

**THE EFFECTS  
OF RAPID  
TECHNOLOGICAL  
CHANGE ON  
REGULATORY  
POLICIES IN THE  
COMMUNICATIONS  
SECTOR**

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August 17, 2018

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## EXECUTIVE SUMMARY\*

Predicting what future changes in technology may occur is often an impossible endeavor. Designing effective regulatory policies around changing technologies is even more difficult, as it requires understanding how those changes may alter market conditions that often render such policies obsolete or even counterproductive. This report draws on a sizable history of past regulatory and antitrust interventions whose results demonstrate that:

- In a fast-changing industry, it is often very difficult to predict developments that dramatically change the market.
- In industries characterized by rapid technological change, regulation often leads to counterproductive constraints on firms. Moreover, history shows that such counterproductive regulations are often hard to lift and stay in place for a long time.

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*Therefore, at this time the regulators should be particularly cautious in intervening.*

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- The wireless industry is in the midst of a major technological change, a move to 5G, and competitors have already successfully entered with new business models (cable companies, DISH, and others, including Google and other tech companies). As a result, predicting future market conditions is particularly difficult.
- Therefore, at this time the regulators should be particularly cautious in intervening.

The vulnerability of regulatory policies to changing market conditions is particularly notable in the communications sector, given the rapid rate of technological change and the deployment of new services over time. This report provides a detailed critique of four such policies involving telecommunications, media, and cable television that were overtaken by technological change that rendered these policies unnecessary or even counterproductive. In the first two of these cases involving telecommunications, regulation persisted for many years after dramatic changes in technology clearly showed the regulations to be inefficient and unnecessary. The last two, involving cable television and the Internet, were exposed as counterproductive or irrelevant much more quickly because of the evolution of market conditions that were not foreseen or understood by regulators but still had detrimental effects on consumers and the marketplace.

\*The author wishes to thank T-Mobile for underwriting this paper. All conclusions in this paper represent those of the author.

# I. The Artificial Distinction Between “Local” and “Long-Distance” Calling in Telecommunications Regulation

In the modern digital age, one may communicate through a wireless or wireline telephone call, a text message, an e-mail, or through a social media site. The price of using any of these media for such a communication is rarely distance sensitive and may be zero or close to zero in many cases. The distance insensitivity of communications prices is a rather recent phenomenon, one driven by changes in technology and – belatedly – by changes in regulatory policies.<sup>1</sup>

In the earliest days of telephony, the average cost of transmitting a signal varied with distance because of the technology employed. At first, signals were transmitted only over copper wires. The cost of sending a call

over such facilities rose substantially with distance. After World War II, microwave technology began to replace copper wires, reducing the cost of transmitting “long distance” calls, but not eliminating the distance sensitivity of the cost of calls. Once fiber optics began to displace microwave as the dominant technology in long-distance transmission, the cost of transmitting calls across hundreds or even thousands of miles declined dramatically. Today, the full cost of transmitting a call from New York City to, say, Los Angeles might still be somewhat above the cost of transmitting it to Newark, NJ, but the differences in transmission cost are so small that they are likely not worth measuring and billing consumers for them.

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<sup>1</sup> For a thorough discussion of this development, see FRANCES CAIRNCROSS, *THE DEATH OF DISTANCE: HOW THE COMMUNICATIONS REVOLUTION IS CHANGING OUR LIVES* (2001).

## A. Regulatory Price Distortions

Prior to the entry of new long-distance carriers in the 1960s, federal and state regulators controlled the telephone rates of AT&T, the dominant U.S. carrier, and various smaller companies. A Joint Board of these regulators made recommendations to the Federal Communications Commission (FCC) on the allocation of carriers' costs between intrastate and interstate jurisdictions. In an effort justified as necessary to achieve "universal service," these regulators allocated a substantial share of the fixed (non-traffic-sensitive) costs of the telephone network to interstate long-distance calls, even after the cost of such calls had begun to decline rapidly with the introduction of microwave transmission.<sup>2</sup>

The result of this allocation of costs was to elevate interstate long-distance rates relative to costs so as to keep local telephone rates correspondingly low. As long-distance costs fell due to technological change, this artificial regulatory distortion of the relative prices of interstate and intrastate services grew.

The 1974 *U.S. v. AT&T* antitrust case was settled by a consent decree in 1982, which provided for vertical divestiture of AT&T's local operating companies.<sup>3</sup> This divestiture was completed in 1984. AT&T continued as a long-distance carrier, competing with new carriers such as MCI, Sprint, and WorldCom, and its local operations were spun off to seven Regional Bell Operating Companies. The vertical separation of local and long-distance wireline service required the FCC to set explicit access charges that the divested operating companies would charge AT&T and other long-distance companies for originating and terminating their interstate calls.

The access charges were established at levels that preserved the pre-divestiture rate structure and therefore were set very high. Indeed, they were initially set at more than 17 cents per conversation minute. Realizing that these access charges were far above any reasonable estimate of costs, the FCC began to reduce them, substituting a monthly fixed "subscriber line charge" that residences and businesses would pay on their local telephone bills to rebalance rates towards their relative costs and allow the local carriers to recover the lost revenues. See Table 1.

Between 1984 and 2004, per-minute access charges were reduced steadily from 17.3 cents to 1.4 cents while the subscriber line charge for residences and single-line businesses rose from \$0 to \$5.96 per month and the subscriber line charges for multi-line businesses rose to more than \$6 per month.<sup>4</sup> These dramatic changes in the telephone rate structure following

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<sup>2</sup> The non-traffic-sensitive costs allocated to the interstate jurisdiction were recovered on a usage-sensitive basis with charges levied for each call on the basis of time and distance. For a description of this policy, see ROBERT W. CRANDALL AND LEONARD WAVERMAN, WHO PAYS FOR UNIVERSAL SERVICE? WHEN TELEPHONE SUBSIDIES BECOME TRANSPARENT (2000).

<sup>3</sup> See Modification of Final Judgment, *U.S. v. American Tel. and Tel. Co.*, 552 F. Supp. 131 (D.D.C. 1982), *aff'd. sub. nom.*, *Maryland v. U.S.*, 460 U.S. 1001 (1983).

<sup>4</sup> See *Universal Service Monitoring Report*, FCC, at Tables 7-12 and 7-13 (June 1999), <https://www.fcc.gov/general/monitoring-reports-2010-and-earlier>.

the AT&T divestiture were phased in over nearly two decades in order to avoid an adverse public reaction from those most affected by a rise in the fixed cost of subscribing to the telephone network - the flat local rate plus the subscriber line charge - even if those rates more accurately reflected costs.<sup>5</sup> The average price of a local residential line rose from \$15.18 per month in 1984 to \$24.52 in 2004 while the average price for interstate and international calls fell from 32 cents per minute to 8 cents per minute over the same period.<sup>6</sup>

**Table 1**

The Federal Communications Commission's Rebalancing of Wireline Telephone Rates 1984-2004


Period	Residential and Single-Line Business Subscriber Line Charge (\$/mo.)	Multi-Line Business Subscriber Line Charge (\$/mo.)	Interstate Switched Access Charge per Conversation Minute (¢/min.)
5/26/84-1/14/85	0.00	4.99	17.26
1/15/85-5/31/85	0.00	4.99	17.66
6/01/85-9/30/85	1.00	4.99	16.17
10/01/85-5/31/86	1.00	4.97	15.38
6/01/86-12/31/86	2.00	4.97	14.00
1/01/87-6/30/87	2.00	5.12	12.41
7/01/87-12/31/87	2.60	5.12	11.49
1/01/88-11/30/88	2.60	5.01	10.56
12/01/88-2/14/89	3.20	5.01	9.60
2/15/89-3/31/89	3.20	5.01	9.46
4/01/89-12/31/89	3.50	4.94	9.11
1/01/90-6/30/90	3.48	4.84	7.78
7/01/90-12/31/90	3.48	4.83	7.48
1/01/91-6/30/91	3.48	4.77	7.18
7/01/91-11/27/91	3.49	4.74	6.97
11/28/91-6/30/92	3.49	4.76	6.97
7/01/92-6/30/93	3.49	4.68	6.76
7/01/93-6/30/94	3.50	5.37	6.66
7/01/94-6/30/95	3.50	5.45	6.89
7/01/95-6/30/96	3.50	5.50	6.16
7/01/96-6/30/97	3.50	5.53	6.04
7/01/97-12/31/97	3.50	5.68	5.18
1/01/98-6/30/98	3.50	6.92	4.04
7/01/98-12/31/98	3.50	7.11	3.82
1/01/99-6/30/99	3.50	7.05	3.71
7/01/99-12/31/99	3.50	6.94	2.82
1/01/00-6/30/00	3.50	6.94	2.85
7/01/00-6/30/01	4.28	6.88	1.91
7/01/01-12/31/01	4.78	6.66	1.71
1/01/02-6/30/02	4.92	6.79	1.69
7/01/02-6/30/03	5.62	6.45	1.46
7/01/03-6/30/04	5.96	6.37	1.44

Source: 2011 Universal Service Monitoring Report, Tables 4.4 and 4.5. FCC.<sup>7</sup>

<sup>5</sup> As explained in Section I.C below, this rebalancing did not result in fully cost-based pricing.

<sup>6</sup> See *Trends in Telephone Service*, Report, DOC-301823, Tables 13.3 and 13.4 (Sept. 30, 2010).

<sup>7</sup> See *Universal Service Monitoring Report*, Report, DOC-311775 (Dec. 29, 2011).



Note that the decline in interstate access charges over this period accounted for nearly 16 cents of the 24 cents-per minute decline. Thus, the rebalancing of rates after the AT&T divestiture was the major force in driving down interstate long-distance rates.

## **B. The Continuation of FCC Regulation Despite the Increase in Competition from New Technologies**

As far back as 1974, the FCC began to develop its policy of licensing the electromagnetic spectrum for mobile wireless services.<sup>8</sup> The first U.S. cellular service began operating in 1983 using an analog technology. The demand for the new service was substantial as reflected in the rapid growth in cellular subscriptions. By 1988, there were more than 2 million subscribers; by 1993, just ten years after the introduction of cellular service, 16 million subscribers had cellular handsets;<sup>9</sup> and by 2016, subscriptions totaled 396 million.<sup>10</sup>

In 1998, AT&T Wireless announced a new Digital One Rate plan that allowed subscribers to call anywhere in the United States for the same price, a price that declined with overall minutes of use in the chosen variant of the plan.<sup>11</sup> Soon, other carriers began offering similar pricing plans, and subscribers responded by using their cellular phones to make long distance calls that they had been making over their traditional wireline connections because the wireless calls did not incur traditional wireline access charges and were cheaper. The result was a dramatic shift of long-distance calling from traditional wireline to wireless carriers. Moreover, in 2003 cable television companies began to offer distance-insensitive Voice over Internet Protocol (VoIP) calling services. These competitive developments induced a sharp decline in interstate switched access minutes reported by local wireline carriers, as shown in Figure 1.

Despite the rapid growth of wireless telephony, the FCC continued the regulation of wireline carriers. The 1996 Telecommunications Act (“1996 Act”) established a detailed policy of requiring that the dominant, incumbent wireline carriers – principally the Bell Operating Companies that were divested by AT&T in 1984 – allow competitors to lease portions of their networks at regulated wholesale rates.<sup>12</sup> These wholesale rates were set by state regulators under guidelines established by the FCC. In addition, the FCC had the responsibility of regulating interstate long distance rates and ruling on a variety of issues that arose under the 1996 Act. All of this regulation continued despite the obvious growth of competition from wireless providers in the late 1990s.

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<sup>8</sup> See *Inquiry Relative to the Future Use of the Frequency Band 806-960 MHz, Amendment of Parts 2, 18, 21, 73, 74, 89, 91, and 93 of the Rules Relative to Operations in the Land Mobile Service Between 806-960 MHz*, Memorandum Opinion and Order, 51 FCC 2d 945 (1975).

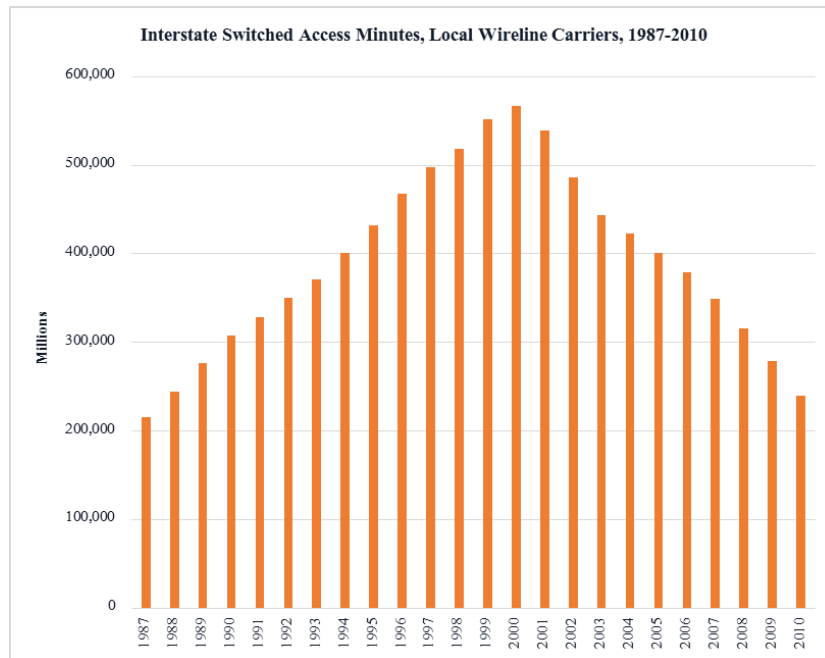
<sup>9</sup> See *Trends in Telephone Service* at Table 11.3.

<sup>10</sup> See *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Twentieth Report, 32 FCC Rcd 8968 ¶ 5 (2017).

<sup>11</sup> See *Cell Phone Plan Debuts*, CNN MONEY (May 7, 1998), <https://money.cnn.com/1998/05/07/technology/attwireless/>.

<sup>12</sup> See *infra* Section II for a further detailed discussion.

**Figure 1**



Source: 2012 Universal Service Monitoring Report, Chart 5.1, FCC.<sup>13</sup>

As early as 2001, the FCC offered the following observations about the growth of wireless competition:




*According to a recent survey by the Yankee Group, about 3 percent of mobile telephone subscribers rely on their wireless phone as their only phone. While most wireless customers may not be willing to “cut the cord” just yet in the sense of canceling their subscription to wireline telephone service, it is indisputable that wireless service has significantly changed the way Americans communicate. Initially a business tool, wireless phones have become a mass-market consumer device. According to one survey, 77 percent of wireless customers said they use their phones primarily for personal calls. For some, wireless service is no longer a complement to wireline service but has become the preferred method of communication. In a survey performed for the Consumer Electronics Association, three in 10 wireless phone users stated they would rather give up their home telephone than their wireless phone. Among wireless users aged 18 to 34 years old, that figure rose to 45 percent.<sup>14</sup>*

<sup>13</sup> See Universal Service Monitoring Report, Report, DOC-319744 (Mar. 22, 2013).

<sup>14</sup> See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, Sixth Report, 16 FCC Rcd 13350, 13381 (2001) (“Sixth Mobile Competition Report”).





Thus, the FCC recognized that wireless communications were competing strongly with wireline services very soon after AT&T introduced its Digital One Rate plan in 1998. Nevertheless, the FCC and state regulators continued their regulation of the wireline carriers and long-distance service.<sup>15</sup>

It was already becoming clear by 2001 that the competitive landscape had changed. The long-distance carriers, principally AT&T and MCI, would never enter the market for local wireline service in a meaningful way and their long-distance service businesses were declining rapidly. In 2005, AT&T agreed to be acquired by Southwestern Bell and MCI was acquired by Verizon. The viability of standalone long-distance carriers had been undermined by competition from wireless service and VoIP providers. The major focus of regulatory policy finally turned away from “local” and “long distance” voice services to Internet broadband services but this occurred 30 years after the FCC first announced a policy of allocating spectrum for cellular wireless services, 22 years after the first cellular service was launched in the United States, and 12 years after Congress authorized spectrum auctions.

Nevertheless, the FCC and state regulators continue to regulate traditional wireline services, largely in an effort to continue to promote “universal service.” Technological change has clearly eliminated the original case for the detailed regulation of telephone rates as wireless services and VoIP have become available to virtually all consumers, but regulation continues because of the apparent political appeal of using the FCC’s regulatory authority as a mechanism for taxing<sup>16</sup> consumers of interstate and international telecommunications services for the benefit of rural carriers, schools, libraries and rural health facilities. The technological revolution driving wireless telecommunications today is more dramatic and fast-paced than the changes which occurred between the AT&T divestiture and 2005. Regulators and antitrust authorities should therefore be cognizant of the difficulties their predecessors faced in dealing with dramatic changes in technology and unwinding inefficient regulations between 1984 and 2005.

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<sup>15</sup> The FCC declared AT&T “non-dominant” in the provision of long distance services in 1995, thereby eliminating detailed regulation of its interstate rates. See *Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, Order, 11 FCC Rcd 3271 (1995). AT&T still had to file interstate tariffs that were just, reasonable and non-discriminatory. The FCC continued to regulate the interstate carrier access charges paid by long-distance carriers to local carriers, and the states continued their regulation of intrastate long distance service rates.

<sup>16</sup> Considerable controversy has existed over whether the federal universal service charge should be defined as a “tax,” but it clearly is a government-imposed charge imposed on consumers of interstate and international telecommunications services - in effect, a tax.

## C. The Adverse Effects of FCC Regulation on Economic Welfare

For decades before the Department of Justice brought its antitrust suit against AT&T in 1974, the FCC and the states had operated a policy of keeping the monthly subscriber charge for telephone service below cost and compensating the carriers – principally AT&T – for the loss in revenues by establishing high rates for calling, particularly over long distances. In brief, this was a policy that made it inexpensive for consumers to have a phone but unduly expensive to use it. Such a policy reduces the value of telephone service to producers and consumers because the demand for telephone connections (local service) is far less price sensitive than the demand for long-distance usage. As a result, this policy provides very small increases in telephone subscriptions but much greater decreases in (long-distance) usage.

In *Who Pays for Universal Service? When Telephone Subsidies Become Transparent*, Crandall and Waverman estimated that the total economic welfare loss due to the regulatory mispricing of residential telephone service in 1996, long after the FCC had begun to rebalance rates, was still between \$2.5 billion and \$7 billion per year, depending on the assumed marginal cost of long-distance service and the cost model used to determine the cost of local service.<sup>17</sup> These estimates would have been much higher if the rate structure had been the one that existed before the FCC began to rebalance rates in 1984 after the AT&T divestiture. By 1996, residential subscribers were paying a \$3.50 per month subscriber line charge, which would allow long-distance rates to be 2.5 cents per minute lower, all other factors being constant. Had the FCC not imposed this subscriber line charge, the welfare loss due to mispricing would have been as much as \$2 billion more – or as much as \$9 billion per year in 1996.<sup>18</sup>




TOTAL ECONOMIC WELFARE LOSS DUE TO  
THE REGULATORY MISPRICING OF RESIDENTIAL  
TELEPHONE SERVICE IN 1996

**BETWEEN \$2.5 BILLION AND  
\$7 BILLION PER YEAR**

<sup>17</sup> WHO PAYS FOR UNIVERSAL SERVICE? WHEN TELEPHONE SUBSIDIES BECOME TRANSPARENT at 119. The calculation involved only residential services. Had business services been included, the estimated welfare loss would have been much greater.

<sup>18</sup> The absence of a subscriber line charge would have required long-distance rates to be 2.5 cents per minute higher, or about 20.5 cents per minute. Assuming an average price elasticity of long distance service of -0.72, long distance calling minutes would have been 10 percent lower.



The annual cost of this regulatory price distortion was very high for years - if not decades. Equally important, empirical studies of this “universal service” policy consistently show that this policy has little effect on overall telephone subscriptions because artificially low local rates can only induce additional subscriptions from the very few households that do not already subscribe.<sup>19</sup> On the other hand, everyone’s long-distance rates are raised by the policy.

Had the FCC moved more aggressively to introduce cellular wireless services after its spectrum allocation decision in 1975, competitive pressures from wireless services would likely have begun much sooner. Such competition may have made the 1996 Act unnecessary and would have thus spared the country the ill effects of another decade of misguided regulation, the topic of the next section.

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<sup>19</sup> See, e.g., Ross Eriksson, David L. Kaserman, and John A. Mayo, *Targeted and Untargeted Subsidy Schemes: Evidence from Post-Divestiture Efforts to Promote Universal Telephone Service*, 41 J. OF L. & ECON. 477, 485-502 (1998).

## II. The 1996 Telecommunications Act's Costly Failure

Fourteen years after the Department of Justice negotiated a consent decree to end the *U.S. v. AT&T* litigation, Congress passed the 1996 Act, which relieved the District Court of the District of Columbia of the increasingly complicated task of enforcing the decree.<sup>20</sup> The new law established a regulatory framework for “unbundling” the divested local Bell Companies’ networks and offering the unbundled elements to competitive entrants into local telecommunications markets in the hope that such competition would eventually flourish and solve the problem of the local “bottleneck” monopoly in fixed-wire services. The 1996 Act continued the consent

decree’s ban on Bell Operating Company entry into “Inter-LATA” long distance services, but it allowed the FCC to permit such entry if the Bell companies opened their networks sufficiently to competitive entry. The policy motivation continued to be the erosion of the local wireline bottleneck “monopoly” of the Bell companies. Recall, however, that the 1996 Act was passed just two years before AT&T launched its Digital One Rate plan for wireless services that would dramatically change the telecommunications marketplace, a development unanticipated by Congress and the FCC.

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<sup>20</sup> The Telecommunications Act of 1996, 47 U.S.C. § 151.

## A. The Rise and Fall of Local Network Unbundling

The 1996 Act created an immediate struggle over the details of network unbundling. Which elements of the local networks are bottlenecks and therefore need to be made available to entrants who could not afford to build them to compete profitably in the Bell companies' local markets? The 1996 Act specified that rates for each unbundled element should be based on its cost. But how could regulators determine the costs of individual elements of a network – subscriber loops, transmission lines, network switches, buildings, etc. – that entrants would share with the incumbent Bell carrier? A variety of telecommunications services are delivered over the same network; therefore, measuring the costs of any individual service requires an arbitrary allocation of joint and common costs. Moreover, the companies' accounting records are based on historical acquisition costs, not the current costs of replacing facilities with rapidly-changing technology at today's prices.

The details of regulating the wholesale prices of network components or “elements” were left to state regulators, but the FCC had the responsibility of providing the rules for determining which elements must be unbundled and for establishing the guidelines for determining the costs of providing these elements. The various parties affected by the rules – local Bell companies, prospective local entrants, and long-distance companies – provided alternative cost models for the FCC to consider. Frustrated by continuous challenges to any of these models by other participants in the regulatory process, the Commission decided to build its own “forward-looking” model of network costs, a task that required several years and was never fully adopted by the Commission.<sup>21</sup>

The FCC issued its first rules implementing the principal local-competition provisions of the new Act in August 1996,<sup>22</sup> but these rules were immediately challenged in the federal courts. A critical provision of these rules involving the criteria for determining which network elements had to be unbundled was eventually overturned by the Supreme Court.<sup>23</sup> Subsequent attempts by the Commission to draft these rules met a similar fate. In these rulemakings, the FCC attempted to provide an expansive view of the scope of the local Bell companies' unbundling requirements, even proposing at one point that the companies should offer entrants their entire network capability at low regulated rates.<sup>24</sup> Eventually, in 2003 after repeated court reversals, the FCC was forced to scale back its mandated unbundling requirements, but only after the entrants had discovered that offering local telephone service over the local companies' lines was not a profitable business.

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<sup>21</sup> For a description of the model, see *Hybrid Cost Proxy Model (HCPM)*, FCC, <https://www.fcc.gov/general/hybrid-cost-proxy-model-hcpm> (last updated Apr. 2009).

<sup>22</sup> See *Interconnection Between Local Exchange Carriers and Commercial Mobile Radio Service Providers*, Report and Order, 11 FCC Rcd 15499 (1996).

<sup>23</sup> *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999).

<sup>24</sup> This policy was described as requiring the local companies to provide UNE-P, the “unbundled network element platform,” even though it required no unbundling. Rather, it was an attempt to allow entrants to resell the incumbents' local service with a much greater profit margin than would be available with simple resale.

Chastened by a succession of court reversals, the Commission finally admitted:



*While unbundling can serve to bring competition to markets faster than it might otherwise develop, we are very aware that **excessive network unbundling requirements** tend to undermine the incentives of both incumbent LECs [local exchange carriers] and new entrants to invest in new facilities and deploy new technology. The effect of unbundling on investment incentives is particularly critical in the area of broadband deployment, since incumbent LECs are unlikely to make the enormous investment required if their competitors can share in the benefits of these facilities without participating in the risk inherent in such large-scale capital investment.<sup>25</sup>*

This was an admission that the wholesale unbundling regulations imposed real costs on the economy in the form of reduced investment in new facilities required to advance into the digital broadband age. Unless these costs were offset by substantial benefits flowing from the competition in local services that the policy was supposed to create, the policy would be a failure.<sup>26</sup>

The number of lines leased by entrants from the incumbent local carriers, largely the Bell companies, rose sharply from 2 million at the end of 1999 to nearly 20 million by 2004. Thereafter, they declined steadily to less than 6 million by the end of 2013.<sup>27</sup> Not only had wireless consistently grown over this period, but cable television companies began offering VoIP over their broadband networks in 2003. By the end of 2013, VoIP telephone subscriptions totaled 39 million while all other competitive wireline carriers had less than 20 million subscribers on unbundled incumbent lines, resold incumbent lines, and their own facilities.<sup>28</sup>


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<sup>25</sup> See *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Services Offering Advanced Telecommunications Capability, Report and Order on Remand and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 16978 ¶ 3 (2003) (emphasis added).

<sup>26</sup> Some argue that there were indirect benefits from the FCC's unbundling exercise because it allowed new entrants to position themselves between the incumbent local carriers and dial-up Internet Service Providers, thereby reaping large revenues from terminating access charges. This strategy exposed the absurdity of high regulated terminating access charges and finally forced the FCC to impose lower, symmetric access charges. See Reed E. Hundt and Gregory L. Rosston, *Articulating A Modern Approach to FCC Competition Policy*, 66 FED. COMM'NS L. J. 71, 85 (2013).

<sup>27</sup> Data is drawn from the FCC's annual competition reports. See *Local Competition Reports*, FCC, <https://www.fcc.gov/general/local-telephone-competition-reports> (last updated Feb. 24, 2014).

<sup>28</sup> The local companies were also required to offer their local services at a smaller discount for resale by the local entrants.



Moreover, the impact of wireless growth reduced the number of fixed-wire subscriber lines operated by incumbent telephone companies, new entrants, and cable television companies from a peak of 192 million at the end of 2000 to just 133 million by the end of 2013.<sup>29</sup> In contrast, the number of wireless cellular subscribers had risen from 109 million to 336 million over this period.<sup>30</sup> Competition in providing local telephone service was thriving, but not because of the FCC's attempt to stimulate entry into local wireline services under the 1996 Act. In fact, most of the entrants into fixed-wire service that relied on the FCC's unbundling policy failed within a few years.

## **B. The Cost of the FCC's Attempt to Create Local Competition through Regulation**

The effort to develop local competition in telephony by granting entrants regulated access to the incumbent Bell companies' networks at low wholesale prices proved to be a failure: first because the entrants could not operate profitably even with this regulatory beneficence and second because wireless and cable television companies invested in rapidly-changing technologies that allowed them to provide enormous competition in this market by the early 2000s. The 1996 Act's local competition provisions proved to be unwise and unnecessary.

The 1996 Act's local competition policy was also very expensive, in terms of providing both the incentive for excessive, wasted investment by the competitors and the disincentive for investment by the wireline companies to invest in new facilities. Forty-five new public entrants reported total capital expenditures of \$36 billion between 1996 and 2003, according to their published financial statements.<sup>31</sup> By the end of 1999, these 45 companies had an enterprise value - market value of equity plus book value of debt - of \$119 billion. Most of these companies never reported a profit and subsequently failed during the stock-market decline of 2000-01 - the so-called "dot.com" stock-market collapse. Ten of the 45 companies filed for bankruptcy by 2003; another 13 had been acquired by other firms. By the end of 2003, the remaining 22 companies' enterprise value had fallen to \$12.5 billion. The value of the survivors was about one-third of the total capital expenditures of all 45 entrants over the previous eight years. Some additional value undoubtedly remained in those companies that were purchased by other carriers, but the value of the remaining capital assets purchased by entrants in the regulatory environment of 1996-2003 was likely only a fraction of the total value of the original investment.


The FCC's local competition policy also suppressed investment and innovation by the established carriers for several years after the "dot.com" stock market bubble burst in 2001.

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<sup>29</sup> *Compare Local Telephone Competition: Status as of June 30, 2002*, Report, Table 1 (Dec. 2002), [https://transition.fcc.gov/Bureaus/Common\\_Carrier/Reports/FCC-State\\_Link/IAD/lcom1202.pdf](https://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/lcom1202.pdf) with *Local Telephone Competition: Status as of December 31, 2013*, Report, DOC-329975, Figure 3 (Oct. 2014).

<sup>30</sup> *Compare Sixth Mobile Competition Report at 5 with Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Seventeenth Report, 29 FCC Rcd 15311, Chart III.B.1 (2014).

<sup>31</sup> Data compiled by the author from their published financial statements.



As Figure 2 shows, capital spending by fixed-wire telecom companies declined dramatically in 2002, as long-distance carriers, incumbent local exchange carriers, and new entrants reduced their spending in response to the 2000-01 plunge in equity values.

The less-regulated cable companies also reduced capital spending, but proportionately less – only 40 percent as opposed to 55 percent for fixed-wire telecom. But cable television capital spending stabilized and began to recover in 2003 while fixed-wire telecom spending declined another 35 percent between 2002 and 2004. This difference reflects the fact that cable television was never subject to the FCC’s local competition policy, which continued through 2003-04.

When the FCC succumbed to federal court reversals, sharply curtailed the scope of local network unbundling,<sup>32</sup> and then greatly reduced the regulation of all broadband services in 2005,<sup>33</sup> fixed-wire telecom capital spending finally rebounded. Thus, not only had the FCC policy created an unfortunate incentive for local entrants to invest billions of dollars in developing businesses that could not succeed, but – as the FCC implicitly admitted in 2003<sup>34</sup> – it suppressed investment by incumbent fixed-wire carriers in the early 2000s at a critical time in the development of broadband services.

Fortunately, the Commission belatedly acknowledged that fixed-wire telecom carriers and cable television companies compete in voice and broadband markets and thus needed to be regulated in largely the same manner. In 2005, it decided to deregulate broadband Internet services offered by defining them as “information services” that are not subject to the strict regulatory requirements of Title II of the Communications Act.<sup>35</sup> The fixed-wire incumbent local carriers still had to unbundle their networks, but the unbundling requirements became much less onerous. But local entrants were failing badly, and their demand for access to incumbent company networks was declining rapidly.

A costly experiment in trying to use regulation to subsidize entry into local fixed-wire telecom markets was essentially at an end. Wireless and cable broadband had developed in a manner never envisioned by the FCC or the authors of the 1996 Telecommunications Act. By the end of 2005, there were more than 3 million mobile wireless subscribers with broadband capability.<sup>36</sup>

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<sup>32</sup> See *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, Report and Order, Order on Remand and Further Notice of Proposed Rulemaking, 18 FCC Rcd 16978 (2003).

<sup>33</sup> See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853 (2005).

<sup>34</sup> See *supra* note 25.

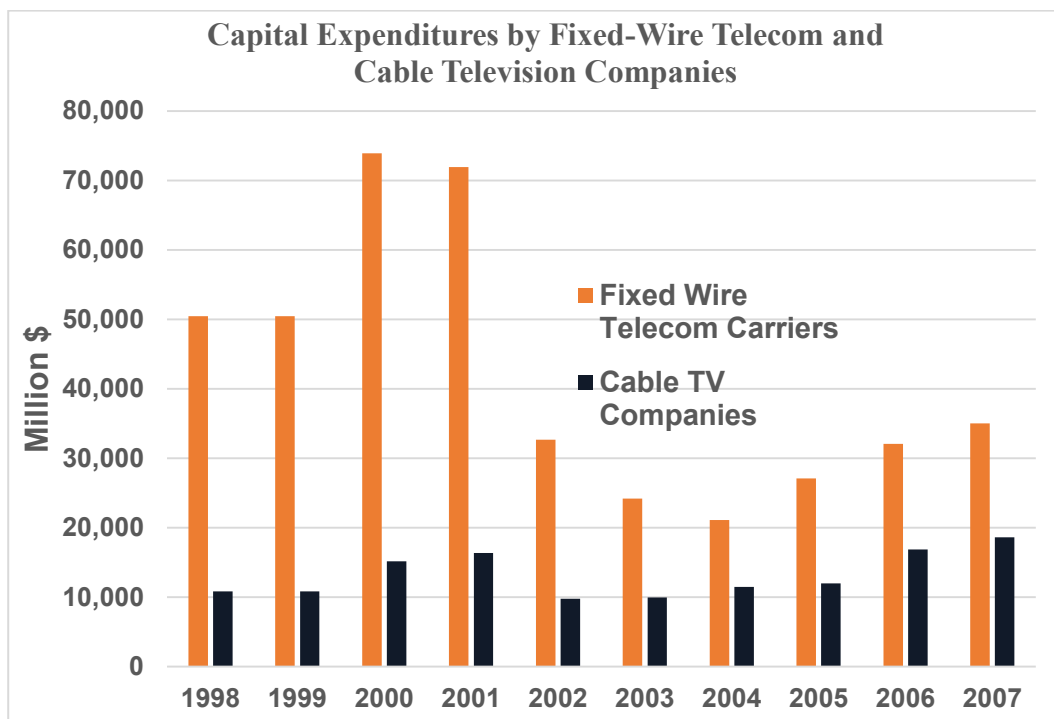
<sup>35</sup> See *supra* note 33. Since that time, the FCC has changed its mind twice, re-imposing Title II regulation of broadband in 2015 and removing the Title II classification of broadband in 2017. See *Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 (2015); *Restoring Internet Freedom*, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd 311 (2018).

<sup>36</sup> See *High Speed Services for Internet Access: Status as of December 31, 2005*, Report, FCC, Table 1 (July 2006), <https://www.fcc.gov/general/reports-high-speed-services-internet-access>.



Ten years later, the FCC would report that the number of broadband wireless subscribers had risen to 253 million, nearly two and one-half times the number of fixed-wire subscriber connections.<sup>37</sup> The local telephone companies would struggle to compete with cable television and wireless services after 2005. Cable television networks have superior bandwidth to that typically available to traditional telephone company subscribers, and wireless broadband capabilities would grow dramatically after the introduction of smartphones in 2010.

**Figure 2**



Source: *Annual Capital Expenditure Survey*, U.S. Census Bureau.<sup>38</sup>

Unable to foresee the technological revolution that delivered high-speed broadband to virtually all U.S. consumers, the FCC had unwittingly suppressed investment and delayed the deployment of a valuable new service. Similar risks from an excessive regulatory focus on yesterday's marketplace exist today as wireless carriers muster the capital to begin deploying facilities to deliver valuable new services through 5G technology.

<sup>37</sup> See *Internet Access Services: Status as of December 31, 2015*, Report, DOC-342358, Figure 6 (Nov. 30, 2016).

<sup>38</sup> See *Annual Capital Expenditures Survey (ACES)*, U.S. Census Bureau, <https://www.census.gov/programs-surveys/aces.html> (last visited Aug. 3, 2018).

### III. Deregulation, Reregulation, and Deregulation of Cable Television Rates

In its early years, cable television was severely restricted by FCC rules that limited cable systems' ability to offer diverse programming to subscribers. Begun as a retransmission service for local television off-air broadcast signals in the late 1950s, cable television began to expand by importing distant broadcast signals. This importation of signals provided unwanted competition for local broadcasters and disrupted copyright agreements between

programming copyright holders and broadcasters. As early as 1962, the FCC responded to broadcaster complaints about cable competition by enacting regulations that limited cable systems' imported broadcast signal carriage.<sup>39</sup> In addition, the Commission later limited the types of programming – particularly motion pictures and sporting events – that cable systems could originate on “pay-TV” channels.<sup>40</sup>

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<sup>39</sup> For details of the Federal Communications Commission's regulation of cable television in the early years of the industry, see Stanley M. Besen and Robert W. Crandall, *The Deregulation of Cable Television*, 44 J. OF L. & CONTEMPORARY PROBLEMS, 77, 81-105 (1981).

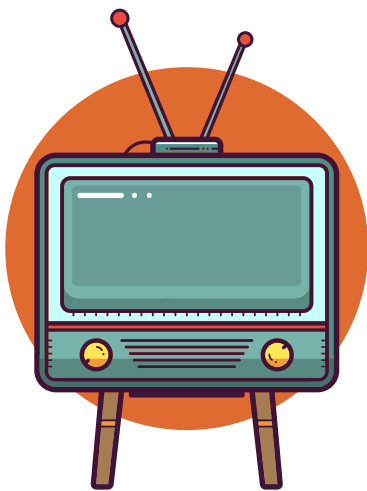
<sup>40</sup> See *Amendment of Part 74, Subpart K, of the Commission's Rules and Regulations Relative to Community Antenna Television Systems*, Cable Television Report and Order, 36 FCC 2d 141 (1972).

## A. Deregulation

In 1977, the federal courts provided the first step towards the deregulation of cable television, vacating the rules that severely restricted cable systems' ability to offer premium pay-tv program channels.<sup>41</sup> The FCC decided not to revisit the issue, thereby allowing cable systems to launch their own premium channels of movies, sports, and other programming. Aided by the development of low-cost satellite transmission, a new wave of premium cable networks, such as HBO and Showtime, was launched.

Unfortunately, the FCC's stringent regulatory regime had suppressed cable television investment for years. More than three-quarters of cable systems had a capacity of twelve or fewer channels in the late 1970s. The availability of new cable program networks after 1977 spurred investment in new cable channel capacity. By 1983, 43 percent of cable systems had a capacity of twenty or more channels, and by 1989, 65 percent of systems had a capacity of at least twenty channels.<sup>42</sup> Although twenty channels would appear to be very limited today, such capacity was substantial at a time when most households had a choice of only three major over-the-air network broadcast stations and, perhaps, an independent broadcast station.

In 1984, Congress passed the Cable Communications Policy Act ("1984 Cable Act"), which mandated deregulation of subscriber rates for all cable systems facing "effective competition" from over-the-air broadcast signals. The FCC subsequently ruled that effective competition existed when there were at least three broadcast signals in the cable system's geographic market, a decision that led to the deregulation of cable rates in all but a few areas of the country. By 1989, the FCC had also eliminated virtually all of its signal-carriage regulations for cable systems.




The deregulation of cable television led to a substantial growth in programming channels available to subscribers. By the end of 1989, the average cable subscriber could receive 40 channels of service.<sup>43</sup> But as the number of channels of service increased, cable systems raised subscriber rates, generating complaints of excessive rate increases by "monopoly" cable systems.

<sup>41</sup> See *Home Box Office, Inc. v. FCC*, 567 F.2d 9 (D.C. Cir. 1977), cert. denied, 434 U.S. 829 (1977).

<sup>42</sup> See ROBERT W. CRANDALL AND HAROLD FURCHTGOFF-ROTH, *CABLE TV: REGULATION OR COMPETITION?* at 6 (1996).

<sup>43</sup> See GAO, *Telecommunications: Follow-up National Survey of Cable Television Rates and Services*, Report to the Chairman, Subcomm. on Telecommunications and Finance, Comm. on Energy and Commerce, House of Representatives (June 1990).



A Government Accountability Office study, requested by Congress, found that the average basic cable rate rose 39 to 43 percent between 1986 and 1989, depending on the definition of basic service, but that the average cable system revenue *per channel* remained constant.<sup>44</sup> This report contributed to a political movement for reregulation of cable television, culminating in legislation in 1992 that gave the FCC wide authority to regulate cable rates.<sup>45</sup>

Despite the political climate at the time, cable subscribers had actually benefitted substantially from deregulation. The rapid growth in the number and variety of programming channels available created ample value that consumers were eager to acquire. Subscriber growth was more than 6 percent per year between 1984 and 1989 and remained above 3 percent in 1990-92.<sup>46</sup> Were rate increases simply a reflection of monopolistic cable systems raising prices for an unchanging service, one would not have expected such growth in the demand for their services. But cable service quality had been increasing steadily as operators added channel capacity and offered more programming choices for their subscribers.

An analysis performed by Crandall and Furchtgott-Roth of the changes in consumer welfare between the passage of the 1984 Cable Act and the 1992 Cable Television Consumer Protection and Competition Act (“1992 Cable Act”), found that cable subscriptions were 8 to 20 percent higher in 1992 than they would have been if subscribers had been faced with the average service options and rates for cable service available in 1983-84. Overall, consumer welfare was \$6.5 billion higher in 1992 than in 1983-84 due to the increase in viewing choices despite the increase in cable rates.<sup>47</sup> It is strange that given such enormous benefits from deregulation, Congress moved to reimpose regulation in 1992.

## **B. Reregulation (and Then Further Deregulation)**

The 1992 Cable Act provided the FCC with the authority to regulate cable rates in a very formal manner based on estimates of rates that would have existed in a competitive marketplace. Furthermore, cable systems would only be able raise rates if they could justify the increase on the basis of their costs, and price increases for new channel offerings would also have to be based on costs. Cable systems had always been regulated informally by municipal franchising authorities, but municipal regulation had not been as stringent as the formal public-utility style regulation now prescribed by the 1992 Act and to be carried out by the FCC over the next few years.


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<sup>44</sup> *Id.*

<sup>45</sup> See Cable Television Consumer Protection and Competition Act, 47 U.S.C. § 543 (1992).

<sup>46</sup> See *supra* note 43; see also *Video Competition Reports*, FCC, [https://www.fcc.gov/reports-research/reports?field\\_report\\_series\\_tid%5B%5D=1755](https://www.fcc.gov/reports-research/reports?field_report_series_tid%5B%5D=1755) (last visited Aug. 3, 2018).

<sup>47</sup> See *CABLE TV: REGULATION OR COMPETITION?* at ch. 3.



The FCC would struggle to establish “benchmark” rates for cable systems of various sizes by 1994, as mandated by the 1992 Act. The Commission based these rates on statistical analyses of rates that existed in markets deemed to be effectively competitive. The Commission eventually accepted a statistical study of rates in effectively competitive markets that led to a rollback of basic cable service rates of 17 percent, after first proposing a 28 percent rollback.<sup>48</sup> In addition, it initially established strict restrictions on rates for non-basic services, allowing them to rise by just 1 percent per month for each channel of new service, regardless of the nature or quality of the new channel’s programming. However, it wisely backed off from the latter policy in 1994, imposing less strict regulation on non-basic services and fully deregulating single-channel “a la carte” services,<sup>49</sup> thereby substantially weakening its grip on cable rates.<sup>50</sup>

The new regulatory environment would last for four years, but the stringent element of the regulation of new services was abandoned after two years. Four years later, the 1996 Act repealed much of the 1992 Cable Act, phasing out the regulation of non-basic service tiers by 1999 but leaving regulation of the basic tier of service. The regulation of basic service became less relevant over time as consumers increasingly subscribed to higher tiers of service; thus, the 1996 Act essentially deregulated the rates for an expanding set of services that cable subscribers were choosing, rendering the regulatory exercise begun in 1992 unnecessary.

### **C. The Effects of Regulation**

The strict regulation of cable rates was in place for only two years and the milder form lasted until 1996 for rural systems and until 1999 for urban cable systems. The effect on cable rates was short-lived, as Hazlett demonstrates.<sup>51</sup> He shows that the Consumer Price Index (CPI) for cable services, adjusted for the growth in the overall CPI, declined briefly by just 1 percent per year from October 1992 to October 1994. It then resumed its upward growth of nearly 4 percent per year in real terms through March 1999.<sup>52</sup> See Figure 3.

Hazlett also found that cable subscriber growth receded markedly during the first two years of regulation under the 1992 Cable Act, but this finding depends somewhat on the source of the data.<sup>53</sup> The data published by the FCC in its Annual Video Competition Reports does not show a decline in growth of subscribers to cable systems in 1992-93. See Figure 4.<sup>54</sup>

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<sup>48</sup> Basic services included the required local broadcast stations; public, educational, and government access channels required by the municipal licensing authority; and other broadcast stations not distributed by satellite.

<sup>49</sup> “A la carte” services were single channel offerings, rather than “basic” service bundles or “premium service” bundles.

<sup>50</sup> For more details, see *CABLE TV: REGULATION OR COMPETITION?* at 39-45; see also Thomas W. Hazlett, *Prices and Outputs Under Cable TV Regulation*, 12 J. OF REGULATORY ECON., 179, 179-81 (1997).

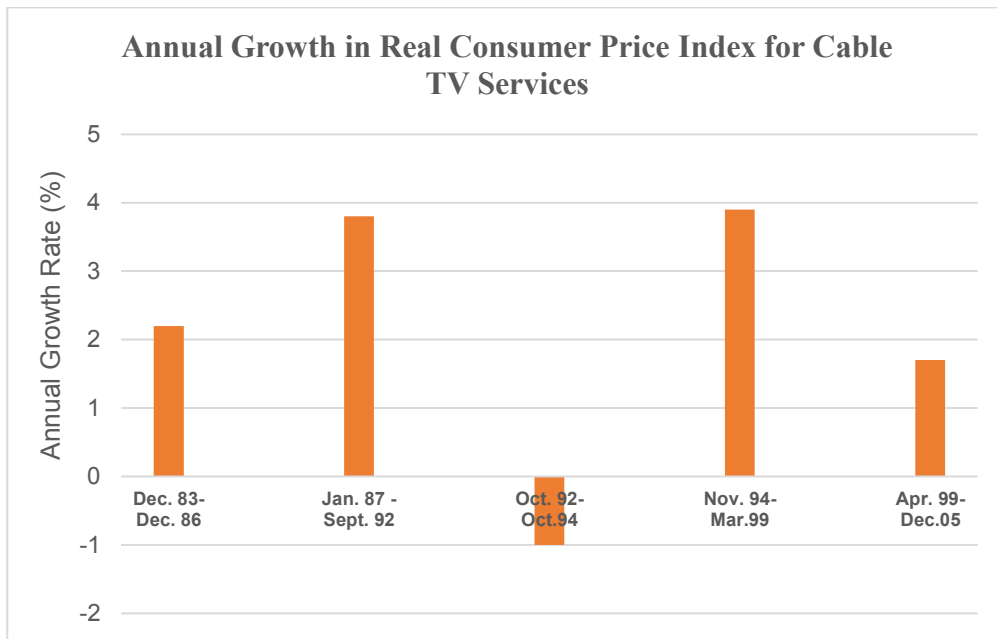
<sup>51</sup> See Thomas W. Hazlett, *Cable TV Franchises as Barriers to Video Competition*, 12 VA. J. LAW & TECH. 1, 9 (2007).

<sup>52</sup> *Id.*

<sup>53</sup> See *Prices and Outputs under Cable TV Regulation* at 182.

<sup>54</sup> Figure 4 includes data for cable television systems, direct broadcast satellites (first launched in 1994), and telecommunications-company TV services (beginning in 2006).

**Figure 3**



Source: Hazlett, *Cable TV Franchises as Barriers to Video Competition*.<sup>55</sup>

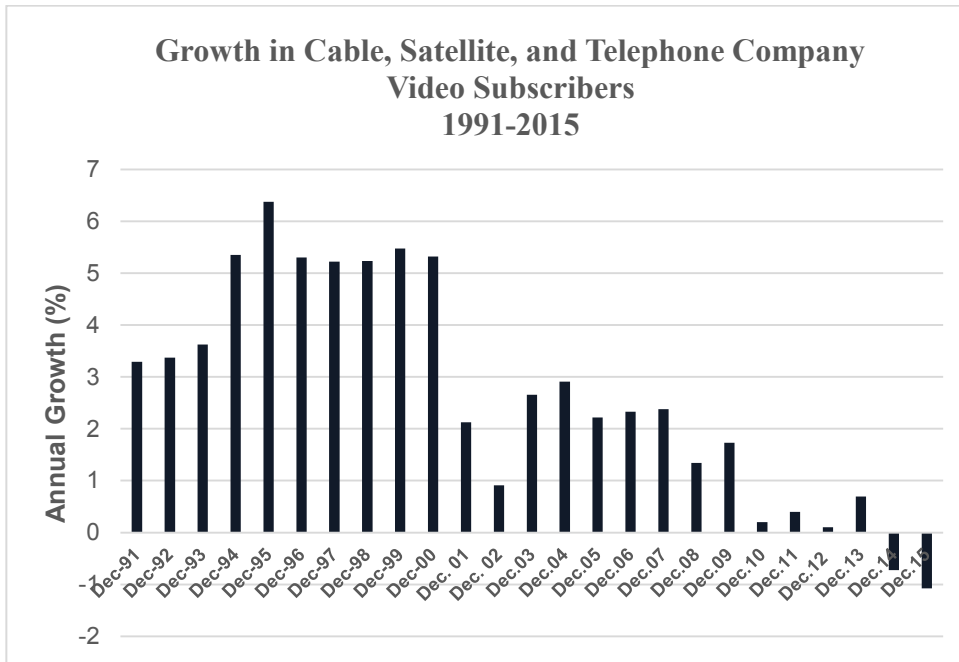
However, according to FCC subscriber data, growth accelerated in 1994 to more than 5 percent as the FCC began to relax its regulations and direct broadcast satellites began to offer service, and growth continued at more than 5 percent per year for the next six years. Given that cable rates rose at nearly 4 percent per year after adjusting for inflation over this period and that the price elasticity of demand has been estimated to be about -0.8,<sup>56</sup> subscriber growth was more than 8 percentage points higher than would have been expected if service quality, such as the number of channels, and every other influence on demand had remained constant.<sup>57</sup>

<sup>55</sup> See CABLE TV FRANCHISES AS BARRIERS TO VIDEO COMPETITION at 33.

<sup>56</sup> CABLE TV: REGULATION OR COMPETITION? at 60.

<sup>57</sup> For a much more detailed description and analysis of this exercise in regulation, see Thomas W. Hazlett and Matthew L. Spitzer, PUBLIC POLICY TOWARD CABLE TELEVISION: THE ECONOMICS OF RATE CONTROLS, ch. 6 (1997).

**Figure 4**



Source: *Annual Video Competition Reports*, FCC.<sup>58</sup>

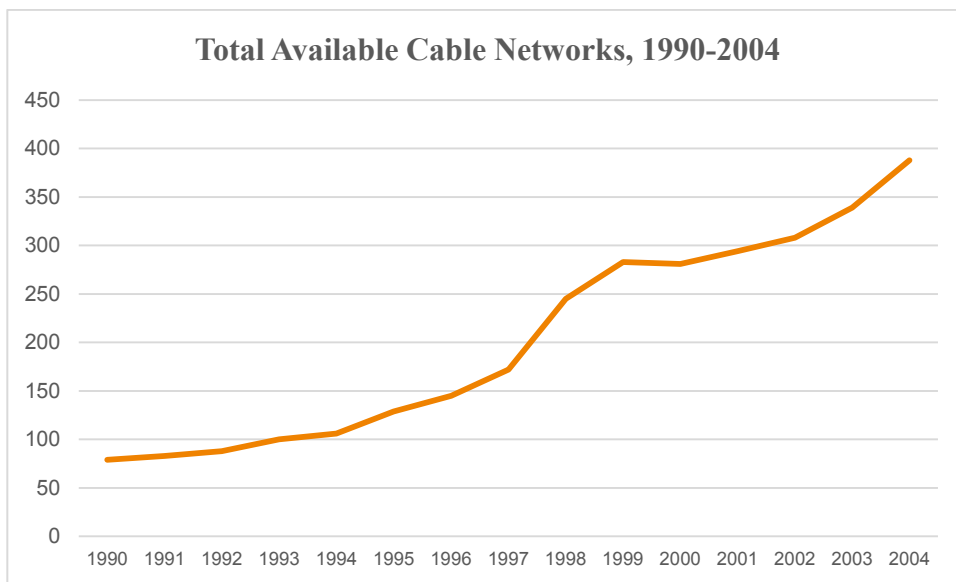
The brief FCC venture into cable rate regulation also had the effect of slowing the development of new cable networks. Figure 5 shows the number of cable networks available to cable systems from 1990 to 2004. The growth in these networks slowed in 1993-94 while the FCC was promulgating its new rate regulations, but then accelerated in 1995 when the Commission greatly reduced the stringency of its rules governing new program services. When the 1996 Act deregulated all but basic cable rates, the number of available cable networks soared. Clearly regulation had reduced the incentive to invest in new networks and reduced the services available to consumers.

<sup>58</sup> See *supra* note 46.

## D. Lessons Learned

Much like telephone service in the 1990s, cable television service was evolving rapidly after the 1984 Cable Act eliminated rate regulation of cable systems. Severe restrictions on cable services imposed by the FCC in response to broadcasters' complaints and copyright enforcement problems had constrained the development of cable programming services for decades. When these restraints were lifted by the courts and the FCC, and the 1984 Cable Act ended rate regulation, cable systems began to offer subscribers an ever-expanding choice of viewing options and, not surprisingly, to raise monthly rates. Unfortunately, Congress and the FCC did not recognize the magnitude of the increase in consumer benefits that changes in cable services and prices made prior to the 1992 legislation. These benefits had reached \$6.5 billion per year by 1992.

**Figure 5**




Source: *11th Annual Video Competition Report*, FCC (2005).<sup>59</sup>

Equally important, attempts to regulate prices, even of homogeneous services offered by “natural” monopolies, can be very difficult because the regulator generally has difficulty estimating the regulated firm’s costs.

<sup>59</sup> *Id.*; see also Thomas W. Hazlett, *Vertical Integration in Cable Television: The FCC Evidence*, Arlington Economics, Fig. 1 (Oct. 19, 2007), <https://arlingtoneconomics.com/wp-content/uploads/2016/02/vertical-integration-in-cable-television.pdf>.





In the case of cable television, this problem is much more difficult because of the variations and rapid growth in service quality. When the FCC tried to regulate the rates that could be charged by cable systems for new services or additional channels of non-basic and “a la carte” services, it was forced to admit defeat. Its continuation of basic service regulation for several years proved to be almost a non-event. The CEO of the largest cable company at the time, TCI, said that the regulation of basic services would simply drive cable operators to concentrate on unregulated “a la carte” services.<sup>60</sup> Thus, despite being a major mistake in policy diagnosis, the 1992 reregulation of cable had only short-lived adverse effects on consumers. The FCC could not – and did not – regulate the expanding array of new services offered on a per-channel basis by operators.

As the FCC struggled to regulate the rates of cable services, a new source of competition emerged in the form of high-powered direct-broadcast satellite services. In June 1994, DirecTV began offering services and another service, EchoStar, followed a few years later. The cable “monopoly” was no more. A little more than ten years later, telephone companies would begin offering their own wired “cable” television services after being freed from previous regulatory restraints in the 1996 Act.

Mercifully, the 1992 experiment in cable television rate regulation lasted only a few years. The Chairman of the FCC at the time, Reed Hundt, wrote his own epitaph for the cable regulation exercise some years later, “What indeed was the point of the regulation, if the beneficiaries were neither thankful nor economically better off?”<sup>61</sup>

Today, Internet streaming of video services that consumers can access over a variety of devices, including wireless devices, is likely to revolutionize the delivery of video content. If wireless carriers can muster the capital to deploy the new 5G technology relatively quickly, consumers will benefit substantially from the additional competition in the delivery of video services and from a variety of new services that regulators cannot foresee today.

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<sup>60</sup> John Malone, as quoted by Hazlett. See PUBLIC POLICY TOWARD CABLE TELEVISION: THE ECONOMICS OF RATE CONTROLS, at 136 (1997).

<sup>61</sup> See Reed E. Hundt, YOU SAY YOU WANT A REVOLUTION?, at 56 (2000).

## IV. The AOL-Time Warner Merger

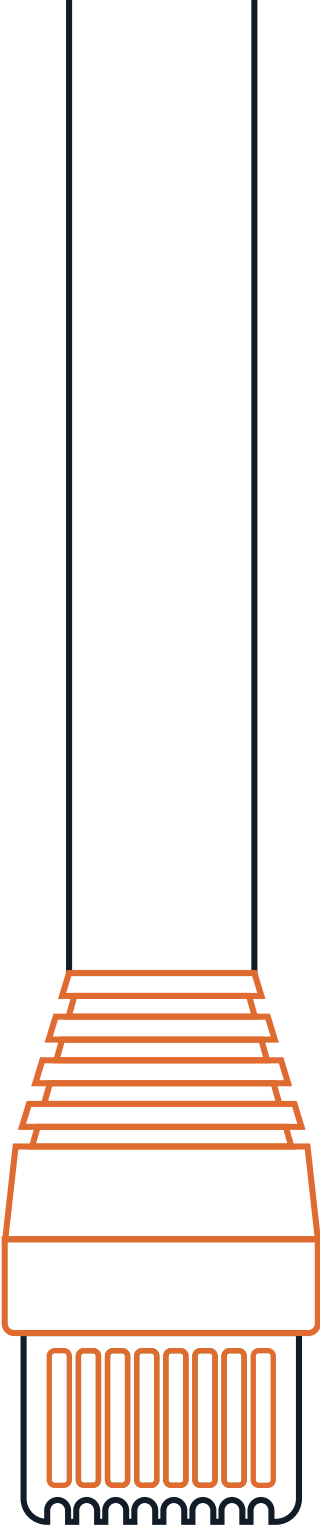
The last example of the effect of unanticipated technological and product-quality change on communications policy is provided by the AOL-Time Warner merger, announced in January 2000. AOL, the leading dial-up Internet Service Provider (ISP) at the time, merged with Time Warner, one of the country's largest media and cable television companies. AOL used its highly-valued equity shares to acquire an interest of 55 percent in the combined AOL-Time Warner company. At the time, the combined

company was projected to have a market capitalization of nearly \$350 billion.<sup>62</sup>

Given the size of the proposed merger and the fact that it offered to combine the largest Internet firm and a very large media company with substantial cable television operations, this merger attracted enormous public interest and required antitrust authorities and the FCC to devote substantial resources to reviewing it. An evolving Internet Goliath was attempting to swallow up another Goliath, a major media company.

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<sup>62</sup> See Tom Johnson, *That's AOL Folks: Internet Leader and Entertainment Firm to Join Forces; New Company Worth \$350 Billion*, CNN (Jan. 10, 2000), [http://money.cnn.com/2000/01/10/deals/aol\\_warner/](http://money.cnn.com/2000/01/10/deals/aol_warner/).



AOL was a very large participant in the development of the Internet prior to 2000 when high-speed, broadband access was just beginning: AOL had approximately 26 million subscribers in early 2000 when it proposed to merge with Time Warner. AOL's share of total online subscribers was about 40 percent. At the time, there were fewer than 2.5 million broadband Internet subscribers, 1.4 million of whom were on cable modems.<sup>63</sup> Of these broadband subscribers, Time Warner's cable systems had 550,000 at end of 1999, reflecting a small share of their 12.6 million total subscribers.<sup>64</sup> Time Warner itself was a very large media company, with considerable presence in print, motion pictures, television and cable television programming, and cable television operations. The combination of these two companies seemed quite formidable at the time, just before the "dot.com" equity market bubble burst in March 2000.

### **A. Issues Raised by the Merger**


The combination of AOL and Time Warner raised two types of public policy issues that the antitrust and regulatory authorities - in this case, the Federal Trade Commission (FTC) and the FCC - would address. The FTC worried that the combination of the two firms would lead to a foreclosure of other Internet Service Providers from Time Warner's cable modem services and that AOL would avoid offering its services over the telephone companies' Digital Subscriber Line (DSL) services that competed with Time Warner Cable's cable modem services. The FCC concentrated on AOL's "killer app" of 2000, its instant-messaging service (AIM). Interestingly, the vertical combination of an ISP (AOL) with the media content of Time Warner did not appear to be a major concern at the time, perhaps because Time Warner already reflected a vertical combination of content with its cable television operations.

#### **1. Access**

From the outset, the FTC was concerned that AOL-Time Warner would foreclose competitive ISPs from gaining access to Time Warner's cable operations and that AOL would deny its service to the competitive broadband Internet service, namely DSL service offered by telephone companies.

<sup>63</sup> See Reports on High Speed Services for Internet Access, FCC, <https://www.fcc.gov/general/reports-high-speed-services-internet-access>.

<sup>64</sup> See Time Warner, Inc., Annual Report (Form 10-K) at F-42, F-85 (Mar. 30, 2000).



At the time, Time Warner's cable systems had almost 20 percent of the country's cable subscribers and more than one-third of burgeoning high-speed cable modem subscribers in the country. The combined company might find it profitable to deny other ISPs, such as Earthlink or MSN, access to its cable modem subscribers in order to build subscriptions to AOL's service and, therefore, its cable modem services. Ironically, AOL had been concerned about being foreclosed from the new cable modem services by cable system operators and had been lobbying for a regulatory requirement of "open access" to such systems before it merged with Time Warner.

When the FTC began to raise concerns about AOL-Time Warner's potential for exercising foreclosure of other ISPs from Time Warner cable systems, the company proposed to voluntarily grant such access. However, the FTC eventually decided to mandate access for at least one other ISP on the merged company's cable systems as a condition for approving the merger. The FTC required AOL-Time Warner to select one ISP to whom it would grant access to its cable systems in major markets on non-discriminatory terms and to negotiate access agreements with two other ISPs if AOL began offering *broadband* service over Time Warner's cable systems. In addition, AOL was required to offer its service over telephone company DSL broadband services on identical terms in areas served by Time Warner Cable and areas not served by Time Warner Cable. Finally, the terms of any deal struck by AOL for access to cable systems would have to be offered to competitive ISPs on Time Warner's cable systems.<sup>65</sup>


## 2. Instant Messaging

The FCC concentrated on the merger's potential effect on the growth in competition among ISPs and AOL's continued control of its AIM service, which allowed users to interact with each other in real time if they were connected to AOL's service. Other ISPs had their own instant messaging services, but none was as heavily subscribed as AOL's because of AOL's very large share of the overall ISP market. Furthermore, these other services were not allowed by AOL to interconnect with AOL's service, thereby limiting their growth potential.

The concern at the FCC was that AIM had reached or soon would reach a "tipping point" where AOL could profitably deny competitive instant messaging services interconnection with other messaging services, thereby continually increasing its market share because new subscribers would prefer the ability to interact with its large customer base over trying to communicate with the smaller subscriber bases offered by other instant messaging services. As AOL expanded its market share of its text-based instant messaging, it might then use this position to gain an insuperable position in a prospective video-based messaging service that the new broadband Internet connections would support.

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<sup>65</sup> For a summary of these conditions, see Gerald R. Faulhaber, *Access and Network Effects in the 'New Economy': AOL-Time Warner* (2000), available at [http://global.oup.com/us/companion.websites/fdscontent/uscompanion/us/pdf/kwoka/9780195322972\\_18.pdf](http://global.oup.com/us/companion.websites/fdscontent/uscompanion/us/pdf/kwoka/9780195322972_18.pdf).



This refusal to interconnect would thus make AOL's AIM service ever more attractive and perhaps constitute a "killer app" that other ISPs could not compete with, even in the new broadband era.<sup>66</sup>

Although the merger added little to AOL's ability to exploit its AIM service, the FCC was nevertheless concerned about it and arguably had regulatory responsibility for such services. Because the merger involved the transfer of spectrum licenses, the FCC could review the merger and determine if it were in the public interest. Interconnection of AIM services thus became an issue that the FCC could address without a lengthy rulemaking process. After considerable analysis and interaction with AOL, the FCC ultimately decided not to require AOL to interconnect its text-based messaging service with other instant-messaging services, but to require such interconnection for any new broadband (video) messaging service that AOL might ultimately introduce unless AOL had already lost its dominant position in text-based instant messaging.

## **B. Evolution of AOL-Time Warner after Conditional Approval of the Merger**

The merger was approved in January 2001 by the FCC and the FTC with the conditions described above. But did these conditions protect consumers from the potential monopoly power that the merger might have produced over the next few years? Alternatively, were these conditions necessary, given the rapid evolution of the Internet and consumer access to it?

### **1. The Access Conditions**

The access conditions imposed on AOL-Time Warner were based on the fear that the company's cable systems would favor AOL over other ISPs and thereby obtain a competitive advantage over other, largely DSL, broadband services. However, it soon became clear that there was little that the traditional ISPs – who developed as dial-up providers of household access to the Internet – could contribute to the new broadband services offered by cable systems and telephone companies.<sup>67</sup> The broadband carriers provided access to the Internet where subscribers could find a rapidly-growing array of features and services that the dial-up ISPs had offered in an earlier era. The dial-up ISPs, such as AOL, were becoming irrelevant.

In April 2000, AOL began to offer an "enhanced" service, AOL Plus, for consumers who already subscribed to a broadband service, such as cable modem or DSL. The service was priced at \$14.95 per month for some time, a substantial discount from AOL's traditional dial-up service.

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<sup>66</sup> For an excellent discussion of these issues, see Gerald Faulhaber, *Network Effects and Merger Analysis: Instant Messaging and the AOL-Time Warner Case*, 26 J. OF TELECOMMS. POLICY, 311, 312-33 (2002).

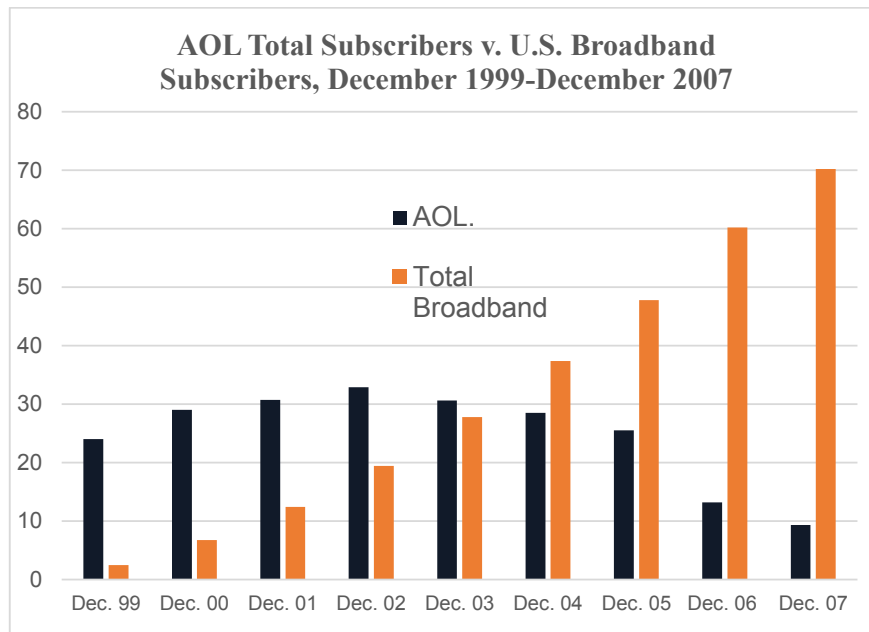
<sup>67</sup> See Gregory L. Rosston, *The Rise and Fall of Third-Party High-Speed Access*, 21 INFORMATION ECONOMICS AND POLICY 21, 22 (2009).

The supplemental broadband service attracted some subscribers, but not enough to prevent AOL's revenues from beginning to decline in 2003. By September 2003, less than three years after the merger was approved, AOL Time Warner recognized that its AOL division was in trouble by dropping AOL from its name.

As total broadband subscriptions in the U.S. soared in the early 2000's, AOL's subscriber base began to decline. See Figure 6. In 2006, AOL sold all of its European operations, and its total subscriber base declined to 9.3 million by the end of 2007, a drop in more than 70 percent from its level when the merger closed in 2001. By this time, AOL had essentially abandoned its subscriber-based model and was attempting to shift to a digital, advertising-based model, a shift that proved to be futile.

In April 2006, AOL sold a 5 percent interest in its operations to Google for \$1 billion. Two years later, however, it was clear that AOL's shift to an advertising-based model was not going to revitalize AOL, and Time Warner began to contemplate divesting AOL. When Time Warner finally spun off AOL to its stockholders in 2009, the new company's market capitalization was about \$3.4 billion, or slightly more than 2 percent of its value when it launched its acquisition of Time Warner in January 2000.<sup>68</sup>

**Figure 6**



Source: *Annual Reports on High-Speed Internet Services*, FCC.<sup>69</sup>

<sup>68</sup> See Yinka Adogoke, *Time Warner to Spin Off AOL on December 9*, REUTERS BUSINESS NEWS (Nov. 16, 2009), <https://www.reuters.com/article/us-aol/time-warner-to-spin-off-aol-on-december-9-idUSTRE5AF5JT20091116>.

<sup>69</sup> See *supra* note 63; AOL subscriber data compiled by the author from AOL, AOL-Time Warner, and Time Warner financial statements.

Clearly, the FTC's concerns that AOL Time Warner could use favorable access to its AOL ISP service to compete unfairly for subscribers in the new broadband era proved to be misplaced. As broadband Internet connections expanded rapidly in the early 2000s, it became clear that subscribers did not need or want AOL's service. AOL's subscribers rapidly switched to broadband and abandoned AOL. In response, AOL tried to offer its content to subscribers without a monthly subscription fee, attempting to rely instead on advertising, but this shift proved unsuccessful in stemming AOL's decline. The FTC's mandated access requirements, imposed as a condition for approving the 2000 merger, became irrelevant.

## 2. Instant Messaging



Obviously, AOL's AIM service was not the "killer app" that could help propel the company forward in the new broadband Internet age. AOL's subscriptions began to decline in 2003, but AIM continued to grow. Estimates of its total user base range up to 53 million by 2005.<sup>70</sup>

Several other instant messaging services competed with AIM in the early to mid-2000s – Microsoft's MSN Messenger, Yahoo! Messenger, Pidgin, and Apple's iChat. A service called Jabber, which allowed users to access their "buddy lists" (contacts) on all of the major instant messaging services was launched in 2000.<sup>71</sup> In 2005, a new service, Meebo, was launched that could be accessed through an Internet browser and allowed users to access all of the other major instant messaging services. Meebo was acquired by Google in 2011.<sup>72</sup>


Much more important changes occurred as broadband Internet access spread. In 2003, a revolutionary new app, Skype, was developed, allowing users to communicate by voice, video, and instant messaging. The development of social media obviously provided new ways for people to interact over the Internet. In 2005, Google introduced Google Chat and in 2008 Facebook introduced a similar service.<sup>73</sup>

<sup>70</sup> See Eulynn Shiu and Amanda Lenhart, *How Americans Use Instant Messaging*, Pew Research Center (Sep. 1, 2004), <http://www.pewinternet.org/2004/09/01/how-americans-use-instant-messaging>.

<sup>71</sup> See Matt Petronzio, *A Brief History of Instant Messaging*, MASHABLE (Oct. 25, 2012), available at <https://mashable.com/2012/10/25/instant-messaging-history/>.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*



AOL failed to develop AIM into a web-based service with video capabilities. It was unable to profit from the early success of the service by attaching advertisements to it. In fact, it soon actually reduced its allocation of staff and resources to the service, thereby condemning it to decline as Google, Facebook, and others introduced new, competitive services. The regulators' concern that AIM could develop into a killer app that would allow AOL to obtain monopolies in follow-on services now appears to have been overblown. After AOL was spun off as a separate company, it was purchased by Verizon in 2015 for just \$4.4 billion, a far cry from its lofty valuation in 1999 that had propelled the merger. In 2017, Verizon quietly closed AIM, abandoning all of its functionalities.

It is possible the FCC's merger condition - that AOL provide interoperability to any new advanced (video) messaging service that it might introduce - deterred it from offering such a service and thereby cost consumers the benefits of such innovation. Commissioner Michael Powell dissented in part from the FCC's order approving the merger because he disagreed with this condition.<sup>74</sup> Although the Commission voted to relieve AOL of this condition two years later,<sup>75</sup> the condition may have sufficiently discouraged AOL from upgrading AIM to a video-based service during key growth years.

### **C. Antitrust Interventions in a Rapidly-Changing Industry**

The AOL-Time Warner merger illustrates how difficult it is for regulators, antitrust authorities, and even the financial markets to predict developments when technologies are changing rapidly. The FCC and the FTC undertook careful, detailed analyses of the possible effects of the mergers, guided by extremely competent economists. The financial markets responded positively to the prospects of the combination. Yet, in just three years it was clear that AOL could not compete in the new era of broadband communications, an era that began several years before the merger was announced in 2000. Broadband quickly replaced dial-up access to the Internet. Given regulators' difficulty in adequately understanding and predicting the outcomes of a revolution that was already underway then, it is unlikely that regulators today can foresee where the wireless communications' revolution will lead. Surely, regulators should be careful not to impede it by pursuing policies that discourage investment in new technologies.

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<sup>74</sup> See *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner, Inc. and American Online, Transferors, to AOL Time Warner, Inc., Transferee*, 16 FCC Rcd 6547, 6700-14 (2001), Separate Statement of Commissioner Michael K. Powell.

<sup>75</sup> See *Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner Inc. and America Online, Inc., Transferors, to AOL Time Warner Inc., Transferee*, Memorandum Opinion and Order, 18 FCC Rcd 16835 (2003).



## **V. Conclusion: The Importance of Technological Change in Communications Policy**

In each of these examples of policymaking in the communications sector, technological change – and the associated market changes – helped to render a policy decision unnecessary or irrelevant. In each case, legislators and regulators could not predict the future changes in market conditions brought about by changing technologies and consumers' adaptation to these changes, leading to serious policy errors with adverse effects on consumer welfare.

### **A few general conclusions may be drawn from these cases:**

- Rapid technological change revealed most of the policies were ultimately unnecessary. Wireless services and VoIP obviously eliminated the distinction between long-distance and local services and the need for regulation of voice services or subsidization of entry into fixed-wire local services. New cable services and, ultimately, new competition from direct broadcast satellites, sharply reduced the need for regulation of basic or non-basic cable television services. And the evolution of broadband and, subsequently, broadband wireless services rendered any merger conditions on AOL-Time Warner irrelevant within three years.



- It is often difficult to change policy regimes, even when they have been exposed as being based on conditions that have been radically altered by technical change. Regulation of voice telephone rates continued for decades after the policy was demonstrated to convey little value and bring substantial costs to consumers. Regulation designed to stimulate entry into local fixed-wire telecommunications after the 1984 AT&T divestiture continued into the mid-2000s, despite these companies' failures, ending only after continual court reversals of the policy. Cable regulation between 1992-96 was terminated much sooner, perhaps because the FCC could not find a way to regulate new services, leading Congress to mercifully lift this responsibility in 1996.

- Each of these policies appeared to impose more costs than benefits on consumers. The changes in technology served in most cases to relieve consumers and producers of the costly burdens of poorly-designed regulation.
- Given the rapid pace of technological change in the communications sector, regulators must be careful not to impede investment in new technologies, such as 5G, through aggressive interventions whose effects cannot be clearly foreseen. This is particularly true for the wireless sector, which is poised to expand rapidly if regulatory conditions do not discourage carriers from making the massive investments required for new 5G facilities.

## ABOUT THE AUTHOR



Robert W. Crandall is an adjunct senior fellow at the Technology Policy Institute. His current research focuses on antitrust and regulatory issues in the telecommunications sector. He is the author or coauthor of numerous articles and books on communications policy, including *Competition and Chaos: U.S. Telecommunications since 1996*; *Broadband: Should We Regulate High-Speed Internet Access?* (with James H. Alleman); *Who Pays for Universal Service? When Telephone Subsidies Become Transparent* (with Leonard Waverman); and *Talk is Cheap: The Promise of Regulatory Reform in North American Telecommunications* (with Leonard Waverman). Crandall is also a nonresident senior fellow in the Economic Studies program at the Brookings Institution. He was acting director, deputy director and assistant director of the Council on Wage and Price Stability. Crandall has also served as a consultant to the Antitrust Division, the Federal Trade Commission and the Treasury Department. He has taught economics at Northwestern University, MIT, the University of Maryland, George Washington University, and the Stanford in Washington program. Crandall holds an M.S. and a Ph.D. from Northwestern University.