

TRIPLE PLAY: A PLAN FOR OPEN DATA SYSTEMS; REGULATED SHARING ON CONVERGENT NETWORKS USING PROPERTY RIGHTS AND MARKETS

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PART I - INTRODUCTION

Telecommunication in the United States is a giant and important enterprise. The four largest telephone and cable companies have a combined market capitalization of over \$300 billion and yearly revenue in excess of \$150 billion.¹ The Federal Communications Commission (FCC), the agency charged with regulating interstate wireline communication², has grown to over 1900 employees, its regulations on competition exceed 400 pages³ and its yearly budget is over \$200 million.⁴ Congress passes laws on communications policy, a politicized commission interprets those laws and promulgated rules, the industry sues and the courts rule and overrule one another. There is too much conflict inside communications policy. This Note proposes a potential solution for part of the problem.

In most American communities the communications needs of the population are served by a duopoly consisting of the telephone company and the cable company. It is also possible, given the current environment of consolidation, for a single provider to capture in a monopolistic fashion the communications capacity of an entire community. There are many reasons why this is not a desirable situation. Corruption⁵, democracy⁶, and quality of life all argue for competition

¹ These are the old regional Bell companies Verizon (\$107b market cap., \$68b revenue), SBC (\$83b/\$43b), BellSouth (\$53b/\$22b), and Qwest (\$8b/\$15b); cable companies Comcast (\$41b/\$12b), Time Warner (\$77b/\$8b), Cox (\$20b/\$6b) and Charter (\$1.2b/\$4.8b). See Emily Nelson & Joe Flint, *Comcast's Big Play for Mickey*, WALL ST. J., Feb. 12, 2004, at B1 (listing the largest cable companies by number of subscribers), Almar Latour, *BellSouth Near Deal as It Refocuses*, WALL ST. J., Mar. 4, 2004, at A3 (listing the four Bells), and *NASDAQ's Summary Quotes and Company Financials at*, <http://quotes.nasdaq.com> (Mar. 22, 2004).

² 47 U.S.C. § 154 (West 2002).

³ Volume 3 of Title 47 on Telecommunications is 434 pages. 47 C.F.R. §§ 40-69 (2004).

⁴ OFFICE OF MANAGEMENT AND BUDGET, BUDGET OF THE UNITED STATES GOVERNMENT: FISCAL YEAR 2005 1125-26 (2004), available at <http://www.gpoaccess.gov/usbudget/index.html> (2004).

⁵ See Roger Lowenstein, *The Company They Kept*, N. Y. TIMES MAG., Feb. 1, 2004, at 27 (detailing fraud and theft at Adelphia Communications by its founder, John Rigas, and his children).

in communications.⁷ Whether or not it is economically efficient to consolidate all communications under a single firm, the values of our democracy have always argued that some inefficiency is desirable.⁸

The technological theme of convergence has become more pronounced as the digital revolution has progressed. Convergence is not a new idea. It has been explored for much of the last 30 years in various decisions by the FCC.⁹ Recently, it has been embodied in the power of the internet and cheap computing that has made business and government start to think about voice, video, and data as fungible items, differing only in their bandwidth requirements. Future productivity gains, distance learning, and advanced telecommunication are all contingent on the function and price of convergent networks.

The current state of affairs in consumer internet, video, and voice is the result of regulatory policy driven by uneven technological development in the three different services.¹⁰ Each network was built to its own specifications and bandwidth requirement. Regulators have historically viewed telephone and cable construction as a natural monopoly, that a single firm could provide service at a lower cost than multiple firms in a competitive market. These are assumptions that have recently been questioned and debunked leading to massive regulatory reform by Congress and a system of competition that endeavors to be lead by the “invisible hand” and not

⁶ See Mathew Rose, *TV Networks Join Forces to Fight Backlash Over Station Ownership*, WALL ST. J., Sep. 2, 2003, at A1 (noting, “Opponents fear the FCC move would leave a small number of companies with undue influence over the media.”).

⁷ See Andy Pasztor & Anne Marie Squeo, *News Corp. Gains Control of DirecTV*, WALL ST. J., Dec. 22, 2003, at B4 (detailing the debates over consolidation in telecommunications and stating, “The decision also is bound to stoke a public debate over controls on media ownership, an issue that has embroiled the commission, Congress and the White House in sometimes-rancorous disputes over the dangers of consolidating television outlets.”).

⁸ See generally N.R. DANIELIAN, A.T.&T.: THE STORY OF INDUSTRIAL CONQUEST 408 (1939) (“accepting the fact that large corporate enterprises are vital components of our national existence, we cannot fail to judge them by their performance not only in the market place for goods, but also as forces that condition the broader economic and political aspirations of the people.”).

⁹ See *infra* Part III.

¹⁰ See, e.g., Yochi J. Dreazen & Anne Marie Squeo, WALL ST. J., Nov. 28, 2003, at A4 (noting the difficulty of regulating, “galloping pace of technological innovation has blurred lines between technologies and erased the original rationales for regulations that govern them, he says. ‘The laws really have very little idea how to keep up,’ Mr. Powell says).

the “invisible litigator.” Creation of competition through the current system of regulation appears to be progressing slowly and even regressing.¹¹

The current regulatory policy is driven by the legacies of the old telephone monopoly. This Note proposes a strategy for the regulation of the next generation in telecommunications infrastructure. It attempts to formulate a framework that maximizes both competition and efficiency while avoiding many of the problems of the current regime. Acknowledging the speed with which communications technologies are advancing, the proposed framework would abandon current infrastructure to anti-trust doctrine and current competition, trading this deregulation for regulation in the deployment of the current state of the art advancements.

This Note assumes that the future of telecommunications will take the form of fiber optic cables to the curb (FTTC) or to the home (FTTH) and proposes to regulate only those technologies that are similar. Where a provider seeks to provide a “triple play,” the provision of voice, data, and video over the same system, or when the builder seeks to provide capacity in excess of a certain preset limit of bandwidth capability (perhaps 1000 MHz) the proposed regulation would enter into force. The bandwidth that can be achieved through fiber allows all types of services currently regulated and unregulated to be supplied through one media and provider. The ability of a single provider to capture the entire market for telecommunications makes it essential that these new technologies be more open and accessible than the telephone or cable television network of the past.

This Note proposes that fiber to the premises and other truly broadband services¹² be treated similarly to the way bandwidth is beginning to be treated in the broadcast spectrum. The pro-

¹¹ See U.S. Telecom Ass. v. F.C.C., No. 00-1012 (D.C. Cir. 2004) (overruling previous F.C.C. rules that had been litigated at the Supreme Court twice).

¹² See *infra* Part III(d).

posed regulations would require a network infrastructure builder to conform to a well-recognized set of industry standards, in part promulgated by the FCC, while limiting usage of their own fiber bandwidth to 1/3 of the system's capacity. This limit would be paired with an auction of the remaining bandwidth on the open market for a contract period consonant in length with the depreciation of capital invested by the auction winner.

This proposal would eliminate the possibility of monopoly and "last mile" roadblocks, use competition to set prices for the majority of the bandwidth on the network, eliminate current legal battles over unbundling and sharing of network elements while leveraging the efficiencies found in previous monopoly situations. Its success depends upon the existence and promulgation of standards in networking which have proven, at least in the internet context, simple to create and maintain.¹³

It is assumed that competition in providing communications services is its own good. It is also assumed that not all services need to be facilities based. Competition can exist through efficiencies in other disciplines, for example, billing and customer service. If clear rules, like the ones proposed, do not pay for themselves through lower transactions costs by eliminating costly rulemaking proceedings and endless court battles, the stimulus to democracy might well be worth the price. This proposal would create jobs in the high-tech sector expanding the Nation's base of technical expertise and avoid an undemocratic concentration of capital.

Part II of this Note provides a background into the economics of regulation and government controlled competition. Part III traces the historical development of deregulation through the FCC and the courts. Part IV introduces the proposal for Open Data Systems, modeled on prior FCC rules governing cable television, describes in further detail the system offered above and

¹³ See generally ERIC STEVEN RAYMOND, THE ART OF UNIX PROGRAMMING 35-41 (2004), available at <http://www.faqs.org/docs/artu/ch17s02.html> (last visited Mar. 17, 2004).

gives reason and argument for its adoption. Finally, Part V concludes that the current system is broken and promises to tarnish the future of fiber based broadband communications.

PART II – (A) ELEMENTS OF THE CURRENT LAW

It has long been recognized that some businesses are not entirely outside the realm of the public's interest. By their very nature some ventures are so entwined with the well being and productivity of a society that the courts have assigned special duties to them.¹⁴ The very first of these businesses were engaged in ship borne transport.¹⁵ There exists a direct analogy to the communications businesses of today – before information could be transmitted through the manipulation of electrons it was conveyed through fixation on physical objects – paper. Seen this way, courts have regulated businesses involved in communications for hundreds of years. Judges have, from the beginning, recognized that certain business owners should be restricted from the pure pursuit of profit where the well-being of the public is at stake.¹⁶ Before the advent of modern, professional, bureaucratic regulation, the judiciary filled this role. The doctrine of common carrier is a manifestation of the special duties assigned by judges to some business and has developed its meaning through the common law.

The key elements of common carrier status are firstly that the carrier itself asserts that it serves customers on an indiscriminate basis and secondly, that the customer chooses what is to be carried. In the context of communications carriers, the customer chooses what information to transmit and the carrier is not in the business of altering it.¹⁷ This general, common law derived, definition was incorporated into the Communications Act of 1934 as a result of the Act's self

¹⁴ See generally Phil Nichols, *Redefining 'Common Carrier'*, 1987 DUKE L.J. 501, 506-07 (citing English common law governing ports and noting that the interest of the central government was superior to that of private interests).

¹⁵ *Id.*

¹⁶ “While the operator of a wharf or dock was free to profit from his proprietary interest, *jus privatum*, Lord Hale held that...the public right conflicted with and superseded the private right in ports” *Id.*

¹⁷ See Nat'l Ass'n of Regulatory Utility Comm'rs v. F. C. C., 533 F.2d 601, 610 (D.C. Cir. 1976). In the context of the Communications Act of 1934 and the 1996 Telecommunications Act, see PETER W. HUBER, MICHAEL K. KELLOGG & JOHN THORNE, *FEDERAL TELECOMMUNICATIONS LAW* 279 (2d. ed., 1999).

referential definition to “common carrier.”¹⁸ Courts have subsequently augmented the statute by defining the term when necessary. Importantly, a common carrier can be defined by a business’ own actions.¹⁹ Attempts to deny common carrier status, and the important statutory duties that then attach, can be derailed by a look at the carriers own actions.

The obligations of common carriers in telecommunications are set out in Title II of the Communications Act.²⁰ They are, briefly, to provide service on a non-discriminatory basis, to interconnect with other services, and to provide these services for prices that are “just and reasonable.”²¹ Although the language of the Act is broad, it is worth noting that its edicts have been complied with for seventy years. There exists much expertise inside the commission in regulating interconnection and what constitutes “discrimination” in this context. It is the belief of this Note, that a strong common carrier duty is in the public interest and that the only offensive portion of common carrier regulation stems from regulators attempting to define “just and reasonable” rates without a corresponding market test.

When considering the setting of rates, important problems quickly arise in relation to the duties of common carriers. Where cargo and information is carried at several different levels and volumes by wholesalers, resellers, retailers, and consumers, the duties of the common carrier can become unclear. Who is the common carrier required to carry for, and at what rate? Should the law mandate discounts for volume or is the carrier entitled to monopoly rents on all carriage?

Both answers to this argument can be found in the *Express Packages Cases*.²² The holdings there have been cited as the start of many problems in the deregulation and interconnection of

¹⁸ 47 U.S.C. § 153 (2002). This reference survives in the 1996 Act due to Congress’ direction that the new amendments be edited into the original Act. See 47 U.S.C. § 609 (2004).

¹⁹ See *Nat’l Ass’n of Regulatory Utility Comm’rs*, 533 F.2d at 608.

²⁰ The amended act is available at, <http://www.fcc.gov/Reports/1934new.pdf>. Title II is at 47 U.S.C. § 201 (2004).

²¹ *Id.*

²² 117 U.S. 1 (1885).

telecommunications in current history.²³ The *Express Cases* involved a group of companies best described as the Federal Expresses of the 19th century.²⁴ Through contractual relations with the railroads, the express companies secured favorable rates and privileges to transport goods using the facilities of the railroads.²⁵ These cozy relationships dissolved after consolidation in the railroad industry and the desire on the part of the railroads to enter the express business itself.²⁶ A legal battle ensued and the lower court entered a permanent injunction.²⁷

The contents of the injunction, and its subsequent vacation by the Supreme Court, have all the elements of the modern debate over regulation in microcosm. The decree essentially declared the railroads common carriers vis-à-vis the express companies. It granted the express companies custody over their packages and held that the railroads must carry express matter for “just and reasonable rates” while providing the necessary facilities to all express companies, none favored over others. The decree was unequivocal that the:

“defendant ... be ... permanently and perpetually enjoined and restrained from interfering with or disturbing in any manner the enjoyment by the plaintiff of the facilities provided for in this decree... and from interfering with or disturbing the business of the said plaintiff in any way or manner whatsoever; the said plaintiff paying for the services performed for it by the defendant monthly, as herein prescribed, at a rate not exceeding fifty per centum more than its prescribed rates for the transportation of ordinary freight, and not exceeding the rate at which it may itself transport express matter on its own account, or for any other express or other corporation or for private individuals”²⁸

This judicial activism and regulation in the form of a permanent injunction was far from acceptable to a Supreme Court deeply committed to freedom of contract. The court overruled the decision with little deliberation, stating, “There is no right to access for express carriers beyond

²³ See HUBER, *supra* note 17, at 15.

²⁴ *Express Packages Cases*, 117 U.S. 1 at 3 (noting express companies “afford the public, under a single contract, and on assured responsibility, safe, reliable, and speedy transportation from and to all points accessible only over two or more railroads”).

²⁵ *Id.* at 4-6.

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.* at 17.

those rights that they have negotiated and secured by contract.”²⁹ Further the court held that the decree was outside the competence of the courts, “This is the providence of the legislature and not the judiciary to create.”³⁰ Congress answered this call the very next year with the passage of the Interstate Commerce Act.³¹ The Interstate Commerce Commission, created by that act, was the federal government’s first foray into modern regulatory policy.³²

(B) IS BROADBAND A NATURAL MONOPOLY?

The formation of the ICC was a Congressional attempt to control an industry in which competition did not seem to be an efficient or effective check upon monopoly. The earliest days of the railroad are a good example of a natural monopoly. Natural monopoly is said to exist in a field in which a single supplier can operate more efficiently than can a host of competitors.³³ In the context of telephone or broadband competition one can imagine a city street crowded with utility poles, electrical wires, transformers, and tangles of lines to digest this contention. The simplicity of a single supplier can be both more efficient, easier on the eyes and more easily regulated.

It is a debatable point whether or not local telephone service is a natural monopoly; experts have argued both sides at different points in time.³⁴ The academic argument over whether a single technology is suitably home for a natural monopoly is a debate generally grounded within the technology that is currently the dominant driving force within that field. In the field of communications, this Note believes the public is best served where there are many voices and competi-

²⁹ *Id.*

³⁰ *Id.*

³¹ Interstate Commerce Act, ch. 104, 24 Stat. 379 (1887) (enactment repealed).

³² See generally THOMAS K. MCGRAW, *PROPHETS OF REGULATION* (1984) (detailing the life of Charles Adams, the first head of the ICC).

³³ See STEPHEN G. BREYER, *REGULATION AND ITS REFORM* 15 (1982), 2 ALFRED E. KAHN, *THE ECONOMICS OF REGULATION*, 119 (1989).

³⁴ See generally Daniel F. Spulber, *Deregulating Telecommunications*, 12 *YALE J. ON REG.* 25 (arguing that there is no single best technology for local telecommunications, that the connectivity of networks renders natural monopoly obsolete and that the problem of duplicative facilities no longer applies).

tion within each method of conveyance, even if this goal requires the sacrifice of some efficiency within the industry.

The evaluation of natural monopoly within broadband is, for some communities, essentially a discussion of the “local loop.” The local loop is the copper line that extends from the telephone companies’ central office to the subscriber. Currently this loop can carry voice and data. How much of a natural monopoly is the local loop? The existence of cellular phone service and cable telephony³⁵ demonstrate that other firms can profit in this arena, and would seem to show that the regional Bell operating companies (RBOCs) can not cut prices to a point that thwarts this competition; that their costs must be somewhat commensurate with those of other firms. Current technology allows multiple lines to be aggregated onto lines of fiber than can run alongside current copper loops, space for lines is no longer a limiting factor. Data equivalent to thousands of copper loops can be run more cheaply inside a single glass fiber for a fraction of the cost. Data can be aggregated and switched with commodity equipment and routed in a similar fashion just as cheaply.

Of course, it is the opposite of natural monopoly, perfect competition, that the regulator seeks to emulate and policy should seek to achieve.³⁶ In this model, numerous firms of small size compete vigorously with each other eking out profits that approach zero.³⁷ Since none of the firms are large enough to effect the prices they charge and all of them are similarly situated in the market place buying their inputs, a state of equilibrium is reached that is the most competi-

³⁵ This is the transmission of telephone conversations over the physical plant previously used for cable television. This is not necessarily what is known as voice over internet protocol (VoIP); the cable company can switch calls over the public switched telephone network (PSTN) from its head-end.

³⁶ See WILLIAM J. BAUMOL & J. GREGORY SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY 28 (1994). Baumol and Sidak propose three rules that regulators should seek to follow. The first is that “where competitive forces are adequate and effective, the regulator should eschew all forms of intervention.” The second rule is that regulators should study competitive markets and try to establish rules in their regulated markets that mirror the behaviors seen in the “real world” of competitive markets. Rule number three is: don’t do anything more than you have to. *Id.*

³⁷ *Id.* at 31.

tive possible.³⁸ Baumol and Sidak writing in 1994 concluded that this model is not applicable to local telephone service,³⁹ however, once the model is changed and telephone service is seen as a data service, an application, not as the provision of the underlying transmission substrate, the network, perfect competition is a more applicable model than natural monopoly.

It has been the tendency of technology to remove industries from the list of natural monopolies through progress.⁴⁰ The most obvious and successful former natural monopoly was the “long lines” or long distance component of the Bell System.⁴¹ What was once thought to be a natural monopoly is now a competitive marketplace for long distance communications.⁴² Success in the long distance business is determined as much by customer service, efficiency in billing and advertising and creative packaging of available services as it is by the efficient operation of the actual trunks.

Two separate ideas can be useful when considering natural monopolies. One set of ideas is best described as the physical component of natural monopoly. The other set of ideas concern organization. I’ve also split the discussion of the physical aspects in to two distinct ideas for ease of evaluation.

First, are the concepts associated with scale of service. Many markets that are susceptible to natural monopoly categorization are markets that can be divided according to the volume of the good supplied. The electricity market, for example, one that is in the throws of deregulation in

³⁸ *Id.*

³⁹ *Id.* at 33.

⁴⁰ See KAHN, *supra* note 33, at 127. “That provision of local telephone service is a natural monopoly is generally conceded.” *Id.* AT&T v. Iowa Util. Bd., 525 U.S. 366, 371 (1999) (stating, “local phone service was *thought* to be a natural monopoly.” (italics supplied)). Steven Semeraro, *The Antitrust-Telecom Connection*, 40 SAN DIEGO L. REV. 555, 601 (2003) (finding that the 1996 Act “rests on the assumption that all aspects of local telephone service are not natural monopolies.”).

⁴¹ See generally STEVE COLL, *DEAL OF THE CENTURY* (1986) (detailing the Justice Department’s case against AT&T and the role played by MCI and the FCC in precipitating the breakup).

⁴² See BREYER, *supra* note 33, at 288. There are currently over 800 suppliers of long distance service in the United States. See North American Numbering Plan, *Carrier Identification Codes*, at http://www.nanpa.com/number_resource_info/carrier_id_codes.html (last visited Mar. 17, 2004) (listing carrier access codes necessary to route long distance calls over the PSTN).

California⁴³ consists of generators of all different sizes (nuclear, hydro-electric, gas fired), transporters, the state regulated grid, and several different scales of local delivery. It might be generally accepted that one portion of the system is a natural monopoly, in this case the local delivery, but this does not suggest that the other components of the industry are also.

The second, and more powerful, factor is technology. In any industry, changes in technology can alter the competitive landscape to such a degree that competition becomes possible where it previously would have been inefficient. Microwave transmission⁴⁴ of voice signals, or even coaxial cable, may have been the invention that made competition feasible in the long lines market. In our electricity example, small hydrogen powered generators that can be located inside of residential communities, or super conducting power transmission lines could alter the dynamics of the power industry in the near future. The main point is that technology is the most important factor of production in controlling costs. Changes in technology should be accompanied by changes in regulation.

Technology can also alter the scale and structure of the underlying business. When a function can be relocated from its historical position, for example from a main-frame computer in a corporate computing center to the desktop, regulation must adapt to these changes. Continuing with our prior electricity example, if technology makes small hydrogen powered units more efficient than mass generation (due perhaps to loss in transmission) it would be more effective for regulators to allow local placement of generation and mandate local interconnection. When regulation fails to adapt, the results are wasted fuel and energy lost in transmission.

⁴³ See generally Michael Hiltzik, *Power Plant Deal Shines Bad Light on the PUC*, L.A. TIMES, Mar. 11, 2004, at C1.

⁴⁴ See generally Allocation of Microwave Frequencies Above 890 Mc., 27 FCC 359 (1959).

Defenses of natural monopoly regulation are also commonly conducted through claims of the heightened organizational capacity of monopoly control.⁴⁵ Closely styled after a slogan of former Bell System head Theodore Vail, “One System, One Policy, Universal Service,” this argument centers on the ability of a single firm to organize and maintain a more effective network.⁴⁶ These claims should be brought under increasing scrutiny in light of recent developments in information technology and industrialization. Monopoly efficiency arguments assume that only single firms can propagate and compete using a single standard. This is perhaps linked to the previous monopoly of AT&T in both equipment manufacture and supply.⁴⁷ This model posits that firms compete by constructing entire systems from scratch, designing, building, and deploying them. It is no longer an accurate model of systems in an information society. Efficiency and the rise of standards have come to characterize the production of high technology components. It is possible that the proprietary model of competition has benefits for firms that are currently unexplored, but the disincentives seem to mediate the desire for these extra efficiencies.⁴⁸ In the realm of high-technology, proprietary systems are often seen as anti-competitive.⁴⁹

Organizational theory is also challenging the assumptions of the economies of scale model. The internet makes the success of efforts involving hundreds of autonomous actors possible. Combining a common goal and an accepted set of standards, these networks demonstrate that

⁴⁵ William P. Barnett & Glen R. Carroll, *How Institutional Constraints Affected the Organization of Early U.S. Telephony*, 9 J. L. ECON. & ORG. 98, 99 (1993).

⁴⁶ See Thomas W. Bonnett, *Is ISP-Bound Traffic Local or Interstate?*, 53 FED. COMM. L. J. 239, 254 (2001).

⁴⁷ In 1956, Western Electric was limited by consent decree to supplying equipment only to the Bell System and government. See *United States v. Western Elec. Co.*, 1956 Trade Cases (CCH) P68, 246 (D. N.J. 1956).

⁴⁸ It is arguable that Microsoft is a company that generates profits from proprietary technology. Yet it can also be argued that almost all of its products operate using internet standards for which no attempt has been made to replace. The Betamax debacle of the late 1970's was a concrete lesson for industry that complying with standards can both increase the chances of success and mitigate the losses from possible failure. Compare the Beta format to that of the compact disc. By investing in a successful standard a firm saves on investment and increases the product's value through interoperability and consumer familiarity.

⁴⁹ See Jube Shiver Jr., *Microsoft is Facing Record EU Fine*, L.A. TIMES, Mar. 23, 2004, at C1 (noting that Microsoft used its monopoly to “crush rivals”).

loose organizations can exceed the efficiency of tightly controlled hierarchical efforts. This type of phenomenon is explained by Eric S. Raymond in his important work “The Cathedral and the Bazaar.”⁵⁰

Raymond presents two views of the world of software production, the cathedral and the bazaar. The cathedral is a highly organized and hierarchical organization, supposedly characterized by low transaction costs while the Bazaar is the wild-west of the internet, a world of autonomous entities contracting in complete freedom, often in non-monetized transactions.⁵¹ That best of breed software could be completed in the latter environment was initially doubted even by Raymond: “I believed that the most important software (operating systems and really large tools like the Emacs programming editor) needed to be built like cathedrals, carefully crafted by individual wizards or small bands of mages working in splendid isolation, with no beta to be released before its time.”⁵²

Raymond’s experience with “fetchmail” a small program used to move mail from a central server to a workstation, allowed him to “understand why the Linux world not only didn't fly apart in confusion but seemed to go from strength to strength at a speed barely imaginable to cathedral-builders.”⁵³ Linux is the kernel of an advanced computer operating system that is developed by semi-autonomous software engineers, without pay, around the world. Perhaps Linux exemplifies the distributed model of network development; it is bound by public standards, yet open to innovation from all contributors.

My final point about the efficiency of multiple organizations and the provision of broadband data services relies on a truism of computer design and information technology formulated by

⁵⁰ ERIC S. RAYMOND, *THE CATHEDRAL AND THE BAZAAR* (1999), available at <http://www.catb.org/~esr/writings/cathedral-bazaar/cathedral-bazaar/> (last visited Mar. 17, 2004).

⁵¹ See generally Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 *YALE L.J.* 369 (2002).

⁵² See RAYMOND, *supra* note 50, at ___.

⁵³ *Id.*

Alan Turing over fifty years ago.⁵⁴ Turing, a mathematician by training, engineered computing machines during the Second World War to decipher encrypted German military communications for the British government. Primitive computers were developed by Turing and his team to reduce the amount of human calculation involved in decryption. By the end of the war, Turing had become the father of British computing.⁵⁵

Turing's most enduring contribution to computer science is the "Turing Machine." A Turing Machine is a theoretical machine that can be thought of as a typewriter that writes on long paper tape instead of single sheets of paper. The machine can both place symbols on the tape and read these symbols, as well as move and erase them. Turing posited that any symbol manipulating machine – computer – can be mimicked by a Turing Machine with sufficiently long tape.⁵⁶ Foreign at the time of conception, the modern day computer with gigabytes of memory is a Turing Machine. In practice, Turing's theory allows that any computer can emulate the workings of any other computer with perfection.⁵⁷

While Turing's machine was theoretical, the modern computer can emulate anything that processes data. This ability of modern machines to "talk" to one another makes the danger of inefficient interconnection or incompatible networks far less probable. Voice, data, and video can be ported from one network to another at the cost of computing power, the price of which drops with predictable regularity.⁵⁸

⁵⁴ See ANDREW HODGES, *ALAN TURING: THE ENIGMA* (1983) (providing a fascinating account of both a genius and the birth of the computer age, as well as a frightening social commentary).

⁵⁵ *Id.* at 295, 317.

⁵⁶ *Id.* at 96-99.

⁵⁷ See, e.g., Charles Forelle & Don Clark, *EMC to Buy VMware for \$635 Million*, WALL ST. J., Dec. 16, 2003, at B6 (noting that server virtualization allows "personal computer users to run Windows and Linux on the same system at the same time").

⁵⁸ That processor power doubles every eighteen months is known as Moore's Law. Gordon E. Moore, *The Experts Look Ahead*, ELECTRONICS, April 19, 1965.

(C) THE ECONOMICS OF REGULATION

Freedom of contract and the ability of market participants to enter into their own business relationships are the hallmarks of the market, the system that we believe to be the most efficient allocator of resources.⁵⁹ Where prices are set by regulation and not competition, as is generally the case for most local telephone service, regulators must allocate resources in a way they think most conforms to the optimal allocations. Regulators must also determine the correct quality of service, the cost of that service, and whether there are any externalities that need to be considered.⁶⁰ This task is known as rate setting. Two persistent problems have historically accompanied it; determining the rate base and the rate of return.⁶¹ The two problems are intertwined. The rate base is generally defined as the total capital investment, minus depreciation, that the regulated firm has employed in the regulated industry. The rate of return is the ratio of the rate base to the profit that regulators allow through the setting of rates.

During the history of AT&T's monopoly of telephone service, it was widely acknowledged that the financial accounting presented to regulators was often far from a realistic representation of reality.⁶² Regulated industries will be reluctant to depreciate their hardware at reasonable rates due to the imposed rate of return. The more capital a company subject to rate of return regulation can show is invested in the provision of service, the higher the product of that number and their regulated rate of return.⁶³ Depreciation and placing value on sunk costs remains a point

⁵⁹ See KAHN, *supra* note 33, at 1.

⁶⁰ See BREYER, *supra* note 33, at 36.

⁶¹ See KAHN, *supra* note 33, at 35.

⁶² See, e.g., W. Page Montgomery, Dr. Lee L. Selwyn, *Implementing Price Caps for AT&T or other Dominant Carriers*, PRACTISING LAW INSTITUTE PATENTS, COPYRIGHTS, TRADEMARKS, AND LITERARY PROPERTY COURSE HANDBOOK SERIES, December 10, 1987, at 94, noting, "[O]ne reason why transfer prices between AT&T and its manufacturing units have long been a regulatory issue is the perceived incentive on the carrier's part to accept inflated prices for the manufactured goods used to provide its services. These transfer prices become part of the regulated service rate base unless regulators are clever enough to detect the inflation."

⁶³ *Id.*

of contention in modern regulation. The current debate centers on whether equipment should be valued at its historical cost or by the cost of its replacement with modern equipment.⁶⁴

The second factor, the rate of return, tries to limit the profits of regulated monopolies by presetting the return on invested capital. This gets the market entirely backward. The point of financial markets is that efficiency, profits and dividends set the value of a certain asset. It is logical to assume that if regulators set the rate of return too high, capital will be drawn inefficiently from other investments to take advantage of the high rate of return. Conversely, setting the rate too low will undercapitalize the firm and provide too little service.⁶⁵

The point of this limited discussion is that the market is perhaps the only effective way to set prices and determine the efficiency of various producers. Any system of rate setting by regulation will result in no small amount of guesswork and gamesmanship.⁶⁶ Other types of regulation, quality of service, disclosure, anti-trust, or the creation of property rights, at least allow firms to individually consider the new regulation as a “law of nature”, like gravity, figure this into their cost calculations and compete in the new environment. Where rate setting exists, competition in price is hard to find.⁶⁷

(D) A SHORT HISTORY OF TELECOMMUNICATIONS COMPETITION

The early years of the telephone industry were monopolized by the Bell companies.⁶⁸ The technology necessary to conduct a telecommunications business was patented by Bell, giving his company and its successors sole dominion over the new business.⁶⁹ The patents on these core

⁶⁴ See discussion on TELRIC, *infra* Part III(c).

⁶⁵ See BREYER, *supra* note 33, at 42.

⁶⁶ “This discussion is meant to suggest that setting a rate of return cannot— even in principle— be reduced to an exact science. To spend hours of hearing time considering elaborate rate-of-return models is of doubtful value, and suggestions of a proper rate, carried out to several decimal places, give an air of precision that must be false.” *Id.* at 47.

⁶⁷ In California, local telephone service is 94% incumbent controlled. CALIFORNIA PUBLIC UTILITIES COMMISSION, THE STATUS OF TELECOMMUNICATIONS COMPETITION IN CALIFORNIA 6 (2003).

⁶⁸ See DANIELIAN, *supra* note 8, at 100.

⁶⁹ *Id.* at 7.

technologies allowed Bell to eliminate would be competitors through the use of the courts for over twenty years.⁷⁰ The Bell Company's litigiousness is a trait that has persisted through to the current day while almost nothing else of the original system is recognizable.⁷¹ Although AT&T maintained a constant monopoly hold over the entire industry from soon after the passing of Communications Act until this day⁷² there was a period from the expiration of the Bell patents until 1934 that saw substantial amounts of competition in the provision of local telephone service.⁷³

Statistics from the research of William Barnett and Glenn Carroll are very illuminating when examined under the expectations of those raised under the AT&T monopoly. Barnett and Carroll counted over 30,000 independent operators within the United States at one time or another with almost half of all incorporated places being served by two companies in 1902, as well as 34 states requiring competitors to complete each other's calls.⁷⁴ They highlight the importance of political boundaries in creating opportunities for competition. The results of the research suggest that local political units can create a barrier to the influential capacity of large telecom companies. The high number of local political sub-groups to penetrate and the existence of entrenched interest groups prior to the entry of an organized telecom lobby as well as the large number of other issues brought to bear on local governments made it difficult to monopolize these markets.⁷⁵

⁷⁰ See Barnett & Carol, *supra* note 45, at 100.

⁷¹ See HUBER, *supra* note 17, at 7.

⁷² About 3% of all telephone lines nationally are owned by competitive providers. FEDERAL COMMUNICATIONS COMMISSION, LOCAL TELEPHONE COMPETITION: STATUS AS OF JUNE 30, 2003 1,2 (2003).

⁷³ See Barnett & Carol, *supra* note 45, at 105.

⁷⁴ *Id.* at 109.

⁷⁵ *Id.* at 111.

Barnett suggests that this interim period in telecom regulation was a consequence of local independence. From 1913 onwards, with the signing of the Kingsberry Commitment,⁷⁶ regulation of telecom is taken to the Federal level. The Communications Act of 1934 continued this trend. These actions allowed the AT&T monopoly to expand, consolidate, and perpetuate with government support. Congress, by exercising its role as regulator of interstate commerce, centralized the lobbying of what had previously been local politics. With end-to-end regulation of the system, it was easier for regulators to deal with a single company. Competition in local service was effectively squelched until the passage of the Telecommunications Act of 1996.⁷⁷

(E) NETWORKS AND NETWORK TRAFFIC

There is no larger disruption to a regulatory regime than innovation. Development of commercial information processing capability provided the stimulus for the FCC to provide for the new capacities within their regulations. After it became clear to the FCC that telecommunications were being used to transport data and that telecommunications equipment could be used for data processing the FCC launched its First Computer Inquiry (Computer I)⁷⁸ in an attempted to determine which portions of the new industries should be regulated. After a false start in Computer I, the FCC articulated a lasting and meaningful set of definitions in Computer II⁷⁹ of the

⁷⁶ This was an agreement between the U.S. Attorney General and AT&T that stopped the company from purchasing local telephone companies. *See id.* at 122 for its full text. *See also* Danielian, *supra* note 8, at 76.

⁷⁷ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, codified at 47 U.S.C. §§ 151, et seq.

⁷⁸ *See Regulatory and Policy Problems Presented By the Interdependence of Computer and Communication Services and Facilities: Notice of Inquiry*, 7 F.C.C. 2d 11 (1966) (noting, “Effective use of the computer is ... becoming increasingly dependent upon communication common carrier facilities and services by which the computers and the user are given instantaneous access to each other.”). *Regulatory and Policy Problems Presented by the Interdependence of Computer and Communication Service Facilities: Notice of Proposed Rulemaking and Tentative Decision*, 28 F.C.C.2d 291 (1970), *Final Decision and Order*, 28 F.C.C.2d 267 (1971) [Computer I], *aff’d in part sub nom. GTE Service Corp. v. FCC*, 474 F.2d 724 (2nd Cir. 1973), *decision on remand, Order*, 40 F.C.C.2d 293 (1973).

⁷⁹ *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry): Tentative Decision*, 72 F.C.C. 2d 358 (1979), *Final Decision*, 77 F.C.C. 2d 384 (1980) [Computer II], *recon., Mem. Op. and Order* 84 F.C.C. 2d 50 (1981), *further recon., Order on Further Reconsideration*, 88 F.C.C. 2d 512 (1981), *aff’d sub nom. Computer and Communications Industry Ass’n. v. FCC*, 693 F.2d 198 (D.C. Cir. 1982), *cert. denied*, 461 U.S. 938 (1983).

type of communications that should be subject to the most stringent portion of the Communications Act.⁸⁰

Computer II did an excellent job in describing the difference between “basic services” and “enhanced services.”⁸¹ The Commission has described its mission as regulating basic services, “the transmission of an unaltered message through a network.”⁸² Enhanced services are data processing services, or what might be called “applications” these days. Computer II announced that the Commission wanted no role in regulating the applications for which subscribers would utilize basic telecommunications. Computer II was a recognition that telephony was just one use to which a network might be used:

Thus in providing a communications service, carriers no longer control the use to which the transmission medium is put. More and more the thrust is for carriers to provide bandwidth or data rate capacity adequate to accommodate a subscriber's communications needs, regardless of whether subscribers use it for voice, data, video, facsimile, or other forms of transmission.⁸³

Basic services under Computer II are still subject to Title II of the Act⁸⁴. Common carriers are required to provide service at tariffed prices on a non-discriminatory basis to all customers.⁸⁵ This basic concept is the foundation of open access, the notion that all providers should have the opportunity to provide applications over regulated networks. Much of the litigation and controversy that was to come in the 20 years after Computer II stems from corporations' desire to provide both basic and enhanced services. If the conceptual division of Computer II could have

⁸⁰ Computer I described two categories of service “pure communications” and “pure data processing.” Unfortunately, many services fell somewhere between the two, offering some telecommunications combined with data processing. These “hybrid services” the commission decided to deal with on a case by case basis. The eventual flood of confusion paved the way for the Second inquiry. See generally Robert Cannon, *The Legacy of the Federal Communication Commission's Computer Inquiries*, 55 FED. COMM. L.J. 167 (2003).

⁸¹ The current definition of enhanced services is 47 C.F.R. § 64.702 (2003) (providing that enhanced services, “refer to services, offered over common carrier transmission facilities used in interstate communications, which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information.”).

⁸² *Computer II, Tentative Decision*, 72 F.C.C. 2d at para. 29.

⁸³ *Computer II*, 77 F.C.C. 2d at para. 94.

⁸⁴ Title II is codified at 47 U.S.C. §§ 201, et seq.

⁸⁵ See *Computer and Communications Industry Ass'n*, 693 F.2d at 198.

been sustained as a structural barrier in business, the incentives of the RBOC's to profit from their monopoly networks could have been eliminated.

The Commission's definitions are still useful in the current environment of convergence.⁸⁶ The categories allow us to differentiate between networks and applications, physical pipes, and content. When the commission required structural separation between the RBOC's provision of basic and enhanced services they had grasped an essential element of this Note's proposal.⁸⁷ The Commission realized that the Bell's could leverage their monopoly to subsidize the new enhanced services, giving them the ability to price enhanced services in a predatory fashion.⁸⁸ Given the Bells' history of exclusion, the structural separation was probably a good idea.⁸⁹ Separating the suppliers of transmission substrate from content and applications is a reasonably pro-competitive regulatory strategy considering the temptation to control a network to the exclusion of others.

PART III – (A) COMPETITION AFTER 1996

The text of the 1996 Telecommunications Act clearly indicates a desire on the part of Congress to end monopoly and promote competition in all areas of the local exchange.⁹⁰ Part two of the act is titled "Development of Competitive Markets," a clear declaration of intent. The Act seeks to create these new markets using a combination of duties and restraints. The duties fall on the incumbent local exchange carriers (ILECs, mainly RBOCs), chiefly the duty to interconnect

⁸⁶ Convergence was used even in the first inquiry. *See Computer I*, 7 F.C.C. 2d 11.

⁸⁷ *See infra* Part IV.

⁸⁸ "The Computer II rules also required common carriers to keep separate accounts of their regulated basic service and their competitive services. Thus, the carriers must sell their basic service to themselves at the tariff rate when they provide enhanced services to their customers. These requirements were designed to prevent 'cross-subsidization' of a carrier's unregulated services by its regulated services." *Computer and Communications Industry Ass'n*, 693 F.2d at 198.

⁸⁹ The Bells had been successful in preventing any other equipment manufacturers from attaching devices to their network until the decision in *Use of the Carterphone Device in Message Toll Telephone Service*, Decision, 13 F.C.C.2d 430, *recons. denied*, 14 F.C.C.2d 571 (1968). Bell warned that foreign equipment might cause the failure of the entire national phone system and had its engineers testify to this effect. *Id.*

⁹⁰ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, codified at 47 U.S.C. §§ 151, et seq.

and provide network access to competitors, to conform to well-defined network standards, and to negotiate in good faith.⁹¹ The restraint falls upon the regulators who are no longer allowed to “prohibit ... the ability of any entity to provide any interstate or intrastate telecommunications service.”⁹²

The interconnection requirements of the Act are straightforward. ILECs are required “to interconnect directly or indirectly with the facilities and equipment of other telecommunications carriers” and “not to install network features, functions, or capabilities that do not comply ... with ... standards...” Combined with a duty to negotiate and co-locate the equipment of their competitors the Act is extremely clear in its pro-competitive intent. Although the statutory mandate was clear, several factors have led to its failure to fundamentally remake the provision of telecommunications.

What Congress perhaps failed to see, and is clearer and clearer to others involved in telecommunications, is that control of the network coupled with control of the content and applications create formidable barriers to entry. Incumbents benefit more from the rulemaking process and tend to be anticompetitive.⁹³ In this difficult environment, competitive local exchange carriers (CLECs) have also faced the full force of the incumbent’s legal departments.⁹⁴ Litigation has been widespread and fierce.⁹⁵ Facilities based competition is sorely lacking.⁹⁶ Perhaps Congress was wrong to think that incumbents would loosen their grip on the local telephony monopoly

⁹¹ 47 U.S.C. § 251 (2004).

⁹² 47 U.S.C. § 253 (2004).

⁹³ See Thomas W. Hazlett, *The Wireless Craze, the Unlimited Bandwidth Myth, The Spectrum Auction Faux Pas, and the Punchline to Ronald Coase’s “Big Joke”: An Essay on Airwave Allocation Policy*, 14 HARVARD J.L. & TECH. 335, 398 (2001) (stating, “not all arguments by incumbents are anti-competitive” while noting that the Commission is structurally biased towards favoring the incumbents, under-utilization of existing resources, and resistance to change (italics supplied)).

⁹⁴ See, Reid Hundt, *Speech, in IS THE TELECOMMUNICATION ACT OF 1996 BROKEN?* 3 (J. Gregory Sidak, Thomas J., Jr. Bliley, William P. Barr eds., 1999) (faulting lawyers for disrupting the goals that Congress desired).

⁹⁵ *Id.*

⁹⁶ See F.C.C., *supra* note 72.

without some type of structural incentive.⁹⁷ If the ILECs had been removed from the provision of local service, or divided into transport and applications in a way similar to the local-long distance partitioning of AT&T in 1982, the landscape now might be different.⁹⁸

Another major problem with the Act that will be explored below is that it relied too much on the provision of service and regulated, so called “just and reasonable” rates. As we have already discussed, ratemaking is not a science.⁹⁹ With reliance on regulators and not markets, setting the price of access to essential equipment creates an intractable problem that neither judges, regulators, nor legislators can solve. The current resolution of this problem, implementation of the TELRIC standard is still finding its way through the courts.¹⁰⁰

(B) UNBUNDLED NETWORK ELEMENT LITIGATION

The language of the 1996 Act comports with the diverse needs of competitors seeking to provide broadband or internet access through the “last mile” local loop copper of ILECs. Competitors have no need for much else of the incumbent’s networks. For example, they have no use for the entire public switched telephone network (PSTN) that lives beyond the termination of the local loop. Broadband competitors seek to connect to the local loop at the most convenient point, that point which makes the copper path the shortest.¹⁰¹ Consonant with this, the ’96 Act provides for unbundled access:

The duty to provide, to any ... telecommunications carrier ... access to network elements on an unbundled basis at any technically feasible point on rates, terms, and condi-

⁹⁷ See Sam Masud, *Mass Market Competition: A Mirage?*, TELECOMMUNICATIONS, Jan. 2004, at 11,12 (quoting industry analyst Tom Nolle, “Access should have been established as a public utility. We got it wrong both times [with the divestiture and the ’96 Telecom Act] and so we’ve paid a serious price in job loss and economic turmoil. And we’ll continue to pay for some time in the future for the lack of foresight we showed in these two events”). See also Larry Lessig, *Fiber to the People*, WIRED, Dec., 2003 (noting, “And as more firms persuade more municipalities to develop competing high-speed networks, then we might learn again why GM doesn’t own the highways, and why neither cable nor telecom companies should own IP access.”).

⁹⁸ See U.S. v. AT&T, 552 F.Supp. 131 (D.C. Cir. 1982).

⁹⁹ See BREYER, *supra* note 33, at 47.

¹⁰⁰ See, e.g., U.S. Telecom Ass. v. F.C.C., No. 00-1012 (D.C. Cir. 2004).

¹⁰¹ Broadband over ILEC equipment is currently limited to xDSL technologies. FEDERAL COMMUNICATIONS COMMISSION, INDUSTRY ANALYSIS AND TECHNOLOGY DIVISION WIRELINE COMPETITION BUREAU, HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF JUNE 30, 2003 2-3 (2003).

tions that are just, reasonable, and nondiscriminatory ... [.] An incumbent local exchange carrier shall provide such unbundled network elements in a manner that allows requesting carriers to combine such elements in order to provide such telecommunications service.¹⁰²

On August 8, 1996, the FCC released its first set of rules for the implementation of the Act.¹⁰³ Multiple challenges to the new rules were consolidated in the Eighth Circuit and challenged in *AT&T v. Iowa Utilities Board*.¹⁰⁴ One of the issues litigated in this case was CLEC access to different portions of the ILEC's services and networks.¹⁰⁵ The incumbents argued that the FCC's proposed rules included sharing of items that should not be considered "network elements."¹⁰⁶ These items like billing services, caller ID, and operator assistance, they argued, were not physical network elements, so the Act could not have considered them. The ILEC's attack on the FCC's rulemaking showed a misunderstanding of Congress' goals. Since the telephone network was so tightly integrated, effective competition would require access to all components, software and hardware. The ILECs also argued that competitors should not be allowed to enter the market without any facilities, that a telecommunications company shouldn't be allowed to provide service without any physical facilities.¹⁰⁷ CLECs argued that any item that impaired their ability to provide service should be shared as an unbundled network element (UNE).

Another issue at stake in *Iowa Utilities Board* was the Commission's ability to dictate the price setting mechanism to be used by State commissions in arriving at pricing for the UNEs at issue. The Commission adopted in its rules a cost setting methodology based upon the future value or "total element long-run incremental cost" (TELRIC). The TELRIC methodology ig-

¹⁰² 47 U.S.C. § 251(c)(3) (2004).

¹⁰³ Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, First Report and Order, 11 F.C.C.R. 15,499 (1996).

¹⁰⁴ 525 U.S. 366, 373 (1999).

¹⁰⁵ *Id.* at 374-75.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 376-77.

nores historical investment and value considerations in favor of a present and future value calculation.¹⁰⁸

Both the TELRIC and UNE debates in *Iowa Utilities Board* point to flaws in the 1996 Act. Although the Act is specific in the actions it requires and the duties it places upon the ILEC's, it is not clear what type of telecommunications industry it sought to create. The Act, in many ways, leaves too much to the imagination of the FCC and competitors themselves by not defining clearly what the competitive landscape should look like. Its fuzzy treatment of UNEs and failure to differentiate facilities based from non-facilities based competition are symptoms of its lack of development.

Similarly, the TELRIC debate is just another wrinkle in the Sisyphusian task of setting rates without the benefit of a market. Congress was well aware of the historical problems in rate-making regulation, yet they failed to either express a preference for any particular scheme or devise a market-based simulation¹⁰⁹ or replacement for the tired and oft-litigated “just and reasonable” language.¹¹⁰ It is unclear from the Act what kind of competitive industry Congress envisioned.¹¹¹ These problems were recognized by the Supreme Court:

It would be gross understatement to say that the 1996 Act is not a model of clarity. It is in many important respects a model of ambiguity or indeed even self-contradiction. That is most unfortunate for a piece of legislation that profoundly affects a crucial segment of the economy worth tens of billions of dollars.¹¹²

¹⁰⁸ *Id.* at 374-75.

¹⁰⁹ See BAUMOL & SIDAK, *supra* note 36, at 28.

¹¹⁰ 47 U.S.C. § 201 (2004).

¹¹¹ Justice Breyer was uncomfortable in interpreting the unbundling requirements of the Act as requiring sharing of elements, more confident in facilities based competition: “[A] sharing requirement may diminish the original owner’s incentive[s]...One cannot] guarantee that firms will undertake the investment necessary to produce complex technological innovations knowing that any competitive advantage deriving from those innovations will be dissipated by the sharing requirement.” *AT&T v. Iowa Utils. Bd.*, 525 U.S. at 428 (Breyer, J., concurring in part and dissenting in part).

¹¹² *Id.* at 397.

(C) TELRIC LITIGATION

The history of ratemaking methodology is as long and tortured as the history of regulation. In many ways, the history of regulation hinges upon the differing confidence that courts have in regulatory bodies at different points in history. Since a full recapitulation of the history of rate setting methodology is beyond the scope of this Note, only some of the judicial highlights in this area will be considered.

Justice Breyer has argued: “to determine the replacement cost of a plant or equipment is too complex a task for an administrative process.”¹¹³ This is a cogent analysis. The basic power of a State legislature to set rates for commercial enterprise without invoking the takings clause of the Fifth Amendment as applied through the Fourteenth Amendment was the basic holding of *Munn v. Illinois*.¹¹⁴ *Munn* holds for deference to the legislature, that a state may regulate the maximum charges a private party can charge for the storage of grain without effecting a taking.¹¹⁵ Of the statutes’ ratemaking for grain warehouses the Supreme Court said: “We know that this is a power which may be abused; but that is no argument against its existence. For protection against abuses by legislatures the people must resort to the polls, not to the courts.”¹¹⁶

An early regulatory attempt to define a rate setting formula was set out in *Smyth v. Ames*.¹¹⁷ Its holding is awesome to behold for its utter lack of administrability:

We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And, in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet

¹¹³ See BREYER, *supra* note 33, at 38.

¹¹⁴ 94 U.S. 113 (1876).

¹¹⁵ *Id.* at 123.

¹¹⁶ *Id.* at 134.

¹¹⁷ 169 U.S. 466 (1898)

operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property.¹¹⁸

*Federal Power Commission v. Natural Gas Pipeline*¹¹⁹ along with *Federal Power Commission v. Hope Natural Gas Co.*¹²⁰ gave regulators the power to disregard components of the formula laid out in *Smyth* in favor of a more liberal approach, granting greater deference to regulators. *Hope* relied less on past investment and historical pricing, instead, placing emphasis on the reasonable decisions of regulators. *Hope* allows regulators to choose the method of determining the cost of the regulated services.¹²¹ Either method presents problems. Strict adherence to prior methods can result in poor pricing results when underlying economic conditions change.¹²²

Another problem results when regulators are forced into close relationships with the industries they regulate. A growing cynicism has posited that these cozy relationships yield regulatory bodies that have been “captured” by the industries they regulate.¹²³ Another problem with the debate about forward or historical rate analysis is that much of it can depend upon the time of the ratemaking proceeding. Due to fluctuations in the economy, previous investment can become under or overvalued leading the utility to take differing positions on the correct methodology for ratemaking or in the end wanting a “reproduction cost of the utility or prudent investment, whichever is the higher.”¹²⁴

¹¹⁸ *Id.* at 546-47.

¹¹⁹ 315 U.S. 575 (1942).

¹²⁰ 320 U.S. 591 (1944).

¹²¹ See *Verizon Communications Inc. v. F.C.C.*, 535 U.S. 467, 481 (2002).

¹²² *Hope* and *Federal Power Commission* arose during the depression when economic assumptions were turned on their heads.

¹²³ See generally John Shepard Wiley Jr., *A Capture Theory of Antitrust Federalism*, 99 HARVARD L.REV. 713 (1986). See also *Cottage Savings Ass. v. Comm’r*, 499 U.S. 554 (1991) (demonstrating regulatory capture in a banking context where regulators adjusted accounting rules to help the regulated entities avoid bankruptcy).

¹²⁴ See *Southwestern Bell Tel. Co. v. Public Serv. Comm’n of Mo.*, 262 U.S. 276, 311 (1923) (Brandeis, J., dissenting).

The first FCC order implementing the 1996 Act chose the TELRIC method for setting the prices of UNEs.¹²⁵ The method imagines a rate-setting procedure in which evidence of the reproductive cost of a UNE using the most efficient technology available can be used to set the price of an existing element that is probably less efficient. Incumbents have rejected this scheme, arguing that no new networks would *ever* be built if a competitor could instead extract the most technologically efficient price from an incumbent's facility.¹²⁶ The incumbents, in their attack, favored another method, "efficient component pricing" (ECPR)¹²⁷ which determines prices without a cost input. The court rejected ECPR because of this disconnect: "ECPR does not provide any mechanism for moving prices towards competitive levels; it simply takes prices as given."¹²⁸ The problem with ECPR is that it relies on information supplied by a monopolist.¹²⁹

The most cogent attack upon TELRIC concerns its effects upon the incentives to invest. It argues that since TELRIC at its most accurate represents the value of UNEs as their replacement cost, no rational CLEC would construct any new equipment. The CLEC would instead petition the FCC for pricing review until the price mandated was equal to its contemplated cost of construction. The court was nonetheless un-swayed by the argument.¹³⁰

After *Verizon* the TELRIC methodology had weathered the extended storm. First challenged indirectly in *AT&T v. Iowa Utilities Board*¹³¹ the Supreme Court had affirmed the FCC's authority to stipulate the method to be used to set prices only to see a second challenge, that the

¹²⁵ See Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, 11 F.C.C.R. 15,499, 16,166-67 (1996).

¹²⁶ See *Verizon Communications Inc. v. F.C.C.*, 535 U.S. 467, 549-50 (2002) (Breyer, J., dissenting).

¹²⁷ See generally William J. Baumol & J. Gregory Sidak, *The Pricing of Inputs Sold to Competitors*, 11 YALE J. ON REG. 171 (1994).

¹²⁸ See *Verizon*, 535 U.S. at 514.

¹²⁹ There are various major incentives for regulated industries to restrict the production of information. See ROGER G. NOLL & BRUCE M. OWEN, *THE POLITICAL ECONOMY OF DEREGULATION* 63 (1983).

¹³⁰ See *Verizon*, 535 U.S. at 538-39.

¹³¹ *Iowa Util. Bd.*, 525 U.S. 366 (1999).

TELRIC methodology chosen by the FCC was faulty. TELRIC was upheld in *Verizon* after lengthy debates as to the meaning of the word “cost” and a reliance upon *inefficiencies* built into the TELRIC methodology that would raise the pricing levels enough to encourage competitor investment in facility based competition. The FCC commitment, backed by two Supreme Court decisions is strong.¹³² As of this writing, the rulemaking is still incomplete. The sharing requirements of the 1996 Act are still under ILEC attack.¹³³

(D) LINE SHARING LITIGATION

There are currently two pervasive methods of achieving broadband speeds in the residential context.¹³⁴ Both methods use older infrastructure designed originally for a different task. Cable modems rely on the installed base of coaxial cable originally deployed for common antennae television (CATV) applications. Some parts of the network have been upgraded to provide data services, resulting in what is called “hybrid fiber-coaxial” architecture, but the final link to the subscriber is still over coaxial cable. Digital subscriber lines (DSL) are the other method. DSL uses the existing copper loops used by telephones to provide data communications over a set of frequencies higher in the spectrum than what is necessary for “plain old telephone service” (POTS).

The recent regulatory history of both transmission substrates is illustrative of the current confusion and lack of clear policy that threaten to continue into the coming era of fiber to the

¹³² Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers, 68 Fed. Reg. 59,757 (2003) (to be codified at 47 C.F.R. § 51) (stating, “As a preliminary matter, we reaffirm our commitment to using forward-looking costing principles to determine UNE rates. We decline to open an inquiry into alternative pricing theories, including historical cost, efficient component pricing rule, and Ramsey pricing theories. Instead, in examining UNE pricing rules, the NPRM focuses, and seeks comment, on whether clarifications or modifications should be made to the current forward-looking economic cost-based.”).

¹³³ See James S. Granelli, *Review of Phone Ruling Sought*, L.A. TIMES, Mar. 12, 2004, at C1.

¹³⁴ See Charles L. Jackson, *Wired High-Speed Access*, in BROADBAND: SHOULD WE REGULATE HIGH-SPEED INTERNET ACCESS 83 (Robert W. Crandall & James H. Alleman eds., 2002).

home and true “broadband”¹³⁵ The rulemaking procedures of the FCC are intricate, “open-ended” proceedings that result in a tremendous mass of documents,¹³⁶ correspondingly, what follows will not be a perfect timeline of any proceeding, it will instead offer an outline of a debate that still continues.

Since DSL technology is tied the infrastructure operated by the old RBOCs that have special duties under the 1996 Act¹³⁷ one would assume the FCC would desire and assure that the technology remain open to the entry of competitors. One would be wrong. The continuing regulatory battle, combined with some observations on the general state of competition provides some insight.

Following the explosion of the internet in 1998¹³⁸ and the advent of voice over internet protocol (VOIP),¹³⁹ the FCC opened an investigation into the possible impact of the new technology on the Universal Service Fund, a redistributive tax that subsidizes low-income and rural telecommunications at the expense of businesses and urban users.¹⁴⁰ In their report to congress, the FCC classified internet access services as information services not subject to regulation.¹⁴¹ The FCC also suggested that it might use its new powers of forbearance¹⁴² to refrain from regulating

¹³⁵ See Bruce M. Owen, *Broadband Mysteries*, in BROADBAND: SHOULD WE REGULATE HIGH-SPEED INTERNET ACCESS 9 (Robert W. Crandall & James H. Alleman eds., 2002) (discussing what amount of transmission capability should be defined as broadband. This suggests that “putting a number on it” is a foolish enterprise since advancement in transmission methods and compression techniques are always altering the baselines. A good definition might require enough bandwidth to carry two high-definition television signals while concurrently supporting two telephone calls and a moderately strenuous web browsing session.).

¹³⁶ See Hazlett, *supra* note 93, at 360.

¹³⁷ 47 U.S.C. § 251(h) (2004).

¹³⁸ Although Worldcom suggested that “internet traffic is doubling every 9 months” this was a bold face lie. However, this lie drove investment in the sector. J. Gregory Sidak, *The Failure of Good Intentions: The Worldcom Fraud and the Collapse of American Telecommunications After Deregulation*, 20 YALE J. ON REG. 207 (2003).

¹³⁹ Voice over internet protocol is the ability to emulate a traditional circuit switched telephone conversation over packet switched networks like the internet.

¹⁴⁰ See Federal-State Joint Bd. on Universal Serv., 13 F.C.C.R. 11,501 (1998).

¹⁴¹ *Id.* at 11,536.

¹⁴² See 47 U.S.C. § 160 (2004).

VOIP, expressing hope that any damage to the universal service fund would be offset by growth in the sector, and that deregulation is always pro-growth.¹⁴³

One month after the FCC declared internet access service a deregulated industry, GTE, an incumbent and monopoly player, although not an RBOC, submitted a federal tariff for its new DSL service.¹⁴⁴ From the timing and content of the tariff it seems that GTE hoped to forestall competition in the DSL arena by subjecting competitors to regulation and slowing their growth. After initially noting that DSL doesn't seem to be an interstate service at all, and thus not proper for Federal regulation, the FCC complied and held that DSL contained an interstate component, which required DSL to be tariffed.¹⁴⁵ For an industry that continually bristles under regulation and lobbies for deregulation, the move to tariff the new service was curious. It is reasonable to interpret that faced with well capitalized competition from companies like Covad and Northpoint,¹⁴⁶ ILECs were anxious to use any advantage they might have, including their regulatory expertise in Washington.

Another issue concerning DSL that has seen an FCC reversal is the issue of line-sharing.¹⁴⁷ Line sharing is the term used to describe a situation in which a copper loop is shared; POTS supplied by the RBOC and DSL supplied by a CLEC. Both services are provided over the same "shared" wire.¹⁴⁸ An early FCC order had required this unbundling and sharing as consistent

¹⁴³ See *Universal Service* at 11,545.

¹⁴⁴ GTE Telephone Operating Cos., 13 F.C.C.R. 22,466 (1998).

¹⁴⁵ See *id.* The FCC noted the anti-competitive concerns, "This Commission is well-versed in addressing the price squeeze concerns of new entrants and has in the past successfully forestalled attempts by incumbent LECs to shift costs to monopoly services in order to justify rates that effect a price squeeze." *Id.* at 22,483.

¹⁴⁶ Nick Wingfield, *Telecommunications (A Special Report): Borrowed Lines*, WALL ST. J., Sept. 21, 1998, at R10 (detailing the difficulties encountered by CLECs in dealing with the incumbents).

¹⁴⁷ On the issue of network sharing in general, see ADAM D. THIERER, *WHAT'S YOURS IS MINE: OPEN ACCESS AND THE RISE OF INFRASTRUCTURE SOCIALISM* (2003). This alarmingly titled Cato Institute tract presents many arguments against sharing that are addressed throughout this Note.

¹⁴⁸ Line sharing is "when a competing carrier provides xDSL service over the same line that the incumbent LEC uses to provide voice service to a particular end user, with the incumbent LEC using the low frequency portion of the loop and the competing carrier using the HFPL [high frequency portion.]" Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 F.C.C.R. 16,978, 17,132 (2003).

with the 1996 Act.¹⁴⁹ After the collapse of capital markets for competitive telecommunications companies¹⁵⁰ the FCC decided to review its line sharing rules.¹⁵¹ After the long Triennial Review process¹⁵² the Commission decided in a rancorous opinion to end line sharing.¹⁵³ Commissioner Kathleen Abernathy stated:

“I believe that the majority should own up to the fact that, by cutting off data LECs' access to line sharing, it has shut down residential broadband competition over the copper loop. Any talk of a glide path is fanciful, because, in all likelihood, there will regrettably be no providers left to participate in a transition three years from now.”¹⁵⁴

The recently vacated Triennial Review and the turmoil that has followed the decision reveal tremendous splits both within the Commission and between the FCC and Congress.¹⁵⁵ The Review inconsistently eliminated sharing on copper lines, mandated the sharing of mass market telephone switching capacity, and exempted new fiber construction from any sharing.¹⁵⁶ Even Chairman Powell decried the loss of copper line sharing and suggested that the incongruous results grew more from political horse trading than from detached professionalism.¹⁵⁷ At this writing it is unclear if the Justice Department will appeal the Circuit Court's decision and bring these issues before the Supreme Court once again.

¹⁴⁹ See Deployment of Wireline Services Offering Advanced Telecommunication Capacity, Third Report and Order, 14 F.C.C.R. 20,912, at para. 4 (1999).

¹⁵⁰ See Julia Angwin, *Covad Provides a Saga of Shakeout Survival*, WALL ST. J., Feb. 28, 2002, at B7.

¹⁵¹ See Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Notice of Proposed Rulemaking, 16 F.C.C.R. 22,781, (2001).

¹⁵² Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 18 F.C.C.R. 16,978 (2003) *vacated*, U.S. Telecom Ass. v. F.C.C., No. 00-1012 (D.C. Cir. 2004).

¹⁵³ “Beginning on the effective date of the Commission's Triennial Review Order, the high frequency portion of a copper loop shall no longer be required to be provided as an unbundled network element.” 47 C.F.R. § 51 (2004).

¹⁵⁴ Federal Communications Commission, FCC Adopts New Rules for Network Unbundling Obligations of Incumbent Local Phone Carriers, Press Statement of Commissioner Kathleen Q. Abernathy, Feb. 20, 2003, available at 2003 WL 367314.

¹⁵⁵ See James S. Granelli, *More Urge Justice Department to Appeal Phone Ruling*, L.A. TIMES, Mar. 16, 2004, at C5 (reporting Senators letter to Justice Department urging the reversal of the D.C. Circuit's ruling).

¹⁵⁶ Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, 18 F.C.C.R. 16,978, 17,132, 17,103, 17,237-38 (2003).

¹⁵⁷ See Federal Communications Commission, *Separate Statement of FCC Chairman Michael K. Powell, Approving in Part and Dissenting in Part, Regarding The Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-36A2.pdf.

Although DSL competition over the copper line is still possible if the CLEC were to resell the entire line including voice service, Abernathy noted, “carrier should not be forced to enter the voice telephony market simply to provide competitive DSL service.”¹⁵⁸ Commissioner Adelstein said:

“[Mr. Powell, head of the Commission] puts questions of consolidation and competition pretty low on the heap of things he cares about. By allowing further consolidation, we're forcing everyone into this horrible cycle of being forced to consolidate to stay competitive. These companies are going to get as big as the government allows, and the only thing stopping them is the public interest standard we've basically abandoned.”¹⁵⁹

It is a reasonable assumption that the RBOCs favored placing large capital expenditure stumbling blocks in front of the now poorly financed competition. It is difficult to see how this decision square with the language of the 1996 Act¹⁶⁰ or the Supreme Court’s holding in *Iowa Utilities Board*.¹⁶¹

The state of competition over cable lines is in a different state of flux. Courts have struck down the ability of municipalities to require line sharing over cable as a requirement for their cable franchise as described in the Cable Communications Policy Act of 1984.¹⁶² In *City of Portland v. AT&T*¹⁶³ the court held that internet service provided through cable is not a “cable service” and, as such, it cannot be regulated through municipal franchise agreements.¹⁶⁴ The court held that “[C]ongress has reposed the details of telecommunications policy in the FCC, and we will not impinge on its authority over these matters.”¹⁶⁵ Further that, “Portland may not con-

¹⁵⁸ *Id.*

¹⁵⁹ Yochi J. Dreazen & Anne Marie Squeo, *Reshaping Powell's Vision*, WALL ST. J., Nov. 28, 2003, at A4.

¹⁶⁰ “Such term also includes features, functions, and capabilities that are provided by means of such facility or equipment, including subscriber numbers, databases, signaling systems, and information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service.” 47 U.S.C. § 153(29) (1994 ed., Supp. II).

¹⁶¹ *AT&T v. Iowa Util. Bd.*, 525 U.S. 366, 386-87 (1999) (holding operator and directory assistance UNEs).

¹⁶² Pub. L. 98-54947, 98 Stat 2779, codified at 47 U.S.C. § 541(b)(3) (2004).

¹⁶³ 216 F.3d 871 (9th Cir. 1999).

¹⁶⁴ *Id.* at 877.

¹⁶⁵ *Id.* at 879-80

dition the transfer of the cable franchise on non-discriminatory access to AT&T's cable broadband network.”

The Commission exercised their ancillary jurisdiction to regulate cable in 2002, not to insure access to cable lines for internet communications, but to deregulate cable modem services and insure that the cable companies maintained a monopoly over the data transmitted over its lines.¹⁶⁶ In the opinion of the majority, deregulation and the accompanying lack of common carriage help to advance economic goals. In the words of the Commission, “Classifying cable modem service as an information service will promote our goal of fostering a minimal regulatory environment that promotes investment and innovation in a competitive market.” Over the protestations of ISP’s the commission declined to find a telecommunication, or basic, service inside of cable modems. Where there is no telecommunications service, Title II common carrier regulation does not apply.¹⁶⁷

The minority’s dissent was strong. The analysis was labeled as “scant’ and the decision was dismissed as avoiding the real implications of the issue:

It is a public policy matter of enormous implications. How we get it done affects not only how many megabytes of information our computers can download, but what kinds of options consumers will be able to choose from, what kinds of protections they will have against misguided or fraudulent business practices, and what kinds of opportunities will be available to those in our society who do not share fully in our general prosperity. With so much at stake, I would have hoped for a little more modesty and measured pace on our part.¹⁶⁸

The Ninth Circuit apparently agreed. In *Brand X Internet Services v. F.C.C.*¹⁶⁹ the court held that cable modems are entitled to the same treatment as other wireline communication when

¹⁶⁶ High-Speed Access to the Internet Over Cable and Other Facilities, Internet Over Cable Declaratory Ruling, 17 FCC Red. 4,798 (2002).

¹⁶⁷ *Id.* at 4,833.

¹⁶⁸ *Id.* at 4,871 (dissent of Comm’r Michael Copps).

¹⁶⁹ 345 F.3d 1120 (9th Cir. 2003).

ISP's seek access.¹⁷⁰ The decision overruled the F.C.C.'s order and found enough basic telecommunications service in cable modem service that they be subjected to common carrier regulation.¹⁷¹ This leaves the state of common carriage in broadband contradictory. On the public telephone network, a network built with the cooperation and support of the government under a protective monopoly, the DSL portion of lines need not be shared. Yet on cable lines, built without the same public support, the courts have ordered sharing. As of this writing, *Brand X* is being reheard by an en banc Ninth Circuit.

(E) ANTITRUST LITIGATION

Competition is the favored mode of deciding who shall deliver goods and services in this country. When markets are captured by a single supplier or multiple vendors cooperate with each other in restraint of trade, antitrust law can be applied to return the market to a competitive state. It is widely believed that monopoly markets introduce inefficiencies that lead to society's wasteful allocation of resources.¹⁷² Unregulated or even poorly regulated markets can be made more responsive to competition using the tools of antitrust.¹⁷³ The main federal tools in the antitrust arena are section one and two of the Sherman Act¹⁷⁴. These tools were used successfully to break up the monopoly of the Bell System in 1982.¹⁷⁵ Recently, firms attempting to compete in ILEC dominated business spaces have turned to antitrust for help.

The Sherman Act makes it a felony to "monopolize or attempt to monopolize" any part of a trade or industry.¹⁷⁶ Few courts would dispute that in many markets the provision of broadband

¹⁷⁰ *Id.* at 1140.

¹⁷¹ *Id.*

¹⁷² See generally RICHARD A. POSNER, ANTITRUST LAW 12 (2d ed. 2001) (describing the economic costs of monopoly).

¹⁷³ See BREYER, *supra* note 33, at 156.

¹⁷⁴ 15 U.S.C. §§1 et seq.

¹⁷⁵ See U.S. v. AT&T, 552 F. Supp. 131 (D.C. Cir. 1982). See generally DANIELIAN, *supra* note 8.

¹⁷⁶ 15 U.S.C. § 2 (2004).

services by facilities based providers is a monopoly,¹⁷⁷ and in the majority of markets many RBOC tactics could be described as in “restraint of trade.” One problem with using the Sherman Act as a lever for new entrants or to break up current monopolies is the judicial interpretation of the elements of the crime of monopolization. As the court stated in *United States v. Grinnell*¹⁷⁸ and approved in *Verizon Communications Inc. v. Trinko*,¹⁷⁹ the crime of monopoly has two components, the possession of monopoly power and, more importantly, “the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.” This second component has been the undoing of all the recent and important cases involving antitrust challenges to ILEC domination.

Several CLECs have pressed antitrust actions in the federal courts, even in the face of the Supreme Court’s decision in *Grinnell*. In *Covad Communications Co. v. Bell Atlantic*¹⁸⁰ a competitive supplier of DSL services brought suit against the ILEC for its failure to comply with multiple sections of the 1996 Act and attempted to equate these violations with crimes under Sherman Act.¹⁸¹ The Court in *Covad* refused to extend the exclusionary conduct of antitrust violation to include the duties of sharing mandated in the 1996 Act.¹⁸² The *Covad* court tied the RBOC’s conduct to sections 251 and 252 of the Act and found the requirements of sharing to be incompatible with existing antitrust law. The case was dismissed.¹⁸³ Similarly, in *Cavalier*

¹⁷⁷ Although the FCC reports more than seven providers in many metropolitan areas, anecdotal evidence points to a lack of real competition beyond the ILEC and a single cable company. F.C.C. *supra* note 101, at table 12 (showing many areas with several providers of high-speed services).

¹⁷⁸ 384 U.S. 563, 570-71 (1966) (alleging monopolization of the fire protection and sprinkler market by a supplier with 87% of the market share).

¹⁷⁹ 124 S. Ct. 872, 878 (2004).

¹⁸⁰ 201 F. Supp 2d 123 (U.S. Dist. 2002).

¹⁸¹ *Id.* at 128.

¹⁸² To that effect the Act has a savings clause that explicitly states that nothing in it should be construed as extending the existing confines of antitrust law. Pub. L. 104-104, 110 Stat. 56, § 601(b)(1) (1996) (providing that, “nothing in this Act or the amendments made by this Act shall be construed to modify, impair, or supersede the applicability of any of the antitrust laws.”).

¹⁸³ *See Covad*, 201 F. Supp 2d at 133.

*Telephone v. Verizon Virginia Inc.*¹⁸⁴, the Fourth Circuit dismissed Sherman Act claims based on violations of the 1996 Act. Cavalier’s suit, like Covad’s, attempted to circumvent the FCC and obtain redress in the courts. The *Cavalier* court upheld the district court’s dismissal and held that, “Conduct that merely has the consequence of shutting out competition does not rise to the level of anticompetitive behavior subject to antitrust liability; the monopolist must have acted with the intent to prevent competitors from entering the market.”¹⁸⁵

Some life was given to the possible success of these claims by the Second Circuit’s approval in *Law Office of Curtis V. Trinko v. Bell Atlantic*¹⁸⁶. Here, a consumer brought suit against the ILEC, complaining of poor service due to the exclusionary and monopolistic conduct of the incumbent. The lower court in *Trinko* believed that “[w]hile ideally, the regulatory process alone would be enough to bring competition to the local phone service markets, it is possible that the antitrust laws will be needed to supplement the regulatory scheme, especially with respect to injury caused to consumers.”¹⁸⁷ The court found that the savings clause of the 1996 Act¹⁸⁸ in effect *extended* antitrust law to deal with regulatory foot dragging.¹⁸⁹

This line of thinking was overruled by the Supreme Court, and *Trinko*’s claims were dismissed. The Court refused to consider an extension of antitrust law and stated:

[I]t does not create new claims that go beyond existing antitrust standards; that would be equally inconsistent with the saving clause’s mandate that nothing in the Act ‘modify, impair, or supersede the applicability’ of the antitrust laws. We turn, then, to whether the activity of which respondent complains violates preexisting antitrust standards.¹⁹⁰

¹⁸⁴ 330 F.3d 176 (4th Cir. 2003).

¹⁸⁵ *Id.* at 183.

¹⁸⁶ 305 F.3d 98 (2d Cir. 2002) *rev’d*, 124 S. Ct. 872 (2004).

¹⁸⁷ *Id.* at 112.

¹⁸⁸ Pub. L. 104-104, 110 Stat. 56, § 601(b)(1) (1996).

¹⁸⁹ 305 F.3d at 109 (holding, “The savings clause unambiguously establishes that there is no ‘plain repugnancy’ between the Act and the antitrust statutes. We thus find that the Telecommunications Act does not provide an ‘implicit immunity’ from the antitrust laws”).

¹⁹⁰ *Trinko*, 124 S. Ct. at 878.

The Court seemed quite hostile to the idea of sharing and receptive to the existence of the current monopolies:

The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices at least for a short period is what attracts business acumen in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct

The plaintiff in *Trinko* also sought redress against Verizon for its refusals to sell it UNEs required by mandate of the FCC.¹⁹¹ *Trinko* declined to extend the courts refusal to deal precedent¹⁹² or to recognize the “essential facilities” doctrine.¹⁹³ The result of these decisions, taken together, is that the broadband CLEC is denied access to the courts when progress through the FCC is insufficient. Given a Commission sufficiently politicized or hostile to the 1996 Act, the CLEC’s opportunities for redress are almost eliminated.

PART IV – (A) TOWARD OPEN DATA SYSTEMS

The 1996 Act included provisions for the creation of Open Video Systems (OVS).¹⁹⁴ The idea was to free multi-channel cable operators from some of the restrictions of the Communications Act¹⁹⁵ and to encourage the entry of new players, principally telephone companies, into the provision of cable television. Previously the commission had promulgated “video dial tone” rules that paralleled the common carrier scheme of voice, grafting it onto the video world.¹⁹⁶

¹⁹¹ See *id.* at 877.

¹⁹² See *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985).

¹⁹³ See generally, Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841 (1989).

¹⁹⁴ 47 U.S.C. § 573 (2004).

¹⁹⁵ Specifically, Title II’s common carrier regulations. 47 U.S.C. §§ 201 et seq.

¹⁹⁶ See HUBER, *supra* note 17, at 1167-1169.

The OVS statutes sustained key elements of the FCC rulemaking, including the elimination of municipal franchise fees in return for open access to up to two-thirds of the carrier's capacity.¹⁹⁷

OVS is, in theory, an attractive concept for LECs. It allows them to leverage their existing networks and, without paying any local franchise fees, to capture an entirely new revenue stream from them. One would theorize that cable operators would team with LECs to compete in markets in which they had no current presence. Since the cable operators already have agreements and technology in place for the production of a multi-channel signal, all that would be required is shared investment in network upgrades and the transmission of the signal to the new market.¹⁹⁸

The initial outlook for the success of OVS was not entirely rosy. Contemporary commentators had doubts as to whether the carrot and stick method employed would be enough to drive LECs into the video business and create new competition in those areas:

The opportunity to avoid local franchising costs and local protectionist restrictions is a nontrivial advantage for OVS operators. Nevertheless, considering the other burdens of OVS – providing fair and reasonable access to two-thirds of the open video system's channel capacity, as well as complying with most of the signal carriage rules imposed on conventional cable operations – the opportunity to bypass local franchising does not seem to be a very substantial inducement to build open video systems.¹⁹⁹

This inducement was subsequently erased through judicial action. In *City of Dallas v. F.C.C.*²⁰⁰ the Fifth Circuit answered a municipal challenge to the FCC's authority to eliminate the franchise fees cities charged cable companies for access to their rights of way. The court found that Congress had been unclear in its grant of preemption authority on this matter to the FCC. Accordingly, *Gregory v. Ashcroft*²⁰¹ requires that Congress must preempt traditional local

¹⁹⁷ 47 U.S.C. § 573 (2004).

¹⁹⁸ ILECs are hostile to the idea of competing in new markets. In the words of Verizon's CEO, Ivan Seidenberg, "Why don't I expend in these other markets? You know why? It's a bad idea." James S. Granelli, *Verizon Targets High Speed, Wired or Not*, L.A. TIMES, Jan. 12, 2004, at B1,2.

¹⁹⁹ See Glen O. Robinson, *The New Video Competition: Dances with Regulators*, 97 COLUM. L. REV. 1016,1035 (1997).

²⁰⁰ 165 F.3d 341. (5th Cir. 1999).

²⁰¹ 501 U.S. 542 (1991).

authority clearly and unmistakably. The convoluted statutory argument presented by the FCC, involving interplay of several statutory sections could not pass Constitutional muster with the Fifth circuit.²⁰²

Whether or not OVS is currently a successful option for multi-channel video providers is an open question, and beyond the scope of this Note. It is somewhat interesting to note that *City of Dallas* did not end filings for OVS certificates, so other components of OVS certification²⁰³ must still convey some benefit to operators. The commission has approved many OVS certificates in both rural and urban areas, yet whether or not there are competing providers of video services on those networks is a topic that needs research.²⁰⁴ Another area for investigation would query cable operators about their decision making process in choosing one statutory scheme over the other for the operation of a cable business.

The interesting precedent provided by the OVS statutes is that common carrier regulation is still sometimes contemplated and enacted by Congress in contexts other than voice communications. Congress should expand on OVS common carrier duties and transplant them into the realm of data transmission by creating what could be known as Open Data Systems (ODS). Key points of the OVS scheme would be preserved. Firstly, the OVS certificate filing²⁰⁵ which requires operators to file a simple form listing the place where the network will be built, the networks owner, and its capacity in channels, would be used by ODS. The ODS filing would duplicate this information but substitute a measure of system capacity in bits per second instead of

²⁰² *Id.* at 347-48.

²⁰³ 47 U.S.C. § 573 (2004).

²⁰⁴ See Federal Communications Commission, *Archived Filings for Certification of Open Video Systems*, at <http://www.fcc.gov/mb/ovs/csovsarc.html>. "One reason may be that selling video transmission (in effect) without controlling all the programming content is not an attractive business model for potential entrants. Another may be the Fifth Circuit's decision in *City of Dallas, Texas v. FCC* ... Many applicants that started out with OVS certifications have in the end obtained cable franchises instead and entered the market as traditional overbuilders." Mitsuko R. Herrera, *Refranchising, Franchising Administration and Franchise Transfers*, 723 PRACTICING LAW INSTITUTE, PATENTS, COPYRIGHTS, TRADEMARKS, AND LITERARY PROPERTY COURSE HANDBOOK SERIES 247, 257-58 (2002).

²⁰⁵ 47 U.S.C. § 573(a)(1) (2004).

video channels carried. Secondly, like OVS, the FCC should be required to respond to such filings in ten days.²⁰⁶ ODS filings might also include a listing of the physical location of all the proposed interconnection points for the network. OVS has already shown that such a scheme is feasible; data systems should use this scheme and build upon it.

Broadband presents an opportunity to implement new, clear, common carrier regulation. True competition for network application like voice and video could be accomplished by requiring that companies choosing to build broadband networks opt out of the telephone and cable businesses. Congress should carefully study all possible incentives and make the choice as attractive as possible to system builders.

Existing media companies, faced with clear, prospective regulation, could easily divest and form separate companies to exploit both opportunities. The failure of many mega-mergers during the last decade to increase corporate profits can be used as a political foil when merger efficiencies or “synergies” are raised as objections to structural separations.²⁰⁷ The innovation seen on the internet, like blogs, video on demand, and VoIP are the best arguments for open networks.

A fair analysis of the current cases might leave one to believe that the goals of the FCC are not commensurate with those of Congress as described in the 1996 Act. The current FCC Chairman, Michael K. Powell, is a vocal supporter of reduced regulation. Recently, when the D.C. Circuit vacated a set of Commission sharing obligation rules, the Chairman hailed the decision and said that it would bring about “true competition.”²⁰⁸ Others disagreed and wrote that the new rules might cost phone subscribers \$10 billion a year, largely from the loss of savings

²⁰⁶ *Id.*

²⁰⁷ See Martin Peers & Julia Angwin, *AOL Reports Record Annual Loss And Says Ted Turner Will Resign*, WALL ST. J., Jan. 30, 2003, at A1 (announcing the biggest corporate loss in history, over \$45 billion).

²⁰⁸ See Federal Communications Commission, *Statement of FCC Chairman Michael K. Powell Regarding The D.C. Circuit Decision on Triennial Review*, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-244539A1.pdf

attained through regulated competition.²⁰⁹ It is not unreasonable to assume that the Chairman's definition of competition diverges from the competition in the application of telephony that Congress envisioned.

Whether or not some frustration or hostility justifies the labeling the 1996 Act a "model of ambiguity" is debatable, the 1996 Act is in some regards a clear failure. Firstly, any successful regulation should avoid ratemaking through the historical "just and reasonable" methods and rely on the market or a market-based simulation instead.²¹⁰ Secondly, the roles played by various competitors should be well defined. If open-access is to be the rule, the statute should state so clearly and apply structural methods that guarantee those results.

These kinds of deficiencies are clearly illustrated in both the TELRIC and UNE debates. Incumbents, given any leeway, will fight against the duty to share even when compensation is reasonable. Sharing eliminates monopoly rents which are worth fighting for. A regulatory system for broadband should clearly limit or eliminate the possibility of these kinds of battles. Complete structural separation of fiber transmission capacity and provision of network applications is one option. Short of this, Congress could create mechanisms to limit a firm's participation in its own fiber network's traffic at a preset amount (perhaps 1/3 as in Open Video Systems.) To compensate for this restriction, Congress could allow for exclusive municipal franchises in new fiber construction, knowing that competition for network services will still exist. No specific sanctions would be necessary; the fiber builder would be more than reluctant to leave two-thirds (or all) its capacity dormant. If the builder is restricted to one third of the traffic, the remainder could be disposed of through competitive auctions.

²⁰⁹ See James S. Granelli, *Local Phone Firms Called to Strike Deals*, L.A. TIMES, Mar. 11, 2004, at B1.

²¹⁰ See generally Daniel F. Spulber & Christopher S. Yoo, *Access to Networks: Economic and Constitutional Connections*, 88 CORNELL L. REV. 885, 885 (2003) (noting that changes to regulation effectuated by the 1996 Act require the FCC to abandon its reliance on historical or forward looking ratemaking methods and adopt market based solutions instead).

(B) PRICE SETTING THROUGH AUCTIONS

An alternative to ratemaking regulation is the creation of property rights²¹¹ or a change in the background rules governing the activity. A perennial suggestion about how to reform the spectrum allocation task of the FCC has been to privatize portions of the spectrum and allow them to be owned and traded as private property.²¹² The FCC is slowly learning this lesson, implementing unlicensed spectrum in the 2.4 GHz spectrum and in the new 80 GHz bands.²¹³ The FCC has recently shown an affinity for the idea of private property subject to market rates in its allocation of cellular frequency through auctions. The new term “spectrum auction” is, unfortunately, not exactly accurate. As Thomas W. Hazlett explains:

References to "spectrum auctions" are common, even in official FCC documents. This phrase is unfortunate because the FCC does not issue property rights to radio spectrum by auction or any other assignment method. What the Commission awards are licenses to use FCC-approved devices to emit radio signals. Wave lengths are allocated to licenses, not licensees, meaning that spectrum can only be used as authorized by regulation. Hence, FCC licenses are analogous to operating permits, not titles to real property.²¹⁴

These auctions demonstrate the possibility of combining a market based concept with an alteration of a ground rule. The FCC provides licenses through auction to the highest bidder, yet limits the use of the acquired property. This is analogous to buying a truck and being contractually limited as to what can be hauled. In this way the FCC retains control over the allocation of spectrum, yet obtains the correct market value for the frequency.

²¹¹ See BREYER, *supra* note 33, at 171.

²¹² See Ronald H. Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1 (1959).

²¹³ See Allocations and Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands, 69 Fed. Reg. 3257 (January 23, 2004)(to be codified at 47 CFR pts. 1, 2, 15, 97, and 101) (setting up a non-exclusive method of licensing).

²¹⁴ See Hazlett, *supra* note 93, at 453.

There is no reason why the bandwidth on ODS networks cannot also be regulated in this fashion. Wired bandwidth can be apportioned in an identical way to the wireless spectrum.²¹⁵ The allocation is actually superior because of the absence of cross-talk and need for buffer frequencies in fiber based communication. An auction mechanism could be managed by the FCC that allows for a spot-market in bandwidth with both capacity and interconnection locations defined in a contract for a set period of time. A market constructed in this fashion could support a futures market as well, with contracts of differing duration. This type of market is currently the best way we know to allocate costs and derive efficient pricing solutions.²¹⁶

PART V - CONCLUSION

The heart of this proposal is the severance of the unconditional right of a telecommunications provider to fill its own bandwidth with its own content or applications. The Open Data System regulates owners of high-bandwidth transmission capacity. Owners are forbidden from providing some portion of the content, anywhere from total severance, zero percent of content, to a fixed percentage, say, one third.

Builders of high speed convergent networks are thus encouraged to provide for the efficient interconnection of independent service and content providers. They will be encouraged to hew closely to industry standards and provide collocation facilities or head-ends near existing fiber capacity. Since the cost of providing the end user with any application is dependent on the efficiency with which application providers can connect to the basic telecommunications capacity, efficiency in interconnection and collocation is encouraged.

²¹⁵ “Bandwidth confined within fiber optic cables is privately owned, and exchanges for this capacity are spontaneously emerging. RateXchange, Arbinet, Enron, Pulver.com, and Bandwidth Market already operate domestically, with international trading active at Band-X (London), Cape Saffron (London), and Interxion (Amsterdam). These markets have materialized precisely because the airwaves are housed in wires – ‘spectrum in a tube.’ Although technically identical to wireless, wired bandwidth is private property.” *Id.* at 338.

²¹⁶ “Private band owners compete to discover the information that eludes policy makers allocating spectrum owned by others. True owners have incentives to maximize value and escape the distractions of rent seeking.” *Id.* at 392.

The government then compensates ODS builders for the taking of transmission capacity by administering an auction of that bandwidth. The auction is conducted on the open market, so the compensation for the taking is the exact measure of the fair market value of the property. The FCC should encourage frequent auctions and perhaps allocate a portion of the bandwidth to resellers who can accommodate smaller users. This should create a true market for communications capacity, the auction of a scarce resource in an open fashion setting efficient prices.²¹⁷ If sales are encouraged to resellers for short time periods, a spot market in bandwidth can be created, perhaps for favored or minority operators.

Other incentives could be provided to builders of networks, like tax incentives or exclusive franchises. Congress could create a tax on bandwidth and exempt network builders from the tax on their one third of the network. To avoid future problems, any exclusive franchise should be contingent on the full utilization of the installed network and the proper functioning of the auction mechanism.

New technology, like passive optical networks (PONS), are perfect for ODS opportunities. PONS provide a content neutral pathway with extremely low repair and maintenance that can be made to carry more content without the replacement of community deployed components. PONS provide a transmission vehicle that conforms well to the “information superhighway” analogy, a road requiring little maintenance.²¹⁸

²¹⁷ Coase suggested that there is nothing incompatible between scarcity and markets: “It is true that some mechanism has to be employed to decide who, out of many claimants, should be allowed to use the scarce resource. But the way this is usually done in the American economic system is to employ the price mechanism, and this allocates resources to users without the need for government regulation.” Coase, *supra* note 212, at 18.

²¹⁸ See *The Passive Optical Networks Forum*, at <http://www.ponforum.org/technology/default.asp>. “With Passive Optical Networks, all active components between the central office exchange and the customer premises are eliminated, and passive optical components are put into the network to guide traffic based on splitting the power of optical wavelengths to endpoints along the way. This replacement of active with passive components provides a cost-savings to the service provider by eliminating the need to power and service active components in the transmission loop. The passive splitters or couplers are merely devices working to pass or restrict light, and as such, have no power or processing requirements and have virtually unlimited Mean Time Between Failures (MTBF) thereby lowering overall maintenance costs for the service provider.” *Id.*

This system balances our notions of private ownership and just compensation while preserving the historical values of common carrier access and public goods. If combined with a simple tax on bandwidth, this new system can be reconciled with the goals of Universal Service by providing direct subsidies for basic service.

OVS builders could be today's RBOCs, CLECs, new entrants, or even municipalities.²¹⁹ Congress could learn from the previous OVS effort and encourage the establishment of local common carriers by limiting the ability of municipal governments to impose franchise fees on convergent carriers. Or, municipally owned networks could be discouraged.²²⁰ Whatever the source of these new networks, Congress should hurry to legislate before the FCC forecloses any opportunity for action.²²¹ This proposal does not hinge on public or private ownership of the transmission substrate, it is based on the severance of content and services from carriage. For these reasons, open data systems, can provide the structural reform necessary to simplify the regulation of broadband networks and encourage the multitude of voices that we should expect in a digital democracy.

²¹⁹ See Matt Richtel, *In Utah, Public Works Project in Digital*, N.Y. TIMES, Nov. 17, 2003, at C1 (reporting the start of a 17 city, \$470 million fiber optic network that would deliver data, internet and video to homes and businesses via fiber at speeds 100 times faster than current commercial and residential offerings).

²²⁰ See *Mo. Mun. League v. F.C.C.*, 299 F.3d 949 (8th Cir. 2002) *rev'd*, *Nixon v. Mo. Mun. League*, 541 U.S. ___ (2004). It has also been noted that when municipalities build networks, they merely pay for them. See Lessig, *supra* note 97. The municipality would not really be in the business of building or operating the network. These functions would be contracted to firms expert in the particular line of work. *But see*, James S. Granelli, *Cerritos Joins the Wi-Fi Age*, L.A. TIMES, Dec. 2, 2004, at C2 (recording a plan for a municipally sponsored, city-wide wireless network).

²²¹ See *supra* note 156. The FCC's rules have already stated that new fiber is not a UNE.