



The Remedy for the "Bottleneck Monopoly" in Telecom: Isolate It, Share It, or Ignore It?

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The Remedy for the “Bottleneck Monopoly” in Telecom: Isolate It, Share It, or Ignore It?

Robert W. Crandall†

Despite more than one hundred years of United States antitrust policy, there is very little evidence that antitrust has produced tangible consumer benefits.¹ As a result, proponents of antitrust often cite government victories in major cases as evidence that antitrust is “working” in some sense even if there is no careful empirical assessment of the effects of these victories on prices or output.² An important exception is *United States v AT&T*,³ a 1982 Sherman Act case that resulted in the breakup of AT&T in order to isolate the local “monopoly bottleneck”—the array of wires and electronics that connects telephone subscribers to the nation’s telecommunications network.⁴ It is widely assumed that the significant and measurable decline in long distance telephone rates that followed was due to the AT&T breakup. In this Essay, I show that even in this case, the antitrust decree may have been sufficient to generate competition in long distance services, but it was not necessary. The *AT&T* case was brought as the result of a regulatory failure, not a market failure, and the very large costs of breaking up AT&T could have been avoided.

In Part I.A, I show that the development of long distance competition in the United States after the AT&T divestiture was partly the result of a distorted regulated price structure and the regulation of the

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¹ See Robert W. Crandall and Clifford Winston, *Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence*, 17 J Econ Perspectives 3, 23–24 (2003) (questioning whether the benefits of antitrust enforcement are worth its costs and recommending limited enforcement pending further study).

² See, for example, Jonathan B. Baker, *The Case for Antitrust Enforcement*, 17 J Econ Perspectives 27, 28–35 (2003).

³ 552 F Supp 131 (D DC 1982).

⁴ The 1982 consent decree required AT&T to divest itself of its local telephone operating companies. AT&T kept the long distance operations and the telecommunications equipment manufacturing facilities. The divested local companies were organized into seven Regional Bell Holding Companies that were barred from offering long distance service outside their home Local Access and Transport Areas (LATAs), undertaking equipment manufacture, and offering “information services.” Id at 140–43. The divestiture was completed in January 1984, and some of the seven Regional Bell companies subsequently combined, leaving four major Bell companies—Verizon, BellSouth, SBC, and Qwest (formerly US West).

erstwhile monopolist, AT&T, which reduced the ability of AT&T to match the entrants' lower prices. Even more important was the AT&T decree's requirement that the divested local Bell operating companies provide equal access to all long distance competitors, a rule that the Federal Communications Commission (FCC) could have promulgated in the 1970s, thus avoiding the need for the antitrust action and the very costly restructuring of the telecommunications sector. Thus, isolating the bottleneck was not necessary in 1984, and its unfortunate heritage is that it created a vertically fragmented industry structure that is not sustainable today, as I demonstrate in Part I.B.

After fourteen years of trying to live with this decree in an environment of rapidly changing technology, the major industry participants sought legislation that would take another approach to dealing with the bottleneck. In order to facilitate *local* telecom competition, the Telecommunications Act of 1996⁵ required that regulators allow entrants to share incumbent (Bell) local companies' bottleneck facilities at regulated wholesale rates. In Part II, I show that this novel policy not only sowed confusion and repeated court reversals, but also failed to promote sustainable competition in the provision of local access to the network. Most of the entrants using these leased local facilities could not survive because they offered no innovative new services. They simply attempted to replicate the incumbent Bell companies' existing regulated local services, which the incumbents often offered at below-cost regulated rates. After eight years of attempting to promote competition in this manner, the FCC is still trying to fashion rules that will work and will survive a court appeal.

The attempt to use regulation to mandate local telephone network sharing is not only futile in promoting competition in traditional services, but, as I show in Part III, the current environment of rapidly changing technology makes the attempt both unnecessary and unworkable. Telecommunications networks are evolving rapidly to accommodate the need for high-speed internet connections. More importantly, there is no "monopoly bottleneck" in the delivery of these new services, because the telephone companies now have to compete with cable television companies, mobile wireless carriers, and fixed wireless services (such as "WiFi") in delivering these services. Even if there were only one broadband network, regulators could not easily define how that network should be shared by competitors if the regulators could not anticipate what it would look like in one or two years and what services it would offer. Creating a set of rules to share today's network creates a set of new competitors who will lobby the

⁵ Pub L No 104-104, 110 Stat 56, codified in various sections of title 47 (2000).

regulators to block the deployment of new technologies required for tomorrow’s network.

An analysis of the outcome of the *AT&T* case and the legislation it spawned is important for a number of reasons. First, it demonstrates how rapidly markets and technologies can change, rendering antitrust intervention unnecessary or even counterproductive. Such changes rendered earlier antitrust interventions against Standard Oil, Paramount Pictures, and Alcoa largely irrelevant.⁶ Second, any discussion of using antitrust policy to remedy problems of monopoly bottleneck abuse in telecommunications must come to grips with the fact that the expert agency in charge of such problems, the FCC, was in fact a large source of the problems that antitrust authorities were attempting to solve in 1982. Finally, the apparent success of the *AT&T* divestiture in launching competition in long distance services has led to calls for further divestitures in this and other industries. In Part III, I also review recent attempts to roll the clock back to 1984 in telecom regulation and to reimpose a regime of isolating the purported bottleneck despite the technological change that is sweeping through this sector. Part IV provides a brief concluding assessment of the legacy of the *AT&T* case.

I. THE *AT&T* DIVESTITURE: ISOLATING THE BOTTLENECK

More than twenty years after the breakup of *AT&T*, much of the telecom policy debate still centers on the “monopoly bottleneck” in the local distribution network, particularly the last-mile copper wires that connect customers to the local telephone companies’ switching plant. This is surprising because, as I write this Essay, I look out at four separately owned wires that pass my home office,⁷ all strung to the same poles, and periodically use my cell phone to make long distance calls. Since there are five national wireless competitors in the United States, this suggests that I could choose my telecommunications services from at least eight different carriers. Where, then, is the *monopoly* bottleneck?

⁶ See Robert W. Crandall, *The Failure of Structural Remedies in Sherman Act Monopolization Cases*, 80 *Or L Rev* 109, 115 (2001) (examining the effectiveness of structural relief in seven of the most important § 2 cases and finding little evidence that such relief successfully increased competition, with the possible exception of the breakup of *AT&T*).

⁷ One of them is an electric utility wire, which could carry telecommunications signals but does not yet do so. For a discussion of the prospects for using power lines to deliver broadband telecommunications, see generally Michael Kennedy, *Broadband over Power Line Comes of Age*, *Telecommunications* (July 2004), online at <http://www.telecommagazine.com/default.asp?func=articles&journalid=3&year=2004&month=7&page=0407t07> (visited Dec 10, 2004).

In 1974, when *United States v AT&T* was filed, my choices would have been far more limited. There was no wireless cellular service. Cable television was limited by the FCC to a simple service of re-transmitting a limited number of off-air television signals. AT&T's local bottlenecks were a serious problem that communications regulators or, as it turned out, antitrust authorities would be forced to deal with. The solution negotiated in the *AT&T* case was the isolation of the local bottleneck from both long distance and information services⁸ and from the manufacture of equipment required to use this bottleneck.

The Department of Justice sued AT&T in 1974 for monopolizing various telecommunications markets. The FCC aided this monopolization by allowing AT&T to engage in strategies that allegedly reduced competition in the markets for long distance services and terminal equipment.⁹ The FCC had even attempted (unsuccessfully) to block the first major entrant into long distance, MCI, from competing with AT&T in ordinary long distance services.¹⁰ However, the FCC decided to liberalize the terminal equipment market by requiring AT&T to allow competing equipment to be connected to its local telephone lines, a decision upheld by the Fourth Circuit in the late 1970s.¹¹ By the time of divestiture, therefore, the focus was squarely on long distance and related services, and the mechanism chosen to create competition in such services was to isolate the local monopoly bottlenecks that AT&T had allegedly used to frustrate the development of that competition.

A. Why Did Long Distance Competition Develop After Divestiture?

A simple glance at the trend in market shares in the long distance sector and long distance rates after 1984 suggests to most casual observers that the AT&T decree “worked” to facilitate long distance competition. Table 1 and Figure 1 provide the details required to allow one to reach this superficial conclusion. AT&T's market share began to decline fairly rapidly after 1984, and long distance prices followed suit. The decree divorced AT&T's local operating companies from its

⁸ The information services restriction was subsequently dropped as the result of a court challenge, but the “inter-LATA” long distance restriction remained in one form or another for nearly twenty years.

⁹ For the details, see Robert W. Crandall, *After the Breakup: U.S. Telecommunications in a More Competitive Era* 16 (Brookings 1991). See also Michael K. Kellogg, John Thorne, and Peter W. Huber, *Federal Telecommunications Law* 199–248 (Little, Brown 1992) (tracing the evolution of the telecom sector, its regulation, and the enforcement of the AT&T decree).

¹⁰ *MCI v FCC*, 561 F2d 365, 380 (DC Cir 1977).

¹¹ *North Carolina Utilities Commission v FCC*, 552 F2d 1036 (4th Cir 1977).

long distance operations, thereby eliminating the operating companies' incentives to deny AT&T's rivals access to their local monopoly bottleneck facilities, which were essential for originating and terminating long distance calls. It therefore seems reasonable to conclude that by eliminating the incentive of AT&T's operating companies to discriminate in this fashion against its long distance rivals, the decree accelerated the growth of the entrants' long distance market shares and rapidly brought down long distance rates for U.S. consumers. Unfortunately, the story is much more complicated. Competition in long distance services increased after 1984 for many reasons, but the vertical divestiture of AT&T is not likely a major one.

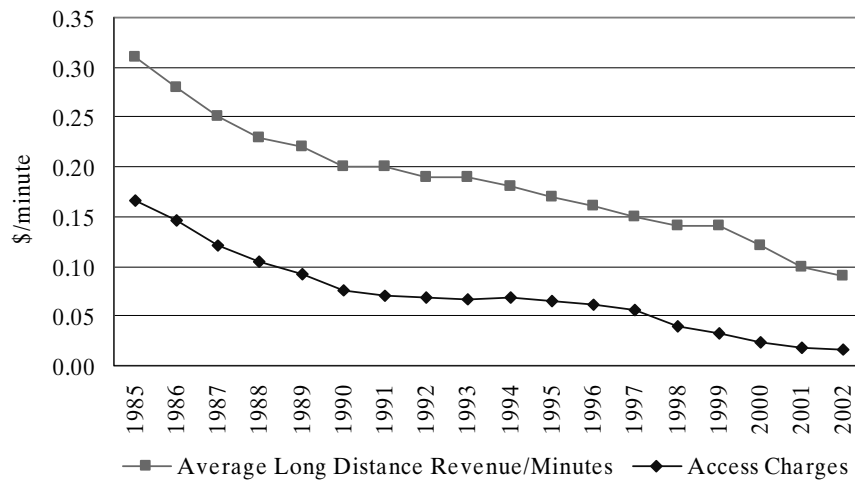
TABLE 1
Percentage Shares of Long Distance Carrier Revenues, 1984–2001¹²

Year	AT&T	MCI	Sprint	Others*
1984	90.1	4.5	2.7	2.6
1985	86.3	5.5	2.6	5.6
1986	81.9	7.6	4.3	6.3
1987	78.6	8.8	5.8	6.8
1988	74.6	10.3	7.2	8.0
1989	67.5	12.3	8.4	11.8
1990	65.0	14.5	9.7	10.8
1991	63.2	15.6	9.9	11.3
1992	57.7	16.9	9.1	16.3
1993	52.4	17.6	8.9	21.1
1994	52.7	19.6	9.6	18.1
1995	51.8	23.3	9.3	18.4
1996	49.0	23.6	9.0	23.0
1997	43.6	25.4	9.5	21.5
1998	42.4	23.2	8.4	26.0
1999	39.9	23.4	9.7	27.0
2000	37.0	21.9	8.8	32.3
2001	36.3	22.7	9.0	32.0

* Includes reported wireless long distance revenues.

¹² Federal Communications Commission, *Statistics of Communications Common Carriers, 2002/2003 Edition* 8 table 1.5, online at ftp://www.fcc.gov/pub/Bureaus/Common_Carrier/Reports/FCC-State_Link/SOCC/02socc.pdf (visited Dec 10, 2004).

FIGURE 1
U.S. International and Interstate Long Distance Rates
and Interstate Access Charges, 1985–2002¹³



1. The regulated rate structure.

Regulatory ratemaking played an important role in attracting entry into the long distance market as early as the 1970s. Beginning in the 1950s, federal and state regulators elevated intrastate and interstate long distance rates above long-run incremental cost in the name of a “universal service” policy designed to keep the price of a residential line low. This policy was (and continues to be) economically inefficient because it marks up the prices of telecommunications services in *direct* proportion to the relative demand price elasticities. Ramsey quasi-efficient pricing¹⁴ requires precisely the opposite: recovering the joint and common costs in inverse proportion to the demand elastic-

¹³ Federal Communications Commission, *Trends in Telephone Service* 13-6 table 13.4 (May 2004), online at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/trend504.pdf (visited Dec 8, 2004); Robert W. Crandall, *Competition and Chaos: The U.S. Telecommunications Sector Since 1996* table 6.2 (Brookings forthcoming 2005).

¹⁴ The derivation of the Ramsey pricing rule can be found in William F. Baumol and David F. Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 *Am Econ Rev* 265, 267 (1970):

[T]he social welfare will be served most effectively not by setting prices equal or even proportionate to marginal costs, but by causing unequal deviations in which items with elastic demands are priced at levels close to their marginal costs. The prices of items whose demands are inelastic diverge from their marginal costs by relatively wider margins.

ities. The policy was also unnecessary because universal telephone service had already largely been achieved.¹⁵

Had regulators used price caps to regulate AT&T before divestiture and allowed AT&T substantial pricing flexibility across services within such a rate-cap regime, AT&T would have moved local rates much higher and cut long distance rates to a level that provided very small contributions to fixed costs.¹⁶ This pricing would not only have been much more economically efficient, but it would have greatly reduced the incentive for MCI and its emulators to enter the long distance business. Instead, the FCC and state regulators implicitly invited entry into long distance services by keeping long distance mark-ups extraordinarily high even after microwave technology—with its more limited scale economies—began to replace copper wires in transmitting signals over long distances.

2. Regulatory protection and arbitrage.

For the first eleven years after the 1984 divestiture, the FCC pursued two policies that protected the new long distance entrants. First, it continued to regulate AT&T's interstate rates, limiting AT&T's ability to reduce rates in the face of growing entry. Second, as demonstrated in Figure 1, the FCC steadily reduced the interstate access charges paid by long distance companies to the local companies for originating and terminating their calls, while keeping a floor under AT&T's rates, thereby creating a continuing arbitrage opportunity for the entrants.¹⁷ At the same time, the AT&T decree kept the Bell companies out of inter-LATA long distance services, further protecting MCI, Sprint, and the agglomeration of entrants that were eventually brought under the WorldCom tent.

3. Equal access in the termination of traffic.

Competition in long distance services, or virtually any other telecommunication service, requires that the entrant be able to intercon-

¹⁵ For a more complete discussion and estimate of the costs of this policy, see Robert W. Crandall and Leonard Waverman, *Who Pays for Universal Service? When Telephone Subsidies Become Transparent* 45–68 (Brookings 2000). See also Milton L. Mueller, Jr., *Universal Service: Competition, Interconnection, and Monopoly in the Making of the American Telephone System* (MIT and AEI 1997) (arguing that competition over network scope is responsible for the ubiquity of telephone infrastructure in the United States).

¹⁶ See Ingo Vogelsang and Jörg Finsinger, *A Regulatory Adjustment Process for Optimal Pricing by Multiproduct Monopoly Firms*, 10 *Bell J Econ* 157, 170 (1979) (providing a model for how a monopoly firm would price its services under a regulatory price-cap regime).

¹⁷ For details of these reductions, see Federal Communications Commission, *Trends in Telephone Service* at 1-6 table 1.2 (cited in note 13) (providing statistical data to show that rates have fallen over the last twenty years).

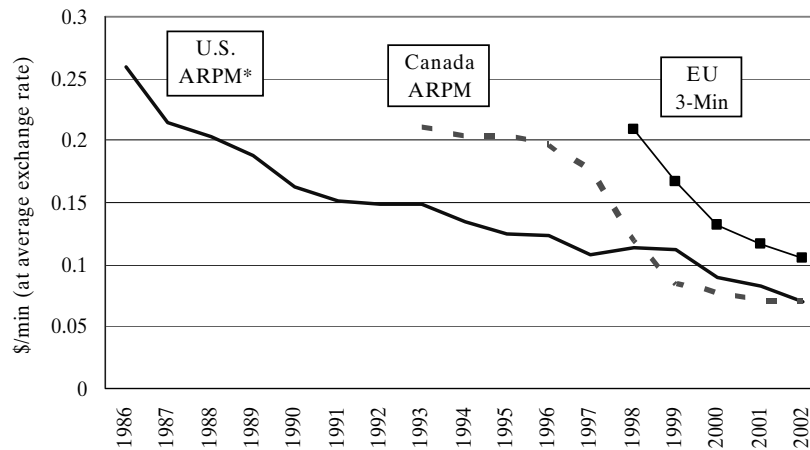
nect with other carriers. In the case of long distance services, the new entrants had to be able to connect their calls to dialing and receiving parties, 85 percent of whom were accessible only through AT&T's local exchange operations. AT&T's switching systems in the 1970s were not built to accommodate competitors, but they could have been modified to do so. Had the regulators wished to accommodate entry, they could have simply required AT&T to modify its switches to allow entrants the same access that its own long distance subsidiary obtained.¹⁸ When the regulators failed to do so, the entrants sought out the antitrust courts to force such "equal access." Eventually, they won when the 1982 decree settling the government's antitrust case split off the local operating companies from AT&T and required the divested Bell companies to modify their switches to accommodate equal access.¹⁹

All of these policies served to encourage entry, and perhaps even excessive entry, before the stock market bubble of the 1990s burst. The AT&T divestiture's alleged success in creating long distance competition by isolating the monopoly bottleneck was in reality superfluous. Competition could have been achieved simply by requiring equal access to AT&T's local switches, a requirement that virtually every other developed country subsequently imposed on its national telephone carrier with very little controversy. None of these latter countries broke up its vertically integrated telephone company, and most obtained the benefits of long distance competition much more rapidly than the U.S. did. They simply prescribed an equal access regime for the exchange of traffic among carriers, and that was sufficient to allow new long distance carriers to compete. As Figure 2 shows, long distance rates declined more rapidly in Canada after 1993 and in Europe after 1998, when each liberalized its telecom sector and mandated equal access, than in the first few years of U.S. long distance competition.

¹⁸ This "equal access" requirement was part of the AT&T decree, see *AT&T*, 552 F Supp at 195–200, and it was implemented within two years of the 1984 AT&T divestiture. See Terry Dodsworth, *Most Callers Now Have a Choice*, *Fin Times Surv* III (Dec 1, 1986). The equal access requirement has subsequently been imposed by regulators in most developed countries to allow competition in calling services. See, for example, Paul Meller, *Telephone Regulation Is Approved*, *NY Times* W1 (Dec 13, 2001) (describing an EU telecommunications agreement that included equal access assurances).

¹⁹ See *AT&T*, 552 F Supp at 195–200. See also Crandall, *After the Breakup* at 37–40 (cited in note 9).

FIGURE 2
Prices for National Calls in the United States,
the European Union, and Canada²⁰



* Average Rate Per Minute

B. The Divestiture from Today’s Perspective

U.S. policy, as enunciated in the Telecommunications Act of 1996, continued to isolate the local Bell companies’ bottlenecks for a few years more. The Bell companies were kept out of equipment manufacture and were to be allowed to enter long distance only after a laborious state-by-state regulatory process that assured that they were complying with a fourteen-point checklist of actions thought to be neces-

²⁰ U.S. data: Jim Lande and Kenneth Lynch, Federal Communications Commission, *Telecommunications Industry Revenues 2002* table 10 (Mar 2004), online at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/telrev02.pdf (visited Dec 10, 2004); Robert E. Hall, *Long Distance Benefits from Increased Competition* figure 4 (Study Prepared for MCI 1993).

Canada data: Canadian Radio-television and Telecommunications Commission, *Report to the Governor in Council: Status of Competition in Canadian Telecommunications Markets: Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services* 16 figure 4.7 (Sept 2001), online at <http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2001/gic2001-09.htm> (visited Dec 10, 2004); Canadian Radio-television and Telecommunications Commission, *Report to the Governor in Council: Status of Competition in Canadian Telecommunications Markets: Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services* 27–28 figure 4.10 (Nov 2003), online at <http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2003/gic2003.htm> (visited Dec 10, 2004).

EU data: Commission of the European Communities, *Technical Annexes of the Ninth Report on the Implementation of the Telecommunications Regulatory Package* 72 figure 80 (2003), online at http://europa.eu.int/information_society/topics/ecom/doc/all_about/implementation_enforcement/annualreports/9threport/annex1191103.pdf (visited Dec 10, 2004).

sary to allow local entry.²¹ It was not until 2003 that the Bell companies completed the process of satisfying these requirements in every state,²² a delay that provided the independent long distance carriers—including AT&T—with further insulation from competition.

The AT&T decree implicitly assumed that a vertical separation of local services from long distance was sustainable in the long run. In fact, twenty years later, that appears not to be the case. As early as 1995, Frances Cairncross was writing about the “death of distance.”²³ The sharply declining cost of fiber optic transmission was already obvious to an astute journalist at this time, and presumably it should have induced telecommunications companies in a competitive environment to reconsider the idea of charging separately for local access, local calls, slightly longer distance calls, and very long distance calls. Once liberalized, how could the market continue to support separate companies providing local and long distance services to the mass market in this technological environment?

In the same year the Justice Department filed the AT&T suit, the FCC was looking into the licensing of spectrum for a new “cellular” wireless service.²⁴ Bureaucratic problems at the FCC delayed the launch of this service for nearly ten years,²⁵ and it required another ten years for Congress to force the FCC to license sufficient spectrum to support six national cellular carriers.²⁶ Once this additional spectrum was auctioned to the highest bidders, it took only three years for one of the national cellular carriers to discover the death of distance by offering a rate plan that is distance insensitive within U.S. borders.

²¹ See 47 USC § 271 (2000) (codifying this checklist).

²² For details, see Federal Communications Commission, *RBOC Applications to Provide In-Region Inter-LATA Services Under § 271*, online at http://www.fcc.gov/Bureaus/Common_Carrier/in-region_applications (visited Dec 8, 2004) (listing the states and companies that have filed with the FCC to date).

²³ Her initial article appeared in *The Economist*, see Frances Cairncross, *The Death of Distance*, *Economist* S5 (Sept 30, 1995) (arguing that continued innovations and increased competition in the telecommunications industry would make the concept of distance irrelevant), but the most recent version of her thesis is found in Frances Cairncross, *The Death of Distance: How the Telecommunications Revolution Is Changing Our Lives* (Harvard Business 2d ed 2001).

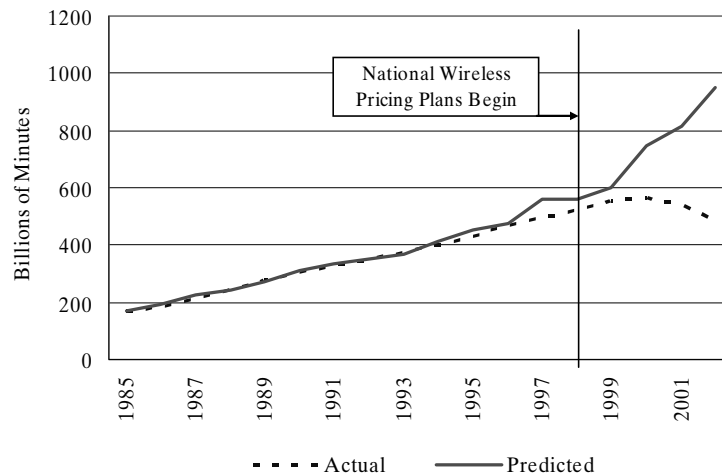
²⁴ See *An Inquiry Relative to the Future Use of the Frequency Band 806–960 MHz*, 46 FCC2d 752, 753 (1974).

²⁵ See *In the Matter of Amendment of the Commission's Rules to Allow the Selection from Among Mutually Exclusive Competing Cellular Applications Using Random Selection or Lotteries Instead of Comparative Hearings*, 98 FCC2d 175, 175 (1984) (implementing lotteries for cellular telephone licenses). For an estimate of the cost of this delay to U.S. consumers, see Jerry Hausman, *Mobile Telephone*, in Martin E. Cave, Sumit K. Majumdar, and Ingo Vogelsang, eds, 1 *Handbook of Telecommunications Economics: Structure, Regulation, and Competition* 589–91 (Elsevier 2002) (estimating the costs at approximately \$33 billion in 1994 dollars).

²⁶ In February 2004, one of these six carriers—AT&T Wireless—was acquired by another, Cingular, leaving only five national carriers. See Andrew Ross Sorkin and Matt Richtel, *\$41 Billion Offer by Cingular Wins AT&T Wireless*, *NY Times* A1 (Feb 18, 2004).

AT&T Wireless launched its One Rate pricing plan in 1998; the other wireless carriers followed in 1999 and 2000;²⁷ and all have now extended these plans to offer free calling during off-peak hours. As a result, as shown in Figure 3, in the next four years the wireless companies captured a large share of mass-market interstate long distance traffic.

FIGURE 3
Actual Versus Predicted Wireline Switched Access Minutes, 1985–2002²⁸



²⁷ See Jennifer Files, *Mobile Phone Merger Details Expected Soon*, Dallas Morning News 1D (Mar 31, 2000) (discussing this trend in pricing and its effects on competition).

²⁸ My estimates come from a forthcoming book, Crandall, *Competition and Chaos* ch 7 (cited in note 13) (discussing the growth of the wireless sector in recent years). The most accurate measure of U.S. interstate minutes is the number of “interstate switched access minutes” provided by local carriers to originate and terminate long distance calls. These switched access minutes should increase with total long distance conversation minutes, which, in turn, are driven by real income growth and declining real long distance prices. To simulate the expected growth in long distance minutes, I assume that the elasticity of minutes with respect to real GDP is unity and that the elasticity with respect to real interstate long distance prices is -0.75 . In addition, I assume that total switched minutes have been subject to a secular decline of 10 percent per year as long distance carriers substitute leased lines or “special access” for the more expensive switched access services provided by local carriers. My equation for predicted minutes is:

$$\text{PredictedMinutes} = 0.01507 \cdot (\text{RealRev/Min})^{-0.75} \cdot \text{RealGDP} \cdot \text{TimeTrend}^{-0.1}$$

RealRev/Min is equal to the average revenue per interstate conversation minute, as calculated by the FCC, deflated by the Consumer Price Index from the Bureau of Labor Statistics. See Lande and Lynch, *Telecommunications Industry Revenues 2002* table 10, line 11 (cited in note 20); Hall, *Long Distance Benefits from Increased Competition* figure 4 (cited in note 20). Real GDP is obtained from the Bureau of Economic Analysis of the Department of Commerce. Switched Access Minutes data is from Federal Communications Commission, *Trends in Telephone Service* at 10-3 table 10.1 (cited in note 13).

When the Bell companies finally entered in-region inter-LATA long distance services between 2000 and 2003, the nonintegrated long distance companies' fate was largely sealed. WorldCom may have failed with or without the accounting irregularities that sent it into bankruptcy. There is less than \$20 billion in market capitalization left in the independent long distance carriers, a far cry from their \$300 billion in market capitalization at the end of 1999.²⁹ With no connections to local customers, an independent long distance company cannot offer innovative new services. For the most part, long distance service is no longer an identifiable, separate service from local service. Rather, it is an intermediate transmission service, largely purchased by other carriers at low wholesale rates reflecting the incredible improvements in fiber optic technology. Wireless companies and local fixed-wire companies now offer packages of virtually unlimited calling at a fixed price. Distance has died, and the "long distance" industry is dying with it.

C. The Cost of Divestiture

One might accept my view on the apparent irrelevance of the 1984 vertical restructuring of AT&T to the subsequent development of competition in U.S. long distance services, but conclude that the breakup was essentially benign. After all, what were the costs? Unfortunately, there were two significant sources of costs: the direct resource costs of the breakup and the indirect costs associated with the misconception that the decree was successful in containing the Bell companies' market power.

The direct costs of the divestiture were muted by the fact that the divested Bell companies inherited a switching plant rapidly becoming technologically obsolete. Given that they had to replace their analog switches with new electronic digital switches, designing these switches to accept traffic from competitive long distance carriers would not be as burdensome as retrofitting existing switches. The other costs of divestiture were likely much more important.

First, the intense two-year effort required to restructure AT&T may have cost the economy as much as \$5 billion in lost output due to the diversion of resources into the effort of consummating the breakup. As a result of the breakup, there was a sharp downturn in the tele-

²⁹ At the end of 1999, the major U.S. long distance companies were AT&T, MCI-WorldCom, Sprint, Qwest, and Global Crossing. These companies had a combined market capitalization of more than \$500 billion at that time. (Data was tracked over time from <http://finance.yahoo.com>.) Included in this total were AT&T's cable television assets and Qwest's and Sprint's local telephone company assets. When the value of these non-long distance assets is deducted from the \$500 billion total, more than \$300 billion of market capitalization remains.

communications sector’s total factor productivity in 1984–1985, as the various parts of the old AT&T adjusted to the new environment. I have estimated that loss at about 2 percent of total sector output in each of the two years.³⁰ Given annual value added of about \$100 billion per year at the time,³¹ these costs may be estimated at roughly \$4 billion. In addition, the costs of the legal process involved in enforcing the decree over its twelve-year life were substantial. For instance, Paul Rubin and Hashem Dezhbakhsh estimate that the costs of delay in approving waiver petitions from the line-of-business restrictions in the decree were more than \$1 billion.³² Surely, the divestiture also resulted in additional economic costs by distorting investment incentives and denying the efficiencies of vertical integration.³³ But even without these latter costs, the decree was very expensive relative to its benefits.

More damaging, however, may be the overly optimistic popular impression created by the AT&T decree of the potential benefits of using antitrust to restructure an industry. This misleading perception of the net benefits of aggressive action against vertical integration could easily have damaging consequences in future antitrust policy actions inside and outside the telecommunications sector. In the case of telecommunications, there have been repeated calls for further “structural separation” of incumbent telephone companies, creating a regulated wholesale “loop-co” in each region and one or more retail operations out of the divested Bell companies or other incumbent telephone companies. I discuss the problems with such a further separation in Part III.

The recommendation for a similar vertical separation appeared in the Microsoft litigation now winding down in the United States³⁴ and a

³⁰ Crandall, *After the Breakup* at 70 (cited in note 9) (finding that the cost of the breakup was 2.1 percent of total sector output in 1984 and 1985).

³¹ See United States Department of Commerce, Bureau of Economic Analysis, online at http://www.bea.gov/bea/pn/GDPbyInd_VA_SIC.xls (visited Dec 8, 2004) (estimating the telephone industry’s contribution to the U.S. GDP at \$91.8 billion in 1984 and \$101.3 billion in 1985).

³² Paul H. Rubin and Hashem Dezhbakhsh, *Costs of Delay and Rent-Seeking Under the Modification of Final Judgment*, 16 *Managerial & Decision Econ* 385, 390–92 (1995).

³³ Among these inefficiencies were various restrictions on the geographic scope of Bell company wireless (cellular) services and limitations on various information services that were essentially precursors to the internet. The latter were eventually vacated by the D.C. Circuit. See *United States v Western Electric Co*, 894 F2d 430, 435–38 (DC Cir 1990). The geographic limitations on wireless services were relaxed slowly by the D.C. district court during the twelve-year period that the decree was in force. See *United States v Western Electric Co*, 890 F Supp 1, 7–10 (D DC 1995), vacd, 84 F3d 1452 (DC Cir 1996).

³⁴ See *United States v Microsoft Corp*, 2002 US Dist LEXIS 22864 (D DC) (entering by the parties’ consent a final judgment allowing hardware manufacturers to separate Microsoft’s operating system from its software).

similar proceeding now being litigated in the European Union.³⁵ Citing the *AT&T* case repeatedly, four leading economists proposed to the district court that the appropriate remedy for Microsoft's violation of the Sherman Act would be to break up Microsoft into separate operating system and applications companies.³⁶ Such a proposal would have been less likely in the absence of the perceived success of the *AT&T* decree. Indeed, the economists' brief refers to "*AT&T*" no fewer than twenty-three times.

II. FROM ISOLATING THE BOTTLENECK TO SHARING IT

When many of the telecommunications industry participants became frustrated with attempting to enforce the 1982 *AT&T* decree in the rapidly changing telecom environment of the mid-1990s, they struck a compromise to vacate it through legislation. The result was the Telecommunications Act of 1996, which opened local telecom markets to competition in a very complicated manner predicated on the assumption of the continued existence of local monopoly bottleneck facilities. Over time, the isolation of the bottleneck was to be abandoned as the Bell companies were admitted into in-region long distance services, but the Bell companies would be forced to obtain this liberation at a price. They would now have to share their alleged "bottleneck" facilities with local entrants at regulated wholesale rates. Vertical integration would be permitted once again, but only if entrants could share in the benefits of such integration through short-term leases of the incumbents' sunk local facilities.

The 1982 *AT&T* decree did not go as far as the 1996 Act because the issue at that time was the use of the local monopoly bottleneck to monopolize long distance services and telephone equipment. Had the government's case included a charge that *AT&T* was frustrating long distance entry in order to discourage potential entry into *local* telecom services, the decree might have been designed differently. By allowing MCI, Sprint, and others to share or lease *AT&T*'s local facilities, the remedy could theoretically have provided these companies with the opportunity to enter as quasi-integrated carriers offering local and long distance services. At the time, in 1981–1982, however, no

³⁵ See Steve Lohr and Paul Meller, *Europe Rejects Microsoft's Bid to Preserve Bundling Plan*, *NY Times* C1 (Dec 23, 2004) (describing the status of the EU litigation).

³⁶ Remedies Brief of Amici Curiae Robert E. Litan, Roger G. Noll, William D. Nordhaus, and Frederic M. Scherer, *United States v Microsoft Corp*, Civil Action No 98-1232, *19, *24–25 (D DC filed Apr 27, 2000), online at <http://www.brookings.edu/dybdocroot/views/papers/litan/20000428.pdf> (visited Dec 8, 2004) (using the *AT&T* case as a model for how to resolve the Microsoft litigation).

one believed that entry into local services was possible; hence, the focus was on long distance.

By 1996, the transition to equal access in the origination and termination of long distance telephone traffic had gone so well that Congress (and many industry lobbyists) assumed that leased access to local bottleneck facilities could be achieved with similar ease. It was assumed that competition could thus be achieved relatively quickly in local services based on a network sharing model. This proved to be a very optimistic assumption.

A. Network “Unbundling” with Unchanging Technology

The 1996 Act’s new policy of regulated wholesale access to the local Bell companies’ network facilities was termed “network unbundling,” suggesting that the incumbent Bell companies would be required to divide their networks into various components—or, unbundled network elements (UNEs)—and offer them to new entrants at regulated wholesale rates. Although it sounds relatively simple, this policy had not been attempted before in the telecommunications industry.³⁷ Its implementation would prove extremely difficult and so controversial that the rules for implementation have been before the courts for eight years.³⁸

Were a local telephone network similar to a water utility or a local natural gas distributor, network unbundling might be relatively simple. The only issues would involve where the new competitor would be able to interconnect with the network of underground pipes that were probably buried decades ago. Because the technology or network architecture in these services does not change appreciably over time, there would be no need to consider how to accommodate new services or new types of capital equipment into such a shared network.

³⁷ Unbundling began in 1995 in Hong Kong, but there was surely no evidence on how well it worked prior to the passage of the 1996 Act. In 2004, Hong Kong decided to radically scale back its unbundling requirements. For details, see generally Office of the Telecommunications Authority, Interconnection Determination Committee, *Supplementary Determination Under Section 36A of the Telecommunications Ordinance on the Terms and Conditions of Self-Built Points of Interconnection Between New World Telecommunications Limited and PCCW-HKT Telephone Limited* (May 14, 2004), online at <http://www.ofta.gov.hk/ta-determine/de20040514.pdf> (visited Dec 8, 2004).

³⁸ As this Essay is being written, the FCC must rewrite its rules allowing the states to find that unbundling of switching is required under the 1996 Act’s “impairment” standard. See *United States Telecom Association v FCC*, 359 F3d 554, 568 (DC Cir 2004) (vacating the FCC’s subdelegation to state commissions of decisionmaking authority over impairment determinations). On June 9, 2004, the Solicitor General and the FCC decided not to appeal this ruling. See FCC Press Release, *Office of Solicitor General Will Not Appeal DC Circuit Decision* (June 9, 2004), online at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-248220A1.pdf (visited Dec 10, 2004).

In the case of telecommunications, it was thought that the “local loop”—a maze of copper wires radiating from a central switching center—would be similarly easy to share with new entrants. The copper plant degrades slowly and had traditionally been replaced with similar strands of covered wire when it reached the end of its physical life, although in recent years much of it was replaced by a hybrid fiber-optics/copper loop. There might be arguments over how to accommodate the equipment of the entrant at the “co-location” facilities in the incumbent Bell companies’ switching centers and, surely, debate over setting the wholesale rates, but it was anticipated that these disputes would be resolved fairly easily.

In this hypothetical technologically stagnant environment, what would an entrant be able to offer? It could use the opportunity to arbitrage the rate structure in much the same manner as the long distance companies of an earlier era. But the regulated rate structure in telecommunications has traditionally provided residential customers with below-cost local services that have been cross-subsidized by long distance services and local connections to small and medium-sized businesses.³⁹ If entrants had access to incumbents’ facilities at cost-based rates, they could not profitably sell services over these leased facilities to residential subscribers who are being served by the incumbents at rates below costs. Without innovative new services, entrants could not possibly use the unbundled local loop to offer residential services, and even business customers might be reluctant to switch carriers and suffer through a transition of service problems for a relatively small reduction in the price of traditional voice and data services.

Thus, “unbundling” might work in theory, but no entrant would be able to operate profitably in this technologically stagnant environment.⁴⁰ Moreover, once the wireless carriers began to offer national calling plans, the revenues available to all fixed-wire operators would begin to decline. As a result, virtually every new carrier that has tried to enter by using the unbundled local loop to offer the same services as incumbents in a marketplace with declining total revenues has, not surprisingly, failed in just a few years.⁴¹

The United States is one of the few countries that has attempted to use network unbundling to promote competition in traditional

³⁹ See Crandall and Waverman, *Who Pays for Universal Service?* at 7–9 (cited in note 15).

⁴⁰ Writing in 2002, Douglas Lichtman and Randal Picker assert that it is too soon after the 1996 Act to know whether local competition is working. But they point out that the “real hot spot” of competition is wireless, not fixed lines. See Douglas Lichtman and Randal C. Picker, *Entry Policy in Local Telecommunications: Iowa Utilities and Verizon*, 2002 S Ct Rev 41, 88–91.

⁴¹ For details, see Crandall, *Competition and Chaos* ch 4, part D (cited in note 13).

voice services.⁴² Because providing access to unbundled essential facilities has not produced viable competitors in these services, the FCC and state regulators have used the unbundling provisions to permit entrants to resell the incumbents’ services—that is, requiring the “unbundling” of all facilities and a recombination of them—at deep wholesale discounts.⁴³ Through this policy, the larger long distance carriers and a few other carriers have obtained the incumbents’ services at discounts of 50 percent or more from average retail revenues and offered them back unchanged to the same consumers at relatively small savings. There is no innovation in this process, simply an increase in marketing expenditures to convince consumers to change the billing address for their local carrier. As a result of this regulatory strategy, roughly two-thirds of the 29.6 million competitor lines at the end of 2003 were simply the resale of incumbent lines; only 4.3 million customer lines were actually “unbundled.”⁴⁴

B. Network Sharing When Technology Is Changing

Fortunately, the 1996 Act was passed as the internet revolution was just beginning. New uses of the telephone network were proliferating, and users were beginning to demand greater network capacity. Telecommunications networks would now be required to offer high-speed, packet-switched services to accommodate this new demand. The bad news is that these services cannot be delivered over the old network without major new investments and even a fundamental change in network architecture. How does a regulator mandate “unbundling” of a network the design of which has yet to be determined? Even more important, who decides how the network should be designed?

Once the network technology begins to change, any attempt to mandate the “unbundling” of that network at regulated rates becomes extremely difficult and even counterproductive. Much of the economics literature has focused on the adverse incentive effects on network investment of mandated unbundling of well-defined elements and

⁴² Germany required network unbundling for ISDN services in 1998, but unbundling did not begin generally in the EU until 2001 and was focused only on broadband services. See Commission of the European Communities, *Eighth Report from the Commission on the Implementation of the Telecommunications Regulatory Package* 24–28 (2002), online at http://europa.eu.int/information_society/topics/ecomm/doc/all_about/implementation_enforcement/annualreports/8threport/com2002_0695en01.pdf (visited Dec 10, 2004).

⁴³ This policy is being abandoned as a result of the D.C. Circuit’s decision in *United States Telecom Association*, 359 F3d 554. See also note 38.

⁴⁴ Federal Communications Commission, *Local Telephone Competition: Status as of December 31, 2003* 7–8, tables 3, 4 (June 2004), online at http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/lcom0604.pdf (visited Dec 8, 2004).

attempts to price these unbundled elements at long-run incremental cost. If the entrant leases the network element on a month-to-month basis, but the lessor's investment in that asset is largely sunk, the lessee is granted a "free option" to forgo the capital expenditure and thereby remain free to adopt any subsequently new technology that renders the current network element prematurely obsolete.⁴⁵ As serious as this problem may be in forestalling network investment by incumbents and entrants alike, an even more serious practical problem is likely in network sharing in a period of dynamic technological change.

In a network-sharing regime, any decision by the owner of the network to introduce new technology is likely to redound to the disadvantage of one or more of its competitors who are leasing its network. For example, if a telephone company decides to extend fiber optics farther into its network, thereby reducing the length of its copper loops, the entrants who have located their equipment at the end of the old copper wires would be forced to relocate such equipment to a multitude of "remote terminals" that the network builds to provide the optical/electrical signal conversion. Rather than doing so, the entrants will surely argue before the regulator that they should be allowed to share the electronics and the fiber optics path as well. Once they are granted access to the electronic equipment and other new network equipment, it is a small step to allow the entrants to intervene in the very design of the incumbent's facilities.

Thus, a regime of mandated network sharing is likely to create substantial disputes over the right of the network operator to make its own decisions about the technologies and services to be deployed. Such disputes severely delayed the deployment of DSL service in Illinois, for example, before the state regulatory commission decided to change its decisions about how entrants could interconnect with SBC, the incumbent network owner.⁴⁶ A similar dispute threatened the deployment of network facilities for DSL in Minnesota, but the threat was ended when the FCC issued new rules in 2003 that ended mandatory line-sharing for broadband services.⁴⁷

⁴⁵ See, for example, Jerry A. Hausman, *The Effects of Sunk Costs in Telecommunications Regulation*, in James Alleman and Eli Noam, eds, *The New Investment Theory of Real Options and Its Implications for Telecommunications Economics* 191, 194–96 (Kluwer 1999) (arguing that the regulations implementing the 1996 Act do not provide carriers with appropriate compensation for their investment in sunk network costs).

⁴⁶ See generally Illinois Commerce Commission, Docket No 00-0393, online at <http://eweb.icc.state.il.us/e-docket> (visited Dec 8, 2004) (docket for unbundling issues).

⁴⁷ See Steve Alexander, *FCC Ruling Gives Bells Both Limits and a Lift*, Minneapolis Star Trib 1D (Feb 21, 2003). When provided with evidence on these problems in the United States, the New Zealand Commerce Commission reversed its earlier position and decided not to adopt an unbundling regime in December 2003. In 2004, the New Zealand Minister of Communications

Thus, rapid changes in technology have made “network unbundling” of telecommunications networks much more difficult than, say, applying a similar regime to water or natural gas pipelines. Mandating network sharing at long-run incremental cost-based prices invites disputes over network design and is likely to undercompensate network owners for the risk of the premature obsolescence of their sunk facilities. Both of these problems are likely to reduce capital spending and the deployment of new technologies, a result clearly identified by the D.C. Circuit this year in affirming the FCC’s decision to end network sharing for broadband facilities.⁴⁸

In contrast, were the telecom network a well-defined, relatively unchanging entity offering simple voice services, unbundling might work, but in such a world there would be few entrants because they would have little to offer consumers. They would find it difficult to attract subscribers and cover their marketing costs by trying to switch calls and send out monthly bills at a cost lower than that achieved by the incumbents. Thus, it is very difficult to see how mandated network sharing can be welfare enhancing in telecommunications, regardless of the rate of technological progress in network design.

C. The Erosion of Monopoly in the “Monopoly Bottleneck”

As long as telecommunications was largely “plain old telephone service,” little incentive existed to build new networks to compete with the established carriers. Entry occurred in long distance services, as we have seen, largely because of the arbitrage opportunity presented by regulators. But with no arbitrage opportunities available, who would want to build new local networks to share the stagnant consumer and small business marketplace with the incumbents?

The technological revolutions that allowed low-cost (cellular) wireless services and high-speed, packet-switched internet services changed this environment in the 1990s. Cable companies, satellite carriers, and a proliferation of wireless companies began to offer innovative new services. To compete in the new high-speed, broadband market, the incumbent telephone and cable television companies had to spend billions of dollars in network upgrades. The wireless carriers also had to invest heavily in expanded digital (“2G”) networks to provide nationwide voice services and have recently begun to increase capital spending to provide high-speed internet connections. The re-

affirmed this decision. See Peter Griffin and Kevin Taylor, *Telecom Wins in Access Verdict*, New Zealand Herald (May 20, 2004).

⁴⁸ *United States Telecom Association*, 359 F3d at 581–82 (discussing the effect of unbundling on incentives to roll out new technologies).

sult has been an increase in the number of competitive platforms to deliver these new services. Once deployed, these platforms are able to deliver the older, traditional voice services as well. In some cases, these new platforms can deliver the traditional voice services through packet switches at a fraction of the cost of delivering them over the older circuit-switched networks found in the traditional telephone networks.

In short, changing technology has created the opportunity for new carriers to offer new services and to compete with the traditional local telephone companies in offering network access to millions of households and small-to-medium businesses. But these opportunities have required new networks, or at least the substantial rebuilding of older networks, not the sharing of the old technology. As a result, cable television systems changed and wireless platforms were deployed throughout the country, making it very difficult to describe the old copper loops of the incumbent telephone companies as *monopoly* bottlenecks. To a new telecom carrier, the cost of building the connection from the subscriber to its network may still appear to be a “bottleneck,” but it is no longer a monopoly bottleneck. Similar “bottlenecks” exist in other industries, making entry difficult, but not impossible. For instance, the \$2 billion cost of investing in the design, tools, and dies to stamp out and assemble a new motor car provides a similar bottleneck in the motor vehicle industry, but it is not a monopoly bottleneck either.

III. FROM NETWORK SHARING BACK TO ISOLATING THE BOTTLENECK?

Because of the perceived success of the AT&T divestiture and the subsequent frustration with the 1996 Act’s unbundling regime, there has been some interest in moving back in the direction of “isolating the bottleneck,” even if it is not a monopoly bottleneck. Some earlier proponents of unbundling in the United States, such as AT&T, have advocated a “structural separation” of the incumbent telephone companies’ distribution plant from the rest of their operations.⁴⁹ Such proposals have also appeared in Europe, particularly in the United Kingdom.

By advocating a return essentially to the approach taken in the 1982 AT&T decree, these proponents fail to come to grips with what is

⁴⁹ See AT&T News Release, *AT&T Calls Pennsylvania Decision a Good Order, Saying It Confirms Verizon’s Anti-Competitive Practices 2* (Mar 22, 2001), online at <http://www.att.com/news/2001/03/22-3724> (visited Dec 8, 2004) (arguing that actual structural separation would render discrimination by local access companies easier to detect).

perhaps the most important problem facing the U.S. telecommunications industry: how to induce the investment necessary to provide a network architecture capable of delivering internet connectivity at speeds of twenty to thirty megabits per second. Such speeds are now routinely available in Japan and South Korea because their population density and various government subsidies have resulted in a telecommunications network architecture that has fiber optic distribution lines much closer to the final subscriber than in the United States.⁵⁰ Large investments will be required to allow U.S. networks to deliver similar speeds.

If the regulated local distribution company, or “loop-co,” were separated from those providing the final services, it is not clear what the isolated loop-co’s investment incentives would be. If the various downstream service companies had different preferences over network design for new, advanced services, whose design would the loop-co choose? Could it enter into long-term contracts with downstream companies to deliver services over this network? If not, it might be very reluctant to invest in long-lived, sunk-network assets because of the “free option” problem described above. If it entered into such a contract, other downstream companies would surely complain of discrimination.

One of the benefits of vertical integration in an industry with rapidly changing technology lies in the coordination of investment and production decisions. At the present time, when the technology for delivering telecom services is undergoing a sea change and the very nature of those services is changing dramatically, any decision to mandate a move away from vertical integration would be very risky. Traditional circuit-switched voice telephone revenues are falling rapidly because of wireless competition. As “always-on” broadband connections proliferate, voice revenues will fall even more rapidly because internet telephony over packet switches will simply be another application, like e-mail, delivered at extremely low costs. The efficient mix of fiber optics, various wireless technologies, and copper or coaxial cables that will emerge to deliver these packet-switched applications is difficult to predict. As a result, investments in these technologies are increasingly risky. They are not remotely similar to the investments

⁵⁰ Korea and Japan have subsidized investment in these advanced networks through a variety of tax incentives. See Junseong An, *E-Korean DSL Policy: Implications for the United States*, 20 *John Marshall J Computer & Info L* 417, 422–23 (2002) (describing the South Korean government’s efforts to encourage information technology development); International Telecommunication Union, *Promoting Broadband: The Case of Japan* 34 (April 2003), online at <http://www.itu.int/osg/spu/ni/promotebroadband/casestudies/japan.pdf> (visited Dec 8, 2004) (detailing Japanese government policies for technological development).

made to replace worn out water pipes, gas lines, or copper telephone lines in a traditional public utility environment.

Fortunately, every jurisdiction that has entertained the notion of structural separation for local telecommunications carriers has rejected it.⁵¹ However one viewed the wisdom of this policy in 1982 when AT&T was broken up along vertical lines, the current environment surely suggests much greater caution. In 1984, the divested Bell companies were forced to deploy equal access capability in their end-office circuit switches that controlled the access to the monopoly bottleneck. Today, these companies are faced with the prospect of retiring those circuit switches entirely because of the internet revolution and the competition from other platforms. The pace of this retirement and the nature of the complete redesign of their networks are matters that appear to be best left to unregulated markets. Their “monopoly” bottlenecks no longer exist; indeed, they may be on the verge of obsolescence.

CONCLUSION

In the literature of antitrust, the monopoly bottleneck has an honored position that has recently enjoyed a revival of interest because of cases such as *Verizon Communications Inc v Law Offices of Curtis V. Trinko, LLP*.⁵² My purpose in this Essay is to show how a regime of enforced network sharing or isolation of the bottleneck has worked or would work in one specific and important sector—the telecommunications sector.⁵³ I conclude that neither policy is likely to be welfare enhancing in an environment of stagnant technology except as

⁵¹ In the early 1990s, a form of structural separation for Rochester Telephone (now, Frontier) was rejected by the New York Public Service Commission. More recently, Pennsylvania considered and rejected it. See Pennsylvania Public Utility Commission, *PUC Orders Functional Structural Separation of Verizon 1* (Mar 22, 2001), online at http://www.puc.state.pa.us/general/press_releases/press_releases.aspx?ShowPR=610 (visited Dec 8, 2004) (rejecting structural separation, but requiring nondiscriminatory access to Verizon facilities). In the United Kingdom, the former regulator, Oftel, rejected a proposal to impose structural separation on British Telecom. See Michael H. Ryan, *Structural Separation: A Prerequisite for Effective Telecoms Competition?* 12–14, online at <http://aporter.pair.com/articles/structsep.pdf> (visited Dec 8, 2004) (detailing the history of Oftel’s rejection of structural separation).

⁵² 540 US 398, 410–11 (2004) (holding that insufficient assistance to rival firms using networks under the Telecommunications Act of 1996 did not give rise to an antitrust claim).

⁵³ I do not try to provide a general economic rule on when refusals to deal by an owner of the bottleneck should be actionable under the antitrust laws. For such a discussion, compare Glen O. Robinson, *On Refusing to Deal with Rivals*, 87 Cornell L Rev 1177, 1204–30 (2002) (arguing that refusing to deal with one’s rivals should not be a separate antitrust violation except in the unique case of essential facilities), with Steve Semeraro, *The Efficiency and Fairness of Enforced Sharing: An Examination of the Essence of Antitrust*, 52 Kan L Rev 57, 59–62 (2003) (criticizing Robinson’s analysis and suggesting that, in a variety of cases, monopolists should be compelled to deal with their rivals).

a means of providing opportunities for regulatory arbitrage and thereby sending important market signals to regulators. In the current environment of rapid technological change, however, concern over the telecommunications bottleneck is misplaced. The distribution plant of the local telephone company may have been a bottleneck of concern to antitrust authorities at one time, perhaps even as late as 1982 when the AT&T decree was entered. But this plant no longer contains a monopoly bottleneck because it is under severe pressure from new technologies and platforms.

Allowing competitors to share this distribution plant or trying to separate it from other telecommunications operations is not only unnecessary today, but likely counterproductive. The telecommunications industry appears to be settling down into a competitive struggle between at least three vertically integrated platforms: the fixed-wire telephone companies, the cable television companies, and the wireless carriers. In addition, new fixed-wireless carriers (such as those using “WiFi”) and satellite carriers may compete for large shares of communications service revenues. In this highly uncertain environment, any attempt to use antitrust or regulation to control the evolution of the communications market structure is perilous indeed.