really got a chance to compete. Patent litigation crippled it in its infancy. In doing so, patent law forced VoIP to develop in a different way—in particular, it channeled VoIP toward larger existing providers such as incumbent cable companies.

\textbf{D. OBJECTIONS}

This Part has argued that legal and regulatory choices have limited the competitive potential of various broadband and broadband access services. One obvious objection is that this narrative underplays the role of market forces and the superior business models of the more successful companies. As noted above, one could argue that independent VoIP and municipal broadband were hurt not so much by law, but by their inability to provide multiple service “bundles” to customers.\textsuperscript{194}

Another objection is that the success of companies like Verizon Wireless and AT&T Mobility stem from their innovations and investments. Both companies have invested substantial amounts in higher-speed 3G networks. AT&T has also benefited

\textsuperscript{191} Cauley, supra note 174 ("The patented technology goes to the heart of Vonage’s business, which hinges on its ability to provide high-quality Internet phone calls.").

\textsuperscript{192} Adam Bender, Vonage Unfazed as Court Upholds Verizon Infringement, COMM. DAILY, Sept. 27, 2007 (describing both cases).

\textsuperscript{193} Farn, supra note 185 ("The case is closely watched by the nascent Web-calling industry, with some experts saying that a ruling against Vonage could encourage more patent suits in the telecom world.").

\textsuperscript{194} Flynn, supra note 184 (noting Vonage’s inability to provide bundles of services).
from its savvy decision to partner with Apple on the iPhone, which has proven extremely popular and profitable.\textsuperscript{195}

It would be foolish, of course, to argue that these factors were wholly irrelevant. Complex trends like these always have multiple causes. The question is necessarily one of degree. There are, however, several reasons to believe that legal choices were the primary driving force behind these various developments.

The strongest evidence, arguably, is simply the timing of these various developments, which followed specific legal actions very closely in time. The consolidation of the wireless industry, for instance, rapidly increased following the spectrum cap repeal in 2003 and the deregulation of special access two years earlier. Many of the individual wireless companies cited these specific developments in getting acquired to larger carriers. Alltel, for instance, was purchased by Verizon following its inability to obtain more spectrum in the 700 MHz auction.\textsuperscript{196}

I have already discussed the close correlation in time between Vonage’s various woes and negative developments in the patent litigation developments. This same correlation, however, exists with respect to municipal broadband. Both the collapses—and the shifts in ownership models—occurred very closely in time to the legislative and legal challenges against municipal broadband.

Further evidence of law’s primary role can be seen in the trend toward a duopoly of national wireless carriers. It is not merely that a duopoly is emerging, but that this\textit{ particular} duopoly—the two affiliates of the largest Bells—is emerging. Given that low frequency spectrum and special access infrastructure are critical inputs, it is not surprising that the two affiliates of AT&T and Verizon have emerged as the dominant carriers. Not only do AT&T Mobility and Verizon Wireless benefit from the special access holdings of their affiliates, they also possess the bulk of the low-frequency spectrum initially allocated to the wireline companies.\textsuperscript{197}

Finally, one could argue that consolidation does not actually pose a threat to broadband deployment at all, particularly within the wireless industry. Larger carriers, for instance, would argue that consolidation has enabled them to deploy higher-speed broadband more aggressively through great efficiencies and

\textsuperscript{195} Alex Pham, \textit{Apple Is Unhurt by Hard Times, First-Quarter Profit Jumps 15\% as Sales of iPhones, iPods Surge}, L.A. TIMES, Apr. 23, 2009, at B1.

\textsuperscript{196} Howard Buskirk, \textit{Verizon-Alltel Merger Faces Tough Fight at FCC, Congressional Scrutiny}, COMM. DAILY, June 6, 2008 ("Alltel’s failure to obtain 700 MHz licenses ‘crippled’ its capacity to ‘break out’ as a national competitor, Harold Feld, senior vice president of the Media Access Project, said . . . ”).

\textsuperscript{197} Initial Comments of Frontline Wireless, LLC, supra note 19, at 7-8.
DEATH OF THE REVOLUTION: THE LEGAL WAR ON COMPETITIVE BROADBAND TECHNOLOGIES

... economies of scale. Consolidation also, the argument goes, facilitates the development of a truly national network infrastructure that better serves the public, particularly those who travel frequently.

While these arguments sound plausible in the abstract, they have yet to play out in practice. Indeed, as cited above, public interest organizations have cited both conduct and other data that seems to reflect an uncompetitive wireless market, with its attendant consumer harms. In addition, advanced wireless penetration in the United States lags far behind global leaders such as Japan and South Korea. Further, in judging wireless broadband deployment, it is important to distinguish between dense urban areas and the rest of the country, particularly rural areas. The largest carriers are making investments in denser areas, but are not developing less dense areas in which they also hold vast blocks of spectrum. Indeed, the FCC’s data obscure this disparate treatment because it has traditionally considered a county as fully served even if a carrier serves only part of the county. The fear, then, is that the largest wireless carriers are warehousing spectrum in these areas, which poses an entry barrier to smaller and midsized carriers who could provide higher-capacity broadband with more spectrum.

In addition, the large carriers have been notoriously slow in deploying next-generation networks that are sufficient to compete with wireline broadband offerings. The most aggressive effort on this front thus far are the new WiMax offerings from Sprint and Clearwire—who, unsurprisingly, are not affiliated with wireline broadband providers. It is unclear, however, whether this project will succeed. Already, it has experienced various delays in its rollout. And more broadly, Sprint-Clearwire face all the various

199 See supra note 36.
200 BERKMAN CTR. FOR INTERNET & SOC’Y, NEXT GENERATION CONNECTIVITY: A REVIEW OF BROADBAND INTERNET TRANSITIONS AND POLICY FROM AROUND THE WORLD 154 (2009) (“Just as they do in fiber infrastructure, Japan and South Korea lead the world in 3G penetration as well. Japan has over close to 72 3G subscriptions per 100 inhabitants, and South Korea has 63. By comparison, the United States has 20.6 3G subscriptions per 100 inhabitants.”).
201 Rural Telecomms. Group, Inc., supra note 22, at 8.
202 See, e.g., Buskirk, supra note 15.
203 Allie Winter, Sprint Nextel Set To Roll Out WiMax; U.S. Adoption Rate Remains To Be Seen, RCR WIRELESS NEWS, Sept. 8, 2008 (“Continuous delays in rolling out the technology have haunted Sprint Nextel.”).
obstacles and barriers to entry outlined above—including lack of special access infrastructure and lack of low-frequency spectrum.

In sum, while market forces undoubtedly play a role in the trends toward consolidation, law and regulatory choices have played an even greater role.

II. THE ROLE OF SIZE IN ENTRENCHEING INCUMBENTS

The previous Section established that law has played a primary role in stifling competitive broadband technologies. This Section seeks to explain why. Specifically, it examines how and why law was transformed into an instrument that entrenches incumbents against competitive threats in these market contexts.

Although there are undoubtedly multiple causes of this entrenchment, I argue that the primary cause is simply the size of the incumbents—or more precisely, the relative size of the incumbents to their potential competitors. Size in and of itself, however, has not caused entrenchment. Instead, law and size have intersected in dynamic and mutually reinforcing ways to create entrenchment effects. It is these dynamic intersections that have been previously overlooked in the literature, particularly in the context of new communications technologies.

To illustrate these dynamics, I propose three ways in which the intersections of law and size have resulted in entrenchment effects. First, these intersections have led to an increased concentration of political power, which has in turn allowed incumbents to reshape law. Second, these intersections have amplified barriers to entry. Third, I argue that relative size disparities have implicitly transformed facially neutral legal doctrines into entrenchment devices.

A. Increased Political Power

One of the traditional progressive critiques of concentrations of wealth is that it leads to concentrations of political power.\textsuperscript{204} For the political process to function properly, the argument goes, extreme wealth disparities must be avoided. This argument has deep roots, and was emphasized by progressive political philosophers like John Rawls.\textsuperscript{205}

\begin{footnotesize}
\textsuperscript{204} See, e.g., PAUL KRUGMAN, THE CONSCIENCE OF A LIBERAL (2007) (describing the interplay of political power and wealth concentration).
\end{footnotesize}
A similar concept can be applied to the telecommunications industry. Extreme disparities in resources within the industry can lead to concentrations of political power. Size itself, of course, does not automatically lead to concentrated political power. The key is relative size.

Once industry consolidation occurs, it can lead to concentrated political power in various ways. For one, larger companies simply have more resources. They can therefore donate more money, hire more (and better) lobbyists, and spend more on marketing. Consolidation also imposes discipline and order on the lobbying process. As public choice literature argues, well-organized and well-resourced interest groups can often secure their interests better than unorganized and leaderless majorities. Consolidation provides the top-down leadership and coordination that successful lobbying efforts require.

Even more important than size, though, consolidation also reduces the number of companies within the industry. Size, after all, is only an advantage in relative terms. If two equally-sized industries are fighting it out in the legislative arena, their respective sizes become irrelevant because they “cancel” each other out. Consolidation, however, can remove these potential political rivals from the dispute.

Interestingly, James Madison’s “theory of the big republic” has some relevance on this point. In particular, it helps illustrate why reducing the number of rival companies can affect the quality of the legislative process.

As first year law students learn, Madison’s contribution to political philosophy was that larger republics actually enhance stability. The contemporary fear had been that “factions” would inevitably tear republics apart by seeking private gain rather than public good. Madison, however, argued that the answer to this problem was to increase the number of factions by expanding the size of the republic. The idea was that, by multiplying the factions, no single faction would become too powerful. Instead, the factions would check each other as fluid political coalitions emerged from issue to issue.

Under this logic, consolidation removes rival “factions” from the political debate, which harms the quality of the legislative process. One good example of how this process plays out can be

See, e.g., Steven P. Croley, *Theories of Regulation: Incorporating the Administrative Process*, 98 *Colum. L. Rev.* 1, 54 (1998) (“[A]ccording to public interest theorists, . . . the concentrated interests of powerful organized groups lose out to the diffuse interests of the mostly unorganized citizenry.”).

*The Federalist* No. 10 (James Madison).

seen in the recent vertical mergers within the wireline market—specifically, the SBC/AT&T and Verizon/MCI mega-mergers.\textsuperscript{209} (The former entity ultimately adopted the name “AT&T.”)  

Prior to the mergers, AT&T and MCI were two of the largest competitive local exchange carrier (CLEC), and they competed with the incumbent local exchange carriers (ILEC) companies SBC and Verizon.\textsuperscript{210} Smaller CLECs benefited enormously from the political lobbying effort and expertise that these two carriers provided on behalf of the CLEC industry. After the mergers, however, the Bell ILEC companies not only integrated these two large rivals, they deprived a rival industry of two of its strongest political voices. In short, two important “factions” that had previously “checked” ILECs in the political sphere had disappeared.  

Both of these types of political power concentration—superior resources and the loss of competing voices—are illustrated in the municipal broadband and wireless broadband contexts, respectively.  

Beginning with municipal broadband, there are several examples of how incumbents transformed law merely by possessing superior resources. The most obvious example is how explicitly pro-incumbent the text of many legislative restrictions was. The Pennsylvania statute was particularly egregious in this respect. In the wake of Philadelphia’s proposed WiFi network, the Pennsylvania legislature (under intense lobbying) passed a law that actually required competitors to get the permission of the local incumbent provider (generally Verizon) before offering service.\textsuperscript{211} The same is true for the post-1996 Act laws, which flatly prohibited rival exchange service by a government entity.\textsuperscript{212}  

The sheer amount of political donations to defeat municipal broadband also illustrates these relative power disparities. Returning to Pennsylvania, the Center for Public Integrity found that lobbyist donations to Pennsylvania legislators sharply increased during this time, and that Verizon had donated a large majority of the money.\textsuperscript{213} More broadly, intense incumbent...  

\textsuperscript{209} Memorandum Opinion and Order, \textit{In re SBC Commc’ns, Inc.} & AT&T Corp. Applications for Approval of Transfer of Control, 20 FCC Rcd. 18,290 (2005); Memorandum Opinion and Order, \textit{In re Verizon Commc’ns & MCI, Inc.} Applications for Approval of Transfer of Control, 20 FCC Rcd. 18,433 (2005); see also Chen, supra note 44, at 1315-16.  

\textsuperscript{210} Kimmelman et al., supra note 35, at 513-14 (“AT&T and MCI were the two largest non-Bell competitors in the local market . . . .”).  

\textsuperscript{211} 66 PA. CONS. STAT. ANN. § 3014(h) (2009).  

\textsuperscript{212} See supra text accompanying notes 111-112.  

\textsuperscript{213} O’Loughlin, supra note 106, at 491 n.81 (giving Center for Public Integrity donation amounts).
lobbying was not unique to Pennsylvania, but extended across the country.214

The size of the consolidated incumbent industries also helped them to coordinate efforts and to gain expertise from legislative battles in other states. Indeed, incumbents lobbied for municipal broadband restrictions across the nation.215 The national scope and resources of these companies not only helped them lobby legislatures in the individual states, they also helped the companies reinforce the signal nationwide that municipal entry would be strenuously opposed. Had the incumbents been smaller and less national in scope, the threat would have been less credible. After all, the signals were arguably even more important than the scope of the restrictions.216

Moving to the wireless industry, its history illustrates how the loss of rival factions helped incumbents concentrate political power. The group of wireless carriers that have been most threatened by consolidation are the midsized carriers. These carriers generally have extensive regional networks, and are the companies with the most potential to eventually grow into national competitors.217 They are, however, an endangered species. Many of most well-known midsized carriers have all been acquired in recent years, including Alltel, Dobson, and Centennial.218

Alltel is an especially good example for our purposes in that it straddled the line between a small national carrier and a large midsized carrier. On various policy issues, many small and midsized carriers benefited from Alltel’s political and regulatory efforts. In recent regulatory comments, for instance, the midsized carrier MetroPCS noted that Alltel had been an important voice on

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214 *FTC Comr. Blasts Municipal Broadband Opponents, St. Telephone Reg. Rep.*, Oct. 7, 2005 (noting the “tens of millions” incumbents were spending nationally to defeat these initiatives).

215 *Id.*

216 Similarly, within the wireless industry, many of the policies here also resulted from the sheer size advantages of the companies doing the lobbying. Size, for instance, significantly helped incumbents lobby for more favorable spectrum rules, such as the lifting of the spectrum caps, which followed “intense” incumbent lobbying. Benjamin, *supra* note 40, at 96-97 (“The main reason for their success is that the wealth they derive from their control of valuable frequencies not only gives them an incentive to hold onto that spectrum but also gives them the funds to be effective lobbyists.”); Howard Buskirk, *Public Interest Groups, Wireless Disagree in Broadband Comments*, COMM. DAILY, June 10, 2009; Reza Dibadj, *Regulatory Givings and the Anticommons*, 64 OHIO ST. L.J. 1041, 1068 n.146 (“The Cellular Telephone Industry Association (CTIA), composed of the largest wireless carriers, worked for years to defeat a spectrum cap that ensured competition by limiting a cellular carrier to 45 MHz bandwidth in each market.”).

217 *Bender, supra* note 21.

218 *See supra* note 22.
issues such as roaming reform that are very important to smaller and midsized carriers. When Verizon acquired Alltel, however, it not only removed a business rival, it also removed an important and well-resourced political voice on various issues.

In sum, the growing relative size has helped increase incumbents’ political power both in terms of sheer resources, and in removing rival factions or voices from the political debate. This increased concentration of political power then intersected with, and transformed, law in various ways that entrenched incumbents against competitive threats.

B. Amplifying Barriers to Entry

A second way that the intersections of law and size have entrenched incumbents is through amplifying barriers to entry. Even assuming that law posed no obstacle to entry, the broadband access market (like network economies more generally) is already characterized by significant barriers to entry. On the supply side, communications networks require significant upfront, fixed costs, but have very low marginal costs. That means it is expensive to set them up, but not nearly as expensive to keep them going. This dynamic leads to economies of scale because an entity’s costs become relatively smaller as providers gain a larger customer base.

Additional barriers to entry exist on the demand side, largely in the form of network effects, or positive network externalities. The idea behind network effects is that the value to the user increases as each additional user joins the network. Consider, for instance, the Microsoft Windows platform. The software became increasingly valuable as more and more people adopted it. One result of network effects, then, is that the market can eventually “tip” into a winner-takes-all monopoly, particularly if rival services cannot access it or are incompatible with the larger company. Another example of network effects is the emergence of the original Bell monopoly. In the early 20th century, customers

219 Comments of MetroPCS Commc’ns, Inc., supra note 77, at 7.
220 For an excellent overview of these barriers, see Richard S. Whitt, Evolving Broadband Policy: Taking Adaptive Stances To Foster Internet Platforms, 17 COMM.LAW CONSPECTUS 417, 432-36 (2009) (surveying various characteristics of network markets that make them “resistant to discipline of competition”).
221 Id. at 433; William J. Kolasky, Network Effects: A Contrarian View, 7 GEO. MASON L. REV. 577, 578 (1999) (referring to “high fixed costs” as barrier to entry).
222 Whitt, supra note 220, at 485.
224 Id. at 182-83.
in many areas subscribed to alternative and incompatible telephone services. Thus, some telephone customers could not call other customers in the same town. Eventually, however, the market “tipped” in favor of the Bell network, which evolved into a dominant monopoly service.225

Industry consolidation has amplified both of these kinds of barriers. That is, as companies have grown larger, they have intersected with law in new ways that dynamically reinforce these barriers and thus increase the costs of entry.

Beginning on the supply side, consolidation significantly increases the barriers to entry that new entrants already face in the form of constructing new capital infrastructure, securing rights of way, and obtaining other required inputs. For instance, incumbents’ vast spectrum holdings raise competitors’ costs of entry by limiting the amount of available usable spectrum, which is a finite resource. The more that incumbents’ relative share of available spectrum increases, the more that entry costs rise.

Incumbents’ control of low-frequency spectrum exacerbates competitors’ capital costs. Recall that low-frequency waves go further and are more resilient than higher-frequency waves. With low-frequency spectrum, a carrier can cover more territory with less capital infrastructure.226 Competitors with higher-frequency spectrum, by contrast, must construct more towers and transmission equipment because the waves do not travel as far.227 Accordingly, even though new wireless competitors already face daunting upfront fixed costs to enter the market, the type of spectrum available to them amplifies these costs.

Incumbents’ control of special access infrastructure further amplifies these costs of entry. The ability to obtain special access is a vital input, and it is simply impossible for companies to construct an alternate special access infrastructure in all but the most densely populated areas. Here, then, the combination of size of the incumbents’ special access holdings with the FCC’s decision to deregulate special access prices has sharply increased entry costs. As the GAO has documented, deregulated prices have gone up considerably in the most deregulated regions228—and this price increase has disproportionately hurt carriers who are not affiliated

226 Initial Comments of Frontline Wireless, LLC, supra note 19, at 7-8; Crawford, supra note 39, at 933 n.242.
227 See supra p. 10.
228 GAO REPORT, supra note 59, at 13-14.
with wireline companies that own vast amounts of special access infrastructure. 229

A third example of this dynamic can be seen in the municipal broadband context. Municipalities that wanted to offer public networks already faced the daunting fixed startup costs that any new entrant would face. The legislation protecting large incumbents, however, increased these costs in various ways. Some of these laws, for instance, required governments to undertake burdensome business studies; others required various complex procedural steps. 230 The net effect of these various restrictions, however, was to increase the costs of entry. Indeed, these restrictions increased costs even in states that had not adopted any restrictions (or had adopted more narrow ones). In these states, incumbents could still effectively raise costs by credibly signaling that any ambitious proposal for municipal entry would be opposed, and maybe even tied up in litigation, as many fiber projects have been. 231 And, of course, the larger and more consolidated the incumbent, the more credible these threats became.

These intersections of size and law have also amplified barriers to entry on the demand side, as the roaming dispute illustrates. One of the problems facing any non-national carrier—particularly rural carriers—is the need to provide service to their customers when those customers are outside the service area. In light of network effects and the benefits of being connected to the larger network, smaller carriers who cannot offer roaming (or affordable roaming) face a tremendous competitive disadvantage.

Consolidation makes this challenge even more difficult by dramatically altering bargaining leverage among the parties. 232 In a world with more providers, smaller and mid-sized carriers can more easily shop around for roaming partners, and enter into reciprocal roaming arrangements with them. As the market increasingly tips toward larger providers, however, those larger providers have increasingly less need to secure roaming agreements with smaller carriers. At the same time, though, smaller carriers have increasingly greater need to secure roaming agreements with their larger competitors.

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229 See Buskirk, supra note 21 (noting criticisms that “[s]pecial access prices present a barrier to growth”).
230 See supra text accompanying notes 119-124.
231 See supra p. 22.
232 See Jeffrey Silva, Consolidation Presses Roaming Issues; Congress, Smaller Carriers Fear Unreasonable Requirements, RCR WIRELESS NEWS, Jul. 7, 2008 (noting statement of smaller carriers that “[c]onsolidation in the wireless industry has reduced the number of roaming partners for small, rural and regional home carriers”).
For this reason, roaming regulations become increasingly important as carriers get larger and fewer, particularly considering that certain carriers have incompatible digital standards. Indeed, that is exactly why roaming became one of the most controversial issues surrounding Verizon’s acquisition of Alltel. Alltel had traditionally provided roaming services to several small and midsized carriers (in both formats), and the latter feared they would lose these roaming agreements after the acquisition.

In sum, the dynamic reinforcement of size and law is quite evident in the roaming context. As carriers get larger and fewer, roaming arrangements become increasingly important. At the same time, however, the data and in-market exceptions make it increasingly more difficult for smaller carriers to obtain roaming agreements. The two forces working together—size and law—have amplified entry costs, and therefore limited competitive threats to incumbents.

C. Implicit Doctrinal Transformation

The final way in which these intersections can create entrenchment effects is through what I call “implicit doctrinal transformation.” The idea here is that disparities in size and resources can intersect with facially neutral laws in ways that implicitly transform the law into entrenchment devices. The municipal broadband restrictions do not belong in this category because they explicitly discriminate against municipal entry. The laws I examine here, by contrast, are neutral as written.

Incumbent carriers’ patent litigation against Vonage provides one example of this implicit transformation. The near-death of Vonage was caused not by patent law alone, but by the intersection of the size of the incumbent carriers with patent law. This disparity in size and resources between the parties implicitly transformed patent law into an incumbent-entrenching mechanism.

To provide some background, scholars and journalists have recently voiced criticisms of large companies’ alleged abuse of

233 See Planned AT&T Buy of Centennial Could Show Changing Merger Policies, COMM. DAILY, Jan. 21, 2009 (explaining that carriers were concerned because Centennial was “the last remaining GSM carrier to have an appreciable facility footprint that AT&T does not cover”).
234 Jeffrey Silva, In-Market Roaming Debate Hangs over Carrier Mergers, RCR WIRELESS NEWS, Sept. 1, 2008 (discussing debate over data exception as well).
235 Howard Buskirk, Public Interest Groups Ask FCC To Block Verizon Wireless Buy of Alltel, COMM. DAILY, Aug. 13, 2008 (describing smaller carriers’ reliance on Alltel for roaming services).
their patent portfolios.\textsuperscript{236} The basic argument is that larger companies often create portfolios of weak patents to threaten new competitors. For instance, Stuart Graham and Ted Sichelman write: “Even knowing that their patents may be weak, large companies can often exploit them in strategic fashion to prevent competition from upstarts.”\textsuperscript{237}

This strategy only works, however, if the other party also lacks an extensive patent portfolio. Otherwise, patent infringement plaintiffs would face expensive counter-claims. In essence, companies with equally extensive patent portfolios deter litigation through the threat of mutually assured destruction, or at least mutually assured expensive litigation. This dynamic is arguably why high-profile patent litigation between incumbent telephone and cable companies has been limited. Cable companies “are less vulnerable . . . because they are likely to have developed deep patent portfolios which they can use defensively to deter an infringement suit.”\textsuperscript{238}

The Vonage litigation illustrates the perils of lacking such a portfolio. The incumbent carriers who won large settlements from Vonage all had much larger patent portfolios.\textsuperscript{239} The patent disparities among the parties created the opportunity to drag Vonage into an expensive litigation that simultaneously limited its ability to obtain capital investment.

Of course, commercial litigation always tends to favor larger companies over smaller ones. The costs of extended and fact-intensive litigation are more easily borne by larger and more experienced companies, particularly when the opposing parties are new startups who need capital investment (which is very common in the communications industry).\textsuperscript{240} It was not merely size alone, however, that hurt Vonage in this litigation. It was that this specific doctrine—the law surrounding patent infringement—lent itself particularly well to efforts to exploit size disparities.

The concerns surrounding these developments extend well beyond Vonage. Looking ahead, one fear is that patent law could eventually be used in other interconnection contexts. Most


\textsuperscript{237} Id. at 1080.

\textsuperscript{238} Cable Seen as Less Vulnerable to VoIP Patent Disputes, TELEVISION A.M., Apr. 9, 2007.

\textsuperscript{239} See supra pp. 30-31.

troublingly, there are fears that it could help fuel consolidation of Internet backbone services, which are currently competitive.241

Moving beyond the patent law context, a second example of a law that size disparities implicitly transform into an incumbent entrenchment device is the in-market exception to the automatic roaming rule. Recall that the exception applies even if the carrier has not yet constructed infrastructure, and even if the spectrum has yet to be cleared.242 The logic of the exception is to encourage carriers to build out service by denying them roaming rights in these areas. It is, in essence, a buildout requirement for spectrum licensees.

At first glance, the exception seems reasonable—encouraging new facilities construction is a worthwhile policy goal. Upon closer examination, however, the implicit pro-incumbent bias of this effective buildout requirement becomes evident. Specifically, the larger a carrier becomes, the less burdensome the buildout requirement becomes. By contrast, the smaller the carrier, the more burdensome this expensive and capital-intensive requirement becomes.

Again, it is not so much that these laws themselves are pro-incumbent, but that the disparity of size reflects through the laws, and effectively transforms them into entrenching devices.

III. THE POLICY IMPLICATIONS OF ENTRANCHED EFFECTS

The last two Parts have established that law has helped entrench incumbents in communications industries, and that the intersection of companies’ size with law explains why law developed this way. This Part examines the implications of these observations upon both regulatory and deregulatory theories of communications policy. With respect to regulatory policies, my analysis implies that many of the new FCC’s regulatory proposals will prove futile in reversing incumbents’ entrenchment. Examining these implications is especially timely, given that the new Obama Administration and its FCC have already proposed new regulations, and are actively considering more.

241 Werbach, supra note 171, at 372-73 (“The possibility that interconnection on the Internet will no longer be a matter of technical sufficiency and business agreement, but rather require negotiation with a group of intellectual property right-holders, [is] frightening . . .”).

A. Implications for Regulatory Policy

At the outset, I should note that the distinction between competing “regulatory” and “deregulatory” theories is problematic. In fact, one implication of this Article is that the dichotomy between regulation and deregulation is not the best prism to view modern communications policy debates. Instead, a more accurate approach would be to analyze whether or not a given policy tends to entrench the status quo.

As illustrated above, incumbents have been entrenched not through deregulation alone, but through a combination of both regulatory and deregulatory policies. In the municipal broadband context, for instance, incumbents have pushed for aggressive regulations to entrench their position. The government’s limited allocation of spectrum for wireless broadband is another example of incumbent-entrenching regulation. In other contexts, however, deregulation has helped entrench incumbent positions. For instance, lifting spectrum caps and ending special access price regulations are examples of deregulatory policies that strengthened incumbents’ competitive positions.

With this disclaimer, I have nonetheless adopted the regulatory/deregulatory dichotomy for the remainder of this Section. The reason is that most of the important policy debates happening today tend to depend on one’s preference for regulatory solutions. The FCC, for instance, is considering a range of potential regulations (detailed below) that would scale back various deregulatory policies adopted over the last decade.

To provide context, after years of aggressive deregulation, both Congress and the FCC have become increasingly skeptical in recent months of the consequences of industry consolidation. The election of President Obama, coupled with these growing concerns, has created a political environment far more conducive to new regulation than in the recent past. And new regulatory efforts are proceeding on several different fronts.

Interestingly, many of these new regulatory efforts were initiated toward the end of Republican FCC Chairman Kevin Martin’s term. In 2007, for instance, the FCC imposed the automatic roaming rule, which provided partial relief for small and midsized carriers. Martin also pressured the national wireless carriers to reform early termination fees, and these threats led to modest changes in industry practices. With respect to broadband access, Martin’s FCC ultimately voted to sanction Comcast for its alleged blocking of services that used popular peer-to-peer

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244 See Martin Says FCC To Pursue ETF Preemption as Early as July, WASH. TELECOM NEWSWIRE, June 12, 2008.
protocols including BitTorrent. 245 Finally, the FCC also adopted service rules in the 700 MHz spectrum auction that required the winner of the large regional “C Block” spectrum licenses to operate “open” networks. 246

Since the 2008 presidential election, the embrace of regulatory solutions has gained even more steam. The 2009 federal stimulus legislation explicitly imposed nondiscrimination requirements on broadband access providers that received stimulus funds. 247 To accomplish this goal, the stimulus legislation incorporated the FCC’s earlier policy statement, which states the FCC’s general preference for open networks (“Policy Statement”). 248

Both Congress and the new FCC have also signaled a new willingness to investigate and regulate alleged anticompetitive practices in the wireless industry. These practices include handset exclusivity agreements, and the blocking of certain applications on wireless devices. 249 The latter practice is illustrated by Apple and AT&T’s controversial decision to limit both Skype and Google Voice on the iPhone—a decision that has raised many skeptical eyebrows among policymakers. 250

Concerns over the limitations imposed by wireless carriers have also spurred calls for “wireless Carterfone” and “wireless network neutrality” requirements. 251 Under these regulations,

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245 Memorandum Opinion and Order, Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications, 23 FCC Rcd. 13,028 (2008). The Comcast Order was one of the FCC’s most historically significant orders, and it signaled the FCC’s determination to prevent Internet service providers from abusing their control over access facilities.


250 See Saul Hansell, Apple Tells F.C.C. It Is Still Pondering Google Voice Application for the iPhone, N.Y. TIMES, Aug. 22, 2009, at B3. Notably, AT&T has reversed its policy following both media and regulatory scrutiny, though Apple has yet to approve Google Voice at the time of this writing. Saul Hansell, AT&T To Let iPhone Users Make Calls on the Internet, N.Y. TIMES, Oct. 7, 2009, at B8.

251 See, e.g., Tim Wu, Wireless Carterfone, 1 INT’L J. COMM. 389 (2007); see also Skype Commc’ns S.A.R.L., Petition To Confirm a Consumer’s Right To Use Internet Communications Software and Attach Devices to Wireless Networks, Docket No. RM-11361 (Fed. Commc’ns Comm’n Feb. 20, 2007).
wireless users would be allowed to connect any non-harmful device, and to run any non-harmful application, over any wireless network. For example, under this requirement, an iPhone user would not be limited to AT&T, but could sign up with any carrier. This user would also be able to access any application on the network—thus, AT&T’s initial restriction of Google Voice on the iPhone would have been prohibited under this type of “openness” regime.

The most important regulatory battle ahead, however, is arguably what has come to be known as the “network neutrality” or “open networks” debate. At its essence, the dispute centers on whether incumbent broadband access providers such as cable and telephone companies will abuse their control over access facilities. Some of these concerns are that providers could block certain data or applications. Others are that access providers could strike exclusive deals to transmit certain content more quickly, which would ultimately create a crowded “slow” lane for providers who could not afford to make exclusive deals.

The FCC has recently taken concrete, and controversial, steps to enact policies it claims will protect open networks. Specifically, the FCC proposed in a recent rulemaking notice to codify as formal rules the four “openness” principles in its previous Policy Statement. The Notice also, however, proposed expanding the scope of the Policy Statement’s protections by adopting both “nondiscrimination” and “disclosure” requirements (also known as the “fifth” and “sixth” principles). This rulemaking proceeding is currently pending. Congress could of course weigh in as well and provide more explicit authority to enforce nondiscrimination, though legislation does not appear likely anytime soon.

Regardless of what (if any) regulations the FCC ultimately adopts, my analysis suggests that many of these new and proposed regulations could easily prove futile. The reason is that incumbents have become so firmly entrenched that they may now be beyond the power of law to regulate them—or at least beyond the power of the more limited new laws being considered today.

Recent history has shown that entrenchment can occur in multiple ways. For that reason, eliminating one entrenchment

252 Wu, supra note 251; Skype Commc’ns S.A.R.L., supra note 251.
253 Preserving the Open Internet; Broadband Industry Practices, GN Docket No. 09-191 (Fed. Commc’ns Comm’n Oct. 22, 2009) [hereinafter 2009 Notice]. The original 2005 Policy Statement outlined four principles, including the freedom of consumers to (1) access the content of their choice; (2) access the applications and services of their choice; (3) use the legal devices of their choice; and (4) enjoy competition among network, application, and service providers. FCC Internet Policy Statement, supra note 248.
254 2009 Notice, supra note 253.
mechanism does not necessarily foreclose others. For instance, incumbents have repeatedly shown that they can use laws external to the FCC’s jurisdiction to entrench their position in the communications context, as Verizon’s patent litigation against Vonage illustrates. Imagine, for instance, that the FCC enacted the proposed neutrality regulations that would prevent incumbents like Verizon from blocking Vonage, or—more likely—from dragging their feet on providing interconnection. Even in this world, companies like Verizon could still use both the law and its size to entrench itself by pursuing patent litigation against Vonage. The FCC’s regulations would not limit Verizon in the patent law context at all. 255

In addition to using these “external” laws, consolidated incumbents can also use their control over their vast network infrastructures to evade any pro-entry requirement that the FCC ultimately imposes. Consider, for instance, the FCC’s proposed “open device” requirement, which would allow wireless users to use any non-harmful device on any wireless network. The goal of such a requirement is not only to spur device innovation, but also to spur competition among carriers. The rationale is that carriers would have to compete on other grounds (e.g., prices, bandwidth) if they could no longer lock in exclusive deals with handset manufacturers. Indeed, that is precisely why smaller carriers are urging the FCC to end exclusivity agreements. 256

Even assuming, then, that this requirement existed, wireless carriers could squeeze smaller carriers in other ways. An open device requirement, for instance, would not address the increasing price of special access services. Neither would it address the lack of available low-frequency spectrum, nor the problems associated with the data and in-market exceptions to the automatic roaming rule. In short, carriers’ control over the network infrastructure and spectrum would help limit the proposed regulations’ ability to spur entry and competition.

Other types of evasions would also likely emerge if the FCC adopts its proposed nondiscrimination regulations. Indeed, given that incumbents have proven quite adept at finding new ways to entrench themselves, these evasions may difficult to predict at present.

255 Benjamin & Rai, supra note 9, at 21-22 (“[T]he PTO’s issuance of broad patents has allowed Verizon and other incumbent providers to pursue via government-granted property rights what they have been unable to achieve via FCC regulation.”).

256 Brad Reed, How Ending Exclusivity Agreements Would Change the Telecom Industry; Small Wireless Providers Could Benefit from End of Exclusivity Deals for iPhones and Other Devices, NETWORK WORLD, July 9, 2009.
One good example of this versatility is the recent proposal by cable companies such as Time Warner to impose monthly data caps, which give users a quota for how much information they can download in a month. On first glance, this requirement seems neutral and nondiscriminatory. Upon closer examination, however, several problems emerge.

Most importantly, monthly caps can potentially stifle new video competition. Video is in many ways the future of broadband—and people are increasingly watching video over their broadband lines through services like Hulu and iTunes. These shows are also increasingly available in high definition (HD), which is more bandwidth-intensive.

The monthly caps, while seemingly harmless, pose a potential entry barrier to these types of emerging video services. Under some of the proposed caps, downloading a few HD movies could quickly put a customer over the monthly limit, thus subjecting them to penalty fees. The ultimate result would be to raise the costs of these movies, thus making the “on demand” movies offered by the incumbent cable company comparatively cheaper. This problem will only get worse as next-generation video services emerge that require even more bandwidth.

The larger point is that incumbents have multiple ways to evade new regulations. Indeed, this analysis all assumes that the final regulations will actually have legitimate force. It is quite possible that they will not. For instance, incumbents may leverage their political power to lobby for loopholes in the regulations—such as an expansive exception to nondiscrimination for

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257 Cable Operators Diverge on Bandwidth Optimization Plans, COMM. DAILY, Apr. 10, 2009 (describing details of Time Warner Cable’s proposals).
259 Id.
260 Further, the caps raise the difficult issue of whether the FCC should care about “intent.” Monthly caps are arguably problematic even if they are adopted with the purest of intentions. Cable providers, after all, argue that caps are needed to manage bandwidth, and that the networks would otherwise be neutral and nondiscriminatory. The problem with this argument, however, is that the caps as currently proposed are extremely overbroad. Congestion, for instance, is less of a problem at 3 a.m. when most people are asleep. However, the bans as proposed would presumably still apply to 3 a.m. downloads that have little impact on other, non-insomniac, users. The larger point is that this type of practice could very easily stifle new video competitors, while simultaneously being “neutral” and maybe even “nondiscriminatory” under the FCC’s regulations.
“reasonable network management”—that ultimately swallow the rule.261

In sum, the ultimate implication is that we should be skeptical of regulation’s ability to stop strategic behavior by large consolidated incumbents. So long as the underlying incentives to stifle competition are present, incumbents seem to find a way to entrench themselves. The point, however, is not that regulation is hopeless, but that the current range of regulations being considered are likely inadequate to the task, and will need significant revision. The more specific policy recommendations that follow from this conclusion are outlined in Part IV.

B. Implications for Deregulatory Policy Advocates

The ability of consolidated incumbents to entrench themselves through law also has important implications for advocates of deregulatory policy. Critiques of the FCC’s deregulatory policies over the last decade are not in short supply.262 Thus, my discussion of the implications on deregulatory policy need only be brief.

Over the past decade, the FCC has pursued an aggressive deregulatory strategy in many (though not all) formerly regulated markets.263 The FCC has, for instance, deregulated every form of broadband access, including wireline and wireless services.264 The extensive deregulation of aspects of the wireless industry have already been documented, and includes the lifting of spectrum caps, various merger approvals, and the eliminating of special access pricing regulation.

The common rationale underlying these policies is that the markets are competitive enough to check incumbents, thus making regulation unnecessary. Even assuming, however, the markets are not currently competitive, the FCC has routinely assumed that the threat of competitive entry is credible enough to prevent anticompetitive practices.265 For instance, both the broadband access and special access markets have been deregulated under the explicit assumption that convergence and new technologies pose

262 See generally TURNER, supra note 129.
263 See generally Blevins, supra note 65 (outlining various deregulatory measures adopted in numerous regulatory contexts).
264 See supra note 129.
265 For instance, deregulation of the special access market was explicitly premised on the notion that collocation constituted a sufficient threat of entry to check incumbent prices and behavior. See GAO REPORT, supra note 59.
competitive threats to incumbents. The correctness of this assumption has arguably been the central debate in communications policy circles over the past decade.

The entrenchment effects described in earlier sections are relevant to this debate. Recall that deregulatory policies assume that competitive entry is feasible. The problem, however, is that the entrenchments described above are stifling that entry, thus undermining a key assumption of deregulatory advocates. Wireless and municipal broadband, for instance, have both been cited to justify the deregulation of wireline broadband access. This “intermodal” competition, advocates argue, makes regulation unnecessary. As we have seen though, entrenchment effects have significantly limited these technologies’ ability to evolve into full, viable substitutes for the incumbent services. For this reason, the assumption that competitive entry is possible should arguably be relaxed.

IV. RECOMMENDATIONS FOR THE FUTURE

Having described the implications of my analysis, this Part offers more concrete policy recommendations for the future. The ultimate recommendation is that policymakers need to adopt more aggressive and comprehensive regulatory schemes to address the deep and systematic entrenchment that blocks competitive entry. The more limited regulatory policies being adopted and considered today in isolation are not sufficient to counter this entrenchment. In short, policymakers need to “think bigger,” and to consider adopting far more aggressive reforms.

Indeed, the regulations being proposed today may not only be futile, they may—ironically—further cement entrenchment by creating the illusion that the FCC has adequately addressed these problems. In other words, the appearance of addressing entrenchment may undermine political momentum and awareness for more comprehensive changes.

A. Structural Remedies

266 Id.; see also Jim Chen, Antitrust Issues in the Telecommunications and Software Industries: Titanic Telecommunications, 25 SW. U. L. REV. 535, 552 (1996) (“In a contestable, albeit imperfectly competitive market, it is the threat of entry rather than the fact of entry ‘that disciplines incumbents and forces them to serve consumers efficiently.’” (quoting Elizabeth E. Bailey & William J. Baumol, Deregulation and the Theory of Contestable Markets, 1 YALE J. ON REG. 111, 120 (1984))).

267 Blevins, supra note 65, at 245-56 (discussing theoretical foundations of intermodal competition in the communications law context).
The analysis above adopts a fairly pessimistic view of the efficacy of regulation to counter incumbents’ barriers to competitive entry. The combination of size and law has rendered these incumbents beyond law’s power in many respects. As long as consolidated companies maintain their relative size and resources, they will have many avenues for evading regulations designed to promote and protect competitive entry, many of which cannot even be predicted.

For this reason, the ultimate solution may require structural remedies that would essentially break up the industry into relatively smaller entities. Although these remedies would arguably be the most effective, they are also the most politically unrealistic. While I fully recognize the political obstacles to such reforms, I nonetheless analyze their benefits and costs below, if for no other reason than to expand the boundaries of “acceptable” political debate on the topic.

The recent banking crisis provides a potentially interesting parallel to this debate. The near meltdown of the American banking system in 2008 opened political space for scholars to raise some fundamental questions about the current structure of the industry. Several prominent economists called for aggressive regulatory intervention. For instance, former IMF Chief Economist Simon Johnson proposed that the nation’s largest banks should be broken up into smaller entities. Echoing other economists’ critiques, Johnson argued that the banks’ size posed systemic risks and gave the companies disproportionate political power. Without such actions, Johnson explained, the other regulations he proposed would be “insufficient.”

I would argue that many of these same concerns apply to the modern communications industry. For that reason, we should begin at least debating more aggressive structural remedies. These remedies could take multiple forms, but some of the most obvious ones would include: (1) prohibiting wireless/wireline affiliations; (2) prohibiting entities with special access infrastructure from entering the retail wireless market; (3) structural, or at least functional, separations between wholesale broadband access providers and retail Internet service providers (coupled with prohibitions on exclusivity agreements); (4) breaking up the AT&T and Verizon wireline divisions in a manner similar to the original breakup of AT&T.

Putting aside the political obstacles for now, these aggressive remedies would arguably be the most effective reform for several reasons. First, these types of structural remedies have

268 Simon Johnson, The Quiet Coup, ATLANTIC MONTHLY MAG., Mar. 2009 ("Oversize institutions disproportionately influence public policy ... ").

269 Id.
already proven to be effective. In fact, the most effective broadband access competition that exists today—between incumbent telephone and cable companies—exists because of mandated structural separations under section 652 of the Telecommunications Act of 1996.\(^{270}\) This law “presumptively bans the cross-ownership of cable and telephone companies.”\(^{271}\) The structural division of these types of companies arguably provides the foundation for the intermodal competition at the heart of the FCC’s deregulation of broadband access. Without it, mergers between these types of companies could have materialized, particularly given the Court’s increasing reluctance to apply antitrust laws to these industries.\(^{272}\)

Second, structural remedies would remove many of the incentives to stifle competitors. Indeed, if we assume that most isolated regulations will be futile, then the only way to prevent entrenchment is to remove the underlying incentives to act anticompetitively.

For instance, if lawmakers prohibited affiliates of large special access providers from entering the wireless market, then it would reduce the incentives to exploit special access infrastructure to squeeze smaller wireless carriers. Similarly, if wholesale broadband access providers (i.e., the facilities owners) were prohibited from offering retail broadband services, then the incentives to discriminate through facilities control would also be reduced.

Third, creating smaller entities would also lower the administrative costs of new regulation. Any type of nondiscrimination regulation will only be as good as the regulatory oversight regime. And even assuming good faith on the part of the regulators, it will still be difficult to monitor networks and to make difficult judgment calls about whether certain practices have anticompetitive effects. If, by contrast, the company in question has less incentive to discriminate in the first place, then the stakes of getting enforcement right become much lower. In this respect, structural remedies would prevent the need for ongoing government oversight.

For similar reasons, these types of structural remedies would also help address agency capture, and would help prevent future FCC administrations from watering down the ultimate enforcement regime. The fear would be that future administrations might be captured, or at least more politically aligned with


\(^{271}\) Chen, supra note 44, at 1346-47.

\(^{272}\) See Blevins, supra note 65, at 282-87 (discussing recent limitations of antitrust applicability to regulated communications industries).
incumbents, and would therefore refuse to vigorously enforce nondiscrimination requirements.

Finally, creating smaller entities would arguably promote innovation. Stuart Benjamin and others have noted that more-established firms are less likely to pursue technologies that could disrupt existing benefits. He writes:

\[\text{[T]he theoretical and empirical literature indicates that small, entrepreneurial firms with little ability (relative to powerful incumbents) to influence the regulatory process are particularly likely to be the sources of breakthrough, or disruptive, innovation.} \]

On the theoretical side, economists from Joseph Schumpeter onwards have noted that such entrepreneurial firms may be more likely than large firms with vested interests in existing products to be able to move outside routine tasks into "untried technological possibilities."\(^{273}\)

Needless to say, these types of aggressive structural remedies have problems of their own. Most obviously, these proposals are politically unrealistic at the moment. My recommendation should therefore be seen as the beginning of an effort to shift the boundaries of the political and policy debate. Indeed, my own view is that the range of the current debates has become unduly narrow in recent years.

Even assuming, however, that the political will existed for such aggressive remedies, such measures could not remove \textit{all} incentives to use law to entrench one's market position. For instance, separating wholesale broadband access from retail broadband would not necessarily reduce incentives to limit competition at the \textit{physical} layer. Wholesale broadband providers would still have incentives to prevent municipal governments from constructing new physical broadband facilities for instance. But that said, even if they retained these incentives, their reduced size would simultaneously reduce their political power to shape pro-incumbent legislation.

In addition, structural remedies come with costs of their own. Put another way, consolidation is not without its benefits. In many instances, it allows companies to enjoy efficiencies and economies of scale that ultimately benefit consumers. The important question, then, in analyzing consolidation is not so much whether it exists, but whether its existence intersects with law in anticompetitive ways that entrench market position.

\(^{273}\) Benjamin & Rai, \textit{supra} note 9, at 13-14 (quoting \textit{JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM, CEMOCRACY} 13 (1942)).
Consolidation in the railroad industry, for instance, has numerous benefits. In this context, consolidation presents less of a threat because consumers have other choices for travel such as flying or driving. Consolidation in the special access and broadband access markets, by contrast, is much different because this diverse range of choices does not exist here. In these markets, there is simply nowhere else to go.

In short, the implication of this Article’s analysis is that aggressive structural remedies may ultimately be the only effective way to end the excessive entrenchment caused by the intersections of consolidation and law. Considering the considerable political obstacles to these policies, however, the next Section reviews more practical near-term recommendations.

B. Alternative Remedies

The fact that certain regulations being proposed today may prove futile does not imply that the only possible beneficial reform consists of more extreme structural remedies. While structural remedies would arguably be more effective, policymakers could at least improve the problems that entrenchment creates by rethinking their regulatory approach. In particular, any attempt to impose new, more progressive regulations on the industry should incorporate the following principles.

First, policymakers need to understand the importance of a comprehensive approach to regulatory reform. Promoting competitive entry presents policymakers with a “whack-a-mole” problem. More formally, addressing industry entrenchment in one context is often futile because it merely reallocates entrenchment strategies rather than removing them. For instance, imposing spectrum caps does little good if the roaming and special access regulatory regimes remain in place. Larger carriers and their wireline affiliates can simply leverage their resources elsewhere to limit competitive entry.

Thus, reform efforts need to be more comprehensive in scope. To truly promote competition within the wireless broadband market, several things need to happen simultaneously. First, spectrum caps need to be reinstated. Second, special access prices need to be re-regulated (assuming these assets remain with wireline affiliates). Third, roaming regulations need to extend to data services. Fourth, wireless carriers should be required to abide by open device and nondiscrimination requirements. The problem, however, is that unless policymakers enact virtually all of these measures, incumbent carriers can exploit the absence of any one of them to entrench themselves against competitors. And once the smaller and midsized carriers vanish (as they currently are), it will
be much harder for new competitors of equal size to emerge, even if the other measures are eventually enacted in piecemeal fashion. In short, untimely regulation is effectively the same as no regulation.

Interestingly, the very structure of FCC rulemaking contributes to this problem. Generally, the FCC pursues regulatory reform by opening notice-and-comment proceedings on narrow issues. The roaming proceedings, for instance, are procedurally distinct from the spectrum cap proceedings, which are initiated in a completely different docket. The FCC should therefore institute more proceedings that are global in scope, and that cover a more diverse range of topics. The national broadband plan proceeding, which covers several distinct issues, is a welcome development in this respect.

Next, policymakers should also pursue remedies that I call “structural light.” The idea here is similar to facilitating “intramodal” competition. Essentially, these types of policies seek to create more, and smaller, entities without taking the more radical step of breaking up existing companies. One such remedy, for instance, would be new spectrum cap policies that are explicitly intended to maximize the number of providers. Another “structural light” remedy would be a more aggressive use of divestitures in merger proceedings.

Another recommended intramodal policy would be to enact stricter open access regulations that would require wholesale broadband access providers to provide nondiscriminatory access for all competing retail broadband providers. Generally speaking, open access policies “require telecommunications providers . . . to make available to their competitors . . . various parts of their network or service, so that the competitors can . . . compete . . . without having to replicate the full [network infrastructure].” As a recent comprehensive study from Harvard University’s Berkman Center documents, open access policies played a critical role in the success of other countries’ broadband policies. Indeed, these countries now boast superior broadband service to the United States on virtually every major metric (speed, deployment, etc.).

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274 See supra at note 13-14.
276 Blevins, supra note 65, at 245-49 (discussing foundations of intramodal competition).
277 BERKMAN CTR. FOR INTERNET & SOC’Y, supra note 200, at 77.
278 Id. at 74-151.
Re-embracing these types of open access policies would help this country close the gap.

Finally, and at the very least, Congress and the courts should ensure that the FCC has flexible authority to deal with the various forms of incumbent entrenchment that will inevitably emerge with broadband access and retail markets. Indeed, the scope of the FCC’s authority in this area—known as its “ancillary jurisdiction”—is currently being challenged in the D.C. Circuit by Comcast.280 As I have written at length in a separate article, the court should uphold the FCC’s authority here, and recognize the wide latitude that courts have historically given the FCC to protect against anticompetitive vertical leveraging by incumbent facilities owners.281

**CONCLUSION**

One of the perennial problems in communications regulation is that policymakers often fight “the last war.” My fear is that the current FCC may be repeating history in this respect. Although the new proposed reforms are a welcome development, they are arguably a few years too late. Consolidation has permanently altered the regulatory landscape, and any new regulatory regime must account for these recent changes. In particular, it must account for the fact that entrenchment has sharply increased in the past few years and that incumbents therefore have more options to evade isolated regulatory requirements. In sum, my argument is not that reform is futile, but that pursuing reforms that would have been quite effective earlier in the decade may no longer be sufficient in 2009 and beyond. The times, to paraphrase Dylan, have a’changed.

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280 Ancillary jurisdiction refers generally to the FCC’s authority to regulate services over which they do not have explicit statutory authority under the Communications Act of 1934. John Blevins, Jurisdiction as Competition Promotion: A Unified Theory of the FCC’s Ancillary Jurisdiction, 36 Fl. A. St. U. L. Rev. (forthcoming 2009).

281 Id.