



Consumer Federation of America



Public Knowledge

OVERCHARGED AND UNDERSERVED:

**HOW A TIGHT OLIGOPOLY ON STEROIDS
UNDERMINES COMPETITION AND HARMS CONSUMERS
IN DIGITAL COMMUNICATIONS MARKETS**

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EXECUTIVE SUMMARY

A SILVER CLOUD WITH A DARK LINING

This paper examines the market structure and performance of the four major products that constitute the digital communications sector – wireless, broadband Internet access service (BIAS), multichannel video programming service (MVPD) and business data services (BDS). The first three are sold directly to consumers, the fourth is an intermediate good, vital to the delivery of the other three digital communications services, but also a key input to all goods and services sold by non-communications firms to the public. Taken together these four services constitute a huge market equal to about half a trillion dollars today, or almost three percent of the gross national product.

The rapid spread and dramatic growth of these service is testimony to their immense value to consumers; they would not have become a major household expenditure (rivaling other necessities like electricity, gasoline, health care and groceries) without delivering services that consumers want and need. Unfortunately, that silver cloud has a dark lining.

Four firms (ATT, Verizon, Comcast and Charter) dominate these four markets, forming what this paper shows is a “tight oligopoly on steroids.” Not only is each market highly concentrated, with these four firms accounting for over 70 percent of the sale in each, but, to a remarkable extent, they have avoided head-to-head competition over the 20 years since the passage of the Telecommunications act of 1996.

Instead of competing vigorously on a head-to-head basis, they preferred to buy each other out. This not only eliminated the most likely potential competitors, but it also gave them huge fortress regions. Lax antitrust and regulatory policy for the first fifteen years of the implementation of the 1996 Act allowed this to come about.

Each has continued the geographic dominance of the local markets and products for which they enjoyed franchise monopolies on the eve of the 1996 Act. Cable companies have refused to overbuild neighboring cable companies; telephone companies have refused to overbuild neighboring telephone companies. Telephone companies were slow to go into the video business, preferring to dominate, local telecommunications. Cable companies never offered wireless services to compete directly with telecommunications companies.

The concentration, geographic separation, technological specialization, and product segmentation have allowed these four firms to accumulate and abuse vast amounts of market power. For a typical household with two wireless subscriptions, a landing, broadband Internet access service, and multi-channel video, the total overcharge is about \$45 per month (\$540 per year). The aggregate overcharges are almost \$60 billion per year.

THE POLICY DEBATE

The 1996 Act sought to rely on competition to drive innovation and deployment of digital services. The failure of head-to-head competition to develop is one of the greatest disappoints of the 1996 Act. In the past six-years antitrust and regulatory policy shifted dramatically in an effort to slow the growth of market power by the dominant firm and protect the nascent

competition that was growing through the delivery of online services. Policy makers rejected several mergers, imposed procompetitive, pro-consumer conditions on others, and adopted a series of rules intended to better protect competition and consumers. This shift in policy was contentious, vigorously opposed by the communications giants who continued to propose mergers and oppose rules.

With a new administration, soon to be in office, the intensity of the debate is certain to grow, although there may be some common ground in this area. The proposal by ATT (in many respects the single largest member of the tight oligopoly on steroids) to acquire one of the largest cable programming producers (Time Warner Entertainment, TWX), elicited strong statements of opposition from some (Trump, Sanders, Warren). The issues raised by the merger and examined in this paper reflect key themes in the recent election campaign – pocketbook populism, excessive media power, and mega mergers that undermine competition.

Consumer expenditures on communications services have increased dramatically in the past decade. The “typical” household (two cell phones, one landline, and a video-internet bundle) spends about \$2,700 per year on these services, with two-thirds accounted for by the “new” digital services—wireless and broadband. These have become a major household expenditure comparable to other more traditional goods and services – larger than some (e.g., electricity and gasoline), almost as large as others (e.g., groceries and health insurance).

The large expenditure makes it clear that the communications sector has done well for consumers, but this paper shows that it could have done much better. Just as it would be a mistake to ignore the immense success and value of the digital technological revolution, it would be an equal, if not greater, mistake to ignore the problems and imperfections that come with the new technology and flow from implementation of bad policies.

PART I: ANALYTIC FRAMEWORK

The paper arrives at these estimates by using a traditional approach to the economic analysis of industrial organization economics applied to multiple sources of data.

The level of concentration and its effect on prices in concentrated markets is taken from the *Merger Guidelines* published by the Department of Justice/Federal Trade Commission. The empirical concepts are also traditional and widely used. We use the Lerner Index, which measures the markup of price over cost, and the closely related HHI (Hirschman-Herfindahl Index), which measures the level of concentration of specific markets.

The paper shows that these indices are firmly grounded in traditional welfare economic analysis. It also introduces a broader conceptual framework—the Structure-Conduct-Performance paradigm (SCP)—to organize the discussion of the many factors that have contributed to the abuse of market power by the communications giants. This has been the dominant approach used for the analysis of industrial organization and market performance in the United States for almost a century. We rely on the definitions and concepts offered by both liberal and conservative economists.

The empirical analysis relies on a broad range of publicly available data, including official reports from government agencies such as the Federal Communications Commission, the Department of Justice, the Bureau of Labor Statistics, the Bureau of the Census, company financial statements, filings in regulatory and merger proceedings, and various financial analysts, as well as international comparisons of rates. The financial analysis relies on the annual reports of ATT, Verizon, Comcast, and Charter/Time Warner.

PART II: MARKET STRUCTURE

This part identifies the generic characteristics of the communications market that make it prone to being highly concentrated and exhibit anticompetitive practices. These are based on Alfred Kahn's discussion of the justifications for regulation of infrastructure industries.

The qualitative analysis of the tight oligopoly on steroids is discussed through a review of the evidence in several recent merger reviews, as embodied in analyses prepared by the DOJ/FCC. The wireless sector is dealt with first, then the broadband/MVPD sector. Part II concludes with an overview of the quantitative analysis in the report.

PART III: PROMISE AND THE PERIL OF THE TECHNOLOGICAL REVOLUTION

This part discusses the promise and the peril in the digital revolution against the background of the analysis of the tight oligopoly on steroids. It begins with a discussion of the key role that access to the communications network for entrepreneurs and innovators played in creating the digital revolution. It then discusses the threat that the abuse of market power by communications network owners poses to the flourishing of the digital communications ecology. The dramatic expansion of consumer use of digital communications services is analyzed, calling attention to the fact that declining elasticities of demand increase in the potential for abuse of market power by dominant firms as these services become necessities. Part III concludes with a discussion of the increasing importance of access to core network functionalities as the digital revolution transforms not only the communications sector, but also the economy. Access to the ubiquitous digital network becomes an increasingly important choke point, which enhances the ability to abuse market power by the network owners.

PART IV: OVERCHARGES

In this Part, we calculate the excess prices and excess earnings of communications giants per subscriber. Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) is the central financial statistic used to characterize earnings. Moreover, out of an abundance of caution, we base our estimates of overcharges on EBITDA less capital expenditures.

The analysis begins with business data services because the extent of competition, costs and profits have been the subject of a recent formal proceeding. This demonstrates the basic concepts and methods. To avoid double counting, we do not include the overcharges on these services in our total consumer pocketbook impact. Since there are passed through to consumers as a cost of business for other communications services they would be accounted for in the end-user bills. To the extent that sellers of non-communications goods and services are overcharged for business data services, consumers would ultimately bear the burden.

We move next to overcharges for wireless services, which are estimated to be \$10 per month per subscriber. Since wireless is an individual-level service, the overcharge per household is, on average, about \$20 per month. International comparisons suggest overcharges in the range of \$20-\$30 per subscriber per month. The shift to consumer payment for handsets increases costs, but these may not be reflected in the monthly subscription revenue.

The paper shows that the outbreak of competition created by the denial of the ATT/T-Mobile merger, along with T-Mobile's aggressive competition strategy, is definitely putting downward pressure on prices and excess profits, saving consumers \$5-\$10 per month. Even if we optimistically project competition to constrain additional abusive pricing over the next few years, and the benefits of economics of scale and scope begin to be passed through to consumers, the aggregate level of overcharges would still be at this level as more subscriptions are added.

To estimate the total overcharges, we apply the \$10 overcharge figure only to the subscribers of the dominant carriers. With 270 million accounts at present, the total annual overcharge is over \$40 billion ($\$10 * 12 * 270\text{m} = \32.4b). This equals just over a quarter of the revenues of the firms with overcharges.

We next turn to the broadband/video bundle, with the EBITDA-based estimate of overcharges at \$25 per month per household. This reflects overcharges on both broadband and video services. Again, there are reasons to believe that this estimate is low. Historical price trends would support estimates that are \$10 per month higher on the bundle. International comparisons and comparisons between ownership types put the overcharges in the range of \$25-\$50 per month.

Given that these are household services and that both broadband and video are in the range of 70 to 90 million subscribers, we use 80 million as the base to estimate aggregate overcharges. The total would be \$24 billion. ($\$25 * 12 * 80\text{m} = \24b). This represents just under a quarter of the revenues of the firms with overcharges.

This part concludes with an examination of "where does all that money go?" Overcharges in the range of \$60 billion per year represent a huge sum, although we have emphasized that this amounts to about one-quarter of the total bill of the affected consumers. Is it possible that rates could come down that much and not harm the communications sector? Put another way, where does all the money go?

There are three answers to this question that indicate rates could and should come down by that much. First, competition would lower costs in the industry. The comparative rate and cost analysis suggests that there is a significant amount of fat that could be cut. Second, stockholders are not putting new net investment into the industry; consumers are fully funding the investment in the industry. Depreciation exceeds capital expenditures. Third, the industry throws off a huge amount of cash that is not put back in to improve or expand the operation of the sector.

Looking back over the past five years, which is the period over which we have analyze price and cost evidence most intensely, we find that the companies have been throwing off cash at the rate of \$80 billion per year for mergers and acquisitions, increased liquid assets (retained earnings and stock repurchases), excess dividends and high prices paid for auctioned spectrum to keep spectrum out of the hands of potential competitors. Thus, excess returns to shareholders easily

account for the excess profits and cost-reducing competitive effects would add to total consumer savings.

PART V: SOCIAL GOALS THAT HAVE YET TO BE ACHIEVED

In the broad framework of the Structure-Conduct-Performance there are market imperfections and failures that are likely to occur, regardless of concentration and market power. We address three issues here, all of which may be exacerbated by the presence of market power.

The first issue is universal service. This has been a longstanding goal embraced in the first sentence of the Communications Act. Even if markets were vigorously competitive, there are likely to be geographic areas and population groups that would not be served because the rate of profit would not be high enough to allow firms to deliver services at rates that are sustainable and affordable. The fact that we have identified significant overcharges compounds the problem, as lower prices would make service more affordable.

The second issue involves ownership of content. Vertical integration can distort the content that is produced. As a social goal, communications policy has long expressed a concern about ensuring a diversity of voices in the marketplace of ideas. This is an outcome that might or might not be achieved in the marketplace, but it is too important a social and political outcome to be left to the vagaries of the market. In reviewing policies to promote diversity in the electronic media, we show that vertically integrated entities are likely to dominate the production and distribution of content. We make this point by examining the video market before, during and after the adoption of rules to ensure access to audiences for independent producers.

The final issue we discuss is privacy. We review the market imperfections and failures that suggest consumers are not receiving and not likely to receive the level of privacy protection they desire. The unique power of communications network owners to invade the privacy of consumers have recently been addressed by the FCC.

I. A SILVER CLOUD WITH A DARK LINING: THE GOOD, THE BAD AND THE UGLY OF THE DIGITAL COMMUNICATIONS SECTOR

A TIGHT OLIGOPOLY ON STEROIDS IN DIGITAL COMMUNICATIONS NETWORKS

The proposal by ATT to acquire the cable programming giant, Time Warner Entertainment (TWX), coming in the midst of a heated presidential campaign, was certain to trigger strong reactions. Leaders in both parties (Trump, Sanders and Warren) declared that the merger should be blocked. On the other side, financial analysts who follow the industry said it would likely be approved, but might be subject to significant conditions.

These reactions were intensified by a dramatic shift in attitude toward major communications mergers that had taken place in the latter part of the Obama administration. As shown in Figure I-1, in a complete, 180-degree reversal of direction from the first decade and a half of policy implementation after the passage of the Telecommunications Act of 1996. Seven mergers were considered and either rejected or approved subject to extensive conditions.

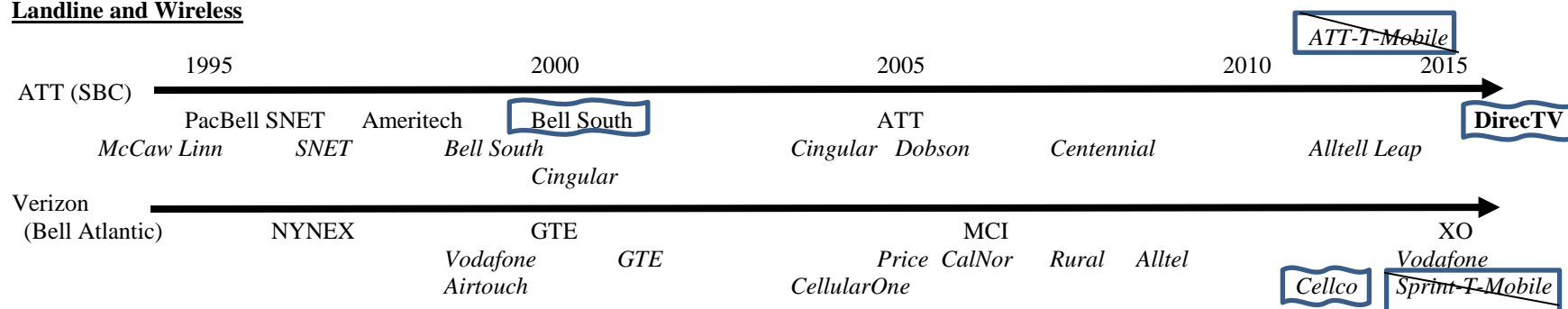
- The DOJ and the FCC blocked two mergers (ATT/T-Mobile, Comcast/Time Warner) and jawboned another out of existence (Spring/T-Mobile)
- They imposed extensive conditions on others (Comcast-NBC, ATT-DirecTV, Charter-Time Warner-Bright House, and the Verizon-cable joint venture (Cellco).

The Obama administration had also shifted the attitude in regulatory policy.

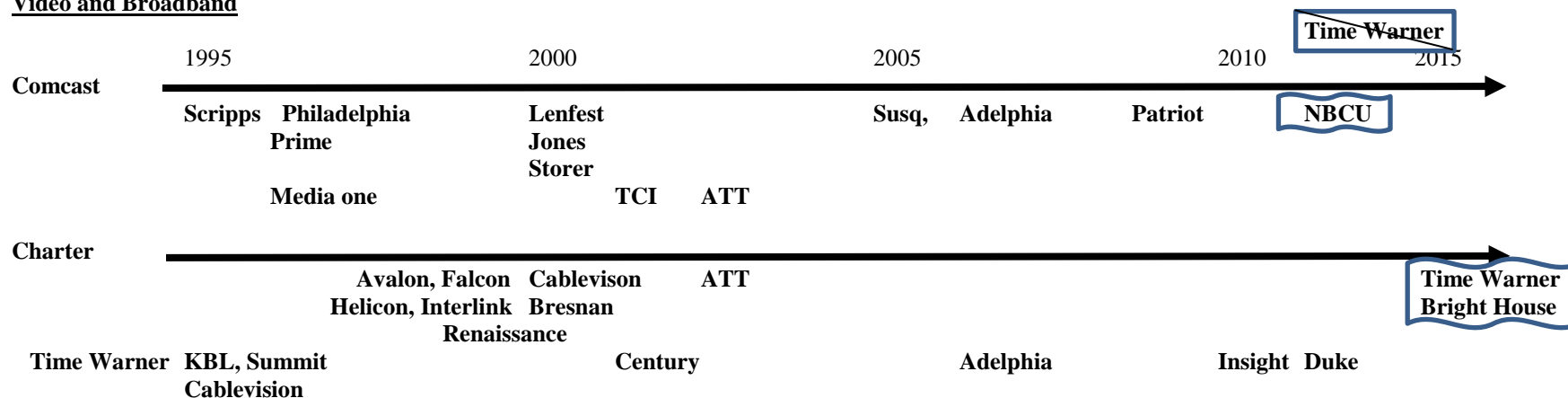
- It declared broadband internet access service to be a Title II communications service, thereby activating the language of the Communications Act that prevents dominant communications companies from imposing unjust, unreasonable or discriminatory rates terms and conditions.
- It concluded that the deployment and adoption of broadband service was not adequate, as defined by the Communications Act, and issued rules to transform the universal service program from one that supported only 20th century voice communications to one that support for 21st century broadband.
- It concluded that, under Title II, broadband consumer privacy required greater protection and issued rules to prevent the customer proprietary information that broadband network service providers needed to operate the network efficiently from being used for other commercial purposes.
- It was also considering rules to control the abuse of market power by network operators in the increasingly important and rapidly growing business data services market and the set-top box market, but the election cut those efforts short.

**FIGURE I-1: MERGERS CREATED A TIGHT OLIGOPOLY ON STEROIDS IN THE DIGITAL COMMUNICATION SECTOR
THE OBAMA ADMINISTRATION SET A NEW DIRECTION FOR MERGER POLICY**

Landline and Wireless



Video and Broadband



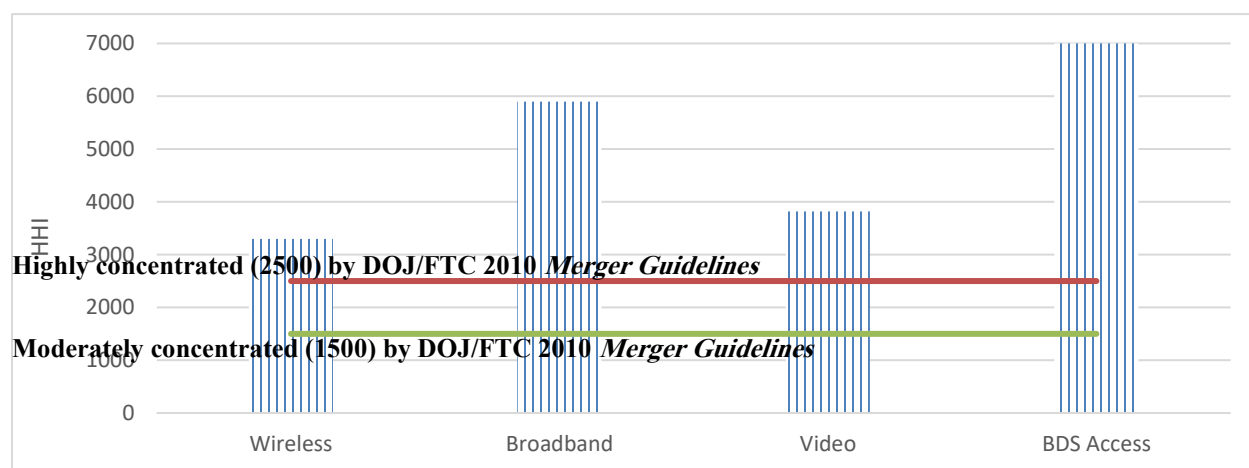
Legend: Cable in **bold**. Wireless in *Italics*. ~~Merger Blocked~~ Extensive Conditions

Sources: Older mergers from: Eli Noam, *Media Ownership and Concentration in America*, 2009, pp. 77, 236, 237, 240, 246; Federal Communications Commission, *Competition Reports, Cable and Wireless*, various years; Wall Street Journal, “A Tangled Family Tree,”; Pew Research.org, Chart of the Week, based on Rani Molla, *Wall Street Journal*. U.S. Department of Justice, *Complaint, Competitive Impact Statement, United States v. Comcast Corp.*, 808 F. Supp. 2d 145 (D.D.C. 2011) (No. 1:11-cv-00106); *Complaint, Competitive Impact Statement, United States v. AT&T Inc. and Deutsche Telekom, AG*, (No. 1:11-cv-01560), August 31; *Competitive Impact Statement, U.S. and the State of New York, v. Verizon Communications Inc., CELLCO Partnership d/b/a Verizon Wireless, Comcast Corp., Time Warner Cable Inc., Cos Communications, Inc., and Bright House Network, LCL*, No. 1:12-CV-01354, August 16, 2013; *Competitive Impact Statement Charter Communications, Inc., Time Warner Cable Inc., Advance/New House Partnership, and Bright House Networks, LLS*. Civil Action No. 1:16-cv-00759 (RCL), May 10, 2016; Jon Sallet, Federal Communications Commission General Counsel, Remarks to the “Telecommunications Policy Research Conference: “The Federal Communications Commission and Lesson of Recent Merger & Acquisition Review, September 25, 2015., explains the FCC approach in several of the merger

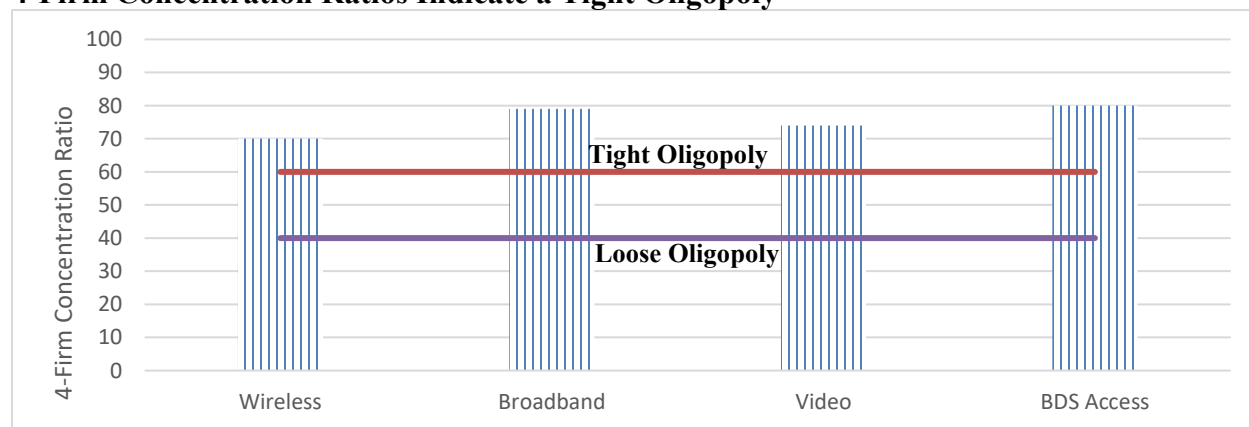
This paper shows that the shift in policy and the intensity of the debate came about because the period of lax antitrust enforcement and regulatory policy implementation had failed to achieve the primary goals of the 1996 Act, as shown in Figure I-2. Instead of vigorous, head-to-head competition between telephone companies and cable companies, by the standard definitions of antitrust and traditional economic analysis, a tight oligopoly has developed in the digital communications sector. The handful of firms that dominate the digital communication sector, possess immense market power, which they have abused to impose massive overcharges on consumers and undermine competition.

Other market structural characteristics pump up their market power so that today we have a “tight oligopoly on steroids.” The four firms of the tight oligopoly (ATT, Verizon, Comcast and

FIGURE I- 2: FOUR FIRMS CONSTITUTE A TIGHT OLIGOPOLY IN DIGITAL COMMUNICATIONS
Local Concentration Digital Communications Markets are Highly Concentrated



4-Firm Concentration Ratios Indicate a Tight Oligopoly



Sources: Thresholds, U.S. Department of Justice and the Federal Trade Commission, 2010, *Horizontal Merger Guidelines*, Wireless: Federal Communications Commission, 19th Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, for national market shares. Local market shares adjusted based on *Complaint, Competitive Impact Statement*, *United States v. AT&T Inc. and Deutsche Telekom, AG*, (No. 1:11-cv-01560), August 31. Cable/Broadband: Paul e Sa, Paul, Ian Chun, and Julia Zheng, 2015, “U.S. Telecom: Pay TV—A New Way to Look at Cable/Telco Competition and Market Shares,” AB Bernstein Analysis, December 9. Craig Moffett, *U.S. Cable & Satellite: A Funny Thing Happened on the Way to the Graveyard*, MoffettNathanson, January 13, 2016, for cable and telephone company broadband subscribers Business Data Services, *In the Matter of Special Access Rates for Price Cap Local Exchange Carriers, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, WC Docket No. 05-25, RM-10593.

Charter) were built through mergers, not competition. They all started with local franchise monopolies (when the 1996 Telecommunications Act was passed) and refused to enter new markets to compete head-to-head with their sister companies. Cable companies never overbuilt cable and never entered the wireless market. Telephone companies never overbuilt other telephone companies and were slow to enter the video market. Each chose to extend their geographic reach by buying out their sister companies, rather than compete.

As a result, today these four firms enjoying geographic separation, technological specialization and product segmentation that makes it easy to avoid competition. They cooperate (e.g. TV Everywhere subscriber authentication), collaborate (e.g. the Verizon-cable joint venture) or engage in reciprocal reinforcing conduct (e.g. purchase of out-of-region special access and political action) rather than compete. While some markets are slightly more competitive than others, the dominant firms are deeply entrenched and engage in anticompetitive and anti-consumer practices that defend and extends their market power, while allowing them to overcharge consumers and earn excess profits.

POCKETBOOK IMPACTS OF THE ABUSE OF MARKET POWER

The analysis of market structure and industrial organization is one of the main themes of this paper, which is captured by factors like the number, size, entry and exit of firms in the market and the conduct of those firms. The primary measure of the impact of the abuse of market power and the second theme of this analysis is the impact on prices and profits. We estimate that typical households (two cell phone subscriptions, landline telephone, broadband and multi-channel video) pay about 25 percent more than they would in a competitive market. As shown in Figure I-3, we estimate the resulting overcharges are over, \$45 per month (\$540 per year), an aggregate of almost \$60 billion.

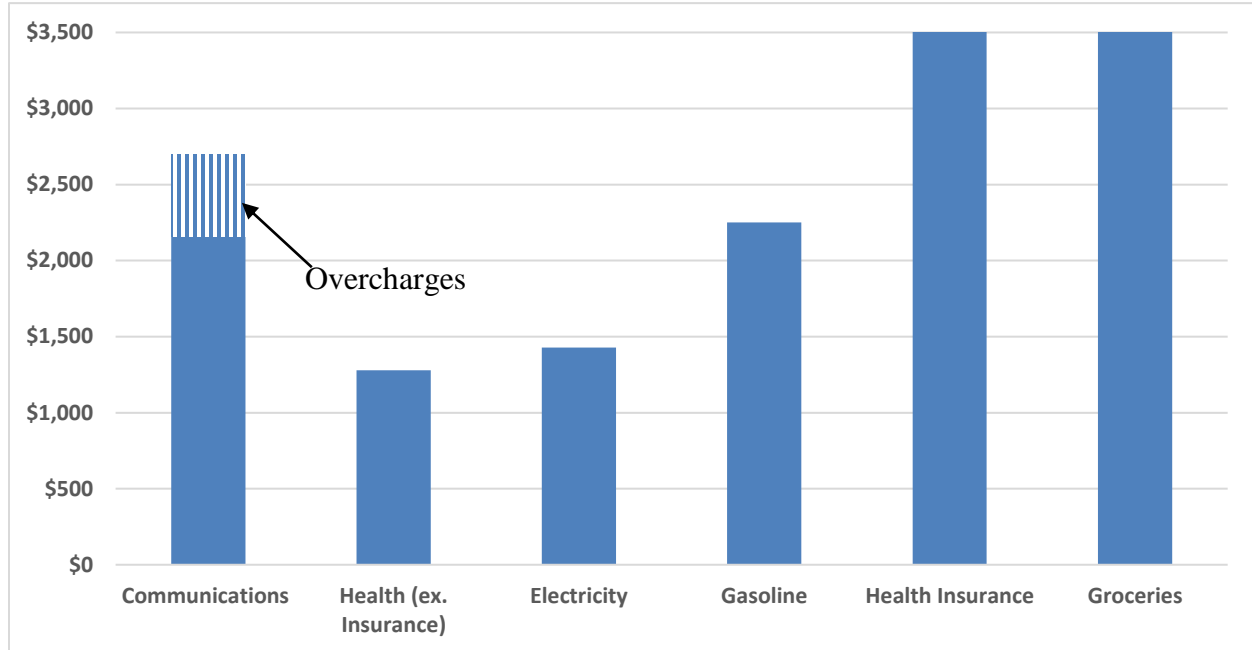
Those overcharges result in excess profits for the members of the tight oligopoly. They fund their capital expenditures through depreciation (investing no new capital in the industry), as shown in Figure I-4. They then throw off (waste) huge sums of capital in mergers and acquisitions, the accumulation of liquid assets, excessive dividends and prices paid for essential assets (like spectrum). This spending does not improve the sector, its goal is to pump up their total returns, Stockholders benefit with high returns, but consumers suffer the burden of overcharges and express great dissatisfaction with the quality of service.

On the premise that the most important step in solving a problem is to admit that there is one, this paper does not propose a long list of policies to correct the problem. Rather, it explores how the problem arose and why it has become so large.

THE GOOD, THE BAD AND THE UGLY IN THE DIGITAL COMMUNICATIONS SECTOR

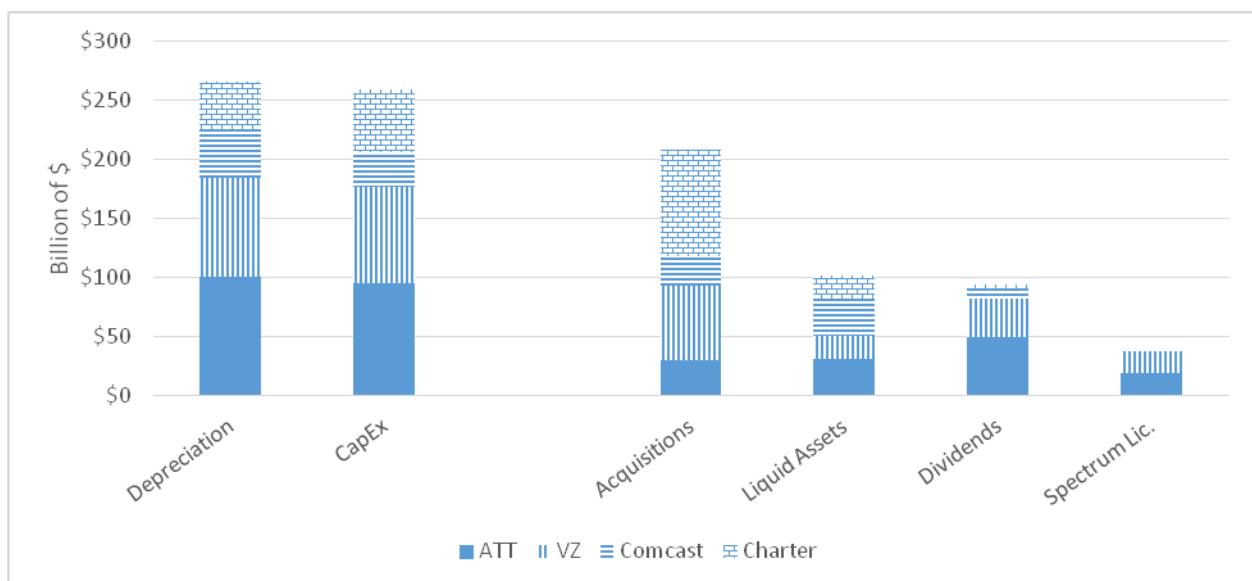
In highlighting the role of lax policy in creating the problem of a “tight oligopoly on steroids,” we do not mean to suggest in any way that there has not been a great deal of progress in the sector. To the contrary, our goal is to understand the complex connection between the good and the bad.

FIGURE I-3: HOUSEHOLD EXPENDITURES AND OVERCHARGES FOR COMMUNICATIONS SERVICES AND OTHER IMPORTANT HOUSEHOLD ITEMS



Sources and Notes: A “typical” middle-income household is modeled with data from the Bureau of Labor Statistics’ *Current Population Survey* and assumes that 90% of the households in this middle-income group have MVPD and broadband. Overcharges are summarized in Section IV and discusses in Sections??-??

FIGURE I-4: EXCESS CASH THROWN OFF FROM THE COMMUNICATIONS GIANTS (2011-2015)



Source: Corporate Annual Reports, various.

Thus, this paper rests on the premise that, just as it would be a mistake to ignore the immense success and value of the technological revolution, it would be an equal, if not greater mistake, to

ignore the problems and imperfections that came with the new technology and flow from implementation of bad policies. The 20th anniversary of the passage of the Telecommunications Act of 1996 has seen a number of celebrations of its accomplishments and recommending improvement.¹ While there has certainly been an immense amount of progress in the past two decades, there is also a dark side to the impact of the 1996 Act that does not receive as much attention as it deserves.

The key to success was the ability to strike a unique balance between progressive public policy principles of nondiscrimination and access and private sector incentives that triggered entrepreneurial experimentation, innovation and action. The failure to preserve those principles in practice poses the greatest threat to the ability of the revolution to continue to deliver broad-based benefits to consumers and the economy.

Ironically and importantly, the year 2016 is also the 50th anniversary of the start of the Computer Inquiries at the Federal Communications Commission, which set one of the key policies pillars on which the digital revolution in communications stood. The FCC order, written in 1968, forbade the dominant telephone companies, national and local monopolies at the time, from discriminating against the flow of data. This decision, vigorously resisted by the telephone companies, with revisions in 1980 (Computer II) and 1989 (Computer III) remained in force until 2005, when it was repealed by the FCC. But the battle over the principle of nondiscriminatory access to the communications network continued and was at the center of the two-decade long debate over the network neutrality (nee “open access” in 1998). In 2015, the paramount role of the principle of non-discriminatory access to the network was restored to its central place in communications policy.²

Another important example, also from the mid-1960s, is the FCC’s Cartphone proceeding. The final order, also written in 1968, allowed anyone to connect any device to the communications network, as long as it did not interfere with the operation of the network. Along with other decisions that required the monopoly phone companies to make it easy for people to connect their devices, this was a second “open access” pillar on which the digital revolution stood. It led directly to the most ubiquitous communications device of the digital era – the modem. It too was vigorously debated and resisted by the dominant incumbents. The issue of connecting competing devices to the network for cable services became a hot topic of debate in 2016, as the FCC endeavored to impose open access principles, required by the 1996 Act, on the set-top boxes that connect users to the video and broadband Internet network and control the consumer experience.

Thus, the 1996 Act came about mid-way through the first half century of the digital revolution. The policy battles that defined the terrain over which the revolution unfolded continue. The persistence, tenacity and intensity of these debates flows from several factors.

- There is a severe difference of opinion on the causes of the success of the digital revolution. Some emphasize the important role of public policy in

¹ The celebratory messages tend to applaud the immense success and then single out an area for improvement, such as less regulation of network management or greater efforts to achieve a specific goal, like universal service. See, for example: www.techpolicydaily.com/internet/20th-anniversary-of-the-1996-telecom-act-lets-get-back-on-track.

² Federal Communications Commission, *2015 Open Internet Order*, March 12, 2015.

setting the conditions for success. Others emphasize the role of private enterprise in building the products and networks that constitute the digital communications space.

- There is also a severe difference of opinion about the overall impact of the revolution. Some emphasize the immensely positive impact that the digital communications revolution has had on consumers and the economy. Others emphasize the significant, unnecessary burden the new services place on consumers and the economy and the failure to achieve important social goals.
- These differences of opinion take place in the context of a sector that has huge importance to the economy and democracy. The communications sector is not only a focal core resource system of an advanced industrial economy, it is also a central structure of the political process. It is much more than just economics;³ it deeply affects politics and democracy. The sector includes the mass media and is the vehicle for mass communication and mobilization.
- There is also a very deep difference of opinion about how market succeed and fail. Those advocating progressive capitalism insist policy is necessary to promote market success and correct market failures. Market fundamentalists arguing that no such policies are needed.

The goal of this paper is to document the fundamental and substantial negative impact of the dark side of the digital revolution and describe in detail the policy failures that allowed it to come about. Recognizing the problem is the first, critical step in establishing a more balanced understanding of what is happening in the sector and how to fix it. It is the only sound basis for identifying a set of policies that can preserve the good and reduce the harm.

One metaphor for the shifting policy is a pendulum that swings between liberal and conservative policies. I believe schizophrenia is a more suitable analogy because both personalities are ever-present and deep-seated and because the conflict between them, when competing to take command, of the personality is particularly intense and violent.

As the digital revolution unfolds, it puts a spotlight on the organizational principles and social goals that define the communications sector. Digital communications lie at the center of the digital revolution, the third industrial revolution.⁴ Just as the revolution in key technologies of the second industrial revolution (e.g. electricity, radio, the automobile) went a long way toward defining the economic and social structure of the 20th century, the revolution in information, communications technologies (ICT) will go a long way toward defining the economy and social structure of the 21st century.

One of the central vectors of policy implementation since the passage of the 1996 Act has been the push by communications companies to define services via the categories that carried the fewest public interest obligations and were generally the least regulated. However, neither law nor economic convergence required this direction of policy convergence. Each of the different services had been governed by different sets of public policies and those distinctions could have

³ Associated Press, 1945.

⁴ Cooper, 2013.

been maintained. Even if policymakers concluded that it was too complicated to maintain the distinctions (known and reviled as silos), policy could have converged in a different direction than it did. It would have been possible to read the law in the opposite direction – declaring that, where services involved mixed functionalities, applying the strongest regulatory category and broadest public interest obligations was (more) consistent with the purpose and intent of the Communications Act.

In fact, the 1996 Act explicitly stated that regulation should be relaxed only where competition, or other factors, had rendered it no longer necessary in the public interest.⁵ It stated that the definition of services, which would trigger the public interest obligations, should not be dictated by the technologies used.⁶ The fundamental values of the Communication Act, coupled with real world experience should have guided policy. But given the tenor of the times, there was an “irrational exuberance” for deregulation. This paper describes how the implementation of the 1996 over the past two decades has gone astray because the extent and persistence of market power was not fully appreciated by policy makers, antitrust authorities and regulators.

The broadly positive developments in the sector are not an excuse to fail to analyze and address the many flaws and imperfections that it exhibits. One of the central premises and findings of this analysis is that technological change is no guarantee against market imperfections and the abuse of market power.

- First, as a rhetorical matter, one frequently hears the claim that if demand is growing, there cannot be anything wrong. That is incorrect, since demand could be growing even more if the abuse were not present.
- Second, success makes the products more important to consumers – they play a larger role in the household’s budget and daily life – which makes the harm of abuse easier to inflict, larger and more deeply felt.
- Third, one of the key aspects of success – declining costs – creates the opportunity for abuse, since there is more surplus in play.
- Fourth, the growing importance of communications in the digital economy makes the achievement of social goal of universal service even more important.

Technological progress is the “good” part of the communications sector. The unnecessary increase and abuse of market power is the “bad” part. The “ugly” part is the effort to use the “good” to not only gloss over the “bad,” but to try to eliminate the possibility of restoring effective, positive, policies, by repealing the legal and institutional structures that made the success possible in the first place.

The Communications Act of 1934 is a remarkably successful, pragmatically progressive flexible policy framework that supported the innovative procompetition access policies, alongside rigid regulation of services. The Telecommunications Act of 1996 allowed flexibility in reducing regulation, where it could be shown that regulation is no longer necessary. After 20 years, the

⁵ Section 402

⁶ See the definition of telecommunications.

weakness and failure of competition to eliminate the abuse of market power provided grounds for stronger actions to promote competition and protect consumers and the courts have upheld key decisions. We believe the Act has worked well and eliminating the framework for achieving this balanced, nuanced review of the evidence, would be a huge mistake.

CONFLICTING VIEWS OF COMMUNICATIONS MARKET STRUCTURE

In order to illuminate this debate, this section contrasts the approach taken by Jeffrey Eisenach, the leader of the Trump telecommunications transition team,⁷ with the view taken in this paper. Eisenach argues, as shown in Figure I-5, that the digital communications market is dynamic, involving modules that can create different business models that run on different platforms. We actually agree with much of that description, but we disagree fundamentally with the claim that market power does not exist in digital markets (or that, since all markets are so dynamic, there can never be an accumulation of market power)⁸ and the suggestion that price is not an important measure of market performance.⁹

As shown in Figure I-6, Eisenach's description fails to recognize that some components of the module are more important than others and possess much greater potential for the accumulation and abuse of market power. The communications function, is a "communications service to exchange information across the ecosystem."¹⁰ There are very few of these in any local area, two or three, if we are talking about true broadband networks. Simply put no business model works, no matter how dynamic, if it does not have access to the communications network that links the platform to the consumer. That communications link is where the bottleneck occurs. Wireless, broadband, video and business data services (nee special access) are all dominated by the "tight oligopoly on steroids" (one telephone company and one cable company in each local area). Along the left side of Figure, I-6 we identify the anticompetitive and anti-consumer conduct that results from the emergence of a "tight oligopoly on steroids." These are examined in detail in this analysis.

As policy background, above we argue that the digital revolution succeeded precisely because public policy in the late 1960s opened up the key bottlenecks (see Figure I-7). The computer inquiries ensured nondiscriminatory access to the communications network. Carterphone allowed end users (and non-phone company entrepreneurs) to connect devices to the network. The spread spectrum decision (1984) made an essential resource (the public airwaves) available to a new set of entrepreneurs under a new business model. It abandoned the licensing regime and allowing open access under simple rules of resource management. We show these are at the core of the promise of the digital revolution, but also in peril as dominant incumbents seek to undermine and control them.

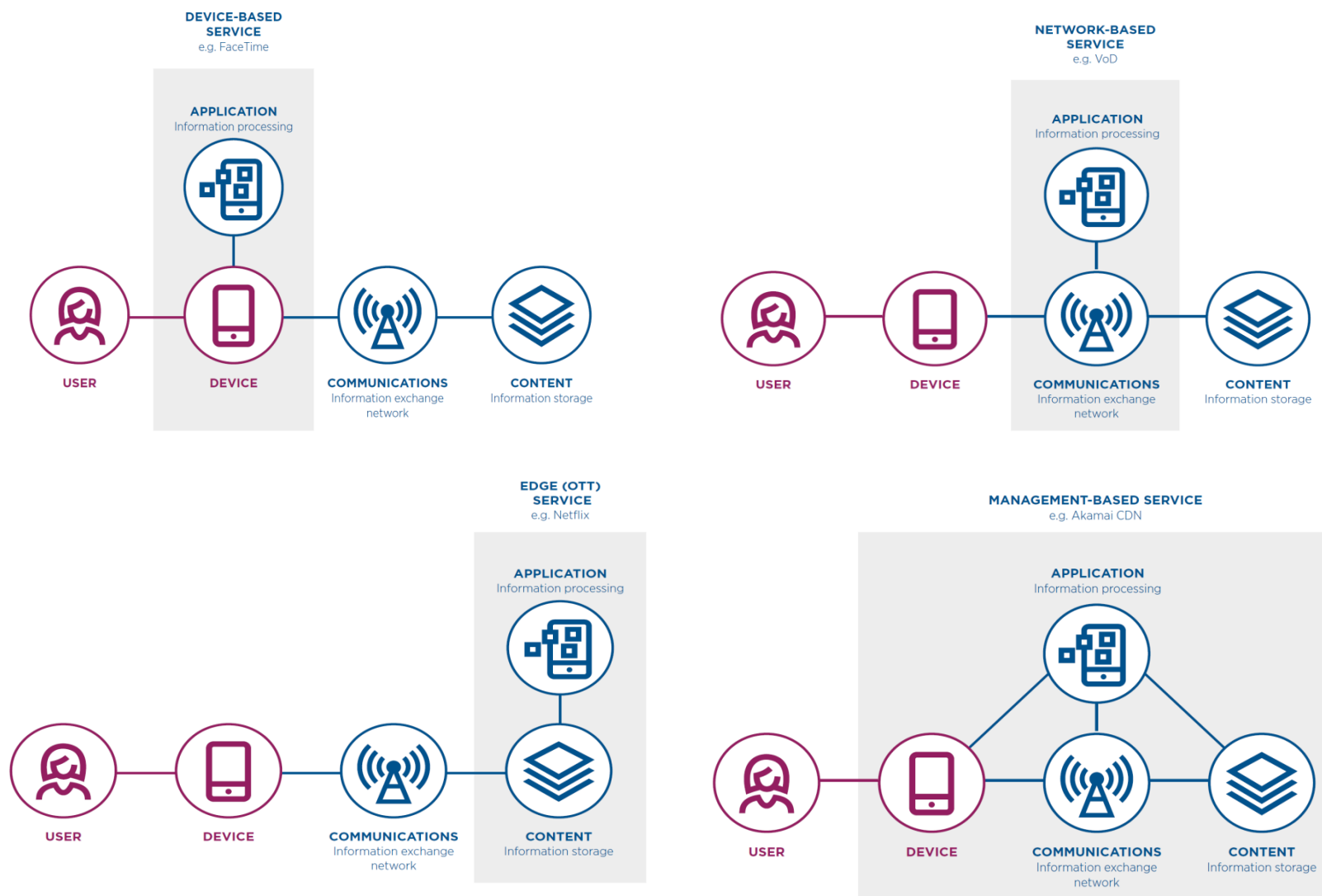
⁷ Eisenach, 2016.

⁸ Id., pp. 18-19.

⁹ Id., p. 8.

¹⁰ Id., p. 12.

FIGURE I-5: HORIZONTAL INDEPENDENT BUSINESS MODELS, ASSUMING MODELS COMPETE AT ALL LEVELS



GSMA/NERA, *A New Regulatory Framework for the Digital Ecosystem*, Appendix A 2016.

FIGURE I-6: VERTICALLY INTEGRATED NETWORK ACCESS FIRMS ARE BOTTLENECKS FOR COMPETITIVE DEVICE, EDGE AND MANAGEMENT SERVICES FIRMS

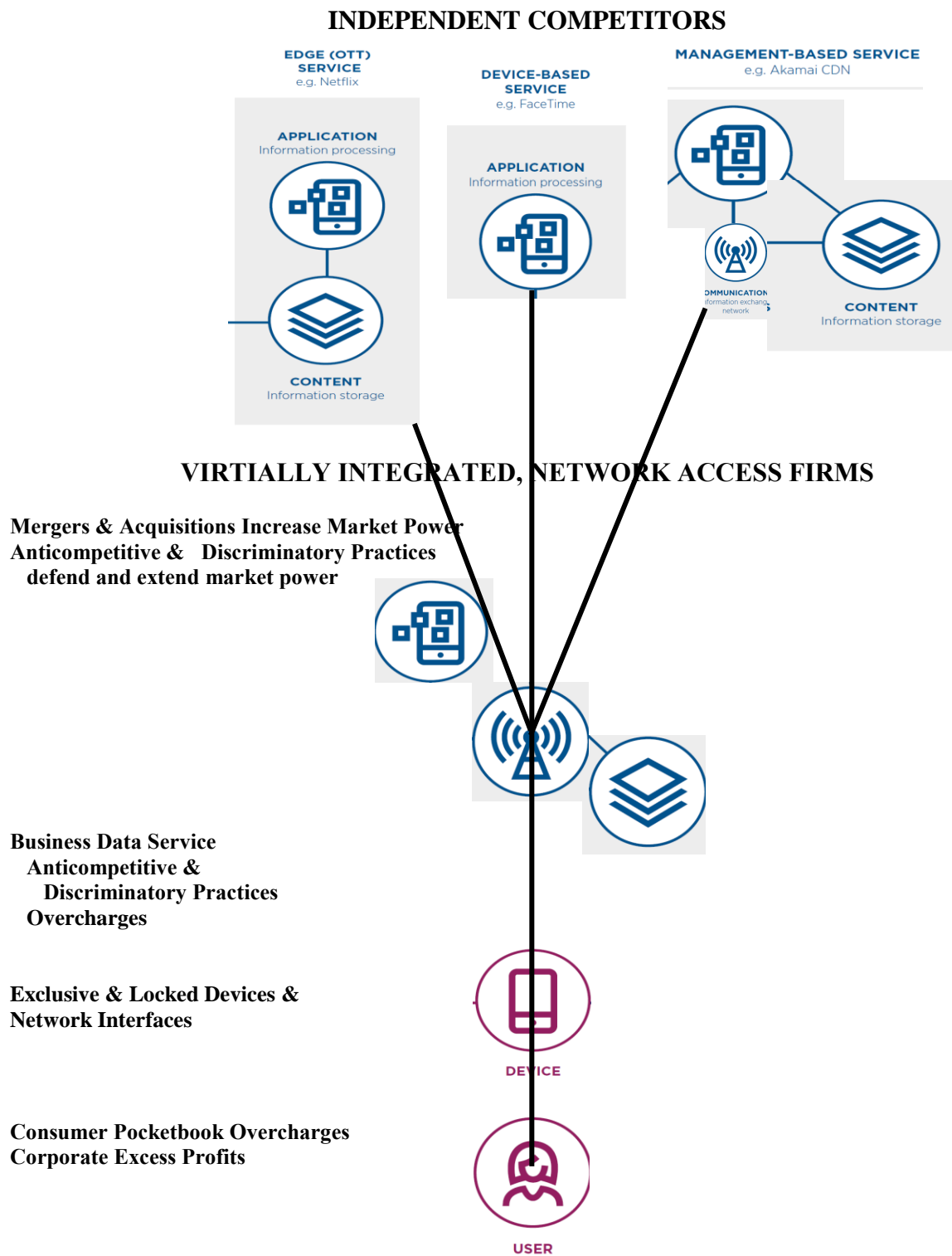
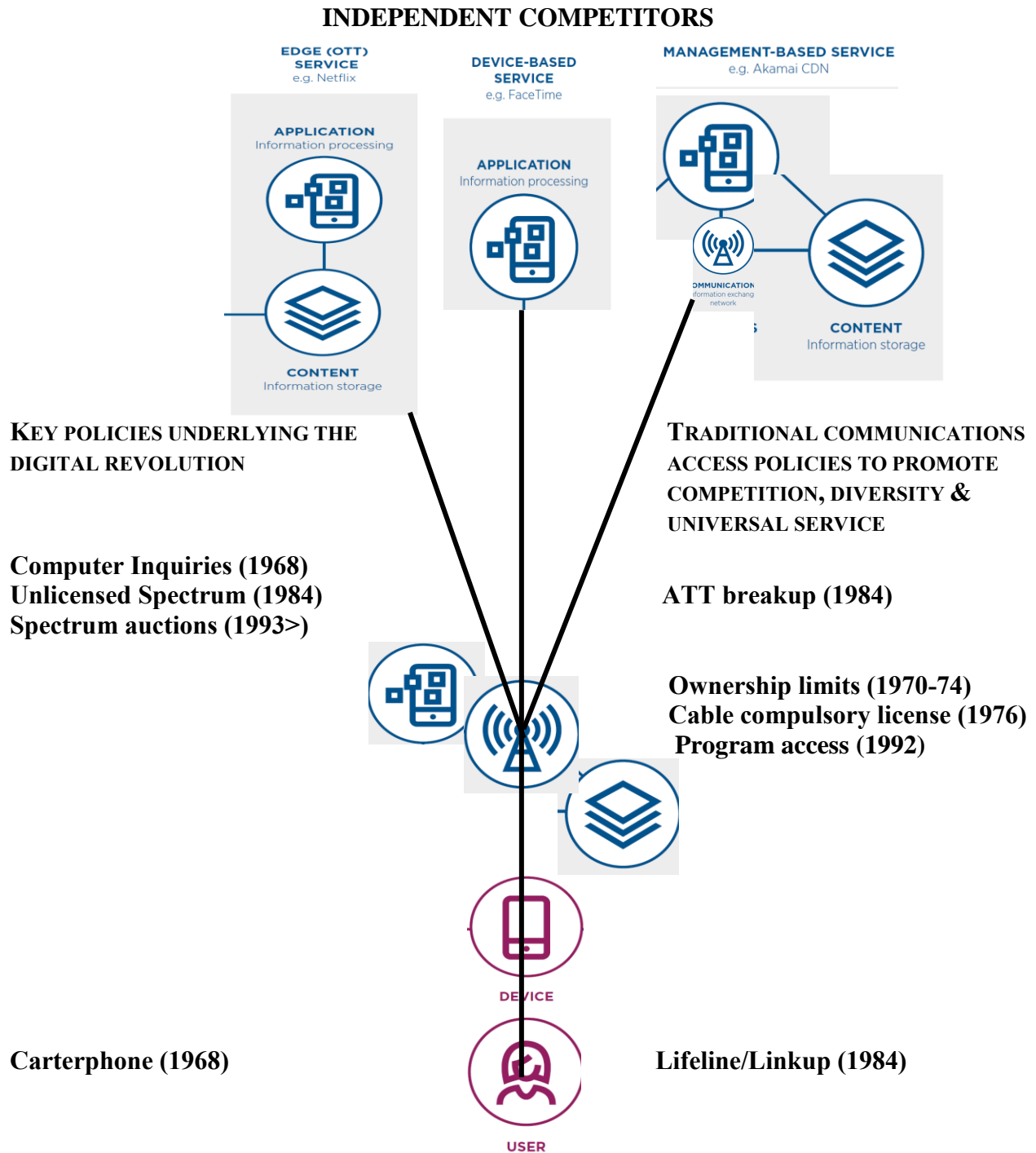


FIGURE I-7: KEY HISTORICAL POLICIES AS BUILDING BLOCKS OF THE DIGITAL REVOLUTION COMBINED WITH TRADITIONAL ACCESS POLICIES TO “RING FENCE” THE MARKET POWER OF THE DOMINANT NETWORKS AND CREATE SPACE FOR INNOVATION AND ENTREPRENEURSHIP



More traditional decisions over this period also leaned in the direction of placing constraints on the owners of distribution networks. They provide access to a wider range of edge producers and alternative distribution models. Some of these actions to promote market success were taken by the Congress, some by the Department of Justice and some by the Federal Communications Commission. While some policymakers lament the fact that the communications sector falls under multiple sources of oversight that has been the case for over a century. We believe the balance that has resulted between the private and public interests in this sector, which is not only vital to commerce, but also to democracy, is one of the great strengths of the U.S. approach.

As shown in Figure I-8, in the past six years antitrust authorities and communications regulators shifted policy back toward the procompetitive, pro-consumer policies of the earlier period. We believe the remedy for the current anticompetitive, anti-consumer state of the digital communications market is to get back to those fundamental principles of progressive capitalism. These policies will provide the terrain of the debate in the months and years ahead.¹¹ The ATT-TWX merger provides a highly symbolic and extremely important scene of battle, but there will be a broad front across which all of the policies identified will be debated.

OUTLINE

The paper is divided into five parts.

Part I presents the analytic framework. It begins, with two conceptual Sections and ends with two empirical sections. In **Section II** we offer a description of the *Merger Guidelines* adopted by the Department of Justice and the Federal Trade Commission. These are a useful starting point, not only because the ATT-TWX merger is on the front burner of the policy debate, but also because this framework has been developed and used for five decades to describe market structure and the concern about market power that arises when markets are concentrated.

Section III then embeds the antitrust approach in a much broader, but equally traditional framework for analyzing industrial organization, the Structure, Conduct Performance, paradigm.

Section IV presents a discussion of the empirical measures that are used to operationalize the theoretical concepts.

Part II presents the details of the structural analysis. **Section V** provides a description of the emergence of the “tight oligopoly on steroids” that was made possible by the underlying economic characteristics of the communications sector and lax antitrust and regulatory policy. **Section VI** describes the wireless aspect of the tight oligopoly on steroid through the market structural analysis in recent merger reviews and regulatory proceedings.

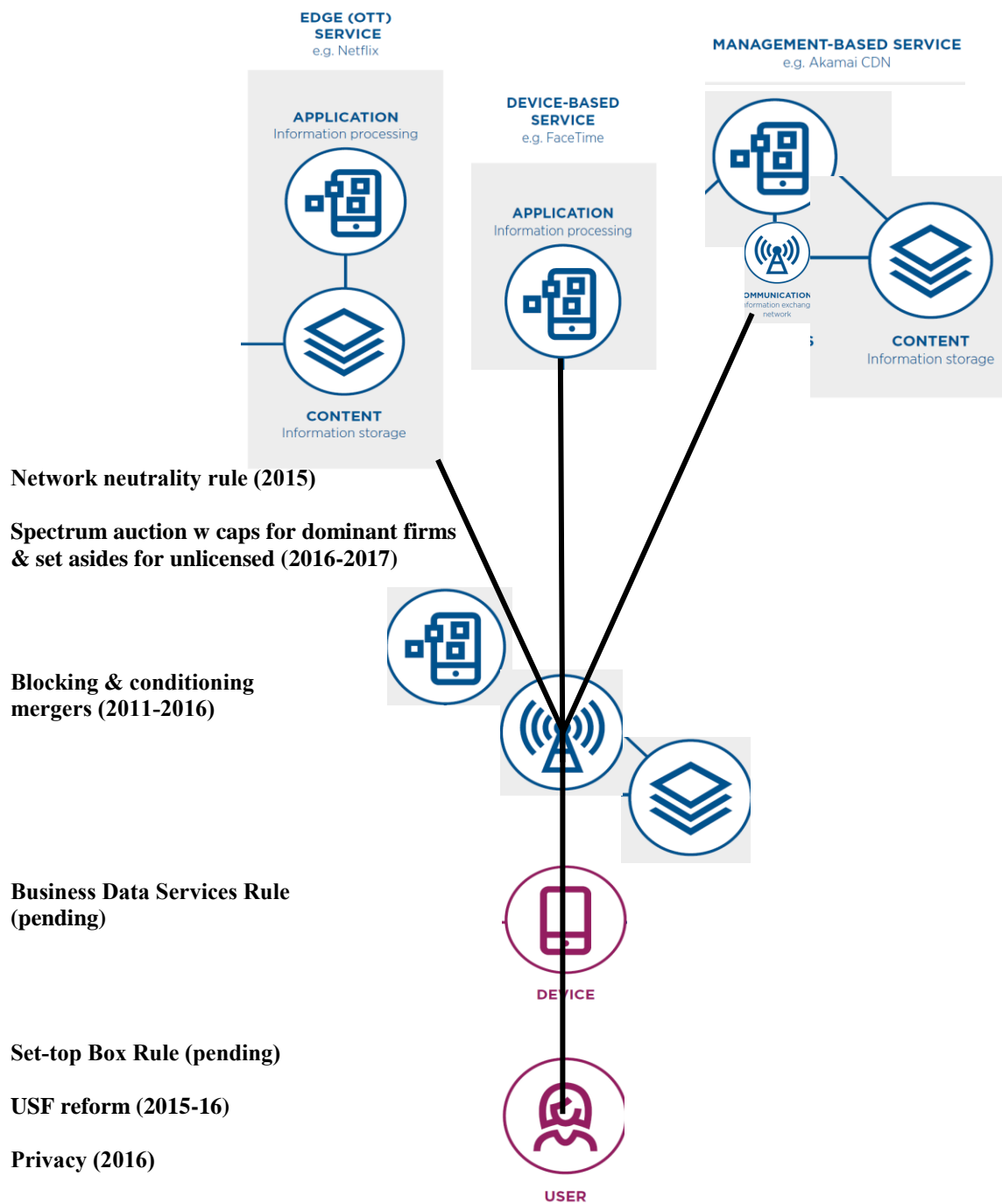
Section VII describes the broadband bundle aspect of the tight oligopoly on steroid through the market structural analysis in recent merger reviews and regulatory proceedings.

Part III discusses the promise and peril in the digital revolution against the background of the analysis of the tight oligopoly on steroids. **Section VIII** discusses the key role that access to the communications network for entrepreneurs and innovators played in creating the digital

¹¹ Cooper, 2002, 2015.

FIGURE I-8: POLICIES TO CONTROL THE MARKET POWER OF THE TIGHT OLIGOPOLY:

INDEPENDENT COMPETITORS



revolution and the threat that the abuse of market power by communications network owners poses to the flourishing of the digital communications ecology. **Section IX** discusses the dramatic expansion of consumer use of digital communications services but also the increase in the potential for abuse of market power by dominant firms as these services become necessities. **Section X** describes the increasing importance of access to core network functionalities as the digital revolution transforms not only the communications sector, but also the economy. Access to the ubiquitous digital network becomes an increasingly important choke point, which enhances the ability to abuse market power by the network owners.

Part IV demonstrates the pocketbook harm imposed on consumers by the overpricing of services. **Section XII** provides an overview of key quantitative analyses in the paper. It starts with a description of the key structural characteristic, concentration, then discusses the estimate of overcharges. **Section XIII** examines the overcharges imposed on business data services. **Section XIV** examines the wireless sector, which has become the single most important consumer communications product. **Section XV** examines broadband internet access service (BIAS) and multi-channel video programming (MVPD), which are increasingly sold by wireline service providers as a bundle. **Section XVI** shows how the massive overcharges that result in hundreds of billions of dollars of excess profits over the past five years, are wasted by the communications giants, in mergers and acquisition, increases in liquid assets, excessive dividends and overbidding for spectrum.

Part V examines major social goals that have not been achieved and remain a subject of intense debate. **Section XVII** analyzes universal service, which has been a longstanding goal embraced in the first sentence of the Communications Act. Even if markets were vigorously competitive, there are likely to be geographic areas and population groups that would not be served because the rate of profit would not be high enough to allow firms to deliver services at rates that are sustainable. **Section XVIII** reviews the issue of diversity of programming through the – universal service and privacy. We begin with it because it is most akin to the broader structural problems that afflict consumer goods. In reviewing policies to promote diversity in the electronic media, we show that vertically integrated entities are likely to dominate the production and distribution of content. We make this point by examining the video market before, during and after the adoption of rules to ensure access to audiences for independent producers. **Section XIX** discusses privacy. We review the market imperfections and failures that suggest consumers are not receiving and not likely to receive the level of privacy protection they desire.

PART I:
ANALYTIC FRAMEWORK AND EMPIRICAL OVERVIEW

II. CONCEPTUAL AND EMPIRICAL FRAMEWORK TO ANALYZE CORE CONCERNS ABOUT MARKET POWER

Although our focus is on the empirical evaluation of the performance of the communications sector and key product markets, it is necessary to start with theory and method to provide a grounding for empirical analysis. This is particularly important in the current policy environment, when a great deal of attention is being devoted to a problem that is characterized as the return of “monopoly.”¹² The problem is very real and large, resulting from the fact that markets have become highly concentrated by dominant firms that have a great deal of market power. They abuse that market power to charge excessive prices and earn profits above the level that would prevail in a competitive market. The use of the word monopoly is incorrect, however, and can discredit the claim that a problem exists. It does not take a monopoly to abuse market power. A tight oligopoly, which is what all of these digital communications markets comprise, is capable of imposing severe harm, and using the wrong term makes it too easy to dismiss analysis that starts from the “wrong” assumption about market structure.

In this section, we describe our approach to market structure analysis, which is primarily based on the Department of Justice/Federal Trade Commission *Merger Guidelines*. Guidelines were first issued by the Nixon Administration, then revised by the Reagan, Bush, Clinton, and Obama Administrations. After describing the approach of these agencies, we provide some of the historical background to explain the analytical basis of the concepts. In this report, we focus on the most widely known quantitative analysis. This section concludes with a brief description of the data used.

The analysis of market structure conducted by the Department of Justice and Federal Trade Commission in the course of merger reviews is particularly relevant as a starting point for describing industry structure and markets for two reasons. First, the antitrust laws are the primary statutes intended to prevent abuse of market power in the economy. Second, merger review is one of the few areas where the antitrust laws empower the agencies to be proactive in their job of ensuring that the economy remains competitive. Restraints on trade are the bread and butter of antitrust policy, and mergers are ideal tools to restrain trade by removing competitors. Here, antitrust authorities can act to prevent abuse rather than try to clean it up after it has caused harm. In the past five years, the Department of Justice and the Federal Communications Commission have opposed mergers, writing detailed antitrust complaints and market structure analyses that document the structural problems in the communications sector.

However, while the *Merger Guidelines* provide a rigorous starting point for defining markets and concerns about the abuse of market power, it is important to identify limitations of the antitrust approach and policy space. This holds particularly true where markets are found to be highly concentrated, as is the case with the communications markets studied in this paper. In these markets, mergers that increase the market share of large firms even slightly are considered to be a severe competitive concern because the markets are inherently vulnerable to abuse. In other words, market power is an endemic problem here. Public policy responses are not limited to

¹² Dayen, 2015; Delp and Mayo, 2016; Jarsulic, et al., 2016, Council of Economic Advisors, 2016; Schmitz, 2016; Stiglitz, 2016; Warren, 2016.

merger review. Depending on the nature and importance of the market, regulation may be deemed necessary to prevent abuse. That is the case in the communications sector.

BASIC ANALYSIS AND CONCERNS

Defining Markets

The DOJ/FTC *Merger Guidelines* are concerned about market power, defined as “a seller [with] the ability profitably to maintain prices above competitive levels for a significant period of time. Sellers with market power also may lessen competition on dimensions other than price, such as product quality, service or innovation.”¹³

The reason the antitrust authorities are concerned about market power is that it results in a transfer of wealth from consumers to producers and the inefficient use (misallocation) of resources. Economists call the latter “deadweight loss” on the economy. Neither wealth transfers nor deadweight loss would take place in a competitive market. While monopoly is clearly a big concern, most antitrust analysis focuses on circumstances in which there are a small number of sellers. With small numbers, coordinated or parallel activities and even unilateral actions can impose these harms.

[In] some circumstances, where only a few firms account for most of the sales of a product, those firms can exercise market power, perhaps even approximating the performance of a monopolist, by either explicitly or implicitly coordinating their actions. Circumstances also may permit a single firm, not a monopolist, to exercise market power through unilateral or non-coordinated conduct... In any case, the result of the exercise of market power is a transfer of wealth from buyers to sellers or a misallocation of resources.¹⁴

Definition: The first step in the effort to examine the extent of competition for a product is to define the market to be evaluated. The key is to identify products that are close substitutes. This has two dimensions. The attributes of the product must be such that they can replace one another with similar qualities and functionalities at similar prices. The products must also be available in the geographic location of the market. In many cases, the geographic dimension is defined by transportation costs. If transportation costs are high or the ability to move products nonexistent, out-of-market products cannot compete on price.

The same is true of communications services. In fact, for many communications services the geographic definition is simple. In order to transmit communications, the consumer needs to have a local connection to the network (first mile) to a point where the traffic can be widely distributed regionally or nationally (middle mile). Connectivity has a strong local component on both the originating and terminating ends. Therefore, the analysis begins at the local level and considers national markets only where they have a unique impact.

Structure: The second step in the analytic process is to describe the market structure. The objective is to understand how structure affects the conduct of the firms in the market. The

¹³ U.S. Department of Justice, 2010, *Horizontal Merger Guidelines*, revised August.

¹⁴ *Id.*

smaller the number and the larger their size, the less likely they are to compete. The extent of concentration is frequently measured by the Hirschman-Herfindahl Index (HHI) for the reasons discussed below. Other factors are considered, too, including unique barriers to entry, history (e.g., long-term dominance by incumbent firms, other distinctive patterns of anti-competitive practices), anti-competitive contracts, or the presence of disruptive firms (mavericks).

Performance: The performance of the market is measured primarily by price, cost, and profits. Prices that greatly exceed costs yield excess profits. We do not expect to observe supranormal profits in competitive markets. We expect any sign of supranormal profits to elicit quick responses from firms in the market or new entrants attracted by the profit opportunity. They offer substitutes at lower prices to steal customers, thereby quickly competing away excess profits. If the supranormal profits are sustained, they indicate the existence and persistence of market power.

Thresholds for Concerns about Market Power

Identifying the situations in which a small number of firms can exercise market power is not a precise science. After the product and geographic market is defined, concentration is measured by the HHI. That index has a direct relationship to the existence of market power, as discussed below. As shown in Table II-1, the thresholds used in the *Guidelines* were recently raised and have “common sense” referents.

For most of the period of this analysis (i.e., until the revision of the *Guidelines* in 2010), an HHI above 1,800 was considered a highly-concentrated market. A market with six equal-size competitors would have an HHI of 1,667.¹⁵ A market with an HHI below 1,000 was considered unconcentrated. A market with 10 equal-size competitors would have an HHI of 1,000 and would be competitive. A market was considered moderately concentrated when it fell between the highly concentrated and unconcentrated thresholds (i.e., had an HHI between 1,000 and 1,800). This reflected a belief that when the number of firms falls into the single digits, there is cause for concern. “Up to six firms one has oligopoly, and with fifty firms or more of roughly equal size one has competition; however, for sizes in between it may be difficult to say. The answer is not a matter of principle but rather an empirical matter.”¹⁶

Under the recently revised guidelines, the unconcentrated threshold was raised to 1,500 while the highly-concentrated threshold was raised to 2,500, or the equivalent of four equal-size firms. These thresholds (old and new) correspond to long-standing characterization of the ability of firms to increase prices to raise profits. Shepherd describes these thresholds in terms of four-firm concentration ratios as follows:¹⁷

- Tight Oligopoly: The leading four firms combined have 60–100% of the market. Collusion among them is relatively easy.

¹⁵ The HHI can be converted to equal-size equivalents as follows:

Equal-size voice equivalents = $(1/\text{HHI}) * 10,000$.

¹⁶ Friedman, J.W., *Oligopoly Theory* (U.K.: Cambridge UP, 1983), pp. 8–9.

¹⁷ Shepherd, 1985, p. 4.

TABLE II-1: DESCRIBING MARKET STRUCTURE

Department of Threshold Definitions	Type of Market	HHI	Equivalents in Equal-size Firms	4-Firm Market Share (CR4)	Concern about anticompetitive effect of increases in market power: a significant, non-transitory increase in price (5%) for two years
	Monopoly ^{a/}	10,000	1	100	
	Duopoly ^{b/}	5,000	2	100	
(Old) Dominant Firm	65% share	4,650	2	100	HHI increase: 200 points—presumed to be likely to increase market power 100–200 points—potentially raises significant competitive concerns
<u>New Highly Concentrated</u>		2,500	4	100	
(Old) Highly Concentrated		1,800	5.5	72	HHI increase: 200 points—potentially raises significant competitive concerns
<u>New Moderately Concentrated</u>		1,500	6.6	61	
	Tight Oligopoly			60	
(Old) Moderately Concentrated	Loose Oligopoly	1,000	10	40	
Unconcentrated	Atomistic Competition		50	8	

Sources and Notes: (a) Antitrust practice finds monopoly firms with market share in the 65% to 75% range. Thus, HHIs in monopoly markets can be as low as 4,200. (b) Duopolies need not be a perfect 50/50 split. Duopolies with a 60/40 split would have a higher HHI. Sources: U.S. Department of Justice, *Horizontal Merger Guidelines*, revised August 2010, for a discussion of the HHI thresholds; William G. Shepherd, *The Economics of Industrial Organization* (Englewood Cliffs, NJ: Prentice Hall, 1985), for a discussion of four-firm concentration ratios.

- A dominant firm, with almost two-thirds of the market, would create a highly-concentrated market and be a particular source of concern.
- Two firms splitting the market in a duopoly also creates highly concentrated markets and raises strong concerns.
- Loose Oligopoly: The leading four firms combined have 40% or less of the market. Collusion among them to fix prices is virtually impossible.

The upper bound of a moderately concentrated market would correspond to a tight oligopoly, which was defined as a market where the top four firms (the four-firm concentration ratio, or CR4) had more than 60% of the market.¹⁸ The lower bound of a moderately concentrated market with 10 equal-size firms would fall at this threshold.

Obviously, any line or threshold is inherently arbitrary, but the purpose of the *Guidelines* is to give firms contemplating mergers a signal about how the antitrust authorities are likely to react. These thresholds send that signal. However, as the *Guidelines* make clear, the ultimate decision

¹⁸ In the case of 5.5 equal-size firms, the four firm concentration ratio would be 72%.

of whether to oppose a merger will reflect a fact-intensive consideration of all aspects of the market.

Competitive Effects

In evaluating the impact of mergers, antitrust authorities focus on small but significant, non-transitory increases in price (SSNIP). The price increases that trigger concern are relatively small (5%), sustained for a relatively short period (two years). Here, we focus on highly concentrated markets under the new *Guidelines* since they are current policy and all of the markets analyzed in this paper are more highly concentrated.¹⁹ The Department of Justice defines the critical concern as follows:

Highly Concentrated Markets: Mergers resulting in highly concentrated markets that involve an increase in the HHI of between 100 points and 200 points potentially raise significant competitive concerns and often warrant scrutiny. Mergers resulting in highly concentrated markets that involve an increase in the HHI of more than 200 points will be presumed to be likely to enhance market power. The presumption may be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.²⁰

In a highly-concentrated market where a firm has a 25% market share, if it sought to increase its market share through merger by just 2%, it would “raise significant competitive concerns.” If it sought to increase its market share through merger by 4%, it would be “presumed to be likely to enhance market power.” In other words, very small changes in market share trigger a presumption that market power will be abused because highly concentrated markets are vulnerable to abuse.

While highly concentrated markets trigger the greatest concern, moderately concentrated markets are also a concern.

Moderately Concentrated Markets: Mergers resulting in moderately concentrated markets that involve an increase in the HHI of more than 100 points potentially raise significant competitive concerns and often warrant scrutiny.²¹

The recent revision of the *Guidelines* reflects a view based on the theory of non-cooperative games that “four is few and six is many.”²² Given the long history of the thresholds, we believe a better summary rule of thumb should be that “four is few, six may be enough, and ten is many.”

In the communications sector, a market with even six equal-size competitors is hard to envision, let alone ten. In fact, as we show below, these markets struggle to support four competitors. Most have concentration ratios close to a duopoly. We recognize that in infrastructure and

¹⁹ The leading firm proviso appears to have been dropped not because such a firm is not a source of concern but because that concern was subsumed in the broad category of “unilateral effects.” A market with a dominant firm is well above the highly concentrated threshold. A merger involving a dominant firm would violate the *Guidelines* if it sought to acquire a competitor with only a 1.5% market share, and “be presumed to be likely to enhance market power.”

²⁰ DOJ/FTC, 2010, p. 19.

²¹ Id., p. 19.

²² Selten, 1973; Davies and Olczak, 2008; Friedman, 2014; Rux and Thoni, 2013; Horstmann and Kramer, 2015.

communications industries, four is a big number that markets struggle to reach. But that should not be an excuse to abandon the fundamental principles of analysis of competitive economics. It should be a warning flag indicating market power pervades these markets. Indeed, because the advantages inherited by the incumbents from the monopoly period are so great, because entry is so difficult, and because the anticompetitive behavior of incumbents is so pervasive and deeply ingrained, we believe it would be a mistake to presume even moderately concentrated markets are competitive. Because it is so hard to achieve large numbers of competitors, communications markets have been overseen by both antitrust and regulation.

Coordination Effects and Incipient Competition

The *Guidelines* devote a considerable amount of attention to the effect a merger can have in facilitating coordination among the firms in a sector. The *Guidelines* describe the competitive concern about coordination as follows.

A merger may diminish competition by enabling or encouraging post-merger coordinated interaction among firms in the relevant market that harms customers. Coordinated interaction involves conduct by multiple firms that is profitable for each of them only as a result of the accommodating reactions of the others. These reactions can blunt a firm's incentive to offer customers better deals by undercutting the extent to which such a move would win business away from rivals. They also can enhance a firm's incentive to raise prices, by assuaging the fear that such a move would lose customers to rivals.²³

The *Guidelines* identify three types of coordination:

- (1) Coordination can be explicit (which in itself would violate the antitrust laws),
- (2) a "common understanding that is not explicitly negotiated but would be enforced by detection and punishment of deviation" and
- (3) "parallel accommodating conduct not pursuant to a prior understanding."²⁴

Although the *Guidelines* note that "coordinated interaction includes conduct not otherwise condemned by the antitrust laws," they argue that merger review should reach this behavior because the merger could produce conditions in the market that make it extremely vulnerable to harmful coordination. By so dramatically altering the overall competitive structure of the market, the merger can violate the antitrust laws.

The ability of rival firms to engage in coordinated conduct depends on the strength and predictability of rivals' responses to a price change or other competitive initiative. Under some circumstances, a merger can result in market concentration sufficient to strengthen such responses or enable multiple firms in the market to predict them more

²³ U.S. Department of Justice, 2010, p. 24.

²⁴ *Id.*

confidently, thereby affecting the competitive incentives of multiple firms in the market, not just the merged firm.

Therefore, the Agencies evaluate the risk of coordinated effects using measures of market concentration (see Section 5) in conjunction with an assessment of whether a market is vulnerable to coordinated conduct... The analysis in Section 7.2 applies to moderately and highly concentrated markets, as unconcentrated markets are unlikely to be vulnerable to coordinated conduct.²⁵

The conditions under which coordination is a concern are the exact conditions that we find in communications markets.²⁶

Concentration, a few dominant firms

Low elasticity of demand, high switching costs

Common interest of the dominant firms

Inability of smaller, fringe firms to attract customers or expand output

Territorial segmentation

Homogeneity of products

History of coordination

Multiple market contacts

The importance of coordination underscores another aspect of merger review – the role of incipient competition and maverick firms. The *Guidelines* mention incipency twice – once in the general introduction and once in the section on “coordination.”²⁷ The Section on coordination introduces the concern with reference “to the Clayton Act’s incipency standard”²⁸ because an individual firm can play a particularly important role in providing competition. This role can be heightened in the situation of systemic stress to the business model.²⁹ The disruptive behavior of mavericks is the antithesis of coordination.

²⁵ Id., p. 25.

²⁶ Id., pp. 25-27.

²⁷ Given this inherent need for prediction, these Guidelines reflect the congressional intent that merger enforcement should interdict competitive problems in their incipency and that certainty about anticompetitive effect is seldom possible and not required for a merger to be illegal. (DOJ/FTC, 2010, p. 1) Pursuant to the Clayton Act’s incipency standard, the Agencies may challenge mergers that in their judgment pose a real danger of harm through coordinated effects, even without specific evidence showing precisely how the coordination likely would take place. The Agencies are likely to challenge a merger if the following three conditions are all met: (1) the merger would significantly increase concentration and lead to a moderately or highly concentrated market; (2) that market shows signs of vulnerability to coordinated conduct (see Section 7.2); and (3) the Agencies have a credible basis on which to conclude that the merger may enhance that vulnerability. (DOJ/FTC, 2010, p. 25)

²⁸ Id.

²⁹ The Agencies consider whether a merger may lessen competition by eliminating a “maverick” firm, i.e., a firm that plays a disruptive role in the market to the benefit of customers. For example, if one of the merging firms has a strong incumbency position and the other merging firm threatens to disrupt market conditions with a new technology or business model, their merger can involve the loss of actual or potential competition. Likewise, one of the merging firms may have the incentive to take the lead in price cutting or other competitive conduct or to

Whether one believes incipency is restricted to the narrow concern with coordination or a broad-based concern under the antitrust laws, it demands consideration in analyzing the communications sector. In this case, a new technology has recently entered the market and competitive models are nascent, while the incumbents, who have resisted the technology, control crucial inputs and continue to have high market shares. The number of firms that control these crucial inputs is quite small, the threat of harm to competition through the abuse of enhanced, and unilateral market power or coordination is considerable.

NON-HORIZONTAL MERGERS AND MARKET STRUCTURE CONCERNS

At one level, the *Non-Horizontal Guidelines* involve many of the same issues as the *Horizontal Guidelines* – concentration, entry conditions, price increases – but the impacts are more complex. They are akin to the coordination effects in the horizontal analysis in two ways. First, they place significant emphasis on the market-level impact of the merger, rather than individual firm level. Second, they launch from the discussion of potential competition, which is akin to the incipency starting point.

Vertical Integration and Leverage

Vertical integration is a key characteristic of some industries,³⁰ where the act of producing a product can be readily separated from its distribution and sale. Production is referred to as the upstream, distribution and sale are referred to as the downstream. The concerns vertical mergers raise involve anticompetitive effects across markets – foreclosure, price squeeze, vertical restraints, exclusion, tying of products, evasion of regulation. Because vertical integration involves the elimination of a (presumably market-based) transaction between two entities, it has been the focal point of a great deal of analysis. Economic efficiencies are frequently claimed for vertical integration due to the elimination of transaction costs. Others fear inefficiency and potential abuse of the ability to leverage vertical market power that can result from excessive or unjustified vertical integration.³¹

In fact, the discussion of vertical mergers and anticompetitive practices in the Viscusi, Vernon and Harrington text is longer than the discussion of mergers generally. In part, this reflects the fact that the potential benefits of vertical mergers and relationships are discussed, the unique vertical concerns must be balanced with analysis of potential benefits – efficiency, quality control, reduced transaction costs.

Vertical integration may become the norm in the industry, making it difficult for unintegrated producers to survive. Vertically integrated entities may capture the market for inputs, inhibiting independent entities from obtain the factors of production necessary to deliver competing

resist increases in industry prices. A firm that may discipline prices based on its ability and incentive to expand production rapidly using available capacity also can be a maverick, as can a firm that has often resisted otherwise prevailing industry norms to cooperate on price setting or other terms of competition (DOJ/FTC,2010: 3-4).

³⁰ Scherer and Ross, pp. 526-527; Shepherd, p.280 – 304; Asch and Senaca, 1985, p. 248; Krattenmaker and Salop, 1986; Ordovery, Sykes and Willig, 1985 in F. M. Fisher (Ed.), *Antitrust and Regulation* (Cambridge: MIT Press, 1985). On the cable industry see Ordovery, and Willig, 1982.

³¹ Scherer and Ross, 1990, p. 522. Relaxation of the simplifying assumptions shows that monopoly power *may be* (but is not necessarily) enhanced through vertical combinations.

products. Also, with vertically integrated entities dominating a sector, reciprocity and forbearance rather than competition may become the norm.

The classic concern in the communications context is that suppliers of (upstream) applications or content distributed over communications networks, who are also owners of those networks, will favor their own products at the expense of the product of unaffiliated producers. Cross-owned products succeed, not because they win on the merits, but because they are favored by their owners who control a key (downstream) choke point. More importantly, in communications networks vertical relationships are central because interconnection and interoperability between networks is crucial for communications to be able to flow. Communications networks are frequently a choke point, bottleneck, or essential facilities that controls the access to consumers by controlling the flow of communications. Therefore, vertical integration and leverage are a heightened concern.³²

As discussed below, the inherent economic characteristics of these networks severely limits the number that will be available to individual consumers. Transmission of data is the indispensable function necessary to deliver services over the communications network. This creates a strong basis for concern about vulnerability to the abuse of vertical market power. Control of the network chokes points gives the network operators a great deal of power in a situation where there are few, if any, alternatives.³³

Conglomeration

The problem of conglomerate mergers³⁴ is also viewed cautiously since any anticompetitive effects flowing from strategic interfirm and overall market impacts, which are difficult to assess. That said, the key conditions that are cited as making conglomerate and vertical mergers a source of competitive concern are exactly the conditions I have shown obtain in the communications market.

Viscusi, Vernon and Harrington list the competitive concerns about conglomerate mergers to include reciprocity, opportunities for predatory pricing, eliminating potential competition, and undesirable giant size.³⁵ They argue these are difficult concepts to demonstrate empirically, but

³² Scherer and Ross, pp. 526-527; Shepherd, p.280 – 304; Asch and Senaca, 985, p. 248; Krattenmaker and Salop, 1986); Ordoover, Sykes and Willig, 1985 in F. M. Fisher (Ed.), Antitrust and Regulation (Cambridge: MIT Press, 1985). On the cable industry see Ordoover, and Willig, 1982.

³³ One of the key aspects of the network neutrality debate is the problem of vertical leverage that the incumbent network operators have, when they are vertically integrated into complementary product markets. Their incentive and ability to frustrate competition in those complementary market is substantial and several of the key disputes swirled around behaviors that appeared to have anticompetitive effects.

³⁴ Viscusi, Smith and Harrington, 2000, p. 213, sweep a number of mergers under the heading of conglomerate: “Conglomerate mergers involve firms that are not sellers in the same market nor do they stand in a buyer-seller relationship... Two other categories of conglomerate mergers discussed were product extension and market extension.... These latter two categories are more likely to be challenged by the antitrust authorities. The reason is concern for reducing potential competition.”

³⁵ Viscusi, Smith and Harrington, 2000, pp. 215...216.

the list of conditions that make the concerns possible are clearly prevalent in communications markets, High concentration, entry barriers, and a small number of potential competitors.³⁶

They then point to the *Merger Guidelines* for instruction in where to look for the potential competition impact. Many of the necessary conditions cited are invariably present in the communications sector.

In the *Merger Guidelines*, several criteria are given that must be met before a potential competition merger will be challenged:

1. The HHI must exceed 1800 [now 2500].
2. Entry must be difficult.
3. The eliminated potential competitor must have been one of only three or fewer firms having comparable advantages in entering the market.
4. The acquired firm's market share must be at least 5 percent [now 3 percent].³⁷

Shepherd identifies similar competitive concerns, emphasizing mutual restraint based on multi-market contact³⁸ and adding cross-subsidy.³⁹ Shepherd argues that dominant firms engaging in conglomerate mergers pose a significant threat to competition due to a number of factors. Competition can be reduced by creating greater potential for cross subsidy,⁴⁰ enhancing reciprocity in the industry,⁴¹ reducing potential competition,⁴² and creating spheres of influence that fosters mutual restraint.

While Shepherd is also skeptical of the impact of conglomerates on competition, the conditions he cites as mitigating the concern are not present in the communications market. Shepherd's

³⁶ Id., pp. 215...216, Numerous anticompetitive claims have been made against conglomerate mergers. They have been charged with creating the opportunities for reciprocal dealing and predatory pricing, producing politically undesirable giant size, and eliminating potential competition.... Although the potential competition principle is certainly correct in theory, there are difficult problems involved in establishing empirically who the potential competitors are and what their respective costs are.

³⁷ Id., p. 216.

³⁸ Shepherd, 1985, p. 304

³⁹ Id., p. 302.

⁴⁰ Id., p. 302, Cross-subsidizing... The effect of such support depends mainly on the market position of branch B. If branch B is dominant, the support will tend to entrench it further. But if branch B has a small market share, the support will tend to entrench it further... If all branches of a diversified firm are dominant in their markets, their pooled resources are likely to increase their dominance through greater price discrimination, threats of punitive actions, and so forth

⁴¹ Id., p. 302, *Reciprocity* is an exchange of favors... Customers will normally try to induce the firm to make reciprocal deals. Yet such favors are usually departures from strict rational choice. The Chicago-school view is that reciprocity is irrational.... The degree of its effect will depend on the situation. One must judge such possibilities carefully. A conglomerate with only minor market share positions can scarcely reduce competition.

⁴² Id., p. 304, If an important potential entrant buys up a dominant firm (or vice versa), competition will be doubly reduced. Even so, the total effect may not be sharp. That depends on the degree of actual and potential competition that remains, and on the market power of the parent firm. Each conglomerate merger presents a different set of conditions. One can still say, roughly that the potential competition and toehold issues do not usually pose large effects on competition.

“horror” story of huge conglomerates dominating spheres of influence and interacting in many markets to create a pattern of mutual restraint, which hypothesized five firms is particularly telling.

Now I consider the big picture, rather than market-by-market effects. Imagine an extreme situation with five big diversified firms extending into all major sectors. They coexist in parallel, touching one another within hundreds of markets. Whatever their effect on each market might be, they pose a larger problem of spheres of interest, of diplomatic behavior replacing competition....

Each firm would weigh action in one market against the possible retaliation by other firms in that market *and* in other markets... Each firm would know more about its rivals’ behavior and have more dimensions in which to react effectively... within some industry groups, there are sets of diversified firms mingling in scores or hundreds of individual markets... A degree of mutual restraint is likely in such cases.⁴³

The threat to competition from conglomerate mergers is heightened where the dominant firm has the ability to recapture the apparent losses that cross-subsidy seem to require. They do so by shifting the cost onto captive customers or regulated customers in the core franchise service. Cross-subsidization becomes possible,⁴⁴ although this is by no means the only available instrument of anti-competitive conduct. Vertical integration facilitates price squeezes and enhances price discrimination.⁴⁵ Firms can impose higher costs on their rivals or degrade their quality of service (withholding flagship programming) to gain an advantage.

This could happen, if, for example, the conduct of vertically integrated firms increased risks for nonintegrated firms by exposing downstream specialists to regular or occasional price squeezes or made it difficult for upstream specialists to find a market for their output in times of depressed demand.⁴⁶

⁴³ Shepherd, 1985, p. 304

⁴⁴ Asch, and Seneca: 1985), p. 248. Subsidization: The conglomerate firm can choose to behave in a predatory fashion in one market, subsidizing its predation from profits earned elsewhere. The simple concept involved in cross subsidizing is that conglomerates can use profits from branch A to support deep, “unfair” price cuts by branch B ...

Shepherd, p. 302. If all branches of a diversified firm are dominant in their markets, their pooled resources are likely to increase their dominance through greater price discrimination, threats of punitive actions, and so forth. By contrast, a string of small-share branches is more likely to promote competition than to reduce it, if it can help its members at all

⁴⁵ Scherer and Ross, p. 524.

Substitution elasticities of unity and less normally imply that inputs are indispensable, that is, that no output can be produced until at least some use is made of each relevant input. When the monopolist of an input indispensable in this sense integrates downstream, it can make life difficult for remaining downstream competitors. It can refuse to sell the input to them, driving them out of business. Or it can sell it to them at a monopoly price, meanwhile transferring input at marginal cost to its affiliated downstream units, which, with their lower costs, can set product prices at levels sufficiently low to squeeze the rivals out of the market.

⁴⁶ Scherer and Ross, p. 526.

The final behavioral effect is to trigger a rush to integrate and concentrate. Being a small independent firm at any stage renders a company extremely vulnerable to a variety of attacks.

It is possible that business firms undertake vertical integration mergers not to enhance the level of monopoly power at some stage, but to redistribute it. Oligopolies often settle down into behavioral patterns in which price competition atrophies, even though some or all sellers suffer from excess capacity. Non-price rivalry then becomes crucial to the distribution of sales. One form of nonprice competition is the acquisition of downstream enterprises which, all else (such as prices) being equal, will purchase from their upstream affiliates. If acquisition of this sort deflects significant amounts of sales, disadvantaged rivals are apt to acquire other potential customers in self-defense, and reciprocal fear of foreclosure precipitates a bandwagon effect in which the remaining independent downstream enterprises are feverishly sought.⁴⁷

Triggering: If there are 10 nonintegrated firms and only one of them integrates, then little effect on competition might occur. But if this action induces the other 9 to do the same, the ultimate impact of the first “triggering” move may be large. Any increase in market power is magnified.⁴⁸

The conditions under which firms could not be able to engage in this anti-competitive strategy do not apply to the communications giants. In fact, the dominant communications possess every one of the characteristics necessary for firms to engage in cross-subsidization of their more competitive products and impose a price squeeze on their rivals. “An insecure, widely stretched conglomerate with no strong market base and thin profit margins can affect competition far less than an established lucrative, triple-A dominant firm.”⁴⁹

CONCLUSION: THE IMPORTANCE AND LIMITATION OF THE ANTITRUST APPROACH TO MARKET POWER ANALYSIS

Having described the theory and measurement of the analysis of market structure, conduct and performance in the antitrust analysis of mergers, several notes of caution are needed.

First, antitrust theory and practice are not uniform, it can also fail because of the weakness of the approach to policies that fall within its bailiwick. A book entitled *How the Chicago School Overshot the Mark* argued that the market fundamentalist interpretation of antitrust theory was based on a series of assumptions and arguments that resulted in the extremely lax enforcement of antitrust, as shown in Table III-5. The result was to allow excessive concentration to create market power followed by lax enforcement that tolerated its the abuse.

Second, in adopting this market structure framework to evaluate market structure it is important to note that the *Merger Guidelines* only provide the tools for analysis, they do not dictate the policy that should be pursued. Antitrust prefers competition as the policy tool to correct or prevent a specific market failure – the abuse of market power. There are other market imperfections that antitrust does not address. There are also situations in which market

⁴⁷ Scherer and Ross, pp. 526-527.

⁴⁸ Shepherd, p. 290.

⁴⁹ Id., p. 302.

conditions will not support sufficient competition to prevent the abuse of market power. Therefore, competition and antitrust cannot solve the problem; much broader policies, including regulation, may be necessary.⁵⁰

⁵⁰ Kimmelman and Cooper, 2015, p. 9.

III. A BROADER ECONOMIC VIEW

The concentration analysis, linked to pricing and profits, is the focal point of the initiation of merger review. The presumption that arises from the threshold screening is only the first step, however. Merger review involves a fact-intensive, merger-specific analysis in which the initial presumption that triggers the detailed review can be supported or rebutted and rejected by an in-depth analysis of the characteristics of the marketplace. Thus, the Concentration-Price-Profit analysis is embedded in a broader economic framework that provides guidance on how to predict the impact of a merger on the performance of the market.

THE WELFARE ECONOMICS OF THE ABUSE OF MARKET POWER

To appreciate the focus on performance and the interconnection between prices, profits, efficiency, and equity, we turn to a standard analysis of the welfare economics of market or monopoly power. The incentive for dominant firms to raise prices and increase profits is basic to a balanced economic evaluation of market performance and public policy, and a central pillar of economic analysis. As exemplified in the notes for Figure III-1, we cite well-known liberal and conservative economists throughout this analysis.

When a firm with market power raises prices, it loses some sales (determined by the elasticity of demand). Why would it risk that? It will do so if the increase in revenue from the remaining sales is larger than the lost revenue from forgone sales, net of costs. The framing of the answer, shown in Figure III-1, appears in every basic textbook on economics, including all of the sources cited herein.

As shown in the upper graph of Figure III-1, in a competitive market, firms must sell at the competitive price, which “shares” the economic surplus between the consumer and the producer. Firms with market power raise prices, shooting for the point where the marginal revenue equals marginal costs. This maximizes their profits. It lowers consumer surplus but increases producer surplus. It creates some deadweight loss (inefficiency) and the total social surplus is diminished, but that is not the concern of the producers. They care only about their profits and increasing producer surplus.

As shown in the lower graph of Figure III-1, in a competitive market, when the cost of producing goods declines through, for example, technological progress, the supply curve shifts and the total surplus expands. Both consumers and producers should enjoy the benefits of an increase in surplus.

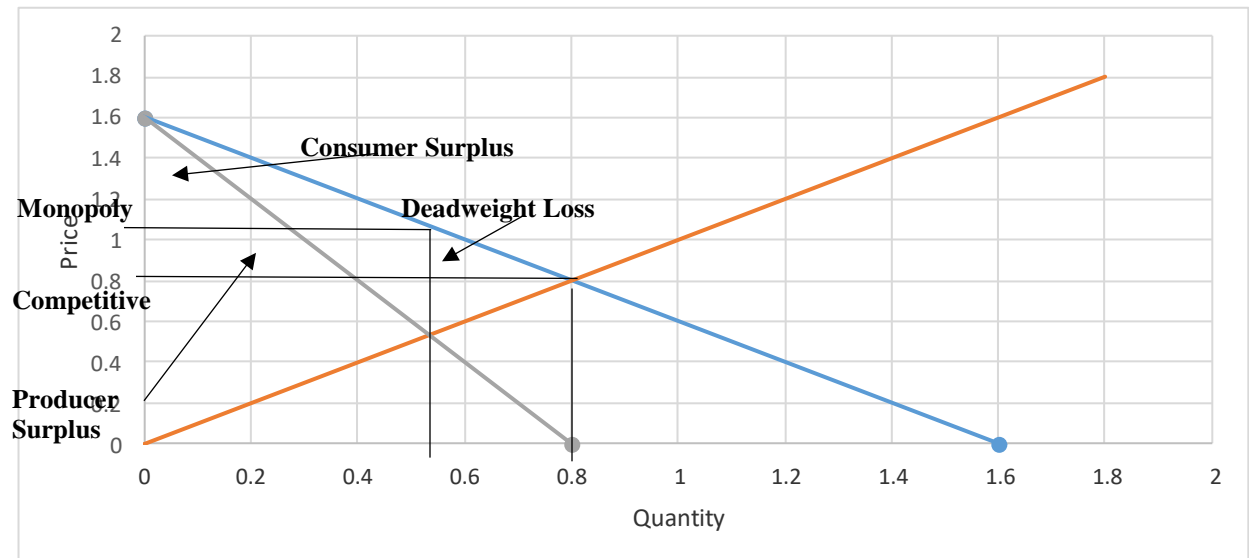
The distribution of the gains (called the incidence, and frequently analyzed as tax incidence) is determined by the elasticities of demand and supply. Market power enables the sellers to capture a disproportionate share of the increase in surplus.⁵¹ Prices may go down, but they do so less than they would in a competitive market. Consumer surplus increases less than it otherwise would, while producer surplus increases more than it should. Deadweight loss increases. If demand were more elastic or entry of competitors easier, consumers would get a larger share

⁵¹ A graph focusing on the division of surplus and the most complete discussion can be found in Viscusi, Vernon, and Harrington, pp. 77–78; Shepherd, pp. 19–21; and Scherer and Ross, pp. 24–29.

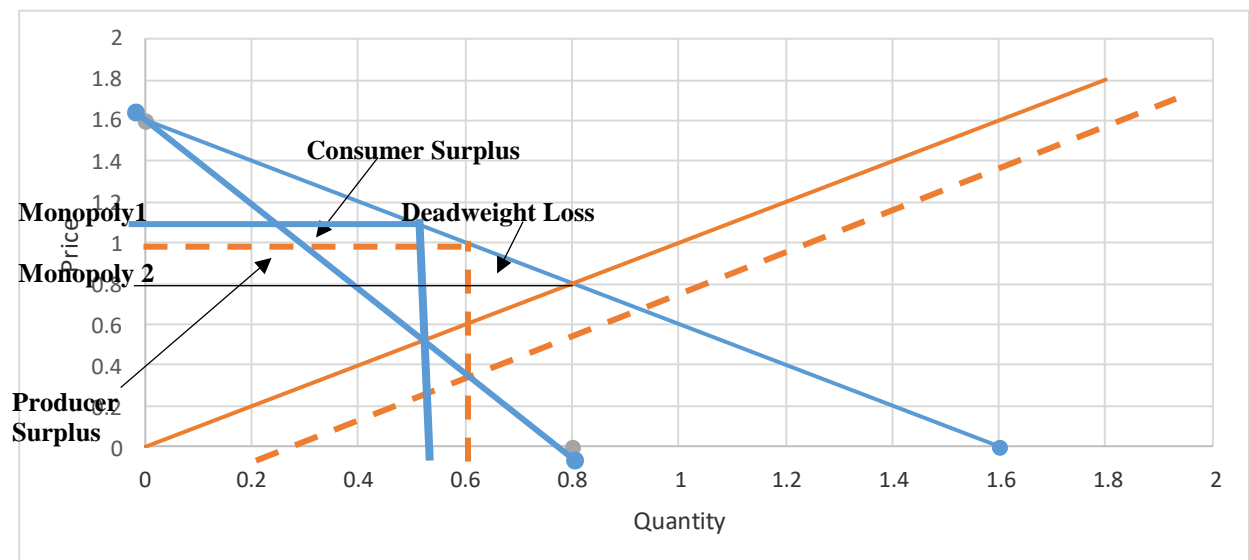
(because producers would compete harder to keep their business by passing through more of the cost savings).⁵²

FIGURE III-1: ABUSE OF MARKET POWER

Increasing Prices, Wealth Transfers, and Efficiency Losses



Declining Cost and the use of Market Power



Source: Scherer, F.M. and David Ross, *Industrial Market Structure and Economic Performance* (Boston: Houghton Mifflin, 1990), p. 34; William G. Shepherd, *The Economics of Industrial Organization* (Englewood Cliffs, NJ: Prentice Hall, 1985), p. 31; Viscusi, Kip, John M. Vernon, and Joseph E. Harrington Jr., *Economics of Regulation and Antitrust* (Cambridge: MIT Press, 2000), p. 79; John B. Taylor, *Economics* (Boston: Houghton Mifflin, 1998), p. 71.

⁵² Taylor, 1998, *Economics*, pp. 275–278, 378–381, discusses these dynamics of welfare economics.

On the other hand, if, as in these communications markets, demand is growing and becoming less elastic as these services become “necessities,” then market power may result in increasing prices and falling consumer surplus. The transfer of wealth to producers increases even more and imposes increased deadweight losses on society. The outcome depends on the magnitude of the shifts in costs and demand. The important point is that technological progress is no guarantee against the abuse of market power.

STRUCTURE, CONDUCT, PERFORMANCE

The dominant paradigm over the last century – the one behind the *Merger Guidelines* – is the Structure-Conduct-Performance (SCP) paradigm. Throughout the following discussion of the SCP paradigm, we try to balance analyses by liberal and conservative economists.

As shown in Figure III-2, the structure of the market is affected by basic economic conditions. Market structure is assumed to have a major impact on the conduct of sellers and buyers in the market. Conduct determines the performance of the market to a significant degree. However, note the feedback loops in which conduct affects market structure and policy. In this analysis, we use the concepts to describe industry structure and focus on three key aspects of the traditional approach to economic analysis: concentration, price, and profits.

The upper graph is taken from Viscusi, Vernon, and Harrison, who note, “While the structure-conduct-performance relationship is subject to debate, it nevertheless provides a useful framework for organizing a number of important concepts.”⁵³ The middle graph is from Scherer and Ross, who argue that “what society wants from producers of goods and services is good market performance. Good performance is multidimensional.”⁵⁴ They conclude that markets should

- be efficient in the use of resources and responsiveness to consumer demand,
- be progressive in taking advantage of science and technology to increase output and provide consumers with superior new products,
- promote equity in the distribution of income so that producers do not secure rewards in excess of what is needed to call forth services supplied, and consumers get reasonable price stability, and
- facilitate stable, full employment of resources, especially human resources.

Scherer and Ross note, “Measuring the degree to which the goals have been satisfied is... not easy, but relevant indicators include price-cost margins, rates of change in output... and price levels.”⁵⁵ These are the primary measures analyzed in this paper. In a workably competitive market, firms are constrained by competitive market forces to earn only a “normal” rate of profit.

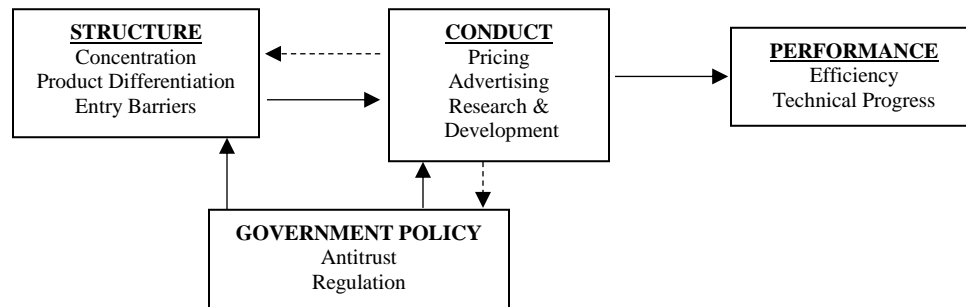
⁵³ Viscusi, Vernon, and Harrington, 2000, pp. 62–63.

⁵⁴ Scherer and Ross, 1990, p. 4.

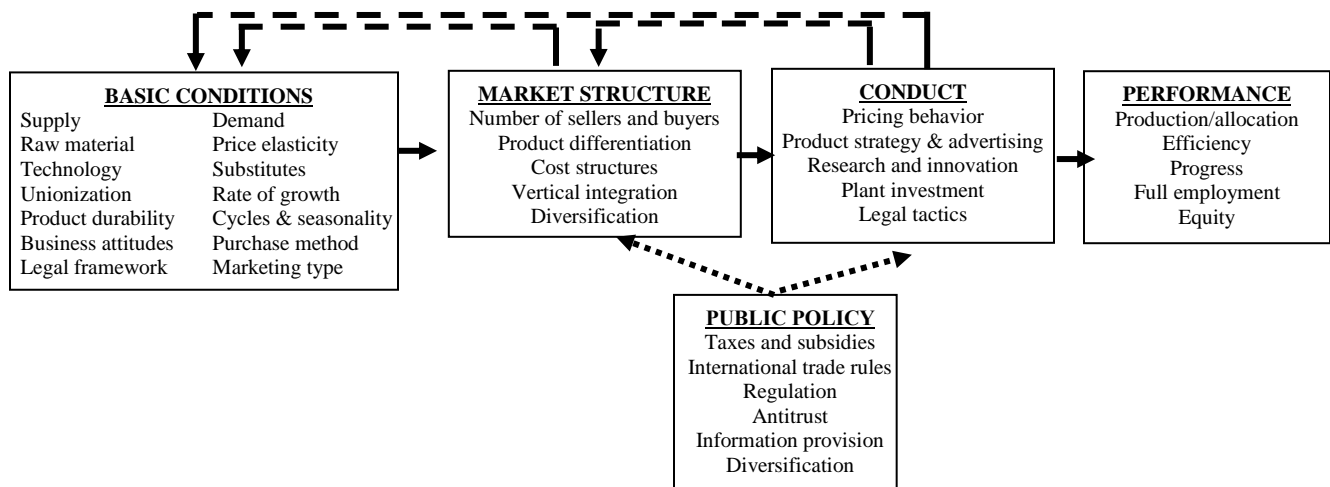
⁵⁵ Id.

FIGURE III-2: THE STRUCTURE-CONDUCT-PERFORMANCE PARADIGM: KEYED TO CABLE

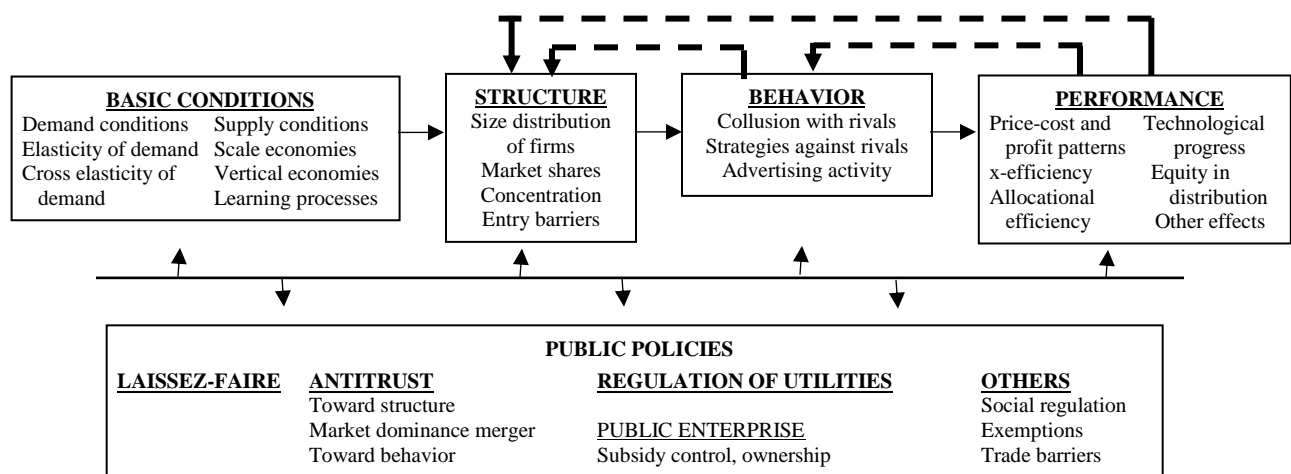
Kip Viscusi, John M. Vernon, and Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust* (Cambridge: MIT Press, 2000), p. 62



F.M. Scherer & David Ross, *Industrial Market Structure and Economic Performance* (Houghton Mifflin, 3rd ed., 1990), p. 5.



William G. Shepherd, *The Economics of Industrial Organization* (Englewood Cliffs, NJ: Prentice Hall, 2nd ed., 1985), p. 5



They do not have the power to set prices unilaterally, through collusion or coordination of their conduct, to gain excess profits. They are also driven to invest and innovate; to win and hold customers who have the ability to choose which products to consume. This forces firms to be responsive to consumer needs that evolve over time.⁵⁶

Scherer and Ross provide a long list of practical measures that detail what a workably competitive market would look like. These are listed in Table III-13, with the attributes arranged roughly according to their relationship to the underlying paradigm.

TABLE III-1: CRITERIA OF WORKABLE COMPETITION

Structure	Conduct	Performance
<p>The number of traders should be at least as large as scale economics permit.</p> <p>There should be no artificial inhibitions on mobility and entry.</p> <p>There should be moderate price-sensitive quality differential in products offered.</p>	<p>Some uncertainty should exist in the minds of rivals as to whether price initiatives will be followed.</p> <p>Firms should strive to attain their goals independently, without collusion.</p> <p>There should be no unfair, exclusionary, predatory, or coercive tactics.</p> <p>Inefficient suppliers and customers should not be shielded permanently.</p> <p>Sales promotions should be informative, or at least not be misleading.</p>	<p>Firms' production and distribution operations should be efficient and not wasteful of resources.</p> <p>Output levels and product quality (i.e., variety, durability, safety, reliability, etc.) should be responsive to consumer demands.</p> <p>Profits should be at levels just sufficient to reward investment, efficiency, and innovation.</p> <p>Prices should encourage rational choice, guide markets toward equilibrium, and not intensify cyclical instability.</p> <p>Opportunities for introducing technologically superior new products and processes should be exploited.</p> <p>Promotional expenses should not be excessive.</p> <p>Success should accrue to sellers who best serve consumer wants.</p>

Source: Scherer and Ross, *Industrial Market Structure and Economic Performance*, pp. 53–54.

THE ROLE OF MARKET FAILURE

The flip-side of markets that achieve workable competition is markets that fail. Where markets are not workably competitive, firms can set prices far above costs to obtain excess earnings, slow innovation, restrict consumer choice, and deliver inferior goods and service. The concentration of a market—the number of firms and their relative size—is a focal point of market structure analysis. The smaller the number and the larger the size of the leading firms, the greater their ability to increase prices and earn excess profits.⁵⁷

John Taylor defines market failure as “any situation in which the market does not lead to an efficiency economic outcome and in which there is a potential role for government...The major sources of market failure are public goods, externalities, and monopoly power.”

Viscusi, Vernon, and Harrington go further:

If we existed in a world that functioned in accordance with the perfect competitive paradigm, there would be little need for antitrust policies and other regulatory efforts.

⁵⁶ With the emphasis on the impersonal process of competitive markets and freedom to choose, competitive economic markets are also preferred, because they provide a strong basis for democratic political systems.

⁵⁷ Landes and Posner, 1981, two of the leading Chicago school law practitioners of laissez-faire economics, focus on the key question from the point of view of competition in markets, asking, “What degree of market power should be actionable?”

All markets would consist of a large number of sellers of a product, and consumers would be fully informed of the product's implications. Moreover, there would be no externalities present in this idealized economy, as all effects would be internalized by the buyers and seller of a particular product.

Unfortunately, economic reality seldom adheres very closely to the textbook model of perfect competition. Many industries are dominated by a small number of large firms. In some instances, principally the public utilities, there may even be a monopoly. Consumers who use hazardous products and workers who accept risky employment may not fully understand the consequences of their actions. There are also widespread externalities that affect the air we breathe, the water we drink, and the future viability of the planet....

Not all market failures stem from actions by firms. In some cases, individuals can also be contributing to the market failure.⁵⁸

Along with Viscusi, Vernon, and Harrington, Taylor stresses the challenge of identifying significant market failures that should be addressed, and points out that giving government the ability to do so requires great care. Nevertheless, it is clear that the incidence and magnitude of market failures is large enough to justify the effort.

Like Scherer and Ross, Shepherd pays attention to the broader policy perspective, considering subsidies, public ownership, and social regulation. He also emphasizes market failure.

Thus, all three discussions of the SCP paradigm recognize the potential role for policy to address imperfections and failures that drive markets away from the outcomes expected in workably competitive markets.

Just as the *Guidelines* have evolved, so too has the market imperfection/market failure aspect of the Structure-Conduct-Performance framework. As shown in Table I-2, over the course of the last several decades, a broad critique of the assumptions underlying the market fundamentalist view of how markets work (or fail) has come into existence. The broad critiques strengthen the case for considering the conditions under markets perform poorly. It follows that policy interventions to correct market imperfections and market failures are appropriate. One can chart the growth of this criticism in a series of more than a dozen Nobel Prizes.

These critiques have grown into full-blown schools of thought. We see them strengthening the usefulness of the Structure-Conduct-Performance paradigm. Few, if any, of these analysts abandon capitalist markets as central economic institutions. Their primary goal is to identify the sources of market failure with greater precision and to prescribe policies to reduce the imperfections, all while preserving the positive, dynamic forces of markets. This course of development is consistent with the underlying framework presented above.

⁵⁸ Viscusi, Vernon, and Harrington, 2000, pp. 2-3.

TABLE III-2: RECENT NOBEL LAUREATES, NEW SCHOOL OF THOUGHT, AND IDENTIFICATION OF MARKET IMPERFECTION AND SOURCES OF MARKET FAILURE

Basic Conditions: New Institutional/ Transaction Cost
Coase, 1992; North, 1993; Fogel, 1993; Williamson, 2009;
Ostrom, 2009 Endemic Flaws: Stiglitz, 2001; Spence, 2001

TRANSACTION COST FRICTION Search & Information Imperfections Availability Accuracy Search Cost Bargaining Risk & Uncertainty Technology Marketplace Policy Financial Liability Enforcement Monitoring Costs Switching Costs Sunk Costs	Market Structure: Krugman, 2008, Heckman, 2008; Tirole 2014; Deaton, 2015	Conduct: Behavioral Akerloff, 2001; Kahneman, 2002; Smith, 2002; Shiller, 2013. Strategic Behavior: Nash Jr., 1994; Selton, 1994; Harsanyi, 1994
ENDEMIC TENDENCIES Information Asymmetry Perverse Incentives Conflict of Interest Agency Moral Hazard Adverse Selection Inequality of Physical Capital Maldistribution Insufficiency Inequality of Human Capital Health Education Macroeconomic Imbalances Income/ Demand Insufficiency Investment Instability	SOCIETAL FLAWS Expanded Role of Externalities Positive Negative Public Goods Basic research Information Learning-by-doing Learning-by-using Network Effects Direct User Nonuser Indirect Cross platform Innovation Economics General Purpose Technology Producer Surplus Consumer Surplus Prosumers Productivity Applications Co-invention Non-economic Values	BEHAVIOR Motivation Values & Commitment Bounded Selfishness & Wants Morality Fairness/reciprocity Altruism Preference Custom Social Group & Status Perception Bounded Vision/Attention Prospect Framing Loss Avoidance Status Quo, Habits/inertia Salience Self-fulfilling Prophecy Social Influence Awareness Attention Low Priority Calculation Bounded Rationality Ability to process info Limited Understanding Heuristic Decision-Making Rules of Thumb Information Discounting
	DEEPER CRITIQUE OF INDUSTRY STRUCTURE Imperfect Competition Concentration Barriers to Entry Scale Vertical Leverage Collusion ICE Problems Price Discrimination Entry Barrier Bargaining Technology R&D Investment Marketing Bundling: Multi-attribute Product Differentiation Gold Plating Inseparability Purchase Method Advertising Cost-Price Level Structure Product Cycle Disaggregated/fragmented Market Ownership Control Transfer Limited Payback Lack of Premium Elasticity Own-price Cross-price Income Availability Backward-bending Supply Absence Emergency Replacement Poor Quality	Performance: End of Value-free Economics, Return of Political Economy Sen, 1998 Economy: North, Stiglitz, Krugman, Ostrom, Shiller
		FOUNDATIONAL VALUES Wellbeing, capabilities Declining marginal value of wealth Distribution of surplus matters between producers & consumers & among consumers Excessive inequality is harmful & inefficient
		RETURN OF POLITICAL ECONOMY Power Legal Framework Property Contract Policy Taxation Subsidies Trade Protectionism Antitrust Toward Structure Market Dominance Mergers Behavior Regulation Price Distortion Access Permitting Capture
Source: Nobel Laureate lectures can be found at: www.nobelprize.org/nobel_prizes/economic-sciences/laureates/		

ECONOMIC OLIGOPOLY, INEQUALITY, AND POLITICAL OLIGARCHY

Before we move on to the market and product analysis, another practical application of the framework is notable, one that describes the political economy of the abuse of market power and relates to the ongoing debate about monopoly in the U.S. economy. Concentration, inequality, and the abuse of political power that go hand in hand with the abuse of market power have become major topics of discussion and concern.⁵⁹ These issues can be related directly to the welfare economics and market structural frameworks discussed above, as shown in Figure III-3. Economic oligopoly, which gives rise to the abuse of market power, is linked to political oligarchy, in which policies are manipulated to reinforce market power.

Two antitrust scholars, Baker and Salop, have described the link between economic market power and inequality through the important role that political power plays in magnifying the abuse of market power.

Capitalism does not self-correct toward equality—that is, excess wealth concentration can have a snowball effect if left unchecked... The returns from market power go disproportionately to the wealthy—increases in producer surplus from the exercise of market power accrue primarily to shareholders and top executives... The wealthiest have a disproportionate influence on public policy. This gives them the ability and incentive to skew public investment and government policies to favor themselves... These policies also may harm others. The exercise of market power tends to raise the return to capital, increasing the divergence between that return and the rate of economic growth. By discouraging innovation and productivity on balance, moreover, market power will also tend to slow the rate of growth, further increasing the divergence.⁶⁰

On the bottom left we have the two welfare economic effects of the abuse of market power, transfer of consumer surplus from consumers to producers, and deadweight losses. Owners, senior management, and highly technically skilled labor are the beneficiaries of the wealth transfers, and they gain enough to be unaffected by the deadweight losses. Everyone else suffers from both the wealth transfers and the inefficiencies.

The advantage of the winners helps to fund a political system in which they have greater power (as well as a bigger advantage and a greater stake in securing such a system). The power of the political oligarchy is used to adopt policies that favor their interests. At the same time, they argue for policies that reinforce the redistribution of wealth toward the most well off. There is a powerful feedback loop that, if left unchecked, reinforces the political economy of oligopoly/oligarchy. Needless to say, many others have made the broader point about the important linkage between inclusive policies in the economy and the polity.⁶¹ In fact, Scherer and Ross argued that the first reason to adopt competitive markets is their compatibility with and link to a democratic polity.⁶²

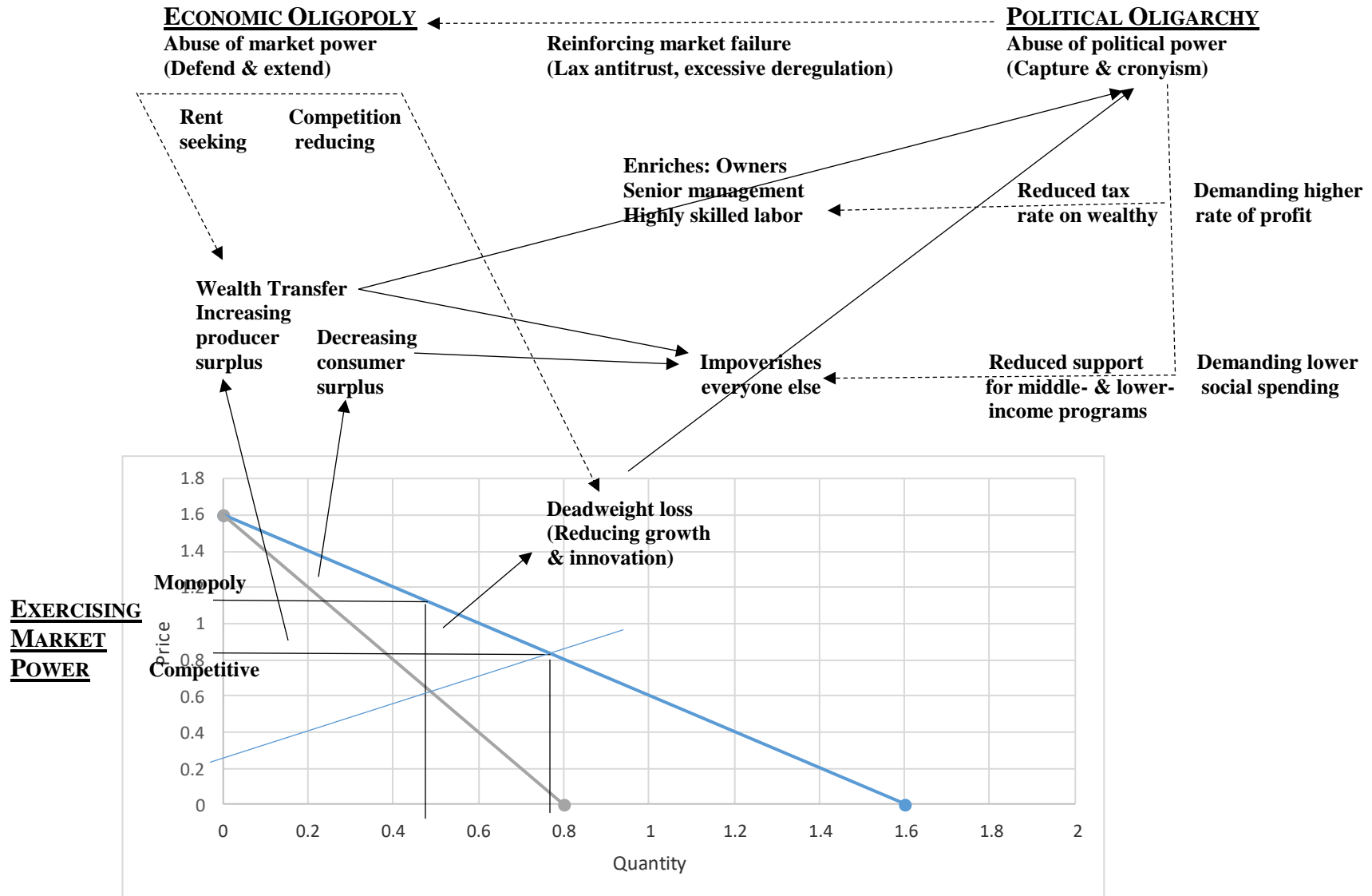
⁵⁹ Major works include Piketty, 2014, and Stiglitz, 2012, while an antitrust and market structure perspective and literature review is provided by Baker and Salop, 2015.

⁶⁰ Baker and Salop, 2015, pp. 4, 6, 7).

⁶¹ Acemoglu and Robinson, 2012.

⁶² Scherer and Ross, p. 18,

FIGURE III-3: THE POLITICAL ECONOMY (WELFARE ECONOMICS) OF MARKET POWER AND INEQUALITY: POLITICAL OLIGARCHY REINFORCES ECONOMIC OLIGOPOLY



The abuse of market power undermines this link. They tie the operation of markets to democracy, making this the first argument in favor of competitive markets;

the case for competition” in the economy they choose to “begin with the political arguments... because when all is said and done, they, and not the economists’ abstruse models, have tipped the balance of social consensus toward competition.” They offer several reasons for the close association between markets and democracy: “The atomistic structure of buyers and sellers required for competition decentralizes power...[l]imiting the power of both government bodies and private individuals to make decisions that shape people’s lives and fortunes... [C]ompetitive market processes solve the economic problem *impersonally*, and not through the personal control of entrepreneurs and bureaucrats.... [The] merit of a competitive market is its freedom of opportunity.”

CONCLUSION

The structural problems we discuss in each market and the overcharges we estimate in this paper show pervasive and deep-seated problems that are not likely to be corrected by competition. While it is desirable to increase competition where it would be viable, competition alone is not likely to suffice. The economics of communications networks will not support a sufficient number of viable service providers to drive markets to the desirable outcome normally associated with vigorous competition. The 20-year failure to develop vigorous competition to develop in these markets suggests three important policy conclusions.

- First, it will take a long time for competition to have an effect, at least to the extent that it can become viable.
- Second, regulation is necessary to create the conditions for competition (e.g., weeding out artificial barriers to entry).
- Third, regulation will be necessary in the significant areas where competition is not sufficient and will be needed to constrain the persistent abuse of market power.

In a sense, the Telecommunications Act of 1996 intended this approach. It declared the desire for competition to replace regulation, but only once competition had already demonstrated that regulation was no longer “necessary in the public interest,”⁶³ and it defined telecommunications

⁶³For example, § 202h: “The Commission shall review its rules adopted pursuant to this section and all of its ownership rules biennially as part of its regulatory reform review under section 11 of the Communications Act of 1934 and shall determine whether any of such rules are necessary in the public interest as the result of competition. The Commission shall repeal or modify any regulation it determines to be no longer in the public interest.

§ 10. Competition in Provision of Telecommunications Service.

(a) Regulatory Flexibility: Notwithstanding section 332(c)(1)(A) of this Act, the Commission shall forbear from applying any regulation or any provision of this Act to a telecommunications carrier or telecommunications service, or class of telecommunications carriers or telecommunications services, in any or some of its or their geographic markets, if the Commission determines that—

independently of technology.⁶⁴ Unfortunately, the deregulatory drive got far ahead of the competitive reality, and lax antitrust allowed the creation of thoroughly noncompetitive market structures. In other words, the 20th anniversary of the 1996 Act should have involved both celebration of progress, as well as thoughtful reflection on how serious policy mistakes and market imperfections had led to widespread abuse that could and should be corrected.

This report documents the problem in the communications market, which is the first step toward a solution. It does not offer specific policy proposals. In a sense, there has already been an important change in direction. Much of the evidence presented in this report comes from merger reviews and regulatory proceedings where antitrust authorities either rejected a merger or imposed extensive conditions on it. In the process of doing so, the authorities present their formal analysis of the underlying problem in the market structure. Similarly, the Federal Communications Commission has conducted several rulemakings that address market structural problems. While the direction has changed, there is a long way to go to correct the underlying problems, particularly in the face of the steadfast opposition of the communications giants. The detailed review of the ongoing problems in communications markets is intended to provide fuel to keep the reform efforts headed in the right direction.

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- (1) enforcement of such regulation or provision is not necessary to ensure that the charges, practices, classifications, or regulations by, for, or in connection with that telecommunications carrier or telecommunications service are just and reasonable and are not unjustly or unreasonably discriminatory;
 - (2) enforcement of such regulation or provision is not necessary for the protection of consumers; and
 - (3) forbearance from applying such provision or regulation is consistent with the public interest.”

⁶⁴ §3 (50). “The term ‘telecommunications service’ means the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used.”

IV. METHODOLOGY AND DATA FOR QUANTITATIVE ANALYSIS

OPERATIONALIZING KEY ANALYTIC CONCEPTS

The key market characteristics identified above—concentration, price, cost, and profits—have been captured in two indices that are interrelated: the Lerner Index (L) and the Hirschman-Herfindahl Index (HHI). Table IV-1 presents a series of key formulas that have been developed by both progressive and conservative economists to analyze industry structure and the exercise of market power.

TABLE IV-1: KEY MATHEMATICAL FORMULAS IN THE ANALYSIS OF MARKET STRUCTURE AND MARKET POWER

1. Lerner Index Traditional Formulation

$$L = \frac{(P - MC)}{P} = \frac{1}{E^d}$$

Where P = price, MC = marginal cost, E = the market elasticity of demand

2. Landes and Posner Formulation of the Lerner Index

$$L = \frac{(P - C)}{P} = \frac{1}{E^d} = \frac{\sum S_d}{e_m^d + e_j^s (1 - S_i)}$$

Where S_d = the market share of the dominant firm, e_m^d = elasticity of demand in the market, e_j^s = elasticity of supply of the competitive fringe, S_i = market share of the fringe

3. The HHI Index

$$HHI = \sum_{i=1}^n S_i^2 * 10,000$$

4. Relating the HHI to Market Power through the Lerner Index

$$S_1 * \frac{(P^1 - MC^1)}{P^1} + S_2 * \frac{(P^2 - MC^2)}{P^2} + \dots + S_n * \frac{(P^n - MC^n)}{P^n} = \frac{HHI}{10000 * E^d}$$

5. Ordoover, Sykes and Willig formulation of the Lerner Index adding a “conjectural” factor

$$L = \frac{(P - C)}{P} = \frac{1}{E^d} = \frac{\sum S_d * k}{e_m^d + e_j^s (1 - S_i)}$$

Where S_d = the market share of the dominant firm, e_m^d = elasticity of demand in the market, e_j^s = elasticity of supply of the competitive fringe, S_i = market share of the fringe

Sources: Scherer, F.M. and David Ross, *Industrial Market Structure and Economic Performance* (Boston: Houghton Mifflin, 1990), pp. 70–71; William M. Landes and Richard A. Posner, “Market Power in Antitrust Cases,” *Harvard Law Review* (94): 1981; Viscusi, Kip, John M. Vernon, and Joseph E. Harrington Jr., *Economics of Regulation and Antitrust* (Cambridge: MIT Press, 2000), p. 149; Ordoover, J.A. and R.D. Willig, “Herfindahl Concentration, Rivalry, and Mergers,” *Harvard Law Review* (95): 1982.

The Lerner Index is a measure of how much prices exceed costs in the market. Scherer and Ross describe the attractiveness of the Lerner Index as follows:

Its merit is that it directly reflects the allocatively inefficient departure of price from marginal cost associated with monopoly. Under pure competition, [the Lerner Index

equals zero ($LI = 0$)). The more a firm's pricing departs from the competitive norm, the higher is the associated Lerner Index value.⁶⁵

In words, formula 1, above, says that the Lerner Index is a ratio. It is the markup above cost ($P - MC$) divided by the price. The Lerner Index is frequently expressed as the inverse of the elasticity of demand. If consumers have the ability to switch to other products, sellers will not be able to increase the price significantly above costs because they will lose their customers.

While the Lerner Index is attractive from a theoretical point of view, there are generally uncertainties about the estimation of marginal cost. Even in antitrust proceedings where data is subject to subpoena, it is difficult to calculate.⁶⁶ Therefore, economists frequently consider several other measures of monopoly profits that are the aggregate manifestation or the result of the underlying pricing abuse.

In a seminal 1981 *Harvard Law Review* article,⁶⁷ William Landes and Robert Posner, two of the leading Chicago school law and economics practitioners, use these concepts. They ask, "What degree of market power should be actionable?" They respond, "The answer in any particular case depends on the interaction of two factors: the size of the market (total volume of sales) and the antitrust violation alleged."⁶⁸ In a section titled "Market Share Alone Is Misleading," Landes and Posner argued that antitrust authorities should take market fundamentals into account. In assessing the potential impact of market power, "the proper measure will attempt to capture the influence of market demand and supply elasticity on market power."⁶⁹ Their intention was to convince antitrust authorities to ease up on enforcement, but the proposition should work in both directions. Markets that have low elasticities of supply or demand, or high total dollar stakes, could certainly demand more scrutiny, not less.⁷⁰ Infrastructure industries deliver service with relatively low elasticities, high value, and great importance.

In formula 2, Landes and Posner rendered the Lerner Index in a somewhat different formulation, which is useful in the analysis below. In evaluating mergers and market structures, it is necessary (and preferable) to consider the market power of individual firms and sum these across all firms in the market. In words, formula 2 says that the markup of price over cost will be directly related to the market share of the dominant firm and inversely related to the ability of consumers to

⁶⁵ Scherer and Ross, 1990, pp. 70-71: "A related performance-oriented approach focuses on some measure of the net profits realized by firms or industries."

⁶⁶ Landes and Posner, 1981, p. 941: "If marginal cost were known, the Lerner Index could be determined directly (assuming the price is observable), without measuring the firm's elasticity of demand. But because marginal cost is a hypothetical construct—the effect on total cost of a small change in output—it is very difficult to determine in practice, especially by the methods of litigation."

⁶⁷ Id.

⁶⁸ Landes and Posner acknowledged this in some respects. In all of the examples, the effect of adopting the approach advocated in this paper was to reduce or eliminate the inference of market power drawn from market share data. In most cases, this will probably be the result of our approach simply because exclusive and uncritical focus on market share data tends to produce an exaggerated impression of market power. In some cases, however, our approach will result in correcting an underestimation of market power based on market share. Id.

⁶⁹ Id.

⁷⁰ Id.

reduce consumption (elasticity of demand) and the ability of other firms (the competitive fringe) to increase output (elasticity of supply).

There was an extensive debate over this formulation and another index was cited: the Hirschman-Herfindahl Index (HHI),⁷¹ shown in formula 3. The HHI is a measure of market concentration. Viscusi, Vernon, and Harrington note that “the HHI has the advantage of incorporating more information about the size distribution of sellers than the simple concentration ratio does.”⁷² The HHI is calculated by taking the market share of each firm in the market, squaring it, and summing across all firms. The index is converted to a whole number by multiplying by 10,000.

The HHI and the Lerner Index can be directly related in the analysis of market power, as shown in formula 4. As Viscusi, Vernon, and Harrington put it, “The HHI is directly related to a weighted average of firms’ price-cost margins for the Cournot [oligopoly] solution.”⁷³ In words, formula 4 says that the markup of price over cost in a market will be directly related to the market share of the firms (as captured by the HHI) and inversely related to the ability of consumers to reduce consumption (the elasticity of demand).

Ordover, Sykes, and Willig offered further qualitative refinement to the analysis in formula 5 that is extremely important in the highly-concentrated communications markets that are made up of dominant conglomerates.⁷⁴ This adds

“conjectural variation” of the firm (k), which measures firm i ’s perception of its interaction with the other nonprice taking firms. Where the conjecture is positive, the interaction is perceived to be parallel... the more positive its k , the more likely firm i will be to depress its output... to take advantage of the implicit cooperation expected from other firms in elevating the industry price.

As described below, the communications firms are non-price-taking firms with multiple market interactions and have exhibited a wide range of parallel and even coordinated behaviors.

CONCEPTUAL CLARITY, EMPIRICAL COMPLEXITY

The conceptual clarity of the Lerner Index encounters many complexities because “it is almost impossible to gather the necessary information on prices and particularly costs” (Wikipedia). The Lerner Index can be estimated indirectly by dividing the HHI by the elasticity of demand for the firm’s product. However, the latter is difficult to measure and changes over time.

Analysts turn to accounting costs that are frequently used in financial evaluation of communications firms. The most frequently used accounting concept is earnings before interest, taxes, depreciation and amortization (**EBITDA**). When expressed as a percentage of total revenue, this is the **EBITDA margin**.

⁷¹ Four Responses, 1982. Schmalensee, Kaplow, Brennan, and Ordover, Sykes and Willig.

⁷² Viscusi, Vernon and Harrington, 2000, p. 147.

⁷³ Id., p. 149.

⁷⁴ Ordover and Willig, “Herfindahl Concentration, Rivalry, and Mergers,” *Harvard Law Review*, 95: 1982.

However, because the firm must be able to invest in capital equipment, variable or operating costs (even including a normal rate of return on capital) may not resolve the estimation problem in industries that are capital intensive. This can be funded out of what is left over after costs are subtracted from revenues. Analysts frequently calculate **EBITDA minus capital expenditures** to take capital expenditures into account (as the FCC did in recent wireless competition reports).

Another simple accounting measure that is used to some extent is the **return on equity or return on invested capital**. These measures are uncertain because the firm's cost of capital is not known and comparison firms of similar risk are difficult to identify.

Another complexity arises because of the dynamic technological revolution occurring within the communications sector. Dramatic cost reductions are taking place in virtually every aspect of the delivery of digital communications services. In a competitive market, we would expect prices to be declining, but the abuse of market power precludes or diminishes this process. Thus, even flat prices do not prove that consumers are not being overcharged. **Analysis of broad cost and price trends can shed light on this issue**

These complexities are compounded in industries that have been monopolies, or where the existence of market power has persisted for a long period of time. Because they have not been subject to competitive pressures, **significant inefficiencies** may be embedded in their cost structure. While these inefficiencies do not appear as excess profits, they do result in unnecessary costs imposed on consumers that can be considered overcharges. Some light can be shed on inefficiencies by comparisons with different regulatory or business models.

Yet another complexity occurs when firms sell multiple products, some of which are regulated or face very different levels of competitive pressures. In this case, there is an incentive to allocate costs to the regulated or less competitive services where the market may bear higher costs. The pattern of margins reflects these **strategic choices** about cost allocation, not underlying costs.

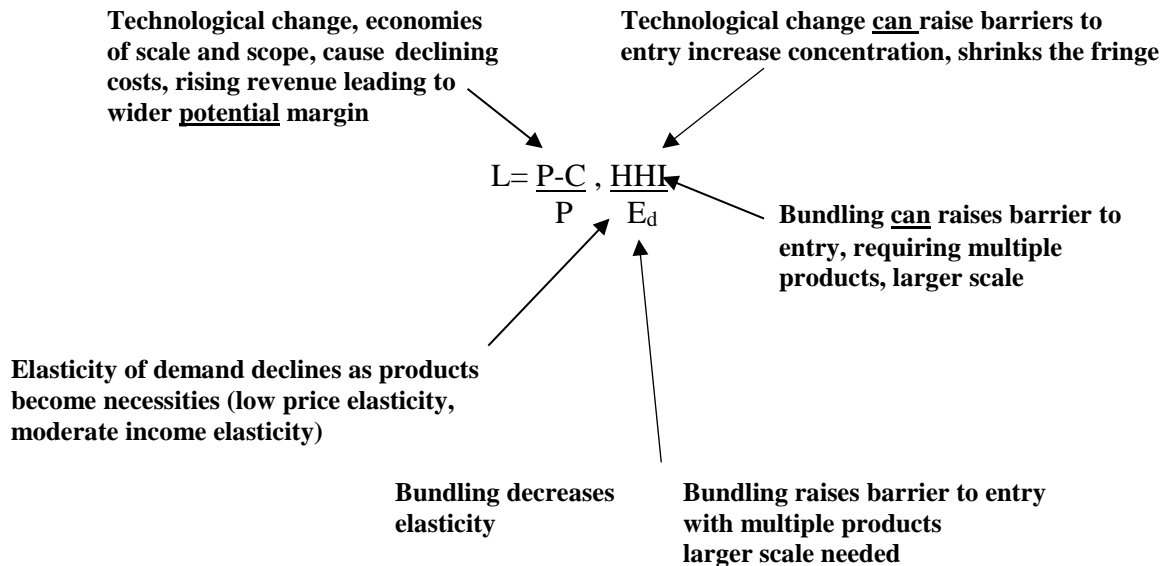
TYING THE EMPIRICAL AND CONCEPTUAL ANALYSIS TOGETHER

The importance of this framework as background becomes readily apparent when the full scope of merger review laid out in the *Merger Guidelines* is considered. Although the analysis is merger and fact specific, the *Guidelines* include extensive discussion of the type of factors the antitrust analysis will consider in making a final determination on the likely competitive effect of a proposed merger. The conditions identified as increasing the vulnerability of markets to the abuse of horizontal market power in the *Guidelines* can be related to the earlier discussion of the abuse of market power and the Lerner index, but noting that each of the factors tends to increase the Lerner Index, as in Figure IV-2.

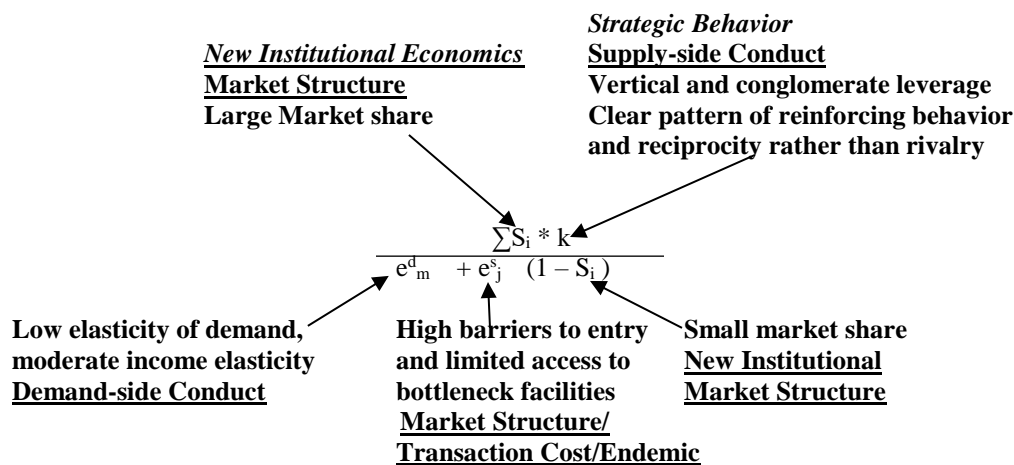
Some factors increase the numerator of the Index, others reduce the denominator. The market structural condition in place in 1996 were very challenging for competition to grow as hoped for in the 1996 Act and the threat of the abuse of market power was very great. Antitrust and regulatory authorities underestimated the challenge and plowed ahead with deregulatory policies and lax oversight on the mistaken belief that competition was just around the corner.

FIGURE IV-1: LINKING THE STRUCTURE CONDUCT PERFORMANCE PARADIGM TO ABUSE OF MARKET POWER

Practical Contemporary Empirical View



Broader Analytic Framework



MULTIPLE MEASURES, MULTIPLE DATA SOURCES

Measures

Thus, the estimation of overcharges must reflect a complex pattern of price/cost/profit relationships. Given the complexity, in the analysis below we examine multiple indicators to arrive at a cautious estimate of overcharges.

The analysis in each section begins with concentration to demonstrate that the potential for the abuse of market power exists. As shown in Table 1, we find that all the product markets examined in this paper are highly concentrated tight oligopolies.

Next, we look at price and cost trends. Because many of these product markets have not experienced vigorous competition, we make a number of comparisons.

With respect to prices and cost, we examine:

- comparisons to broad cost in the economy and the communications sector,
- periods in which competition for a specific product was more effective,
- periods in which cost-based regulation for a specific product was in place,
- similar U.S. products or markets that are subject to greater competition, and
- similar international products.

With respect to financial performance, we examine:

- EBITDA,
- EBITDA minus CapEx, and

three broader indicators of the existence of overcharges at the firm level.

- Return on Investment
- Total Yield
- The throw-off of cash

EBITDA minus CapEx is the primary basis for our estimate of overcharges, located within this broad analysis of prices, costs, and profits. The specific estimate of current overcharges focuses on the past five years. However, we use the period since the passage of the Telecommunications Act of 1996 to provide context for the estimate of overcharges, particularly the past fifteen years; the period in which the digital revolution penetrated deeply into the sectors that provide the primary consumer communications.

Data

In this paper, we strive to introduce rigor into the analysis not only by grounding the empirical measures on strong theoretical constructs, but also by looking at multiple sources of data for each construct.

Table IV-2 summarizes the framework for the analysis of market structure, identifying the key factors that determine market performance used in this paper. The left side of Table II-5 identifies the key factors that affect market structure and performance. The right side of the table presents the data and assumptions used to arrive at the estimation of abuse. Some of the data is widely available from multiple sources; some is more difficult to find. By and large, we try to rely on official government sources. The bottom line measures we use to describe the harm are the result of this intensive data-gathering undertaking. We believe these estimates are quite cautious.

Official documents are of three primary types. First, we have official annual reports. The FCC has long-standing reports on these industry characteristics. The coverage of these reports has shrunk because the FCC cancelled several of them. However, because of the recent changes in policy and the extreme importance of communications, we have a series of annual reports on the state of the industry. Reports on the state of competition were mandated in the 1990s as deregulation policies were instituted.

Second, regulatory proceedings exist in which specific policies that affect the market are considered. Here the agency will seek information, form an opinion, and seek comment. The official proceedings elicit extensive comments from the affected parties and the public.

TABLE IV-2: OVERVIEW OF DATA SOURCES

Element	Source U.S. Gov't	Intl Gov't	Financial Analysts	Public Interest	Company Reports
Market Structure					
HHI, CR4	FCC, DOJ	OECD	Moffet, Others	Numerous Regulatory	Annual
Market Size					
Subscribers	FCC, Census DOJ	OECD	Leitchman	Pew	Annual Regulatory
Revenue	FCC		Moffett, Others		Annual
	BLS-CPI	OECD CRTC	Moffett Others	New Am. CFA	Regulatory
Cost/Earnings EBIDTA	FCC		Moffett, Others		Annual

The third type of official document is produced when potential mergers are analyzed. Mergers are extremely important events in determining market structure and performance, so they call forth very intensive efforts to evaluate their impact. The FCC has a formal process in which the merging parties must explain the basis for the merger, and other parties can petition to deny the merger. The DOJ investigates and generally only makes detailed findings public when it opposes a merger (makes a complaint) or, in some cases, agrees to the merger with conditions (settlement). Because two major mergers have recently been rejected (Comcast/Time Warner and ATT/T-Mobile) and two approved with extensive conditions (Comcast/NBC and Charter/Time Warner), we have a great deal of detailed data on current market structure and performance in the communications sector.

We also have financial analysts who spend a great deal of time providing information, primarily for investors. Many of these are ongoing analyses of the sector, frequently tied to financial performance, which is a key element of the harm analysis. These analysts also tend to handicap the outcome of mergers with more detailed analysis of the individual firms involved in the merger transaction. Companies' Annual Reports are our primary source of financial data.

The level of concentration, estimated based on number of subscribers and/or total revenues, is the central characteristic, since it tells us whether there may be a problem of market power. Government documents address this issue, as do analysts' reports. Industry comments in merger proceedings do, as well.

PART II:
**THE ORIGIN AND STRUCTURE OF THE TIGHT OLIGOPOLY ON STERIODS
ACROSS DIGITAL COMMUNICAITONS MARKETS**

V. UNIQUE AND PERSISTENT PROBLEM OF MARKET POWER IN COMMUNICATIONS NETWORK INDUSTRIES

Throughout the discussion of the analytic framework we have noted that the communications sector exhibits characteristics that make their markets vulnerable to the abused of market power. In this section, we present an overview of the conditions in the market from two perspectives. We begin with a discussion of the fundamental conditions in the market. In keeping with our general approach, we ground that discussion is a “traditional” approach. We then review the manifestations of the conditions of market power in the post-Telecommunications Act context.

REASONS TO REGULATE

In the second edition of his classic work, *Economics of Regulation*,⁷⁵ published less than a decade before the enactment of the Telecommunications Act of 1996, Alfred Kahn identified a series of characteristics that could justify regulation. While he was generally critical of the way regulatory oversight had been practiced, the conditions he identified compel careful consideration of regulation of communications networks.

Infrastructure and Externalities

Making the case for economic regulation, Kahn pointed to the fact that because communications networks exhibit economies of scale, the market will support only a small number of large firms compared to other sectors of the economy.⁷⁶ In addition, because of the essential inputs they provide, they influence the growth of other sectors and the economy.⁷⁷ They are infrastructure.

Kahn’s description of the rationale for regulating infrastructure encompasses three major economic principles. He starts with what is essentially a positive externality – a public goods argument. The broad economic impact means that private individuals might not see the benefits or might be unable to appropriate (capture) that value in the form of profits, so they will invest less in the provision of service than is socially justified. In addition to this macroeconomic impact, those who are unserved or priced out of the market are disadvantaged at the individual level.

An extension of this argument for the communications network involves achieving ubiquitous, seamless interconnection and interoperability, which is not a likely outcome of market forces alone.⁷⁸ Ubiquitous, seamless interconnection and interoperability are a highly desirable characteristic of infrastructure networks that achieve important network effects, another positive externality.⁷⁹ We have argued that competitive communications and transportation networks do

⁷⁵ Kahn, 1988.

⁷⁶ Kahn, 1988, p. 11.

⁷⁷ Id.

⁷⁸ Cooper, 2014.

⁷⁹ This remains true, even in the case of a recent example in the digital age – peering between interconnected networks. For a significant period, the national transmission networks engaged in unbilled interconnection and carriage. That approach worked well, only as long as it did not matter. As soon as the networks became differentiated by size or market, voluntary unbilled peering broke down. Big charged little and transmission dominant networks (those who simply transported the bits) charged eyeball heavy networks (those who were

not inherently produce this outcome because of the perverse incentives of dominant providers of bottleneck facilities and because the high cost of negotiating interconnection, create obstacles to seamless interconnection. Government policy has repeatedly been forced to step in to achieve the desired outcome.

Market Structure

Kahn added two other characteristics as potential justifications for regulation: “natural monopoly” and “for one or another of many possible reasons, competition does not work well.”⁸⁰ Although Kahn was skeptical of the monopoly rationale for regulation, he later argued that the nature and extent of competition is an empirical question:

The question is not simply one of *how much* competition to allow—how much freedom of entry or independence of decision making with respect to price, investment, output, service, promotional effort, financial, and the like. It is a question also of what, in the circumstances of each regulated industry, is the proper *definition*, what are the *prerequisites*, of effective competition.⁸¹

Two decades after the passage of the Telecommunication Act of 1996, which aspired to supplant regulation with competition, the critical question is not “Is there more competition?” The question is, “Is there enough competition to prevent abuse?” This report shows that the answer must be a resounding “no”!

The second rationale offered by Kahn is a market structure problem. Very large economies of scale mean that building multiple networks raises costs. The market will not support competition. In the extreme, we run into the problem of a natural monopoly. Firms that become too large behind high barriers to entry, transaction costs on the supply-side or high switching costs or other behavioral flaws on the demand side, obtain market power. Monopolists (natural or otherwise) have market power and there is a strong incentive to abuse it. With the incentive and ability to exercise it, they engage in behaviors that harm competition (by creating additional obstacles to entry or extending their market power to complementary markets) and consumers (raising prices and restricting choices). Regulation controls market power. However, monopoly is not the only reason to implement public policy – e.g. it has never been a necessary condition to impose common carriage in the communications and transportation sectors.

Infrastructure industries exhibit several market structural problems. They deliver service with relatively low elasticities. In fact, they can be considered “necessities” since they have a combination of low price elasticity and moderate income elasticity.⁸² The low-price elasticity

selling the content to their customers). Commercial negotiations became contentious and disputes and disruptions occurred.

⁸⁰ Id.

⁸¹ Id. at 114.

⁸² Taylor, 1994, p. 262, “Taylor identifies three characteristics of necessities – inability to replace the good, large relative size of the expenditure, and importance of the good in a broad sense. ‘The point of departure will be to remind ourselves of a point this is probably too often forgotten: that price elasticity consists of two components, an income effect and a substitution effect. The substitution effect is a measure of the extent to which goods and services can substitute for one another when there is a price change without making the consumer any worse off in terms of consumer welfare. The income effect, on the other hand is a measure of the extent to which the

means it is difficult to go without communications or find good substitutes. The moderate-income elasticity means the good commands a significant part of the household budget all the way up and down the income distribution, but the percentage declines as income rises. The important role of communications in the broader economy and for households magnifies the ability to exercise and the impact of the abuse of market power.⁸³

Deployment of facilities to compete with an incumbent communications network is costly and difficult. Network effects, the ability to reach large numbers of customers to make the network more valuable to each individual customer, are important. Therefore, the communications sector provides a fertile ground for the abuse of market power. Its size, great importance to the functioning of the economy and underlying economic characteristics suggest that the existence and persistence of market power is a problem. It has made this sector the target of a great deal of public policy.⁸⁴ Elasticities of demand and supply are low compared to other sectors.

Social Values

We turn next to Kahn's third reason for regulation – "other." Although it is less specific, it can be given several referents in the communications space. Competitive markets do not deliver universal service because there are significant parts of society where the rate of profit does not support extending the infrastructure or making it affordable. Rural/high cost areas and low income populations may not be very attractive from an investment point of view, but they are important from a public policy/social values point of view.

Freedom and diversity of opinion and voices are extremely important socio-political values that may not be accomplished by a competitive market. They may, or may not, be profitable, but society simply cannot leave them to the vagaries of the market. Speech is perhaps the most important example of these values,⁸⁵ diversity is too. Communications is well-recognized as a key to democracy and many consider it a human right.⁸⁶ The challenge is not simply to ensure that all have the opportunity to speak, but also to address gross imbalances in those opportunities.

consumer's real income is changed when there is a change in price. Ordinarily, the importance of the income effect is represented by the importance of the good whose prices has changed in the consumer's budget. Goods whose expenditure account for a small proportion of the consumer's total expenditures will have a small (or even tiny) income effect, while a good whose expenditures account for a large portion of total expenditure will have a possibly large income effect. Goods that in ordinary discourse are seen as necessities (such as heating fuels and telephone service) will also have relatively larger income effects the lower the level of income."

⁸³Id., p. 262, "In assessing income effects, however, a point that is usually overlooked is the effect on the consumer's welfare of not consuming a good because of a price increase. In the case of making or not making a phone call because it has become more expensive, the question that needs to be asked is what are the consequences (not necessarily in monetary terms) of not making the call. For residential consumers, this cost is usually cast in term of the utility (or satisfaction) that is given up by the call not being made. For many calls, however, this is not the correct measure of cost, for the call may be important to the *earning* of income. In this case, the actual income effect of not making a telephone call may be large, although the decrease in real income, (as customarily measured), occasioned by the price increase may be extremely small.

⁸⁴ Kahn, 1998, p. 11.

⁸⁵ Associated Press, 1945.

⁸⁶ Cooper, 2013, 2014.

These very fundamental economic and non-economic justification for public policy to promote ubiquitous, affordable communications service are frequently reinforced (and preceded) by the rationale that much infrastructure relies on some form of public license – use of rights of way, control of airwaves, grants of authority, exclusive franchises and eminent domain. Those rationales are important and they tend to be stated first because they are easy and obvious. However, the broader factors are at least as important.

THE DOMINANCE OF VERTICALLY INTEGRATED CONGLOMERATES

Because the analysis in this paper covers many products over a long period of time and the communications policy issues have been hotly debated, it presents a great deal of detailed market structure, price, financial and policy data. This Section offers an overview that pulls the various analyses together. It combines many of the discrete elements in the individual sections into summary Figures and Tables.

The Nature of Communications Markets

Layer upon layer of characteristics render communications markets vulnerable to the abuse of market power. The fundamental economies of scale, scope and network effects exhibited by the communications sector would have been an obstacle to competition under any circumstances. But the 1996 Telecommunications Act's competition policy was launched from a condition in which monopoly power existed, having been built behind decades of franchise monopoly that shielded the incumbents from competition and endowed them with a vast communications network whose sunk costs had been paid by captive consumers. They had not won their dominant position, they were gifted it by public policy. The economic fundamentals of the sector combined with a ubiquitous inherited network to give the incumbent local telephone and cable companies an insurmountable advantage. The difficulty of overcoming the advantage that had been bestowed on the incumbents was vastly and repeatedly underestimated. Lax antitrust enforcement and premature deregulation of markets with substantial market power made matters worse.

The key structural characteristics can be captured in a string of adjectives use to described these markets and the firms that make them up. They are highly concentrated, with high barriers to entry, behind which vertically integrated and conglomerated giants sell low elasticity of demand services that embody huge potential surplus. The economic framework usually starts with and assumption of workable competition, then explores deviation from it. Given the underlying structure and history, in the communications sector the discussion needs to reverse direction. The starting point is market power and the question is can competition grow sufficiently and quickly enough to constrain the abuse of the endemic market power. There were and are good reasons to believe the answer is negative.

First, the dominant firms in the current communications industry structure were all born as monopoly franchise holders. They had exclusive rights to offer services or use important essential assets. While there have been efforts to introduce competition, the current market structure still very much reflects that original DNA.

Second, the traditional analytic framework used to examine market structure and performance is referred to as “The possession of Monopoly Power”⁸⁷ or “Alternative Monopoly Measures.”⁸⁸ In fact, the “lesson... of the economic definition of monopoly power is that it is not an ‘either-or’ concept. It is a matter of degree.”⁸⁹

Third, although it is true that many of the markets are oligopolies today, they are tight oligopolies, with levels of concentration in important, especially local, product and geographic markets that approach or exceed the level of a duopoly. They operate under conditions that are conducive to the abuse of market power. That is, there are a small number of firms who have a history of anticompetitive behavior in circumstances with high barriers to entry, where they meet each other on a continuous basis across many markets. This provides the opportunity for learning and strategic behavior in the sale of products that have relatively low elasticities of demand and few if any good substitutes.⁹⁰ The outcome is closer to the monopoly outcome than the competitive outcome. In these circumstances, the concerns raised by the *Merger Guidelines* of the Department of Justice and the Federal Trade Commission are very real.⁹¹

Concentration

Since the services provided by communications networks are about connecting the user to the network, they are, first and foremost, local services. Measured by the guidelines used by the Department of Justice and the Federal Trade Commission, shown in Figure I-1 and Table IV-2, above, each of the markets is highly concentrated and the leading firms constitute a tight oligopoly.

The high level of local concentration reflects one of the great disappointments of Telecommunications Act of 1996. The 1996 Act envisioned vigorous competition in all markets, but the stronger form of competition never developed. Telephone companies chose not to compete against other telephone companies. Cable companies chose not to compete against other cable companies. Head-to-head, intramodal competition did not develop because the companies chose to buy one another out. Thus, the geographic separation, technological specialization and service segmentation between sectors dating back to the monopoly history of the industry was brought forward into what was supposed to be the competitive era.

This conclusion is reinforced by the fact that each of these markets is also above the level that is typically used to determine whether a market is a “tight oligopoly,” not only at the local level, but also at the national level, as shown in Figure I-2 and Table IV-.1 above.

Figure I-1, above, listed the mergers that underlie the increase in concentration. It shows both the mergers between dominant Regional Bell Operating Companies (RBOCs) and the acquisition of independent mobile providers. Here the national view is useful in the sense that it shows how the best actual and potential competitors were eliminated through merger. Twenty years after the

⁸⁷ Viscusi, Smith and Harrington, 2000, p. 258

⁸⁸ Scherer and Ross, 1990, p. 70.

⁸⁹ Viscusi, Smith and Harrington, 2000, p. 200.

⁹⁰ Viscusi, Smith and Vernon, p. 112, “When firms’ products are so differentiated that consumers do not even perceive them as being substitutes, each firm is effectively a “local” monopolist and charges the monopoly price for its market.

⁹¹ DOJ/FTC, 2010, p. xx

passage of the 1996 Act, much of the old Bell system had been put back together (in three pieces) and that structure has been extended to mobile through the merger waves that affected both landline and wireless.

A TIGHT OLIGOPOLY ON STEROIDS (VIRTUAL CARTEL)

The conditions for the exercise of market power do not stop with highly concentrated markets. The market division strategies that the dominant firms chose to pursue have resulted in a tight oligopoly for each of the services at the local level. A dominant local firm that does not face head-to-head, intramodal competition takes a high market share in its home territory for its franchise service, on the order of half the market. Where the service territories of the different media overlap, a second, intermodal competitor, takes a small market share – one-fifth to one-sixth – as the “entrant” into a new service, but within its old service territory.

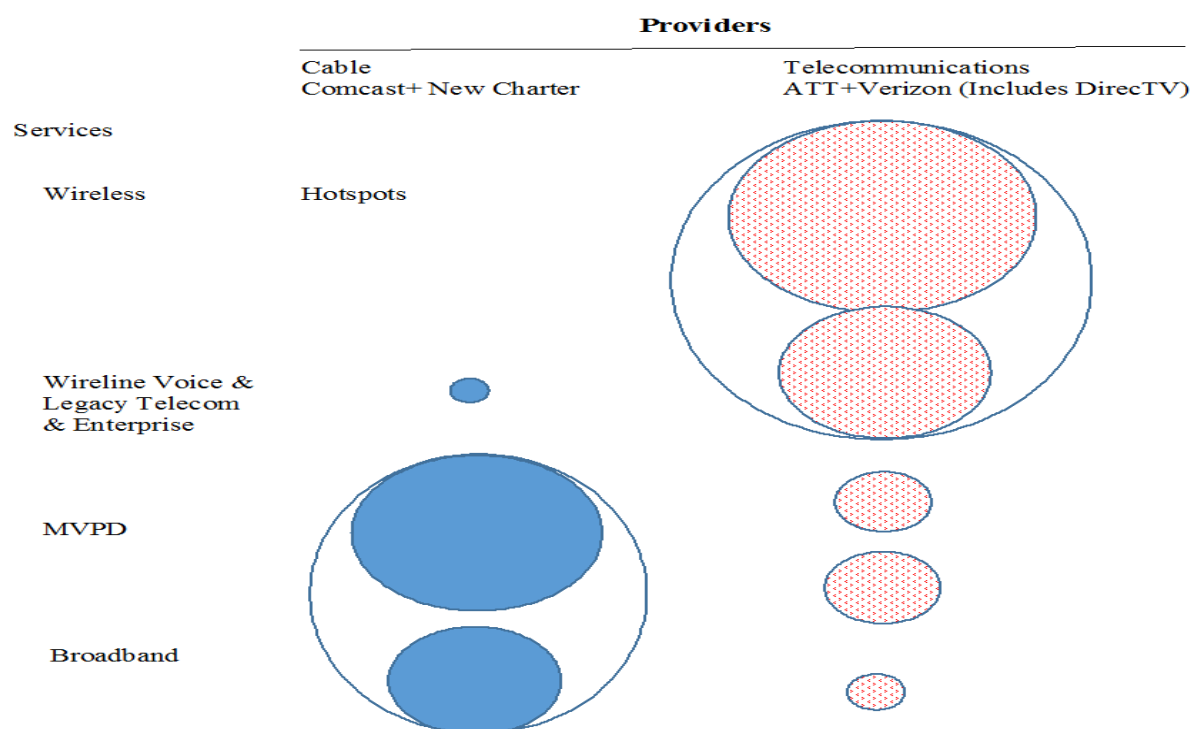
In every case, by a wide margin, the four dominant firms exceed the level that is characterized as a tight oligopoly. This means that the potentially strongest competitors (those with expertise and assets that might be used to enter new markets) are few. This reinforces the geographic segregation between services from the monopoly period, since the best competitors have followed a non-compete strategy. In fact, the actual situation is worse than the traditional concentration analysis suggests. It is the same four consolidated, vertically integrated firms that dominate all the main product markets. These four firms alone constitute a tight oligopoly across all three markets.

Moreover, as shown in Figure V-1, each of the firms has preserved its dominance of its “franchise” services. They also exhibit technological specialization. Given the small number of firms, their geographic segmentation, technological specialization and repeated contact in multiple markets, it is easy to engage in parallel and reciprocal actions that dampen competition.

Duopoly and tight oligopoly would both be properly descriptive of some aspects of digital communications markets. Reinforced with geographic separation, technological specialization and product segmentation, the market power these firms enjoy goes beyond the simple oligopoly concept we find in the analytical frameworks. Given the significant and repeated examples of coordination – sometime explicit, frequently parallel, and the reinforcing behaviors in multiple market, it is proper to call the current situation a “virtual cartel” or a “tight oligopoly on steroids.” Moreover, given the economic forces in the communications sector, it may well be that small numbers of suppliers will be typical. Therefore, the public policy problem is that we have dominant conglomerates in inadequately regulated, highly concentrated markets.

The failure to keep the faith expressed in competition in the 1996 Act is most readily seen in merger policy. In each of the communications services, we have arrived at a tight oligopoly through merger, even at the national level. One can argue that while these transmission networks are no longer “natural monopolies,” they are a far cry from saying that they are workably competitive. They are at best, tight oligopolies. And the problem at the local level is even worse because the market opening policies either could not work due to the underlying economics, or did not work because incumbents were able to frustrate the efforts to introduce competition. At the local level, they are barely duopolies.

FIGURE V-1: GEOGRAPHIC SEPARATION, TECHNOLOGICAL SPECIALIZATION AND PRODUCT SEGMENTATION MAGNIFY THE MARKET POWER OF THE OLIGOPOLY



Sources: Thresholds, U.S. Department of Justice and the Federal Trade Commission, 2010, *Horizontal Merger Guidelines*, Wireless: Federal Communications Commission, 19th Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, for national market shares. Local market shares adjusted based on Complaint, Competitive Impact Statement, *United States v. AT&T Inc. and Deutsche Telecom, AG*, (No. 1:11-cv-01560), August 31. Cable/Broadband: Paul e Sa, Paul, Ian Chun, and Julia Zheng, 2015, “U.S. Telecom: Pay TV—A New Way to Look at Cable/Telco Competition and Market Shares,” AB Bernstein Analysis, December 9. Craig Moffett, *U.S. Cable & Satellite: A Funny Thing Happened on the Way to the Graveyard*, MoffettNathanson, January 13, 2016, for cable and telephone company broadband subscribers Business Data Services, *In the Matter of Special Access Rates for Price Cap Local Exchange Carriers, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, WC Docket No. 05-25, RM-10593.

That being the case, there should be no pretense that competition is sufficient to protect consumers. The amount of scrutiny they require is magnified by the important role they play and their central location as chokepoints and bottlenecks in the digital communications sector and the digital economy. Thus, it is important to recognize the problem at the national level for several reasons.

- Some markets, like the one for video programming, are national and the problem of monopsony power is important.
- Given their central location, they possess unique forms of vertical market power that pose a broad threat to competition and consumer.

- Given the specialized nature of network industries, it was reasonable to expect that these firms would be the “ideal” candidates to engage in head-to-head competition by geographic extension (overbuilding their neighbors) or product extension (adding a new product to an existing line), but they merged instead, removing the best candidates to promote competition.

While increasing profits are the primary motive behind the abuse of market power, dominant incumbents have a strong interest in using their market power to control and direct the process of innovation where it poses a threat to their dominance. Traditional concerns about large incumbents raising prices have received a great deal of attention, too much in the sense that other sources of market failure which undermine or weaken competition and innovation deserve equal attention. Indeed, in a dynamic sector with dominant incumbents controlling key choke points, their incentive and ability to weaken competition and control or diminish long term change may be even more important. They are the weakest link in the chain of competition.

The incentive and ability to implement these strategies will vary from market-to-market and product-to-product). Incumbents have been willing to push their market power and to litigate even modest constraints on their behavior despite the issue being under close public scrutiny. Their steadfast opposition to unbundled network elements, which was the cornerstone of the 1996 Act’s to promote competition by opening the most critical choke point, was an early and striking example, with direct implications for the special access market. The almost two-decade-long battle over network neutrality (nee open access) present another clear example of the vigorous defense of market power that the dominant incumbents have mounted.⁹²

REINVIGORATING MARKET STRUCTURE AND ANTITRUST ANALYSIS

This description of the forces in the communications market that drive toward concentration and the abuse of market power are not only theoretically and historically grounded, they are reflected in the antitrust and regulatory analysis reviewed in the remainder of this report.

Table V-1 ties the analysis back to the structure conduct performance framework by identifying the market imperfections/failures that are cited in the evidence provided to support the opposition to a merger or need for a rule. Table V-2 ties the antitrust approach and the structure conduct performance paradigm together. It identifies three major types of factors considered—competitive effects, market structure, and participant characteristics that determine whether a merger will harm competition and consumers. These reflect the broader framework of the Structure-Conduct-Performance paradigm as expanded by contemporary economic theory. There are more than four dozen factors, although several are repeated in each of the categories. We include our assessment of how these factors play out in the communications market, which is detailed below.

⁹² The first decade is recounted in Cooper, 2006, the second in Cooper 2014.

TABLE V-1: SPECIFIC MARKET IMPERFECTIONS AFFECTING THE COMMUNICATIONS SECTOR

	SECTOR				POLICY			
	Cable	Wireless	Wireline	BDS	Universal	Privacy	FinSyn	Network
					Service			Neutrality
SOCIETAL FLAWS								
Externalities	x	x	x	x	x	x	x	x
Network Effects	x	x	x	x	x		x	x
Innovation Economics		x						x
MARKET STRUCT.								
Imperfect Competition	x	x	x	x		x	x	x
Entry Barriers	x	x	x	x			x	x
ICE problems	x	x	x	x		x		x
Marketing	x					x		
Cost-Price	x	x	x	x		x		
Vertical Ownership	x	x	x	x		x	x	x
Elasticity	x	x	x	x		x		
Availability	x	x		x			x	x
TRANSACTION COST						x		
Imperfect Information						x		
Bargaining		x		x			x	
Enforcement				x				
Switching costs	x	x	x	x		x		x
Sunk costs	x			x		x		
ENDEMIC FLAWS								
Asymmetric Info.		x				x		
Perverse Incentives	x	x	x	x		x	x	x
Moral Hazard								
Adverse Selection								
Conflict of Interest		x	x	x		x		x
Inequality						x		
Macroeconomic	x	x		x	x			x
BEHAVIORAL ECON.								
Motivation Values						x		
Perception						x		
Calculation		x	x			x		
Execution		x	x			x		
VALUES								
Wellbeing					x			
Value of wealth								
Distribution of surplus	x	x	x	x				
Excessive inequality					x			
POWER								
Legal Framework	x	x	x			x		x
Policy								x
Subsidies		x	x					
Antitrust	x	x	x	x				x
Regulation	x	x		x				x
Price Squeeze				x			x	x
Cross Subsidy	x	x	x	x				x
Access	x	x	x					
Permitting	x	x	x	x				
Capture	x	x	x					

TABLE V-2: COMPETITIVE EFFECTS, MARKET CONDITIONS, AND PARTICIPANTS IN COMPREHENSIVE MERGER REVIEW ANALYSIS

Anti-competitive Effects		Market Conditions to Abuse of Market Power		Firm Incentives/Ability to Abuse Market Power	
General	Communications Sector	General	Communications Sector	General	Communications Sector
Price (SSNIP $\geq 5\%$)	Yes ($\geq 25\%$)	Seller #	Few	Dominant Firm	
Profit	High (EBITDA)	Seller size	Large	Price	High
Quality		Product	Segmented	Profit	High
Variety		Geography	Separated	Margins	High
Service	Poor (Satisfaction)	Technology	Specialized	Market share	High
Innovation		Concentration	High	Incremental cost	Low
Exclusion	Pervasive	over time	Persistent	Sales analysis	Limited Loss
		Demand elasticity	Low	Customer location	Crucial
Coordination		Entry & Exit		Information about buyers	Extensive
Negotiated	Occasional	Challenges	Severe	Capacity Management	Yes
Accommodating	Frequent	Barriers	High	Competitors	
Parallel behavior	Reciprocity	Sunk costs	Large	Response	Weak
Conditions facilitating		History	Limited	Speed	Slow
Predictability		Intramodal Competition	Limited	Capacity	Limited
Past practices	Yes	Vertical integration	Extensive	Similarity	Yes
Monitoring		Conglomeration	Yes	Nearness	Yes
Other markets	Multiple contact	Mavericks	Few	Complements	Yes
Collective market power	High	Price		Entry	
		Products		Timeliness	Late
		Innovation		Likelihood	Low
		Efficiencies	Not unique	Sufficiency	Low
		Pass-through	Limited	Consumers	
		Other Practices		Switching	
		Monopolization	Yes	Cost	High
		Facilitating practices	Yes	Availability	Limited
		Monopsony mergers	Yes	Speed	Slow
				Output competition	
				Direct/Indirect	Both
				Price discrimination	
				Targeting	Yes
				Arbitrage	No
				Overcharging	
				End-use Products	Consumer
				Intermediate goods	BDS

The performance of the market is listed in the left column, since this is the bottom line for the antitrust analysis. Market conditions and structure are in the center column; conduct is in the third column. There is clearly a pervasive and powerful set of conditions that make these markets vulnerable to the abuse of market power.

The detailed analysis of market structure as the basis for antitrust and regulatory policy revives the practice of both that had gone dormant over the previous decade as the tight oligopoly came into existence. We can see this in two ways.

A book entitled *How the Chicago School Overshot the Mark* argued that the market fundamentalist interpretation of antitrust theory was based on a series of assumptions and arguments that resulted in the extremely lax enforcement antitrust, as shown in Table V-3. The result was to allow excessive concentration to create market power followed by lax enforcement that tolerated its the abuse. The shift in approach documented in the next three Sections constitute corrections of each of these flaws, in different degrees.

TABLE V-3: LAX ANTITRUST ENFORCEMENT ALLOWS THE ABUSE OF MARKET POWER

Over-reliance on the efficient market hypothesis

- Over-reliance on economic models, that privilege theory over fact
- Over-estimation of ease of entry and expansion of output
- Defines markets too broadly, resulting in underestimation of market power
- Over-protection of autonomy of leading or dominant firms
- Under-emphasis on dynamic efficiency and competitive rivalry
- Lack of appreciation for the role of mavericks
- Failure to recognize non-economic impacts and causes

Over-emphasis on efficiency

- Failure to require empirical evidence leads to over-estimation of efficiency gains
- Failure to require demonstration of mechanism for pass through of efficiency
- Failure to recognize wealth transfers as a cause of consumer harm

Failure to Recognize the anticompetitive potential of vertical leverage

- Over-reliance on single monopoly profit to absolve harm of maker power
- Overstated defense and incomplete analysis of vertical restraints
- Potential effects of vertical leverage creating market power in tied product maintaining market power in tying product facilitating collusion and parallelism evading regulation
- Enhanced tools of monopolization raising rivals cost refusal to deal increases barriers to entry

Policy outcomes that harm competition and consumers

- Under appreciation of the importance of concentration allows merger to domination
- Under enforcement and tendency to do nothing
- Over-concern about false positives rather than false negatives
- Places burden on the wrong party and imposes impossibly high standards of proof
- Ignores subjective evidence and customer views
- Failure to use structural solution

Source: Based on Robert Pitofsky (Ed.), *How the Chicago School Overshot the Mark* (Oxford University Press, 2008).

Of particular importance is the recognition of the importance of vertical relationships. Antitrust examination of vertical issues has been “checkered” at best.⁹³ A recent article by Salop and Culley made the case that vertical market power deserves more systematic attention in merger review based on the identification of four dozen potential anticompetitive impacts of vertical mergers. These were discussed in seven categories of impacts: input foreclosure, customer foreclosure, unilateral incentives, coordination effects, information and impact on mavericks, raising prices, evasion of regulation. They note that there is overlap in the specific impacts.

Table V-4 combines the 48 impacts into 25 concerns. The Appendix to this chapter provides the full language from the paper. Table I-1 evaluates the potential for the abuse of vertical leverage in the Business Data Services market, which I show in Section xx, is a centrally located choke point in the digital communications space. It shows that the BDS market exhibits characteristics that would make the abuse of vertical market power a great concern. Market power is great, the incentive to abuse it is strong and the competitive fringe is weak.⁹⁴

⁹³ Salop, Steven, “Economic Analysis of Exclusionary Vertical Conduct: Where Chicago Has Overshot the Mark,” in Robert Pitofsky (Ed.), *How the Chicago School Overshot the Mark* (Oxford University, 2008)

⁹⁴ There is a strong similarity between this list and the EU Guidelines on Non-Horizontal mergers, which were updated much more recently than the U.S. *Guidelines*. It is interesting to note that the EU identified conditions that are red flags for concern, several of which are clearly present in the BDS market, i.e. firm market share of 30% or more; HHI of 2000 or more; and presence of past or ongoing coordinating or facilitating practices.

TABLE V-4: CONCERNS ABOUT VERTICAL LEVERAGE IN HIGHLY CONCENTRATED MARKETS APPLIED TO THE BDS MARKET

Concern	Short Description	Conditions in BDS Market
	<u>Input Foreclosure (IF)</u>	
1	Market Structure	Extremely highly concentrated
2	Ability of fringe to compete	Limited due to high cost, low market share
3	Behavior of integrated firms	Multiple exclusion strategies
4	Impact of contractual terms	Layers of anticompetitive conditions
5	Availability of substitute inputs	Limited
6	Incentives of other firms to parallel	Strong in-region and reciprocity out-of-region
7	Ability to undermine competition -- withholding, quality degradation, or price increase	Demonstrated in input and output markets
8	Competitive fringe ability to constrain	Price competition is weak or non-existent
9	Pass through of variable cost	Yes
10	Ability to capture customers	Incumbents dominate with 80% market share
11	Impact of reciprocity	Extensive
	<u>Customer Foreclosure (CF)</u>	
12	Bargaining leverage	Overwhelming
13	Ability to self-supply	In-region, absolute
	<u>Unilateral Incentives (UI)</u>	
14	Earning on input, compared to retail product	Rapid growth in BDS services
15	Relative margins	High margin on BDS services
16	Barriers to entry	Substantial
17	Vulnerability to coordination	Significant and demonstrated
18	Incentive to deal with independents	Nil in-region, small out-of-region
19	Access to and use of competitively sensitive information	Dominance puts fringe at a severe disadvantage
20	Who are the mavericks and how do firms behave toward them	All non-incumbents behave as mavericks
	<u>Price Increases (\$)</u>	
21	Cost symmetry	Asymmetry between incumbents and competitors
22	Cost and ability to punish market participants	High margins create strategic tool
23	Balance of upward and downward pressure on prices	Persistent rising prices, increasing profits
	<u>Evasion of regulation (ER)</u>	
24	Evasion of regulation: ability, profitability	Clear evidence of cross subsidy
25	Ability of regulators to detect and deter evasion	Nil

VI. THE WIRELESS MARKET

Over the course of the past five years, the Department of Justice and the Federal Communications Commission have dealt with a wide array of proposed mergers, acquisitions and joint ventures that would have taken the concentration and integration of digital communications markets to an unprecedented level. In the wireless space these included, a major horizontal merger (ATT/T-Mobile), acquisition of scarce, essential resources by dominant incumbents and a cross product joint venture (driven by the exchange of spectrum). In the broadband/MVPD space the proposed mergers included unprecedented vertical integration/conglomeration (Comcast-NBC) and geographic extension (Comcast/Time Warner Cable and Charter/Time Warner/Bright House). As noted above, changing direction from past practice, the mergers were either rejected or subject to extensive conditions.

The overriding objective was to prevent harm to actual competition or undermine potential competition. The unique aspect was the increased importance of efforts to prevent the increased incentives and ability to abuse vertical leverage. This focus stems from the general nature of the communications sector, as described above, in which access to the distribution network is a key choke point or bottleneck. The focus was reinforced by the recognition that the number of communications networks capable of delivering the vast amounts of data that are involved in the broadband/video bundle are extremely few.

The only hope for competition is for providers of complementary services that flow on the network to have access to consumers on rates terms and conditions that are fair and reasonable and not discriminatory. Needless to say, this central concern spilled over into the most intense, non-merger related policy debate of the same period – the network neutrality debate.

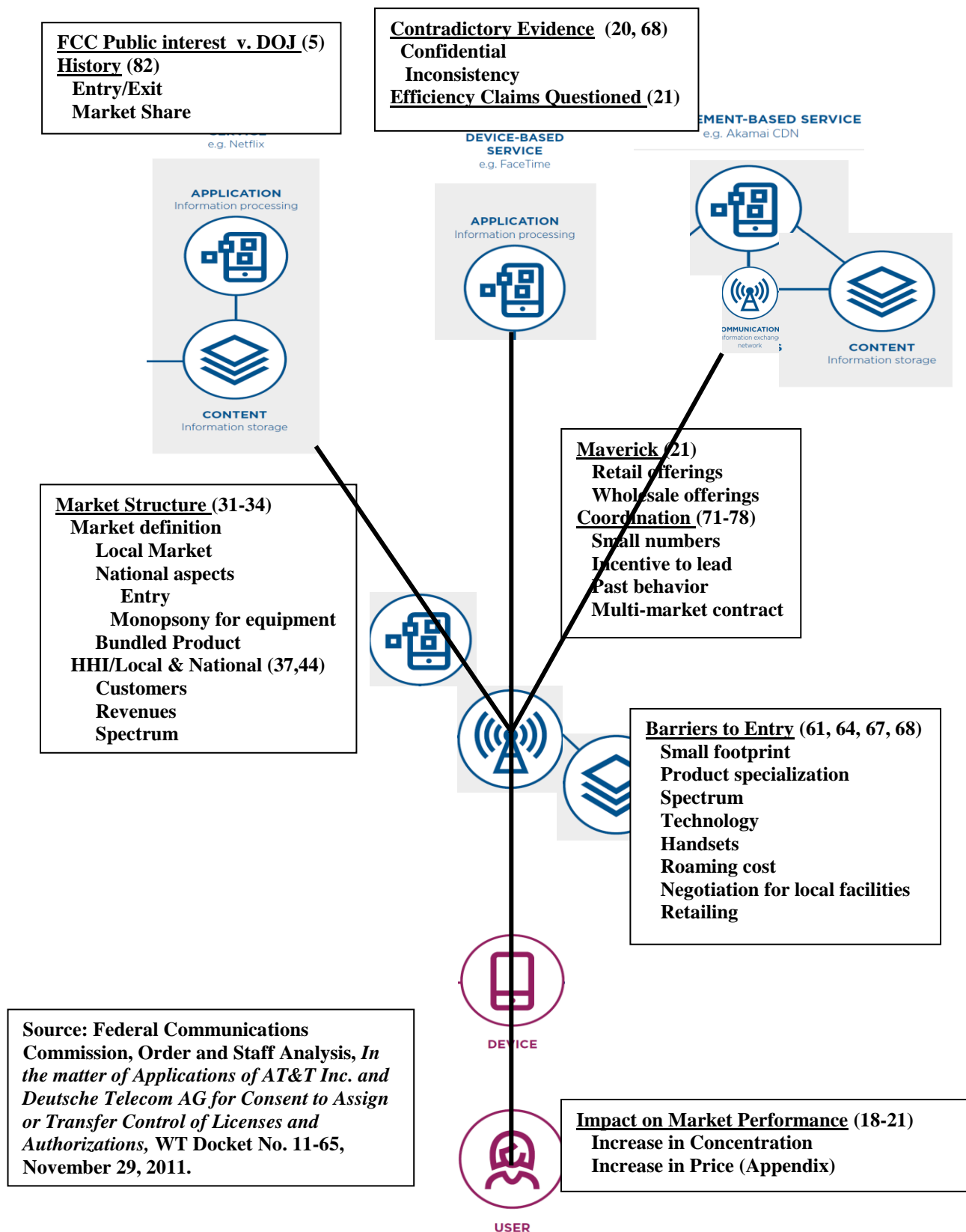
The AT&T/T-MOBILE MERGER

The AT&T/T-Mobile merger represented a simple case of horizontal concentration. It was unique in the sense that the FCC had rarely determined that a merger should go to a formal, legal review within the agency. It was even rarer for the merging parties to declare that, even though they would withdraw the proposed merger in light of that decision, they would consider proposing it in the future. That decision led the FCC to release the order it intended to use to put the merger over to trial, even though the merging parties tried to convince the FCC not to do so. Thus, not only do we have a rare case of a withdrawn merger, but we also have a detailed account of why it raised the concerns of the agency.

This was a proposed merger between two firms that, the record showed, clearly competed against one another head-to-head, with massive implications for market structure and conduct, as shown in Figure VI-1. It involved the number two and the number four firm merging to become the number one firm that violated both the Department of Justice *Guidelines* and the FCC's own thresholds, which were very similar:

the DOJ declared that a merger was presumed to be likely to enhance market power if the post-merger market was highly concentrated ($HHI > 2500$) and the increase in the

FIGURE VI-1: MARKET STRUCTURAL REASONS TO OPPOSE THE ATT/T-MOBILE MERGER



Citations

National/local market definition

Mobile wireless telecommunications services are sold to consumers in local markets that are affected by nationwide competition among the dominant service providers. It is therefore appropriate both to identify local markets in which consumers purchase mobile wireless telecommunications services and to identify the nature of the nationwide competition affecting those markets. AT&T's acquisition of T-Mobile will have nationwide competitive effects across local markets.

Because most customers use mobile wireless telecommunications services at and near their workplaces and homes, they purchase services from providers that offer and market services where they live, work, and travel on a regular basis....

Accordingly, from a consumer's perspective, local areas may be considered relevant geographic markets for mobile wireless telecommunications services. (8)

In competing for customers in the 97 markets identified in Appendix B and other CMAs, AT&T and T-Mobile (as well as Verizon and Sprint) utilize networks that cover the vast majority of the U.S. population, advertise nationally, have nationally recognized brands, and offer pricing, plans, and devices that are available nationwide....

The national decision-making of the Big Four carriers results in nationwide competition across local markets....

Because, as AT&T admits, competition operates at a national level, it is appropriate to consider the competitive effects of the transaction at a national level. There is no doubt that AT&T and T-Mobile compete against each other on a nationwide basis, make many decisions on a nationwide basis, and that this national competition is conducted in local markets that include the vast majority of the U.S. population. (9...10)

Highly concentrated markets increased by more than the HHI threshold.

AT&T and T-Mobile compete against each other in local markets across the United States that collectively encompass a large majority of U.S. mobile wireless telecommunications consumers. Indeed, AT&T and T-Mobile compete head to head in at least 97 of the nation's top 100 CMAs as well as in many other areas. These 97 CMAs alone include over half of the U.S. population. Each of these 97 CMAs, identified in Appendix B, effectively represents an area in which the transaction likely would substantially lessen competition for mobile wireless telecommunications services and each constitutes a relevant geographic market under Section 7 of the Clayton Act, 15 U.S.C. § 18. (9)

Preliminary market share estimates demonstrate that in 96 of the nation's largest 100 CMAs -all identified in Appendix B as representing relevant geographic markets for mobile wireless telecommunications services -the post-merger HHI exceeds 2,500. Such markets are considered to be highly concentrated.

In 91 of the 97 CMAs identified in Appendix B as representing relevant geographic markets for mobile wireless telecommunications services -including all of the 11 nation's 40 largest markets -preliminary market share estimates demonstrate that AT&T's acquisition of T-Mobile would increase the HHI by more than 200 points. Such an increase is presumed to be likely to enhance market power. In an additional 6 CMAs, the increase would be at least 100, an increase that often raises significant competitive concerns. (11-12)

Limited Competition

Generally

AT&T and T-Mobile are two of only four mobile wireless providers with nationwide networks and a variety of competitive attributes associated with that national scale and presence. The other two nationwide networks are operated by Verizon Wireless ("Verizon") and Sprint Nextel Corp. ("Sprint"). Although smaller providers exist, they are significantly different from these four. For instance, none of the smaller carriers' voice networks cover even one-third of the U.S. population, and the largest of these smaller carriers has less than one-third the number of wireless connections as T-Mobile. Similarly, regional competitors often lack a nationwide data network, nationally recognized brands, significant nationwide spectrum holdings, and timely access to the most popular handsets. Collectively, the "Big Four" -AT&T, T-Mobile, Verizon, and Sprint -provide more than 90 percent of service connections to U.S. mobile wireless devices. (2-3)

Among other limitations, the local and regional providers must depend on one of the four nationwide carriers to provide them with wholesale services in the form of "roaming" in order to provide service in the vast majority of the

United States (accounting for most of the U.S. population) that sits outside of their respective service areas. This places them at a significant cost disadvantage, particularly for the growing number of customers who use smartphones and exhibit considerable demand for data services. The local and regional providers also do not have the scale advantages of the four nationwide carriers, resulting in difficulties obtaining the most popular handsets, among other things. (15)

Enterprise market particularly hard hit

Business customers, sometimes known as enterprises, and government customers often select and contract for mobile wireless telecommunications services for use by their employees in their professional and/or personal capacities. These customers constitute a distinct set of customers for mobile wireless telecommunications services, and sales of mobile wireless telecommunications services covered by enterprise or government contracts amounted to more than \$40 billion last year. The selection and service requirements for enterprise and government customers are materially different than those of individual consumers. Enterprise and government customers typically are served by dedicated groups of employees who work for the mobile wireless carriers, and such customers generally select their providers by soliciting bids, sometimes through an "RFP" (request for proposal) process. Enterprise and government customers typically seek a carrier that can provide services to employees, facilities, and devices that are geographically dispersed. Therefore, enterprise and government customers require services that are national in scope. In addition, prices and terms tend to be more attractive for enterprise and government customers than for individuals, and include features such as pooled minutes as well as favorable device upgrade and replacement policies. Enterprise and government service contracts often are individually negotiated, with carriers frequently providing discounts on particular RFPs in response to their competitors' offers. There are no good substitutes for mobile wireless telecommunications services provided to enterprise and government customers, nor would a significant number of such customers switch to purchasing such services through ordinary retail channels in the event of a small but significant price. (7-8)

Loss of a maverick

Due to the advantages arising from their scale and scope of coverage, each of the Big Four nationwide carriers is especially well-positioned to drive competition, at both a national and local level, in this industry. T-Mobile in particular -a company with a self-described "challenger brand," that historically has been a value provider, and that even within the past few months had been developing and deploying "disruptive pricing" plans -places important competitive pressure on its three larger rivals, particularly in terms of pricing, a critically important aspect of competition. AT&T's elimination of T-Mobile as an independent, low priced rival would remove a significant competitive force from the market. (3)

T-Mobile has positioned itself as the value option for wireless services, focusing on aggressive pricing, value leadership, and innovation.... T-Mobile consumers benefit from the lower prices offered by T - Mobile, while subscribers of Verizon, AT&T, and Sprint gain from more attractive offerings that those firms are spurred to provide because of the attractive national value proposition of T-Mobile.

T-Mobile has been responsible for numerous "firsts" in the U.S. mobile wireless industry... first Android handset, Blackberry wireless e-mail, the Sidekick (a consumer "all-in-one" messaging device), national Wi-Fi "hotspot" access, and a variety of unlimited service plans, among other firsts. T-Mobile has also been an innovator in terms of network development and deployment.

Barriers to Entry on supply-side

To provide service, mobile wireless telecommunications carriers typically must acquire FCC licenses to utilize electromagnetic spectrum to transmit signals; deploy extensive networks of radio transmitters and receivers at numerous telecommunications towers and other sites; and obtain "backhaul" -copper, microwave, or fiber connections from those sites to the rest of the network. They must also deploy switches as part of their networks, and interconnect their networks with the networks of wire line carriers and other mobile wireless telecommunications services providers. To be successful, providers also typically must engage in extensive marketing and develop a comprehensive network for retail distribution. (6)

Entry by a new mobile wireless telecommunications services provider in the relevant geographic markets would be difficult, time-consuming, and expensive, requiring spectrum licenses and the construction of a network. To replace the competition that would be lost from AT&T's elimination of T-Mobile as an independent competitor, moreover, a new entrant would need to have nationwide spectrum, a national network, scale economies that arise from having tens of millions of customers, and a strong brand, as well as other valued characteristics. Therefore, entry in response to a small but significant price increase for mobile

wireless telecommunications services would not be likely, timely, and sufficient to thwart the competitive harm resulting from AT&T's proposed acquisition of T-Mobile, if it were consummated. (20)

High switching costs on the demand side

Extreme importance of mobile: Mobile wireless telecommunications services have become indispensable both to the way we live and to the way companies do business throughout the United States. Innovation in wireless technology drives innovation throughout our 21st-century information economy, helping to increase productivity, create jobs, and improve our daily lives. Vigorous competition is essential to ensuring continued innovation and maintaining low prices. (2)

Lack of substitutes: There are no cost-effective alternatives to mobile wireless telecommunications services. Because neither fixed wireless services nor wireline services are mobile, they are not regarded by consumers of mobile wireless telecommunications services as reasonable substitutes. (6)

In the face of a small but significant price increase imposed by a hypothetical monopolist it is unlikely that a sufficient number of customers would switch some or all of their usage from mobile wireless telecommunications services to fixed wireless or wireline services such that the price increase or reduction in innovation would be unprofitable. Mobile wireless telecommunications services accordingly is a relevant product market under Section 7 of the Clayton Act, 15 U.S.C. § 18. (6-7)

Harms of the merger:

Reducing price, choice, quality innovation: T-Mobile consumers benefit from the lower prices offered by T-Mobile, while subscribers of Verizon, AT&T, and Sprint gain from more attractive offerings that those firms are spurred to provide because of the attractive national value proposition of T-Mobile... Innovation is well known to be an important driver of economic growth. T-Mobile has been responsible for numerous "firsts" in the U.S. mobile wireless industry, as outlined in an internal document entitled "T-Mobile Firsts... T-Mobile has also been an innovator in terms of network development and deployment. (12-13)

Coordinated effects: Certain aspects of mobile wireless telecommunications services markets, including transparent pricing, little buyer side market power, and high barriers to entry and expansion, make them particularly conducive to coordination. Any anticompetitive coordination at a national level would result in higher nationwide prices (or other nationwide harm) by the remaining national providers, Verizon, Sprint, and the merged entity. Such harm would affect consumers all across the nation, including those in rural areas with limited T-Mobile presence. (16)

HHI was greater than 200 points. The FCC's threshold was 2800 and 1000 points respectively⁹⁵

In this case, the local markets had an average of post-merger HHI of almost 3500 and the increase at the national level was almost 700 points (the increase at the local level was stamped proprietary).

An unprecedented 99 of the largest 100 local wireless markets – every Top 100 CMA except Omaha... would exceed the level at which the Commission becomes concerned about anticompetitive effects. Similarly, the Commission's spectrum screen is triggered in an excess of 250 CMAs covering two-thirds of the population of the United States (and territories).⁹⁶

The willingness to propose a merger that vastly exceeded the thresholds was magnified by the insistence that the parties reserved the right to re-propose the merger. It sheds light on the disdain

⁹⁵ FCC, 2011, Staff Analysis, ¶ 45.

⁹⁶ FCC, 2011, Staff Analysis, ¶ 13.

for merger oversight that had developed during the period of lax merger review. In rejecting the merger, for the many reasons identified in Table VI-3, the Department of Justice and the Federal Communications Commission rejected the claim by the merging parties that they did not actually compete.

AUCTIONING SPECTRUM: LIMITS ON ACQUISITION BY DOMINANT CARRIERS

AT&T, DOJ and the FCC had at it again five years later when the FCC set out to define rules for auctioning low frequency spectrum. The DOJ filed extensive comments supporting efforts by the FCC to impose restrictions on how much spectrum the dominant incumbents could acquire.

The DOJ starts its analysis by noting the important role that spectrum plays in wireless service and also the impact that utilization of different frequencies has on the ability to deliver – and determine cost of – service. Access to spectrum is a critical (bottleneck) input for wireless service and different frequency bands have different propagation characteristics that significantly affect the economic costs of provisioning wireless networks and therefore the competitive structure of the sector.⁹⁷ Lower-frequency spectrum (generally spectrum below 1 GHz) has far more robust propagation characteristics, affording broader coverage and better in-building penetration than higher-band spectrum.⁹⁸ While there is typically the possibility of substituting among spectrum and investment in facilities to deliver service, the DOJ underscores the fact that access to high-quality, low-frequency spectrum reduces the amount of capital necessary to provision the network.⁹⁹

The DOJ went on to note that the holding of licenses to high-quality, low-frequency spectrum is highly concentrated in the hands of the two dominant wireless carriers, which accounts in part for their dominance. The smaller wireless carriers have little, if any, high-quality, low-frequency spectrum, which diminishes their ability to maintain effective economic competition with carriers that enjoy the benefits of large low-band portfolios. Enhanced competition created by broader access to high-quality, low-frequency spectrum has broad market-wide benefits.¹⁰⁰

⁹⁷ DOJ Submission, p. 1, The Department notes that bands of spectrum have different characteristics that may affect the competitive landscape. In particular, for instance, the propagation characteristics of lower frequency spectrum permit better coverage in both rural areas and building interiors. A carrier's position in low-frequency spectrum may determine its ability to compete in offering a broad service area, including its ability to provide coverage efficiently in rural areas. Therefore, the Department concludes that rules that ensure the smaller nationwide networks, which currently lack substantial low-frequency spectrum, have an opportunity to acquire such spectrum could improve the competitive dynamic among nationwide carriers and benefit consumers.

⁹⁸ DOJ Submission, p. 12, For example, low-frequency spectrum (usually referring to frequencies below 1 GHz) has superior propagation characteristics, permitting better coverage in both rural areas and buildings.

⁹⁹ DOJ Submission, p. 11, Also, a competitor's lack of spectrum may require higher capital expenditures, such as having to build more cell towers, in order to provide competitive service. Thus, a large incumbent may benefit from acquiring spectrum even if its uses of the spectrum are not the most efficient if that acquisition helps preserve high prices.

¹⁰⁰ DOJ Submission, p. 11, The Department believes that consideration of the role that "foreclosure value" might play in how spectrum is used is crucial because local mobile wireless markets across the nation are relatively concentrated. In a highly concentrated industry with large margins between the price and incremental cost of existing wireless broadband services, the value of keeping spectrum out of competitors' hands could be very high. For example, if competitors acquire spectrum to provide broader service offerings, expand coverage, or increase capacity, prices for existing customers would fall, threatening the margins being earned.

The auction that was the subject of the proceeding is likely to be the last major release of low-frequency, high-quality spectrum in the foreseeable future. Access to this valuable resource takes on great importance because the wireless market is highly concentrated, has exhibited abusive practices, and would be denied the benefits of more competition if access to high-quality spectrum were denied to the small competitors.¹⁰¹

The resulting highly-concentrated market structure creates an incentive for and gives dominant firms the ability to foreclose access to high-quality, low-frequency spectrum to protect not only their market power and the resulting monopoly rents they extract from consumers in the wireless market, but also their dominant position in the wireline market.¹⁰² Wireless broadband cannot even begin to act as a ‘third-pipe’ for American consumers so long as the best spectrum for the provision of mobile broadband is concentrated in the hands of dominant incumbents who also control the other pipes.

Given the importance, concentration and scarcity of high-quality, low-frequency spectrum, the Department of Justice identified important policy considerations for designing auction rules.¹⁰³

- The failure to ensure that the auction has a pro-competitive impact represents a major lost opportunity to promote the public interest.¹⁰⁴

In the DOJ view, this real-world assessment of the wireless market lays the foundation for crafting auction rules that promote more vigorous competition in the wireless space.

- Ensuring greater access to high-quality, low-frequency spectrum for non-dominant wireless service is in the public interest because it will lower prices and increase penetration of wireless broadband service.¹⁰⁵

¹⁰¹ DOJ Submission, p. 8, Even though the carriers engage in this competition, the marketplace is not uniformly competitive. Carriers do have the ability and, in some cases, the incentive to exercise at least some degree of market power, particularly given that there is already significant nationwide concentration in the wireless industry. Therefore, the Department believes it is essential to maintain vigilance against any lessening of the intensity of competitive forces.

¹⁰² DOJ Submission, p. 10, Namely, the more concentrated a wireless market is, the more likely a carrier will find it profitable to acquire spectrum with the aim of raising competitors' costs. This could take the shape, for example, of pursuing spectrum in order to prevent its use by a competitor, independent of how efficiently the carrier uses the spectrum.

¹⁰³ DOJ Submission, p. 6, The Department also believes that spectrum policies that promote competition and enhance the potential for entry and expansion in the wireless market play a vital role in protecting, and indeed enhancing, the competitive dynamic to the benefit of American consumers.

¹⁰⁴ DOJ Submission, p. 14, The Department believes it is important that the Commission devise policies that address the allocation of low-frequency spectrum in particular so that acquisitions of such spectrum do not hamper the ability of carriers to compete in markets where that spectrum is important. Particularly if low-frequency spectrum remains scarce, the Commission must ensure that the allocation of spectrum at auction does not enable carriers with high market shares to foreclose smaller carriers from improving their customers' coverage. Commission's policies, particularly regarding auction of new low-frequency spectrum, can potentially improve the competitive landscape by preventing the leading carriers from foreclosing their rivals from access to low-frequency spectrum.

¹⁰⁵ DOJ Submission, p. 6, Rivalry among competitors provides strong pressures to maintain existing demand and to win over new customers in a number of ways, such as seeking out means for lowering costs or for developing new or better products and services, through new technology, new business methods, or other sources of

- The market effects of the denial of the AT&T/T-Mobile merger provide clear evidence that resisting concentration and protecting competition has beneficial effects and¹⁰⁶ that competition is the mother of invention.

The fact that the wireless market has a small number of national providers with very different sizes makes it relatively easy to estimate the impact of pro-competitive policies on specific providers.¹⁰⁷ The competitive benefit is the driving force behind the DOJ's analysis and recommendations.¹⁰⁸ While one can expect smaller competitors to gain, new entrants might as well.¹⁰⁹

AT&T incorrectly claimed that the propagation characteristics of spectrum frequencies are unimportant "because the propagation qualities of low-frequency spectrum do not in and of themselves provide any systematic marketplace advantage."¹¹⁰ The claim that the large dominant carriers use spectrum more efficiently rests on this erroneous assumption.¹¹¹ The advantages of high-quality, low-frequency spectrum in area coverage and penetration of structures are widely recognized,¹¹² even by a senior executive of Verizon.¹¹³ Once the

efficiency. Indeed, competitive forces have been a central driver of innovations that have enabled carriers to expand capacity and improve service quality.

¹⁰⁶ DOJ Submission, p. 17, For example, in the course of investigating the proposed transaction between AT&T and T-Mobile, the Department cast doubt on the parties' claims that there were few alternatives to deal with spectrum shortages. Since abandoning the transaction, both companies have announced plans to deploy LTE more extensively than they had earlier suggested would be possible by, for instance, deploying spectrum previously dedicated to older technologies.(17)

¹⁰⁷ DOJ Submission, p. 8, I therefore welcome the opportunity to provide our views on the relationship between the work of the Commission as it designs its auction and other spectrum-related rules and the preservation of the competitive forces that are a critical engine for innovation in the wireless market.... The Department of Justice's principal concern is that acquisitions of spectrum, whether at auction or through subsequent transactions, should not be used to create or enhance market power.

¹⁰⁸ DOJ, Submission, p. 14, Today, the two leading carriers have the vast majority of low-frequency spectrum whereas the two other nationwide carriers have virtually none. This results in the two smaller nationwide carriers having a somewhat diminished ability to compete, particularly in rural areas where the cost to build out coverage is higher with high-frequency spectrum.

¹⁰⁹ DOJ Submission, p. 11-12, This potential risk, in turn underscores the need for additional spectrum. Based on the Department's experience with highly concentrated telecommunications markets, and more generally, there are substantial advantages to making available new spectrum in order to enable smaller or additional providers to mount stronger challenges to large wireless incumbents.

¹¹⁰ AT&T Submission, p. 8.

¹¹¹ Shapiro, p. 25, referring to carriers other than AT&T and Verizon as "less efficient." The hypothetical/theoretical analysis presented by the Phoenix Center (p. 7) assumes that both the large and small wireless companies enjoy the same marginal benefit from the acquisition of high-quality, low-frequency spectrum. The only sensitivity case considered has the large companies enjoying a marginal benefit twice as large as the smaller companies (p. 9). Given that the smaller companies have been starved of high-quality low-frequency spectrum, those assumptions are backwards. The acquisition of high-quality, low-frequency, spectrum will increase the efficiency of the smaller operators more than it will benefit dominant operators.

¹¹² Richard Thanki, 2009, The Economic Value Generated by Current And Future Allocations of Unlicensed Spectrum, Perspective, p. 59.

¹¹³ Tony Melone, Verizon Wireless – Senior VP & CTO, Wells Fargo Securities Technology, Media & Telecom Conference, November 10, 2010, slide 12.

propagation characteristics of frequencies are taken into account, large carriers that dominate the holdings of high-quality, low-frequency spectrum are clearly less efficient.¹¹⁴

In fact, the DOJ explicitly notes that it is not a question of whether the spectrum will be used or not (hoarded), but how its availability affects the economics of network utilization.¹¹⁵ Whether the spectrum is used is not the central point of the DOJ analysis. The decision of the FCC to lift the limits of spectrum holding contributed to the concentration of the mobile market¹¹⁶ and became a focal point of debate in designing the auction for low frequency spectrum. AT&T and other critics of the DOJ to accept the reality that the wireless sector is highly concentrated, which stems in part from the extreme concentration of high-quality, low-frequency spectrum in the hands of the dominant wireless carriers.¹¹⁷ Given their dominant position, they have the incentive and ability to deny high-quality, low-frequency spectrum to their competitors by outbidding them in spectrum auctions.

In the full statement, DOJ reached the exact opposite conclusion:

When market power is not an issue, the best way to pursue this goal in allocating new resources is typically to auction them off, on the theory that the highest bidder, i.e., the one with the highest private value, will also generate the greatest benefits to consumers. ***But that approach may not lead to market outcomes that would ordinarily maximize consumer welfare due to the presence of strong wire line or wireless incumbents***¹¹⁸

The recommendation offered by the DOJ (reproduced below), which allows participation by *all* carriers, subject to limitations that promote competition, is entirely consistent with the law.

...well-defined rules for spectrum acquisition in auctions would best serve the dual goals of putting spectrum to use quickly and promoting competition in wireless markets. Such rules could both provide predictability and prevent foreclosure of entry or expansion. Given the characteristics of different spectrum bands, as discussed above, different rules, weights or caps could, for example apply based on the kinds of spectrum

¹¹⁴ While it is certainly the case that capital and spectrum are inputs that can be traded off to deliver service, the mistake made by AT&T's and its defenders is to fail to recognize that the capital/spectrum "indifference curve" varies between frequencies. The tradeoff of capital for spectrum was and the failure of the dominant incumbents to make adequate infrastructure investment in the context of use of unlicensed spectrum were addressed in earlier CFA comments filed in this proceeding Mark Cooper, Comments Of The Consumer Federation Of America, Before the Federal Communications Commission, In the Matter of Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Revisions to Rules Authorizing the Operation of Low Power, Auxiliary Stations in the 698-806 MHz Band, Public Interest Spectrum Coalition, Petition for Rulemaking, Regarding Low Power Auxiliary Stations, Including Wireless, Microphones, and the Digital Television Transition, Amendment of Parts 15, 74 and 90 of the Commission's rules, Regarding Low Power Auxiliary Stations, Including Wireless, WT Docket No. 12-268, Docket No. 08-166, WT Docket No. 08-167, ET Docket No. 10-24, January 25, 2013

¹¹⁵ DOJ Submission, p. 15, "Even if a carrier has not yet identified a use for specific spectrum to accommodate its customers' data consumption, deploying the spectrum can provide a significant increase in user throughput at relatively low cost."

¹¹⁶ FCC, 2001.

¹¹⁷ The exercise of market power by the dominant wireless carriers was examined in the historical context in Cooper, 2011.

¹¹⁸ DOJ Submission, p. 10, emphasis added.

frequency put up for auction... Auction rules of this nature would ensure the smaller nationwide networks, which currently lack substantial low frequency spectrum, would have an opportunity to acquire it. Such an outcome could improve the competitive dynamic among nationwide carriers. As such, using a pre-announced set of rules would allow the Commission to realize substantial benefits to competition from quick allocation of new spectrum while minimizing the potential risk that procompetitive acquisitions would be prevented.¹¹⁹

The DOJ filing and the general proposition that the FCC should place some limits on the ability of the dominant wireless carriers, who currently hold licenses for almost four fifths of high quality spectrum, to acquire additional high-quality spectrum has been roundly criticized by AT&T.¹²⁰ Several analysts who frequently defend the interests of the dominant wireless carriers have released reports that echo the AT&T criticism.¹²¹ A careful examination of the dispute reveals that the DOJ analysis rests on well-established fundamentals of the wireless market that the DOJ has consistently articulated and promoted throughout the entire history of U.S. wireless broadband service.¹²²

CELLCO

Figure VI-2 shows the graphic approach I take to depicting the complex horizontal and vertical relationships that have been affected by merger proposals and present broad challenges to public policy as it affects the structure of the digital communications space. I use different shapes to capture the four main services in the digital communications market. The size of the shapes is intended to represent the relative size of each. There are horizontal and vertical implications in the deal which involves both cable and wireless.

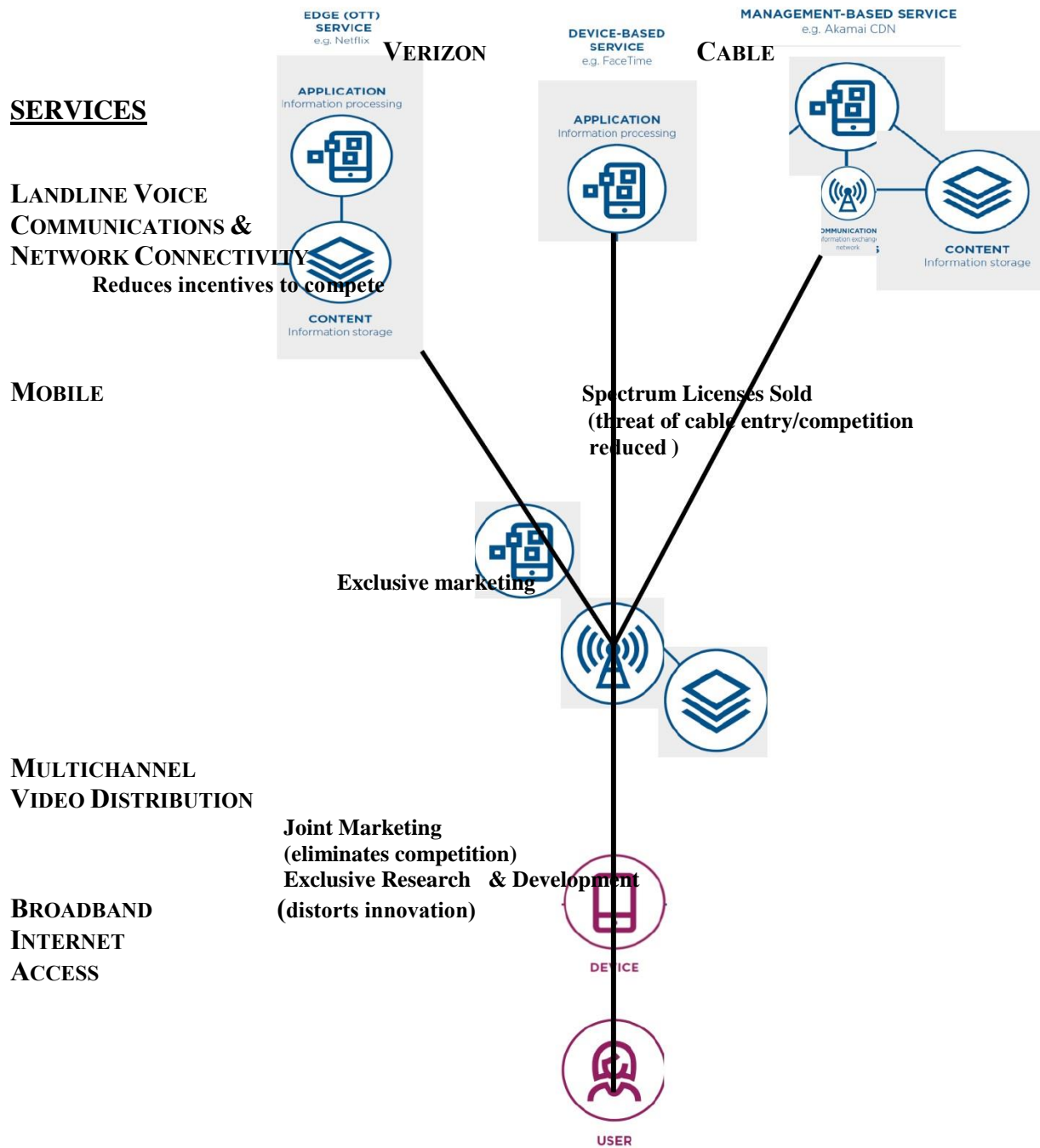
¹¹⁹ DOJ, Submission, p. 23.

¹²⁰ Wayne Watts, Senior Executive Vice Presidents and General Council, AT&T Inc., Letter, RE: Policies Regarding Mobile Spectrum Holdings: WT Docket No. 12-269, April 24, 2013.

¹²¹ Robert J. Shapiro, Douglas Holts-Eakin and Coleman Bazelon, The Economic Implications of Restricting Spectrum Purchases in the Incentive Auctions, Georgetown University, McDonough School of Business, April 30, 2013; George S. Ford and Lawrence J. Spiwak, Equalizing Competition Among Competition: A Review of the DOJ's Spectrum Screen Ex Parte Filing, Phoenix Center Policy Bulletin No. 33, May 2013.

¹²² Ex Parte Filing of the United States Department of Justice, In re Broadband Industry Practices, FCC WC Docket 0752 (Sept. 6, 2007); *Ex Parte* Submission of the United States Department of Justice, *In the Matter of Economic Issues in Broadband Competition: A National Broadband Plan for Our Future*, FCC GN Docket No. 09-51 (January 4, 2010), *The conditioning and opposition to mergers, United States, et al. v. Cingular Wireless Corp., SBC Commc 'n Inc., Bell/South Corp., and AT&T Wireless Serv's, Inc.*, 2004, available at www.justice.gov/atr/cases/cingular.htm; *United States, et al. v. Verizon Commc 'n Inc. and Alltel Corp.*, 2008, available at www.justice.gov/atr/cases/verizon3.htm; *United States v. AT&T Inc. and Dobson Commc'n Corp.*, available at www.justice.gov/atr/cases/dobson.htm; *United States et al. v. AT&T Inc. and Centennial Commc 'n Corp.*, available at www.justice.gov/atr/cases/attcentennial.htm; *Complaint, United States et al. v. AT&T Inc., T-Mobile USA, Inc. and Deutsche Telekom AG* (D.D.C. filed Sep. 30, 2011) (No. 11-1560). *U.S. Dep't of Justice, Justice Department Issues Statements Regarding AT&T Inc.'s Abandonment of Its Proposed Acquisition of T-Mobile USA Inc.* (Dec. 19, 2011), available at www.justice.gov/atr/public/pressReleases/2011/278406.pdf; *U.S. Dep't of Justice, Justice Department Requires Changes to Verizon-Cable Company Transactions to Protect Consumers, Allows Pro competitive Spectrum Acquisitions to Go Forward* (Aug. 16, 2012), available at www.justice.gov/atr/public/pressReleases/2012/286098.pdf.

FIGURE VI-2: THE VERIZON/CABLE JOINT VENTURE



VII. BROADBAND-VIDEO MERGERS

COMCAST-NBC

The analysis of the Comcast-NBC problem involves a vertical relationship – the potential for Comcast’s heightened interest and leverage in the content market to retard competition in the distribution market. One of the most important and interesting pieces of evidence supporting the concern about the abuse of market power in the MVPD industry is the Department of Justice complaint against the Comcast-NBC merger.

In the public interest filing and expert testimony accompanying the request for the transfer of broadcast licenses from NBC to Comcast, Comcast took the position that, because it was largely a vertical merger and all of the market segments involved were vigorously competitive, the merger posed no actual or potential threat to competition, consumers, or the public interest.¹²³ The Department of Justice¹²⁴ and the Federal Communications Commission¹²⁵ rejected the Comcast arguments and analyses, finding that the merger posed significant threats and could not be approved without substantial remedial actions and ongoing conditions. The Comcast-Time Warner merger poses a much greater threat of harm.

The Department of Justice made a strong case for concern about the impact of control of marquee content on incipient digital competition in its recent complaint against the Comcast-NBCU merger.

Through the JV, Comcast seeks to gain control of NBCU's programming, a potent tool that would allow it to disadvantage its traditional video programming distribution competitors, such as cable, DBS, and the telcos, and curb nascent OVD competition by denying access to, or raising the cost of, this important content. If Comcast is allowed to exercise control over this vital programming, innovation in the market for video programming distribution will be diminished, and consumers will pay higher prices for programming and face fewer choices...

The impact of the JV on emerging competition from the OVDs is extremely troubling given the nascent stage of OVDs' development and the potential of these distributors to significantly increase competition through the introduction of new and innovative features, packaging, pricing, and delivery methods.

Comcast has an incentive to encumber, through its control of the JV, the development of nascent distribution technologies and the business models that underlie them by denying OVDs access to NBCU content or substantially increasing the cost of obtaining such content. As a result, Comcast will face less competitive pressure to innovate, and

¹²³ Applications and Public Interest Statement of General Electric Company, Transferor, to Comcast Corporation, Transferee (Jan. 28, 2010), as amended on May 4, and November 3, 9, 17, 18 and 29, 2010.

¹²⁴ Complaint, Competitive Impact Statement, *United States v. Comcast Corp.*, 808 F. Supp. 2d 145 (D.D.C. 2011) (No. 1:11-cv-00106).

¹²⁵ Memorandum Opinion and Order, *In re Applications of Comcast Corp., General Electric Co. and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees*, FCC MB Docket No. 10-56 (adopted Jan. 18, 2011).

the future evolution of OVDs will likely be muted. Comcast's incentives and ability to raise the cost of or deny NBCU programming to its distribution rivals, especially OVDs, will lessen competition in video programming distribution.¹²⁶

The core of the concern in the Comcast-NBC merger was Comcast's significant market share at key points in the supply chain of video and communications service, as shown in Figure VII-1. As the nation's largest multichannel video program distributor (MVPD) and the nation's largest provider of broadband Internet access service (BIAS), Comcast's large market share occurs at strategic chokepoints where competition is feeble at best. The DOJ/FCC concluded that allowing it to gain control over additional "marquee" content would give Comcast the incentive and ability to exercise market power, at the expense of competition, consumers and the public interest in all the video content and distribution markets where Comcast participates.

The agencies reached the conclusion that the Comcast-NBC merger posed these threats based on a close examination of the record, wherein they found that Comcast's claims of "no harm to competition" were contradicted by its own words. As the FCC put it with regard to Online Video Distribution (OVD)

despite their arguments in this proceeding, the Applicants' internal documents and public statements demonstrate that they consider OVDs to be at least a potential competitive threat. The record here is replete with e-mails from Comcast executives and internal Comcast documents showing that Comcast believes that OVDs pose a potential threat to its businesses, that Comcast is concerned about this potential threat, and that Comcast makes investments in reaction to it. The record also contains NBCU e-mails and documents showing that many of the other cable companies are similarly concerned about the OVD threat and that

NBCU feels pressure to avoid upsetting those companies with respect to any actions it might take regarding the online distribution of its content.¹²⁷

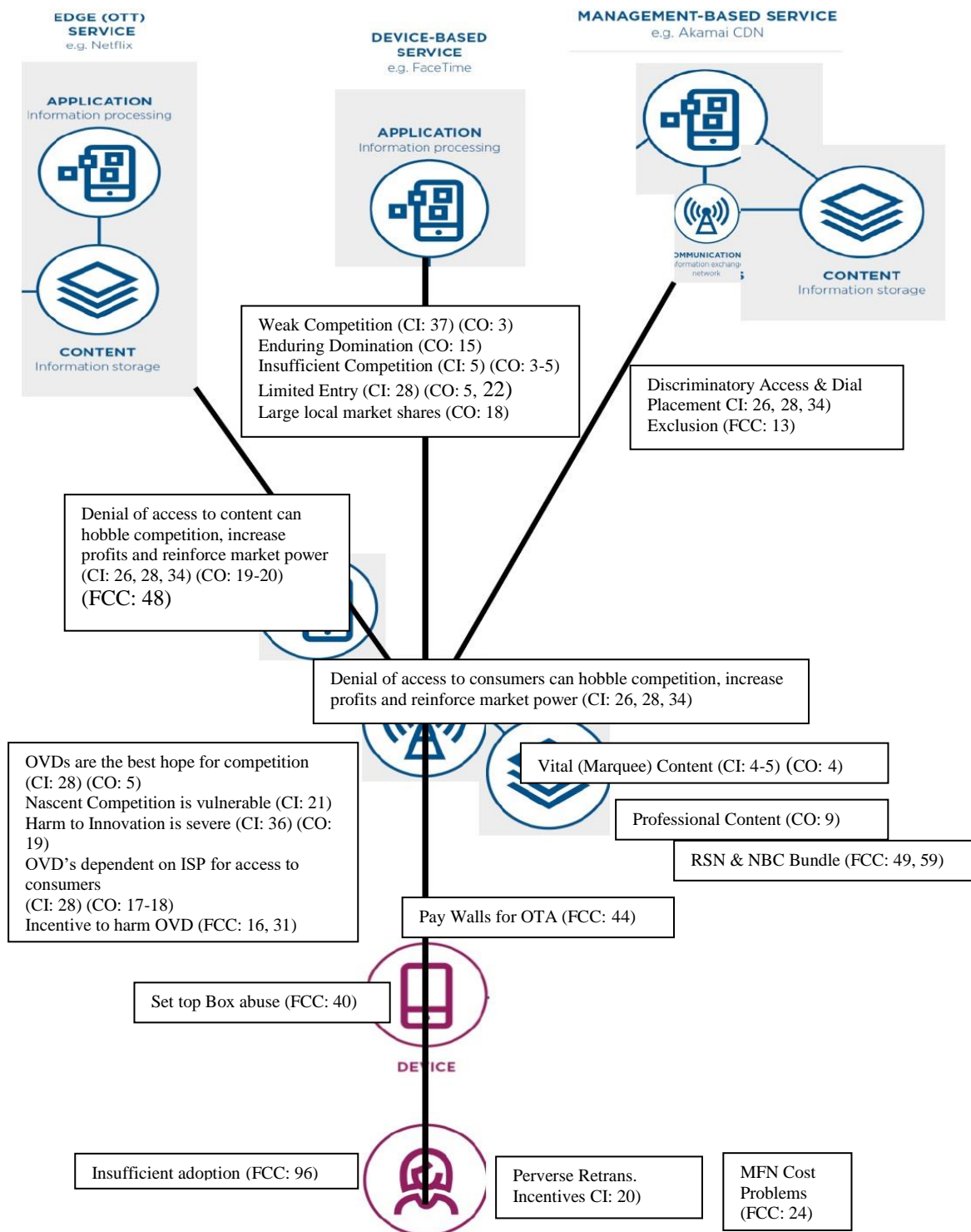
In public Comcast executives claimed that OVDs did not pose a competitive challenge. In private they thought and acted in exactly the opposite manner. In fact, in the FCC order, which reviews the record in detail, there are almost 50 citations to proprietary documents that contradict the Company's public statements. This is approximately one-third of all the citations to proprietary documents in the body of the FCC order. In addition to the key issue of OVD competition, these citations covered other key issues, including exclusionary conduct with respect to MVPDs, online distribution of content affecting both OVDs and MVPDs and broadband Internet access service. In short, Comcast's public statements are repeatedly at odds with its private thoughts, not to mention the reality of the markets in which it sells services.¹²⁸

¹²⁶ DOJ, 2011: 4, 52, 54.

¹²⁷ FCC, 2011.

¹²⁸ The lead Comcast experts did not cite the internal proprietary documents in the Comcast-NBC case, nor do they do so in the proposed merger. Instead they just regurgitate management arguments. In this case the lead experts (Rosston and Topper) cite interviews with Comcast executives as their source over 60 times.

FIGURE VII-1: CONCERNS ABOUT COMCAST’S INCENTIVE AND ABILITY TO ABUSE ITS MARKET POWER AS A RESULT OF THE NBC ACQUISITION



Sources: Department of Justice, Complaint (CO), Competitive Impact Statement (CI), *United States v. Comcast Corp.*, 808 F. Supp. 2d 145 (D.D.C. 2011) (No. 1:11-cv-00106); Federal Communications Commission (FCC), Memorandum Opinion and Order, *In re Applications of Comcast Corp., General Electric Co. and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees*, FCC MB Docket No. 10-56 (adopted Jan. 18, 2011).

Public interest groups filed extensive analysis of the documents and buttressed the analysis of these confidential documents with additional data that is not proprietary. Table VII-1 pinpoints the evidence supporting the case against the merger in the body of confidential documents.

The story the documents tell is crystal clear. Contrary to the claims in the Public Interest Statement and the Comcast's experts, the Internet provides a platform for video competition. The acquisition of NBC Universal would dramatically increase the arsenal of weapons available to Comcast to use in its campaign to reduce the threat of competition over the Internet platform. The anticompetitive impact of the merger on traditional video markets exacerbates the threat to video competition on the Internet platform because it increases the vertical leverage that Comcast can bring to bear on consumers and competitors. Moreover, the direct anticompetitive effects on traditional video markets are considerable and should not be overlooked by the responsible authorities at the Department of Justice (DOJ) and the FCC. The merger eliminates head-to-head competition.

The response to the Comcast-NBC merger, the first merger that integrated a large MVPD with one of the major TV broadcasters, opened a new phase in the effort to deal with the problem of vertical integration in the age of digital communications. As discussed in Section XV below, the consent decree signed by the merging parties and the conditions for the transfer of NBC's broadcast licenses imposed by the FCC endeavored to address the problem of vertical integration between transmission and content.

The Sources of Market Power

As the largest MVPD and largest BIAS provider in the nation, Comcast occupies a key strategic location in the 21st century communications sector that is quickly becoming the heart of the digital economy. Access to the network is an essential component of any and all uses of the network. Comcast is the dominant provider of the dominant technology. The vertical links created by the merger give Comcast the incentive and the ability to exercise market power through vertical leverage that has harmful effects on horizontal competition, consumers and the public interest.

Access facilities and markets are inherently local. The user needs a local connection to access the network. Because network access facilities tend to be capital intensive and immobile (i.e., they serve a particular place and it is difficult, costly and time consuming to move them [(if they can be moved at all)], competition tends to be weak in these markets. Network owners are likely to have market power.

TABLE VII-1: THE CASE AGAINST THE COMCAST-NBC UNIVERSAL MERGER, STRUCTURE, CONDUCT PERFORMANCE

	Internet	MVPD	Broadcast	Confidential
<u>Structure</u>				
Distribution concentration	E-17-20; CI7-7-8, 23-29	S-40-42, 121-122; R-54-55;	S-30-44; R17-18; D-2; CI-45-52	X
		CI-15-16, 18-19, 29-35; MX-12-15,	MC-13-14	
		MX-A2-15; MC-21-26		
Must Have Content	S-33,37, 105-106; ACA-35-37;	S-30, 106-109; MX-16-18; ACA-10-12;	S-103-106,109-114; D-13-15;	X
	CI-36-46	MC-26-33; CW-17-30	CR-42-47	
Competition	S-15-16, 28, 71-76; W-5-8;	S-56-71, 127-140; M17-21	R-9-11; CI-50-51; CR 33-38	X
-	E-27-32; CI-53-59; MC-3-36;	MX-22-24, A7-16		
-	CR-5-13, 29-33, CW-34-42			
<u>Conduct</u>				
Vertical Leverage Theory	S-76-82; D-11-13:	CI-9-12;MC-14-21, 103-126 >>		X
	MX-26-28; E-21-23; >>			
Foreclosure Withholding	D-6,28-33, E-39-43	S-43-56, 76-93; D-8-11; ACA-26-28	S-82-93,114-115	X
		MX-20-22, 30-32 ,A-24-30: CW_33-39		
Demand Exclusives	S-45-56			
Degrade Quality	W-15-16; E32-39			
Discrimination	S 96-103	MX-28-30, A7-12		X
Tying/bundling	S-115-118, MX-32-37;	S-18,86; MX-37-41, A-30-43; CW-14-15	S-10-13, 114-115; D-6,33-34	X
	CI 65-68; MC-37-61			
Raising Rival's Cost		R-18-21; D36-44; ACA-4	D-23-27	X
Coordination	S-2,22; E45-47; CI59-63; CR-13-25			X
<u>Performance</u>				
Prices (cable rate/Retrans Fees)		S-34,61; R38-40; CI-34	R-14-18,36-37; D-15-23;	X
		CW 12, 16,30-33; CR 17, 53	M-2,21-22; ACA-21-24	
Margins	E-24-27	S-106-109; MX-23, A-7; CR-18,53		X
Equity Stakes		S-9-10, 93-99	MC-62-102	
Departure Rates (Katz Critique)		S-118-127; M27-32; W-20-24; CR-25-29		

Notes: References are to the July 21 filings for the following: ACA= American Cable Association; B=Bloomberg; CI=Cooper/Lynn, initial; CR=Cooper/Lynn Replies; CW= Communications Workers; D=DirecTV; E=Earthlink; M=Murphy; MC=Cooper; MX=Marx; R=Rogerson; S=Singer; X = Confidential Evidence.

Source: Declaration of Mark Cooper and Adam Lynn in Support of Public Interest Petitioners' Reply to Opposition, In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign, Licenses or Transfer Control of Licensees, Federal Communications Commission, MB Dkt No. 10-56, August 19, 2010, Redacted, Exhibit 1, The Case Against the Comcast-NBC Universal Merger, Structure, Conduct Performance, which is not proprietary.

Although the access market is local, when a single entity dominates many of these local markets, it has implications for the goods and services that are delivered to consumers over the local communication network. If a single entity dominates a large enough share of the local markets, it can influence the outcome of services that compete in national markets. Denying access to a large body of consumers who subscribe to a network or imposing excessive costs and conditions on gaining access to those consumers can reduce or undermine the ability of potential and actual content competitors to survive or provide effective competition. Similarly, withholding access to marquee content can reduce or undermine the ability of actual or potential distribution competitors to survive or provide effective competition.

The agencies reached the conclusion that the Comcast-NBC merger posed these threats based on a close examination of the record in which they found that Comcast's claims of "no harm" were to be contradicted by its own words.

Comcast's incentives and ability to raise the cost of or deny NBCU programming to its distribution rivals, especially OVDs, will lessen competition in video programming distribution. (DOJ, 2011: 4, 52, In public Comcast executives claimed that OVDs did not pose a competitive challenge; in private they thought and acted in exactly the opposite manner. In fact, in the FCC order, which reviews the record in detail, there are almost 50 citations to proprietary documents that contradict the Company's public statements. This is approximately one-third of all the citations to proprietary documents in the body of the FCC order. In addition to the key issue of OVD competition, these citations covered other key issues, including exclusionary conduct with respect to MVPDs, online distribution of content affecting both OVDs and MVPDs and broadband Internet access service.

Buyer Market Power

An important antitrust concern arises when a firm becomes such a large a buyer of goods or services that it can use its market power to dictate prices, terms and conditions that hurt the firms from which it buys those goods and services. It might do so to increase its profits, even though the quality or diversity of the products available declines. The official term for this form of market power is "monopsony" power.

Enhancement of market power by buyers, sometimes called "monopsony power," has adverse effects comparable to enhancement of market power by sellers. The Agencies employ an analogous framework to analyze mergers between rival purchasers that may enhance their market power as buyers.¹²⁹

If the firm with buyer market power also happens to sell similar products, as Comcast does in the video market, it would be doubly glad to weaken potential competition in the market for those products. It could increase its profits by paying less for the goods and services it buys and charge more or gain market share for its own products by using its buyer power. The weaker horizontal competition is, the more likely it is for the firm with buyer market power to benefit from its abuse.

¹²⁹ Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, August 19, 2010, p. 2.

There is no doubt about the relevance of this concern. Comcast is the nation's largest buyer of professional video content. When Comcast announced the Time Warner acquisition, it said it would divest enough cable subscribers to lower its market share to 30%. The 30% figure is the limit the Federal Communications Commission (FCC) proposed for video distribution firms based on the fear that by refusing to carry a cable network, the firm would be large enough to determine if the program will succeed or fail. Antitrust practice uses the same threshold and companies have been found guilty of violating the antitrust laws by abusing their market power with market shares at this level. Mergers have been blocked based on the existence of buyer market power.¹³⁰ The Comcast-NBC merger was legally blocked and later approved with conditions on this basis.

We find that, as a vertically integrated company, Comcast will have the incentive and ability to hinder competition from other OVDs, both traditional MVPDs and standalone OVDs, through a variety of anticompetitive strategies. These strategies include, among others: (1) restricting access to or raising the price of affiliated online content; (2) blocking, degrading, or otherwise violating open Internet principles with respect to the delivery of unaffiliated online video to Comcast and (3) using Comcast set-top boxes to hinder the delivery of unaffiliated online video.... Specifically, we find that Comcast's acquisition of additional programming content that may be delivered via the Internet, or for which other providers' Internet-delivered content may be a substitute, will increase Comcast's incentive to discriminate against unaffiliated content and distributors in its exercise of control over consumers' broadband connections.¹³¹

Bottleneck Market Power

The importance of bottleneck power was affirmed in the Comcast-NBC merger. The Department of Justice (DOJ) made it clear that Comcast would have the incentive and the ability to undermine competition by leveraging its control over access to broadband customers. This would weaken online video distributors (OVDs). Both the DOJ and the FCC imposed conditions to prevent that abuse.

The proposed JV would allow Comcast to limit competition from MVPD

competitors and from the growing threat of OVDs. The JV would give Comcast control over NBCU content that is important to its competitors. Comcast has long recognized that by withholding certain content from competitors, it can gain additional cable subscribers and limit the growth of emerging competition. Comcast has refused to license one of its RSNs, CSN Philadelphia, to DirecTV or DISH. As a result, DirecTV's and DISH's market shares in Philadelphia are much lower than in other areas where they have access to RSN programming...

52. The impact of the JV [Joint Venture between Comcast and NBC] on emerging competition from the OVDs is extremely troubling given the nascent stage of OVDs'

¹³⁰ The area of greatest activity has been health care (e.g. Henry, S. Allen, Jr., *Consolidating Health Insurer Markets: A Challenge Facing Antitrust Enforcement*, American Medical Association.

¹³¹ Federal Communications Commission, "Memorandum Opinion and Order," In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licensees, MB Docket No. 10-56, January 20, 2011, p. 26, 37, emphasis added.

development and the potential of these distributors to significantly increase competition through the introduction of new and innovative features, packaging, pricing, and delivery methods...

54. Comcast has an incentive to encumber, through its control of the JV, the development of nascent distribution technologies and the business models that underlie them by denying OVDs access to NBCU content or substantially increasing the cost of obtaining such content. As a result, Comcast will face less competitive pressure to innovate, and the future evolution of OVDs will likely be muted.¹³²

Every MVPD rival that participates along with Comcast in these relevant markets purchases most if not all of Comcast-NBCU's programming, including most if not all of the programming to be contributed to Comcast-NBCU in this transaction. Comcast-NBCU has the ability to exclude all of Comcast's rivals from the JV's programming, whether by withholding the programming or raising its price, thereby harming competition in MVPD services in each of Comcast's franchise areas.¹³³

Given the failure of cable operators to compete head-to-head in physical space, along with their efforts to extend that non-compete model into cyberspace, we must consider the impact of the proposed merger to enhance the ability of the industry to coordinate this campaign against OVD competitors. A dominant firm with a post-merger market share as large as Comcast-Time Warner would be well positioned to lead, signal and coordinate actions that would diminish competition. "Internal documents expressly acknowledge that "authentication" is Comcast's and other MVPDs' attempt to counter the perceived threat posed by OVDs."¹³⁴

The Remedy

Having provided a very detailed examination and explanation of the potential harm the merger would do, the agencies chose to impose conditions on the merger, rather than block it.¹³⁵ The complaint and remedy, described in Figure VII-2 marked an important milestone in the quarter of a century long struggle to protect consumers from the abuse of market power that was unleashed by the Cable Deregulation of 1984. The Proposed Final Judgment sought to address the vertical leverage problem that the merger poses.

Distributors of video content over the Internet will have better access to broadband consumers. The network neutrality conditions recently implemented are secured for the largest broadband Internet access provider, regardless of the outcome of legislation or litigation. A minimum capacity adequate to support video distribution will be available for competing video is guaranteed.

¹³² United States Department of Justice, et al. v. Comcast, et. Al, Complaint, 2011, pp. 19...21

¹³³ FCC Comcast-NBC Order, p. 20.

¹³⁴ DOJ Competitive Impact Statement, p. 19.

¹³⁵ In the Matter of Applications of Comcast Corporation, General Electric Company and NBC Universal, Inc. For Consent to Assign Licenses and Transfer Control of Licensees Memorandum opinion and order, MB Docket No. 10-56, January 20, 2011

The availability of programming for Internet distribution will be better. NBC will be required to match the best practices in making content available by independent programmers that are similar in size. The contracting practices of Comcast and NBC will be constrained with respect to Internet distribution. The DOJ consent decree and the FCC order lay the foundation for ensuring that the Internet TV enjoys the Communications Act protections from the abuse of market power. The DOJ has tackled the problem of vertical integration more effectively than has been the case in decades.

These conditions were enforceable with strengthened mechanisms. The Federal Communications Commission has outlined improvements in its complaint process to accelerate dispute resolution and give. Most importantly, the Department of Justice will have the ability to enforce a consent decree. These two improvements will work hand in hand. Since Comcast will have a strong incentive to avoid being hauled into the antitrust court, it will have an incentive to bargain in good faith and resolve disputes at the FCC.

COMCAST-TIME WARNER

Severe Damage to Market Structure

Less than four years later, Comcast was back defending another merger and using essentially the same failed arguments.¹³⁶ Comcast and its experts claim that because its proposed merger with Time Warner Cable was largely a geographic extension merger and all of the market segments involved are vigorously competitive, the merger poses no actual or potential threat to competition, consumers or the public interest.

The *Economist* magazine took a different view, which the FCC and DOJ ultimately agreed with.

“the deal would create a Goliath... For consumers, the deal would mean the union of two companies that are already reviled for their poor customer service and high prices. Greater size will fix neither problem... The biggest worry is Comcast’s grip on the Internet... Comcast will have extraordinary power over what content is delivered to consumers, and at what speed.”¹³⁷

Ironically, Comcast’s public interest filing and attached expert testimony in the proposed Time Warner merger never mentions the DOJ consent decree. It is easy to see why. The DOJ was required to lay out the case against the NBC merger in a legal filing in court. Needless to say, the Competitive Impact Statement and the Complaint filed by the DOJ thoroughly undercut the Comcast claims of no harm.

Given the persistent dominance of cable MVPDs and the recognition of the complex vertical relationships that was growing in the Internet distribution of video, it is easy to argue that the Comcast-Time Warner merger posed a much greater threat to competition, consumers and the public interest than the Comcast-NBCU merger (see Figure VII-2). The acquisition of Time

¹³⁶ Application and Public Interest Statement, In the Matter of Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Transfer Control of Licenses and Authorizations (Application), MB Docket No.14-57, before the Federal Communications Commission (April 8, 2014),

¹³⁷ “Turn it off: American regulators should block Comcast’s proposed deal with Time Warner Cable,” *Economist*, March 15th 2014.

Warner would grow Comcast to a point where it would dominate the landscape at multiple levels. Comcast would be

- 1.5 times as large as the next largest MVPD.
- 2 times as large as the next largest Internet access service provider.
- 3 times as large as the next largest service provider with the capacity to deliver an integrated bundle of video and broadband,
- the dominant cable and broadband operator in 24 of the nation's largest 25 video markets, including the addition of the most important media markets, New York and Los Angeles.
- The swaps of systems with Charter divide the nation into "fortress regions," with Comcast dominating the coasts, while Charter would dominate the upper Midwest.
- The merger results in a 33% increase in Comcast's control of regional sports and news, local marquee content that Comcast has repeatedly used to undermine competition.

There is nothing in the recent past or near future that has or will change the fact that cable is the dominant technology and has substantial market power in the distribution of professional video and broadband Internet access.

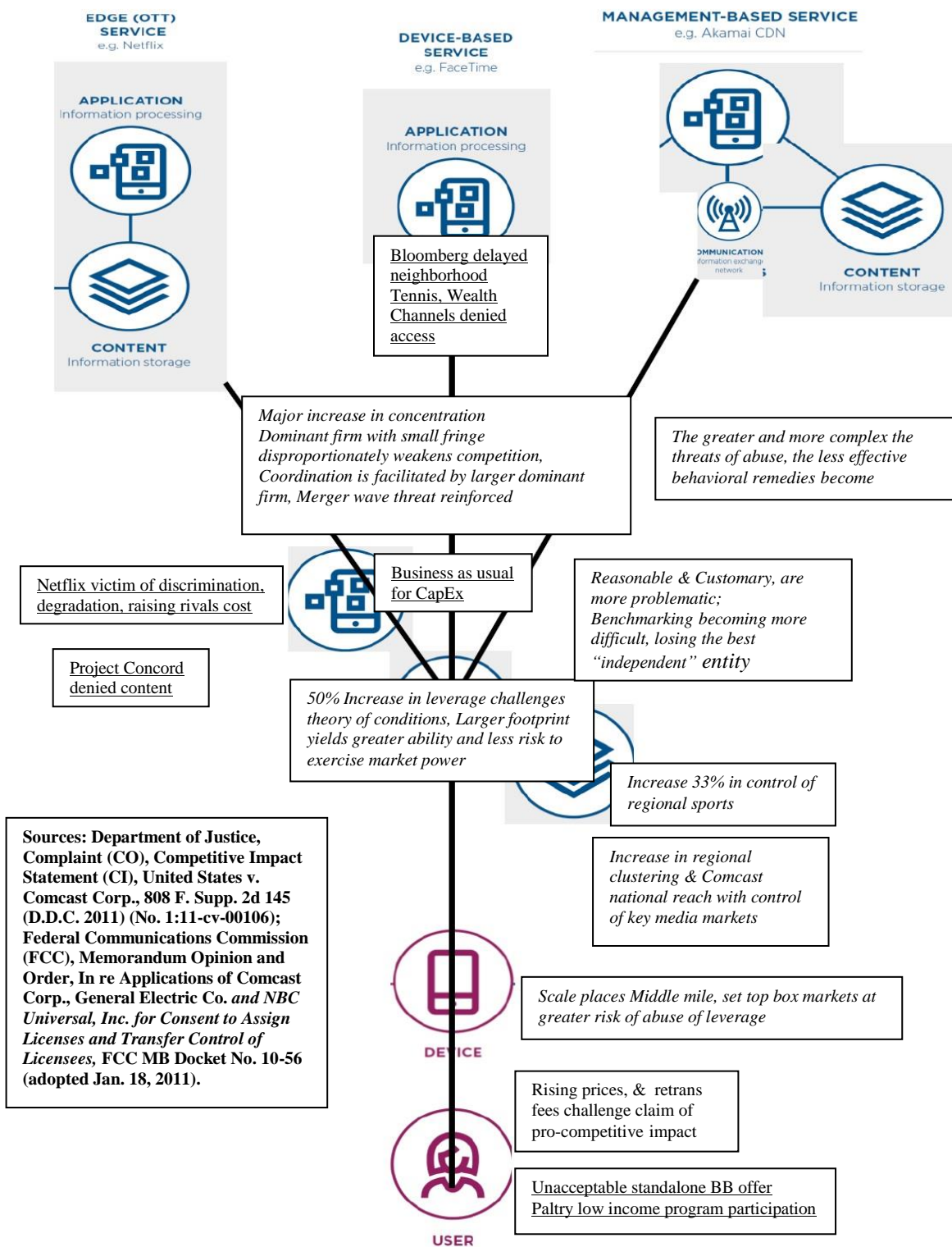
- Comcast has been expanding its share of the broadband market and enjoys high margins because competition is weak.
- Comcast's fixed-line, true broadband technology has much higher capacity than DSL and wireless.
- Entry has been minimal and there are no prospects for significant, wide scale entry of new technologies or new players.

Because Comcast has such a commanding position in distribution and owns a huge slate of national and regional programming, with well over a billion subscribers, it has the incentive and ability to leverage its market power to distort and weaken competition in local, regional and national video and Internet markets. Comcast has a long history of abusing its market power that has been reaffirmed by its behavior since its acquiring NBC.

It showed it is willing to press its advantage to the limits of the law and beyond in disputes with video programmers in both the traditional and online markets.

- Netflix: discrimination, degradation of service quality, raising rival's cost
- Conductive: denial of access to content
- Bloomberg News: delay in providing fair channel location
- Tennis and Wealth Channels: denial of carriage

FIGURE VII-2: CONCERNS ABOUT COMCAST'S PROPOSED ACQUISITION OF TIME WARNER



In contrast, Comcast had done as little as possible to deliver on its public interest promises.

- Participation in Comcast's broadband lifeline program has been meager, one-quarter of what well-run assistance programs in the communications sector achieve.
- The standalone broadband offer was badly mismanaged.
- Comcast remains a laggard in capital expenditures, investing the lowest percentage of its free cash flow in capital expenditures (CapEx) than any of the large video and Internet access providers.
- In fact, it takes more capital out through depreciation and amortization than it puts back in with CapEx, with the total disinvestment over the past decade reaching \$15 billion.

Table VII-2 presents the market structure analysis of the Comcast-Time Warner merger in terms of both the dominant firm's post-merger market share analysis (30% threshold recognized by Comcast) and antitrust practice and the HHI analysis from the *Guidelines*. It assumes the market is national and presents several alternative definitions of the product market that have been discussed in the press and would be examined by the oversight agencies.

The Charter Swaps

Upon close examination, the swap of cable systems with Charter, which was supposed to be a divestiture to allay concerns about the increase in market power, appears to be a blatant geographic market division scheme. The cable operators, who have long refused to compete head-to-head in local market extend that practice into regional markets. The swaps cleanse DMAs of any possible competition for regional sports and news.

Comcast had originally said it would divest three million subscribers. It has now presented a deal with Charter in which it divests 1.5 million, puts 2.5 million in a joint venture, and acquires Charter subscribers in three times as many DMAs as Charter obtains subscribers (see Exhibit III-6. There is a clear pattern of regional consolidation observable in the swaps. Comcast acquires subscribers in regions where it is the dominant MVPD/broadband service provider, reinforcing its regional dominance.

Moreover, the DMAs in which Comcast acquires subscribers are much larger than the DMAs in which Charter or the joint venture are acquiring subscribers (see Exhibit VII-2). Since Comcast is acquiring viewers in the larger markets, the value per viewer, measured by TV advertising dollars per capita is greater.

TABLE VII-2: THE COMCAST-TIME WARNER MERGER RAISES SEVERE CONCERNS ABOUT INCREASED MARKET POWER

	<u>Post-Merger Market</u>		<u>DOJ/FTC Merger Guidelines</u>	
	Dominant Firm Share	HHI Level	Change in HHI	Impact on Competition
DOJ/FTC Thresholds of market power concerns	30	1500-2500	100-200	
<u>Internet Access Service</u>				
True Broadband	49	2835	1120	Likely to enhance market power
High Speed Data	38	2045	670	Significant competitive concerns
<u>Cable Television Service</u>				
Wireline	54	3249	1359	Likely to enhance market power
MVPD	35	1778	552	Significant competitive concerns
<u>Regional Marquee Content</u>	52	3188	1014	Likely to enhance market power

Sources and Notes:

Thresholds: Dominant firm, see text, Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, August 19, 2010

Market shares: LRG March 17, 2014, Year-End subscriber counts for Broadband and Multichannel Video. True Broadband includes AT&T U-Verse and Verizon FIOS, but excludes AT&T and Verizon DSL subscribers and all other telephone company DSL subscribers. Wireline excludes satellite from the video count.

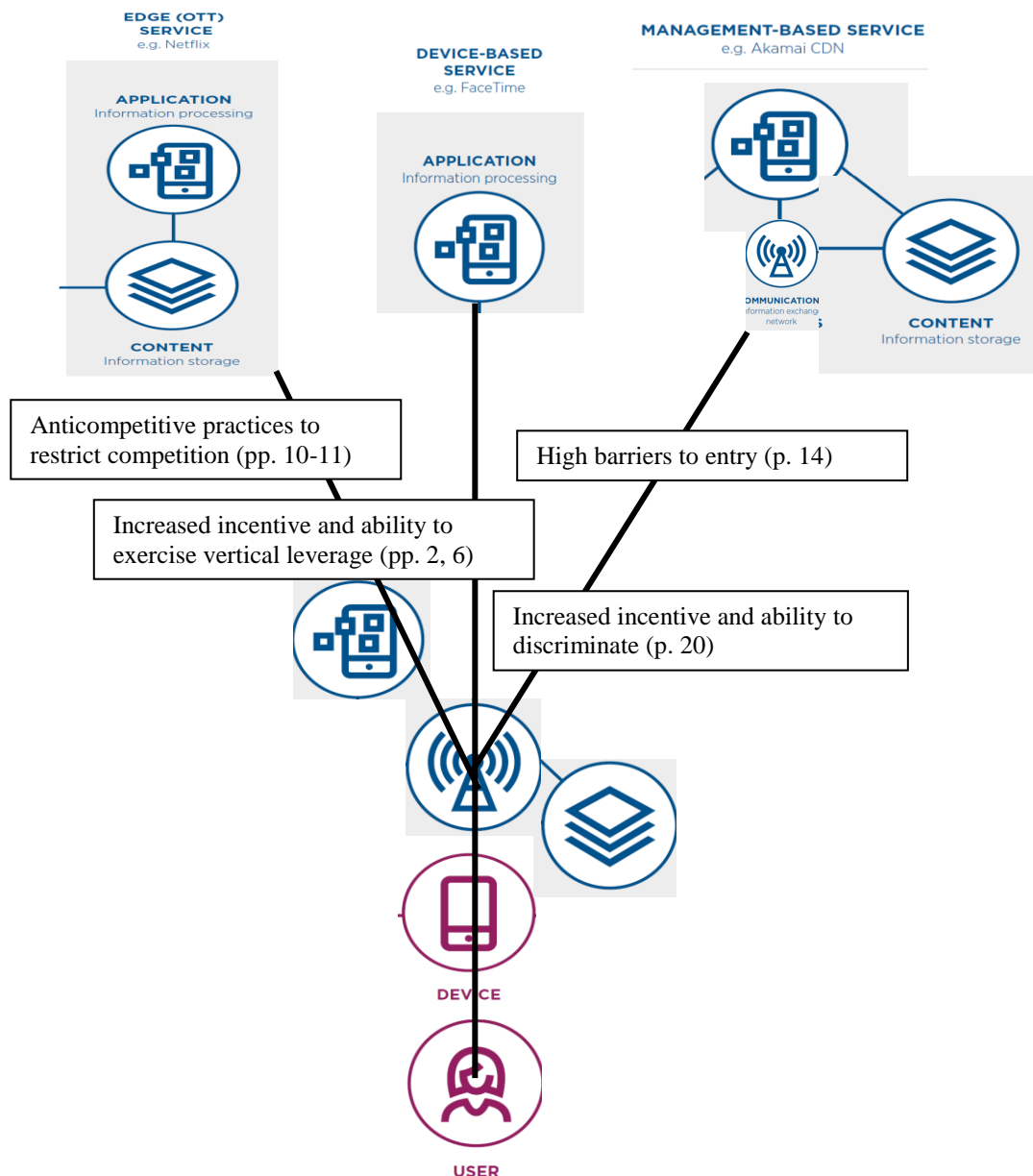
Regional Programming: Federal Communications Commission, *Fifteenth Report, In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket No. 12-203

The bottom line is that the deal with Charter does little, if anything, to address the market power problem that the Comcast-Time Warner merger creates. Indeed, it can be argued that the Comcast-Time Warner-Charter merger/joint venture/system swaps makes matters worse.

CHARTER/TIME WARNER/BRIGHT HOUSE

Given the long line of cases that has proceeded the Charter/Time Warner Bright House proposed merger, they outcome – approval with conditions – not surprising, nor is the fact that the conditions focused on the threat that vertical leverage would be used against online video distribution. Charter was a geographic extension merger that increased the market share of the number four MVPD. The market share of the expanded number two firm was large enough to raise concerns about vertical leverage and elicit merger conditions similar to those imposed on Comcast NBC. In this case, however, the agencies did not need to invoke the incentives of ownership interest in programming to reach the conclusion that the threat was sufficient to merit conditions.

FIGURE VII-3: CONCERNS RAISED BY THE CHARTER/TIME WARNER ENTERTAINMENT/BRIGHT HOUSE



Source: U.S. Department of Justice, v. Charter Communications, Inc., Time Warner Cable Inc., and Advance/New House LLC. Competitive Impact Statement, Civil Action No. 1:16-cv-00759, May 10, 2016; Federal Communications Commission, In the Matter of Application of Charter Communications, Inc., Time Warner Cable Inc., and Advance/New House Partnership, for Consent to Assign or Transfer Control of Licenses and Authorizations, MB Docket No. 15-149, May 10, 2016.

Citations to the Department of Justice Compliant

Vertical Leverage

Unless a video programmer obtains carriage in the packages of video programming distributors that reach a sufficient number of consumers, the programmers will be unable to earn enough revenue in licensing or to attract enough advertising revenue to generate a return on their investments in content. For this reason, video programmers prefer to have as many video programming

distributors as possible carry their networks, and particularly seek out the largest MVPDs that reach the most customers. If the programmer is unable to agree on acceptable terms with a particular distributor, the programmer's content will not be available to that distributor's customers. This potential consequence gives the largest MVPDs significant bargaining leverage in their negotiations with programmers...

Unlike MVPDs, OVDs do not own distribution facilities and are dependent upon broadband Internet access service providers, including incumbent cable companies such as Charter and TWC, for the delivery of their content to viewers. (p. ...6)

the Complaint alleges that the proposed merger would increase the ability and incentive of New Charter to use its leverage with video programmers to limit the access of online video distributors ("OVDs") to important content. These OVDs are increasingly offering meaningful competition to cable companies like Charter, and the loss of competition caused by the proposed merger likely would result in lower-quality services, fewer choices, and higher prices for consumers, as well as reduced investment and less innovation in this dynamic industry. (p. 2)

Local Market/Bottleneck

In contrast, wireline-based distributors such as cable companies and telcos generally must obtain a franchise from local, municipal, or state authorities in order to construct and operate a wireline network in a specific area, and then build lines to homes in that area. A consumer cannot purchase video programming distribution services from a wireline distributor operating outside its franchise area because the distributor does not have the facilities to reach the consumer's home. Thus, although the set of video programming distributors able to offer service to individual consumers' residences is generally the same within each local community, the set can differ from one local community to another. (p. 7)

Large Market Share

The incumbent cable companies are often the largest video distribution provider in their respective local territories; the Defendants' market shares, for example, exceed 50 percent in many local markets in which they operate. The DBS providers, DirecTV and DISH Network, account for an average of about one third of video programming subscribers combined in any given local market. The telcos, including AT&T and Verizon, have market shares as high as 40 percent in the communities they have entered, but they are only available in limited areas and account for about 10 percent of video programming customers nationwide. Overbuilders such as Google Fiber can also have moderately high shares in particular local markets, but their services are only available in a small number of areas and they account for fewer than two percent of nationwide video programming distribution subscribers. (p. 7)

High Barriers to Entry

Successful entry into the traditional video programming distribution business is difficult and requires an enormous upfront investment to create a distribution infrastructure... Therefore, traditional MVPDs' market shares are likely to be fairly stable over the next several years. (p. 14)

Potential competition

Several OVDs, including Netflix, Amazon Prime Instant Video, and Hulu Plus, offer "subscription video on demand" ("SVOD") services where consumers typically obtain access to a wide library of movies, past-season television shows, and original content for a subscription fee.³ In addition, some individual cable programmers, such as CBS and HBO, have begun offering their content directly to consumers on an SVOD basis.

In contrast to these SVOD providers, a few OVDs have recently begun offering MVPD-like bundles of live, scheduled content to consumers over the Internet. (p. 8)

Although many consumers treat OVD services as a complement to traditional MVPD service... some are already using OVDs as substitutes for at least a portion of their video consumption....

Absent interference from the established MVPDs, OVDs are likely to continue to grow, and to become stronger competitors to MVPDs.... Defendants' internal documents show that they have typically been comparatively less concerned about competition from certain SVOD providers, like Netflix, that do not offer live or current-season programming, and more concerned by the threat posed by vMVPDs (pp. 9-10).

Anti-competitive practices

some MVPDs have sought to restrain nascent OVD competition directly by exercising their leverage over video programmers to restrict video programmers' ability to license content to OVDs. As alleged in the Complaint, and explained in more detail below, TWC has been an industry leader in seeking such restrictions, and the formation of New Charter will create an entity with an increased ability and incentive to do so. For example, a merger may create, or substantially enhance, the ability or incentive of the merged firm to protect its market power by denying or raising the price of an input to the firm's rivals. (pp. 10-11)

Merger Increases Leverage

Given the importance of New Charter as a distribution channel, programmers will be less likely to risk losing access to New Charter's considerable subscriber base – which is almost 60 percent larger than TWC alone – and will be more likely to accept to New Charter's demands. (p. 13)

Remedies

The Proposed Final Judgment Prohibits Defendants from Limiting Distribution to OVDs through Restrictive Licensing Practices (p. 15)

The Proposed Final Judgment Prohibits Defendants from Discriminating Against, Retaliating Against, or Punishing Video Programmers (p. 18)

Provision of Defendants' FCC Interconnection Reports (p. 19)

The FCC's order approving the merger imposes an obligation on New Charter to make interconnection available on a non-discriminatory, settlement-free basis to any Internet content provider, transit provider, or content delivery network ("CDN") who meets certain basic criteria. (p. 20)

PART III:

**THE GREAT TRANSFORMATION:
SILVER CLOUDS AND DARK LININGS**

VIII. COMMUNICATIONS PROTOCOLS, OPEN ACCESS AND ENTREPRENEURIAL EXPERIMENTATION

In responding to the Congressional Request to draw up a National Broadband Plan, the FCC concluded that the success of the digital revolution in communications rested on a unique innovation system that created virtuous cycles of innovation and investment.¹³⁸ The virtuous cycle framework posits that innovation and investment at the edge of the network are inextricably linked to innovation and investment in the communications network itself in a recursive, reinforcing feedback loop. Development of applications, devices, and content stimulates demand for communications that drives innovation and investment in the supply of communications network capacity and functionality. In turn, improving network functionalities and expanding capacity makes new applications possible, which stimulates new demand and allows the cycle to repeat. The Commission took on the challenge of developing a regulatory framework that protects and advances the “virtuous cycle,” so that broadband deployment and adoption is stimulated. This framework is widely accepted under a variety of names, positive externalities, spill overs, network effects, positive feedback loops, dynamic increasing returns.

In this section, we first analyze the economics of the Internet innovation system, focusing on the factors that have created a powerful “virtuous cycle” as described in Shane Greenstein’s account of computers and the Internet as General Purpose Technologies. We then examine the success of unlicensed spectrum, which has made a major contribution to the overall success of the digital communications sector. We then examine the threats to the continued expansion and development of the sector emanating from dominant incumbents with market power.

THE ROLE OF ACCESS IN THE VIRTUOUS CYCLE OF DIGITAL COMMUNICATIONS

Shane Greenstein describes the process of entrepreneurial experimentation at the core of the virtuous cycles that developed in several digital technologies, including computers, the Internet and Wi-Fi. It is important to distinguish the micro level activities in which individuals and firms engage from the macro or system level unintended benefits to which they give rise. Individual firms are motivated and take action at the micro level. At the micro level, we can identify a number of conditions that created a space that was extremely friendly to entrepreneurial experimentation, which Greenstein puts at the center of the success of the digital techno-economic paradigm.¹³⁹

The “intentional” activities that constitute the core of the “virtuous cycles” that typify the digital techno-economic paradigm include the following:

- Neutrality of the communications protocols and network devices
- Avoiding costly bilateral negotiations over the cost and quality of access
- Freedom to experiment
- User driven to an unprecedented degree

¹³⁸ Perez, 2002.

¹³⁹ Shane, 2010.

- Interoperability
- Open standards
- Importance of platforms
- New relationship to capital markets

The system level characteristics that emerge as positive externalities to reinforce the “virtuous cycle” of the Internet innovation system include the following:

- Expanded division of labor
- Divided and diverse technical platform leadership
- Specialization of supply firms
- Network effects
- Knowledge flows
- Learning externalities

Greenstein singles out two critical features that enabled the micro level activity that gave rise to an explosion of entrepreneurial experimentation.

First, the Internet was designed to have its intelligence at the end of the network. That is, users had to adopt applications in the PCs and workstations that were compatible with one another, but did not have to worry about any of the devices or protocols inside the network.

Second, once the commercial Internet had diffused (by 1997 to all major cities in the United States), a remarkable set of new possibilities emerged: The Internet made it possible for users and vendors to move data across vast geographic distances without much cost, either in operational costs and/or in advanced set-up costs of making arrangements for transport of data. Together, those two features enabled enormous combinations of users and suppliers of data that previously would have required bilateral—and, therefore, prohibitively costly—agreements to arrange. In brief, it enabled a network effect where none had previously existed, involving participants who could not have previously considered it viable to participate in such a network.¹⁴⁰

The fact that users and companies at the edge did not have to “worry about the devices and protocols inside the network” and could use the ubiquitous telecommunications network without bilateral – and prohibitively costly – arrangements were essential and necessary features of a communications environment that fostered innovation at the edge. The arrangement involved the dramatic reduction in transaction costs that created a network effect. “Network neutrality” is a perfect description for a situation in which you do not have to “worry about” the insides of the network or negotiate to make agreements for transport of data through the network. This dramatically expands the communications space.

¹⁴⁰ Greenstein, 2010:489-490.

Greenstein points out that the Internet protocol itself was managed as an open standard subject to a multi-stakeholder governance process. This prevented the incumbent telecommunications companies from hijacking the standard setting process. The key was a collaborative, open process built on

the emergence of a new form of leadership for designing standards, one that involved collections of market participants... not beholden to the managerial auspices of AT&T or IBM... [and] also did not simply ratify the design decisions of Intel, Microsoft, or Cisco, though all those firms sent representatives who had a voice in shaping outcomes.¹⁴¹

The standards committees that were responsible for designing key standards for the Internet were comprised of representatives from many firms, as well as interested researchers from universities and other nonprofit organizations. Because undirected economic experiments are undertaken by multiple firms working together, by definition, the committees participated in these types of experiments. This raised the profile of activities inside standards committees and it directed attention at different forms of consensus-oriented standards processes for designing standards accommodating a variety of complementary goods and services.

Ultimately, the accumulation of Internet industry knowledge depended on spreading the lessons learned from economic experiments. Further innovations then built on that knowledge, renewing a cycle of accumulated lessons from more experiments. This accumulation was a key driver of the market's evolution because it set the conditions for innovative behavior. Standards committees participated in this cycle and helped shape the Internet by affecting, for example, pricing, the quality of services, and the identity of leading firms.

The range of such important decisions shaped by standards committee was without precedent. The IEEE, for example, made designs that shaped the LAN market, modem, and wireless data communications markets, while the IETF made designs that shaped the operations of every piece of equipment using TCP/IP standards. Many of these decisions went into use quickly, ensured that all complying components would interoperate, and had enormous consequences for the proprietary interests of firms.

Never before had such a large industry had so much of its innovative activity shaped by collective firm decisions.¹⁴²

In the array of potential sources of information, the new paradigm provides the opportunity for the most edgy of all actors – consumers and users – to play a much larger role in driving innovation. “All of the sources of ideas for new R&D projects outside the R&D lab itself, including suppliers, rivals, university and government labs or even a firm's own manufacturing operations, customers are far and away the most important.”¹⁴³

¹⁴¹ Greenstein, 2010:517.

¹⁴² Id.

¹⁴³ Wesley M. Cohen, “Fifty Years of Empirical Studies of Innovative Activity and Performance,” *Handbooks in Economic Volume 1*, 2010:172.

This new techno-economic paradigm dramatically improves economic performance because it facilitates economic activity at the micro level that had been hampered by traditional market barriers or imperfections (transaction costs, access to capital, market power, etc.). It also has the effect of reducing a number of other market imperfections that had hampered the macro level performance of the system (provision of public goods, learning, spillovers, network effects, etc.)

The impact of the micro level intended or directed activities described above were reinforced by undirected processes. There were strong positive external economies associated with the emerging techno-economic paradigm... referred to as “dynamic increasing returns... self-reinforcing, positive feedback cycles. Other external economies among users, increasing returns to learning and development of expertise, the nonrivalrous character of application of innovation to output, innovational complementarities, spillover pools.¹⁴⁴

Greenstein’s analysis cited above does not examine how the network neutrality that existed on the eve of the explosion of the commercial Internet and was so vital to its success came into existence. Tim Wu (among many others), has identified a series of regulatory decisions that paved the way.

[T]he FCC ordered Bell to allow the connection of the “Carterphone,” a device designed to connect a mobile radio to a Bell Telephone... the FCC went further and specified something simple but absolutely essential: the familiar RJ-45 telephone jack... The modular jack made it unnecessary for a Bell technician to come and attach one’s phone to the phone line. More crucial, with the phone change in place, any innovator – any person at all – was suddenly free to invent things that could be usefully attached to the phone lines...

They also made possible the career of Dennis Hayes, a computer hobbyist (“geek” is the term of art) who, in 1977 built the first modulator/demodulator (modem) designed and priced for consumers, the so-called Hayes Modem...

[T]he FCC issued a rule banning AT&T from directly entering the market of “data processing” or “online services.” These were the earliest precursors of what I now call Internet service...

In short, with strange and unprecedented foresight, the FCC watered, fertilized, and cultivated online computer services as a special, protected industry, and, over the years, ordained a set of rules called the *Computer Inquiries*, a complex regime designed both to prevent AT&T from destroying any budding firms and also to ensure that online computer service flourished unregulated.¹⁴⁵

Francois Bar notes that the FCC made a number of additional decisions that magnified the importance of the commitment to access to the core communications network and the decision not to regulate behavior in the data transmission area.

¹⁴⁴ Cohen 2010, pp 177-181.

¹⁴⁵ Wu, 2010, pp. 190-191.

The FCC allowed specialized providers of data services, including Internet Service Providers (ISPs) and their customers, access to raw network transmission capacity through leased lines on cost-effective terms. Regulatory policy forced open access to networks whose monopoly owners tried to keep them from using the full capabilities of the network in the most open and free manner.

Open network policy assured the widest possible user choice and the greatest opportunities for users to interact with the myriad of emerging new entrants in all segments of the network... Indeed, the Commission consistently back cost-based access to the network (initially through leased lines and later through unbundled network elements). The de facto result of this policy, and of more conscious choices symbolized by the *Computer III* policies, was to prevent phone company monopolies from dictating the architecture of new data-related services.¹⁴⁶

Thus, this was not a one-off policy, but a sustained commitment.

UNLICENSED SPECTRUM AND THE WiFi REVOLUTION

The FCC repeated this feat when it helped to create another key pillar in the structural foundation of the digital revolution. It established the conditions for the explosive growth of another communications protocol, Wi-Fi. Here, Greenstein acknowledges the role of the FCC.

More surprising, a wireless fidelity technology now popularly known as Wi-Fi became dominant. Wi-Fi did not arise from a single firm's innovative experiment. Rather, Wi-Fi began as something different that evolved through economic experiments at many firms. The evolution arose from the interplay of strategic behavior, coordinated action among designers, deliberate investment strategies, learning externalities across firms, and a measure of simple and plain good fortune.¹⁴⁷

The mobile communications revolution was built upon two very different and successful approaches to the management of spectrum. They were made possible by a remarkable, U.S. led, real-world experiment.¹⁴⁸ In the early days of radio communications, policymakers chose to manage interference in radio transmission by granting an exclusive license to one user to transmit signals on specific frequencies, called bands, in a specific geographic area for a specific purpose. For three quarters of a century this approach led to the dominance of broadcasting in the commercial use of the airwaves. In the mid-1980s the FCC altered the regulatory regime for access to spectrum and created the opportunity for dramatic improvements and changes in the use of spectrum for communications purposes.¹⁴⁹

The FCC established the basis for two different approaches. Exclusive licenses were made available that allowed new, two-way communications. Later, licenses were auctioned to the highest bidder.¹⁵⁰ The licenses were still exclusive, but the bidding and flexibility were intended

¹⁴⁶ Bar, et. al., 1999, cited in Cooper, 2002:68-69.

¹⁴⁷ Greenstein, 2007:69... 70...71.

¹⁴⁸ Lemstra and Groenewegen, 2011, p. 4.

¹⁴⁹ Wehrbach, 2002

¹⁵⁰ The first two licenses were given to incumbent wireline telecommunications providers.

to improve the utilization of spectrum by assigning the rights to those who were willing to pay the highest price. At the same time, the FCC identified some bands where there would be no licensee and interference would be avoided by the use of new technologies (spread spectrum) as well as restrictions on the amount of power devices could use. Anyone and everyone could transmit in these unlicensed bands as long as the devices obeyed the rules.

From the point of view of traditional economic analysis, compared to exclusive licenses, the unlicensed model is extremely, even radically, deregulatory.¹⁵¹ It captures what would be externalities with respect to licensed approaches.¹⁵²

- The unlicensed model removes the spectrum barrier to entry, which is the primary obstacle by allowing anyone to transmit signals for any purpose, as long as the devices used abide by the rules.¹⁵³
- Removing this barrier to entry removes the threat of hold up, in which the firm that controls the bottleneck throttles innovation by either refusing to allow uses that are not in its interest, or appropriating the rents associated with innovation.¹⁵⁴
- It lowers the hurdle of raising capital by eliminating the need for a network and focusing on devices.¹⁵⁵
- It fosters an end-user focus that makes innovation more responsive to consumer demand; indeed, it allows direct end-user innovation.¹⁵⁶
- It de-concentrates the supply of services compared to the exclusive licensed model, especially for high bandwidth services which tends to result in a very small number of suppliers, particularly in lower density markets.¹⁵⁷

Unlicensed spectrum lowers transaction costs. If the rules are written leniently, many people will be able to transmit for many purposes. If the rules are written well, interference will be avoided. The FCC's approach to setting aside spectrum for shared use exhibits several

¹⁵¹ Hovitz, 2007, p. 4.

¹⁵² Milgrom, et. al. 2011, p 2, [T]he primary benefits of unlicensed spectrum may very well come from innovations that cannot be yet be foreseen. The reason is... that unlicensed spectrum is an enabling resource. It provides a platform for innovation upon which innovators may face lower barriers to bringing new wireless products to market, because they are freed from the need to negotiate with exclusive license holders.

¹⁵³ Horvitz, 2007.

¹⁵⁴ Milgrom, et al., 2011, 13.

¹⁵⁵ Lemstra and Groenwegen, 2011b, p. 373, "Multiple product vendors and, later, service providers have been seen to be willing to invest in the development of products and service to exploit the unlicensed part of the RF spectrum." One could argue that this is the result of the return on investment largely being based on the sale of Wi-Fi equipment, and not on the exploitation of a service requiring complementary and deep investment in the creation of a network infrastructure, as is the case in mobile cellular communications.

¹⁵⁶ Von Hippel, 2005, has emphasized the importance of user innovation. Cooper, 2006, discusses the importance of end-user innovation and local knowledge in collaborative production in digital product spaces, including Wi-Fi and mesh networking.

¹⁵⁷ The intensity of the debate over ownership models is equaled or exceeded by the intensity of the debate over whether the dramatic increase in concentration of the cellular service sector has resulted in the abuse of market power. Cooper, 2011b, shows that economies of scale and scope and industry concentration have both typified the decade of development of wireless broadband, making it difficult, if not impossible, to disentangle the two.

characteristics that accomplish the task of managing the common pool resources in a light-handed manner.¹⁵⁸

- The use rules were simple and established an easy set of conditions with which devices must comply.
- They did not require intensive, continuous monitoring and coordination.
- There are no membership rules. Anyone could enter and use the shared resource.

Beyond these traditional economic factors, the unlicensed model creates a much more diverse sector. Diversity has come to be recognized as a uniquely important characteristic of economies and economic systems because it reinforces desirable economic traits of the system.¹⁵⁹ Diversity creates value, enhances innovativeness and builds resilience, as well as promoting other social values like pluralism. Diversity is created by three systemic characteristics – variety (the number of firms), balance (market shares of firms) and disparity (the differences between the firms). Adding an additional cellular service provider may increase variety and may improve balance if the new provider gains market share, but it does not increase disparity. The diversity that a different ownership model introduces into the communications ecology provides the uniquely significant benefit of introducing a different perspective that is ideal for enhancing diversity.¹⁶⁰

The contribution of the unlicensed use model to the wireless ecology is driven by spectral efficiency,¹⁶¹ deepening complementarity between licensed and unlicensed uses,¹⁶² and the continual development of new arrangements that integrate the technologies and ownership

¹⁵⁸ Cooper 2005, applied the framework developed by Ostrom to mesh networks, discussing the eight sets of rules that have been identified. The FCC boiled the management challenge down to primarily one set of rules – position rules that define what users of the resource are allowed to do. Milgrom, et al. (p. 14), describe the FCC approach to shared public use spectrum as a “managed commons. “ In fact, it has succeeded because it relies on as little management as possible to get the job done.

¹⁵⁹ Stirling, 2000, Benhamou, et al., 2009.

¹⁶⁰ It is important to note that the benefit of diversity in ownership models in the digital age is not limited to the example of spectrum reserved for or made available to shared use by the public. In fact, we find a similar outcome across a number of areas of the digital economy. Cooper, 2006, analyzes several examples. In software development, proprietary and open source software have both grown side-by-side. Sometimes they reinforce one another, as in the extensive support provided to open source projects by proprietary software firms. Sometimes they compete, as in the rivalry between Microsoft, Apple and Linux in operating systems or Apple and Android in the mobile operating system product space. In the desktop computing product space, the PC open platform and the Apple closed platform have existed side-by-side for decades. When the smaller, closed platform ultimately supported the larger open platform it gained substantial market share, creating more balance. In the production and distribution of content, peer-to-peer networks exist alongside hub-and-spoke networks and are used to alleviate congestion on or efficiently manage the resource of those networks (Cooper, 2011a). occupy very different spaces and the collaborative model has played a much smaller role in industrial society. Digital technology seems to be supporting a broader role for collaborative production. Digital technologies enable the embodiment of knowledge in silicon chips, which facilitates the decentralization of intelligence and promotes distributed innovation. Digital communications dramatically lower the cost of communications, which enhances coordination as a result. The digital revolution has fostered the convergence of areas in which the two models can exist side-by-side and expanded the role of collaborative production.

¹⁶¹ Rysavy, 2010b, p. 10, Cisco, 2011a, p.1; Higginbotham, 2011,

¹⁶² Cisco, 2011a, p. 1,

models.¹⁶³ In the case of the cellular embrace of Wi-Fi, necessity is the mother of acceptance.¹⁶⁴ The reliance on Wi-Fi is much more than just a convenience; it represents a fundamentally different approach to provisioning initial connectivity that some analysts believe is the inevitable long-term solution for wireless broadband communications. The key to the efficiency of offloading traffic onto unlicensed use spectrum as implemented by the FCC is the fact that all unlicensed use spectrum is available to all users all the time. This has the effect of making more available to every user, as long as interference is effectively controlled by the rules of sharing.

Operators are already using Wi-Fi for effective data offload on their 3G networks. This is an excellent application of Wi-Fi because the technology can deliver much higher throughput in small coverage areas to more people than is possible with cellular technologies. Not only is there more unlicensed Wi-Fi spectrum available than the amount of spectrum licensed to any individual cellular operator, but since coverage areas are much smaller, frequency reuse is much higher, and thus there is more bandwidth available to each subscriber.¹⁶⁵

By 2015, more than half of all wireless traffic was being offloaded onto unlicensed spectrum to deliver voice and data to consumers. A recent Nielsen survey found that 80% of respondents had used WiFi to obtain content.¹⁶⁶ Unlicensed spectrum was also playing a significant part in the delivery of landline broadband, both in distributing signals to devices around the premise once it arrived over wireline and in the form of millions of hotspots. One can argue that WiFi had become the single most important distribution medium in the digital communications sector. WiFi held its own by every measure of performance – standard development, innovation in devices, uses and users. In order to support the array of digital services and carry the immense amount of traffic that has been offloaded onto unlicensed use bands, a great deal of technology had to be developed and deployed in a short period of time. This goes to a fundamental focus of economic policy – the ability of a model to stimulate innovation.

INCUMBENT OPPOSITION AND THE CONSTANT THREAT OF THE ABUSE OF MARKET POWER

Discriminatory Access

Having made the case that these bold decisions, implemented over decades, were profoundly successful, one might ask, “what do policy makers have to worry about?” The answer is, “A lot.”

The incumbent communications companies were adamantly opposed to changes in policy that might threaten their dominance. They continue to oppose the openness mandates. They possess massive economic resources, occupy critical strategic locations and wield a great deal of political influence and power. Policy is always subject to reversal. Questions of the applicability of “old” policy to “new” technologies or services can always be raised. The 1996 was just the beginning of the war, not the end. In 2016, they were still litigating against efforts by the FCC to implement open access rules.

¹⁶³ Higginbotham, 2011,

¹⁶⁴ Iluna, 2011. Woyke, 2011, Lamberth, 2011, “

¹⁶⁵ Rysavy, 2010b, p. 7.

¹⁶⁶ Nielsen, 2016.

Open spaces like the Internet and Wi-Fi protocols are the meat and potatoes of new entrants and entrepreneurs; but they are anathema to entrenched network incumbents. Given their location and importance in the digital communications platform, left unregulated to pursue their interest they are likely to do significant harm to freedom of entrepreneurial experimentation at the edge of the network, which is the driving force in the “virtuous cycle.”

Their actions can dampen the willingness and ability of the edge to experiment by imposing counterproductive “worry” about the network and its devices, increasing costs substantially by forcing edge entrepreneurs to engage in bilateral negotiation, undermining interoperability, and chilling innovation through the threat of “hold up” of successful edge activities.

As incumbents, they have a conservative, myopic bias, and are certain to be far less innovative and dynamic than the edge based on a preference for preserving the old structure,¹⁶⁷ pursuit of incremental,¹⁶⁸ process innovation rather than radical, product innovation, and proprietary culture that prefers restrictions on the flow of knowledge.¹⁶⁹

Competition is much weaker in the network segment of the digital platform than the edge segments, which means network owners face less pressure to innovate, have the ability to influence industrial structure to favor their interests at the expense of the public interest,¹⁷⁰ can use vertical leverage (where they are integrated) to gain competitive advantage over independent edge entrepreneurs,¹⁷¹ and have the ability to extract rents where they possess market power or where switching costs are high.

At the same time, the network operators have given strong indication that they have the incentive and ability to engage in these antisocial kinds of conduct.¹⁷² Services that compete with the franchise offerings of network owners, voice and video have been singled out for attack. In the earliest debate over non-discrimination, they made it clear that they intended to exercise control over the flow of data on their Internet communications network.

A term sheet offered by Time Warner to unaffiliated ISPs who had requested access to its network during the summer of 2000 gives a new and troubling specificity to the threat to innovation. There in black and white are all the levers of market power and network control that stand to stifle innovation on the Internet. Time Warner demanded the following:

1. Prequalification of ISPs to ensure a fit with the gatekeeper business model
2. Applying ISP must reveal sensitive commercial information as a precondition to negotiation

¹⁶⁷ Greenstein, 2010: 479.

¹⁶⁸ Cohen, 2010:137-138...139.

¹⁶⁹ Greenstein, 2010: 492-493,

¹⁷⁰ Greenstein, 2010:497

¹⁷¹ Greenstein, 2010: 93.

¹⁷² Greenstein, 2010: 94.

3. Restriction of interconnecting companies to Internet access sales only, precluding a range of other intermediary services and function provided by ISP to the public (e.g., no ITV [interactive TV] functionality)
4. Restriction of service to specified appliances (retarding competition for video services)
5. Control of quality by the network owner for potentially competing video services
6. Right to approve new functionalities for video services
7. A large, nonrefundable deposit that would keep small ISPs off the network
8. A minimum size requirement that would screen out niche ISPs
9. Approval by the network owner of the unaffiliated ISPs home page
10. Preferential location of network owner advertising on all home pages
11. Claim by the network owner to all information generated by the ISP
12. Demand for a huge share of both subscription and ancillary revenues
13. Preferential bundling of services and control of cross market of services
14. Applying ISP must adhere to the network operator's privacy policy

Under these conditions, the commercial space left for the unaffiliated and small ISPs (where much innovation takes place) is sparse and ever shrinking.¹⁷³

AT&T's negotiations with Mindspring exhibited similar problems.¹⁷⁴

As concerning as these early actions were, the FCC under Powell moved forward with the information service classification. Notwithstanding even more scrutiny, the incumbents continued to engage in behaviors that clearly violated the principle of non-discriminatory access.

- **Blocking:**

- Madison River blocking VoIP ports (2005):
- Cingular's blocking of Paypal (2006):
- AT&T blocking of Slingbox iPhone application (2010):
- Skype blocking on mobile networks (2010):
- FaceTime blocking over mobile devices unless using Mobile Share plan (2012):
- Verizon blocking access to tethering apps (2012):

- **Degradation:**

- Comcast degrading Bittorrent Traffic (2007):
- Netflix degradation on Comcast (2013-2014)

¹⁷³ Northnet, Inc. 2000.

¹⁷⁴ Cooper, 2000.

- Comcast refusal to connect Netflix CDN (2013)
- **Discrimination:**
 - Comcast exemption of Xfinity online video app on Xbox and TiVo from data caps (2012)
 - AT&T sponsored data plan on wireless network (2014)
 - T-Mobile “Music Freedom” exemption of popular music streaming sites from data caps (2014):
- **Raising rivals’ costs:**
 - Comcast/Verizon interconnection agreements with Netflix (2014):
 - Continuing problems with wireless data roaming (2010-2014)

The traditional concerns about market power abused by large incumbents has received a great deal of attention, too much in the sense that the other sources of market failure that would undermine or weaken the “virtuous cycle” deserve at least as much attention. Nevertheless, the fundamental point is that “[l]eading incumbent firms and new entrants face different incentives to innovate when innovation reinforces or alters market structure.” The incumbents will invest in innovation that supports the platform and their leading role in it. In particular, they will prefer proprietary standards.¹⁷⁵

Set Asides for Unlicensed Use

While auctions of spectrum certainly played an important part in stimulating competition and growth in the wireless sector, auctions are certain to result in little, if any, spectrum being allocated to the unlicensed use model.¹⁷⁶ Given the history of spectrum auctions in the United States, they will fail to address the problem of the market power of the incumbent cellular providers and fail to reflect the externalities and transaction cost efficiencies of unlicensed use spectrum. Opponents of setting aside spectrum for unlicensed use have put forward a highly implausible model in which groups of companies interested in exclusive licenses are pitted against groups of companies interested in unlicensed spectrum.¹⁷⁷ Such a contest would be totally one-sided, loaded in favor of the group pursuing exclusive licenses.

Looking at auctions in the last decade, along with subsequent mergers and acquisitions, two-thirds of all spectrum auctions ended up in the hands of the top two companies (ATT and Verizon).¹⁷⁸ The top four firms have acquired 80 percent of the spectrum. Here it is important to recognize that the marketplace would put virtually all the auctioned spectrum in the hands of

¹⁷⁵ Cohen, 2010:154.

¹⁷⁶ If public policy is to reflect economic reality, it must reflect the fact that the two models are effective solutions to the coordination problem. Economic analyses or public policies that assume exclusive licenses are superior to shared use spectrum are simply wrong. The suggestion that auctions can be configured to yield the “socially” optimal amount of shared use spectrum has been thoroughly criticized. Rose, 2011. Milgrom et. al., 2011,

¹⁷⁷ Bykowsky, Olson, and Sharky, 2008,

¹⁷⁸ Top 4 firms are Sprint-Clearwire (Joint Venture), AT&T, Verizon, and T-Mobile. Current shares are from Federal Communications Commission, 2011c; Auction shares are from FCC Auction Database, year shown is the completion date. Total spectrum available for broadband is from Bazelon, Jackson, and McHenry, 2011., Table 4 based on Potential Supply.

the dominant incumbents through auction, merger and acquisition in less than a decade if regulators do not stop the process. Incumbent cellular service providers are likely to be the big winners in auctions for spectrum for several reasons.¹⁷⁹ Incumbents

- have deep pockets,
- already possess communications infrastructure,
- concentrate demand and decision making,
- are primarily telecommunications companies, and
- have a strong incentive to bid to foreclose competition.¹⁸⁰

Indeed, in the context of auctions of spectrum in a communications sector that has become highly concentrated, the cellular service providers have an incentive to keep competition out. By denying spectrum to potential or actual competitors, they increase their own ability to extract the rents that flow from their market power.

Unfortunately, an auction that awards the spectrum to the bidders with the highest values may not assure efficiency because of the bidders' private values for the spectrum may differ from social values as a result of market structure issues. For example, an incumbent will include in its private value not only its use-value of the spectrum but also the value of keeping spectrum from a competitor. Effective policy must recognize competition issues in the downstream market for wireless services.¹⁸¹

Moreover, the incumbent can potentially limit entry, and hence competition, by purchasing additional spectrum that would otherwise go to the incumbent... part of the willingness to pay in the auction for the incumbent comes from the value of deterring entry, which is bad for overall efficiency for the standard market power reasons and may be bad for the dynamic evolution of the service if the threat of competition is necessary to speed up build out and development of new technologies.¹⁸²

The push by incumbent cellular network operators to prevent the FCC from imposing any conditions on the auction of spectrum, coming after the failure of past auctions to stimulate competition and amid vigorous efforts by the incumbent wireless carriers to obtain more spectrum through mergers and acquisitions shines a bright light on the effort of the incumbents to deny additional high quality spectrum for the unlicensed model. The unlicensed space has long been the most competitive area of the wireless market and, as we have seen in the discussion of future development, it may be the last hope for meaningful competition in the broadband space.

The reason I prefer allocating the spectrum as dedicated unlicensed is this provides a well understood model for ensuring open and non-discriminatory access to the resource – not just for incumbents but potential future entrants. Preserving the option for future

¹⁷⁹ Cramton, et al., 2011 p.1.

¹⁸⁰ Milgrom, et al., 2011, p. 13,.

¹⁸¹ Cramton, et al., p.1.

¹⁸² Id.

entry helps ensure that the bottleneck resource (spectrum) is not cartelized so as to limit competition (and thereby, also hampering prospects for innovation).¹⁸³

Thus, two of the key building blocks of the digital communications revolution were put in place over the opposition of dominant incumbent communications companies and those companies are constantly endeavoring to overturn those decisions or relax their enforcement. The threat is ever-present and, in the face of a tight oligopoly on steroids in communications network, the threat is substantial.

¹⁸³ Chapin and Lehr, 2010 p. 27.

IX. THE DIGITAL REVOLUTION IN COMMUNICATIONS SERVICES

CONSUMER POCKETBOOK SPENDING ON DIGITAL COMMUNICATIONS SERVICES

This section examines the consumer pocketbook impact of the abuse of market power in services that occupy a significant and growing place in consumer household budgets—wireline telephone service, wireless service, video, and broadband. The importance of these services to households is clearly demonstrated by Figure I-1, above.

There modeled the “typical” middle-income household (third quintile in the most recent consumer expenditure survey) as having landline telephone service, two cell phone subscriptions, a broadband connection, and a subscription to a multichannel video service. We compare the costs of these services to other important household expenditures. According to the most recent *Consumer Expenditure Survey*¹⁸⁴ by the Bureau of Labor Statistics, a “typical” household spends about \$2,700 per year on these services. The new digital services – broadband and wireless – account for about two-thirds of the total. Adjusting for the “average” take rate of services in the middle-income group, consumers spend almost twice as much on these services as they spend on electricity or health care (excluding insurance).¹⁸⁵ They spend more on these services than they spend on gasoline. Consumer expenditures on communications services equal about four-fifths of their spending on health insurance or groceries (i.e., food at home).

At the same time, as discussed at length in this paper, we estimate that about a quarter of the total bill—around \$540 per year—for these services represents overcharges. Because the markets in which these services are sold are not effectively competitive, the dominant firms set prices far above cost to reap excess profits. Economists call them “supranormal” profits, but in several cases, they are astronomical. The paper shows that the overcharges total almost \$60 billion per year.

Because the changing pattern of consumption makes it difficult to compare expenditures across time, we start with a simple, static example of a typical middle-income family. To get an average for the group, the consumer expenditure survey includes all households, even those that do not take service. That average will be greatly affected if the take rate is changing, as was the case for these services. Landline telephone was declining; mobile and broadband were rising.

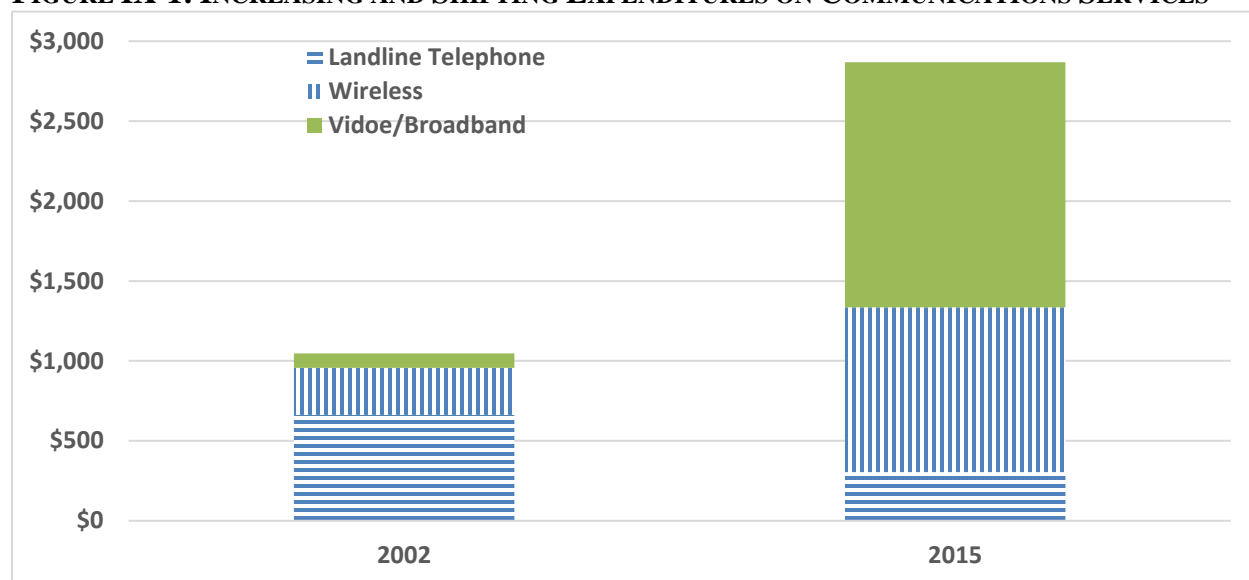
The landline and wireless numbers in Figure IX-1 are from the Expenditure survey. We have added in the figure for MVPD/BIAS (Multichannel Video-Broadband Distribution/Broadband Internet Access Service) based on the average revenue per subscriber, adjusted for the penetration rate of each service. The dramatic increase in wireless spending reflects the increase in penetration. The increase in the video/broadband bundle reflects both the increased penetration of broadband and the increase in cable prices. It should be noted that much of the

¹⁸⁴ The most recent survey available from the Bureau of Labor Statistics is for the year ending July 2015. The comparisons here use the middle quintile, which has a mean income before taxes just under \$49,000 per year.

¹⁸⁵ Instead of looking at the “typical” middle-income household we analyzed above, the *Consumer Expenditure Survey* provides average expenditures for all households, whether or not they take services. The expenditures per household estimated in this way look smaller because a significant number of households that have no expenditures are included in the denominator used to calculate the average.

revenue “lost” for landline is recaptured by the local phone companies in broadband and wireless revenues, as discussed in the next section.

FIGURE IX-1: INCREASING AND SHIFTING EXPENDITURES ON COMMUNICATIONS SERVICES



Sources: Landline and Wireless, Bureau of Labor Statistics, Consumer Expenditure Survey; MVPD/BIAS based on average revenue per subscriber, adjusted for national average penetration rates, discussed in Section IV. Creech, Brett, 2016, “Expenditures on cellular phones services have increased significantly since 2007,” *Beyond the Numbers*, Bureau of Labor Statistics, February, (5:1).

Nevertheless, the dramatic increase is clear, with total expenditures more than doubling and expenditures on the digital services quadrupling. Because income was increasing as well, communications expenditures grew from about 2% of income to almost 3% of income.

CREATING NEW “NECESSITIES”

The dramatic growth of expenditures on these services, along with their large size, reflects the value the services deliver to consumers. These markets are also at the core of the digital economy. They deliver what have been traditionally considered infrastructural services that broadly affect both end uses and intermediate goods.

Because communications have always been a mainstay of household spending, and the digital revolution has made them more important and vital than ever, consumers “need” to buy these services. Without these services, it is simply not possible to participate fully in the routine economic, social, and political life of society. The suggestion that needs will evolve as technology advances is well-grounded in U.S. communications policy. For example, the first sentence of the Communications Act of 1934 declares the goal

to make available, so far as possible, to all the people of the United States, *without discrimination on the basis of race, color, religion, national origin, or sex*, a rapid,

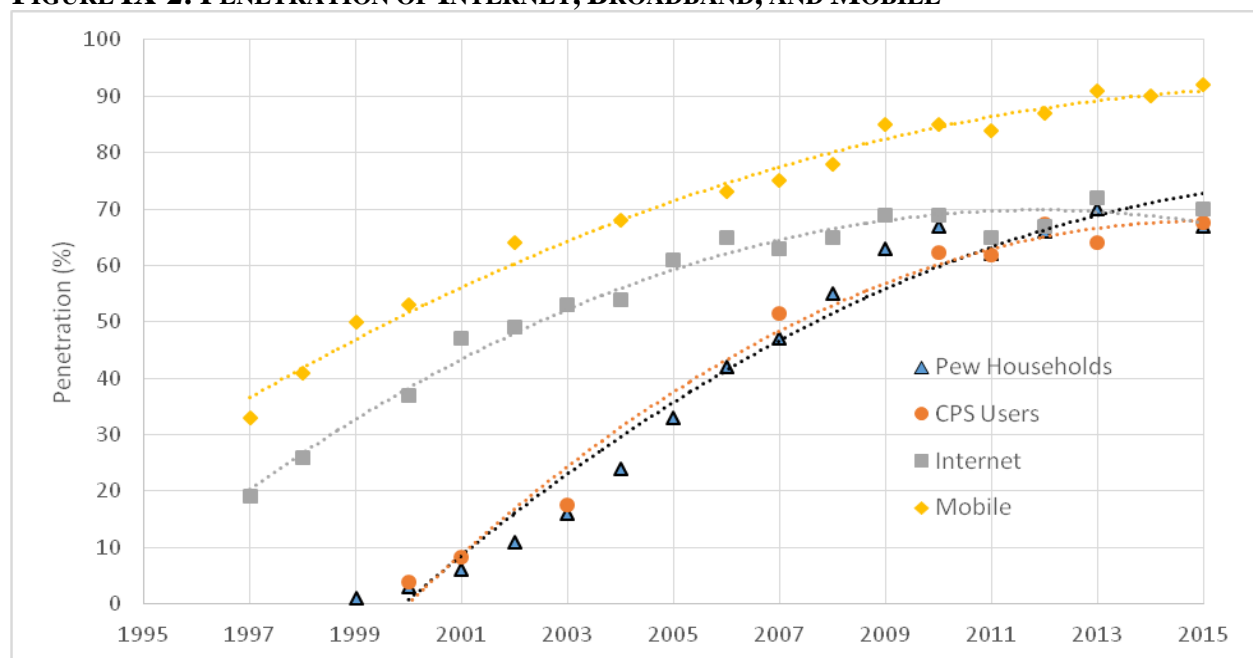
efficient, nationwide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.¹⁸⁶

The level of “adequate” facilities certainly suggests a pragmatic approach to defining the target. The 1996 Act was more explicit in embracing the evolutionary approach to defining universal service. It stated,

Universal service is an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services.... Universal support mechanisms shall consider the extent to which such telecommunications services are: (A) are essential to education, public health, or public safety, (B) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers, (C) are being deployed in public telecommunications networks by telecommunications carriers, and (D) are consistent with the public interest, convenience and necessity.¹⁸⁷

Figure IX-2 shows the increasing penetration of mobile and broadband over the last decade and a half. Mobile shows the percentage of adults who have a subscription. For broadband, we show the penetration in the consumer market of broadband at home measured in two ways—individual use (Current Population Survey, CPS) and household availability (Pew).

FIGURE IX-2: PENETRATION OF INTERNET, BROADBAND, AND MOBILE



Sources: Pew Internet and American Life Project, Trends Database; Giulia McHenry, *Evolving Technologies Change the Nature of Internet Use*, NTIA Data Central, April 19, 2016.

¹⁸⁶ 47 U.S.C. § 1.

¹⁸⁷ 47 U.S.C. § 254.

Both sets of data come from surveys, but the CPS is a huge survey of 53,000 people with a very small standard error and continuous evaluation of the underlying instrument. The Pew survey is much smaller, but also has a long, continuous history. The two adoption curves are almost identical. The speed with which the transition to a higher level of universal service took place may have caught policy makers by surprise, but there is no doubt that the statutory language anticipated it, and that the transformation is very real.

While mobile is approaching universality, the penetration of broadband in the residential sector is a classic good news/bad news story. The penetration has increased rapidly, delivering substantial benefits to households that have broadband. Yet, the fact that the current level of penetration is well below 100% and growth of penetration appears to be leveling off can be seen as a major failure of, and challenge for, public policy. The fact that millions of people and as much as one-third of all households appear to be trapped on the wrong side of a digital divide is a primary challenge for policy. This issue is discussed in Section XVI.

It goes without saying that consumers would not adopt these technologies if they did not get a great deal of value out of them. The majority of Americans have added wireless and broadband. The compelling practical implication can be seen in their use of these two new digital communications media. Table IX-1 highlights the dramatic expansion of online activity over the decade from 2002 (when broadband penetration took off) to 2012. These are the most recent data for which consistent surveying in use is available.

Table X-1 uses one consistent source, the Pew Internet and American Life project, which has not only asked similar questions across time, but also makes all of the data available. We have sorted the different types of uses into eight categories, as shown in the second column. Because Pew does several surveys each year, we have used one main survey (the most comprehensive) for each year and filled blanks from the data available from a second survey that is close in time. Because the goal is to identify important activity, we have only included uses in the table that are either at very high levels (even though only a single year is available) or that have been expanding significantly.

At the start of the broadband era, the Internet was already an important means of communication, with a majority of respondents saying they used the Internet and nine-tenths of Internet adopters using it for email and for gathering personal and political information. By 2012, penetration had increased while personal communications and political information gathering continued at a very high level. The use of the Internet for commercial and work-related activities has grown to majority status. Social-entertainment activity has grown to majority status, as well. Creative activities have increased somewhat but remain at lower levels.

DRAMATICALLY FALLING COSTS

One of the most important background factors for the both the silver cloud and the dark lining is the remarkable technological revolution that is taking place in the communications space. While many aspects of that revolution can be examined, the one that is most central, given the analysis of market performance, is the movement of costs in the economy

TABLE IX-1: THE GROWTH OF ONLINE ACTIVITIES (% engaging)

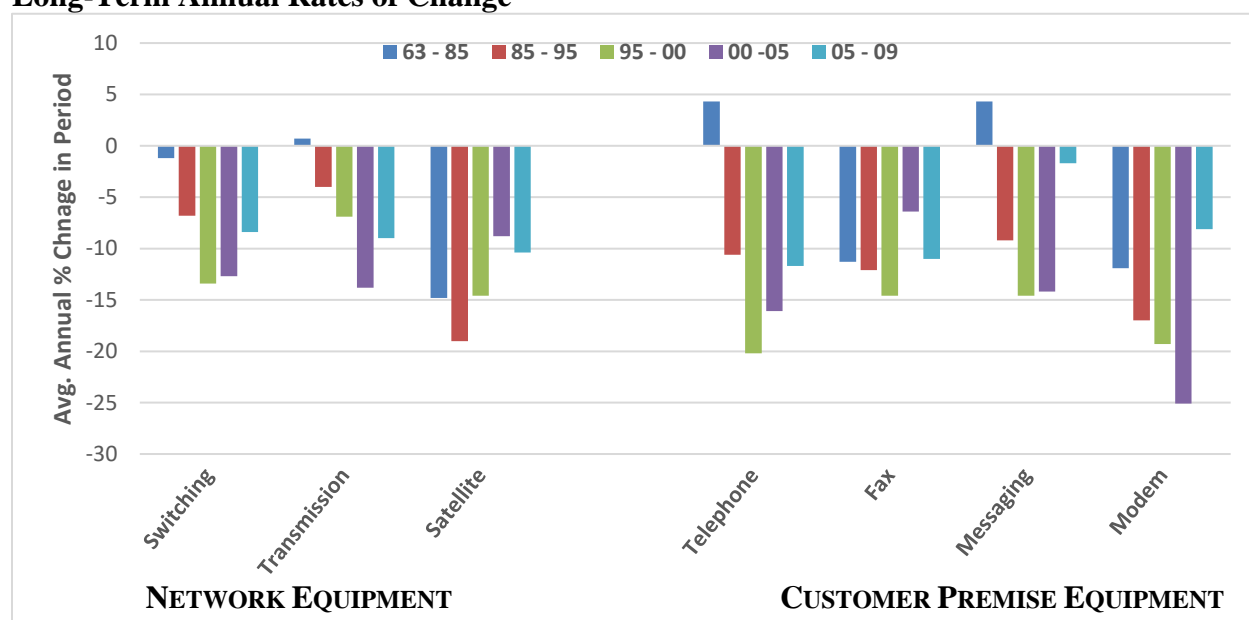
<u>ONLINE ACTIVITIES</u>	<u>TYPE OF ACTIVITY</u>	2002	2006	2009	2012
Use the internet	General use	61%	70%	79%	81%
Use the internet yesterday		58%	65%	73%	82%
Send or read email: Ever	Personal Ccommunication	93%	91%	90%	89%
Yesterday		51%	54%	57%	
Make a phone call online: Ever					30%
Yesterday					4%
Get news online: Ever	Political Info/activity	70%	67%	72%	74%
Yesterday		25%	31%	38%	45%
Look for political news/info: Ever		42%	54%**	60%	61%
Yesterday		9%	19%**	25%	28%
Visit a government website: Ever		56%	49%	59%	53%
Yesterday		9%	9%	10%	13%
Get financial info: Ever	Commercial info/activity	42%	41%*	39%	
Yesterday		10%	9%*	12%	
Research a product/service: Ever		83%			
Yesterday		19%			
Buy a product: Ever		62%	71%**	75%	71%
Yesterday		4%	6%**	8%	6%
Buy or make a reservation for a trave plan: Ever		50%	63%*	66%	65%
Yesterday		1%	3%*	3%	4%
Do banking online: Ever		32%		57%	61%
Yesterday		10%		24%	24%
Ever participate in an online auction		22%	27%**	27%	
Yesterday		4%	3%**	3%	
Rate a product, service or person: Ever			32%	31%	37%
Yesterday			3%	3%	4%
Use classified ads or sites: Ever				49%	
Yesterday				9%	
Do research for school or training: Ever	Work/ education	53%			
Yesterday		10%			
Look for information about a job: Ever			46%**	52%	56%
Yesterday			5%**	9%	11%
Use social or professional networking sites: Ever				46%	69%
Yesterday				27%	48%
Look for health/medical info: Ever	Personal info. gathering	62%			71%
Yesterday		6%			10%
Look for info about a hobby or interest: Ever					84%
Yesterday					35%
Look for information about a place to live: Ever			39%*		
Yesterday			5%*		
Look for religious or spiritual info: Ever		28%		28%	
Yesterday		4%		4%	
Use an online search engine: Ever			91%	88%	91%
Yesterday			41%	50%	59%
Just for fun or to pass the time: Ever	Social/entertainment		62%	72%	74%
Yesterday			28%	38%	44%
Use an online dating site: Ever		10%	6%	8%	
Yesterday		2%	1%	2%	
Make a donation to a charity online:Ever		7%		19%	25%
Yesterday		NA			
Search for info on someone: Ever		28%			51%
Yesterday		NA			
Watch a video on a video-sharing site: Ever			33%	62%	71%
Yesterday			8%	19%	28%
Create own online journal or blog: Ever	Creative activity	7%		11%	14%
Yesterday		1%		2%	4%
Share something online you created: Ever			22%	30%	
Yesterday				4%	

Source: Pew Internet and American Life Project Internet Use Database

Figure IX-3 shows two key categories of costs for communications equipment, network equipment, and customer premise equipment. It is important to keep in mind that these are estimates of input costs, not the prices charged to consumers. The extent to which the cost reductions are passed through to consumers depends on the market structure.

FIGURE IX-3: DECLINING COST OF COMMUNICATIONS EQUIPMENT IN THE DIGITAL REVOLUTION

Long-Term Annual Rates of Change



Sources: David M. Byrne and Carol A. Corrado, *Prices for Communications Equipment: Rewriting the Record*, February 2012; “Recent Trends in Communications Equipment Prices,” *FEDS Notes*, September 29, 2015.

Figure X-3 shows the average annual changes over three periods of importance to the historical analysis—the era prior to 1984, which is a period before the break-up of ATT and the deregulation of cable; the decade before the passage of the Telecommunications Act of 1996; and the years since the 1996 Act.

The authors of the price indices point out the importance of investment in communications equipment. They note that “IT capital services have historically made outsize contributions to labor productivity. Consequently, greater IT capital investment augurs well for future productivity gains.”¹⁸⁸ They then note the strength of the revolution in terms of declining costs.

Last with respect to the debate about whether the impetus for the “IT Revolution” has petered out, we observe that prices for communications equipment have continued to fall rapidly in recent years. Price declines accelerated significantly in the mid-1980s and again in the mid-1990s. Since that time, prices for communications equipment—a

¹⁸⁸ Byrne and Corrado, 2015, p. 3.

general purpose technology central to the economy—have been falling 11 percent on average for 20 years running, and price declines have shown no sign of slowing.¹⁸⁹

In an era that sees doubled capacity on silicon chips every 18 months (Moore’s Law), we may have become somewhat indifferent to a rate of decline that cuts prices in half every 76 months. But placed in the context of industrial revolutions, this rate of decline is truly historic. It is substantially higher (two to three times) than that of products that have come to symbolize previous industrial revolutions (e.g., cotton cloth, light, heat power, and automobiles).¹⁹⁰ To go by the conceptual analysis in Section II, we would expect to see a significant part of these cost savings passed through to consumers if the markets for communications services are competitive. Throughout this analysis, we show that, due to the abuse of market power, this has not occurred. Generally, a cost-reducing, productivity-enhancing technology change is seen as a positive development for an economy. However, if the change is profound, it raises concerns about the adjustment costs that may be imposed on those whose skills are devalued or rendered obsolete and who cannot find an equivalent or better place in the emerging division of labor. It also encounters strong resistance from the dominant incumbents, who will see the value of their assets and skillsets diminished and their market power reduced.

The fact that technological change can be disruptive is not an excuse to forgo it or to allow its negative consequence to go unaddressed. On the contrary, it can be argued that the failure to address important market imperfections seriously impairs the performance of the economy. It certainly should not be an excuse to adopt bad policies or policies that undermine important social values. The increasing availability of surplus should not only facilitate the accomplishment of long-standing goals and values, but should allow society to aspire to achieving higher levels of those values.

CONSUMER DISSATISFACTION

Pocketing the Surplus

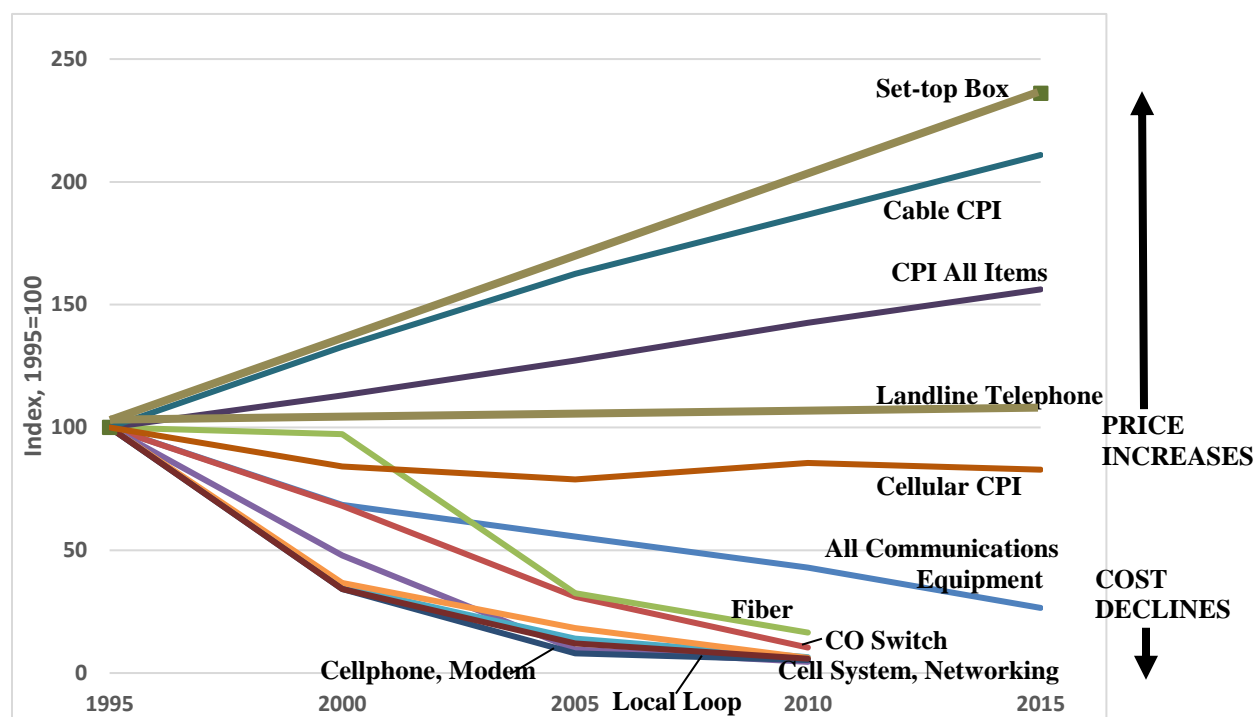
While disruption is an inevitable part of the technological revolution, this paper argues that the abuse of market power does not have to be. In a competitive market, as the demand for services becomes less elastic, consumers see larger benefits as sellers compete for their business. On the other hand, in a situation of high and increasing market power, the opposite occurs. Exploitation of consumers increases. Unfortunately, the lack of competition combines with the importance of these services to allow the firms that dominate communications markets to impose substantial overcharges on consumers. We will analyze this problem in detail throughout Section IV.

Figure IX-4 captures the essence of the situation by highlighting the sharp contrast between price increases and cost declines since the passage of the 1996 Act. Cable rates have been the target of a great deal of analysis pointing out the rapid escalation of monthly rates above the rate of inflation, but this is far too narrow a view. As shown in Figure X-4, it dramatically underestimates the extent of the problem in two respects:

¹⁸⁹ Id.

¹⁹⁰ Sovacool and Dworkin, 2014, pp. 48, 312; Bureau of the Census, U.S. Department of Commerce, 1975; Allen, 1981; Harley, 2010..

FIGURE IX-4: COMMUNICATIONS SERVICE PRICE INCREASES V. DECLINING EQUIPMENT COSTS



Sources: Cost trends: David M. Byrne and Carol A. Corrado, *Prices for Communications Equipment: Rewriting the Record*, released February 2012, revised and released as Finance and Economics Discussion Series, 2015-069; “Recent Trends in Communications Equipment Prices,” *FEDS Notes*, September 29, 2015. Price trends: Bureau of Labor Statistics, *Consumer Price Index*.

- First, the problem afflicts many more services than cable monthly rates.
- Second, the general rate of inflation is not the proper baseline or referent for communications markets during a technological revolution. Costs have been falling dramatically in several of the most important aspects of the delivery of services. Even steady prices may constitute substantial abuse of market power.

Although we do not study the price/cost of landline service in this paper, we include it in Figure I-6 to underscore the latter point. Even though the price has been flat, costs have been falling. Rate reductions were in order. We have argued in a different context that the primary impact of the abuse of market power in the traditional telephone (landline) sector has been to dump network costs onto local rates, even though those costs supported the expansion of wireless and broadband services.¹⁹¹

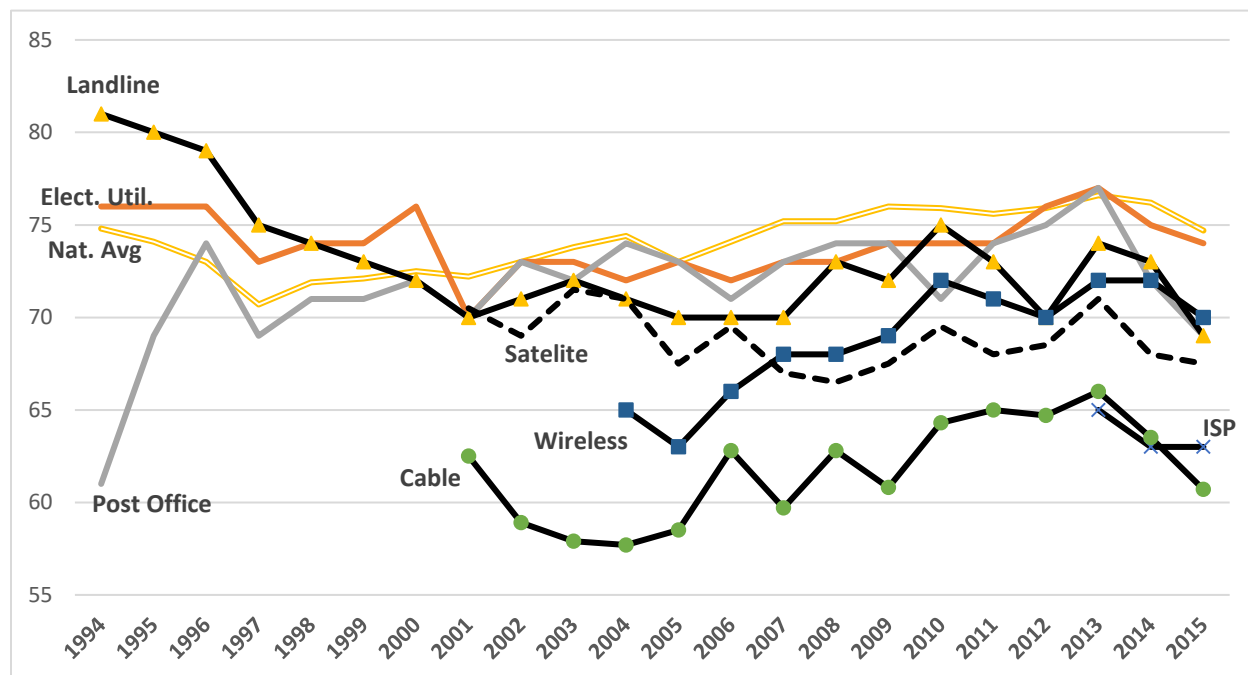
Low Consumer Satisfaction Ratings

Because the dominant providers of these services have market power, they can overcharge and deliver lower quality than consumers would get in a competitive market. Consumers pay too much for services that are lower in quality than they could be. We would expect consumers to be

¹⁹¹ Cooper and Kushnick, 2016.

less than pleased with this situation. Long-term analysis of consumer (dis)satisfaction with these services supports this conclusion, as shown in Figure X-5.

FIGURE IX-5: AMERICAN CONSUMER (DIS) SATISFACTION INDEX SINCE THE 1996 ACT



Source: American Consumer Satisfaction Index, Annual except 2015, which is 2q. Cable calculated as the (weighted average) of subscription television service minus satellite. Satellite is average of DIRECTV and DISH.

All of these services have been well below the national average on consumer satisfaction since the passage of the 1996 Act. Cable has consistently been ranked at the bottom of more than 40 individual sectors. The two largest cable companies, Comcast and Time Warner, have long been at the rock bottom of 150 companies. Internet Service Providers (ISPs)—overwhelmingly broadband service by the time they were first covered by the survey—entered at the very low level of cable, which is not surprising since cable is the dominant provider of broadband service. Wireless entered the survey somewhat higher than cable and has been steadily improving, although it is still below the national average. Landline telephone service, whose rates were generally regulated, was well above the national average but was declining before the passage of the 1996 Act. It continued its decline for a while but has since stabilized somewhat below the national average. We include electric utilities as a point of comparison for a network service that imposes significant costs on the household. Satisfaction with these utilities was above the national average but stabilized just below the national average. The post office has been hovering around the national average, and is well above cable and ISP. Overcharges and consumer dissatisfaction are hallmarks of a market that has performed poorly.

X. THE ECONOMIC TRANSFORMATION AND THE IMPORTANCE OF CORE NETWORK FUNCTIONALISTY

TRANSFORMING THE ECONOMY

The dramatic shift of activity online reflects the value that consumers derive from the new services that digital technologies deliver. Underlying this change in consumer behavior is a fundamental transformation of economic activity.

In the early days of the digital revolution, some questions were raised about the benefit of the massive investment in the technology in the form of a “computer paradox”¹⁹² and later a “productivity paradox of information technology.”¹⁹³ Two decades later, there is no doubt that the economy has been transformed and growth has been stimulated by the digital revolution.

The standard ways to describe the results of the complex analysis conducted using econometric models is to state the multiplier effect that one observes in the before and after levels of output. For example, lowering the cost of an input by X is observed to result in a change of 2X in output.¹⁹⁴ A second way to express the impact of new technology is to estimate the change in output over a range of the input. For example, an increase in penetration of broadband of 10% results in a 1.2% to 1.5% increase in economic output. A quadrupling of the average speed of broadband increases economic output by 0.6%.¹⁹⁵ Since the economic change is permanent and the investment necessary to achieve it is small relative to the overall economy, the net benefit is very large.

It is difficult to convey how comprehensive the changes have been, but a study by Ericsson, Arthur D. Little, and Chalmers University offered the schematic in Figure X-1 to try to capture the pervasiveness of the process. Across the top half of the graph we see the benefits that accrue to the broad economy as the penetration and speed of broadband Internet access and use advances. Across the bottom half of the graph we see the individual-level benefits.

As complicated as the chart is, the text cautions that “this map is a simplification—in reality there are even more factors and linkages.”¹⁹⁶ Be that as it may, this is what a technological revolution looks like when a general purpose technology is driving a new economic paradigm at the center of an emerging mode of production. For those on the wrong side of the digital divide, the lack of broadband becomes a severe disadvantage that reinforces other sources of social exclusion. The effect of this technological revolution has been felt across all factors of production, and not only in production costs but also in lowering transaction costs. Technological progress under the assumption of increasing returns to scale is broadly defined as new knowledge innovation, public infrastructure, among other things. The effect of technology is

¹⁹² Robert Solow, 1987. “We’d better watch out,” *New York Times Book Review*, July 12, 1987.

¹⁹³ Brynjolfsson, 1993.

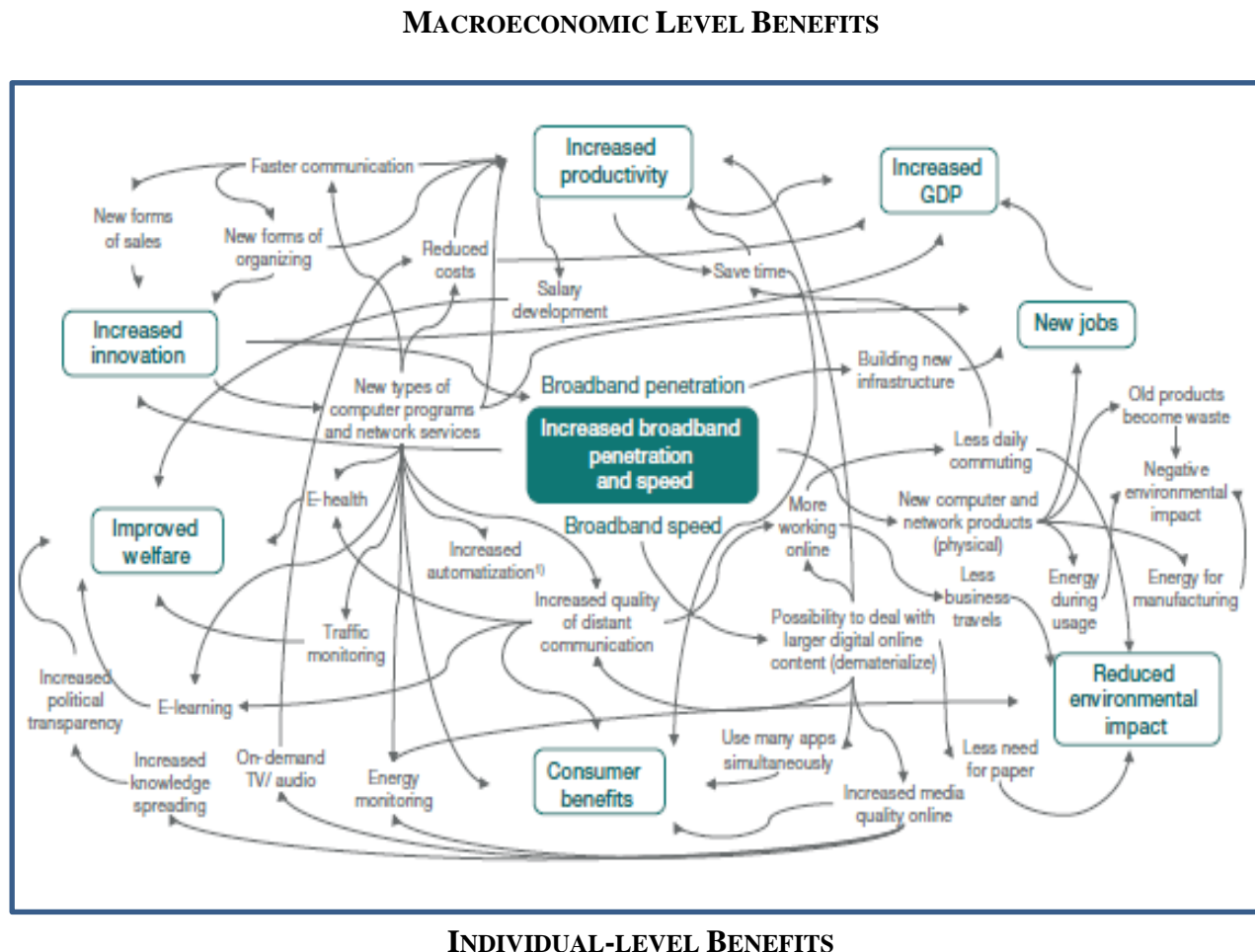
¹⁹⁴ Recent examples in a related FCC proceeding can be found in Spiwak, 2011, for the United States, and Wall Communications Inc., 2015, for the UK. Many of the studies cited in notes 1–18 rely in this concept to estimate the benefits of technological adoption.

¹⁹⁵ The specific range is from Czernich, N., et al., 2011; Ericsson, Arthur D. Little, and Chalmers Univ., 2013. Scott, 2012, evaluates these in a broad context and finds an even larger effect.

¹⁹⁶ Ericsson, Arthur D. Little, and Chalmers Univ., 2013, p. 10.

magnified when the latter includes technology that supports communication, enhances productivity, and improves the wellbeing of the society.¹⁹⁷ In this regard, development in technology is expected to lower the cost of production, streamline supply chain processes, provide access to information in decision making, and support consumers in acquiring quality products at competitive prices. The beneficial effects have been demonstrated at the level of

FIGURE X-1: SCHEMATIC OF EFFECTS STEMMING FROM THE DIGITAL REVOLUTION AND DEPLOYMENT AND ADOPTION OF BROADBAND



Source: Ericsson, Arthur D. Little, and Chalmers University, *Socioeconomic Effects of Broadband Speed*, September 2013. A much simpler version that conveys the same message can be found in International Telecommunications Union, *Impact of Broadband on the Economy*, April 2012, p. 3.

¹⁹⁷ Kumar, Kumar, and Patel provide extensive citations of the general literature. The specific citations to the general proposition in the analysis of communications include Koutroumpis, 2009; Tseng, 2009; Gruber and Koutroumpis, 2010; Datta & Agarwal, 2004; Lam and Shiu, 2010; Kumar et al., 2014; Shahiduzzaman and Alam, 2014; Buhalis and Law, 2008; Porter, 2001; Vu, 2011.

geographic areas (nations, regions),¹⁹⁸ and industrial units (sectors, industries and firms).¹⁹⁹

The magnification of the impact of communications infrastructure comes about because of its pervasive effect across all economic and social activity and its ability to transform a wide range of relations of production.²⁰⁰ The social returns to investment in communications infrastructure are very high, a positive externality²⁰¹, and sectors where they have a large impact, e.g., government services, education, health, and energy, are themselves public goods, or exhibit significant characteristics of public goods.²⁰² Moreover, because of the ability of broadband to

¹⁹⁸ Kumar, Kumar and Patel, 2015, look at small islands and cite an extensive literature. At a country level, various studies support Tech-LG hypothesis. These include: Jorgenson and Stiroh (2000), Jorgenson (2001), and Oliner and Sichel (2000) for the United States of America (US); Oulton (2002) for the United Kingdom (UK); Jalava and Pohjola (2002, 2008) for Finland; Daveri (2002) for European Union (EU) economies; Jorgenson and Motohashi (2005) for Japan; Jorgenson (2003) for the G-7 economies; Jorgenson and Vu (2007) for 110 countries; Kuppusamy, Raman, and Lee (2009) for Malaysia; Venturini (2009) for the US and 15 EU countries; Kumar (2011) for Nepal; Kumar and Kumar (2012, 2013a) and Kumar and Singh (2013) for Fiji; Kumar (2012) for Sub-Saharan Africa (SSA); Kumar (2013, 2014) for the Philippines and Vietnam, respectively.

¹⁹⁹ Kumar, Kumar, and Patel, 2015, cite the following (p. 286): “Lehr and Lichtenberg (1999) examine firms in service industries in Canada and find personal computers made a positive contribution to productivity growth. Stiroh (2002) investigates 57 major US industries and finds a strong link between ICT and productivity. Similarly, Brynjolfsson and Hitt (2003) find that firms that invested in computer technology were able to realize greater productivity (output per unit of input). O’Mahony and Vecchi (2005) use pooled data at the industry level for the US and the UK and find a positive effect of ICT on output growth and excess returns relative to the non-ICT assets.”

²⁰⁰ Pradha et al., 2015 (p. 635): Hackler, 2003; Gasmi and Virto, 2010; Narayana, 2011.

²⁰¹ Thus investment returns (in terms of higher economic growth) are expected to be higher in telecommunications infrastructure than in other types of infrastructure (Chakraborty and Nandi, 2011). Furthermore, the returns may not accrue as a linear function of the value of infrastructure investment (Roller and Waverman, 2001). One can thus expect a positive relationship between the development of a telecommunications infrastructure and economic development in all countries (Hardy, 1980; Shiu and Lam, 2008a; Lam and Shiu, 2010). There are at least four ways in which the telecommunications infrastructure can contribute to economic and societal development: first, business retention; second, economic diversification; third, enhancement of quality of life; and fourth, increasing business competitiveness (see, for instance, McGovern and Hebert, 1992; Jorgenson and Stiroh, 1999, 2006; Oliner and Sichel, 2000; Cieslik and Kaniewski, 2004; Lee, Gholam, and Tong, 2005; Shiu and Lam, 2008b). However, perhaps the greatest impact of telecommunications infrastructure is on information diffusion and organizational efficiency (Hardy, 1980). Many economists have asserted that telecommunications infrastructure affects economic growth both directly and indirectly (Tranos, 2012; MacDougald, 2011; Kenyon, 2010; Choi and Yi, 2009; Thomson Jr. and Garbacz, 2007; Ding and Haynes, 2006; Brock and Sutherland, 2003; Kenny, 2002; Oliner and Sichel, 2000; Cronin, Colleran, Herbert, and Lewitzky, 1993a). Other observers have stated that the development of telecommunications infrastructure is a prerequisite for other infrastructure developments that are necessary for economic growth. Conversely, the inadequacy of telecommunications infrastructure can affect the economic growth negatively (Gorman, 2000; Moss & Townsend, 2000).

²⁰² Vander Wee et al. (p. 177): “It has been shown that broadband infrastructure can act as an enabler supporting an endless variety of applications using the Internet as a platform (OECD, 2008). As such, broadband access networks are pervasive technologies affecting different sectors of the economy in providing opportunities for growth of new e-services in a complementary manner. If these complementarities are taken into account, CBAs have to focus in great detail on the conceptualization, measurement and quantification of indirect effects (OECD, 2009b). In investigating a number of sectors, the OECD (2009a) concluded that the cost savings in just four sectors of the economy (particularly transport, health, electricity and education) would justify the construction of a nationwide FTTH network. In focusing on the government and business sector, the paper is aimed at providing a clear identification, categorisation and quantification of indirect benefits....indirect effects of broadband infrastructure should be taken into account in the evaluation of broadband deployment projects as these effects are responsible for economic growth and thus necessary to account for the full impact of broadband deployment and uptake.... In a dynamic Schumpeterian world, in which general purpose technologies provide necessary

compress space and time, areas and people who are more isolated can benefit disproportionately from the spread of the technology.²⁰³

During the formulation of the National Broadband Plan, it was made clear that broadband communications services play a vital role in the overall U.S. economy.²⁰⁴ A quote from a review by the Organization for Economic Cooperation and Development (OECD) of the impact of the Internet captures its pervasive effect:

The Internet significantly affects OECD economies at different levels and in numerous different impact areas. In particular, the Internet impacts firms in various sectors, individuals and governments. It also has some observable general macro-economic effects.

At the firm level, the restructuring of business models in association with use of the Internet has led to improved efficiencies. The impact of the Internet can also be seen in the rapid growth of new firms founding their businesses on the Internet. The Internet's enhanced communication capabilities are affecting nearly all sectors of the economy in ways that may be as subtle as making previously hard-to-find data available online or as profound as transforming an entire market such as is occurring with music, video, software, books and news.

The Internet is reshaping the way individuals live. It brings benefits of higher consumer welfare (through a larger variety of digital goods and services, lower prices, improved information gathering, more distribution channels and so forth). In addition, individuals benefit from a more efficient labor market and, on a broader level, from positive impacts on the environment and in education....

The impacts of the Internet on the individual, firm and government level can be also observed at the aggregated, macroeconomic scale. Existing empirical studies, including ongoing OECD work, suggest a positive link between increasing Internet adoption and use and economic growth. Even though the aggregated effects are still preliminary, the

inputs into different application sectors (such as health, education and energy), policy has a function in providing incentives to provide broadband infrastructure and to foster the adoption of new e-services.... Literature has just started to provide conceptual frameworks to examine these indirect benefits. In the discussion on the 'real' benefits of broadband infrastructure for economic growth (Katz, 2010; Kenny and Kenny, 2011), rarely has any agreement been reached with respect to common methodologies and appropriate data sources to measure and evaluate these benefits."

²⁰³ Mack, 2014; Perkins and Neumayer, 2011, Bloom and Van Reenen, 2007; Czernich et al., 2011). In this respect, advances in Internet-related ICTs are considered particularly important to the economy because of their unprecedented space-time compressing capabilities and their widespread impacts related to their categorization as general-purpose technologies (GPTs) (Harris, 1998; Helpman and Trajtenberg, 1998; Jovanovic and Rousseau, 2005). Innovations in these technologies are recognized as a key feature of the tremendous period of economic growth in the 1990s, and the economic changes wrought by these technologies have received several names over the years including the New Economy and the Knowledge Economy (Cohen et al., 2000; Pohjola, 2002)."

²⁰⁴ National Broadband Plan, at xi, "Like electricity a century ago, broadband is a foundation for economic growth, job creation, global competitiveness and a better way of life. It is enabling entire new industries and unlocking vast new possibilities for existing ones. It is changing how I educate children, deliver health care, manage energy, ensure public safety, engage government, and access, organize and disseminate knowledge.", Cooper 2010a.

relationship between Internet development and economic growth, as well as microeconomic evidence, suggest that governments should continue to pursue policies that help promote Internet connectivity and encourage the take-up of services.²⁰⁵

While broadband receives a great deal of attention in the analysis of macro and micro economic impacts of new technology, wireless communications have the same effect. As the Department of Justice explained in its opposition to the ATT/T-Mobile merger,

Mobile wireless telecommunications services have become indispensable both to the way I live and to the way companies do business throughout the United States. Innovation in wireless technology drives innovation throughout our 21st-century innovation economy, helping to increase productivity, create jobs, and improve our daily lives. Vigorous competition is essential to ensuring continued innovation and maintaining low prices.

BUSINESS DATA SERVICES: CORE NETWORK CONNECTIVITY

The Increasing Importance of Network Functionality and Connectivity

As digital technology spreads through society, the communications sector and the Internet become the core of the digital economy and the size and importance of communications grows dramatically.²⁰⁶ Many activities that took place in physical space now take place in cyberspace and are dependent on communications. By substituting communications as an intermediate factor for physical transportation transaction costs are lowered, increasing economic efficiency, and more transactions can be executed with communications rather than physical transactions. Intermediate goods or services are consumed by businesses to produce the goods and services that they sell to the public.²⁰⁷ In fact, over the course of the past quarter of a century. The role of intermediate goods in the economy has grown dramatically, from 30% to 40% of the national economy.²⁰⁸

²⁰⁵ OECD, 2012, p. 4.

²⁰⁶ Cooper, 2015, Cooper, 2014, Cooper, 2013.

²⁰⁷ Intermediate consumption (also called "intermediate expenditure") is an economic concept used in [national accounts](#), such as the [United Nations System of National Accounts \(UNSNA\)](#), the US [National Income and Product Accounts \(NIPA\)](#) and the [European System of Accounts \(ESA\)](#). Conceptually, the aggregate "intermediate consumption" is equal to the amount of the difference between [Gross Output](#) (roughly, the total sales value) and [Net output](#) (gross [value added](#) or [GDP](#)). In the US economy, total intermediate consumption represents about 45% of [Gross Output](#). The services component in intermediate consumption has grown strongly in the US, from about 30% in the 1980s to more than 40% today. Thus, intermediate consumption is an accounting [flow](#) which consists of the total monetary value of goods and services consumed or used up as inputs in production by enterprises, including raw materials, services and various other operating expenses. Because this value must be subtracted from [Gross Output](#) to arrive at [GDP](#), how it is exactly defined and estimated will importantly affect the size of the GDP estimate. Intermediate goods or services used in production can be either changed in form (*e.g.* bulk sugar) or completely used up (*e.g.* electric power). Intermediate consumption (unlike fixed assets) is not normally classified in national accounts by type of good or service, because the accounts will show net output by sector of activity. However, sometimes more detail is available in sectoral accounts of income & outlay (*e.g.* manufacturing), and from input-output tables showing the value of transactions between economic sectors. https://en.wikipedia.org/wiki/Intermediate_consumption.

²⁰⁸ Id.

While the cost, capacity and quality of digital connectivity available to consumers (known as first or last mile) has rightly attracted a great deal of attention, the vast amount of data that flows over the digital network has transformed core network functionality and connectivity (everything in between the first and last mile) an equal, if not more important manner. In order to move large quantities of data to end-users, the middle of the network must expand its ability to deliver data. The point at which the customer connects to the core network has become a focal point of concern. Some businesses have always had this need for high-capacity, always on connectivity. It used to be call special access, private line, back haul or middle mile services. The need for these services has grown so rapidly and become so pervasive that there is nothing “special” about them. They are the routine and central network functionality and the FCC has correctly renamed these services Business Data Services (BDS).

As shown in Figure X-2, a wide range of businesses and public agencies, including hospitals, schools, libraries, and public safety offices also need secure, dedicated high-speed, high-capacity connections to the wireline communications network to function well. Plain old telephone service does not meet the service and quality needs of an increasing array of users and uses. There are hundreds of millions of end-users spread all over the map that must rely on BDS and with the expansion of the Internet of Things there will be billions.

To put this another way, all of these services involve a connection to a business. In addition to the two applications that involve the sale of communication services to residential end users

- Broadband Internet Access Service
- mobile broadband and phone service,

Three involve connections to business that do not sell communications to consumers, but need BDS to conduct their daily business.

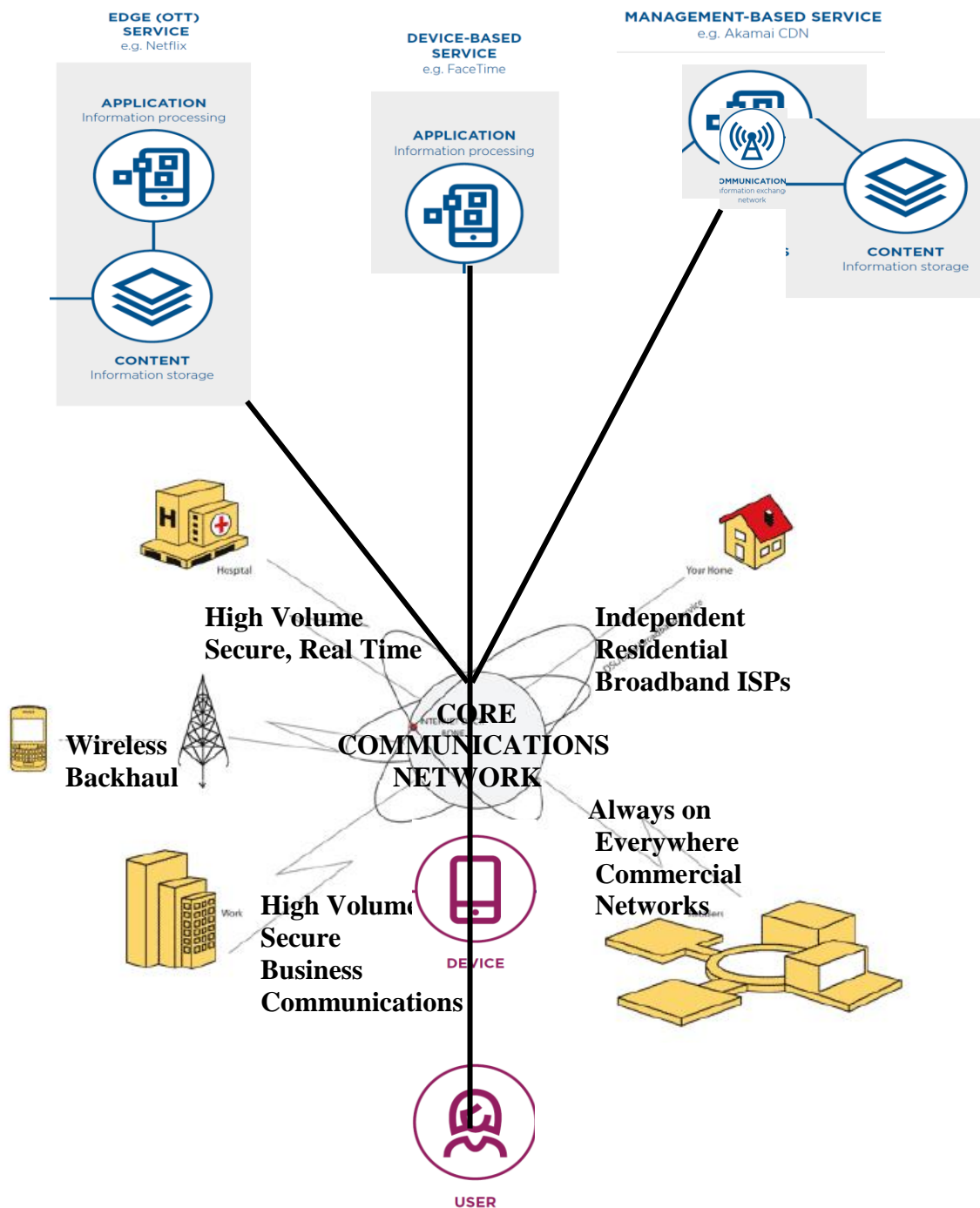
- small, medium, and large businesses that need much more capacity than a single telephone line,
- branch networks (like ATM’s or gasoline stations) that have many nodes that need to be online all the time, and
- businesses like health care providers, who need to move large quantities of data between their offices, frequently in real time

We underscore the business-to-business relationships on which BDS service is based because these increasingly important core network communications services are not free. They have significant cost as intermediate goods that are recovered from consumers in the prices they pay for the goods and services that embody them.

A good example of this is mobile wireless service, which has become the largest component of the household communications budget, as we have seen. In order for a consumer to place or receive a mobile wireless transmission, the consumer uses all the facilities that connect the transmission from end-to-end. When the consumer originates the transmission, it is carried from the handset to a cell tower. Once it gets to the tower, it must be hauled back to a point where it

can connect to the nationwide communications network. The provision of this “middle-mile” link in the communications network is just as necessary to a successful transmission as the “first mile” link to the consumer.

FIGURE X-2: BUSINESS DATA SERVICES AND ACCESS TO CORE NETWORK FUNCTIONALITY ARE CENTRAL IN THE SYNERGY PHASE OF THE DIGITAL REVOLUTION



Since the backhaul is to a connection point with the telephone network, high volumes of traffic are aggregated at the cell tower and the backhaul generally takes place over high volume wireline facilities. These facilities that are essential to the communications are needed on both ends of the transmission. Mobile wireless carriers usually purchase these services, called “special access” from wireline incumbent telephone carriers. As such, when the consumer pays her mobile wireless bill she pays the cost of the middle-mile/special access/backhaul for both the originating and terminating areas. Ultimately, all of the costs of BDS are just a cost of doing business, which is passed through to consumers in the bills they pay for goods and services that use BDS as an input.

“First mile” and core connectivity have always been two parts of a single network, whose relationship is being transformed by digital technology and services. Special access stands at a key choke point that poses a threat to the development of digital communications networks, as shown in Figure XI-2. The efficient way to meet the need for these services is to deploy a ubiquitous network. This is how and why the telephone network was developed and, as we show below, the dominant incumbent network operators who, inherited this ubiquitous network from the monopoly period, continue to have immense market power of this dramatically growing and increasingly vital network service.

Pass Through of Business Data Service Costs

The FCC estimated that the narrow category of special access is a \$45 billion a year business. The FCC noted that, as digital communications become more central to the economy, special access from the telephone age has become part of a broader category of Business Data Services. According to the FCC, the business data service market is larger, totaling \$75 billion. We show below that a substantial part of the cost of BS is, improperly recovered from local telephone companies, so the total value of cost of BDS services could be in the neighborhood of \$100 billion. That equals over \$700 per household.

While this sum is certainly large enough to get our attention, we must ask, “do households actually pay these costs?” The answer is clearly “Yes.” These costs are just like any other commercial costs in the economy. When a farmer pays for fertilizer or the delivery driver gets his paycheck, these are business costs that are recovered in the price of the related goods and services. In fact, when econometric models of the economy are constructed, they rely on end use prices and values to capture the cost and value of intermediate goods. In building these models, the pass-through is assumed. Since communications are replacing transportation as a central means of commerce, it is instructive to examine how transportation costs have been treated in economic analysis.²⁰⁹ Because transportation is well recognized as an intermediate good whose costs are passed through, it is a useful analogy.²¹⁰ The concept is reinforced by the observation

²⁰⁹ Two studies in the hearing record demonstrate the centrality of communication in general and special access in particular by running or applying the results of econometric models, see Spiwak, 2011, WIK-Consult Report, 2016. The latter study reviews the results of numerous earlier efforts to model this impact. While the specific multipliers vary from study to study, they all show very substantial macroeconomic impacts, or as the WIK study call them “spillovers.”

²¹⁰ The Mid-Atlantic Freight Coalition confirms the pass through of transportation costs in a recent report on how transportation and logistics consume a significant portion of household budgets. According to the report, “the freight logistics system costs... which is spent moving and warehousing goods... factors into the cost of every

that although communications are a small part of the total economy, they have an outsized impact on the cost of goods and services, which is reflected in the way input output models describe the economy.

Transportation is an economic factor of production of goods and services, implying that relatively small changes can have substantial impacts on costs, locations and performance... Transport also contributes to economic development through [job creation](#) and its derived economic activities... Producers and consumers make economic decisions on products, markets, costs, location, prices which are themselves based on transport services, their availability, costs and capacity.²¹¹

Because the costs are indirect, a large part of the abuse turns up in the bill for other services. The methodology we use in the next section to calculate the overcharges in wireless and broadband, based on the profitability of those services, is likely to already include a substantial part of the abusive pricing of BDS. There are certainly significant overcharges borne by consumers for non-communications goods and services they buy, but we have no way to reliably estimate that number. To avoid over counting the abuse, we simply note that the aggregate estimate of overcharges I offer is likely to be an underestimate.

The Shifting Focal Point of Market Power

Since wireless and broadband data and voice are dependent on Business Data Services and the incumbent market share of the BDS market is the highest of any of the services analyzed in this report, the market power that the dominant incumbent local exchange carriers have by controlling the terminating monopoly – the network interface at the end-user premise – has been transferred to the market power they possess at the first point of network interconnection, i.e. the network interface for BDS (which used to be called the middle mile/special access point of service).

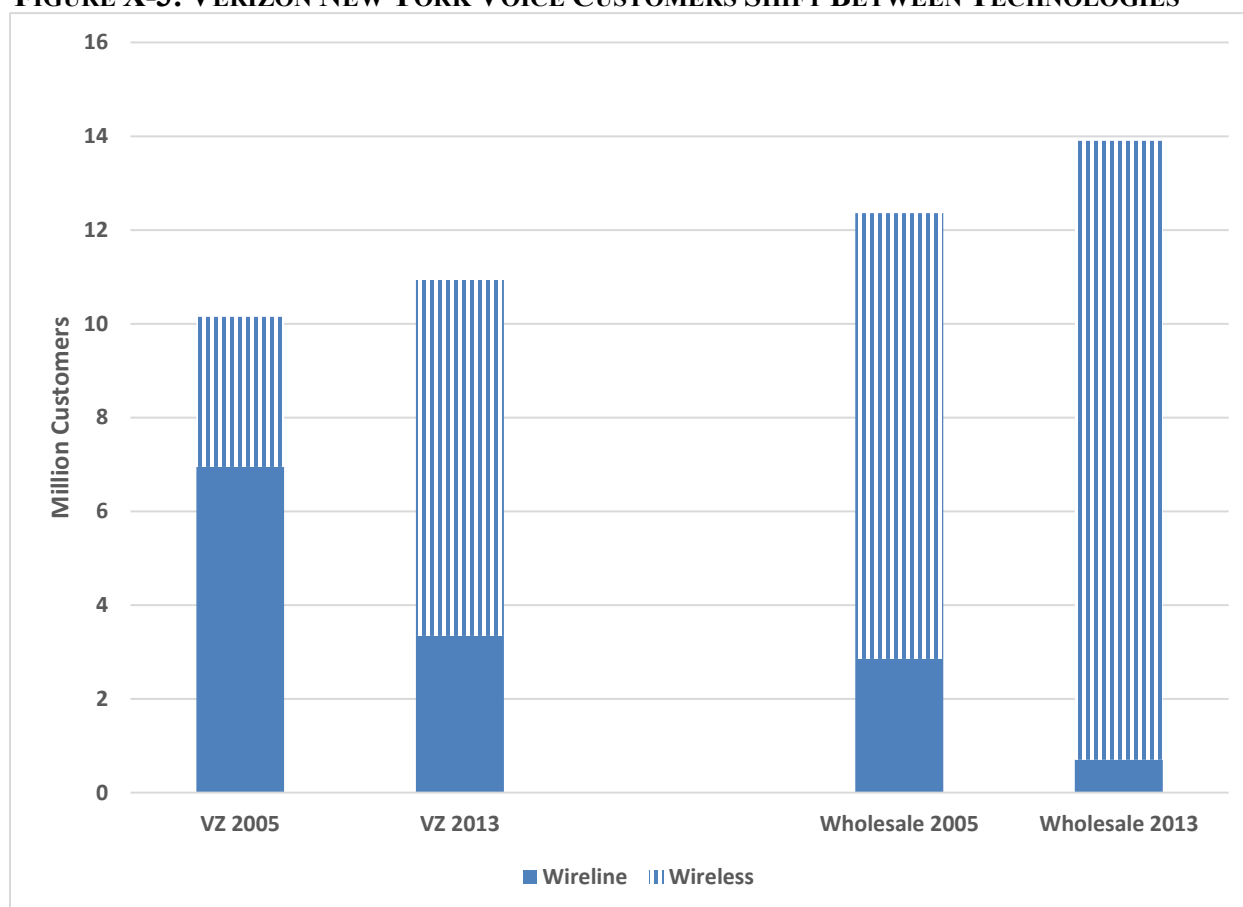
The central role of these services in the economy and the strategic location of BDS, in particular, as a method to provide both fixed and mobile broadband services means that the harm to the economy from the overcharges is magnified. The importance of communications in economic models is reflected in the high multiplier it is given in the models. In order to build a model of the economy, analysts study the places where a sector purchases inputs and sells output. Typically, the more places that are touched by a sector, the larger its multiplier. Econometric modelling suggests that the indirect effect on the economy doubles the out-of-pocket burden.

To appreciate the magnitude and speed of the shift in the role of these two parts of the network, Figure X-3 shows the change in voice connections experienced by Verizon over the period from 2005 to 2013.

product I buy. Anything that industry or government can do to make the logistics system more efficient will return benefits in terms of lower cost and greater global competitiveness.”Mid-America Freight Coalition, p. 2.

²¹¹ Rodriguez and Notteboom, [A regional analysis](#) reinforces this observation, “Manufacturing is dependent on transportation to receive raw materials and to deliver its products. Manufacturing is usually a highly competitive activity. Unless an area has other low cost attributes, high transportation costs will cause manufacturers to leave or avoid that area.”

FIGURE X-3: VERIZON NEW YORK VOICE CUSTOMERS SHIFT BETWEEN TECHNOLOGIES



Source: Department of Public Service, In the Matter of a Study on the State of Telecommunications in New York State, Staff Assessment of Telecommunications Services, Case 14-C-0370, June 23, 2015, pp. 15-16.

We use Verizon here because it been particularly active in the debate over BDS services and the New York Public Service Commission has maintained data collection to support its regulation of basic network (Title II) services, a category into which the core BDS services fall. We focus on voice connectivity because that provides a consistent metric across time.²¹²

We observe that Verizon has experienced modest growth of customers, about 7 percent. We estimate the wholesale BDS market for voice connections by excluding cable, which is likely to be self-supplying special access. The rest of the market, made up primarily of out of region wireless service providers has grown by about 16 percent. Since Verizon is the dominant special access provider, it has garnered the lion's share of that market.²¹³ These are voice circuits only. Internet data circuits grew much more rapidly, increasing over 30% per year for the decade between 2005 and 2015.

²¹² Over the last 7 years, New Networks Institute has examining the Verizon New York financial reports and developed a new report series called "Fixing Telecom," see Cooper and Kushnick, 2016.

²¹³ I do not include cable in this analysis of Verizon's voice connectivity because cable operators do not have to connect with the landline network for many of the services they sell and, even where they do, they have begun self-supplying BDS services. They have not become significant competitors for BDS services sold to third parties.

The shift in connectivity from “plain old telephone service” (POTS) to “pretty amazing new stuff” (PANS) in the form of broadband and wireless for connectivity is the technological revolution we have been describing. This shift requires a dramatic growth in high capacity connectivity. Taking this view, in 2005, Verizon’s voice connectivity business was split roughly equally between 10 million POTS connections and 13 million BDS connections. Just eight years later, the POTS connections have been reduced by 60%, while the BDS connections had increased by almost two thirds. POTS had declined from two-fifths to only one-sixth of the connections. This reminds us that for many customers, BDS was always important and that importance has grown, even for a service like voice.

Reading the public record can be informative, as shown above in the case of the Comcast-NBC merger proceeding. Table X-1 shows the evidence of the abuse of market power that can be gleaned from the record. The BDS market provides a textbook case of the abuse of vertical leverage and market power:

- Structure,
 - Extremely highly concentrated market
 - No good substitutes
 - High economic barriers to entry
 - Huge deep-pocket dominant firms
- Conduct
 - Artificial barriers to entry in contract terms
 - Cross subsidy
 - Price Squeeze
 - Foreclosure
 - Multi-market contract
 - Reciprocity
- Performance
 - High prices
 - Astronomical profits

TABLE X-1: SUPPORT FOR KEY ELEMENTS OF THE ANALYSIS IN THE HEARING RECORD¹

Basic Conditions ² <ul style="list-style-type: none"> Franchise Monopoly History³ Few Substitutes⁴ Inelastic Demand and Supply⁵ Declining Costs & Rapid Growth⁶ Market structure <ul style="list-style-type: none"> Concentration/Inadequate Competition⁷ Barriers to Entry⁸ <ul style="list-style-type: none"> Deployment Costs⁹ Network Effects¹⁰ Incumbent Advantage¹¹ Weakness of Alternatives¹² 	Perverse incentives <ul style="list-style-type: none"> Vertical integration, Merger wave¹³ Regulatory shenanigans¹⁴ Anticompetitive Conduct <ul style="list-style-type: none"> Price¹⁵ Price squeeze¹⁶ Lock-in Terms and conditions¹⁷ Performance <ul style="list-style-type: none"> Price above costs¹⁸ Excess profits¹⁹ Macroeconomic Losses²⁰
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Sources:

¹ All citations are to the record in the Matter of Special Access Rates for Price Cap Local Exchange Carriers, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, WC Docket No. 05-25, RM-10593.

- 2 The welfare economic framework animates and described in detail in several of the major discussion, *e.g.* Declaration of Bridger Mitchell, Attached to Comment of Sprint, January 19, 2010, (Hereafter Mitchell Declaration); WIK-Consult *Report, Ethernet Leased Lines: An International Benchmark*, January 2016, Attached as an Appendix to “Reply Comments of BT Americas,” February 19, 2016, (Hereafter, WIK-study). The WIK study provides a review of the literature that demonstrates the lack of competition and economic harm of abuse of market power in special access services (pp. 45-47); Peter Bluhm with Dr. Robert Loube, *Competitive Issues in Special Access Markets*, National Regulatory Research Institute, January 21, 2009, pp. 25-30, also provides a review of previous studies (Hereafter, NRRI); Reply Comments of the National Association of Utility Consumer Advocates and the Maryland Office of People’s Counsel, February 19, 2016, argues for the traditional approach, p. 6 (Hereafter NASUCA, 2016).
- 3 Declaration of Lee L. Selwyn on behalf of the Ad Hoc Telecommunications Users Committee, January 19, 2010, (Hereafter Selwyn), shows the compelling logic of the deployment of telecommunications network in franchise territories; The technology deployed during the monopoly period, still dominates, Declaration of Willima P. Zarakas and Susan M. Gately, January 27, 2016, Table 2, (Hereafter Zarakas Declaration). The NRRI account of the history of regulation reminds us of the strong and somewhat arbitrary role the regulated franchises played in the development of the industry and the allocation of costs and benefits, pp. 9-19.
- 4 Declaration of Stanley Bessen and Bridger Mitchell, attached to Reply Comments of Sprint, February 19, 2016, ¶ 5. (Hereafter, Bessen Declaration); Reply Declaration of Jonathan Baker, February 19, 2016, ¶¶ 16, 26, 30 (Hereafter Baker Declaration); Declaration of David Sappington, Attached to Sprint Reply Comments, February, 19, 2016, ¶¶ 13, 14 (Hereafter Sappington Declaration); Reply Comments of the National Association of State Utility Consumer Advocates and The New Jersey Division of Ratepayer Counsel, May 31, 2013, p.13 (Hereafter NASUCA 2013).
- 5 Mitchell Declaration, ¶ 65.
- 6 Susan Gately, et al., *Longstanding Regulatory Tools Confirm BOC Market Power*, Economics and Technology Inc., January 2010, (Hereafter Gately, Comment). pp. ii, 4. (Hereafter, Gately Comment), CostQuest, Wik Study, NRRI, NASUCA, 2016, p. 13; NASUCA, 2013, p. 14.
- 7 NRRI; CostQuest and Windstream, *Analysis of Fiber Deployment Economics for Efficient Provision of Competitive Service to Business Locations*, Presentation to FCC Staff, June 4, 2015. attached to *ex parte* filing of Harris, Wiltshire & Grannis, June 8, 2015, (Hereafter, CostQuest), p. 2; Bessen Declaration, ¶ 41 *et seq.*, Baker Declaration, ¶44; Sappington Declaration, ¶17; NASUCA, 2016, p.2.
- 8 Selwyn, p. 6, (Hereafter Selwyn); Mitchell Declaration, ¶ 19; NRRI, p. 25; Government Accountability Office, *FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services*, GAO 07-80, p. 6 (Hereafter GAO); Bessen Reply, ¶¶ 23, 28-30.
- 9 CostQuest, p. 2; Mitchell Declaration, ¶¶ 19, 118., Declaration, ¶ 40.
- 10 Selwyn, p. 3; This observation underlies the analysis in CostQuest.
- 11 CostQuest, p. 2.
- 12 Baker Declaration, ¶¶ 31, 32, 22; Bessen Declaration, ¶ 16.
- 13 NRRI, p. 81; Numerous commenters point out that AT&T, as a long distance company demonstrated the severe problem of vertical integration, see *e.g.* Charles W. McKee, *Special Access: The Unregulated Monopoly*, March 4, 2009, p.5. shows Sprint’s HHI rising from just under 6,000 to just under 8,000 as a result of the acquisition of the two largest long distance carriers (ATT, MCI) by the dominant local exchange companies (SBC, VZ) (Hereafter, McKee); Comments of Sprint, p. 2.
- 14 Reply Comments of Sprint, February 19, 2016, pp. 64-66.
- 15 Gately Declaration, pp. ii, 4. (Hereafter, Gately Comment), Baker Declaration, ¶¶ 63-64. Citation of NECA tariffs (Comments of INCOMPAS, January 19, 2010), p. 10, (hereafter INCOMPAS Comments), Sappington Declaration, ¶ 23.
- 16 NASUCA, 2016, p. 8; McKee, 7; Sprint Comment, pp. ii, 28. Sprint Reply, pp. 49-51.
- 17 Mitchell Declaration, ¶¶ 20, 115, 116, 130-131; Gately Comment, pp. 42-46; NASUCA 2013, p. 26; GAO.
- 18 Gately, Comment, WIK-study, NASUCA< 2013, p. 17.
- 19 McKee, 8-9; Gately, Comment, pp. ii, 4; NASUCA, 2016, p. 3.
- 20 Stephen E. Spiwak, *Economic Benefits of Special Access Price Reductions*, March 2011, (Hereafter, Spiwak), attached to *Letter from Maura Corbett, NoChokePoints Coalition to Marlene H. Dortch*, March q5, 2011; WIK-study; NASUCA, 2016, p. 8.

PART IV:
OVERCHARGES AND EXCESS PROFITS

XI. BUSINESS DATA SERVICES

Although business data services are intermediate goods, they provide a useful starting point for the estimation of overcharges and the pocketbook impact for several reasons. These services have become extremely important and all of the overcharges are ultimately paid by consumers. Unlike the other services, BDS has been subject to a formal regulatory review of market structure, conduct, prices and costs for over a decade. Each of the critical measures used in this analysis can be found in the formal proceeding. Because many of the overcharges for BDS are captured in the prices for other communications services, we do not include them in the total consumer pocket book impact assessment. The magnitude of the overcharges for these intermediate goods is so large that it reinforces our estimate of the direct consumer pocketbook burden of overcharges and there are billions of dollars of overcharges that consumers pay for non-communications goods and services.

PREMATURE DEREGULATION CREATED THE SPECIAL ACCESS MARKET POWER PROBLEM

Until the passage of the 1996 Telecommunications Act, special access services were subject to traditional price regulation and later price cap regulation because they were provided almost exclusively by the incumbent local phone company. The 1996 Act declared its intention to promote more competition in the local telecommunications sector, but it did not eliminate the requirement that rates be just, reasonable and nondiscriminatory. It expressed a desire for that outcome to be achieved as a result of competition, rather than regulation.

In 1999, special access was one of the first services to be deregulated by administrative action after the passage of the 1996 Act. Because so little time had passed since the 1996 Act, it was clear that the dominant position of the incumbent local telephone companies had not yet been weakened by competition. The Federal Communications Commission (FCC) decision to deregulate was based on the prediction that competition would grow. Sixteen years later, it is evident that the hope/prediction of competition has not come to pass. The large incumbent local telephone companies still have a stranglehold on the special access market, accounting for at least three-quarters of the special access market and perhaps as much as nine-tenths.

The FCC totally misunderstood the situation and its analysis was exactly backwards. It worried that the new entrant would game the system, holding back on entry to take advantage of the incumbent network, rather than build their own. The opposite problem was much more important. The incumbents understood the immense market power they possessed and they were very skilled at abusing it. Thus, deregulation of the special access market is a striking example of premature deregulation, a clear case of regulators removing their oversight before competition is strong enough to prevent the abuse of market power. The incumbents had a huge advantage in a fully deployed network, the economic barriers to entry were immense and the incumbent telephone companies had the strong incentive and ability to manipulate the system to prevent entry and enjoy excess profits.

. One of the great ironies in the debate over the abuse of market power in the special access market is that until 2007, the Commission collected and published data on the costs and profits of special access services. That data clearly showed that competition had failed to restrain

pricing abuse. The response of the FCC, whose prediction that competition would be effective had failed, was to stop collecting the data at the behest of those large incumbents.

In addition to the strategy of hiding anticompetitive behavior behind a veil of secrecy, the premature deregulation of special access exhibits another common strategy used to hide the impact of premature deregulation. The Commission engaged in technology/vintage bias. It deregulated a specific new technology or facilities deployed after a specific date, claiming that new facilities or technologies will be more competitive. Technology bias introduces two processes that drive deregulation forward much faster than competition develops. First, incumbents with market power have strong incentives to lock customers into the new services, where prices are unregulated, before competition gets going. Second, asymmetric regulation of transactions in which services are identical is hard to justify. Pressures build to treat like service similarly and the FCC uses this as an excuse to deregulate all services, rather than reconsider whether the original deregulation decision made sense. Addressing the mistake of inconsistency is used to divert attention from the more fundamental error of premature deregulation.

The precise magnitude of the abuse of consumers is shrouded in secrecy because the FCC stopped gathering and publishing data on special access as a routine practice. Nevertheless, the public evidence that is presently available indicates that the pricing abuse continues unabated. Hidden behind a veil of secrecy and embedded in consumers' bills as an intermediate good, the billions of dollars of the abuse of market power in the special access market impose on consumers have not received the attention they deserve.

The importance of eliminating the abuse of market power in the special access market, which is dominated by the incumbent local telephone companies, is highlighted at this moment because the digital revolution is penetrating deeply throughout society. This is the period when the synergies of the technological revolution spread across the economy.²¹⁴ The full adoption of digital communications by the millions of businesses that need special access can be hampered and distorted by the abuse of market power by the abuse of market power.

While this analysis focuses on the structural level analysis, there is evidence of anticompetitive behavior at the level of conduct. The development of competition for special access service was a direct victim of that earlier anticompetitive conduct with respect to opening the local network.²¹⁵ Moreover, in the pricing of special access by the dominant, large incumbent telecommunications companies we find anticompetitive "restrictive conditions," including "minimum volume commitments, portability conditions, revenue commitments, shortfall penalties, circuit migration charges and restriction, exclusivity-like provision"²¹⁶ that lock in consumers and undermine competition. The bottom line is simple, if they have market power they will use it to accomplish their goal of raising their rate of profit and protecting their market power.

The FCC's public cost data ends in 2007, and various parties have tried to fill the gaps with studies of various aspects of the special access market. This analysis pieces together the available public data to show that there is a massive exercise of market power by large, dominant

²¹⁴ Cooper, 2015, ICT.

²¹⁵ Cooper, 2005a, 2004.

²¹⁶ Mitchell, 2010, pp. 29-32.

incumbents in the delivery of special access services. The order of magnitude estimates that can be cautiously derived from the publicly available data overwhelmingly support the conclusion that market power abuse in the special access market is costing consumers tens of billions of dollars annually and growing in size.

In this section, we present the publicly available evidence first. We then estimate the magnitude of the harm based on the evidence linked to the “old” FCC data. We also show that a recent study of harm yields similar estimates of abuse.

As noted above, because of the decision of the FCC to stop collecting data on special access, there is a paucity of publicly available data. The FCC undertook a significant, one-time data collection to consider reforming the special access marketplace that is not available for public inspection at this time. The FCC hired an independent, third-party economist to analyze the data it has received. The FCC also received separate analyses from economists representing incumbents and competitors; however, the details supporting the conclusions in those analyses have been submitted under seal to the agency. The FCC will treat the data confidentially until it determines to make some of it public, and both incumbents and competitors agree the FCC should make aggregated and anonymized data available to the public.

CONCENTRATION

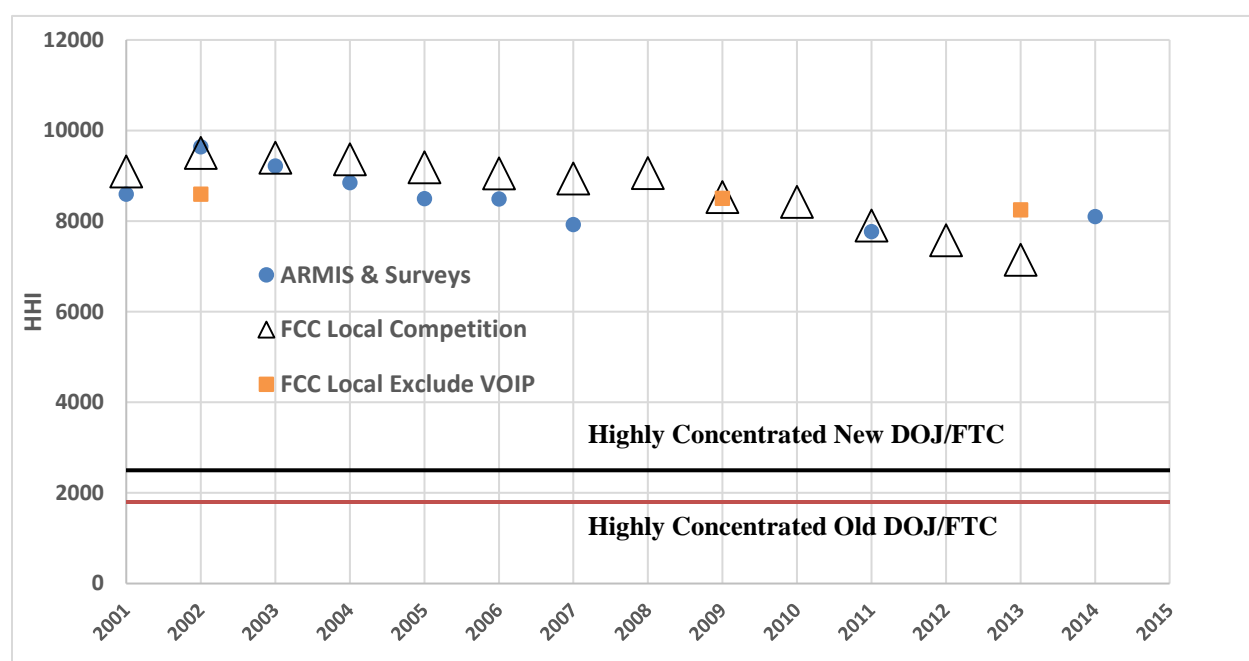
Although the FCC predicted that competition would erode the market power of the incumbent telephone companies in the provision of high capacity business connectivity, after a decade and a half, their market share is still extremely high. As shown in Figure XI-4, the concentration of the special access market exceeds the thresholds of highly concentrated by a wide margin, being more than three times the threshold used by the antitrust authorities to designate a market as highly concentrated.

Figure XI-1 shows four estimates of the HHI. One is based on the ARMIS data, until it was terminated, and other surveys or evidence introduced into the special access proceeding. Coverage is spotty. The second estimate is based on the FCC local competition reports. It assumes that CLECs’ use of ILEC lines (wholesale and UNE) do not represent competition (since the CLECs are not self-supplying). It focuses on business lines only, as a proxy for the special access market. It assumes that the overall ratio of CLEC-owned lines to total lines (*i.e.* owned plus leased from ILECs) applies to business lines.

We make two different assumptions about whether CLEC interconnected VOIP for businesses represent competition (CLECs self-supplying). In the one assumption, interconnected VOIP is assumed to represent a substitute for special access. In the second assumption, it is assumed to not be a substitute (it is excluded from the market for special access). We show both treatment of interconnect VOIP because the dramatic increase in interconnected VOIP in the business sector reflects a small part of the market where VOIP is an adequate service, but VOIP may not deliver the secure, stable quality service that many businesses need. This is readily apparent in the distribution of VOIP between residential and business CLEC customers. VOIP lines represent 47% of residential lines, but only 15% of business lines.

The special access local competition proxy tracks well with the earlier ARMIS data. The level of concentration under both definitions is extremely high, with an HHI in the range of 7,000 to over 8,000. The latter figure is consistent with the non-proprietary evidence in the record, which puts the market share of the incumbents at 90% or higher.²¹⁷ In any case, the deregulation decision should reflect the careful analysis of real world conditions in well-defined product and geographic markets, not hope and hype, to determine that workable competition is present.²¹⁸

FIGURE XI-1: CONCENTRATION IN SPECIAL ACCESS MARKETS



Sources: Early ratios are based on FCC Monitoring Reports, Charles W. McKee, *Special Access: The Unregulated Monopoly*, Sprint, March 4, 2009. 2011 based on FCC *Local Competition Report*, CLEC business subscribers times percent of CLEC subscribers served by CLEC owned facilities. FCC special access proceeding from the Economist' report.

On the question of vigorous competition, the FCC compiled the largest data set in the history of the FCC. It shows that about three quarter (at least 70%, and as much as 80%) of consumers purchase special access services under the conditions of an absolute monopoly – even using a fairly lax geographic definition of the market. The remainder have, at best a duopoly – one competitor serving someone in their building. In very few circumstances do customers have four or more competitors. Even using a looser definition – one actual competitor and four potential competitors somewhere in the census block – fewer than 10% have competition. Measured at the level of buildings and focusing on facilities-based competition, the incumbent local telephone companies have a market share of about 83%. The HHI is close to 6900, attributing no market power to the largest competitor in the market, which tends to have a market share of 10%.

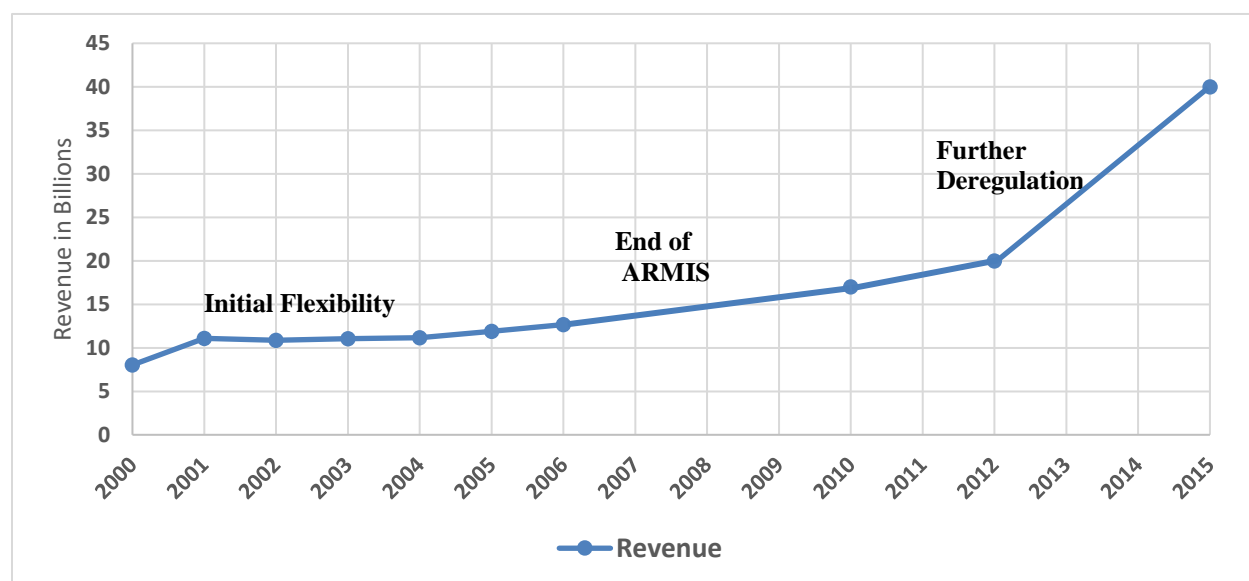
²¹⁷ Cable market share is put at about 7% large CLEC market share is put at less than 3 percent.

²¹⁸ Bessen, ¶¶ 3, 304; Sappington, ¶ 25.

INCREASING REVENUES, DECLINING COST, SOARING PROFITS

Figure XI-2 shows the dramatic increase in revenues after the decision to deregulate the special access market. Between 2000 and 2010, revenues increased by just under 8 percent per year. In the past half-decade, that rate of growth has doubled. This increase was triggered by further deregulation and elimination of oversight over special access rates, including the termination of the controls that the FCC placed on SBC at the time it acquired AT&T. Over the entire period, revenues increased by 11 percent per year. The first round of increase followed the initiation of pricing flexibility. The second came more recently when oversight was further relaxed. Needless to say, growth in the volume of traffic were considerable as well.

FIGURE XI-2: SPECIAL ACCESS REVENUE



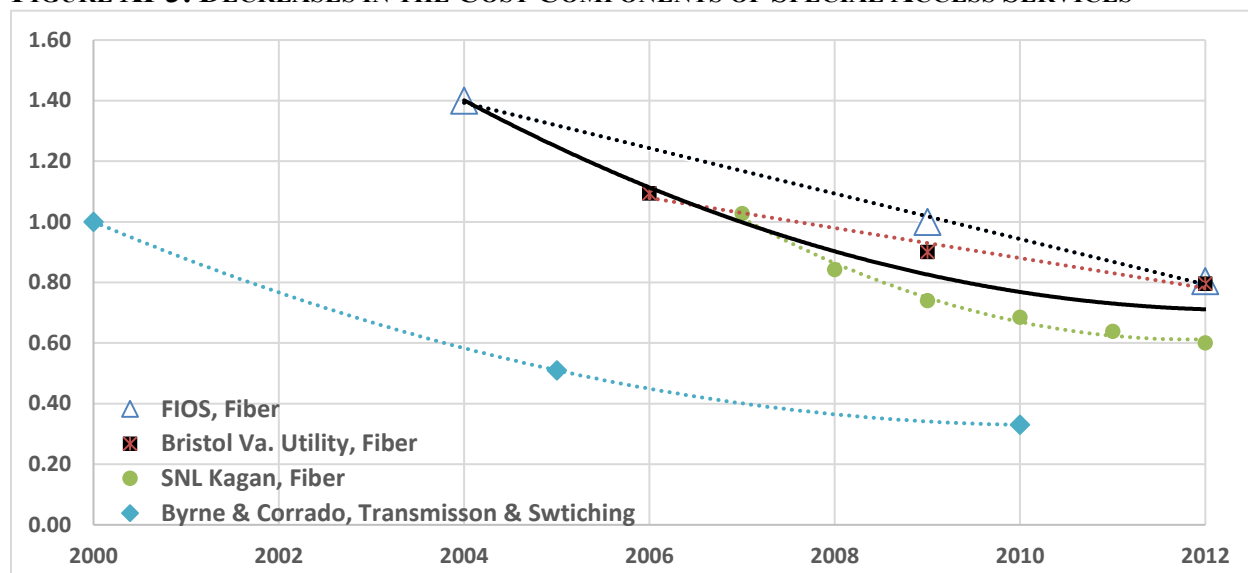
Sources: 2000-2007, The official FCC ARMIS data is frequently the source for early estimates, see Susan Gately, et al., *Longstanding Regulatory Tools Confirm BOC Market Power*, Economics and Technology Inc., January 2010, Charles W. McKee, *Special Access: The Unregulated Monopoly*, Sprint, March 4, 2009.

While revenues were increasing dramatically, costs were declining, particularly for fiber optic cable, as shown in Figure XI-3. Transmission and switching costs were declining about 12 percent per year over the first decade of the 21st century.

With revenues growing at almost 8% per year and costs declining by 12% per year, we would expect to see large double digit increase in profits. This is exactly what the data showed, as long as it was available (see Figure XI-4).

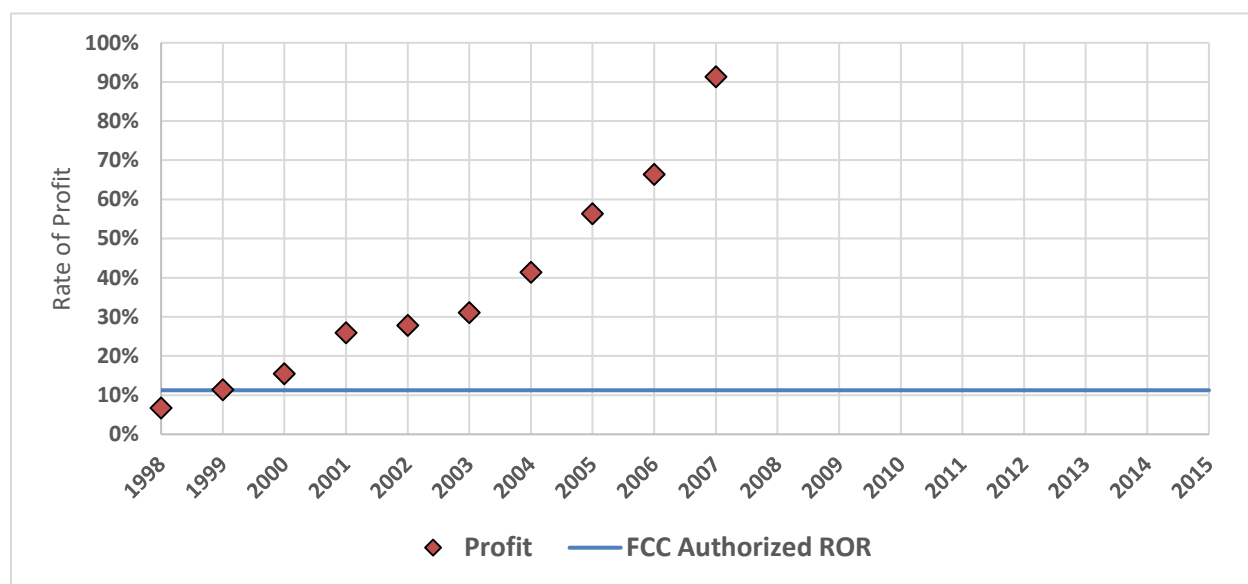
Although detailed evidence on the communications equipment components that most directly affect special access costs is not available for the most recent period, the general index for communications equipment costs has continued to decline. In fact, the rate of decline nearly doubled in the 2010-2014 period. Thus, excess profits in the special access market are certain to be much larger today than they were when the collection of ARMIS data ceased.

FIGURE XI-3: DECREASES IN THE COST COMPONENTS OF SPECIAL ACCESS SERVICES



Sources: David A. Byrne and Carol A. Corrado, *Price for Communications Equipment: Rewriting the Record*, September 2015; CostQuest and Windstream, *Analysis of Fiber Deployment Economics for Efficient Provision of Competitive Service to Business Locations*, Presentation to FCC Staff, June 4, 2015. attached to *ex parte* filing of Harris, Wiltshire & Grannis, *In the Matter of Special Access Rates for Price Cap Local Exchange Carriers, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, WC Docket No. 05-25, RM-10593, June 8, 2015, p. 16.

FIGURE XI-4: SPECIAL ACCESS PROFITS



Sources: 2000-2007, The official FCC ARMIS data is frequently the source for early estimates, see Susan Gately, et al., *Longstanding Regulatory Tools Confirm BOC Market Power*, Economics and Technology Inc., January 2010, Charles W. McKee, *Special Access: The Unregulated Monopoly*, Sprint, March 4, 2009.

For 2007, ETI estimated overcharges in the range of \$10 billion on total revenues of \$17 billion. In other words, excesses are over half the total. That estimate was calculated based on the rate of return that the FCC had allowed in in 1990, as shown in Figure X-6. This was a generous rate of

return and it is very high in today's market. The FCC authorized rate of return was set in a period when the risk-free rate of return (on 10-year T-bills) was about 8.5 percent; today it is less than 3 percent. The interest rate on triple A-rated corporate bonds is also about 5 percentage points lower. Although one can argue that the increase in competition raises the cost of capital, we have shown that competition is feeble at best. The competitive rate of return would be set well below the level that is a quarter of a century old

Capital costs and the cost of capital are only part of the cost of service. We find bits and pieces of evidence on operating costs. Gately gave data that suggested a decline in operating cost of 10% per year for a few years in the mid-2000s. If equipment costs that have been declining by 16% per year represent half of the cost of service (as suggested by s WIK-study), and operating costs have been declining by 5%, the total cost has been declining by 10% per year, or more. Sustained over a 15-year period (since the onset of pricing flexibility), the cost of special access would have fallen by 75%.

This highlights the problem not only with regulatory flexibility, but also the price cap approach, even if the rates are held steady at the rate of inflation. Profits would be growing 10% per year plus the rate of inflation. The price cap adjustment was 5.3% until 2005 and 1.8% for thereafter. Based on these factors, the average annual compound rate of growth in profits would be about 18 percent over the period from 2002 to 2007. In the five years after pricing flexibility for which we have ARMIS data, Gately shows a compound annual rate of increase in profits of 20%.

OVERCHARGES AND THEIR IMPACT

The bottom line is clear. The overcharges are substantial. Since these excessive earnings have been rising rapidly, assuming an average of \$15 billion per year would put the cumulative total in the past five years alone at \$75 billion.

Indirect Macroeconomic Impacts

These large overcharges certainly impose pain on the consumer pocketbook, but they are only part of the harm resulting from the abuse of market power. As noted above, special access is an important intermediate good. Raising its price to earn supranormal profits, reduces demand and depresses economic activity throughout the economy. Because communications are such an important intermediate good, it has a large multiplier effect. As shown in Figure II-2, above, lowering prices increases consumption. Total revenues increase, and the increase is larger than the reduction in price. At the competitive price, the providers of special access have to work harder (they deliver more services at a lower price). Their rate of profit is lower, but producer surplus is larger. Of course, consumer surplus increases much more, as does total social surplus.

A study by Economists Incorporated modelled the impact of the removal of the abuse of market power in the special access market. The estimation of the direct effect on the communications sector and its consumers was based on empirical assumption that are consistent with the above conceptual and empirical analysis. It considered price reductions in the range of 40% to 60%, consistent with the above estimate of overcharges. It used relatively low demand elasticities based on an analysis of the special access services. It also modelled the indirect economic

impact by running a well-known econometric input output model to assess the effect on the economy (the RIMS II model). As shown in Table XI-1, using the middle case rate reduction of 50%, which is consistent the above analysis, we observe the effects of the price reduction for an important intermediate good.

TABLE XI-1: INDIRECT MACROECONOMIC LOSSES FROM ABUSIVE PRICING OF SPECIAL ACCESS (BILLIONS OF \$, MIDDLE CASE, 50% RATE CUT)

	Elasticity	Pocketbook Savings Output	Monetary increase Economy-wide
2010	-1.5	9.0	16.6
	-1.6	9.0	20.6
	-1.7	9.0	25.0
2015	-1.5	18	33.2
	-1.6	18	41.2
	-1.7	18	50

Source: Stephen E. Spiwak, *Economic Benefits of Special Access Price Reductions*, Economists Inc., March 2011.

The indirect effects resulting from the high multiplier are substantial. The increase in output in the economy is twice as large as the increase of the revenue in the sector. The firms that consume more special access (and pay a higher total bill at a lower price) produce more output, which pays for the increased input. The economy-wide increase in value added exceeds the increase in the spending on special access. The lost value in terms of indirect economic harm equals the direct consumer pocketbook harm as a result of the large multipliers. Given the increase in revenue, a conservative estimate of indirect costs for the present would be almost \$20 billion per year and the five-year total would be \$75 billion.

An Estimate Based on International Comparisons

A recent study filed in the ongoing proceeding provides an independent source of data that supports this estimate of the harm imposed by the abuse of market power in the provision of special access service.²¹⁹ The study adopts the same welfare economic framework used in this paper. It launches from the observation that in other nations where special access was not deregulated, prices are much lower. In the U.K., which is the primary focus, rates are half of the U.S.²²⁰

The study then estimates consumer welfare transfers due to market power, deadweight efficiency losses and indirect macroeconomic costs, called spillovers. It makes a counterfactual back-cast. ‘What if rates had been driven down to cost in the past five years (*i.e.* 2011 to 2016)?’

²¹⁹ WIK-Consult Report2016., (Hereafter, WIK-study)

²²⁰ WIK study, Figures 19 and 21.

For 2016 the study estimates consumer welfare transfers plus deadweight losses (both of which come out of consumer surplus) at \$2.8 billion and spillovers at \$5.9. The five-year totals are \$13.billion and \$28.3 billion respectively. These estimates are not directly comparable to the ARMIS-based estimates, but several simple adjustments show that the results are actually quite close to those discussed above.

First, the WIK-study deals only with Ethernet service, which in the U.S. is only 40% of the market. Scaling the results to the total market more than doubles those numbers (as shown in Table XI-2). Second, the price reduction in the study is less than half of the reduction suggested by the ARMIS-based analyses. There is a ready explanation for this.

TABLE XI-2: RECONCILING ESTIMATES OF HARM (billions of dollars)

Cost Period & Component	WIK Study	Adjustments		ARMIS Elasticities		
		TDM	Price	-1.5	-1.6	-1.7
In 2016						
Welfare + Deadweight	2.8	7	14	18	18	18
Spillover	5.9	14.75	29.5	33.2	41.2	50
Total	8.7	21.75	43.5	51.2	59.2	68

Source: WIK-Consult Report, *Ethernet Leased Lines: An International Benchmark*, January 2016, Attached as an Appendix to “Reply Comments of BT Americas,” *In the Matter of Special Access Rates for Price Cap Local Exchange Carriers, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, WC Docket No. 05-25, RM-10593, February 19, 2016. EI refers to Stephen E. Spiwak, *Economic Benefits of Special Access Price Reductions*, March 2011; As described in text, ARMIS refers to Susan Gately, et al., *Longstanding Regulatory Tools Confirm BOC Market Power*, Economics and Technology Inc., January 2010, Charles W. McKee, *Special Access: The Unregulated Monopoly*, Sprint, Mark 4, 2009.

The WIK-study is based on a survey of rates that may have excess costs imbedded. For example, the rate of return on U.K. special access (even though it is regulated) is twice the level that was allowed in the U.S., which we have shown is too high. This is the same problem as in the U.S., where the productivity factor bears no relationship to the actual decline in costs. The cost estimate would be doubled again. The survey of rates includes the cost of new entrant special access services, which are higher than the cost of incumbent services. At the market share of the largest competitor in each market in the U.S. (10%), CLEC costs are twice as high as incumbent costs.²²¹ If this excess cost is imbedded in the benchmark, it would be 20% too high (2 x .1). Thus, the price reduction necessary to make rates and profits reasonable would be at least twice as large as modeled in the WIK study. Therefore, scaling up to include all special access service and doubling the price reduction, renders the ARMIS-based and international studies reasonably close.

Table XI-2 shows the effect of a rate reduction that is twice as large. The spillover effect appears to be much larger because the multiplier is assumed to be much larger and notwithstanding the fact that the elasticity of demand is lower. On balance, these adjustments suggest that the estimates are actually reasonably close. Although the failure of the FCC to

²²¹ *CostQuest and Windstream*, 2015, pp. 12-13.

collect and publish data on costs, prices and profits in the special access market make it difficult to estimate the magnitude of overcharges and excess profits with precision, it is clear that the harm is quite large, in the range of \$50 billion per year.

THE FCC’S SPECIAL ACCESS ORDER

After a decade of delay, the FCC finally issues an order in the Special Access proceeding. We believe it fits squarely into a clear pattern that has developed over the course of the past five years and which takes on more force as it becomes precedential and cumulates evidence.

The dominant firms claim that they face vigorous competition and, as a result, the prices they charge are reasonable and the terms and conditions they impose in contracts are not abusive or anticompetitive. The Commission rejects these claims on the basis of a thick empirical record, blocking some actions and imposing greater regulatory oversight on others.

Anticompetitive Contract Terms and Conditions

We start with the question of conditions, since that is the area where the Commission has acted most aggressively in this case. The companies claim that various contractual terms like “all or nothing requirements,” “shortfall penalties” and “early termination penalties” are a reasonable way to recover costs they have incurred in offering discounted tariffs. The Commission finds that, while some terms are reasonable, many of the tariffs are punitive, rather than efficient. The Commission invited the companies to provide cost data that would explain how such obviously excessive and restrictive conditions could be economically justified. The companies chose not to offer one shred of cost evidence. With no concrete defense, the Commission must find the terms illegal.

The Extent of Competition

On the question of vigorous competition, the Commission has compiled the largest data set in the history of the FCC. It shows that about three quarters (at least 70%, and as much as 80%) of consumers purchase special access services under the conditions of an absolute monopoly – even using a fairly lax geographic definition of the market. The remainder have, at best a duopoly – one competitor serving someone in their building. In very few circumstances do customers have four or more competitors. Even using a looser definition – one actual competitor and four potential competitors somewhere in the census block – fewer than 10% have competition. Measured at the level of buildings and focusing on facilities-based competition, the incumbent local telephone companies have a market share of about 83%. The HHI is close to 6900, attributing no market power to the largest competitor in the market, which tends to have a market share of 10%.

Competition and Price

With respect to prices, for low bandwidth services that make up 60% of the market, the economic analysis shows that competition reduces prices and the more vigorous the level of competition, the larger the price reduction. In the most rigorous specification modeled by the FCC expert, the benefits of competition are at least 5% and as much as 28%. The three quarters

of the special access customers who lack competition are denied any of these benefits. Almost no users of special access service receive the benefits of competition.

The FCC analysis failed to define the geographic market properly. It assumed, incorrectly, that a fiber line anywhere in the census block represented potential competition that would deliver the full benefits of competition. The record was replete with evidence that there were still many cost and institutional obstacles to extending competition to actual customers within the census block.

An alternative definition for the geographic market would be the building. That is, if a competitor is serving one customer in a building the conclusion that they are actual or potential competitors for other customers is more reasonable (unless, of course, anticompetitive terms and conditions in the contracts foreclose those customers).

A reanalysis of the data by John Baker demonstrates the flaw in the FCC analysis. He identified in-building providers as competition, augmented by potential competitors in the census block. Figure XI-5 summarizes the regression analyses of Jonathan Baker that extend the analysis of the FCC expert. Baker analyzes the effect of in-building v. in-census block competitors independently. His analysis accepts the basic approach taken by the FCC expert and elaborates on it in several ways. He analyzes only high bandwidth services, since there is a consensus that low bandwidth services are not competitive. He includes the presence of cable. Baker's analysis is decisive in several respects.

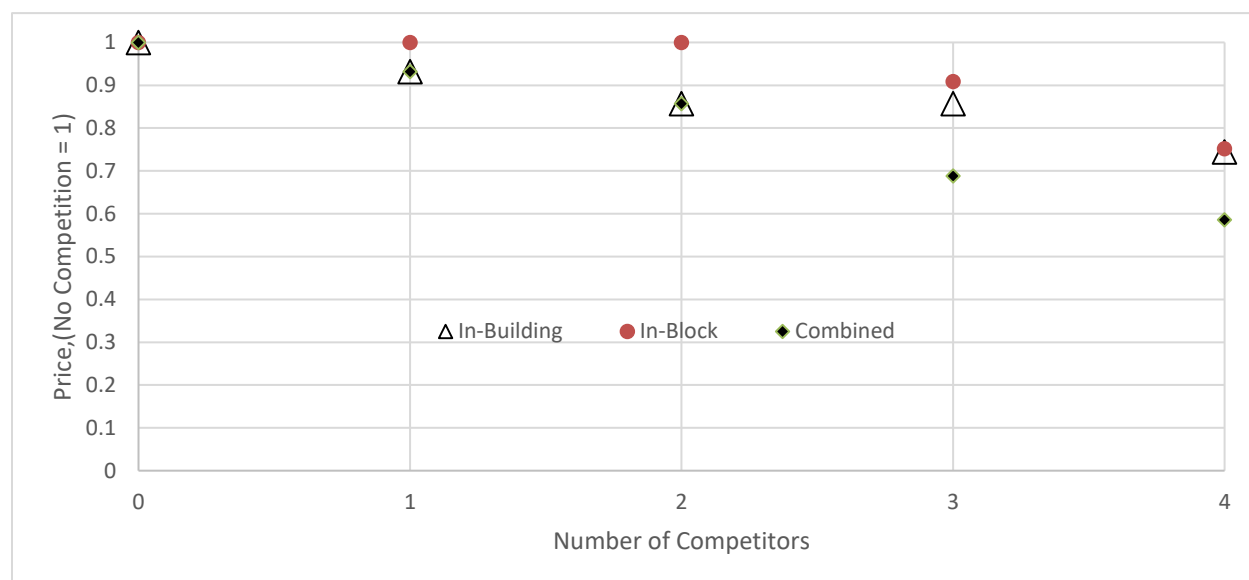
- First, he generally replicates the in-block result, but finds in-building competition is more important.
- Second, in-building competition has an immediate and larger effect.
- Third, in-block competitors do not have an impact until the third competitor is added.
- Fourth, adding the eighth competitor lowers prices by about 10 percent, which exceeds the SSNIP standard.
- Fifth, the impact of eight or more competitors, which is likely very rare, is a price reduction of 43%.

This is consistent with our general conclusion that “4 is few, 6 may be okay and ten is competitive.” Moreover, the fact that prices in competitive markets are lower does not mean they are free of above cost pricing. As noted in the conceptual discussion, in a situation where the dominant firm has a large market share and the competitive fringe has higher costs, the dominant firm can collect rents by strategic pricing – pricing against the residual demand curve.

There are other patterns in the data that suggest anticompetitive practices. Since the largest incumbent local exchange carriers – Verizon, ATT, and Centurylink – have significant out of region businesses (wireless and enterprise) they are purchasers of special access in those areas. They overwhelmingly buy services from the local exchange carriers incumbent to those regions, rather competitors. They almost never build out of region facilities. By withholding their business from competitive suppliers, they significantly shrink the market. They also establish a

pattern of reciprocity – extending their no-compete strategy into this important market. This is the telco version of the no-compete strategy that pervades the cable industry.

FIGURE XI-5: PRICE IMPACT OF IN-BUILDING AND IN-BLOCK COMPETITORS



Source: Jonathan Baker, 2016, Reply Comments, in the matter of *Special Access Rates for Price Cap Local Exchange Carriers*, AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, WC Docket No. 05-25, RM-10593, January 27. Table 1, column 8.

Other Indicators of Anticompetitive Conduct

The regression shows that mobile telecommunications providers are charged much higher prices. This has the effect of undercutting mobile, which has the strongest base of competitors and potential to compete out of region. This reinforces the no-compete strategy.

The economic analysis does not attempt to estimate the magnitude of the abuse of market power. It does not need to do so.

First, the failure of the companies to offer the cost data to justify their contract terms, would have been ideal to address the question of overcharges. They chose not to do so. Again, given the evidence of lack of competition, anti-competitive practices and price effects of competition, the commission must conclude that substantial pricing abuse exists.

Second, since the Commission had abandoned cost analysis and assumed competition or the price cap would protect consumers, and having seen that competition has failed to do so, the Commission must look to its price cap approach as the last line of defense. Its analysis shows that it has failed miserably, resulting in rates that are 15% to 20% higher than would have been the case if the Commission had updated its X-factor based on broad economy parameters. While this is a good place to start, our analysis of cost trends for communications equipment shows that the excesses are much larger – well over 20% without taking into account excess profits that were built into the base rates.

These adjustments to the formula are based on the economy wide changes, not the dynamic changes in the communications sector. Indeed, the cost indices identified above, were developed precisely because the routine indices were dramatically under estimating the decline in costs. In fact, the specialized cost index shows a decline that is almost twice as high as that calculated by the FCC. Given that the base of the index involved a rate of return that was based on a cost of capital that is substantial higher than the current cost of capital, our estimate based on the historical data – that rates are 50% higher than they should be – seems reasonable.

NEW YORK DATA

In this section, we focus on Verizon because it has agreed to the proposition that there are severe market power problems in this market, although the solution it proposed was totally inadequate. We also have access to financial data for New York that moves beyond the very aggregate data that is publicly available to gauge financial performance. When the FCC stopped publishing data the New York Department of Public Service (NYDPS) continued to require Verizon to file financial data. The FCC cannot regulate these markets without having a clear and consistent view of its size, which must start with the counting and classification of the number of lines. This not only is a key to understanding where market exists, it is also central to the allocation and recovery of costs.

Third, it is not even entirely clear how much the market power of the dominant incumbent local exchange carriers has declined in the last mile. The Commission must recognize that the dominant local exchange carriers still dominate the terminating service because they are the overwhelmingly dominant providers of the network facilities over which VOIP service flows and they are the dominant providers of wireless service, by far. In other words, they not only control the bottleneck BDS point of service, they also control much of the technology between that point and the end-user premise.

Table XI-3 shows the level of concentration measured in a number of ways across product markets defined as discussed in our earlier filing in this docket. Using a broad market definition, the voice market has deconcentrated to just below the highly-concentrated level and Verizon's market share has declined, but it is still quite high. Viewed through the other lenses of more narrow market definition that we have argued are more appropriate, there is little justification to change the classification of Verizon. Markets are highly concentrated, Verizon is the dominant player, and the virtual cartel dominates the New York Market.

TABLE XI-3: INDICATORS OF CURRENT VERIZON NY VOICE MARKET STRUCTURE

Product Market	HHI for Voice		Verizon Share (%)		Cartel Share (%)	
	2005	2013	2005	2013	2005	2013
All	2502	2367	43.5	37.7	62	75
Wireline	4948	4251	64.9	40.7	73	91
Wireless	2191	2768	25.4	36.5	42	69

Source: Department of Public Service, In the Matter of a Study on the State of Telecommunications in New York State, Staff Assessment of Telecommunications Services, Case 14-C-0370, June 23, 2015, pp. 15-16. The Cartel analysis treats all cable as one operator included in the cartel.

Financial Analysis of the BDS Market

Since the FCC has stopped collecting financial data on special access and the companies have failed to file any meaningful data on the cost and profitability of these services in this proceeding, it is difficult to analyze the financial performance of these services. Projecting price and cost trends from the last available financial data we have argued that the market is generating \$20 billion in excess profits. That estimate was based on an estimated market size of \$40 billion. In fact, the FCC puts the BDS market at \$75 billion. The line counts above, suggest that a substantial portion of the special access market has been shifted into the local jurisdiction under the heading of wireless and broadband services, a shift that is not accounted for in the FCC's estimate of the size of the market. With 75% of the Verizon's income coming from these services that rely on special access, we think the market could be as large as \$100 billion. This is a critical analysis that must be a focal point of the proceedings we have recommended. Some commenters put the overcharges at \$40 billion.²²²

Here we take a different approach to the excess profitability question. Matching Verizon corporate financial data with detailed filings in the state of New York we estimate EBITDA for various market segments. The analysis supports the conclusion that there are tens of billions of dollars of overcharges and we urge the Commission to conduct a thorough cost studies to sort these issues out.

In Table XI-4 we present three views of Verizon financial performance. We compare the Verizon SEC annual report to the New York financial filing. In New York, we present two views of the data that differ in how we treat Ethernet-based access. Two views are necessary because of the ambiguity in the treatment of Ethernet-based access, which is likely a part of the IP-services included in the Strategic Services category reported in the VZ-SEC.

First, in the upper part of the Table XI-4 we align the Verizon SEC data with the New York financial data. In 2015, without allocating Ethernet-based services to the New York financial reported to the state, VZ-New York represented 14% of Verizon wireline revenue and 11% of expenses and 16% of depreciation. With Ethernet, revenue was 17%. For the reasons stated below, we do not attribute additional Ethernet costs to the New York Jurisdiction.

The Verizon SEC data identifies a wireline segment that includes consumer and small business retail in the mass market category. This includes FIOS revenues, which Verizon estimates to be about 34% of wireline revenue. In the New York data, the category of nonregulated services (made up largely of FIOS) equals 22% of the wireline revenue. The difference in the FIOS share results from the fact that some FIOS revenues (e.g. video) are not reported as telecommunications revenues in New York.

This is an important issue for cost allocation, since FIOS costs appear to be reported as local, but these revenues are not. For example, the New York financials show that just 4% of the current plant are classified as FIOS and only 9% of plant under construction are classified as FIOS, compared to 28% of revenues that are attributed to FIOS. To the extent that FIOS uses special access, this misallocation might impact the estimates of costs and profits, but the bigger question

²²² NASUCA, p, i

here is whether costs are being dumped on regulated local service to subsidize competitive services.

TABLE XI-4: VERIZON SEC AND NEW YORK WIRELINE FINANCIAL DATA: 2015
(All figures are in %)

VZ-NY as a % of VZ-SEC	VZ-SEC	VZ--NY	
		Ethernet included	
		No	Yes
Revenue		14	17
Expenses		11	11
Depreciation		16	16
Cost as a % of Wireline			
Cost of Service	55	62	62
Selling	14	16	16
Depreciation	18	20	20
Revenue as a % of wireline			
FIOS	34	28	21
Local Service	15	19	18
BDS	52	58	58
Access (Core & Wholesale)	29	29	33
2 Other BDS (Strategic & Other)	23	29	26
EBIDTA Margin			
Wireline	23	30	30
Local Service		-51	-51
Access		67	80
Wireless	43		

Source: VZ-SEC, Verizon, Annual Report, 2015, pp. 19-24. FIOS is 79% of customer retail, Local service is 21% of customer retail plus small business. Access includes global enterprise and global wholesale. VZ-NY, Annual Report of Verizon for the Year Ended December 31, 2015, to the State of New York Public Service Commission, Schedule 9. Other Revenues of \$1.5 billion are included and attributed to other BDS services. All nonregulated revenues are assumed to be FIOS.

The BDS category poses a similar problem. Verizon identifies several types of service that appear to be access services.

Global Enterprise offers strategic services and other core communications services to medium and large business customers, multinational corporations and state and federal government customers...

Global Wholesale provides communications services including data, voice and local dial tone and broadband services primarily to local, long distance and other carriers that use our facilities to provide services to their customers.²²³

²²³ Verizon, 2015, p. 23

Strategic services are defined as follows in the 2008 annual report.

Our strategic IP-based services are the essential building blocks for the integrated communications and IT solutions that Verizon Business offers worldwide... In 2008 we expanded and improved what was already one to the worlds few truly global networks, resulting in enhanced speed, availability, diversity and resiliency for business and government customers worldwide. These improvements were part of approximately \$17 billion we invested last year building, operating and integrating our advanced broadband wireless and wireline networks.²²⁴

Here we have the thorough interweaving of the IP-transition, access and broadband. Strategic services clearly include Ethernet-based access services which is a large part of the BDS market, but are not reported as local telecommunications in New York. The FCC has identified the distinction between services based on TDM technology and services based on Ethernet as important. It concludes that Ethernet-enabled special access represents over 40% of special access. Verizon reports this in the SEC financials as wireline, but does not report it in New York. The far right column in Table 2 assumes that Ethernet-based access represents 40% additional access revenue, compared to the base of access revenue reported in New York.²²⁵ Whether or not that should be reported as New York revenue, the existence of that revenue raises the profitability of access services substantially, as shown in the lower part of Table 2.

The lower part of Table 2 shows the standard estimates of EBITDA for four categories of services, mass market, local service, access and wireless. Mass market and wireless are from the SEC filing; local and access are from the New York filing. The fact that local service shows a severe loss (-51%) and access is immensely profitable (+67%) reflects in part the misallocation of costs, but for the present purposes, the critical factor is that access is the most profitable service. Including the Ethernet-based revenue could boost that to as much as 80%.

CONCLUSION

To sum up, we have demonstrated the structural conditions for a severe abuse of market power in the delivery of special access services. Cost and price trends and direct evidence of show substantial overcharges and excess profits. Direct overcharges of \$20 billion per year burden household budgets. Indirect economic losses that result from the drag on the economy add another \$20 billion to the harm. These harms have been building up since the premature deregulation of special access and they have accelerated in recent years.

Special access is one of the clearest cases of unjustified deregulation since the passage of the 1996 Act in terms of the harm imposed, measured by the rate of overcharges, if the not the absolute value of harm. It came so quickly that there could be no pretense that competition had already grown enough to discipline the market power of the large incumbents. The predictive theory offered by the FCC to authorize deregulation seriously misunderstood the market

²²⁴ Annual report, p. 10.

²²⁵ Because the cost of services and depreciation in the VZ-NY financials are higher than the VZ-SEC books, we do not attribute additional costs. To the extent that there are additional costs that should be accounted for in the NY financial, the margin would be lower.

structure. For over a decade, the FCC ignored the problem and tried to hide it behind a veil of corporate secrecy. The time for decisive action to end the abuse of market power is long past.

As an intermediate good, this abusive pricing for special access operates in the background. A lot of it turns up in the consumer's cellular bill, since wireless is a huge consumer of special access. Some may turn up in the consumer's broadband bill. The rest is passed through in the cost of other goods and services.

XII. WIRELESS: COMPETITION, PRICES, AND EXCESS PROFITS

We begin the sector/service analysis with wireless communications for several reasons.

First, mobile communications technology is the new technology in the personal communications space, having been introduced in the mid-1980s. The possibility of “always-on, anywhere” personal communications provides unique functionality for consumers. It has spread extremely rapidly in the United States and other developed nations. In a quarter of a century, it has approached a level of penetration that took landline service over a century to attain. Globally, mobile penetration is even more remarkable, with almost four times as many mobile phone subscribers as wireline subscribers. It is a truly revolutionary communications technology.

Second, because the use of public radio spectrum for mobile communications was virgin territory, the potential existed for vigorous head-to-head competition in mobile communications. Competition was prevalent for a decade, but over time, public policy allowed it to slip away. Thus, mobile provides a test case for the impact of concentration in a communications service.

Third, the denial of the ATT/T-Mobile merger marked a turning point in communications sector policy. This denial affirms the relevance of traditional concerns about concentration and the importance of mavericks.

Fourth, the proposed ATT/Time Warner merger underscores the importance of the analysis of market structure and the abuse of market power.

POLICY CONTEXT AND CONCENTRATION

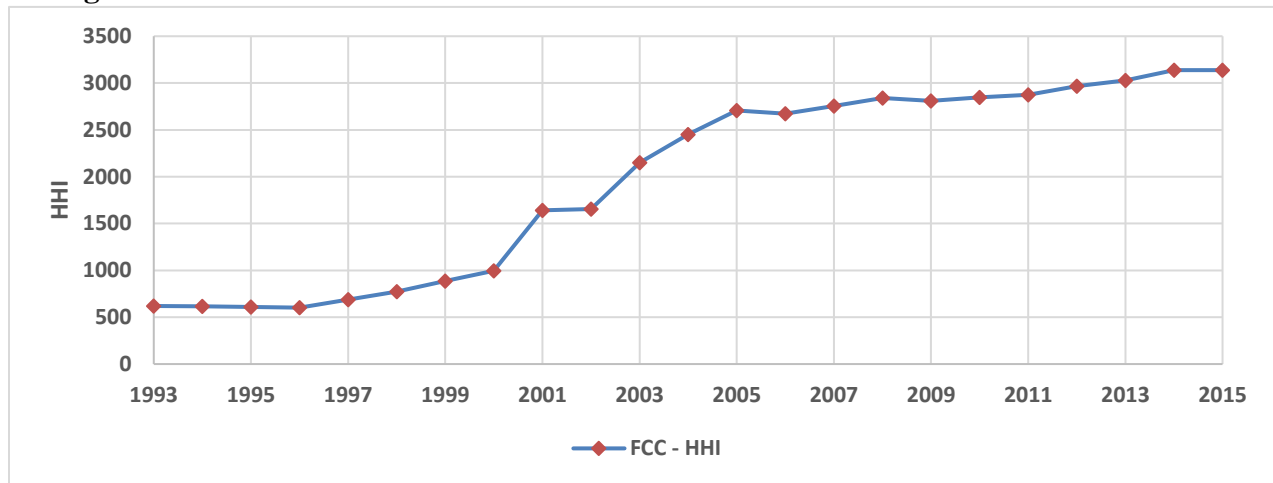
In the early 1990s, when the mobile industry was opened to competition through the auctioning of spectrum licenses, there were few subscribers and prices were extremely high. The incumbent telephone companies that had been given cellular licenses a decade earlier had not done much to develop the space, not wanting to cannibalize their monopoly telephone services. Once competitors entered, things changed rapidly. New entrants were unconcerned with protecting monopoly rents. As shown in Figure XII-1, concentration remained quite low, only reaching the threshold of moderately concentrated (by the old DOJ/FTC definition) at the end of the decade.

The HHI values in Figure XII-1 are national figures. While this reflects the fact that wireless companies compete in most markets with uniform prices, this view somewhat understates the level of concentration in local markets. Since the initial mobile providers were the dominant Incumbent Local Exchange Carriers (ILECs), they tend to have a higher market share in the home territories where they enjoy advantages of brand recognition and ubiquitous facilities to support their mobile services (as shown in Figure XII-2).

One additional view of market concentration included in Figure XII-2 is rarely, if ever, analyzed. The DOJ identified the large business (enterprise) market as a separate national market for wireless. It was much more concentrated (700 points) than the overall national market. Today, the national and local markets are highly concentrated, even by the recently relaxed *Merger Guidelines*

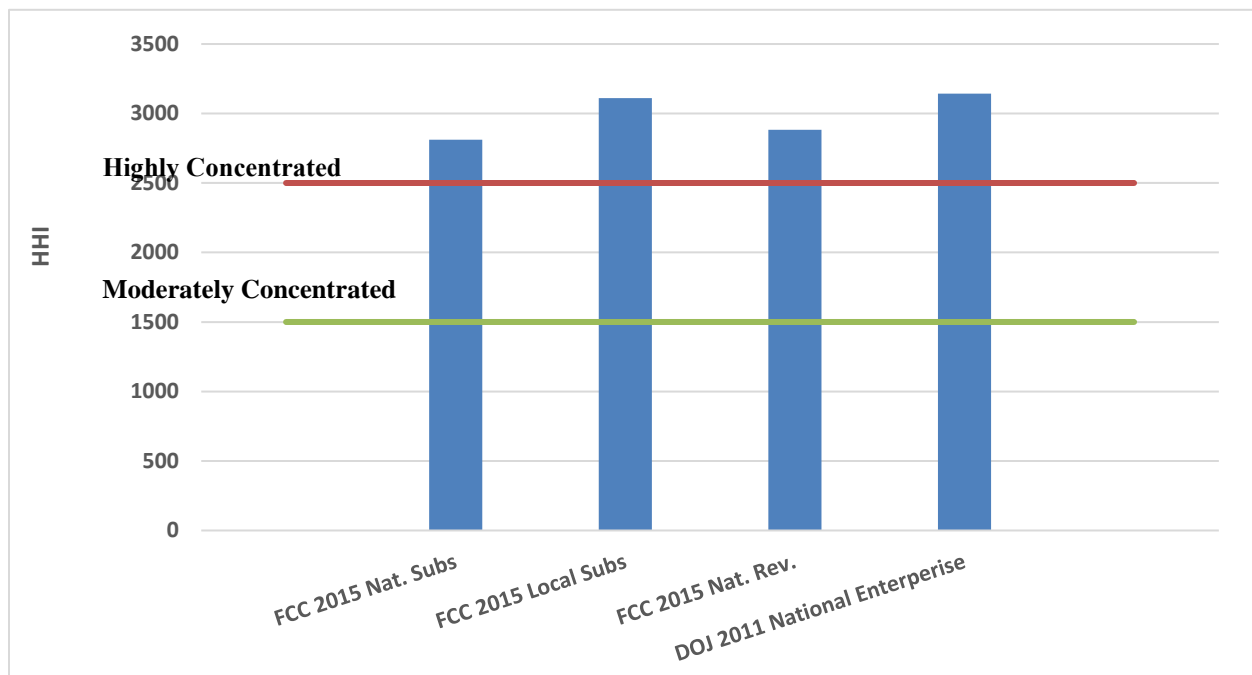
FIGURE XII-1: WIRELESS MARKET CONCENTRATION RATIO (HHI)

Changes in National Concentration 1993-2015



Source: Federal Communications Commission, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, various.

XII-2: LOCAL AND NATIONAL HHI FOR WIRELESS SERVICES



Sources: U.S. Department of Justice, 2011b, *Complaint, Competitive Impact Statement, United States v. AT&T Inc. and Deutsche Telekom, AG*, (No. 1:11-cv-01560), August 31. Federal Communications Commission, 2011b, *Order and Staff Analysis, in the matter of Applications of AT&T Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses and Authorizations*, WT Docket No. 11-65, November 29. Federal Communications Commission, various, *19th Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*.

Beginning around 2000, a wave of mergers dramatically increased the level of concentration. Prices stopped falling, as shown in Figure XII-3). A few years later, cellular providers began to offer broadband service, greatly increasing functionality. Subscribership continued to increase, reflecting the immense value of mobile communications to consumers. The increasing functionality kept demand growing (see Figure XII-3). The continued absence of competition kept prices flat, even though technological progress and economies of scale and scope were lowering costs and increasing earnings

Figure XII-2 presents data on three market characteristics of central concern in assessing market performance: growth, competitive structure, and price. The impact of the shift in pricing with the change in the market structure can be readily seen when we cross-tabulate concentration and price. The upper graph cross-tabulates the two indices from the lower graph of Figure XII-1. The lower graph adds the price index for wireless service from the Consumer Price Index (CPI) of the Bureau of Labor Statistics. Unlike the Cellular Telecommunications Industry Association (CTIA) estimates in Figure XII-1, the CPI estimates are adjusted for quality. We use 1997 as the base year for two reasons: The CPI data starts in that year, and the passage of the 1996 Telecommunications Act created a hiatus in some market processes as market participants adjusted to the Act. The CPI price estimates show a larger decline in the late 1990s with their quality adjustment. But after the competitive period, both the CPI and CTIA indices show flat pricing until the past three years. Below, we argue that this recent change reflects the reintroduction of competition after the denial of the ATT/T-Mobile merger.

Analysis of the pattern of price changes in the competitive and oligopoly periods shown in Figure XII-2 suggests significant consumer losses as a result of the reduction in competition. The graphs show two predictors of prices if competition had not been reduced. One uses the full competitive period (1993–1999); the other relies only on prices after the initial auction and the passage of the Telecommunications Act (1996–1999). In both cases, the projected competitive prices are much lower—\$20 to \$30 per month. Although we do not base our estimates of overcharges on the simple price trends, they do clearly support a conclusion that the weakness of competition has resulted in excessive charges.

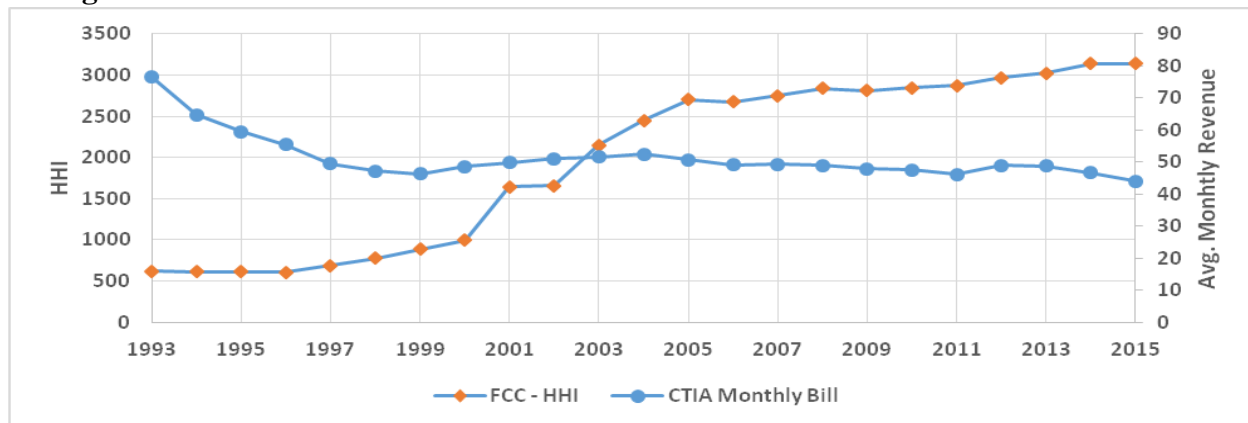
EXAMINATION OF TRENDS IN PRICE, COST AND PROFIT

Figure XII-3 puts the projected competitive price in context by comparing it to the CPI estimate and independent estimates of equipment costs. The implication here is that costs were falling much more rapidly than prices.

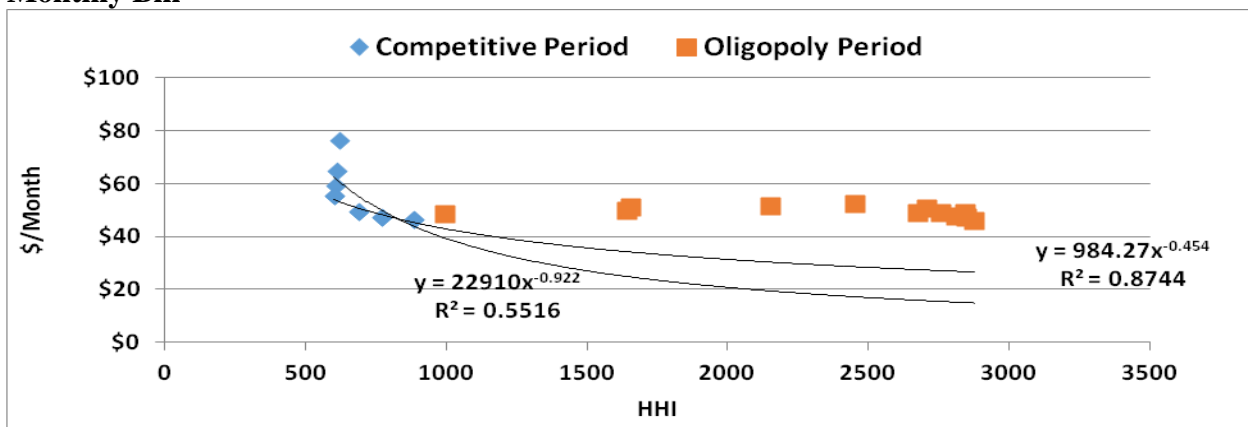
While the declining costs were reflected in prices in the competitive period, that correspondence ceased as the industry concentrated. In other words, costs continued to decline, but prices did not. In light of these declining costs, the competitive projection seems quite reasonable, or even high. Moreover, the competitive processes of the 1990s did not reflect the dynamic technological development of the 2000s, wherein strong economies of scale and new economies of scope were

FIGURE XII-3: THE CORRELATION BETWEEN CONCENTRATION AND MONTHLY PRICE

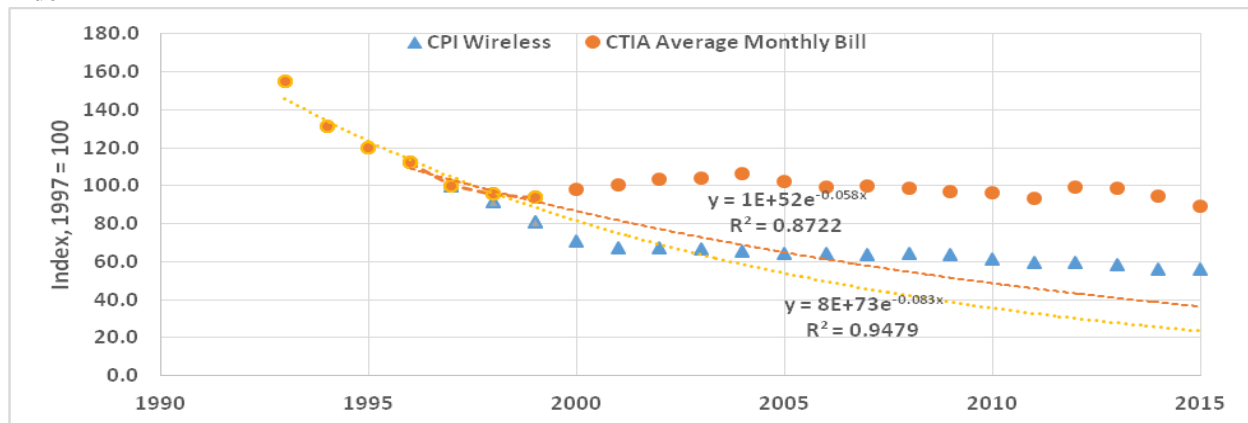
Changes in Concentration and Price



Monthly Bill



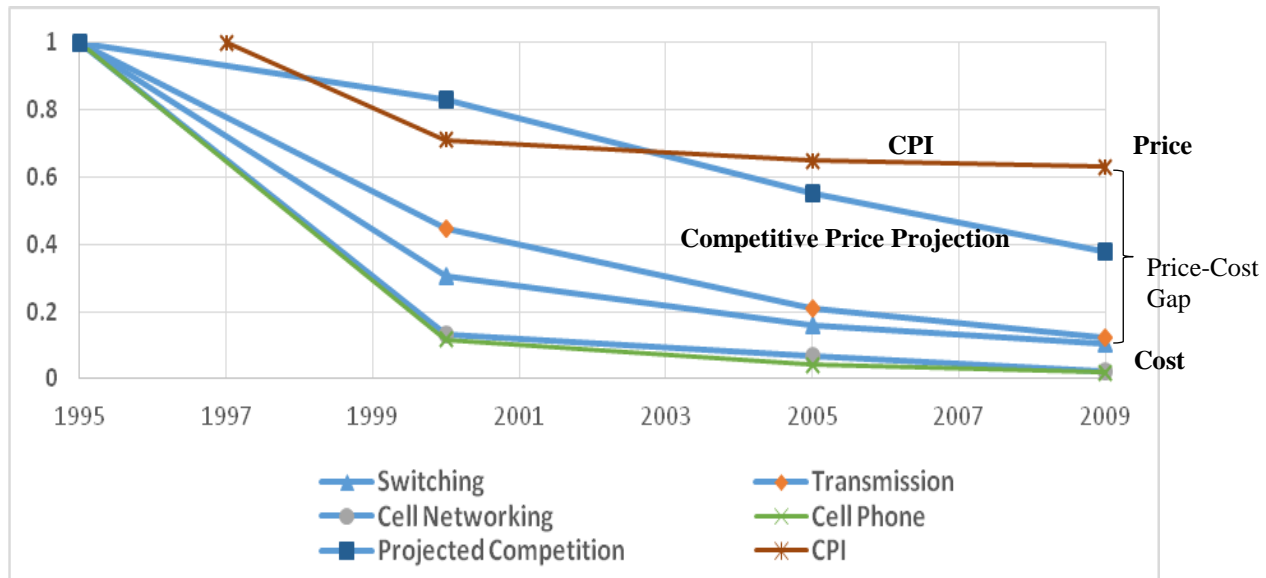
Index



Source: Federal Communications Commission, *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, various.

present.²²⁶ The declining cost of technology is consistent with the pattern of investment per subscriber, as shown in Figure XII-4. The high levels in the mid-1990s reflected the investment stimulated by the auction of spectrum and the entry of new suppliers. Investment surged briefly with the rollout of wireless broadband. Over the past decade, investment per subscriber has trended downward, with annual investment down one-third since the broadband era peak in 2005.

FIGURE XII-4: CELL CPI, PROJECTED COMPETITIVE PRICES & COST OF EQUIPMENT, INDICES



Source: Bureaus of Labor Statistics, *Consumer Price Index*; David M. Byrne and Carol A. Corrado, 2012, *Prices for Communications Equipment: Rewriting the Record*, February. Finance and Economics Discussion Series 2015-069, Washington Board of Governors of the Federal Reserve System.

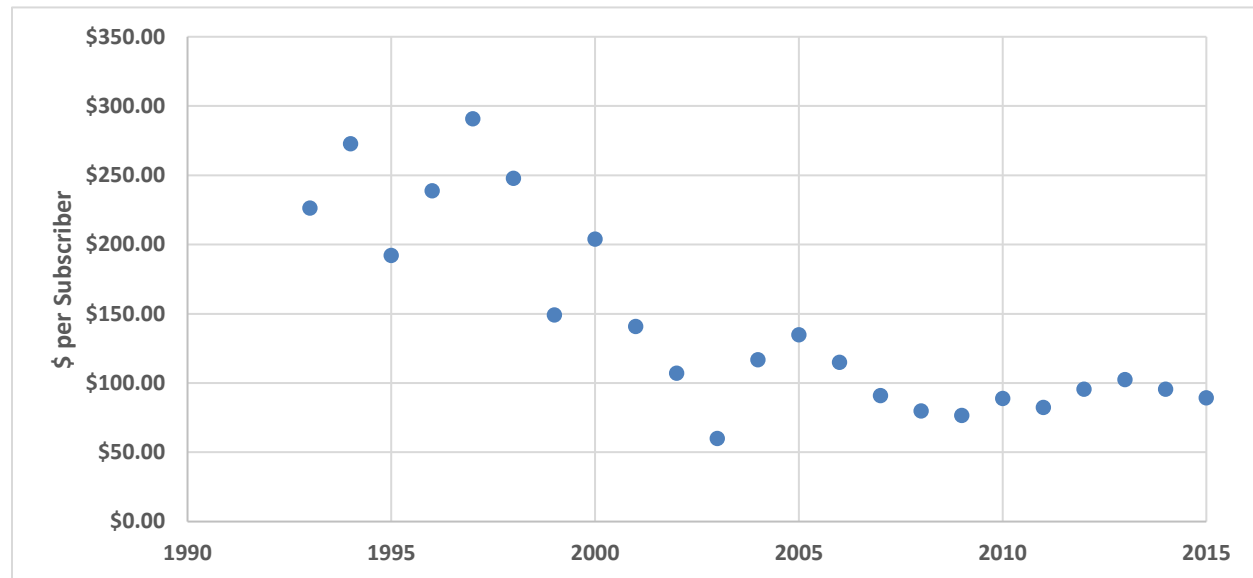
While declining costs were driven by technological change and economies of scale, there were also increasing revenues resulting from the addition of new services. Examining the most important infrastructure investment, cell sites, as in Figure XII-5, we observe a potential large economy of scale. Subscribers per cell site and revenues per cell site both increased significantly over the period. The 32% increase in subscribers per cell site offset a slight 4% decrease in average revenue per user to yield a 27% increase in revenue per subscriber.

There are other indicators of these returns to scope. Examining the number of devices that use wireless data transmission (an important indicator of economies of scope) and the data revenue reported by ATT wireless suggests the immense increase in data revenue – a potential economy

²²⁶ The efficiencies of larger units under these circumstances must be balanced against the increase in market power to arrive at a bottom-line assessment. We believe the net effect was to increase the abuse of market power, and this is one of several factors that make our assessment of the magnitude of abuse conservative.

of scope.²²⁷ In the last decade, the number of devices has gone from zero to a quarter of a billion.²²⁸

FIGURE XII-5: ANNUAL INVESTMENT PER SUBSCRIBER



Source: CTIA Year End Statistics, as reported in FCC Annual

While the CTIA revenue indices have been incorporated into the FCC annual reports of competition in the mobile industry, they do not give a complete picture of the prices paid by consumers or the basis for earnings in the industry. The most recent CTIA report included a second estimate of revenues that reflect equipment costs paid by consumers. Service plus equipment costs are reported 20% higher than the monthly service revenues that had been reported for two decades. The change in the treatment of equipment costs is necessary because it reflects a change in the way equipment is acquired by consumers. Today, consumers are much more likely to directly bear the cost. While that makes perfect sense, it raises a question about the total revenue of the industry in earlier years.

Earlier estimates of equipment costs are rare. However, until the last two years, the difference between the total monthly revenues and service plus equipment remained constant on a percentage basis. In the past two years, the difference has increased sharply, almost doubling. The increase alone equals almost \$1 billion per month, or over \$3 per account per month. Thus, the excessive charges borne by consumers suggested by the previous analysis may have been underestimated.

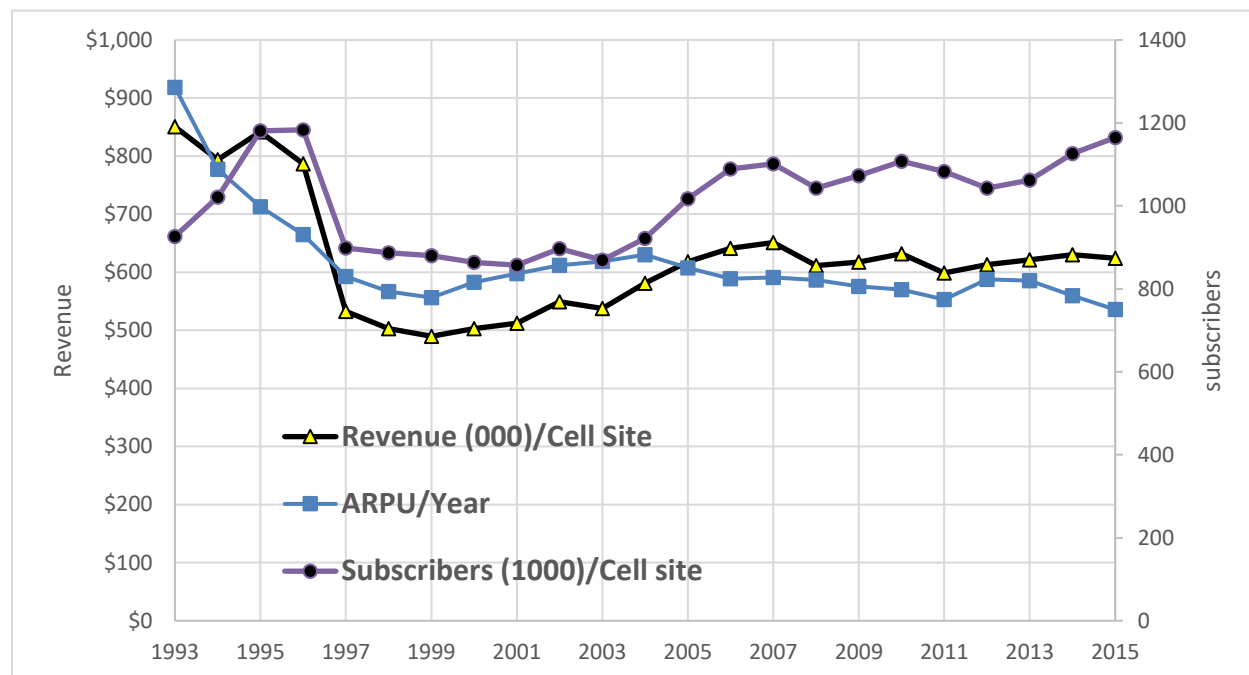
With weak competition, rapidly declining production costs, and additional declining costs associated with economies of scale and scope, large cost reductions and revenue increases could

²²⁷ ATT data from *Annual Reports*, various.

²²⁸ Federal Communications Commission, *In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, various. The 16th Report (p. 39) puts the penetration rate at 72%; the 18th Report (p. 9) puts the total number of connected devices at more than 380 million.

have been passed through to consumers if competition were vigorous. But with weak competition, they were taken as excess profits. We will observe a similar process in the wireline broadband

FIGURE XII-6: INDICATORS OF INCREASING PROFITABILITY OF CELLULAR PROVIDERS



Source: CTIA Year End Statistics, as reported in FCC Annual

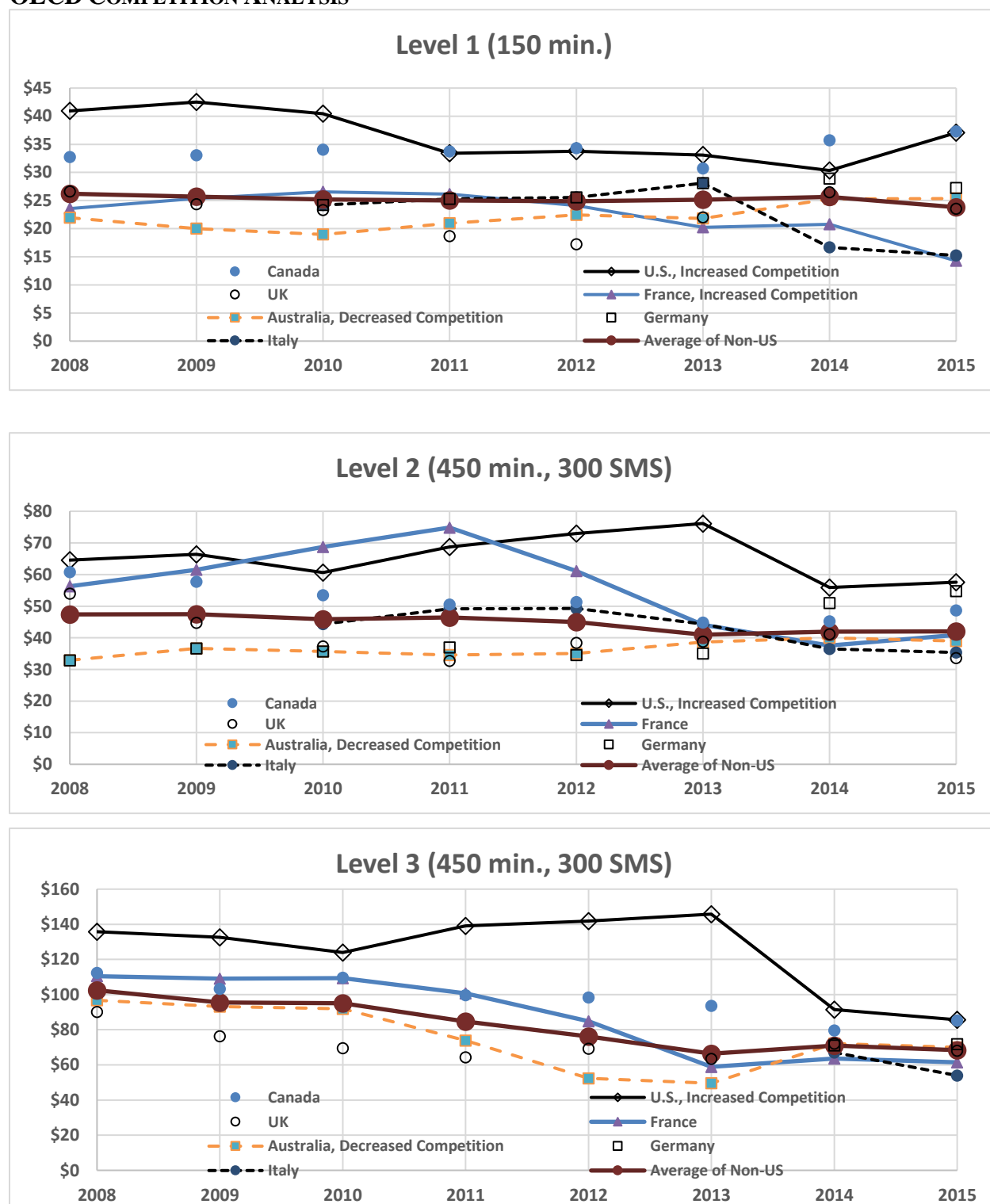
All of these metrics suggest that costs were falling and revenues were rising. The failure of prices to fall is consistent with the exercise of market power that grew dramatically with the consolidation of the industry. The decline in incremental investment per subscriber and increase in revenue per cell site argue against the claim that the industry needed to hold prices to fund deployment, as shown in Figure XII-6. We shall examine that question in the remainder of this section, where we directly examine the impact of the outbreak of competition and trends in EBITDA margins.

INTERNATIONAL COMPARISONS

International comparisons provide additional support for the overall analysis. Many such comparisons have been made, generating a great deal of debate and becoming more refined over time. Figure XII-6 reflects these refinements in several ways. First, it is based on the analysis of regulatory bodies. Second, it models the cost of specific typical bundles. Third, it focuses attention on reasonably comparable nations.

The evaluation of wireless pricing in large nations such as Australia, France, and the United States supports and provides insights into our analysis in two regards. First, the U.S. price is

FIGURE XII-7: MOBILE SERVICE: MONTHLY BILL CRTC RATE COMPARISONS AND OECD COMPETITION ANALYSIS



Source: Wall Communications Inc., 2015, *Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions*, 2015 edition, prepared for the Radio-television and Telecommunications Commission and Industry Canada, March 30. OECD (2014), "Wireless Market Structures and Network. Sharing," *OECD Digital Economy Papers*, No. 243.

substantially higher. For the larger bundles, the differences are in the range of the earlier analysis (\$20–\$30 per month). Second, the effects of competition have been noted in these studies.

Countries that introduce competition experience price declines. Countries that reduce competition experience price increases. The analysis selects large, reasonably comparable nations with respect to income levels. Many cross-national comparisons are plagued by the inclusion of nations with different sizes, densities, and income levels.

THE CONTEMPORARY BENEFITS OF PROMOTING COMPETITION: THE REJECTION OF THE ATT/T-MOBILE MERGER

Before we turn to the analysis of overcharges based on financial data, a brief analysis of the current benefits of competition is informative. After the denial of the proposed ATT merger with T-Mobile, which froze T-Mobile for well over a year, T-Mobile found itself with a large cash infusion from the break-up fee and the prospect of having to stand alone.

As the fourth largest of the major national carriers, it made the decision to compete vigorously on price and service terms to increase market share. It has always been the disruptive maverick in the group. For the first time in more than a decade, price competition broke out. By 2014, its impact was clear.

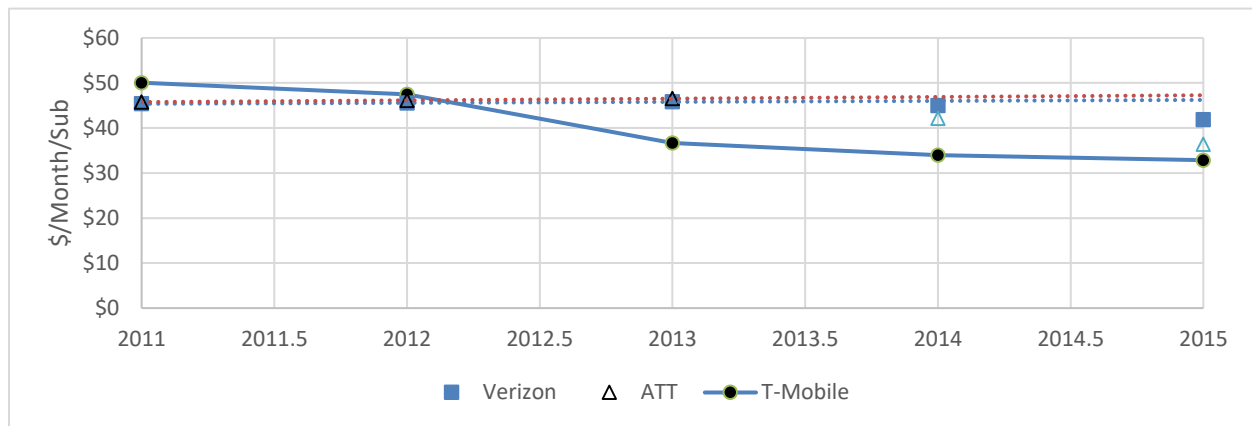
This can be seen in the dip in the industry average ARPU in Figure XII-8, which contrasts the behavior of the dominant firms (ATT, Verizon) and the maverick (T-Mobile). The dominant national carriers were forced to respond by abandoning the pattern of relentlessly raising prices, and their operating income per subscriber showed the effect. The difference between T-Mobile as a competitor and the dominant firms has been clear for over a decade, except for the short period during which T-Mobile was the target of a takeover attempt. Its aggressive price/quality competition strategy has not only increased its market share, but it is yielding increasing margins as it achieves scale. It appears to be a viable competitor as the basis for comparison. By 2015, Average Revenue per User (ARPU) was \$4–\$5 less than in 2013. This competitive gain was not by any means sufficient to wring out the base of pricing abuse by the dominant wireless carriers, but it shows the benefits of competition.

As shown in Figures XII-8 and XII-9, EBITDA and EBITDA minus capital expenditures (CapEx) were down in the first year, but recovered closer to the trend in the second year. We interpret this as a manifestation of the efficiency improvements stimulated by competition. The upward trend had been broken. At \$4 per subscriber, the savings are over \$11 billion per year.

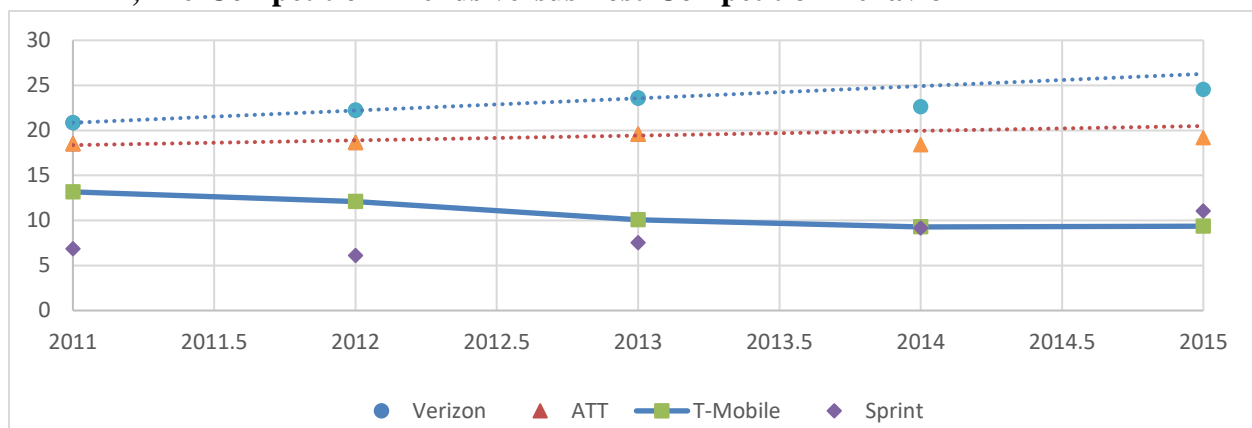
Financial analysts looking at the ATT/T-Mobile merger during the review period argued that the merger could have resulted in average price increases of \$5 per month above the underlying trends. They made these estimates using the standard relationship between the concentration index and prices.²²⁹ Again, this is not the basis of our estimate of ongoing overcharges. It is just more empirical evidence consistent with the overall analysis. In other words, had the merger been approved, rates could have been \$10 higher.

²²⁹ Yankee Group, 2011.

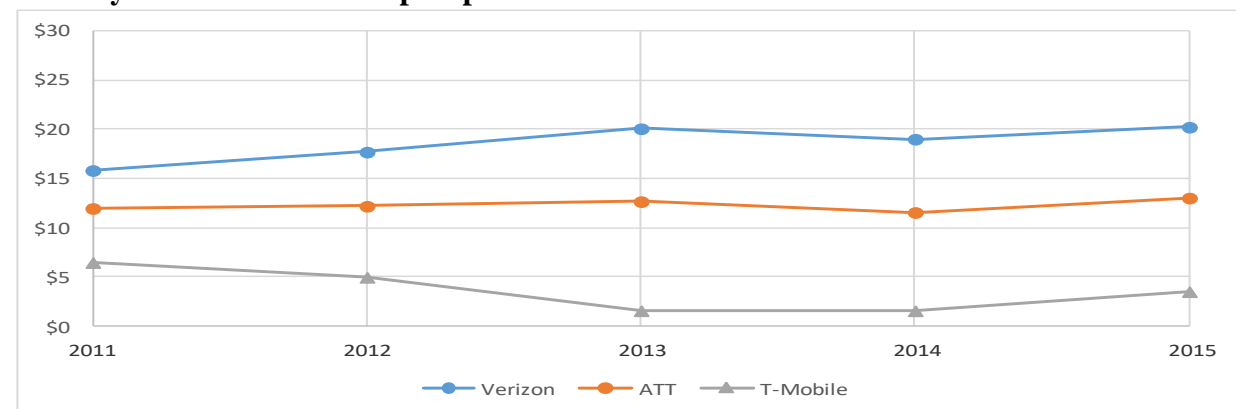
FIGURE XII-8: DENIAL OF THE ATT/T-MOBILE MERGER UNLEASHED PRICE COMPETITION
ARPU, Pre-Competition Trends versus Post-Competition Behavior



EBITDA, Pre-Competition Trends versus Post-Competition Behavior

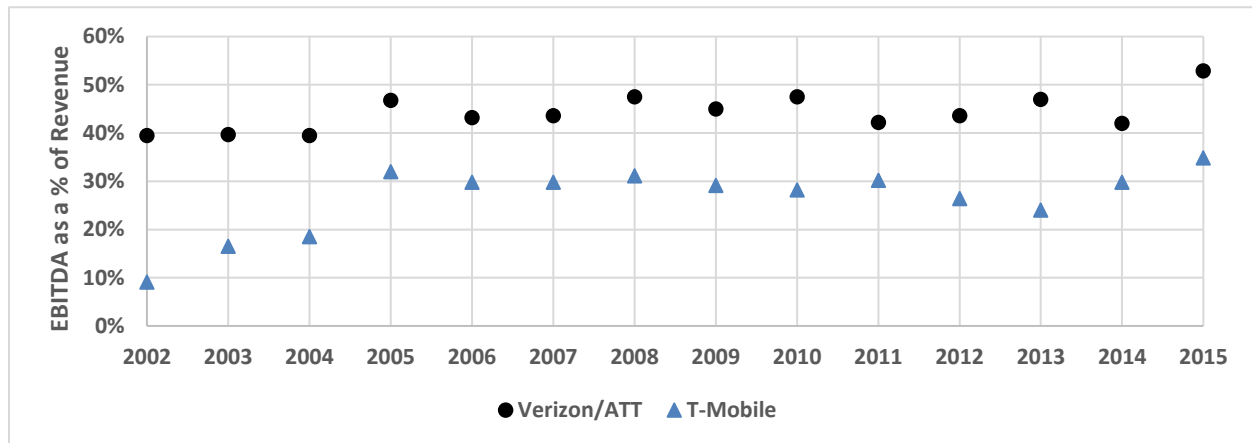


Monthly EBITDA Minus CapEx per Subscriber

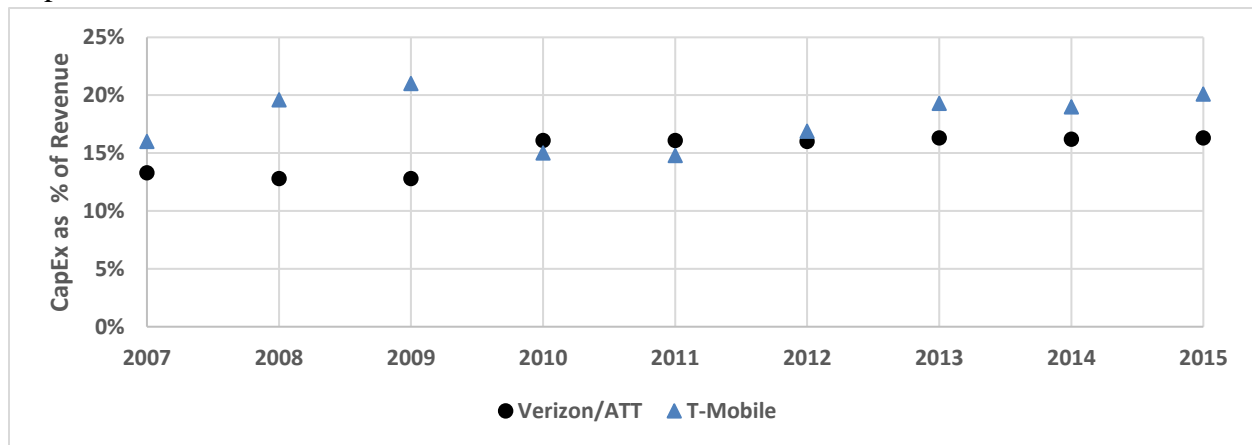


Source: Federal Communications Commission, *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, various. Annual Reports

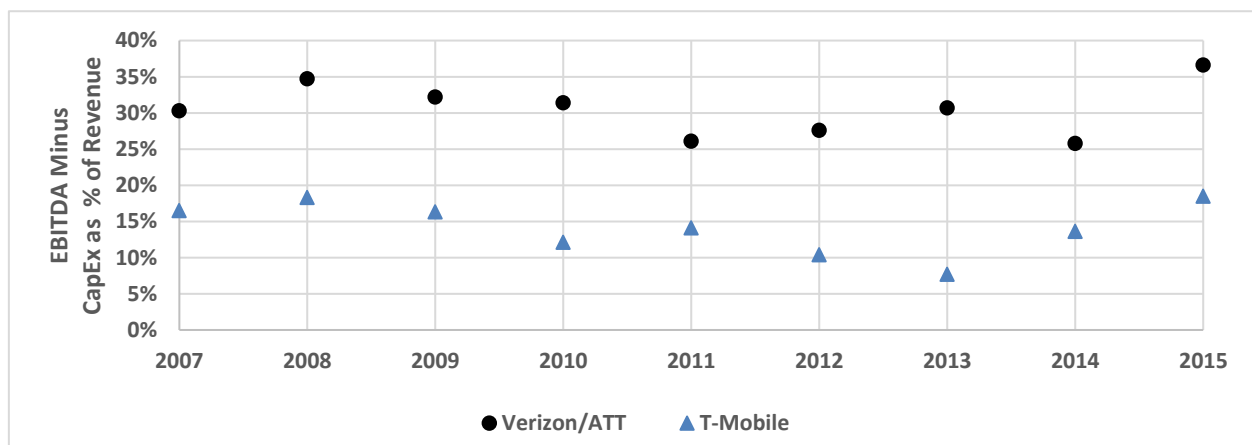
FIGURE XII-9: THE SUSTAINABILITY OF LOWER WIRELESS MONTHLY SERVICE FEES
EBITDA as a % of Revenue



CapEx as % of Revenue



EBITDA Minus CapEx as a % of Revenue



Source: CTIA Year End Statistics, as reported in FCC Annual

Our preferred approach to estimating overcharges relies primarily on the examination of margins and the rate of profit, as shown in Figures XII-8 and XII-9. Estimates of Earnings Before Interest, Taxes Depreciation, and Amortization (EBITDA) are frequently calculated by financial analysts, since this figure gives a good indication of the resources available to service and reward capital investment. This is directly linked to the concept of margins introduced in the discussion of market structure analysis.

THE CONSUMER IMPACT OF OVERCHARGING

The earnings data are consistent with the hypothesis that market power is being exercised by the dominant players. The EBITDA of these companies has been higher and has increased over time. The overcharges have been above \$10–\$15 per month for several years. This is considerably below the price projections in the earlier analysis.

As noted above, one of the criticisms of the Lerner Index is that in some industries where capital investment is large (such as infrastructure industries), marginal cost does not take heavy capital costs into account. One way to address this issue is to look at EBITDA minus Capital Expenditures. Both of these approaches put the excess at around \$13 per month per subscriber.

Figure XII-9 shows the earning per month over more than a decade for Verizon, ATT, and T-Mobile. Here we use annual reports to extend the FCC analysis of EBITDA, which is based on analyses by financial firms. We use T-Mobile as the competitive fringe firm. It has had a lower level of EBITDA throughout the period, but has remained viable.²³⁰ EBITDA is now increasing as it adds subscribers and gains economies of scale even though it remains about half the size of the industry leaders. To be conservative in estimating overcharges we use \$10 per month, which is the lowest figure that these analyses suggest.

One final observation is necessary to round out the analysis. The estimate of overcharges is slightly less than 25% of the average monthly bill per user (including equipment) for the dominant firms. It may seem large, but that is deceptive. As noted above, because these are new technologies delivering new services, the rapid build-up of earnings can be driven by powerful economies of scale and scope. As the delivery of services expands, the significant shared costs of the infrastructure are spread across large base, lowering the cost per service. At a minimum, revenues increased faster than costs. In the past three years, the cost of service at the dominant firms (excluding equipment) has declined by over five percent per year.

CONCLUSION

In this section, we have examined domestic U.S. pricing patterns, finding that overcharges could be in the range of \$20–\$30 per subscriber per month. International comparisons put the overcharges at about \$20. Analyzing earnings puts the overcharges in the range of \$10–\$15 per

²³⁰ In the case of ATT, capital expenditures proportionate to depreciation, since so many of the services share the use of facilities. ATT *Annual Report*, 2015, p. 14: “Our operating assets are utilized by multiple segments and consist of our wireless and wired networks as well as an international satellite fleet. We manage our assets to provide for the most efficient, effective and integrated service to our customers, not by operating segment, and therefore asset information and capital expenditures by operating segment are not presented. Depreciation is allocated based on network usage or asset utilization by segment.”

month. There are two factors that suggest even larger overcharges. The EBITDA-based estimates are on the low side of the price-per-month overcharges, which suggests additional costs could be squeezed out. The shift to consumer payment for handsets increases costs, which may not be reflected in the monthly subscription revenue. The dominant wireless providers are also vertically integrated into telecommunications, and they have the potential to bury costs with cross-subsidies for communications network inputs used by wireless service.

For these reasons, we estimate the overcharges at \$10 per subscriber per month. We have also seen that the fringe carriers have much lower ARPU and EBITDA. Therefore, to estimate the total overcharges, we apply this figure only to the subscribers of the dominant carriers. With 270 million accounts in current surveys, the total annual overcharge is \$32 billion ($\$10 \times 12 \times 270\text{m} = \32.4b). The outbreak of competition created by T-Mobile's aggressive competition strategy is definitely putting downward pressure on prices and excess profits. Thus far, the primary impact has been to constrain the upward march of prices and margins, so the \$10/month figure is a reasonable basis going forward.

A recent analysis by the *Economist*²³¹ demonstrating why the ATT/Time Warner merger should be rejected underscores the reasonableness and relevance of this analysis of the wireless sector in the U.S. The *Economist's* premise is that lack of competition, high prices, and excess profits of the American wireless giants indicate the presence of market power that could be greatly reinforced as a result of the merger.

There are two reasons why trustbusters should now take a tougher line. First, the telecoms industry is already a rent-seekers' paradise. Americans pay at least 50% more for mobile and broadband service than people in other rich countries. For each dollar invested in infrastructure and spectrum, American operators make 28 cents of operating profit a year, compared with 18 cents for European firms. That reflects the lack of competition. AT&T and Verizon control 70% of the mobile market, and are the only firms that reach 90% or more of Americans with high-speed services. Half of the population has no choice of fixed-broadband supplier. The lack of downstream competition in pipes could distort competition in upstream content.²³²

We have provided extensive evidence on all of these quantitative economic points, as shown in Table XII-1. The concentration, price, and profit margin metrics we have offered are virtually identical. Our estimates of price differences between the U.S. and other advanced industrial nations are somewhat lower because we control for bundles of minutes and include only large nations. Our bottom line estimate of overcharges is much more cautious because a) we recognize the need for capital investment, and b) that the costs in the comparatively lower density U.S. might be higher. Thus, our estimate of overcharges is about half of the simple price comparison. It should be said, however, that the long history of anticompetitive behavior and the dynamic effect of competition suggests consumers may be bearing unnecessary costs (overcharges) that

²³¹ Vertical Limit: AT&T's takeover of Time Warner should be blocked, *Economist*, October 29, 2016.

²³² *Id.*, p. 2

are the result of oligopoly-induced inefficiency. Compared to that of *The Economist*, our estimate of \$10 in overcharges per month per subscriber is very cautious.

TABLE XII- 1: *ECONOMIST ANALYSIS* OF WIRELESS MARKET V. CURRENT PAPER

<u>Economist</u>		<u>Current Paper</u>	
Concentration			
Dominant Firm Market Share	70%	70%	Revenue
		68%	Connections
Prices U.S./Other advanced	50%	23-38%	Medium - Large Bundles
Profit Margin (U.S./Other)			
Profit/Sales	55%	50%	EBITDA (Dominant v. Maverick)
	na	≈ 25%	Overcharge as % of Monthly based on EBITDA – CapEx (Dominant v. Maverick)

Sources: “Vertical Limit: AT&T’s takeover of Time Warner should be blocked,” *Economist*, October 29, 2016.

XIII. BROADBAND AND VIDEO: CABLE CONCENTRATION AND EXCESS PROFITS

POLICY CONTEXT

Like all of the major communications networks, at their birth, the cable companies were granted local franchises to provide service. Unlike the cellular industry, which faced head-to-head competition from firms with the same technology (intramodal competition) within a decade, the cable operators did not. Their franchise was exclusive, and they put up vigorous resistance whenever a potential competitor was allowed to enter. Overbuilders, as the intramodal competitors came to be known, never represented more than a very small fraction (2%) of the local multichannel video programming distribution market.²³³ When cable was deregulated in 1984, there was a great deal of talk about multiple cables in every neighborhood, as well as the potential for satellite to compete. By 1992, when rapid increases in cable prices led to the reregulation of cable, the cable monopoly was as strong as ever.

The Cable Television Consumer Protection and Competition Act of 1992 (the Cable Act) had two effects on cable.²³⁴ It subjected rates to regulation, which will be discussed below, and it imposed program access rules on cable. Since cable operators had withheld access to programming, thereby undermining the ability of direct broadcast satellite (DBS) to compete, the Act established a compulsory license. Moreover, since cable was rapidly becoming the preferred way to view television, broadcasters were becoming increasingly dependent on cable for program delivery, so the Act gave over-the-air broadcasters carriage rights. Access was the key consideration in both. A new distribution network could not succeed without access to content. Content providers could not succeed without access to distribution networks.

With the programming bottleneck removed, satellite penetration increased, but it never proved to be an effective direct competitor to cable.²³⁵ Satellite expanded rapidly at first, primarily in rural areas where cable was not available. Later, when satellite expanded into urban areas, the difference in technologies made satellite unable to compete and bring down the price of cable. Intermodal competition was no replacement for head-to-head intramodal competition.

To match satellite, cable moved to digitize its network and increase the number of channels offered, but did not lower prices. Moreover, the digitization of cable systems had the consequence, unintended at the time, of making cable modem Internet service possible. Cable began to offer Broadband Internet Access Service (BIAS) alongside video service. Bundles of Multichannel Video Programming Distribution (MVPD) and BIAS service became the norm, with subscribers to cable modem service exceeding cable MVPD subscribers in 2014. Satellite could not deliver this bundled service, so any chance it had of being able to compete with cable was reduced, if not eliminated. Counting TV and broadband subscriptions separately, wireline broadband/video companies have almost five times the number of subscribers as satellite. Cable

²³³ In 2004, on the eve of entry by the telephone companies, overbuilders accounted for only 1 percent of the market (FCC 11th *Annual Report*, Cable).

²³⁴ Cooper, 2003.

²³⁵ *Id.*, pp. 34–35, and the sources cited therein, note that the DBS variable had the wrong sign, which elicited a comical effort to explain away the finding (one which had been consistent across years).

alone has almost three times the number.²³⁶ For 30 years, competition from satellite could not restrain cable video pricing abuse, and it is now at a severe technological disadvantage.

In the Telecommunications Act of 1996, the rate regulation part of the 1992 Act was swept away, replaced by another round of policy that hoped to stimulate competition. Cable operators were encouraged to compete against one another, and telephone companies were invited to enter the video business. Congress also mandated that the sale of set-top boxes, which receive the video signal from the cable network and deliver it to the television, should be competitive. The content rules (compulsory license, program access, retransmission, and must-carry rules) remained in place, however.

Twenty years after the 1996 Telecommunications Act opened the door to competition, no incumbent franchise cable company has overbuilt one of its neighbors to engage in head-to-head competition. Instead, they bought one another out and tried to extend their physical space “no compete” model to cyberspace with “TV everywhere.”²³⁷

In the 20 years after the passage of the 1996 Act, no Baby Bell has ever overbuilt one of its neighbors to engage in head-to-head telephone competition. The Baby Bells spent the first few years after the 1996 Act

- fending off local competition in voice service,
- exploiting their advantage in wireless service (described above),
- buying up sister Baby Bells (ATT merging SBC, Ameritech, Bell South, and Pacific Bell; Verizon merging Bell Atlantic and NYNEX), and
- acquiring independent local and competing companies (e.g., SBC acquiring ATT long distance and Southern New England Telephone Company; Verizon acquiring MCI and GTE).

They entered the video market late in their service territories, hesitantly, and on a narrow basis. Ultimately, they joined the national market-division scheme hatched by cable by becoming active members of the private passport network that preserved the local market advantage from physical space.

Until 2010, the FCC magnified the threat of the abuse of market power by erroneously classifying Broadband Internet Access Service as an unregulated information service rather than a telecommunications service, and by approving a series of mergers that undermined competition. The DOJ/FTC also failed to block or impose meaningful conditions on mergers that were allowed to go forward.

²³⁶ Leichtman Research Group, 2015.

²³⁷ Kang, 2010; Ammori, 2010; Cooper, 2010.

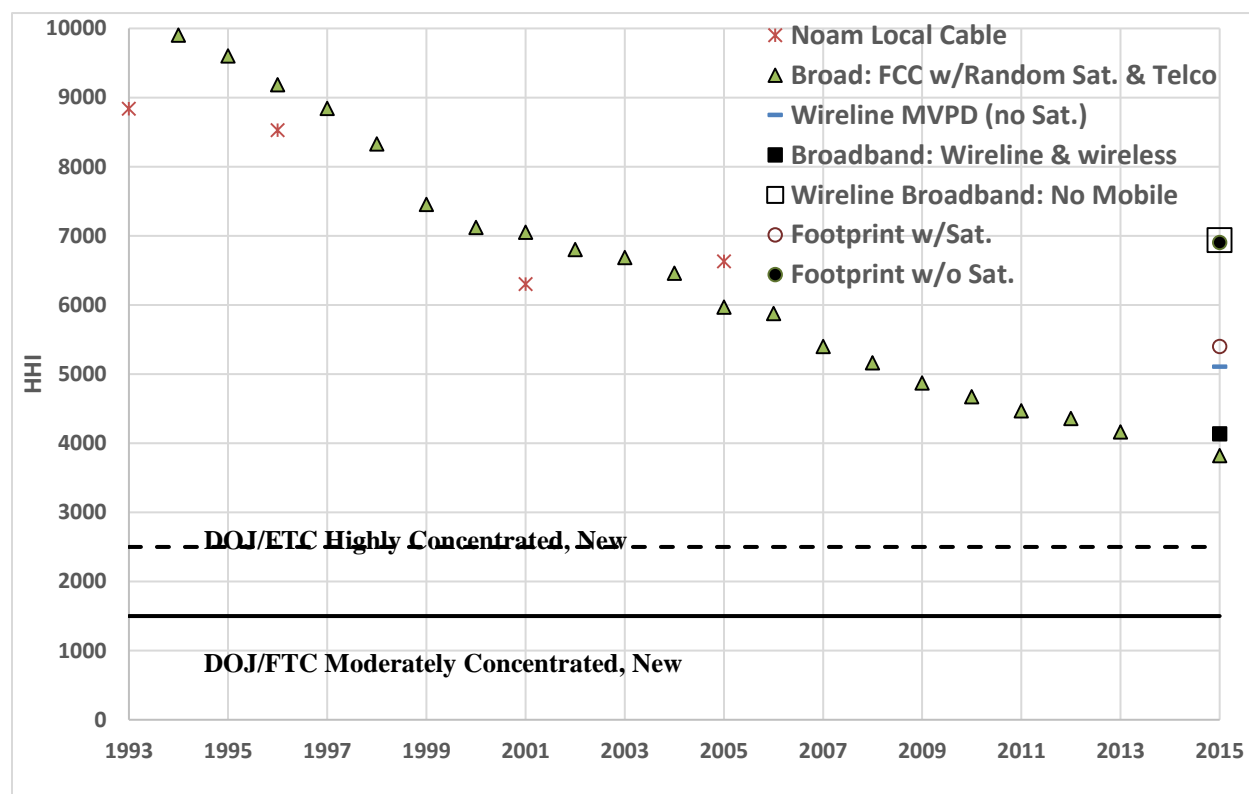
CONCENTRATION

Video

The net result of ineffective intermodal competition and the absence of intramodal competition was to leave the local MVPD market highly concentrated throughout the period, as shown in Figure XIII-1. The graph shows several approaches and sources for calculating the HHI in the MVPD /BIAS markets, treating them as local markets. The local market is relevant for analyzing market power in setting monthly charges for service since consumers must have a local connection to receive service. Figure XI-3 uses the geographic aspect of market definition to estimate local concentration, recognizing that there is almost no head-to-head competition between cable companies and no head-to-head competition at all between telephone companies.

It assumes that satellite and telecommunications competition is evenly (randomly) spread across the nation. It shows two approaches to the definition of the product market.

FIGURE XIII--1: CONCENTRATION OF LOCAL MVPD AND BIAS MARKETS



Source: Eli Noam, *Media Concentration*, Table 4.9, which provides estimates for local concentration through 2006. The footprint numbers extend that local HHI analysis, based on assumptions about head-to-head competition for landline service, as in de Sa, Paul, Ian Chun, and Julia Zheng, 2015, "U.S. Telecom: Pay TV—A New Way to Look at Cable/Telco Competition and Market Shares," AB Bernstein Analysis, December 9. Federal Communications Commission, *Annual Report on Cable Competition*, various issues, Table B-4, which gave national HHI calculations until the 12th Report. Subsequently, the FCC gave national market shares, but did not calculate the HHI because it recognized the importance of local market shares, which it could not calculate. Craig Moffett, *U.S. Cable & Satellite: A Funny Thing Happened on the Way to the Graveyard*, MoffettNathanson, January 13, 2016, for cable and telephone company broadband subscribers.

Pew Center for American Life, *Internet Trends, Broadband at Home*, various reports, for recent national subscribers.

However, we believe a narrow wireline definition of the broadband market is the correct product definition. Satellite has never been able to discipline cable pricing power, and it is at a severe disadvantage vis-à-vis cable because of the emerging dominance of bundles. The bundled product is clearly the product that Comcast promotes: “According to Comcast 79 percent of its video customers at the end of 2013 subscribed to two services while 44 percent subscribed to all three.”²³⁸ Satellite cannot provide bundles. Focusing on the wireline MVPD market, we see that the HHI is about 5,000. It works out to a duopoly, but, as we argue, two is not enough to create workable competition.

The reasonableness of this approach to market definition and estimation of concentration is supported by a recent analysis by de Sa, Chun, and Zheng of AB Bernstein Consulting.²³⁹ They conducted an analysis of the overlap of cable and telco service areas (or “footprints”) as “a new way to look at cable/telco competition and market shares.” Using a broad market definition—two wireline and one wireless provider—we estimate the HHI based on their data to be about 5,400. Focusing only on wireline, we estimate the HHI to be just over 6,900. Since this is essentially the same as our true broadband definition, the HHI is approximately the same as our true broadband definition.

Broadband

In analyzing the market for broadband service, the second aspect of market definition—product definition—plays an even larger role. Internet access started out as a fairly slow-speed data service, delivered to the consumer over the telephone utility plant. Dial-up Internet access service spread rapidly, exceeding one-third of the market in about 15 years. In contrast, telephone service took about 25 years to reach that level. Radio, television, and wireless achieved that level in about five years. Dial-up service was generally monopoly service, offered by the franchise telephone company.

Cable operators entered the Internet access market after the 1996 Act with a much higher-speed broadband service. It used a cable modem technology that ran over the digital network they had deployed to match the quantity of programming offered by satellite. Wireless Internet access service was also available, but the capacity it could offer fell between slow-speed dial-up and true broadband. The competitive role of wireless broadband is also clouded by the fact that the dominant incumbent local telephone companies were also the dominant wireless providers in the local service territories. Even with an unjustifiably broad definition, competition is extremely weak. The HHI is about 4,000.

A product definition that recognizes the very different capabilities of the technologies leads to an even more troubling view of market concentration. The more careful the analysis of competition, the less competition there appears to be. The key point here is that the functionality and capacity of wireless and wireline broadband are radically different. Wireline broadband has much higher capacity, but lacks mobility. Wireless has mobility, but much lower capacity. They are not

²³⁸ www.gurufocus.com/news/268374/3-reasons-to-invest-in-comcast-for-the-long-run

²³⁹ De Sa, Chun, and Zheng, 2015.

treated as substitutes by consumers. The differences in the technologies are reflected in marketplace behavior. Five-sixths of subscribers who have wireline broadband at home also take wireless.²⁴⁰ They are either different products or complements, which means they do not compete. We believe market definition must recognize the major difference between the technologies.

After a decade of misrepresenting market structure by relying on a constant, low-speed threshold for defining high speed, the FCC was compelled to take a more realistic look at broadband in drawing up the National Broadband Plan. Properly evaluating the nature of the service is grounded in the Communications Act in three ways.

- First, the purpose of the Act is to “make available” services with “adequate facilities at reasonable charges.”
- Second, the universal service language in the 1996 Act defines services that are eligible for support from the universal service fund according to what is being deployed and subscribed to in the marketplace.
- Third, the 1996 Act requires the FCC to assess whether the deployment of infrastructure is adequate for a variety of purposes under Section 706, and to take action to accelerate deployment if it finds that it is not adequate.

After the National Broadband Plan report, the FCC initially defined the threshold for broadband at four megabits per second (mbps) down and one mbps up. This level was over five times the level that had been used before the 2009 amendments to the Communications Act. Using the definitions in the Act and taking a forward-looking view of adequate facilities and deployment, the FCC then raised the threshold to 25 mbps down and three up.²⁴¹

Therefore, the most important product market here is the “true” broadband market, which we define to include cable modem service and telephone company high-speed, services. We do not include telephone company DSL in the product market. True broadband is the product that can deliver large amounts of high-quality video to consumers, which makes it the primary area for potential competition. Comcast’s own advertising and executive statements make it clear that DSL is not a good substitute.²⁴²

We do not include wireless (mobile) broadband in this product definition. As deployed, it generally lacks the ability to deliver large quantities of high-quality video that can compete with the MVPD product. Comparisons of speed and price make it clear that wireless broadband is not a good substitute when it comes to professional MVPD video. Compared to Verizon and ATT (the dominant wireless broadband service providers), Comcast offers services at roughly the same fixed monthly charge, but at a speed two to three times faster and a cap over 100 times higher. At the level of Comcast’s cap, ATT and Verizon wireless broadband is 10 times as

²⁴⁰ Pew Center for American Life, *Internet Trends, Broadband at Home*, various reports.

²⁴¹ Grant, 2015.

²⁴² Grunes and Stucke, 2014, p. 4, cite cable industry “veteran” John Malone, who states, “In broadband, other than in the FIOS area, cable’s pretty much a monopoly,” a sentiment also expressed by Comcast CEO Brian Roberts.

expensive. Streaming of HD video, which is the direction of video service, will overwhelm wireless broadband and household budgets that try to use it for MVPD service.

If we look at the true broadband market defined in this way and recognize the fundamental difference in capacity, function, and pricing between wireless and wireline, we conclude that cable is the overwhelmingly dominant provider of true broadband. The HHI is about 7,000, which is higher than any end-user communications market except cable before the 1996 Act. This result reflects the thoroughly uncompetitive DNA of the industry. Since the dominant incumbents never compete by overbuilding one another, competition in the true BIAS market is confined almost entirely to the dominant incumbent cable franchisee, with some competition from telephone companies that have chosen to selectively deploy fiber optic cables to the home, and an occasional overbuilder (older cable overbuilders that have gone digital and, in a few cities, Google).

Given the thresholds identified by the antitrust authorities, both the MVPD and the BIAS markets are very highly concentrated. Theory predicts that this extreme level of concentration should create a great deal of market power and result in substantial pricing abuse and high levels of excess profits. Moreover, the technological and economic structure of the market dictates that we consider video and broadband simultaneously in examining the financial performance of the market.

This nuanced situation is clearly unfolding in the BIAS market with respect to video competition. The video and broadband markets have become thoroughly intertwined in the sense that cable operators provide both services with one infrastructure and market them both in bundles. Video delivered through the Internet could pose a threat to cable operator market power in the video market. But Over-The-Top (OTT) video providers have to reach consumers through a true broadband connection if they are going to compete with cable on quality, quantity, and price. Unfortunately, the majority of consumers that the OTT video providers must reach get the BIAS service from cable operators. In other words, the OTT video service providers are dependent on their competitors to succeed. Wireline network operators have a great deal of experience at using bottlenecks to choke off competition. The network neutrality debate reflects this underlying reality, with Comcast (the dominant cable company) being a particularly egregious repeat offender.²⁴³

U.S. PRICE TRENDS

Because competition has been so weak in the MVPD/BIAS market throughout its history, we do not have examples of a competitive period or a viable disruptive competitor to gauge the extent of pricing abuse. Therefore, we look to similar or related markets to evaluate cable pricing. In addition, given the lack of a direct competitive example, we will look at different pieces of the bundle to add perspective.

As shown in the upper graph of Figure V-2, cable rates have increased twice as fast as inflation, except for the period before full deregulation (1984–1986) and the brief period of regulation in the early 1990s. The Cable Act of 1992 had several effects on cable, as noted above. The impact

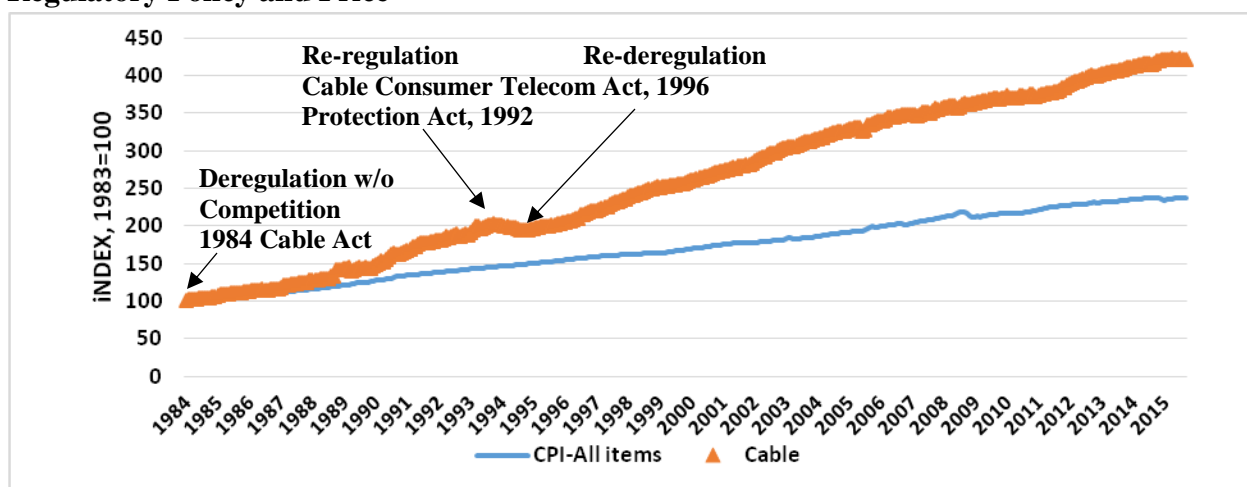
²⁴³ Cooper, 2003, 2002 recounts the long history of the opposition to network neutrality and the anticompetitive practices that were implemented when restraints on those practices were in doubt.

of relevance to this discussion is that it subjected rates to regulation. After an initial rate reduction, the FCC adopted a price cap approach to regulation, which would have allowed cable rates to rise at the rate of inflation. The 1996 Act repealed that regulation, and cable rates, undisciplined by regulation or competition, returned to their relentless upward march.

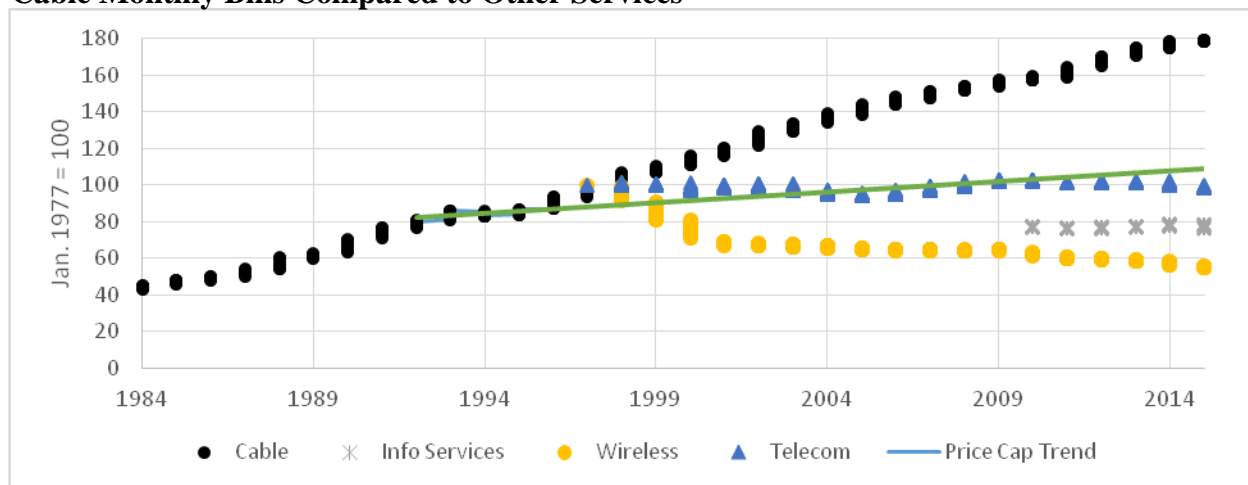
As shown in the lower graph of Figure XIII-2, the prices of three other services we identify are all flat and did not keep pace with inflation. Interestingly, telecommunications service was generally controlled with price cap regulation (wherein the cost of service is presumed to change with productivity increases and those increases are “shared” between the companies and the

FIGURE XIII-2: LONG TERM: DEREGULATION LED TO PRICE INCREASE FAR ABOVE INFLATION

Regulatory Policy and Price



Cable Monthly Bills Compared to Other Services



Sources: FCC, *Cable Competition and Price Reports*, various issues; Bureau of Labor Statistics. Consumer Price Index.

consumer). The sharing may not have been fair, in that it failed to reflect the full extent of the productivity gains and allowed telephone companies to overcharge for plain old telephone service, but consumers fared better than they did in the case of unregulated cable service.

Internet service providers and mobile services were not regulated, but were undergoing significant growth, technological change, and cost declines.

Based on this simple starting point, one can argue that cable prices should not have increased faster than the rate of inflation. Current rates are almost twice as high as they should be. Put more precisely, the current excess is about 44% of the current price based on the rate of inflation.

THE SET-TOP BOX

As we have seen, cable rates generally went through the roof, and set-top box charges were no exception. The dramatic increase in rates afflicted all aspects of cable service, including set-top boxes. Congress explicitly extended the policy of relying on competition to the set-top box market because the set-top box can operate as an independent chokepoint and barrier to competition. By controlling the way programming is presented, as well as complementary information, MVPDs and the programming providers exercise control over the customer and the pace of innovation in both hardware and software. There is no incentive for third parties to innovate new complementary services if they cannot access the content.

The failure of the FCC to develop an effective space for competition in the set-top box market has resulted in a near monopoly by the MVPDs.²⁴⁴ It has also resulted in pricing abuse within this market that is a significant contributor to the abusive price of video service overall. The evidence of this abuse parallels the evidence we have reviewed for the pricing of monthly service.

The pay TV industry collects around \$20 billion in box rental fees per year – a large enough sum to explain the industry opposition to reform in this area. While that number by itself is enough to demonstrate that something is amiss in the set-top box market, it is possible to even more precisely quantify the scale of the set-top box pricing abuse.

With the Cable Consumer Protection Act of 1992, Congress directed the Commission to directly regulate cable rates (including equipment rates). Under the Act, the rates for set-top boxes and remote controls were to be reasonable and based on actual costs, and consumers paid (on average) about \$2.60 per month. With the 1996 Telecommunications Act, Congress changed its approach, deciding to remedy cable consumer harms primarily through marketplace reforms and competition. But the numbers show that the reforms of the 1996 Act were insufficient to prevent pricing abuse by cable companies (see Figure V-3).

Today, the average charge for a set-top box is \$7.43 per month.²⁴⁵ That is an increase of 185% since 1994. It is more than three times the increase in the Consumer Price Index (CPI) over that same period.²⁴⁶ In real terms, the price was increasing at almost 3% per year. The rate of increase is slightly higher than the general increase in cable subscription rates

²⁴⁴ FCC, Order, In the Matter of Expanding Consumers' Video Navigation Choices, ¶7, puts the cable card market share at approximately 1% of the cable MVPD subscribers.

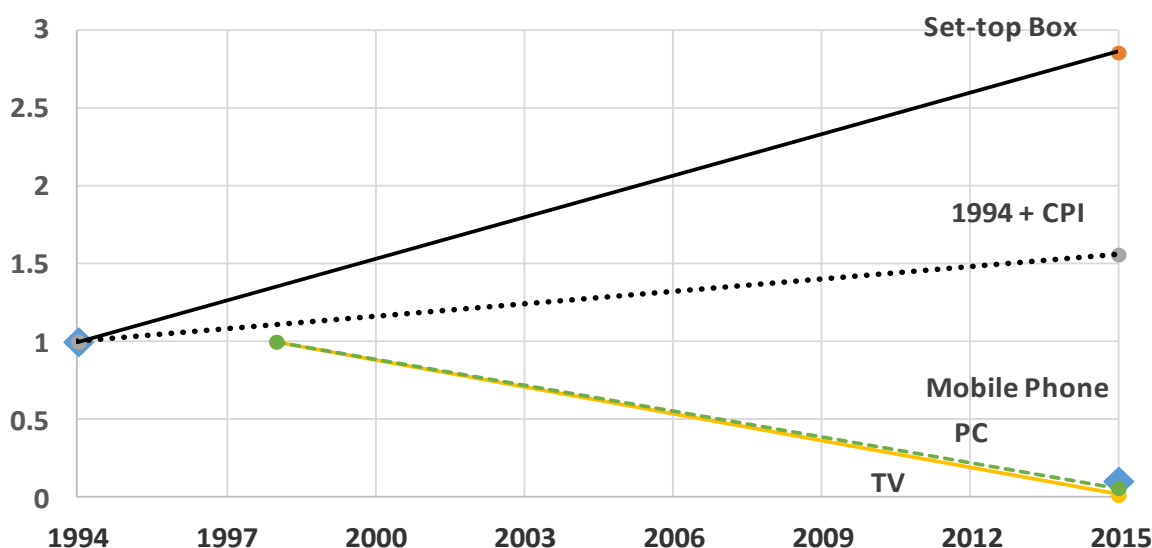
²⁴⁵ Markey and Blumenthal, 2015.

²⁴⁶ Inflation from FCC, 2014, *Report on Cable Industry Prices*, MM Docket No. 92-266, p. 10, updated with Bureau of Labor Statistics, CPI.

An even more damning comparison in Figure V-3 is the pricing of other types of customer premise equipment. The prices for these pieces of equipment were plummeting. They were decreasing by about 19% per year in real terms. This is consistent with price indices for telephones, fax machines, modems, and cellular phones. These other devices provide functionalities that are similar to – and probably more complex than – the functionalities provided by set-top boxes, yet their price was falling.

Set-top boxes today, of course, are more capable than the boxes of 1994, but this is true of all areas of consumer electronics. Indeed, computers, televisions, and mobile phones have gotten better to a greater degree than set-top boxes, and more quickly. But as Figure XIII-3 indicates, the cost of these devices has not gone up since the 1990s. In fact, it has gone down by over 90%.²⁴⁷ This is the expected result in a highly competitive, dynamic technology market. The other equipment markets are, in fact, much less concentrated than the cable market.²⁴⁸

FIGURE XIII-3: PRICES OF CUSTOMER PREMISE EQUIPMENT: SET-TOP BOX V. OTHER CPE



Sources and Notes: Cell Phone, 1994: \$950 (average of 1993 and 1995); from 2015: \$100 “Smartphones connect users with many of the functions of a laptop computer,” <http://electronics.costhelper.com/smartphone.html>. Set-top Box, 1994: \$2.60 (FCC, DA94-767, pp. 11, 12 showed regulated systems in the top 25 markets charging \$2.48 in equipment per month, and all systems in the top 25 markets charging \$2.59, per the chart on page 12). We use \$2.60 as a conservative estimate. Set-top Box, 2015: \$7.43 (Jon Brodtkin, Cable TV Box Rental Fees,” <http://arstechnica.com/business/2015/07/cable-tv-box-rental-fees-cost-average-household-232-a-year>. Inflation from FCC, 2014, *Report on Cable Industry Prices*, MM Docket No. 92-266, p. 10, updated with Bureau of Labor Statistics, CPI.

²⁴⁷ Cell Phone, 1994: \$950 (average of 1993 and 1995) from www.gottabemobile.com/2011/12/28/history-of-cellphones-shrinking-sizes-and-prices-infographic/; 2015: \$100 (widely available from “Smartphones connect users with many of the functions of a laptop computer,” <http://electronics.costhelper.com/smartphone.html>). Set-top Box, 1994: \$2.60 (FCC, DA94-767); Computers and TVs from the Consumer Price Index.

²⁴⁸ https://en.wikipedia.org/wiki/Mobile_phone; www.webpronews.com/samsung-leads-u-s-smart-tv-market-lg-on-the-rise-2014-03/, www.multichannel.com/news/next-tv/roku-tops-us-streaming-device-sales-study/393140,

It is simply not credible to argue that the cost of set-top boxes should behave so differently from other similar and complementary types of customer premise equipment (CPE). The best explanation of the set-top box market's exceptional ability to impose excess charges on consumers is its immunity to market forces and the failure of competition, both in pay TV generally and in the set-top box market specifically. These excesses are rolled into the overall overcharges. They are substantial, in the range of \$6 billion to \$14 billion.²⁴⁹ Singling them out provides context for the overall magnitude of abuse and the importance of identifying chokepoints in the flow of data.

PRICE COMPARISONS OF BUNDLES ACROSS NATIONS AND OWNERSHIP TYPES

Although international comparisons of cable/broadband access rates have been a significant bone of contention for several years, they strongly support the conclusion that market power is being exercised in the United States. The driver in these comparisons is the notion that the marketplace is better regulated in other nations through a variety of interconnection and rate-setting policies that result in lower prices. Meanwhile, operating under the assumption that competition would prevent abuse, the United States allows the unfettered abuse of market power by dominant service providers. As shown in the upper graph of Figure XIII-4, the international comparisons provide additional evidence for our conclusion.

The United States has higher prices in every bundle of service compared to the broad set of advanced economies. The national and international rate analyses put the average excess at around 40% of the monthly bill. The lower graph in Figure V-4 breaks out two subsets of OECD nations to highlight and correct for some of the pitfalls in these comparisons. Costs in telecommunications are driven significantly by population density, while prices are influenced by income (what the market will bear). Australia and Canada are very low-density nations. The United States is about nine times as dense as those nations.²⁵⁰ Germany and France are high-density nations. The U.S. density is one-fifth the average of those two nations. All of the nations are large geographically and are wealthy, although the United States is the largest and wealthiest.²⁵¹ Despite the fact that it is denser and wealthier than the low-density nations, prices in the low-density nations are almost 20% lower. The high-density nations have prices that are over 50% lower. Placed in this context, the average difference of about 40% in the upper graph makes the CPI-based estimates presented above seem reasonable.

Comparisons have also been made between ownership types, operating under the belief that different types of owners have different incentives. Analysts who generally supported the cable/telco point of view were particularly adamant in criticizing publicly owned (generally municipal) providers of MVPD/BIAS services. Yet, as pressures mounted on the set-top box

²⁴⁹ Cooper, Mark, 2016, "Cable Market Power: The Never Ending Story of Consumer Overcharges and Excess Corporate Profits in Video and Broadband," attached to Comments of the Consumer Federation of America, Federal Communication Commission, *In the Matter of Expanding Consumers' Video Navigation Choices* (MB Docket No. 16-42, Commercial Availability of Navigation Devices) CS Docket No. 97-80, April.

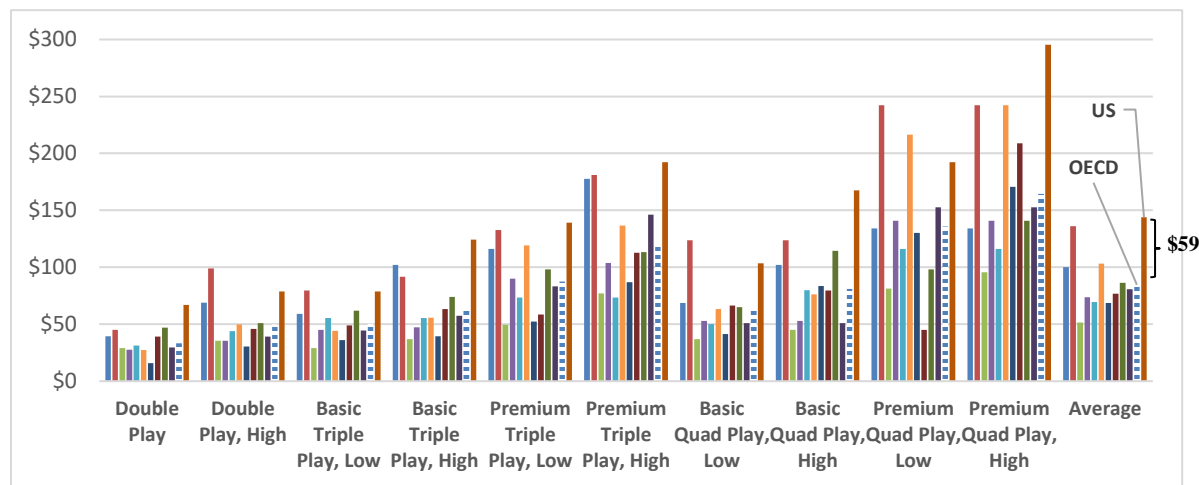
²⁵⁰ Department of Economic and Social Affairs Population Division, 2013. "[World Population Prospects](#)."

²⁵¹ [World Economic Outlook Database-April 2016](#), [International Monetary Fund](#).

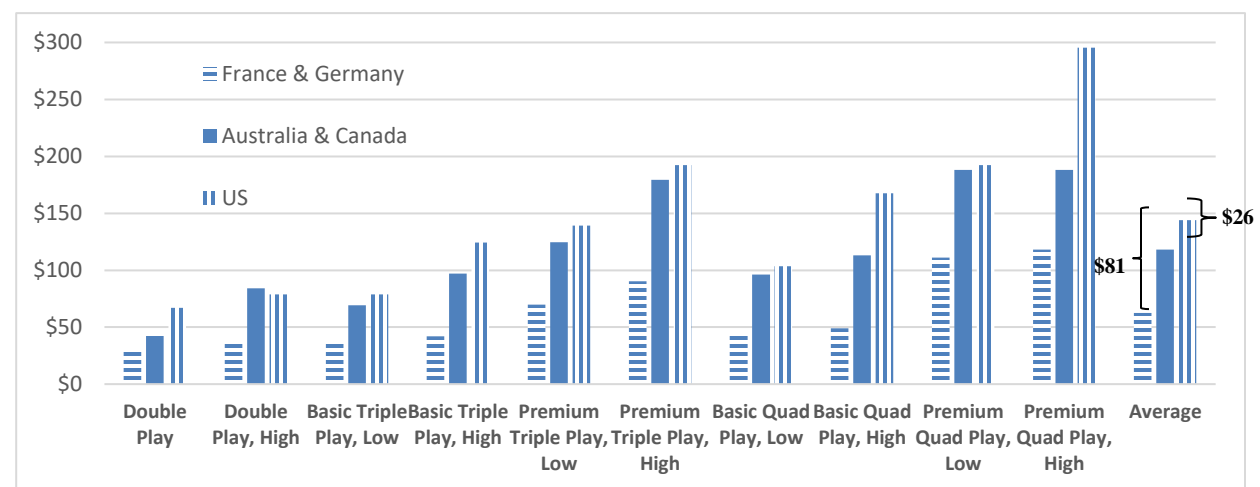
issue, one of those organizations, the Phoenix Center, resorted to a comparison of charges for set-top boxes between investor-owned MVPD/BIAS companies and municipal providers.²⁵²

Ironically, the analysis of the quick and dirty survey they conducted noted that “perhaps the prices provide very little information, since the customer cares only about the sum of the cost of video and any related equipment. In many cases, at least one set-top box is provided at no cost, indicating that the cost of that box is rolled into rates.”²⁵³ We have pointed out that just as consumers worry about the bottom line, producers care about their bottom line and have a significant ability to influence it when they possess market power.

FIGURE XIII-4: INTERNATIONAL AVERAGE MONTHLY CHARGES: ALL BUNDLE OFFERINGS



U.S. Compared to Large, High-Density (France & Germany) and Low-Density (Australia and Canada) Advanced Economies



Sources: OECD (2011), “Broadband Bundling: Trends and Policy Implications,” *OECD Digital Economy Papers*, No. 175, <http://dx.doi.org/10.1787/5kghtc8znnbx-en>.

²⁵² Ford, George, 2016. *Are Government-Owned Networks Abusing Market Power in the Set-Top Box Market? A review of Rates*, Phoenix Center, April 14.

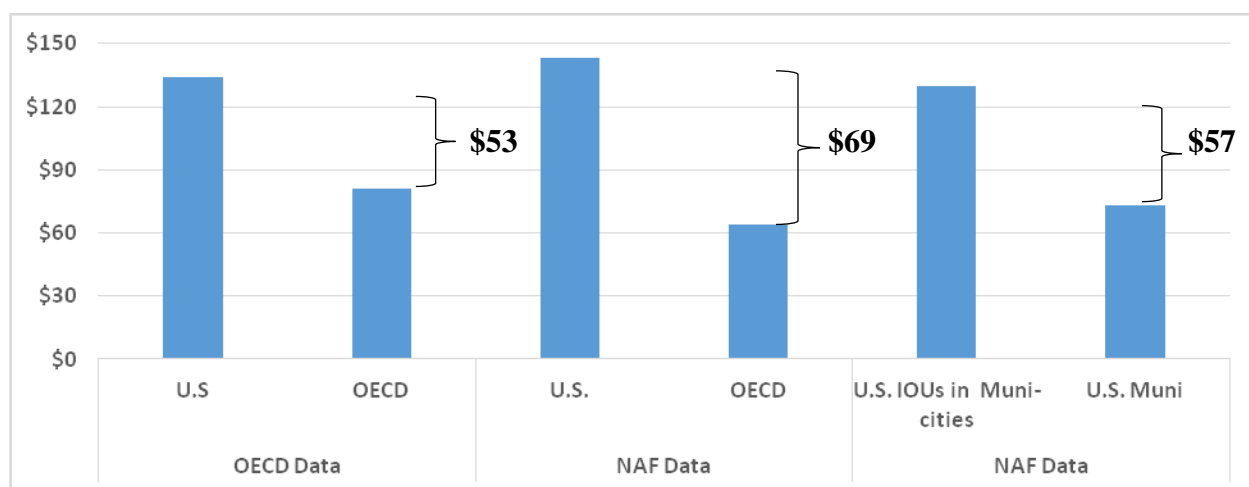
²⁵³ *Id.*, p. 4.

Although, the Phoenix Center paper noted that full cost comparisons may be more relevant, it did not present any such analysis. Since the survey was based on prices available at websites, it would have been easy to compare the total service prices advertised. Invoking a comparison between investor-owned MVPDs and Munis, and suggesting that the total monthly bill is what matters, opens a line of analysis that the dominant MVPD/BIAS operators and their supporters have tried aggressively to close.

Figure XIII-5 shows why they did not make such a comparison. The rate comparison would have been devastating to the investor-owned MVPDs. Figure XIII-5 shows the results of a CFA analysis of data gathered by the New America Foundation (NAF) to explore both the cross-national and cross-ownership questions. Since the timing of that survey was similar to that of the OECD data discussed above, we have included that as well. Moreover, we focus on triple-play bundles because that is what the municipal providers specialize in and what investor-owned cable companies emphasize in their sales efforts. This introduces a control for bundles. We also show cities in which both Munis and investor-owned MVPDs are found – another form of control.

We find that the U.S. rates identified in the OECD data and the NAF data are similar. In the full NAF sample, U.S. prices are a little higher, while OECD prices are a little lower. In the subsample of cities where Munis operate, we find that the rates charged by “well-regulated” OECD service providers are similar to those charged by municipal providers. Across these comparative analyses, we observe a range of estimates of excess charges, but the central tendency is slightly over 40% of the average monthly bill.

FIGURE XIII-5: COMPARISON OF MONTHLY BILLS FOR TRIPLE PLAY SERVICE: U.S. VERSUS OECD, IOUS VERSUS MUNICIPAL SERVICE PROVIDERS



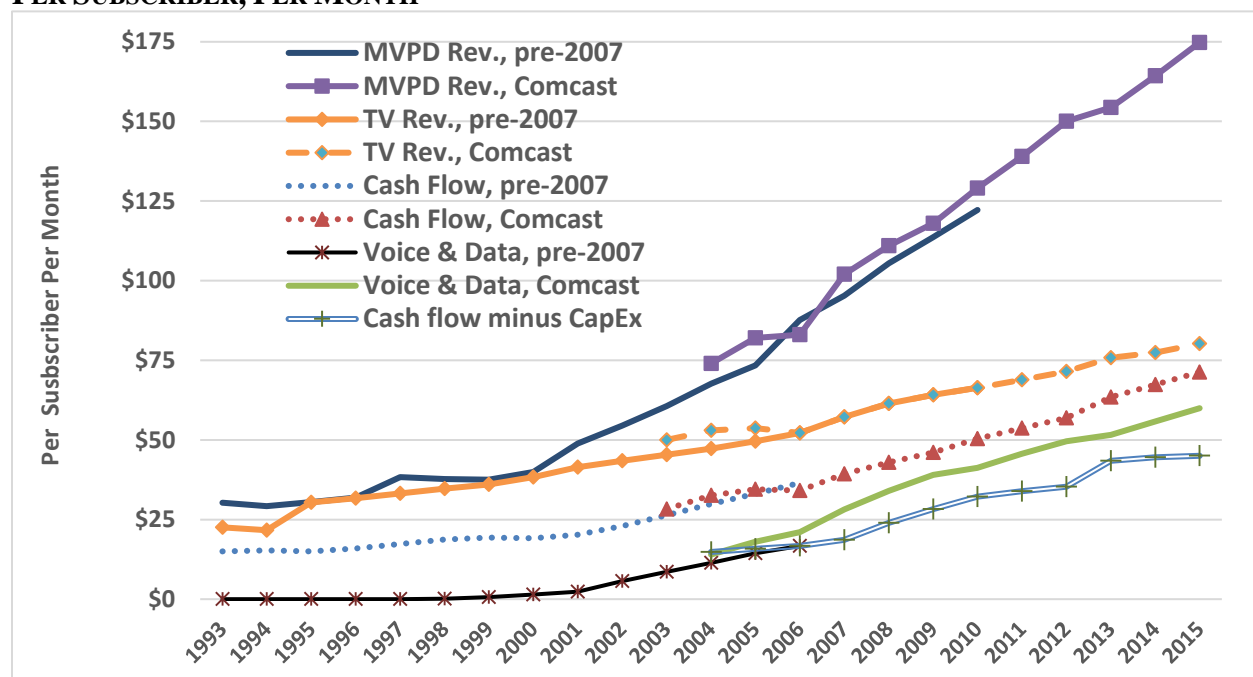
Sources: OECD from, OECD (2011), “Broadband Bundling: Trends and Policy Implications,” *OECD Digital Economy Papers*, No. 175, <http://dx.doi.org/10.1787/5kghtc8znnbx-en>; NAF from: Mark Cooper, “Comparing Apples-to-Apples: Municipal Wireline and Non-Baby Bell Wireless Service Providers Deliver Products That Are More Consumer-Friendly,” Consumer Federation of America, November 21, 2013.

EXCESS PROFITS

In Figure XIII-6, we show trends of operating income for total cable operations and BIAS. Because the FCC stopped reporting EBITDA and the cable operators have shifted to OIBDA (Operating Income Before Depreciation and Amortization), we have calculated operating income per video subscriber for Comcast (the dominant cable operator by far). Comcast is a little higher than Time Warner on some of these measures and a little lower than Charter, but generally it matches up quite well with the earlier FCC series. We show it on an annual basis per video subscriber per month for consistency. The operating income includes the excess of operating revenue over operating costs, plus depreciation and amortization, before interest or taxes are paid.

With the expansion of broadband, earnings increased at an extremely rapid pace – about twice as fast as cable prices. We identified the cause of this difference earlier. Costs were falling in a period when total subscribers were expanding. Economies of scale and scope were realized in a network where Broadband Internet Access Service was added. By the end of the period, revenue from BIAS is equal to half of total revenue. In the absence of competition, cable operators increased TV rates and held broadband rates constant even though costs were falling. They pocketed the surplus as excess profits.

FIGURE XIII-6: CABLE OPERATING REVENUE & INCOME WITH BROADBAND REVENUE PER SUBSCRIBER, PER MONTH



Sources: Federal Communications Commission, Annual Video Competition Reports; Comcast Annual Reports.

There are very powerful economies of scope operating between video and broadband. The margin on broadband is generally reported and reputed to be in the range of 90%, which means all of the network costs are being recovered elsewhere. That elsewhere is cable, which was subject to light regulatory oversight until recently. It made sense for the cable operators to

allocate costs to cable to justify high rates for basic service since there was lingering regulation of basic service. It also made sense to depress the return on video and blame it on transmission fees, which shifts the finger of blame to the programmers.

This astronomical markup on high-speed data services caused some controversy when the number was highlighted in a Time Warner annual report.²⁵⁴ In fact, more than half a decade earlier, in a general analysis of cable modem service, Moffett, one of the leading analysts of the cable industry, had used a similar number.²⁵⁵ Indeed, an even earlier study by another financial analyst,²⁵⁶ ABN-AMRO, had reached a similar conclusion. The issue is simple: When a firm sells, multiple services using the same facilities, it enjoys strong economies of scope and scale. Where it chooses to recover the joint and common costs determines the apparent profitability of each.

In the ABN-AMRO analysis, high-speed data and digital video services were treated as incremental. High-speed data has very low incremental capital costs – as low as two percent of the total.²⁵⁷ The largest capital costs were digital set-top boxes, which, as we have seen, became a cash cow for the cable operators. Even predicting a sharp decline in ARPU for broadband—an assumption based on competition that never developed—the return on invested capital for broadband service was projected at 25%, which is over four times the return for cable service.²⁵⁸ Adjusting for the failure of competition to reduce ARPU, the return on capital invested in broadband rises to 38%. That is over six times the return on basic cable.²⁵⁹ Ironically, both ABN-AMRO and Moffett predicted declining Average Revenue per User due to competition (7% and 5% per year, respectively) that never came to pass.²⁶⁰ By 2009, broadband ARPU was already over 20% higher than Moffett had predicted.

The reasonableness of this estimate can be demonstrated in the context of Figure XIII-6. A reduction of \$25 per month (\$300 per year) can be seen as a reduction in broadband revenue of about 55%. This would put the margin for that broadband service at around 40% – the level of cable video service, which is bearing all the infrastructure costs. In other words, removing the excess would split the surplus between producers and consumers. To put this in perspective, as shown in Figure V-6, cash flow per subscriber has increased by over \$50 per month since the early days of high-speed data offerings by cable operators. A reduction of \$25 per month would have split the increasing surplus between producers and consumers.

Before broadband service was added, cable was overcharging consumers, as the price trajectory showed. Recent estimates of video ARPU show continued growth, as demonstrated in Figure XIII-7 Video ARPU is \$35 more per month than inflation or cost would support. Not all of this ARPU would be converted to earnings. We use the industry average rate at which ARPU is captured as EBITDA (i.e. the EBITDA margin is 40%). Using the experience under the short period of regulation or the CPI, it would be possible to put excess charges for video in the range

²⁵⁴ Kushnick, 2015a, 2015b.

²⁵⁵ Moffett, 2009, p. 50.

²⁵⁶ Wang et al., 2001.

²⁵⁷ Id., compare pp. 23 and 29, without digital boxes.

²⁵⁸ Id., p. 10 compared to p. 8 for cable.

²⁵⁹ Id., p. 27.

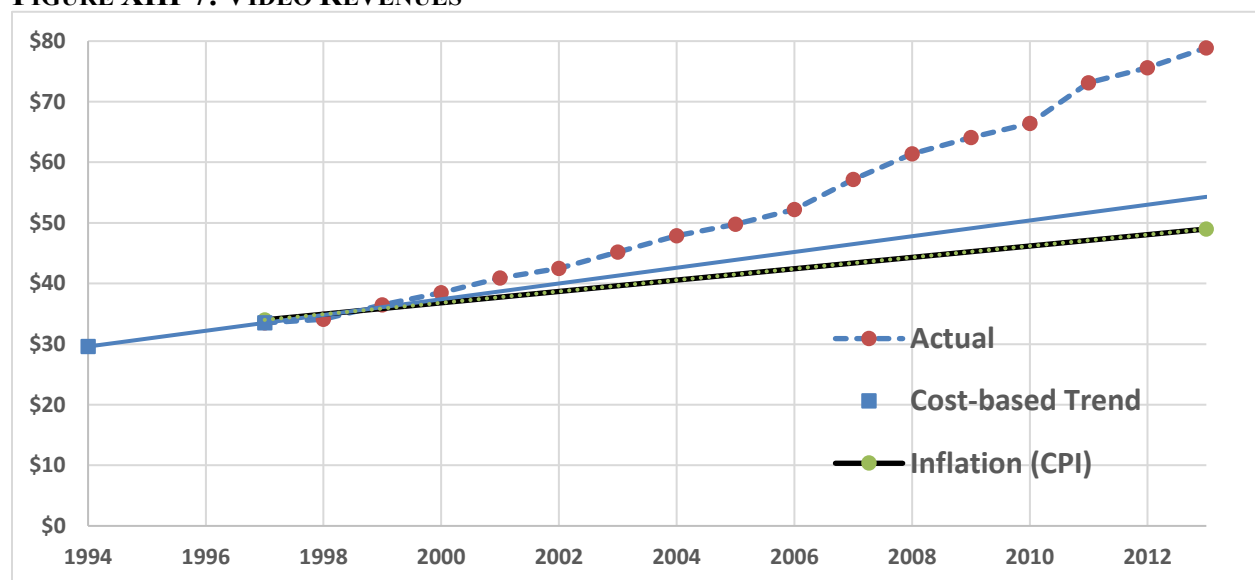
²⁶⁰ Moffett, 2009, p. 50.

of \$10 per month. Out of an abundance of caution, we estimate the monthly overcharge to be \$25 per month on the bundle. This is a household level service.

CONCLUSION

In the broadband/video market, the estimates of overcharges based on the domestic analysis fall in the range of \$20–\$40 per month. The international comparisons for large bundles suggest a higher figure. For purposes of estimating the total overcharges, we assume \$25 per month per subscriber. This figure represents about one-fifth of the total bill. Given that these are household services and the fact that both broadband and video are in the range of 80 million subscribers (70 million video, 90 million broadband), we use 80 million as the base to estimate aggregate overcharges. The total would be \$27 billion ($\$25 * 12 * 80m = \$24b$).

FIGURE XIII-7: VIDEO REVENUES



Sources: Federal Communications Commission, Annual Reports on Cable Competition, Docket Numbers 12-81,13-99, p., 69;., p. 7;., 15-41, p. 66. Earlier data for 1994-2006, was given in a Table Entitled Cable Industry Cash Flow (0-4, p. 23; 06--11, p.11; 07-206, p. 23

The calculation of excess profits suggested in Figure IV-6 by either cash flow or cash flow minus capital expenditures underestimates the abuse of consumers. As discussed below, over the period studied, the two largest cable operators, which account for over 60% of all cable subscribers, brought no new capital to the industry. That is, the depreciation and amortization of existing capital and assets provided more cash than the outlays for capital expenditures. Adjusting the Lerner Index to take capital expenditure into account and thus better reflect the price-cost margin concept underlying the Lerner Index, the excess profits would be larger by almost \$10 billion.

XIV. WHERE DOES ALL THE MONEY GO?

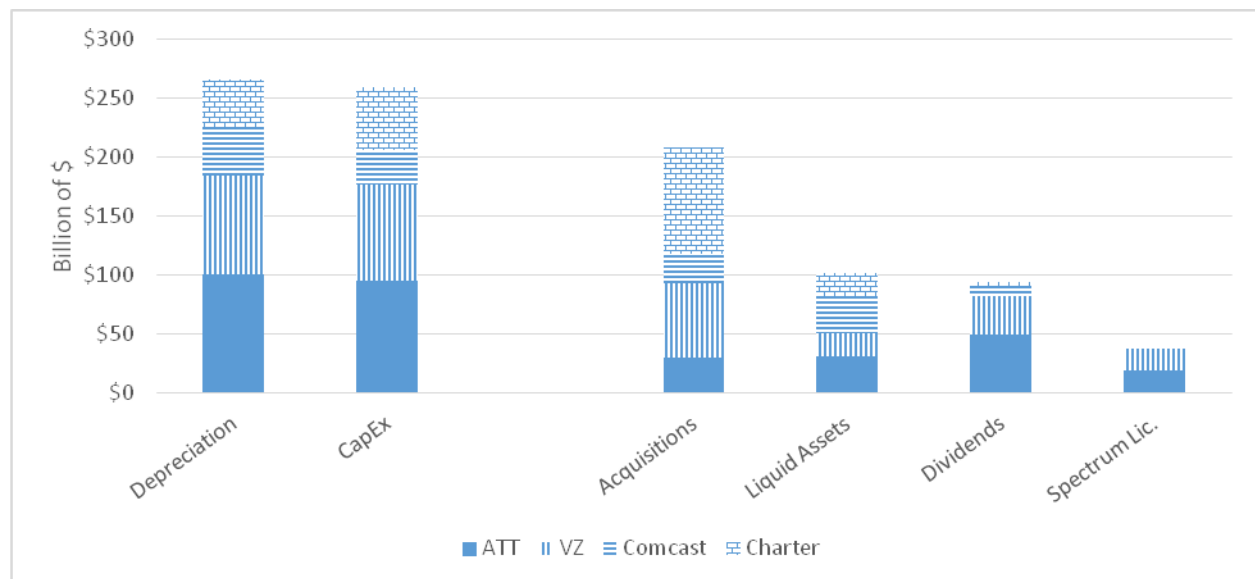
ACCOUNTING FOR OVERCHARGES AND EXCESS PROFITS

Combining the consumer pocket overcharges, we conclude that the total is almost \$60 billion per year. While the overcharges have mounted, the total for the past five years is in the range of \$250 billion or more. These overcharges represent a huge sum, although we have emphasized that this represents less than a quarter of the total revenues of the companies imposing them. Is it possible that rates could come down that much and not harm the communications sector? Put another way, where does all the money go? Placing this figure in historical perspective provides a clear answer. There are three factors that indicate rates could and should come down by that much.

First, competition would lower costs in the industry. The comparative rate and cost analysis suggests that there is a significant amount of fat that could be cut by competition.

Second, as shown on the left side of Figure XIV-1 (which reprises Figure I-4), stockholders are not putting new net investment into the industry; consumers are fully funding the investment in the industry. Depreciation exceeds capital expenditures substantially for the cable operators, while, for the telephone companies, it is somewhat less than Capital Expenditures (although that is primarily caused by capital costs carried on the books for local telephone services). The companies do not need excess charges to fund the level of capital investment they are making.

FIGURE XIV-1: EXCESS CASH THROWN OFF FROM THE COMMUNICATIONS GIANTS



Source: Corporate Annual Reports, various.

Third, the industry throws off a huge amount of cash that is not put back in to improve or expand the operation of the sector.

Mergers and acquisitions ate up over \$200 billion.

Increased liquid assets (retained earnings and stock repurchases) alone came to over \$300 billion. Dividends add almost another \$100 billion to the throw-off of cash. While some dividends must be paid, the dividend rate, driven by the dominant wireless/landline companies, is about twice the national average. This category might represent as much as another \$50 billion in excess rewards to stockholders.

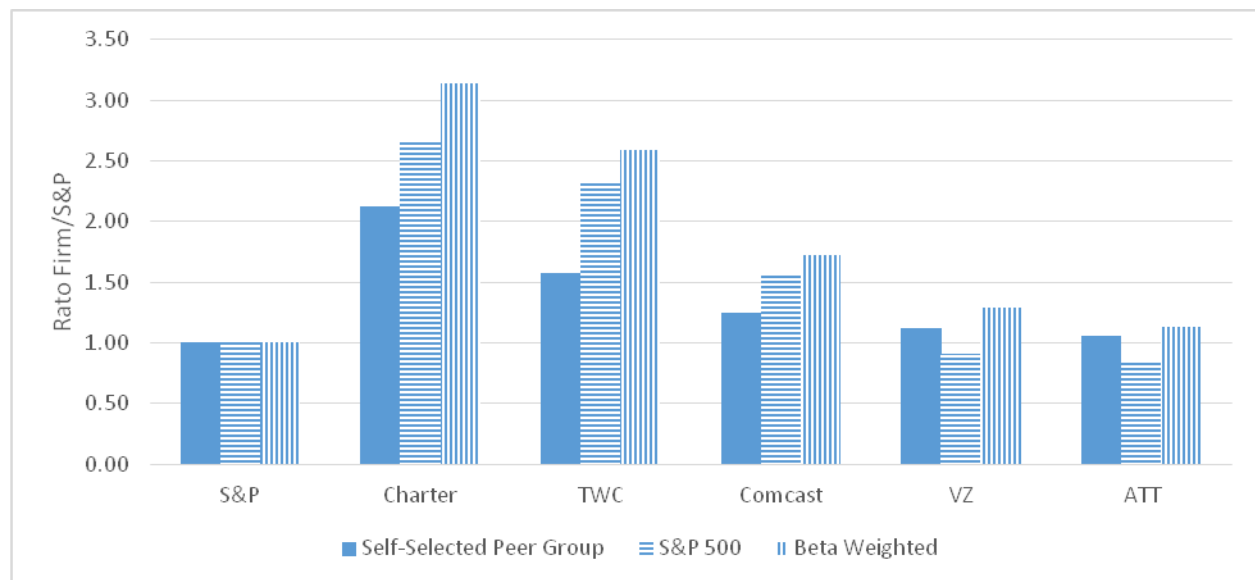
Finally, the prices paid for auctioned spectrum can also be seen as excessive, since the dominant incumbents pay a premium to keep spectrum out of the hands of potential competitors. This would increase the total amount of excess cash used for purposes that do not contribute to the growth of the sector.

Thus, excess returns to shareholders easily account for the excess prices paid by consumers. Reducing this waste and taking cost-reducing competitive measures would add to total consumer savings.

PUMPING UP STOCKHOLDER RETURNS

The companies understand exactly what they are doing with their excess profits. They tout their ability to increase shareholder returns and build shareholder value. The company annual reports present two comparisons that are thoroughly misleading, as shown in Figure XIV-2.

FIGURE XIV-2: COMPARISON OF 5-YEAR TOTAL RETURN



Source: 5-year total return from Annual Reports; Betas from *Value Line*, July 8, 2016.

On the one hand, they show the Standard and Poor's 500, without acknowledging that the S&P 500 firms face, on average, a lot more risk than the communications giants do. We would expect the S&P returns to be higher. On the other hand, the companies present an index for a “peer” group of communications companies. Unfortunately, many of the companies included in the peer group are likely to be abusing their market power. The only conclusion one could draw is that the communications giants are capturing about the same amount of excess returns as the others.

In Figure XIV-2, we present a meaningful comparison. We weight the yield by the riskiness of the enterprise, using a standard measure of risk, the Beta, which we take from *Value Line*. Cable companies' risk-weighted five-year total return is twice that of the S&P 500, as shown in Figure XIV-2. For the telephone companies, the excess is about 20%, on a much larger asset base and market capitalization. Simply put, as we showed in the analysis of the welfare economics of market power, the abuse of market power is great for shareholders but bad for consumers.

THE “GIVE-UP GAP”

Some analysts argue that pumping up short-term profits is shortsighted. As noted in the *New York Times* Business Section, “One of the best arguments against stock repurchases is that they offer only a one-time gain, while investing intelligently in a company's operations can generate years of returns.”²⁶¹

Robert Colby has proposed a simple comparison called the “Give-Up in Growth,” which asks, “What rate of return is required on investing the buyback funds to grow the Net Profit and EPS at the same rate as the Earnings per Share (EPS) grew due to the buyback?”²⁶² He compares the rate of growth of earnings per share (which can be increased by stock buybacks because treasury stock is not included in the calculation) to the rate of growth. He identifies 30 firms with large buyback programs, none of them communications giants. The mean was 5%. He describes the average Give-Up of 30 stocks with significant buyback between 2008 and 2015 as follows: “Using the averages, the Give-Up is 5.0% [per year], which is an enormous difference in the amount of cash generated.”

ATT, which has a relatively low Give-Up in terms of stock buybacks, has the highest dividend rate by far. In fact, some analysts see dividends and stock repurchases as alternative approaches to increasing yield to stockholders. The criticism of share buybacks compared to dividends is not about what is better for the company, but what is better for the stockholder v. management. As Shauna O'Brien notes,

Company buybacks occur when a company decides to repurchase shares of its stock either on the open market, or directly from shareholders in private transactions. Companies partake in share buybacks as a way of “investing” in their company with their excess cash flow. Many investors erroneously believe that share buybacks are somehow profitable to them, but in reality, they are designed to benefit the corporation and its insiders—not shareholders...

Buying back shares is a common technique to artificially increase earnings per share (EPS). This process helps the company meet or exceed analysts' estimates, as well as the company's own internal company targets. Share repurchases can also help temporarily keep a stock's price afloat — not because the market believes the stock is

²⁶¹ Morgenson, 2015.

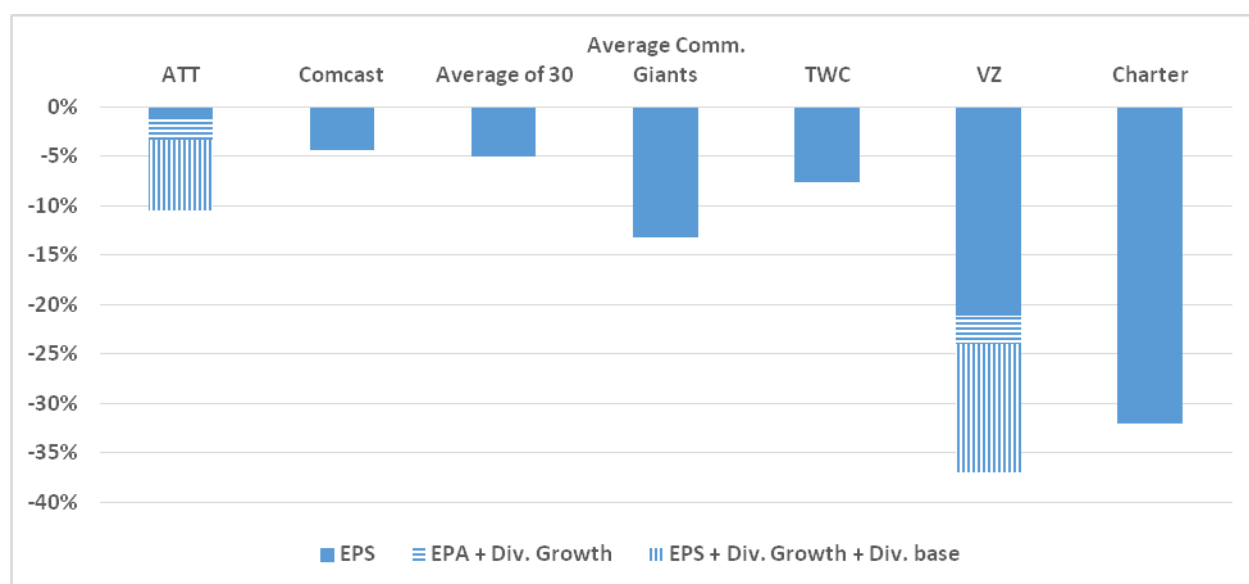
²⁶² Colby, 2016.

of high quality, but simply because the company is throwing its own money at its own stock.²⁶³

Figure XIV-3 shows the Give-Up numbers for the communications giants that are the focal point of this analysis. Their average is twice that of the group studied by Colby as presenting a problematic Give-Up position. Four of the five companies are well above the average.

Company buybacks occur when a company decides to repurchase shares of its stock either on the open market, or directly from shareholders in private transactions. Companies partake in share buybacks as a way of “investing” in their company with their excess cash flow. Many investors erroneously believe that share buybacks are somehow profitable to them, but in reality, they are designed to benefit the corporation and its insiders—not shareholders...

FIGURE XIV-3: GIVE-UP ANALYSIS: INCOME GROWTH/EARNINGS-PER-SHARE GROWTH OF COMMUNICATIONS GIANTS COMPARED TO 30 FIRMS



Sources: Average of 30, Colby, Robert L., 2016, *30 Stocks with Significant Buyback between 2008 and 2015*, May 4. Communications Giants: Annual Reports, Dividend Yields, *Value Line*, July 8, 2016.

Buying back shares is a common technique to artificially increase earnings per share (EPS). This process helps the company meet or exceed analysts’ estimates, as well as the company’s own internal company targets. Share repurchases can also help temporarily keep a stock’s price afloat — not because the market believes the stock is of high quality, but simply because the company is throwing its own money at its own stock.²⁶⁴

²⁶³ O’Brien, Shauna, 2014, *Share Repurchase vs. Dividend: It’s a No Brainer*, Dec 12. See also Dividend Growth Investor, 2009.

²⁶⁴ O’Brien, Shauna, 2014, *Share Repurchase vs. Dividend: It’s a No Brainer*, Dec 12. See also Dividend Growth Investor, 2009.

Figure XIV-3 factors this in with two steps. First, we compared the dividend yield of Colby's 30-Gap stocks (i.e., the 30 firms he identified as having large buyback) to the *Value Line* market average. It was close at about 2%. Having observed that ATT and Verizon are well above that level, we calculated the rate of growth of dividends and added that to the Give-Up analysis. This increases the Give-Up by a small amount, but it does not take into account that the dividend yield started well above the national average. In the second step, we add the additional throw-off of cash above the market average. With excess dividends included in the analysis, the telephone companies are shown to be no better than the cable companies in terms of misdirecting cash to pump up stock prices; they just do it in a different way. In short, from the point of view of the welfare economic framework, there is an immense amount of waste to account for the excessive charges, and a great deal of excess profits enjoyed by stockholders and management, all to the detriment of consumers.

RETURN ON CAPITAL

Using the return on invested capital to identify excess profits is tricky. The calculations are almost always done at the corporate level, but the communications giants have multiple lines of business with very different rates of profit. Moreover, finding firms for comparison to identify a normal rate of profit is extremely complicated. Broad categories do not capture important differences. In the S&P framework, video falls in the consumer discretionary category and wireless falls in the telecommunication services framework. But we argued that these services have become more like necessities with respect to consumer demand, so utilities might be a better comparison.

While we have estimates of the return on invested cable operations from Moffett, ATT and Verizon present much more complex entities, offering wireless, broadband, and video operations, as well as traditional telecommunications services. The EBITDA for wireless operations is almost 2.5 times as high as the EBITDA for the rest of the company. Moreover, it appears that capital costs are dumped into the wireline category. For wireless, depreciation is just under one-third of EBITDA; for wireline, depreciation accounts for three-quarters of EBITDA.

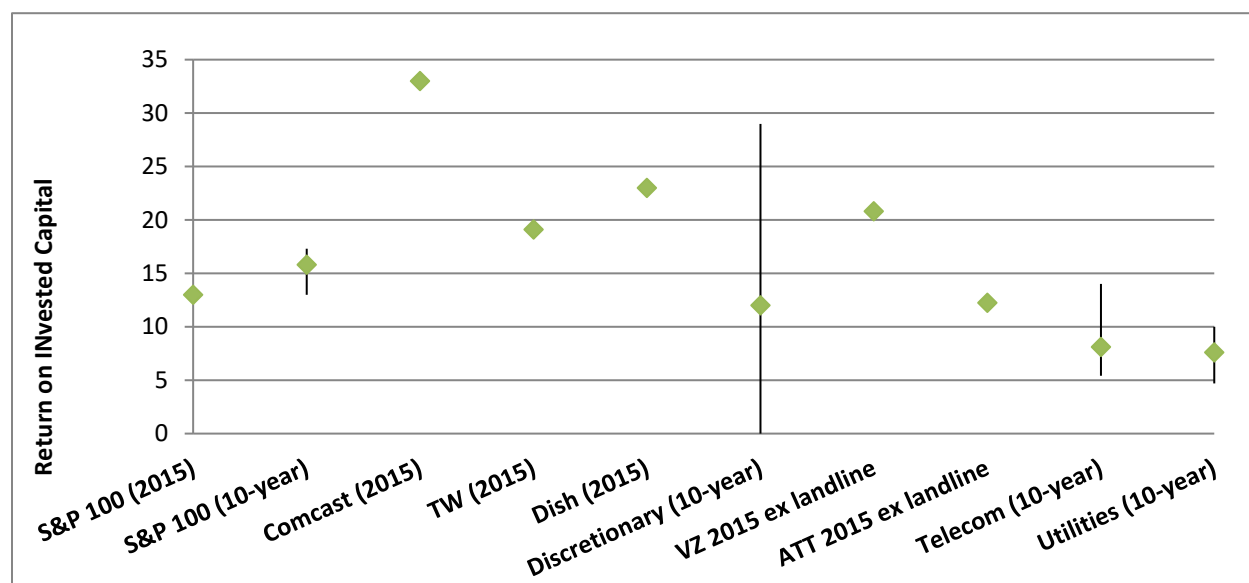
Figure XIV-4 presents estimates of the return on invested capital. The upper graph uses current and 10-year return on invested capital with the Standard and Poor's 100 and the two groups (consumer discretionary and telecommunications service) in to which the communications firms are placed by S&P. We adjust the Verizon and ATT overall corporate return by assuming the wireless segment outperforms on ROC by the same ratio as it outperforms the overall corporation on EBITDA.

The lower graph uses the 10-year return on capital calculated by Joel Greenblatt of GuruFocus. The comparison groups are global telecommunications services and global PayTV. Here, we show his original calculation and one that is adjusted for wireless superior performance.

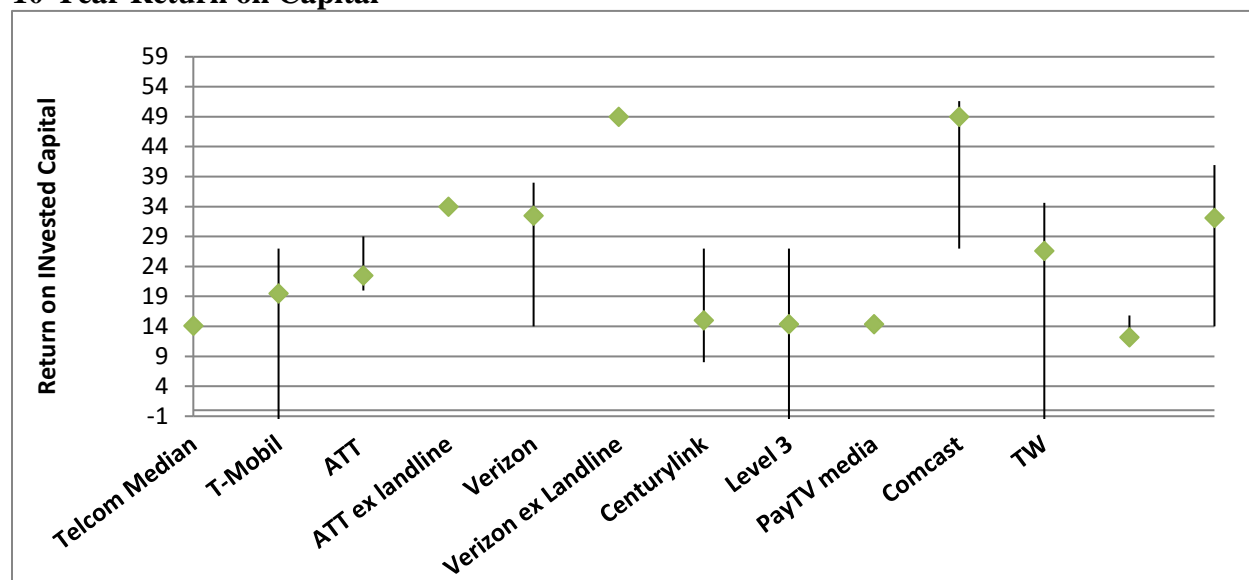
In all cases, we find the dominant firms earning much higher rates of return than the median. Similar to the total return analysis, Comcast and the cable operators have much higher rates of profit.

FIGURE XIV-4: RETURN ON CAPITAL

10-Year Return on Invested Capital, (except as noted)



10-Year Return on Capital



Sources: J. Brett Freeze, *Return on Invested Capital: Its Role in Market Valuations*, May 26, 2016; GuruFocus for ROIC for telecommunications companies, 2015 Annual Report for EBITDA.

CONCLUSION

In the description of the empirical approach that wrapped up the analytic framework in Part I, we described the approach to the estimation of overcharges as complex. The strategy, as summarized in Table XIV-1 was to develop multiple measures based on multiple sources to offer a cautious estimate. In a sense this undertaking is no different than what happens in a merger review, where the antitrust authorities develop a projection of the likely impact on prices, competition, quality and market behaviors (e.g. incentive to innovate). The difference is that this analysis looks backward at what has happened to market structure and prices as the result of the merger wave and the growth of the tight oligopoly on steroid, rather than forward.

Table XIV-1 locates the estimate of overcharges in the context of the several sets of data. Working from the top to the bottom, the analysis can be summarized as follows.

The top of the table shows the estimates of concentration, which is the first step in the analysis. There is no doubt that these markets are highly-concentrated tight oligopolies. We round to the nearest hundred for the HHI.

The price/cost comparisons based on standard consumer price indices and a specialized index of costs shows a large price/cost gap.

The estimates of overcharges based on price comparisons exhibits a wide range.

We base our estimates of the overcharges on the EBITDA based figures, which yields an overcharge estimate at the bottom of the range of price comparisons. We show the business data services, which are assume to be accounted for in the overall estimate).

Finally we “account for” the overcharges by estimating the throw-off of cash by the dominant firms. Our estimate of overcharge is substantially below the estimate of excess cash.

TABLE XIV-1: PRICES, MARGINS AND OVERCHARGES FOR SPECIFIC PRODUCTS

<u>Market Concentration</u>	<u>Wireless</u>		<u>Video/Broadband Bundle</u>	
	<u>Basis</u>	<u>Value</u>	<u>Basis</u>	<u>Value</u>
HHI > 2500 is highly concentrated	National	2900	National	1900
	Local	3100	Local	3100
			Broadband	
			National	3300
			Local	7000
Tight Oligopoly, Top 4-firm Market share > 60%	National	98%	National	83%
	Local		Local	98%
			Broadband	
			National	77%
			Local	99%
<u>Annual Rates of Change in Costs and Quality Adjusted Prices</u>				
<u>Economy-Wide</u>	<u>General</u>			
<u>Equipment</u>				
All (1995-2014)	-11.0			
Network (1995-2009)		-16.1		-11.6
Customer Prices (1997-2015)				
CPI-All Item	2.2			
Info Service	-1.5			
Wireless		-3.3		
Cable				3.7
Landline Intra				-1.0
Landline Inter				-2.6
<u>Product Specific Prices</u>				
<u>Service Level Price</u>	<u>(\$/subscriber/month)</u>		<u>(\$/household/month)</u>	
Greater competition	Pre-consolidation	\$20-\$30		NA
	CPI-projections	\$25		\$31
			Ownership type	\$57
Similar international services	OECD Matched	\$20-\$30	OECD Matched	\$53
<u>Customer Premise Equipment</u>	Hand Set Cost	\$3	Set-top Box Cost	\$3-\$7
	Companies		1992 Cable Act + inflation	
<u>Financial Performance</u>				
<u>EBITDA-based overcharge</u>	<u>T-Mobile as base</u>		<u>2002 as base</u>	
EBITDA (2010-2015)	FCC + Companies	\$10-\$15	FCC + Companies BB	\$25
EBITDA - CapEx. (2010-2015)	FCC + Companies	\$10-\$15	FCC cost-regulated	\$10
<u>Bottom line</u>				
Monthly Overcharge (2015)		\$10		\$25
Total Overcharges	<u>(\$/Monthly*12*units)</u>		<u>(\$/Monthly*12*units)</u>	
(Billions, 2015)	\$10*12*270m	\$32.4	\$25*12*80m	\$24
(Business Data Services ~ \$20)				
<u>Excess Cash Throw-Off</u>				
<u>Average annual (2011-2015)</u>	ATT + Verizon	\$45.1	Comcast + New Charter	\$35.8
Acquisitions		\$18.6		\$23.0
Accumulation of liquid Assets		\$10.1		\$10.3
Excess Dividends		<u>\$16.4</u>		<u>\$ 2.5</u>

PART V:
IMPORTANT SOCIAL GOAL WITH SIGNIFICANT ECONOMIC IMPACTS

XV. UNIVERSAL SERVICE

THE ENDURING COMMITMENT TO UNIVERSAL SERVICE

In this section the challenge of universal service, which is the first goal of the Communications Act. After reviewing the policy terrain, I answer two questions in the affirmative.

Does a digital divide exist?

Does it impose significant costs individuals and society?

Universal service has been one of the cornerstones of U.S. communications policy since 1934, when the first sentence of the Communications Act declared a broad goal, “to make available to all people of the United States, a rapid, efficient nationwide and world-wide wire and radio communication service with adequate facilities at reasonable charges.”²⁶⁵ In the Telecommunications Act of 1996, which is by far the largest single amendment to the 1934 Act, this aspiration was not only embraced, it was specified and expanded, by identifying potential bases of discrimination that would not be permissible, making service available “to all people of the United States, *without discrimination on the basis of race, color religion, national origin or sex.*” It also expanded the services covered and specified the standard for the quality and price of services to be declared the object of universal service policy.

Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

Casting a wide net and tying support for universal service to pragmatic levels of market development, Congress also outlined the conditions under which the concept of service should be expanded,

Universal service is an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services... support mechanisms shall consider the extent to which such telecommunications services--

- (A) are essential to education, public health, or public safety;
- (B) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
- (C) are being deployed in public telecommunications networks by telecommunications carriers; and

²⁶⁵ This commitment went well beyond AT&T definition of universal service which committed to an interconnected network, without expressing an aspiration for universal service. The Communications Act of 1934 also included interconnection on rates, terms and conditions that are just, reasonable and non-discriminatory in Title II.

(D) are consistent with the public interest, convenience, and necessity.

In 1996, the goal of universal telephone service had largely been achieved, with only 7% of all households lacking phone service at home, which has always been the metric by which universal service is measured. Yet, twenty years after the passage of the 1996 Act, a substantial minority of U.S. households, about one-third – does not have broadband (depending on the definition of broadband used) and one-fifth does not have Internet service at home.

Research shows that the causes of the failure to adopt broadband service at home involve a combination of price, availability, and perceptions of difficulties of use or lack of value of the service. There is no doubt that achieving universal service in the digital era is more complex than it was in the days of plain old telephone service (POTS), but, that is not a reason, or an excuse to abandon the goal. On the contrary, to a significant degree the complexity stems from the fact that communications in the digital age require more skills and deliver a more complex set of functionalities and benefits that are increasingly important to daily life. Therefore, the urgency of achieving universal service is greater today than ever. Moreover, the argument that I should not expand the concept of basic service has been debunked by the speed with which the pretty amazing new stuff (PANS) have become routine and ubiquitous uses. This is a measure of the success of the digital technologies that magnifies the importance of eliminating digital exclusion, which attests to the foresight of Congress in the 1996 in taking a broad, forward looking view of universal service.

At the moment that advanced telecommunications and information services were being rolled out in the form of broadband Internet access services, the Bush administration launched a frontal assault on the concept of universal service as expressed in the 1996 amendments to the Communications Act. Indeed, the new FCC Chairman had declared his utter disdain for the concept of the public interest that lies at the heart of the Communications Act in one of his first speeches after being confirmed to the FCC three years earlier. In his first press conference as chairman of the Federal Communications Commission, less than a month after George Bush was sworn in, Michael Powell dismissed the idea of a digital divide, comparing it to a Mercedes Benz divide. It was not a problem that deserved public policy attention, in his opinion, because natural processes of trickledown economics would make it go away. The Bush administration sought to dismantle the programs aimed at speeding adoption, although it never proposed repeal of the underlying statute.

THE REAFFIRMATION OF THE COMMITMENT TO UNIVERSAL SERVICE

The Bush administration spent eight years rejecting the idea that public policy should promote universal service by accelerating the adoption of Internet and broadband service. When congress finally revisited the issue in the wake of the financial meltdown it headed in the opposite direction. It strengthened the commitment to universal service in several ways and directed the FCC and other federal agencies to actively promote the adoption of the service.

First, the passage of the Broadband Data Improvement Act (2008) and the American Revival and Revitalization Act (2009) have shifted the focus of universal service policy to recognize the importance of adoption and utilization. The Broadband Data Improvement Act listed a series of

findings about the impact of broadband, which was the motivation to improve the quality and frequency of the FCC's analysis of broadband deployment under Section 706.

Section 706 was not entered into the U.S. Code in 1996, when the rest of the Telecommunications Act of 1996. It offered the Commission broad powers to promote universal service if it found it was not developing rapidly enough.

The Commission shall determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion. If the Commission's determination is negative, it shall take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.

In General: The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment

Section 706 of the Telecommunications Act of 1996 had never been entered into the U.S. Code. In 2008, when it was, it came with a significant enhancement of universal service policy, both in the identification of the potential benefits and the addition of adoption to the longstanding principle of availability (deployment) to the goal of universal service.

The Congress finds the following:

- (1) The deployment and adoption of broadband technology has resulted in enhanced economic development and public safety for communities across the Nation, improved health care and educational opportunities, and a better quality of life for all Americans.
- (2) Continued progress in the deployment and adoption of broadband technology is vital to ensuring that our Nation remains competitive and continues to create business and job growth.
- (3) Improving Federal data on the deployment and adoption of broadband service will assist in the development of broadband technology across all regions of the Nation.
- (4) The Federal Government should also recognize and encourage complementary State efforts to improve the quality and usefulness of broadband data and should encourage and support the partnership of the public and private sectors in the continued growth of broadband services and information technology for the residents and businesses of the Nation.

The following year, the Congress authorized funds to develop programs to accelerate the deployment of broadband in the Broadband Technology Opportunities Act. It also charged the FCC with developing a National Broadband Plan. The substantive issues to be included, reflect

the earlier findings of the Broadband Data Improvement Act. The Broadband Technology Opportunity Program directly references the Broadband Data Improvement Act, declaring that “In developing the plan, the Commission shall have access to data provided to other Government agencies under the Broadband Data Improvement Act (47 U.S.C. 1301 note).”

The national broadband plan required by this section shall seek to ensure that all people of the United States have access to broadband capability and shall establish benchmarks for meeting that goal. The plan shall also include—

(A) an analysis of the most effective and efficient mechanisms for ensuring broadband access by all people of the United States;

(B) a detailed strategy for achieving affordability of such service and maximum utilization of broadband infrastructure and service by the public;

(C) an evaluation of the status of deployment of broadband service, including progress of projects supported by the grants made pursuant to this section; and

(D) a plan for use of broadband infrastructure and services in advancing consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence and efficiency, education, worker training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes.

The stage was set for a more thorough evaluation of the status of universal service than had taken place in the eight years of the do nothing, market fundamentalist policy. In 2010 the National Broadband Plan and later in the Section 706 report on the status the deployment of the digital communications network, the FCC declared for the first time that deployment was not adequate.

Shortly after the release of the National Broadband Plan, the FCC’s Section 706 report concluded that broadband deployment in the U.S. was not “reasonable and timely,” triggering the obligation to adopt policies to address the problem.²⁶⁶ Although Section 706 is framed as a universal service issue, the most prominent place it played an immediate role was in the network neutrality debate, which is the topic of the next chapter. The FCC defined preservation of the Open Internet as one such policy.²⁶⁷ The D.C. Circuit Court of Appeals upheld the FCC claim of authority, but rejected the specific Open Internet rules.²⁶⁸

The fact that the “virtuous cycle” analysis in the National Broadband Plan has played a prominent role in the Open Internet Order and subsequent litigation should not mislead policy makers, regulators or the courts into thinking that this is the only area where it has an impact and carries weight. The National Broadband Plan is the result of the Congressional desire to have a comprehensive review of the status of deployment and adoption of the leading-edge communications technology.²⁶⁹ The fact that the FCC relied on the “virtuous cycle” to justify

²⁶⁶ Sixth Broadband Deployment Report, 25 F.C.C.R. at 9558 ¶ 2.

²⁶⁷ Preserving the Open Internet, GN Docket No. 09-191, WC Docket No. 07-52, Report and Order, 25 FCC Rcd 17905 (2010) (Open Internet Order), *aff’d in part, vacated and remanded in part sub nom. Verizon v. FCC*, No. 11-1355 (D.C. Cir. Jan. 14, 2014).

²⁶⁸ *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014)

²⁶⁹ The National Broadband Plan superseded the Steven Report, the congressionally mandated review Congress ordered in Telecommunications Act of 1996 that provided the context for FCC policy for over a decade.

the exercise of authority under section 706 does not mean it is irrelevant to other potential authorities. On the contrary, the analysis of the economics of the “virtuous cycle” is generic, providing the basis (justification) for the exercise of any and all authorities that the FCC can claim with respect to broadband policy.

Thus, the concept of the “virtuous cycle” is an important launching point for policy analysis both because it captures the essence of the ongoing economic transformation that is being driven by digital technologies and because it has become a prominent legal foundation for regulatory policy.

QUANTITATIVE EVIDENCE ON THE DIGITAL DIVIDE

While it was clear that a digital divide already existed in Internet access on the eve of deployment of broadband, it could be argued at that time that it was unclear how the digital gap would play out as broadband spread through society, since only about one-eighth of all households had broadband. Thus, one of the key issues in the debate over the digital divide at the beginning of the Bush administration was the question of whether broadband service would simply diffuse naturally throughout society. If broadband is following a normal pattern of diffusion, then one could argue, as the Bush administration did,²⁷⁰ that there was no need to adopt policies to accelerate the process.²⁷¹ Moreover, while the “have-laters” were waiting for the technology to diffuse (trickle down), digital divide deniers argued that the disconnected would have access to broadband in public institutions, like libraries and schools, which was deemed adequate access for the transition.²⁷²

Other advanced industrial nations have debated digital exclusion and concluded it is an important problem (e.g. the European Union,²⁷³ the United Kingdom,²⁷⁴ and elsewhere²⁷⁵) that needs to be addressed.²⁷⁶ In the U.S. this debate was short circuited by the Bush administration’s position.²⁷⁷

Almost a decade later the problem of digital exclusion appears in sharper focus. The trickle down of the marketplace is leaving large numbers of people excluded for a long time. The persistent failure of specific groups – low income, elderly, less educated and rural – to obtain broadband service raise serious concerns about a pattern of digital exclusion that justifies the strong statements made by Congress expanding the concept and reflecting the urgency of dealing with the digital divide. More than a decade after the introduction of broadband into the mass consumer market, with the same groups that were on the wrong side of the digital divide now

²⁷⁰ In his first press conference as Chairman, Powell, declared a “Mercedes Benz divide.” February 8, 2001.

²⁷¹ Stover, 2003; Cooper, 2002, 2004.

²⁷² Stevenson, 2009,

²⁷³ Sourbati, 2009, p. 248, “Europe’s debates on media literacy, access and used suggests a new discursive turn...Lately there has been a realization that technological access is not sufficient. People should also be able to use the technology (Gillard et al, 2007, Goggin, 2007). The emphasis is now on media ‘consumption’ or ‘use’ (UK Department for Media, Culture and Sports, 2006, p.4. European Commission. 2007, p. 6; Office of Communications, 2006, p. 3)

²⁷⁴ Price Waterhouse Coopers, 2009; South East England Development Agency, 2008; Communities and Local Government, 2008a, 2008b; SQWconsulting, 2008.

²⁷⁵ For Australia see Notley and Foth, 2008; for Scotland see, XX notes the origins of the concept of digital exclusion lie in the broader concept of social exclusion developed by the French in the mid-1970s.

²⁷⁶ Sourbati, note 5, citing European Commission, 2008; UK Department for Media, Culture and Sports, 2009.

²⁷⁷ Cooper, 2002, 2004, 2009.

among the digitally excluded and large segments of the population now three generations of technology behind, a thorough reexamination of the issue is in order and the FCC has appropriately interpreted its charge broadly.

The upper graph of Figure XV-1 shows the pattern that is reflected in the trickle down, normalization model. The middle graph shows the stratification model put forward by those on the other side of the debate put forward what was known as the stratification model. They argued that each successive generation of technology would exhibit the same slow diffusion for a significant part of the population so that inequality would persist through the generations of technology.

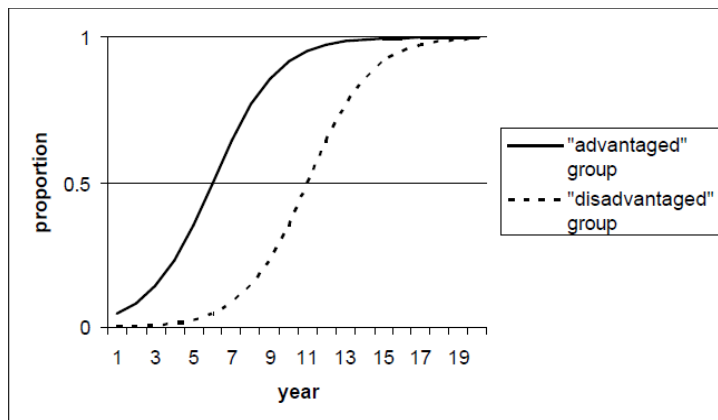
I argued that the situation could be worse than the stratification model suggested because the technologies are cumulative, as shown in the bottom graph. On the one hand, each subsequent generation of technology creates greater functionality, so that those who have it are much better off. On the other hand, each generation of technology becomes more demanding in terms of cost (resources) and skill to master. Those who did not get in on the earlier rounds of technology adoption find it harder to catch up. The rich get richer and the poor get poorer, at least in a relative sense. The current data suggest that the stratification model was closer to reality – at least in the sense that the digital divide has persisted. There remains a substantial segment of the population across and within nations that is still disconnected.

The most important characteristic of the gap is that the households without Internet or broadband are concentrated at lower income level. Among upper and middle income households, the penetration of Internet is above 90%, while for broadband it is in the 80%-90% range. The penetration among lower income households (income below \$30,000) is much lower- more than a quarter do not have Internet at home and more than a half do not have broadband at home. Fifteen years ago, when the penetration of Internet at home was in the range of three quarters (70% to 80%) for middle and upper income households, the penetration of Internet among lower income households (incomes below \$30,000) was only about one-third.

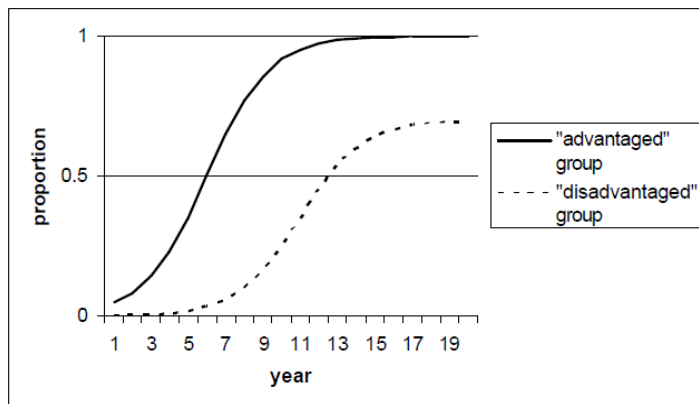
However, as shown in Figure IX-2, above, and XV-2, below, the penetration of digital communications technologies is well below 90%, particularly broadband Internet. After 30 years of mass market Internet service almost one fifth all households. In fact, Internet access at home crossed the quantitative threshold for being declared a target for universal service policy shortly after Powell made his “Mercedes Benz” comments. After 15 years of deployment, a one-third of all households still do not have access to broadband internet at home. Until the last few years, the gap between internet and home and broadband was composed of those who were still on dialup. In the past two years, that gap is now composed of those who only use a smartphone to connect to the Internet. While that represents progress, there are significant differences between wireline broadband and wireless in terms of cost and capacity that raise universal service concerns

FIGURE XV-1: NORMALIZATION V. STRATIFICATION MODELS OF DIFFUSION

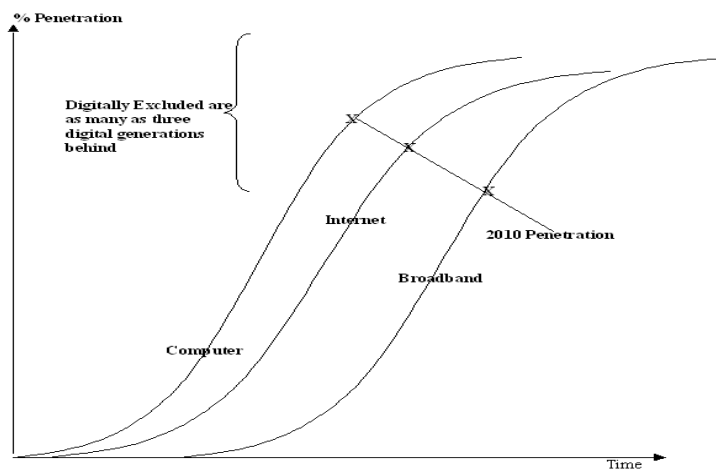
Normalization Model



Stratification Model



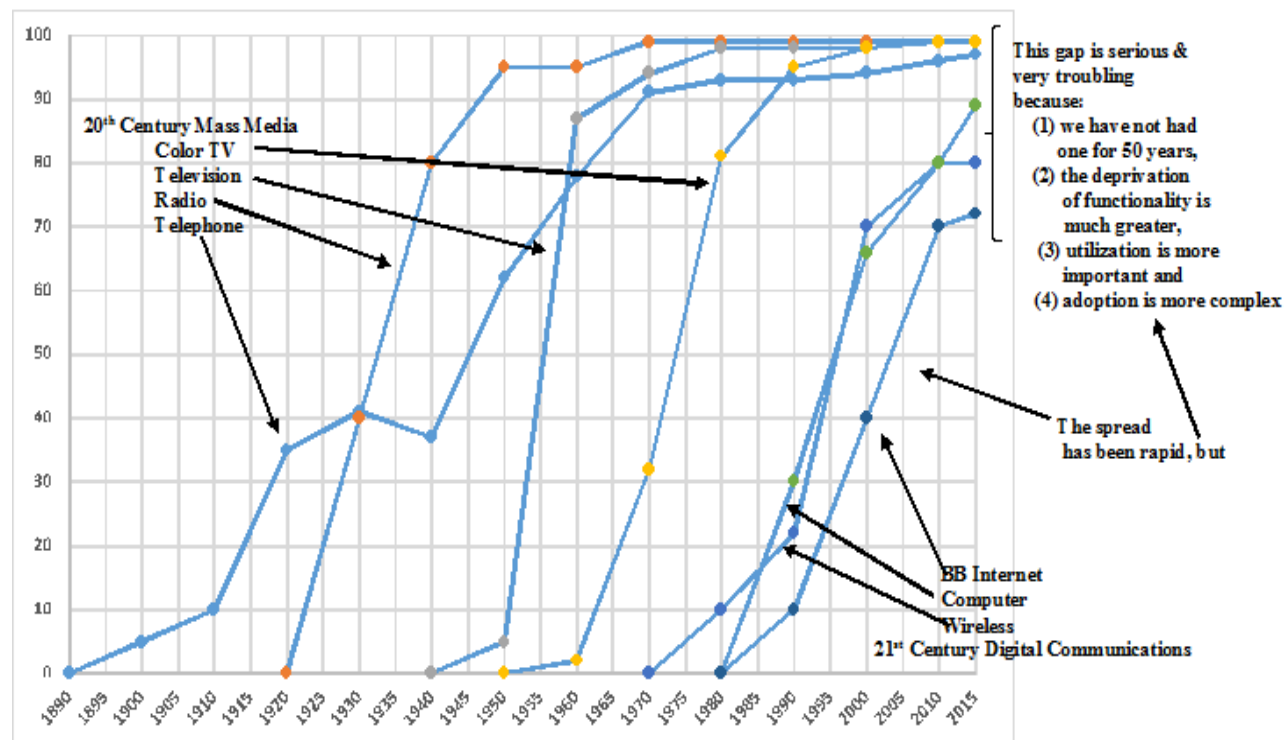
Stratified Diffusion with Cumulative Technology and Digital Exclusion



Source: Steven P. Martin and John P. Robinson, "The Income Digital Divide: An International Perspective," *IT & Society*, 7 (1) 2004, p. 4.

Figure XV-2 frames the universal service analysis in terms of the percentage of households with all of the mass communications media of the 20th and 21st centuries since the advent of electronic media. While a person may have access to a medium outside of the home, these media are so central to daily activities that frequent use at home has become the norm. Those who have to go to the library for Internet connectivity or to a phone booth to make a call are at a severe disadvantage and have a much lower level of use because it is so inconvenient.

FIGURE XV-2: LONG-TERM UNIVERSAL SERVICE: % OF HOUSEHOLDS WITH COMMUNICATION TECHNOLOGIES



Source: U. S. Bureau of the Census, *Statistical Abstract of the United States*, various; U.S. Department of Commerce, *Historical Statistics of the United States*, 1975; Federal Communications Commission, *Local Competition and Broadband Reports*, various.

All of the major electronic mass media penetrated to well above 90% over the course of the 20th century. All of them exhibit a classic innovation adoption curves (an S-shaped logistic curve). Adoption starts slowly among early adopters, accelerates rapidly, then slows. The length of time it took decreased with the advent of the wireless services. The second generation of a technology – color TV following black and white TV – was quite rapid. In some senses, the digital technologies share characteristics with the electronic technologies. Computers are initial customer premise equipment, like radios and TVs – and they became the customer premise equipment of digital communications. Internet service first rode on the already deployed telephone network and broadband is an upgrade of that communications network. Wireless voice has spread rapidly as radio and TV did.

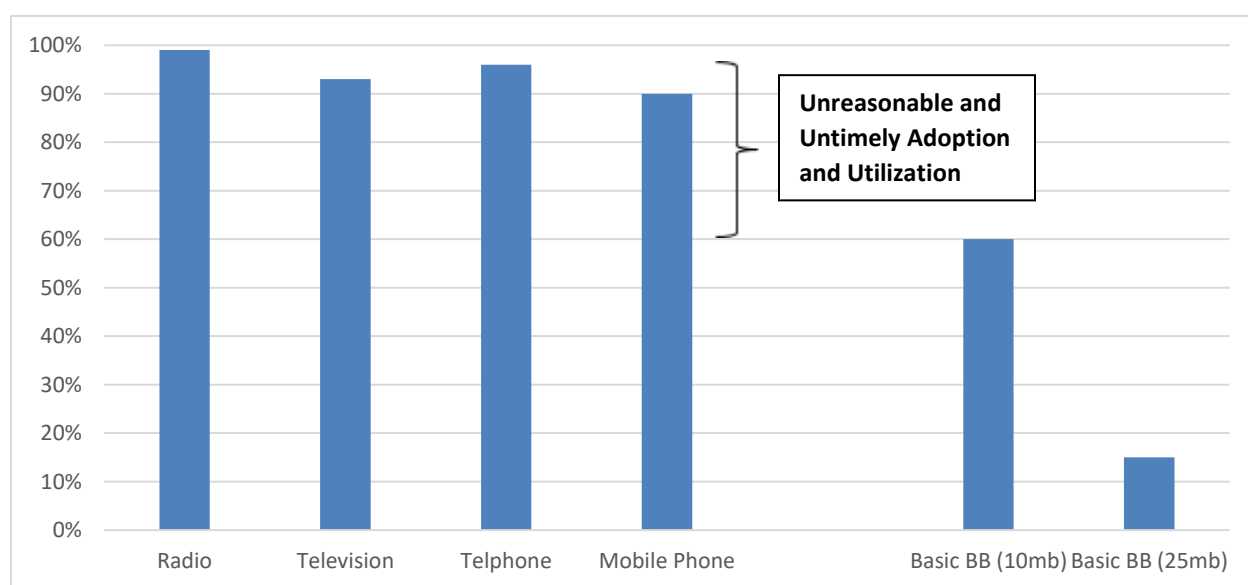
It has been a half century since I have had a universal service deficit this large. Moreover, because digital communications have become so central to daily activity, the deprivation is

severe, more severe than previous universal service deficits. The gap is also more difficult to close for a variety of reasons.

Another source of concern is the speed with which technology changes. I have moved from Internet to broadband Internet and, as shown in Exhibit xx, the speed is increasing quickly. Figure XV-3 shows the digital divide in terms of the speed of service taken by households. Well over a majority now have speeds of ten megabits or more. This is fifty times faster than the speed that the FCC had used to define “fast” for over a decade. This analysis underscores the problem of falling farther behind as technology advances

FIGURE XV-3: THE DYNAMIC NATURE OF THE DIGITAL DIVIDE

Larger Gaps at Higher Speeds



Source: U. S. Bureau of the Census, *Statistical Abstract of the United States*, various; Federal Communications Commission, *Local Competition and Broadband Reports*, various.

THE CAUSES AND CONSEQUENCES OF EXCLUSION

The means of material access to broadband service are only a small part of the problem, as shown as Table XV-1. There are other barriers that must be overcome. Households have to be motivated to acquire the services and have the skills to use it. Motivation includes the perception that there is content and applications worth paying for. Households must have the technical skill to adopt and use the technology. Finally, the nature of the technology and efforts to enhance its adoption are important.

Closing the digital divide is no longer seen as primarily, or simply a matter of making the technology available. Success comes when individuals master the technology and put it to a wide range of uses. Defining the ultimate object according to the nature and extent of use shifts the focus of what determines a successful outcome significantly. It is important to appreciate the full complexity of the challenge, but also not to lose sight of the basics of adoption.

TABLE XV-1: MAJOR CATEGORIES OF FACTORS AFFECTING DIGITAL EXCLUSION

Barriers

Availability:	Physical: proximity and access to ICT equipment and services. Bandwidth (services), Applications (Content), Hardware (Devices)
Affordability:	The user can afford to use the equipment Financial: ability to pay for ICT equipment and services Temporal (time to spend on different activities)
Skill:	The user has the required cognitive skill and knowledge to use the equipment to identify information needs and find, use, evaluate and store information. Multi-literacies: Technological, Language, Numbers, Creative and critical skills Operational: Navigation, Usability (physiological limitations), Experience Technology Design: 'human-machine' interface, hardware and software designed to meet needs of a population, Complexity, Diversity, Intensity
Attitude:	The user has the individual inclination and social location to use the technology Psychological: The user feels comfortable about using the equipment. Perception: Interest, Motivation, Relevance, Practical value Social resources (Interpersonal relationships): Co-participation and sharing; Social network positions and relations in workplace, home or community (spaces & places; planning) Organizational forms and regulations that structure access to digital content in particular ways. Cultural: Status credentials appropriate for the user to be in the location and use the equipment Content: meaning and significance to culture or lived reality. Local language, local content, effective user control and interface; Production: ability of individuals to develop content of their own.

Source: Jan A.G. M. van Dijk, *The Deepening Divide: Inequality in the Information Society* (Thousand Oaks: Sage, 2005), p. 24; Karine Barxilai-Nahon, "Gaps and Bits: Conceptualizing Measurements for Digital Divides/s," *The Information Society*, 2006, 22. p. 273. Dahms, 2009, M., 2009, "Shifting Pocus from Access to Impact: Can Computers Alleviate Poverty?" in Enrico Ferro, et al. (Eds.) *Overcoming Digital Divides: Constructing an Equitable and Competitive Information Society* (Hershey: IGI Global, 2010), p. 450; Selwyn and Faser, 2009, *Beyond Digital Divide: Toward an Agenda for Change*, in E. Ferro, et al., (Eds.) *Overcoming Digital Divides: Constructing an Equitable and Competitive Information Society* (IGI), p. 5, 7; Dunn, 2009, p. 330; Comunello, 2009, pp. 592, 596, 597; Hill, Davies and Williams, "older People and Internet Engagement: Acknowledging Social Moderators of Internet Adoption, Access and Use," *Information, Technology & People*, 21(3) 244-266. pp. 254-255.

Every econometric model that includes an income variable shows it to be one of the most important determinants of adoption and use of broadband. Price variables are not frequently included, but they too are invariably statistically significant and important determinants of use. In the most recent Pew survey on *Home Broadband*, the cost of monthly service was the most frequently given reason for not having the service – cited three times more frequently than any other reason. One-third of the respondents said the service was too expensive.

A reduction in price resulting in the elimination of overcharges would certainly help. Given that the overcharges are substantial – in the range of 30%, they would help significantly. Moreover, public policy is not limited to dealing with pricing abuse. The FCC has the authority to offer subsidies to lower prices for those who have been excluded. It can also promote availability by subsidizing the cost of service in high cost areas.

Given the fact that current penetration of broadband at home is less than 70 percent and the goal is over 90 percent, policy should aspire to a substantial increase in penetration. Given the magnitude of the overcharges and the other potential policy interventions, a 10-percentage point increase in penetration would be a reasonable, near-term goal.

In Section V I described the immense impact that digital communications technologies in general and broadband in particular have on individuals and the economy. Digital exclusion is negative flip side of that benefit. Not having broadband imposes a heavy cost on people and the economy. Three quarters of respondents to the most recent Pew survey say that lacking at home creates a disadvantage in finding out about job opportunities, learning about government services and learning new things that improve or enrich their lives.²⁷⁸ About half say this is a major disadvantage. Two-thirds say lack of broadband creates a disadvantage in getting health information or keeping up with the news. Pew's data also shows that those who lack broadband at home participate less in civic and political activities.

Given the strong relationship between deployment of ICTs and economic growth discussed earlier and the disadvantage that lack of broadband creates for individuals, it is not surprising to find that increases in penetration and use of broadband increases gross domestic product. There is a strong consensus that the effect is substantial. While the models are built in a similar fashion to those used to estimate the impact of price changes in special access, they state their results differently. They estimate how much output will increase with a specific increase in broadband penetration or speed.

Czernich, et al., is a frequently cited source for advanced economies that stated the results as follows: "a 10-percentage point increase in the broadband penetration rate results in a 0.9 to 1.5 percentage-point increase in annual per-capita growth. The model with controlled for country effects suggested that the impact was more likely to be at the higher end."²⁷⁹

The study by Ericsson, Arthur D. Little and Chalmers University cited earlier found that doubling the speed of broadband increases GDP growth by 0.3%, but there was a declining marginal impact so that increasing speed fourfold increase GDP by 0.6%. The economic value of a 10% increase in penetration would be about \$180 billion in GDP per year, if it raised the GDP by only 1%. It would be \$250 billion if it raised the GDP by 1.5%.

CONCLUSION: THE FCC UNIVERSAL SERVICE ORDER

Coming at the end of the shift of policy in a progressive direction, the reform of universal service reflects the main themes developed throughout this paper. As noted above, the social goal of universal service is also fundamentally an economic goal.

The virtuous cycle is cited as justification "The growing importance and value of online content, applications, and services has fueled consumer demand for faster and better broadband, which, in turn, has led to robust investment and deployment by broadband providers." (p. 6)

²⁷⁸ Home Broadband, December 2015.

²⁷⁹ Czernich, p. 1

The individual and economy-wide benefits of adoption are listed.

But at a time when our economy and lives are increasingly moving online and millions of Americans remain offline, the Lifeline program must keep pace with this technological evolution to fulfill its core mission.(p. 2)

Much like telephone service a generation ago, broadband has evolved into the essential communications medium of the digital economy, continuing to transform the landscape of America even more rapidly and pervasively than earlier infrastructure networks. (p. 5)

It is now the dominant technology used to communicate, educate, inform, and entertain. Congress recognized this in 2009 when it directed the Commission to develop a National Broadband Plan ensuring that every American has “access to broadband.” (p. 5)

As more aspects of daily life move online and offline alternatives disappear, the range of choices available to people without broadband narrows. Digital exclusion compounds inequities for historically marginalized groups. (p. 10)

The important role of affordability in achieving the goal of adoption are identified as the primary standard by which performance is measured.

Congress asserted the principle that rates should be “affordable,” and that access should be provided to low-income consumers in all regions of the nation. (p. 3) Congress also recognized at the same time that new technologies, in addition to landline telephone service, could provide telecommunication services to consumers and that “[u]niversal service is an evolving level of telecommunications services.” (p. 3)

While the FCC recognized the complex causes of the digital divide, it also pointed out that cost was the single most important factor inhibiting adoption of broadband.

The biggest reason these Americans don’t sign up for broadband today is cost. Only half of all households in the lowest income tier subscribe to a broadband service and 43 percent say the biggest reason for not subscribing is the cost of the service. Of the low income consumers who have subscribed to mobile broadband, over 40 percent have to cancel or suspend their service due to financial constraints. Affordability remains the primary barrier to broadband adoption. (p. 2)

While the FCC sought a technology neutral approach, it also underscored the fundamental difference between wireline and wireless technologies, setting minimum usage standards that were several orders of magnitude higher for wireline than wireless (pp. 32-34). We view this as another recognition that the two technologies are not good economic substitutes.

Forty-eight percent of Americans, particularly from vulnerable communities, found the cost of maintaining wireless services to be a financial hardship. In addition to the cost of the service acting as a barrier, smartphone-dependent users frequently reached their data caps as part of their monthly plan. (p. 7)

[M] mobile broadband providers face spectrum constraints that fixed providers do not, 214 and the speed mobile broadband providers can deliver to consumers is far more dependent on the consumer's location. (p. 29)

To mark the transition to 21st century universal service policy the FCC declared it was “phasing out support for voice as a standalone option. (p. 18)

XVI. ABUSE OF VERTICAL LEVERAGE IN THE TRADITIONAL VIDEO MARKET

DIVERSITY AND MARKET FAILURE

In this analysis, we have emphasized the importance of access to essential, bottleneck inputs to competition for both distribution entities that need content and content entities that need distribution. The former were older examples, while the latter plays an important role in more recent policy. The DOJ/FCC have identified over-the-top programming as an important, perhaps the only, potential competition for the tight oligopoly in video. These OTT programmers require access to the few true broadband networks that can reach consumers.

The U.S. video space has a recent example that supports the belief that providing access to distribution media is a critical factor in promoting competition and alternative source of content. For the first two decades of commercial distribution of broadcast content, network owners were unconstrained by policy in their exercise of market power. They had each been granted exclusive licenses to broadcast video content in powerful radio frequencies. On selected airwaves. Before the Financial Interest and Syndication Rules (Fin-Syn) and the Prime Time Access rules were in place, networks asserted ownership over prime-time programming.

In the 1970s, what led the FCC to institute the financial interest and syndication rules was a concern that the networks were becoming both too powerful and too demanding when it came to the [program] selection process. Too powerful in that they were the gatekeepers of news, information, and entertainment for the American public. This was so because of the limits of radio spectrum... Too demanding, because networks were requiring an equity stake in a program before it would be accepted as part of the prime-time schedule.... [T]he networks had ownership of more than 70% of their prime-time schedule by the mid-1960s, up from only 45% the previous decade. The strong arming of producers was a fundamental reason for the creation of fin-syn.²⁸⁰

The timing is informative. TV arrived on the scene in the 1950s and became the dominant medium by the early 1960s. In the early days, broadcasters lacked both production capacity and market power to self-supply content. Once television achieved ascendance, the broadcasters used their resources and leverage to assert ownership over prime-time programming.

The broadcast networks had a history of antitrust problems in their role as gatekeepers of access to the television audience. In 1978 they lost an antitrust case that demonstrated a restraint on trade in which independents were frozen out.

In the *Unites States v. National Broadcasting Co.*, The government specifically accused the National Broadcasting Company (NBC) of restraint of trade as it related to purchasing programs from independent producers and of using its network power to monopolize prime-time programming production of shows broadcast on the network. The Department also claimed that NBC, with CBS and ABC, was trying to develop a monopoly over the television programming market.²⁸¹

²⁸⁰ Einstein, 2004), p. 179

²⁸¹ Einstein, p. 60.

The business practices used to accomplish this dramatic shift in the flow of content in the video product space exhibit characteristics that clearly fit the pattern of abuse of market described above. By controlling distribution and vertically integrating into production, the dominant broadcasters became gatekeepers who favored their affiliated content, restrict access of independents to the market, and imposed onerous terms and conditions on independent producers that have further shrunk the sector. They did this before restrictions on their exercise of vertical leverage were in place and after the restrictions were removed.

The key elements of the video entertainment product space fit a pattern that the literature on industrial organization describes as the exercise and abuse of market power. These elements include:

Market Structure and Market Power

- Market shares that have risen to the level traditionally defined as a source of concern about concentration setting the stage for the abuse of market power.
- Substantial barriers to entry in the industry.
- A history of anticompetitive practices.

Vertical Integration

- Barriers to entry increased by vertical integration.
- The foreclosure of markets to unaffiliated producers through favoritism of affiliated upstream production and the subsequent exit of upstream product suppliers from the market.
- Parallelism and reciprocity among the dominant firms in the oligopoly.
- A rush to integrate and concentrate across the sector.

Monopsony (buyer) Power over independent producers.

- The imposition of prices that squeeze unaffiliated producers and terms that shift risk onto those producers.
- Indications of a decline of quality in product attendant on the abuse of monopsony power.
- Flooding of downstream outlets with integrated product.

THE ROLE OF INDEPENDENT PRODUCERS IN SOURCE DIVERSITY

Under the limitation placed on owners of broadcast networks and TV stations in the early 1970s, a substantial independent sector of video content producers came into existence. Major studios provided about one third of product shown on network prime time television while the networks themselves accounted for just 15%. Non-major studios, known as “independents,” supplied

nearly one half. One set of independents sold movies to broadcasters. Another set sold series and other programming. A few produced and sold both. Vertical integration has changed that situation.

The basic public policy point is not about quality or ratings, however, it is about diversity. The presumption is that a more diverse set of producers will produce a more diverse set of products to be aired. Quantification of this issue has been difficult, since genres or formats have been incorrectly represented as diversity. It is the subject matter and roles or role models that are more to the point.

Quantifying this outcome measure is extremely difficult, but there can be no doubt that the independents who rose during the period of Fin-Syn shattered the illusory image of a lily white, suburban America, where fathers worked and knew best and mothers prepared meals. Table XVI-1 shows a stunning list of independently produced TV shows that reminded the public in prime time and before huge audiences that America was black, white and brown; male and female; married, divorced, widowed, or abandoned; more urban than rural, more working class than not; where single moms of both races worked in interesting and sometimes dangerous occupations while raising families on their own, and older Americans were more than just grandparents fawning over grand kids, but lived real lives with human appetites and frailties.

While the most frequently cited examples, *All in the Family* and *The Cosby Show* appear on the list and they are the most spectacular in their success and their spin-offs, it is the breadth of independently produced shows that should get attention too. Over two dozen shows from almost a dozen different producers broadened and enriched television with different images and issues during the period of Fin-Syn. These shows won over half the Emmys for Best Comedy or Best Drama series in the twenty-year period that Fin-Syn was firmly in place.

Thus, while it may be a bit of an exaggeration to say that most of the groundbreaking, socially relevant diversity in the history of television was brought to the TV screen by independents who owed their opportunity to the implementation of Fin Syn, Table XVI-1 demonstrates that it is not much of an exaggeration. And, this is not a comprehensive list of successful independent shows, just a list of those that seem to have made a unique contribution to diversity. Indeed, the exhibit emphasizes the possibility of succeeding commercially while contributing to diversity. The exhibit demonstrates that these shows that dealt with important social issues were not only critically acclaimed, but also successful. Many had long runs with long periods in the top thirty rated shows.

RETURN OF A VERTICALLY INTEGRATED OLIGOPOLY IN TELEVISION

All of this changed quickly when the access policies that had been in place for twenty years were changed in the early 1990s. Three major policy changes were in place by mid-1990s on the production and distribution of video content: the repeal of the Financial Interest/Syndication rules, the enactment of both the Cable Act of 1992 and the Telecommunications Act of 1996. These policy choices led to the formation of a vertically integrated oligopoly in television entertainment and a dramatic shrinkage of the role of independent producers of content.

TABLE XVI-1: LEADING INDEPENDENT TV SERIES CONTRIBUTING TO CONTENT DIVERSITY DURING THE FULL IMPLEMENTATION OF THE FINANCIAL AND SYNDICATION RULES

Series	Start	1st Year in Top 30	Last Year	Number of Years	
				In 1st Run	In Top 30
Mary Tyler Moore	1970	1970	1977	8	6
All in the Family	1971	1971	1983	12	11
Sanford and Sons	1972	1972	1977	6	6
The Waltons	1972	1972	1981	10	6
Maude	1972	1972	1978	7	4
Good Times	1973	1973	1979	7	4
Streets of San Fran.	1972	1973	1977	6	3
Chico & the Man	1974	1974	1978	5	2
Rhoda	1974	1974	1978	5	3
Jeffersons	1975	1975	1985	11	8
One Day at a Time	1975	1975	1982	10	8
Welcome Back Kotter	1975	1975	1979	5	3
Barney Mill	1975	1978	1982	8	4
Tony Randall Show	1976	1976	1978	3	1
Lou Grant	1977	1978	1982	6	2
Benson	1979	1979	1986	7	1
Hill Street Blues	1981	1981	1987	8	3
Kate & Allie	1984	1984	1989	6	4
Cagney and Lacy	1982	1983	1988	6	2
Cosby show	1984	1984	1993	10	10
Golden Girls	1985	2985	1992	8	7
Moonlighting	1985	1985	1989	5	3
A Different World	1987	1987	1993	7	5
Roseanne	1988	1988	1997	10	7
Seinfeld	1990	1992	1998	9	7

Source: shows from William M. Kunz, *Culture Conglomerates* (New York, Rowman and Littlefield, 2007), chapter 5. Prime Time rankings from Tim Brooks and Earle Marcsh, *The Complete Directory to Prime Time Network and Cable TV Shows: 1946-Present* (New York: Ballantine Books, 2003), Appendices 2 and 3.

The expiration of the Fin-Syn rule and the consent decree with the Department of Justice allowed broadcasters to own as much programming as they wanted. The limits on multiple station ownership were relaxed – allowing them to own two stations in the nation’s largest and most important markets. A third policy also gave broadcasters the right to carriage on cable systems (must-carry/retransmission).²⁸² The terrain of the American media landscape was dramatically

²⁸² Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460 (1992).

altered by these policy changes as the broadcasters moved quickly to use these three new sources of leverage in the video market

The 1990s policy changes triggered a series of acquisitions and product developments over the course of the decade that created a vertically integrated oligopoly in the television industry (see Table XVI-2). Over the course of a decade, the content aired on prime time network television, TV syndication, basic and pay cable channels, and theatrical movies came to be dominated by a handful of vertically integrated entities.

Table XVI-2: Major 1990s Acquisitions and Launches Involving Broadcasters in the Creation of the Vertically Integrated Video Entertainment Oligopoly

Year	Disney/ABC	Time Warner	Viacom/CBS	G.E.-NBC	Fox
1993		Turner acquires Castle Rock & New Line			Fox acquires NFL rights
1994			Viacom acquires Paramount		
1995		Time Warner launches WB	CBS launches		
1996	Disney	Time Warner	UPN		
acquires ABC		acquires Turner			
1999			CBS acquires King World	NBC acquires 30% of Paxson	
			Viacom acquires CBS		
2001					Fox duopolies LA, Minn. DC Houston
2002				NBC acquires Telemundo NBC duopolies result	Fox duopolies Chic. Orl.
2003				GE Acquires Universal	

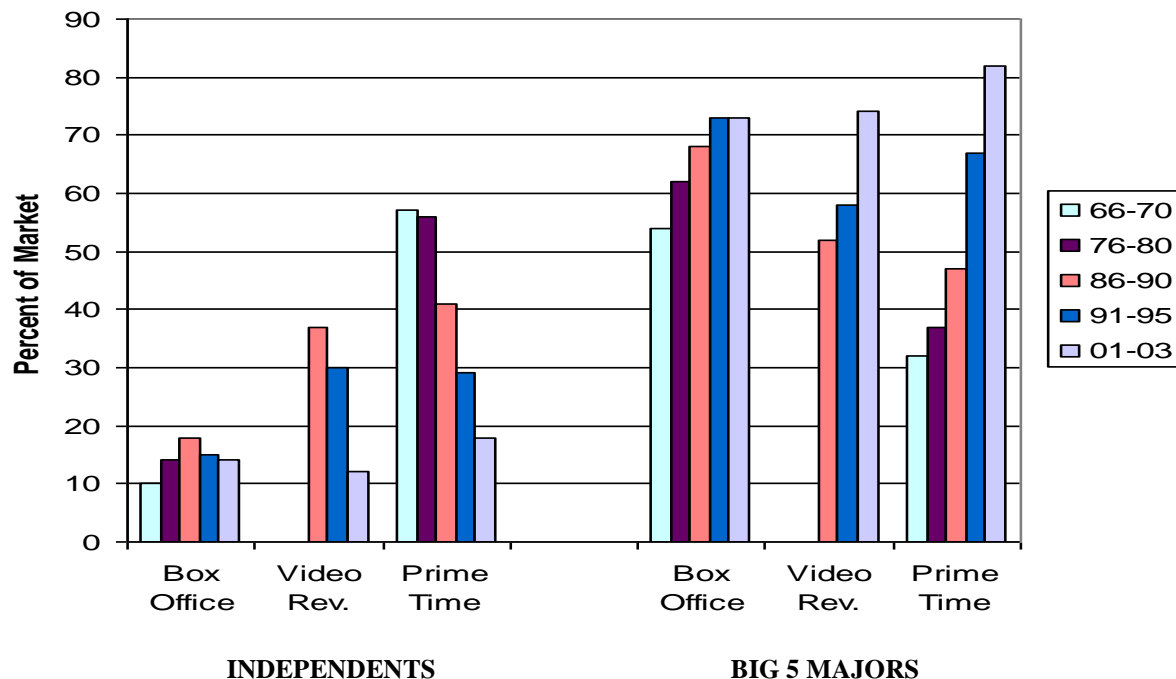
Source: Columbia Journalism Review, *Who Owns What*, August 22, 2006.

The vertically integrated major studios and broadcasters quickly accounted for over 75% of broadcast prime time television programming while independents account for less than 20%. (see Figure XVI-1). The few independents that were aired on prime time television produce reality shows, not scripted programming. As a result, independents have been virtually shut out of the lucrative syndication market, now accounting for just 18% of all first run syndication programming hours and none of the programming hours for shows that have gone into syndication over the last two years.

The economic terrain of cable television has also changed for independents. The vertically integrated media companies owned 24 of the top 25 cable channels. The independents' share of pay cable programming also continues to decline as a percentage of programming, dropping by some 15% since the late nineties. Independent product was also squeezed out of syndication. Independent product is increasingly consigned to the far less visible and less financially

rewarding basic cable channels where license fees are much lower and in many cases inadequate to cover production costs.

FIGURE XVI-1: THE SHARES OF INDEPENDENT PRODUCERS IN BOX OFFICE, VIDEO REVENUE AND PRIME TIME HOURS LATE 1960S TO EARLY 2000S



Sources. Box Office and Video Revenue are five year averages from David Waterman, *Hollywood's Road to Riches* (Cambridge: Harvard University Press, 2005), pp. 21, 25, 86-90 and 01-03. Big Five Majors are the studios that have been acquired by major TV programmers – Disney/ABC; Fox/20th Century Fox; NBC/Universal; Warner Bros.; CBS/paramount. Other majors (not shown) are MGM/UA and Columbia. Independents are what Waterman calls “the residual.” Prime Time is percent of hours in 1989, and 2002 from Mara Einstein, *Program diversity and the Program Selection Process on Broadcast Network Television* (Federal Communications Commission, 2003), p. 26. First-run syndication is from C. Puresell and C. Ross, “Vertical Integration and Syndication,” *Electronic Media*, 22(1): 2003, for 1993 and 2002. It includes only vertical integration and not internal dealing among the big 5.

The mergers of the networks and studios followed and the vertically integrated entities came to dominate prime time, accounting for over three quarters of the programs. In 1989, fifteen entities produced 2 percent or more of the programming on prime time. By 2002, that number had shrunk to five. The programming produced by independents in 2006 was largely reality shows, not scripted programming, as had been the case in the recent past.

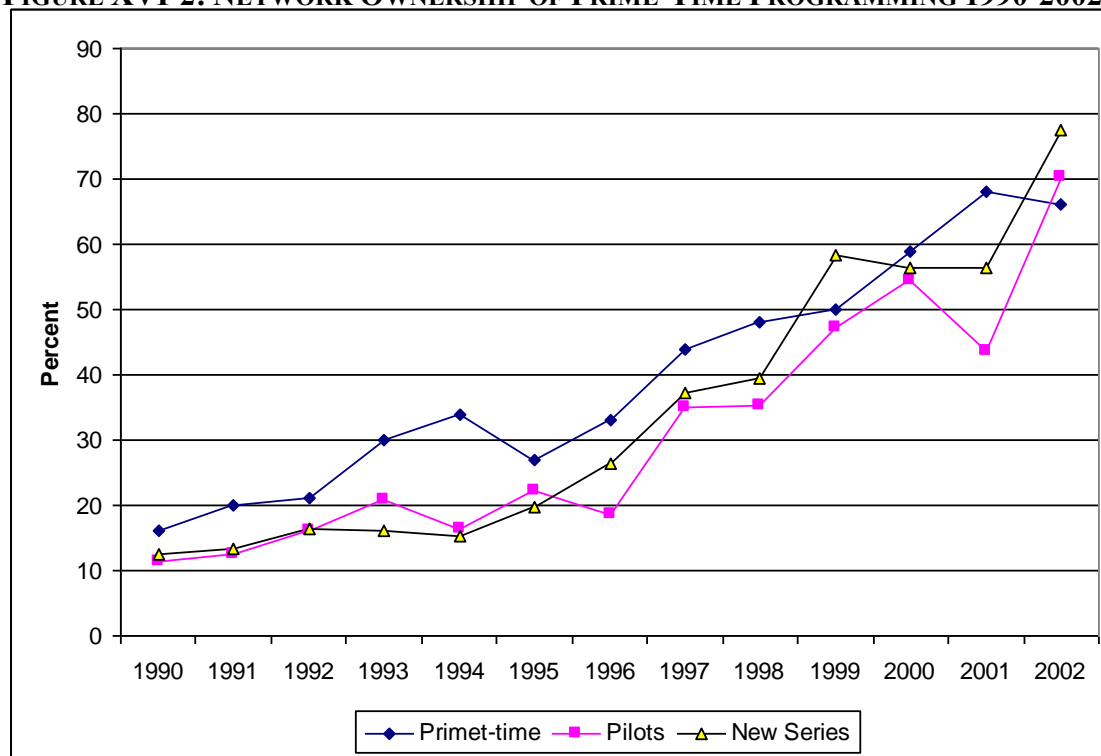
Traditional measures of market concentration used in economic analysis reinforce this observation. As Table XVI-3 shows, the prime time market moved very quickly from an unconcentrated competitive market (CR4=34%; HHI=541) to a tight oligopoly (CR4=74%) well up into the moderately concentrated range (HHI=1596). If the calculations are based only on series, i.e. excluding movies, the concentration is even greater. Within a decade after the repeal of Fin-Syn, the market was a highly concentrated (HHI=2070) tight oligopoly (CR4=84).

TABLE XVI-3: CONCENTRATION OF PRIME TIME PROGRAMMING

Year	Four Firm Concentration	HHI	Four Firm Concentration	HHI
<i>All Prime Time Hours</i>		<i>Series only</i>		
1989	35	541	40	703
1995	47	776	57	1165
2002	74	1596	84	2070

Source: Calculated from Mara Einstein, *Media Diversity: Economics, Ownership and the FCC* (Mahwah: Lawrence Erlbaum, 2004), p. 169.

Figure XVI-2 shows the pattern of ownership by the networks of prime time programming, new shows and pilots. We observe a modest increase in network ownership in the early 1990s, as the Fin-Syn rules were partially repealed, debated and litigated. With final repeal of the rules in 1995, we see a rapid and steady increase in network ownership.

FIGURE XVI-2: NETWORK OWNERSHIP OF PRIME-TIME PROGRAMMING 1990-2002

Source: Calculated from Mara Einstein, *Media Diversity: Economics, Ownership and the FCC* (Mahwah: Lawrence Erlbaum, 2004), p. 171; William T. Bielby and Denise D. Bielby, "Controlling Prime Time: Organizational Concentration and Network Television Programming Strategies," *Journal of Broadcasting & Electronic Media*, 47: 4 (2003), p. 588.

RETURN OF ABUSIVE PRACTICES

After a twenty-year period in which the networks were restrained by the Fin-Syn rules, the broadcasters moved to reassert ownership in prime-time programming once the rules were repealed.

Since the rules were repealed in 1995, the economic structure of the industry changed drastically. The television networks have become vertically integrated institutions with the ability to produce programming through internal business units. Corporate parents put pressure on the networks to purchase programming internally to achieve synergies and, of course, increase profits. Being part of large media conglomerates, there is added pressure on the networks to be profitable so that Wall Street may find the parent company appealing.²⁸³

The networks each have at least a 50% stake in the programming on their air and some have as high as 70% and even 90%.²⁸⁴ The networks could never achieve those kinds of ownership numbers without requesting a stake in the programming that appears on their air. It is no secret to anyone that the networks do this.²⁸⁵

Bielby and Bielby have argued that network behavior was political, as well as economic, and noted the evolving nature of their rhetoric. At first the broadcasters argued that the independents would not be squeezed out. Later they argued that independents were irrelevant.

The network executives' initial position was that independent producers would thrive in a deregulated industry and that network ownership was not a threat to creativity and program quality. Increasingly, in recent years, network executives and deregulation advocates have taken the position that their opponents' positions are irrelevant, because they are out of touch with the realities of the marketplace. In effect, they are saying, vertical and horizontal integration were necessary for the industry to survive in the face of rising costs and increased competition from new technologies.²⁸⁶

As this process unfolded, the impact was felt in more than just access to audiences. The leverage that the vertically integrated core of the industry acquired also dramatically changed the terms of trade between the independents and vertically integrated conglomerates. With a small number of vertically integrated buyers and a large number of much smaller product sellers, the core oligopoly gains monopsony power. They can impose onerous terms on the supplier, appropriating maximum surplus. With all of the major distribution channels under their control, the vertically integrated oligopoly can slash the amount they are willing to pay for independent product.

The gatekeeper role translates into leverage because "with increased vertical integration, independent producers have less access to audiences, or they must align themselves with studios or networks to get their shows on the air."²⁸⁷ Einstein concludes that integration favors internally

²⁸³ Einstein, pp. 179-180.

²⁸⁴ Einstein, p. 217.

²⁸⁵ Einstein, p. 217.

²⁸⁶ Bielby and Bielby, 2003, p. 585.

²⁸⁷ Einstein, pp. 180-181.

produced product.²⁸⁸ Exclusive and preferential deals for the use of facilities and products compound the problem.

Concerns arise that not only will the dominant firm in the industry gain the leverage to profitably engage in anti-competitive conduct, but also the dynamic processes in the industry will clearly shift toward cooperation and coordination rather than competition. The issue is not simply collusion, although that is clearly a concern. Beyond collusion, a mutual forbearance and reciprocity occurs as spheres of influence are recognized and honored between and among the small number of interrelated entities in the industry. Einstein and others identify a number of ways in which vertical integration affects the flow of programming. Clearly inferior shows are aired primarily because the vertically integrated media conglomerate owns them, although there is a difference of opinion on how prevalent this outcome is.²⁸⁹ More generally, owned-programming gets an inside track and is chosen when there are close calls.

[I]t appears the incentives introduced into the program selection process by the repeal of the Fin-Syn rules have clearly affected the program selection process within broadcast networks. Specifically, the networks have an incentive to select programs produced in-house because of both financial and political reasons.²⁹⁰

[I] is important to note here that internally produced programming has the so-called home court advantage when it comes to being selected for the prime-time schedule.... 'If you put the network person in charge of both sides of the fence... It's impossible to ask the network person to have that much objectivity.'²⁹¹

Owned programming is given better time slots,²⁹² is kept on the air longer,²⁹³ and clogs syndication.²⁹⁴ The pattern of acquisition of shows and movies discussed in the previous chapter also suggests that when the oligopolists are not self-supplying, they engage in reciprocal dealing, buying shows from one another.

Broadcasters have the leverage to extract equity shares for shows not developed internally.²⁹⁵ Of even greater concern to these producers than the perceived favoritism towards in-house production and joint ventures is an increasingly common practice by the networks of commissioning pilots from independent producers then demanding a financial stake as a condition of picking up a series for the prime time schedule.²⁹⁶

Networks gain market power to meddle with the content offered by independents.²⁹⁷ The pervasive control over distribution channels on TV allows the integrated firms to dictate terms and conditions that squeeze the independents. These include license fees that do not cover the

²⁸⁸ Einstein, p. 194-195; Bielby and Bielby, p. 581.

²⁸⁹ Einstein, p. 194-195; 217.

²⁹⁰ Einstein, pp. 180-181.

²⁹¹ Einstein, p. 187.

²⁹² Einstein, p. 217.

²⁹³ Einstein, p. 192.

²⁹⁴ Einstein, pp. 198-199.

²⁹⁵ Einstein, pp. 180-181.

²⁹⁶ Bielby and Bielby, p. 581.

²⁹⁷ Beilby and Bielby, p. 580.

costs, given the quality that is demanded, extremely long license periods, and claims to back end-rights – home video, foreign sales and digital distribution -- that limit the ability of independents to make up for the inadequate license fees. The exercise of this monoposony power has gone so far as to allow the buyers to repurpose content to “higher” value” distribution channels without additional compensation for the independent producers. By taking a product that was purchased at terms and conditions designed for a lower value outlet and re-using it on a much higher value outlet, the vertically integrated company extracts much greater value (profit), without compensating the producer.

A new issue has arisen in the syndication market that is adversely affecting producers to the benefit of the networks and their parent companies. Due to increased vertical integration, more and more companies are selling programs within their own company rather than going out into the marketplace to sell a show. For instance, a network that has its own production company will sell a hit show to its cable network at a below market rate without opening the show to bidding by other outlets, cable or broadcast. Though this is very lucrative for the company, it is detrimental to the profit participants in a show – the producers, the actors and so forth.²⁹⁸

It should be evident from these examples that the existence of multiple cable outlets does not alter the already restricted television landscape because the networks have captured a substantial hold over the most important cable networks.²⁹⁹

Another increasingly popular business strategy implemented by the big four and emerging networks also offsets the impact of expanding channels of distribution. “Repurposing” involves exhibiting each episode of a series on an affiliated broadcast or cable network immediately after the initial network broadcast.³⁰⁰

On the supply-side, the argument is straightforward, allowing vertical integration changes the incentives for the firm, which now maximizes profit not by producing the best product, but by carrying the maximum amount of self-supplied product. Simply put, it is more profitable to run an owned program than it is to buy an independently produced program, even if the independently produced product is somewhat superior. Moreover, with integration across different platforms and ownership of multiple outlets within platforms, it is more profitable to repurpose and rerun an owned program than to produce a new one. The result has been the near complete banishment of independent producers from the video space. Prime time, syndication, and the cable dial have come to be dominated by a handful of vertically integrated corporations.

Broadcasters prefer to own the programs, so they can control the content and the cost. They prefer their own programs, even if they are inferior and attract smaller audiences. It is difficult for independent ideas or independent producers to break through this triangle of advertisers, producers and audiences. They prefer to rerun and repurpose the shows they already own and have produced, rather than pay for new shows, even though new shows would attract a larger audience, since shows already in the can deliver higher profits even with smaller audiences. As they become vertically integrated, they do more than just rerun on broadcast and repurpose on

²⁹⁸ Einstein, pp. 198-199.

²⁹⁹ Einstein, pp. 218-219.

³⁰⁰ Beilby and Bielby, p. 592.

cable. They also repackage and recycle the brands for non-TV revenue for both non-video product sales as well as non-TV video (DVD) sales and rentals. “[T]he saturation of multiple markets with branded products means less air time, cable time, shelf space and the like for nonbranded products... While a boon to transindustrial conglomerate, saturation narrows the number of choices that corporate menus present us.”³⁰¹

Cross platform saturation of brands and franchise products reinforces the tendency to accept smaller audiences. Not only is it more profitable to rerun and repurpose a self-produced in hand product, even though its ratings may be lower than a new product, the “conglomerate may be willing to tolerate lower rating from a series representing a new brand in a franchise.”³⁰² It may be more profitable from a strategic point of view to run with products that fit into or reinforce brand strategies, even though there might be other products that would attract larger audiences.

THE DEBATE OVER QUALITY

The perverse incentives created by the vertical integration of programming and distribution lead directly to a debate about quality. The question of the relationship between vertical integration and declining quality has been hotly debated. The exercise of monopsony power is clearly affecting the structure of the industry. Two effects have been noted. First, the number of entities engaged in the process has been reduced sharply because the distribution of risk and rewards has been shifted in favor of the networks.³⁰³ The second effect is to eliminate the creative tension that once existed between the producer and the distributor of product.³⁰⁴

One aspect of the debate over quality that is intriguing but little studied is the potential relationship between integration, declining quality and declining ratings. As Bielby and Bielby note:

In 1999, *Advertising Age* editorialized that ABC was “auctioning” its most desirable prime-time time slot to the program supplier willing to give the network a financial stake, part of a trend that is making it “increasingly clear the broadcast networks are more interested in financial deals than putting the best shows they can find on the air.” The trade publication warned that the ratings decline experienced by the networks would accelerate if “financial packages rather than program quality determine what gets on the schedule.”³⁰⁵

The ratings decline certainly did continue, as integrated ownership of programming increased. As is frequently the case in this sector, many other things were changing that could account for the decline in ratings, but the correlation is notable. Waterman sees some evidence of the latter effect on the studio side of the business. “[E]xcessive movie budgets and an over reliance on sequels or derivative movies have also been associated unfavorably with conglomerate organization and the mentality of the top executive in charge.”³⁰⁶ Waterman also notes that the claimed efficiency benefits of conglomeration have come into question.

³⁰¹ Meehan, 2005, Eileen R., *Why TV is not Our Fault* (New York, Rowman and Littlefield, 2005), p. 111.

³⁰² *Id.*, p. 111.

³⁰³ Bielby and Bielby, p. 590.

³⁰⁴ Einstein, p. 194-195.

³⁰⁵ Bielby and Bielby, p. 581.

³⁰⁶ Waterman, p. 30.

When merger plans are announced, industry analysts often cite efficiencies, such as workforce combinations, or marketing advantages, such as the ability to cross-promote movies using television, magazines or other media assets also owned by the conglomerate. Also, commonly mentioned are the advantages of vertical integration, such as the ownership of television or cable networks that can serve as guaranteed outlets for movies produced by the conglomerate's studio branch. A related benefit is the ability to consolidate exploitation of a single story idea or character through books, magazines, television shows, music publishing, Internet web sites, or other media within a single corporation. The economic advantages of such operating efficiencies (often called economies of scope) are plausible. However, real multimedia exploitation within the same conglomerate is apparently infrequent and other efficiency claims have come into recent disrepute – notably in the cases of AOL-Time Warner and the ABC-Disney mergers.³⁰⁷

Claims that programming decisions reflect the efficient choice of the best available product are difficult to support in light of this description of the changes in behavior as well as the patterns in the data. These changes and patterns are more consistent with the argument that the vertically integrated oligopoly favors its own content and prefers to deal within the oligopoly.

The quantitative analysis of the quality of television is even more complex. Independents were virtually eliminated from prime time and have little opportunity to bring new product to that space, so before and after comparisons tell us little, other than the fact that they were excluded. Moreover, there is no box office to count. The essential point here is that given the opportunity to appear in the exhibition space, independents held their own.

The debate over the impact of vertical integration on quality is difficult to resolve, as many factors were affecting the industry. Still, the pattern of declining ratings observed over a twenty-year period is consistent with the claim that self-dealing had an impact. Prior to the repeal of Fin-Syn, independents and major studios dominated the top shows. The networks did not even pull their weight. They were somewhat underrepresented in these ratings. After the repeal of Fin-Syn, the vertically integrated oligopoly completely dominates the space. There are very few independents and no non-integrated majors in the top 30 shows. When the independents do return to the top 30 in the early 2000s, it is with reality shows, not scripted entertainments.

Figure XVI-3 show the rating of the top 30 shows over the relevant period before and after the return of vertical integration. There are two shifts downward – one in the early 1990s, as the Fin-Syn rules came under attack; one in the late 1990s and early 2000s as the integration of major studios took place. The correlation with the changing pattern of program acquisition discussed earlier is clear. While the quantitative and qualitative evidence on quality cannot prove that vertical integration was the culprit in the decline of quality, it makes a strong case that independents were eliminated not because of an inability to produce high quality and popular content, but rather as a result of a poorly run marketplace for production.

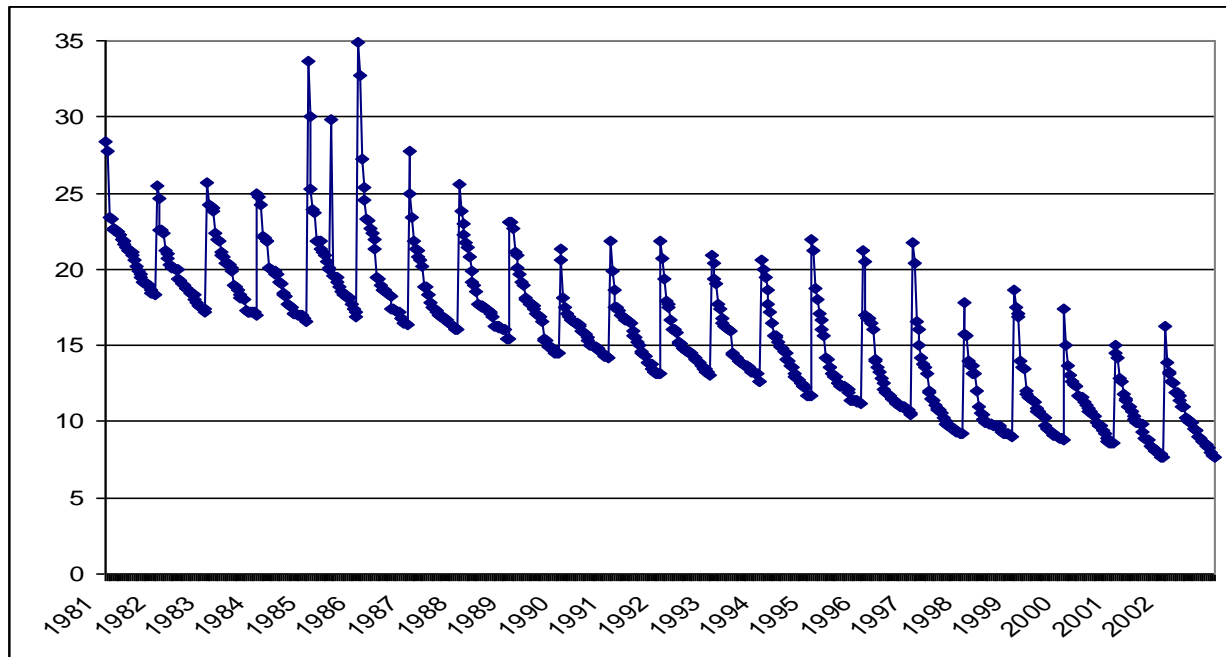
CONCLUSION

The pattern of market structural change and conduct across the first five decades of the commercial TV industry clearly support the concern about the negative impact of the abuse of

³⁰⁷ Waterman, p. 30; Peltier, 2004, Stephanie, "Mergers and Acquisitions in the Media Industries: Were Failures Predictable," *Journal of Media Economics*, 17(4), 2004.

market power and vertical leverage. The efforts of the Department of Justice and the FCC to constrain that market power and abuse in the effort to protect OTT competition is well-grounded in this history.

FIGURE XVI-3: DECLINING RATINGS OF THE TOP 30 TV SHOWS



Source: Tim Brooks and Earle Marsh, *The Complete Directory to Prime Time Network and Cable TV Shows: 1946 – Present*, (New York: Ballantine, 2003), Appendix 3; Beta Study System database.

XVII. PRIVACY

PRIVACY AS A SOCIAL VALUE

Loss of privacy and concerns about privacy are important social and economic issues but they are difficult to quantify and they have a somewhat different relationship to the core economic analysis of this paper. In this Section, I will present three perspectives on the privacy problem.

- First, I will paint a broad picture of the consumer concerns and public interest group frustration with the lack of action and reliance on ineffective self-regulation to protect consumers.
- Second, I will briefly describe the individual market failure, which teach important lessons about the development of consumer-producer relations in the digital economy.
- Third, I will analyze the unique concern that the FCC has about the gathering and abuse of data by communications network operators.

In this section I argue that privacy is an important social value like universal service and market imperfections have diminished the extent to which the marketplace delivers the level of privacy that consumers want. In addition, it can be argued that the marketplace is ill-equipped to deliver privacy, much like it is ill-equipped to deliver universal service or seamless interconnection and the Communications Act has a role to play because network operators pose a unique threat to consumer privacy.

Concerns about online privacy were expressed from the earliest days of the commercialization of the Internet. Privacy merits analysis as an important aspect of communications policy in the digital age for three reasons.

- It is a deeply felt qualitative issue that raises concerns about the fundamental definition and treatment of communications, heightened by the firestorm over surveillance.
- The analysis of the digital markets shows many imperfections in the treatment of privacy that reflect the changes in technology and how they affect the relationship between consumers and producers.
- The decision of the FCC to propose rules governing privacy as it is affected by the operation of the communications network shows the importance of the legal classification of services and the special power of communications network.
- The opposition to regulation from the *laissez faire* advocates reflects a primary theme in their reaction to change in the telecommunications sector – the claim that antitrust oversight is all that is needed

The intense concern about privacy is reflected in a dozen reports by the FTC commencing at the very beginning of the official launch of the Internet as a commercial undertaking, as identified in Table XVII-1:

TABLE XVII-1: FTC REPORTS ON ONLINE PRIVACY

1. FTC Staff Report, *Public Workshop on Consumer Privacy on the Global Information Infrastructure* (December 1996), at, <http://www.ftc.gov/reports/privacy/Privacy1.shtm>.
2. *FTC Announces Two Significant Efforts In Its Comprehensive Examination Of Consumer Privacy* (March 4 1997), <http://www.ftc.gov/opa/1997/03/conspriv.shtm>.
3. *FTC, Privacy Online: A Report to Congress* (June 1998), at 41, <http://www.ftc.gov/reports/privacy3/priv-23a.pdf>.
4. FTC Press Release, *FTC and Commerce Dept. to Hold Public Workshop on Online Privacy* (September 15, 1999), <http://www.ftc.gov/opa/1999/09/profiling.shtm>.
5. *FTC, Privacy Online: Fair Information Practices in the Electronic Marketplace* (May 2000), <http://www.ftc.gov/reports/privacy2000/privacy2000.pdf>.
6. *FTC, Online Profiling: A Report to Congress, Part 2 Recommendations* (July 2000), at 10, <http://www.ftc.gov/os/2000/07/onlineprofiling.pdf>.
7. *FTC, Town Hall, Behavioral Advertising: Tracking, Targeting, and Technology*, <http://www.ftc.gov/bcp/workshops/ehavioral/index.shtml>.
8. *FTC to Examine Consumer Tracking Practices Used by Online Ad Industry*, 6 PVLR 1275 (2007).
9. *FTC, Online Behavioral Advertising Moving the Discussion Forward to Possible Self-Regulatory Principles* (December 2007), <http://www.ftc.gov/os/2007/12/P859900stmt.pdf>.
10. *FTC, Protecting Consumers in the Next Tech-ade: A Report by the Staff of the Federal Trade Commission* (March 2008), <http://www.ftc.gov/os/2008/03/P064101tech.pdf>.
11. *FTC Staff Report, Self-Regulatory Principles For Online Behavioral Advertising, Behavioral Advertising Tracking, Targeting, & Technology* (February 2009), at 32, <http://www.ftc.gov/os/2009/02/P085400behavadreport.pdf>.
12. *FTC, Protecting Consumer Privacy in an Era of Rapid Change: A Proposed Framework for Businesses and Policymakers* (December 1, 2010), <http://www.ftc.gov/os/2010/12/101201privacyreport.pdf>.

Source: https://en.wikipedia.org/wiki/FTC_regulation_of_behavioral_advertising

A Federal Trade Commission report in 1999 led to the creation of a voluntary self-regulatory regime. In November of 2007, the Federal Trade Commission held a Town Hall meeting on behavioral advertising to promote discussion about how to address concerns about behavioral advertising and the broader problem of online privacy. Soon thereafter it issues Online Behavioral Advertising Self-Regulatory Principles issued by the FTC on December 20, 2007.

The Department of Commerce issued analyses of the concerns. While the FTC generally denied any need for regulation, the final report in this sequence acknowledged a significant problem, and fashion a new category of action. After a decade and a half of denial, the FTC declared that

Given these limitations, Commission staff supports a more uniform and comprehensive consumer choice mechanism for online behavioral advertising, sometimes referred to as “Do Not Track.” Such a universal mechanism could be accomplished by legislation or potentially through robust, enforceable self-regulation.³⁰⁸

Needless to say, the frustration of the public interest advocates who had long maintained that responsible federal authorities had underestimate the magnitude and scope of the problem. Subsequently the Federal Trade Commission and The Obama administration issued a broad set of principles and the Department of Commerce later instituted a multi-stakeholder dialogue

³⁰⁸ FTC, 2010.

process to try to reach consensus about additional steps to be taken. Many of the most prominent public interest groups withdrew from the process, feeling it was not adequately reflecting and unlikely to lead to an outcome that would address them.

Underscoring the continuing concern about privacy, after the FCC classified broadband as a service regulated under Title II of the Communications Act (a common carrier telecommunications service), it moved to assert its authority over customer proprietary information. Needless to say, the reaction of the *laissez faire* advocates was swift and loud.

Much of the debate is influenced by a difference in the framing of the fundamental nature of privacy. Some public interest advocates view consumer privacy as a right to be protected, not a harm to be avoided. The notion that privacy is a human right goes back centuries. In modern times, it is found in the 1948 United Nations Declaration of Human Rights³⁰⁹ and in many international conventions and treaties.

MARKET FAILURE

Our analysis of the government reports shows that even if one approaches the issue for the point of view market performance and market imperfections as outlined early in this paper, there is more than enough evidence of the threat to the public welfare to justify dramatic changes in public policy designed to improve consumer privacy protection. Given the focus of this analysis, I examine the economic aspects of the privacy issue.

Table XVII-2 uses the FTC and DOC paper to illustrate that the market imperfections leading to the failure of the market to protect consumer privacy are pervasive. The Table identifies three dozen specific examples of market imperfections that affect privacy spread across five of the different types of market failure outlined earlier in the paper. Using them to reflect the FTC's analysis of the market failure demonstrates a pervasive, multifaceted problem. The analysis in the policy papers were focused on behavioral advertising, which is a highly valued commercial activity among advertisers and data brokers and a source of great concern to consumers.

The public interest groups concluded that the FTC staff report, *Protecting Consumer Privacy in an Era of Rapid Change*,³¹⁰ demonstrated the underlying causes of the failure of the digital marketplace to create an effective regime for consumers to protect their privacy. Public Interest groups looked at the analyses by the two government agencies and the dialogue at the Town hall meeting as proof that seven years of industry self-regulation, neither the voluntary organizations nor the individual companies' approaches to privacy protection are working.

The pervasiveness and nature of the market imperfections led the public interest groups to conclude that much more than transparency is necessary to correct the failure of the market to provide adequate privacy protection. The relationships between information gatherers and the technology of information gathering and exploitation make it highly unlikely that consumers will be able to keep up with and evaluate information on a real-time basis. Even where they have the

³⁰⁹ "No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks." <http://www.un.org/Overview/rights.html>

³¹⁰ FTC, 2010.

skills and abilities, the transaction costs of doing so on a transaction-by-transaction basis would be very high.

TABLE XVII-2: MARKET IMPERFECTIONS LEADING TO THE FAILURE OF PRIVACY PROTECTION IN CYBERSPACE

Societal: Situations where important values are not well reflected in market transactions

Externalities: Trust is undermined¹

Non-economic Values: Concern,² Fear of Being Monitored,³ and Exposed,⁴ Reputational Harm,⁵ Unwanted Intrusion,⁶ Physical Security,⁷

Structural: Conditions that result in inefficient outcomes

Insufficient Competition: Incomprehensible Privacy Policies,⁸ Inadequate Choice⁹

Economic Harm: Bad Purchase Decisions,¹⁰ Security Breaches,¹¹ Identity theft¹²

Endemic: Tendencies of economic relations that undermine key market functions

Perverse Incentives: Incomprehensible Privacy Policies,¹³ Slow to React¹⁴

Asymmetric Information: Speed of Technological Change¹⁵ v. Slowness to React,¹⁶ Difficulty of Detecting Harm,¹⁷ Invisibility of Transactions and 3rd Party Relations¹⁸

Transaction costs: Frictions that impose costs and constrain exchange

Search and Information Costs: Lack of Simple and Clear Information,¹⁹ Cost of Interrupting Transactions to Find, Evaluate and Act to Protect Privacy,²⁰ Invisibility of Transactions and 3rd party Relations to Consumers²¹

Bargaining Costs: Lack of Alternatives,²² Inability to Define²³

Policing and Enforcement Costs: Difficulty of Detecting Harm,²⁴ Complexity, Level and Amount of Information Gathered,²⁵ Rapid Pace of Technological Change,²⁶ Third Party Relationships²⁷

Behavioral: Psychological and other human traits that bound “maximizing” actions

Motivation: Concerns,²⁸ Fear of Being Monitored²⁹

Perception: Reputational Harm³⁰

Calculation: Failure to Understand,³¹ Failure to Appreciate Risk,³² Lack of Awareness³³

Execution: Struggle to Keep Pace,³⁴ Do Not Read³⁵

Sources and Notes: U.S. Department of Commerce, *Commercial Data and Innovation in the Internet Economy: A Dynamic Policy Framework*, December 2010; Federal Trade Commission, *Protecting Consumer Privacy in an Era of Rapid Change: A Proposed Framework for Businesses and Policymakers*, December 2010.

1. DOC, pp. vi, 1, 13, 15.

2. FTC, pp. iii, 28-30, DOC, pp. 3, 16-17.

3. FTC, p. iii.

4. FTC, p. 20.

5. FTC, p. iii.

6. FTC, p. iii.

7. FTC, p. iii.

8. FTC, pp. iii, 26..

9. FTC, p. 19.

10. DOC, p. 1.

11. DOC, p. iii.

12. DOC, p. 1,

13. FTC, pp. iii, 26.

14. FTC, p. iii, DOC, p. 1.

15. FTC, p. 36.

16. FTC, p. iii.

17. FTC, p. 33.

18. FTC, pp. I, iii, 26.

19. DOC, p. vii

20. FTC, p. 27

21. FTC, pp. iii, 26.

22. FTC, p. iii.

23. FTC, p. iv, 35,

24. FTC, p. 33.

25. FTC, pp. ii, DOC, p. 18-19.

26. FTC, pp. ii, iii.

27. FTC, pp. ii, DOC, p. 16.

28. FTC, pp. iii, 28-30, DOC, pp. 3, 16-

29. FTC, p. iii.

30. FTC, p. iii.

31. FTC, p. ii, 26,, DOC p. 4.

32. FTC, p. ii.

33. FTC, p. ii.

34. FTC, pp. ii, 26.

35. FTC, p. iii.

Adding in concerns about values only reinforces the conclusion that voluntary self-regulation is insufficient. Behavioral targeting may be particularly harmful to vulnerable populations, including youth and the elderly. Although the survey data showed that few consumers of any age comprehend the trade-offs involved with behavioral targeting, youth and the elderly are at special risk of not understanding the consequences of being tracked online. These populations in particular deserve better than an opt-out description buried five clicks away in a privacy policy.

“Sensitive information,” a hot topic at the Town Hall meeting, gets to the heart of another harm stemming from behavioral targeting. Industry practices concerning the collection of health, sexual, religious, political, and other forms of sensitive data are not uniform and mostly unregulated, leaving open the potential for highly personal information to be exposed. It is easy to see the danger of a situation where an employee’s health condition is at risk of being revealed to his or her employer – and yet the controls around this kind of data collection and use in the behavioral targeting area are slim.

Behavioral data is also open to civil subpoenas, court orders, and unauthorized or warrantless government access. Civil litigants and government authorities will no doubt soon realize the treasure trove of behavioral profile information held by online behavioral targeting firms.

Behavioral targeting also opens the door to undue price discrimination and red lining. While these practices may not yet be widespread in the marketplace, there is little standing in the way of employing behavioral data for these purposes, while consumers remain ignorant to such developments.

Finally, because behavioral targeting involves the collection of large quantities of data about individuals, security breaches – both internal and external – are a constant threat and may expose consumers to the risks of identity theft. Aside from reacting to major data breaches, the FTC has little capacity to monitor or detect the extent of these harms.

Throughout the green paper there are statements about the current state of privacy protection in the United States that the public interest groups did not believe are supportable, e.g. from the Foreword: “Our laws and policies, backed by strong enforcement, provide effective commercial data privacy protections.” In fact, the U.S. has very few privacy laws, and those I have are “fragmented,” contrary to the assertion in the Foreword, covering only specific entities such as financial institutions and health care providers, or very narrow situations such as the passing of consumers’ financial account number for marketing purposes from one company with which consumers have done business online to another online vendor or sharing children’s online data. The groups concluded that the Federal Trade Commission’s (FTC) Self-Regulatory Principles for Online Behavioral Advertising and voluntary industry self-regulatory programs had proven inadequate to ensure that consumers have effective control if they do not want their online behavior to be tracked for purposes beyond fulfilling the transactions they make. If the current regime is so effective, why does the DOC repeatedly acknowledge that more needs to be done?

- Only if consumers are strongly interested, extremely literate, well- informed and highly skilled can they negotiate the opaque, inconsistent morass of opt-

out procedures, and even then, there are numerous data collection and tracking mechanisms that go undisclosed.

- Unfortunately, the vast majority of consumers lack one or more of these characteristics and therefore are not protected.
- Somewhat less than 5 percent of consumers are effectively able to protect their privacy.
- While 85% of the companies have privacy statements, but that 99% of them are incomprehensible. As a result, less than one percent of consumers read privacy statements.

The industry focuses its efforts on providing a sliver of the population that has the necessary characteristics to exercise choice enough of an option to be placated and silent, while the vast majority of consumers are exploited. In the technological battle with online advertisers, the consumer is outgunned. I need policy to ensure the consumer is protected and can effectively exercise choice.

The industry claims things are good in the privacy space of the online market because there are some sites that would let the consumer opt-out with as few as three clicks (but the average seems closer to five), but it is well recognized that I know that each click dissuades a significant percentage of consumers from taking action. Consumer privacy is not getting a fair shake in the online market.

Furthermore, many consumers who see privacy policies simply assume that this means that their information is not shared with others and that it is not combined with information about them obtained from other sources. When online behavioral tracking and targeting is explained to them in simple terms, a significant number reject it if their only choices are to agree in order to get content from the site or to pay for the site and not have their information collected.³¹¹

I find multiple and diverse advertisers and partners with different privacy, data gathering and marketing policies on individual pages and within individual sessions, each of which requires a separate action by consumers to protect themselves and for which there is no immediate and clear notice of the information that is being tracked or how it will be used.

Survey evidence shows a huge gap between what consumers want and what marketers think they deserve.³¹² This is not an uniformed public, as suggested by the presenter; it is a public that is very concerned about its privacy. The desire of over three-quarters of the respondents for strong privacy protection is not being met in the marketplace.

As a result, the gathering of the data is not subject to meaningfully informed consent and the use of the data is surreptitious. It circumvents consumer defenses to the detriment of the consumer.

³¹¹ Turow, Joseph, Deirdre K. Mulligan and Chris Jay Hoofnagle, 2007,

³¹² Ponemon, 2008.

Simply put, there is a fundamental mismatch between the technologies of tracking and targeting and consumers' ability to exercise informed judgment and control over their personal data. The result is that consumers suffer a persistent and substantial disadvantage vis-à-vis marketers.

Because behavioral targeting involves practices that are inherently deceptive they distort consumption. The inherently deceptive practices that pervade the behavioral marketing space include suggestions of relationships that do not exist and use of information about the consumer that the consumer has not willingly divulged to the seller. A search of the FTC web site for policy statements on deception and found only one such statement from 1983. It is contained in a letter signed by James C. Miller, FTC chairman at the time (a really bad guy) to John Dingell, Chairman of the Energy and Commerce Committee. Commissioners Pertschuk and Bailey dissented, but I have been unable to turn up their dissents. Nevertheless, the practices and case law reviewed in Miller's definition of FTC policy on deception supports the following statement on behavioral tracking and targeting as deceptive and unfair practices.

Behavioral tracking and targeting constitute a deceptive and unfair practice based on the failure to disclose material information to the consumer that is likely to result in consumer detriment. Consumers are likely to be misled because they have the reasonable expectation that their behavioral information is not being collected and used for targeting.³¹³

The Department of Commerce offered a "Consumer Privacy Bill of Rights" and the Federal Trade Commission identified best practices that it seeks to impose on the industry, but both approaches lacked vigorous enforcement and privacy advocates were far from satisfied.³¹⁴

PRIVACY AND NETWORK INFORMATION

When the FCC classified BIAS services as Title II services, it created a new opportunity to provide greater privacy protection for consumers by imposing strong obligations on service providers who pose the greatest threat to privacy.³¹⁵ At one level, the FCC did not have to "justify" imposing privacy protection over consumer proprietary information – it was obligated to do so under Title II. It felt a need to explain why it did not forbear from using these powers when it classified BIAS as a Title II service, as it had done for other provision of the Title.

The FCC's reasoning fits squarely within the style of analysis we have seen throughout this paper. The FCC concluded that, because of the unique position of network operators in the flow of information, they had far greater access than any other service provider and therefore a greater incentive and ability to abuse their leverage.

Looking back at Figure VI-1, we can see the bases for this conclusion. The network operators are located at the bottleneck in the digital communications network. They can see everything that the consumer does.

³¹³ When the practices are targeted at specific audiences, such as children, the elderly, etc., the deceptive practices are evaluated in light of the ability of the targeted group to anticipate or appreciate that the practices may be deceptive or unfair.

³¹⁴ FCC, Privacy Order, 2016, uses these as the framework for its policies, after explaining why it is taking action. In this sense, it makes mandatory what they FTC and DOC had left largely voluntary.

³¹⁵ FCC, Privacy Order, 2016.

Based on our review of the record, we reaffirm our earlier finding that “a broadband provider ‘sits at a privileged place in the network, the bottleneck between the customer and the rest of the Internet’— a position that we have referred to as a gatekeeper. As such, BIAS providers can collect “an unprecedented breadth” of electronic personal information.³¹⁶

The “unprecedented breadth of information was described as follows:

the record is clear that BIAS providers’ gatekeeper position allows them to see every packet that a consumer sends and received over the Internet, while on the network, including, absent encryption, its content. By contrast, edge providers only see a slice of any given consumers traffic.

These providers therefore have access to vast amounts of information about their customers include when we are online, where we are physically located when we are online, how long we stay online, what devices we use to access the Internet, what websites we visit and what applications we use... “because these are paid service, [the broadband service provider has] the subscriber’s name, address, phone numbers and billing history. The combination gives ISPs a very unique, detailed and comprehensive view of their users that can be used to profile them in ways that are commercially lucrative (pp. 3...11).

The edge companies have access to a restricted set of quarter of consumer information and that access can be blocked by browser controls. The network operators have access to much more information both in scope and nature. Because they must route information, they see all flows. Because they have a business relationship to the consumer, they have general consumer proprietary information that can be combined the information on transactions.

With respect to encryption of content, the FCC pointed out that the majority of transactions (well in excess of two-thirds) were not encrypted and that sensitive information was less likely to be encrypted, with barely any health care information being encrypted.

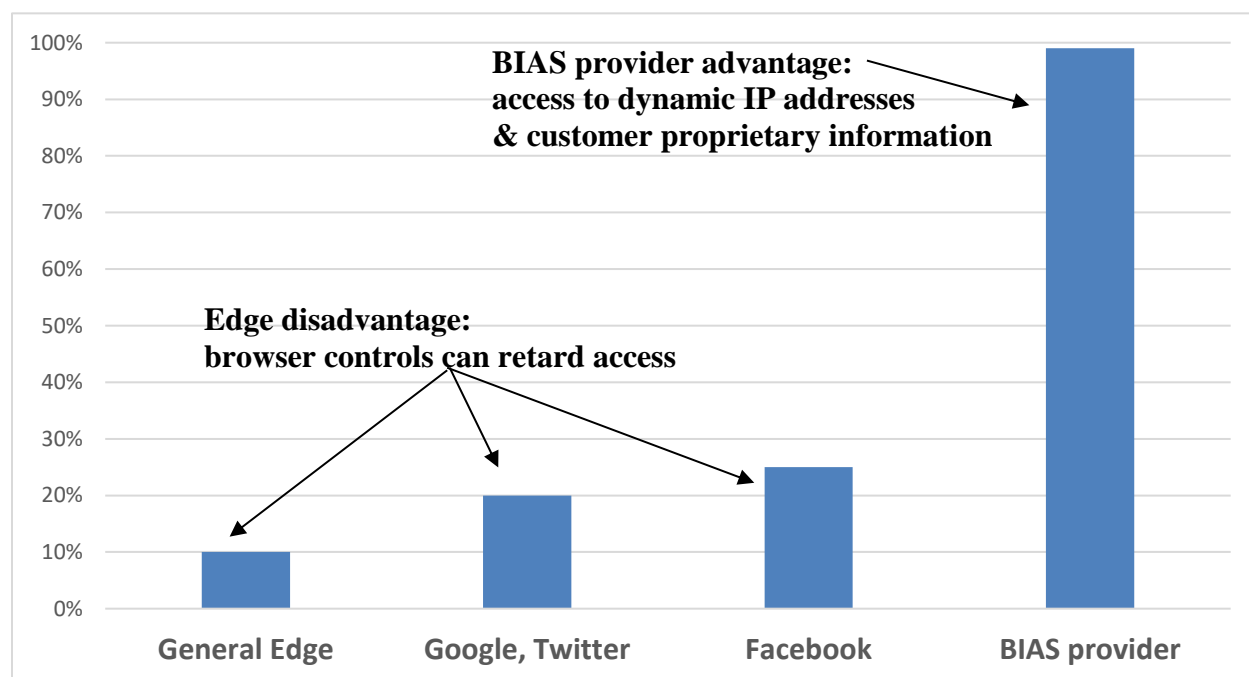
The FCC went on to describe the position of the network operators and the edge companies as depicted in Figure XVII-1.

The FCC defined privacy rights as “fundamental because they protect important personal interests” and drew a direct link between privacy and the success of the digital ecology through its role in supporting the virtuous cycle:

By bolstering customer confidence in broadband providers’ treatment of confidential customer information, we also promote the virtuous cycle of innovation in which new uses of the network lead to increased end-user demand for broadband, which drives network improvements, which in turn lead to further network uses, business growth and innovation....

³¹⁶ FCC, Privacy Order, p. 9.

**FIGURE XVII-1: SCOPE & REACH OF EDGE V. NETWORK SERVICE PROVIDERS:
% OF INFORMATION SEEN AND QUALITATIVE FACTORS AFFECTING AVAILABILITY**



Source: Federal Communications Commission, In the Matter of Protecting the Privacy of Customers of Broadband and Other Telecommunications Services, WC Docket No. 16-106, November 2, 2016.

[O]ur sector-specific privacy rules are necessary to address the distinct characteristics of telecommunications services. The record demonstrates that strong customer privacy protection will encourage broadband usage and, in turn investment. We further find that when consumers are confident that their privacy is protected, they will be more likely to adopt and use broadband services³¹⁷

The problem was not only the access to information, but also the market failures that surround the information. The FCC noted that half of all BIAS customers, at levels of service that met the definition of basic service were captives of a single provider. They have no choice in the market.³¹⁸ There is a lack of choice in another sense, in that consumers must reveal certain information to network operators in order to have the transaction take place.³¹⁹ Even in the circumstances where consumers have a choice for true broadband (almost entirely made up of only two providers), the FCC notes that

“[b]roadband providers have the ability to act as gatekeepers even in the absence of the sort of a market concentration that would enable them to impose substantial price increases on end users.” Their position is strengthened by the high switching costs

³¹⁷ FCC, Privacy Order, pp. 3.... 14.

³¹⁸ Id., p. 13.

³¹⁹ Id., pp. 12-13.

customers face when seeking a new service, which could deter customers from changing BIAS providers if they are unsatisfied [with] the provider's privacy policy.³²⁰

Simply put, the privacy rule, the last rule adopted by the FCC during the Obama administration, rested the rule on the market structural conditions we have explored throughout this paper.

³²⁰ Id., p. 13.

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