

approach comports with what Congress envisioned in the 1996 Act and with the unique nature of ducts and conduit.

177. Use of ICB formula would result in a more accurate valuation of the conduit used by an attacher. When an attacher wishes to gain access to a utility conduit system, the attacher will tell the utility the beginning and ending points to which the attacher wishes to run its facilities. The utility will then complete a manhole-by-manhole search of the entire conduit system in order to determine whether the utility has space to accommodate the attachment and the length of the route that the utility and attacher select to reach the points requested by the attacher. Once the characteristics of the conduit system associated with the specific route required by the attacher are identified, an accurate rate can be calculated based on the forward-looking economic costs the utility would incur to replace the conduit over the length of the proposed route.

178. The forward-looking economic cost valuation of the conduit to be occupied can be derived on the basis of the costs an electric utility would incur to build a similar conduit system. The Electric Utilities suggest that cost studies could be used to assign such values to the conduit system components.^{211/} In essence, an entity would price out the cost of materials, labor and other elements that go into constructing a conduit system to derive a per foot cost of conduit access. This per foot cost could be calculated

^{211/} In the alternative, the Electric Utilities believe that cost proxy models can be used for the same purpose. "Forward-looking economic cost computer models ... could enable regulatory authorities to estimate the forward-looking cost of ... facilities and services without having to rely on detailed cost studies...." The Use of Computer Models for Estimating Forward-Looking Economic Costs A Staff Analysis, Staff of Common Carrier Bureau, Competitive Pricing Division, CPD Docket No: 97-2, 1997 FCC LEXIS 160, *2 (Jan. 9, 1997).

for use as an industry, state or utility average. The elements that must be valued are relatively simple to isolate as compared to the more complicated task of isolating and valuing the network elements championed by the Commission in the Local Competition Order, thus demonstrating that in the conduit context, the use of a forward-looking economic cost approach is feasible, logical and easy to administer and in keeping with the other economic models relied on by the Commission to calculate just and reasonable rates.^{212/}

179. The space allocation element of the formula will be based on the survey results conducted by the utility in response to the attacher's request for access. The utility will know the number of conduit system feet to be occupied by the attacher and can then multiply this by the average cost per foot derived through the process discussed above.

180. Finally, the carrying charges can be calculated using the FERC accounts currently relied on by electric utilities, with the appropriate modifications that have been suggested above to the pole attachment rate formula. The only change that will be required relates to the calculation of gross conduit investment and accumulated depreciation. The gross conduit investment account will reflect the replacement costs of a conduit system at the rate resulting from the costs studies, rather than the historical book value of the conduit system.

^{212/} The Electric Utilities also argue that this approach will "best replicate[], to the extent possible, the conditions of a competitive market ...[and will] reduce[] the ability of an [electric utility] to engage in anti-competitive behavior." Local Competition Order ¶ 679.

181. Overall, the ICB formula will result in very little change to the Commission's past approach to calculating attachment rates and will not create any new burdens on the attaching entities or the utilities. Furthermore, because the Electric Utilities have received few requests for access to their conduit and the amount of available conduit system space is limited,^{213/} any burdens associated with implementing the ICB formula will be minimal. Instead, the Commission has the opportunity to adopt a conduit formula that will result in accurate rates via a pro-competitive approach that is fair for all parties participating in the telecommunications marketplace.

X. Conclusion

182. The 1996 Act effected the most sweeping change in this Nation's telecommunications laws in 60 years. The change is premised on the notion that a deregulated, competitive market results in efficiency and innovation and produces the greatest benefits for the American public. The Electric Utilities urge the Commission to

^{213/} The amount of conduit space available for attachers in electric utility conduit is decreasing. In order to meet increasing electric consumer demand, electric utilities are being forced to deploy even larger conductors to carry high voltage current. These larger conductors will consume more space in the electric utility's conduit systems. The ICB approach will allow the electric utilities to more accurately assess the amount of reserve space they need to provide electric service to consumers. For example, the electric utility needs the ability to replace conductor in the event of a failure. If communications or cable facilities are taking up reserve conduit space when such an event occurs, the electric utility may be unable to run the new conductor necessary to repair the failed conductor or may be required to terminate the attacher's communications or cable service and pull out the communications facility in order to make room for the new electric conduit. Any delay in restoring electric service can have serious health and public safety implications. The ICB approach will minimize the frequency of such events.

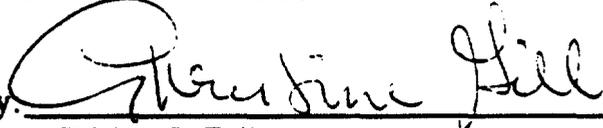
adopt such a deregulated, competitive approach with respect to pole attachment rates and related issues. Where regulation is needed, that regulation should be minimal and designed to achieve a specific goal.

183. The Electric Utilities suggest that the recommendations presented in these Comments are consistent with the overall deregulation and pro-competition themes. They urge the Commission to adopt a regulatory scheme, and specific regulations where necessary, consistent with their proposals.

WHEREFORE, THE PREMISES CONSIDERED, the Electric Utilities respectfully request that the Commission act upon the pole attachment rate formula issues raised in this rulemaking in a manner consistent with the views expressed herein.

Respectfully submitted,

**AMERICAN ELECTRIC POWER SERVICE
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June 27, 1997

**Pricing for Utility Pole Attachments and Conduit Access:
Recommended Analytical Guidelines**

**A Report Prepared in Response to:
The Federal Communications Commission's
Notice of Proposed Rulemaking, CS Docket No. 97-98,
In the Matter of Amendment of Rules and
Policies Governing Pole Attachments**

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About Reed Consulting Group

Reed Consulting Group ("RCG") is a management consulting firm that specializes in the analysis of competitive energy markets, regulatory and litigation support, industry restructuring, planning and organizational studies and specialized information services. RCG's clients include electric and natural gas utilities, energy marketers/retailers, gas pipelines, energy project developers, energy producers, large energy consumers, banks, financial institutions and law firms. RCG's staff members have prepared and presented testimony in hundreds of regulatory and civil proceedings before more than 40 different federal and state agencies and courts. Much of this work has involved electric rate proceedings that focused on cost-of-service, cost allocation, rate of return and rate design issues. Additionally, a significant amount of RCG's work has been in the area of market power and electric industry restructuring, including market-based and performance-based ratemaking, divestiture, stranded costs and other issues related to industry deregulation. As part of this work, RCG's principals and consultants have testified in precedent-setting cases involving the adoption of market-based rates for regulated gas and electric services and the establishment of open-access rules and rate design for electric utilities.

Introduction and Findings

Electric utilities, including American Electric Power Service Corp., Commonwealth Edison Company, Duke Power Company, Florida Power & Light Company and Northern States Power Company provide third parties access to their distribution poles and, in certain circumstances, to their ducts, conduits and rights-of-way, for purposes of attaching and laying cable and telecommunications wire. RCG was been asked to comment on the appropriate pricing standards that should apply to such access. Accordingly, this report discusses the salient analytical principles that should guide pricing decisions for pole attachments and conduit access (the latter is intended to encompass conduits, ducts and rights-of-way).

In determining the appropriate pricing standard, one cannot be directed solely by theoretical economic principles. The choice of pricing framework must be guided by economic principles and a thorough understanding of the market and its participants. In addition, the choice of a pricing framework for these regulated resources should be made in the historical and prospective context of the pricing for other regulated goods and services, otherwise one cannot benefit from the existing and evolving corpus of knowledge acquired over the years by the various regulatory bodies that have dealt extensively with these issues.

As a means of better understanding the relationship among electric utilities, cable and telecommunications companies (the latter two being the principal market participants seeking access), the next section, Section I, discusses and provides a broad overview of the cable and telecommunications industries. Following this discussion, Section II provides a historical perspective on the pricing for pole attachments and conduit access. In this same section, the report presents a brief historical overview of other regulated industries that can be used as an analytical benchmark with which to evaluate pricing for pole attachments and conduit access. In Section III, the dominant pricing paradigms that have emerged over the years are discussed. These paradigms serve as a useful continuum that can be used to assess the appropriate pricing framework for this inquiry. Section IV discusses the basic economic

principles that should guide the choice of pricing framework for any regulated service.

Sections V-VII discuss the salient institutional and economic realities that must be recognized in the current analysis. Specifically, Section V begins with a discussion of the Telecommunications Act of 1996 (the "1996 Act"), which provides the proper backdrop for understanding congressional intent in the area of pricing for these services. This section also clearly identifies the intent of the Federal Communication Commission (the "FCC" or the "Commission") in the area of pricing. The FCC has clearly stated its economic objectives in a recent pricing decision, the outcome of which is particularly relevant for poles and conduits. Sections VI and VII of this report discuss the proper analytical context for pole attachments and conduit access. Section VI provides the "first best" solution, while Section VII provides the alternative "second best."

Findings

Four critical points are drawn from the background information included in Sections I-V. It must be recognized that:

- *The cable industry and competitive telecommunications industries can no longer be considered in their infancy. They are vast, well-financed and formidable.*
- *The regulatory motivation underlying pricing for poles and conduits prior to 1996 no longer has any prospective relevance.*
- *Across most, if not all, regulated industries, there has been a clear and unambiguous movement away from traditional embedded cost-of-service ratemaking towards more market-based, or at least market-emulating, pricing standards.*
- *The 1996 Act clearly established competitive market solutions as its goal. This goal has been embraced by the FCC in its pricing for Interconnection and Unbundled Elements. The FCC's decision in this case is particularly relevant for poles and conduits.*

Based on the above findings, adherence to guiding economic principles and a recognition of the market and market participants, the following are RCG findings:

- *In general, regulatory oversight can be justified in a number of cases in which markets*

fail. However, in the present case, concerns over potential market power are the only relevant justification for regulation of pole attachment rates and conduit access.

- *A proper evaluation of whether electric utilities possess market power cannot rely solely, or even predominantly, on a "structural" analysis where the size of firms and industry concentration guide conclusions. Even if employed, a structural analysis cannot be limited to poles and conduit resources. A thorough accounting of available alternatives to poles and conduits must be conducted.*
- *Electric utilities do not own "essential facilities." Poles and conduits are not "bottleneck" facilities as there are alternatives. Electric utilities provide electric service over distribution resources; they do not, with few exceptions, compete directly with cable and telecommunications companies.*
- *The bargaining relationship between electric utilities and cable and telecommunications companies is that of bilateral negotiation. In the absence of market power by one party in bilateral negotiation, market-based negotiated rates should be allowed.¹*
- *A determination as to whether market-based pricing is appropriate in bilateral negotiation must evaluate each party's bargaining strength. This evaluation must include the alternatives available and each party's underlying bargaining motivation.*
- *Cable and telecommunications companies have alternatives to the electric utilities' poles and conduits. The electric utilities have no alternatives to resell these resources. Both parties are financially and economically sophisticated with equal bargaining strength. The electric utilities have no motivation to restrict access and, in fact, as a result of restructuring in their own industry, are highly motivated to reduce electric distribution costs through successful marketing of pole and conduit space.*
- *Pricing for electric utility pole attachments and conduit access should be determined through market negotiation.*
- *In the absence of market-based negotiation, the FCC should adopt a cost-based pricing framework based on replacement costs of investment. Replacement cost is consistent with economic theory and previous FCC orders. Absent employing replacement cost, significant market distortions will result.*

¹ *As discussed on page 36 of this report, we recognize that the FCC does not have the authority to allow negotiated rates under Section 224(d). However, Section 224(e), which governs pricing in the post-2000 market, anticipates a negotiated pricing framework. The market evaluation and subsequent recommendation were included in this report because of the statutory intent of Section 224(e) and the usefulness of such an evaluation to the Commission's deliberations under Section 224(d).*

Section I. The Cable and Telecommunications Industries

This section briefly reviews how the cable and telecommunications industries have evolved. This overview is useful for two reasons. First, it serves as a backdrop for the discussion in the next section on the history and evolution of pricing for poles and conduits. Second, it provides a particularly useful framework for the discussion in Section VI, which presents the appropriate pricing framework for pole and conduit access.

The evolution of the cable and telecommunications industries is best viewed across three periods that are separated by legislative mandates that influenced the pole attachments and conduit access market. These three periods, (1) pre-1978; (2) 1978 to 1996; and (3) post-1996, recognize the impact on the industry of the Pole Attachment Act of 1978 and the 1996 Act.

A. Pre-1978

1. The Cable Industry

The cable industry prior to 1978 was for all intents and purposes in its infancy. Community antenna television ("CATV") was developed in the 1940s to serve communities that, due to terrain or physical distance, were unable to receive conventional television signals. The concept was simple: CATV companies would establish antennas in areas where the broadcast signal was strong and relay that signal via cable to their subscribers.²

Despite technological advances, CATV was adopted slowly. In the 1950s, cable systems in 70 communities met the needs of approximately 14,000 subscribers. Throughout the 1960s, the industry expanded the capacity of its cable systems from a few to nearly 20 channels. Such technological improvements continued, and by the early 1970s, CATV could transmit over 100 channels. However, the significant advances in technology were not met with significant customer growth. After almost 30 years of existence, the cable industry still

² *Telephony and Cable Television*, Chapter 14.

served only four million subscribers.³

In the early 1970s, growth remained stagnant as a result of low demand and the high costs necessary to serve new areas. Growth in the cable industry remained dormant until the mid-1970s, when subscribers increased with the advent of offerings such as Home Box Office ("HBO"). Witnessing the success of HBO, other pay cable programmers entered the market. In 1978, the cable industry had grown to 13 million subscribers and 3,875 systems.⁴

2. The Telecommunications Industry

Prior to 1978, the telecommunications industry was not as much an industry as it was one company, American Telegraph & Telephone Company ("AT&T"). Although other independent telephone companies provided service in specific areas, AT&T was, for all practical purposes, *the* U.S. telephone company. It was firmly entrenched in all aspects of the business and enjoyed the status of a protected monopoly.

Although a protected monopoly prior to 1978, some inroads were made into AT&T's market. For example, in the mid-1970s, the FCC allowed some independent companies the right to directly connect their equipment to AT&T's telephone network. Most notable in this time frame were the inroads achieved by MCI Communications Corp. ("MCI"). In 1969, MCI petitioned the FCC and was allowed to provide private line service between Chicago and St. Louis. By the late 1970s, MCI won the right to offer "switched" long-distance service in direct competition with AT&T.⁵ However, full-fledged competition between MCI and AT&T and, most importantly, the arrival of a full slate of competitive telecommunications companies did not take place until the 1980s.

³ *Ibid.*, p. 690.

⁴ U.S. Department of Commerce, *Statistical Abstract of the United States*, 1996, p.567.

⁵ Standard & Poors, *Industry Surveys: Telecommunications/Wireline*, September 12, 1996, p. 17.

B. 1978-1996

1. The Cable Industry

By far, the industry's most explosive growth occurred after 1978. From 1978 to 1996, the number of cable subscribers increased from 13 to over 60 million. Similarly, the number of cable systems grew from 3,875 to over 11,000. The expansion during this period occurred primarily because of the industry's transformation from an antenna relay service to a multi-channel programming service. An industry that started out providing residents in remote locations access to conventional broadcast signals now offered video programming from local and distant broadcast stations, local cable-oriented commercial programming, public, educational and government non-commercial programming, and non-broadcast cable networks. These enhanced service offerings led to a tremendous expansion in the number of subscribers as well as an enormous increase in the penetration of CATV. As of 1977, the percentage of cable subscribers relative to the number of homes with television was barely 16.0%. As of 1996, the industry's penetration was an astounding 65%.⁶

Throughout this period, the cable industry's mantra was that competition required companies to vie for and obtain exclusive programming rights. By the late 1980s, the industry was spending well over one-third, roughly \$6 billion, of what the large networks, ABC, CBS and NBC, were spending on programming.⁷ As a means of comparison, the entire industry generated total revenues of only \$345 million in 1970.⁸ The meteoric rise in programming expenditures mirrored the industry's overall financial profile. In 1980, the industry generated approximately \$2.5 billion in revenues. As of 1995, the industry generated revenues of \$25.1 billion, almost a ten-fold increase.⁹

As the cable industry grew from a small antenna relay service to a major provider of programming, the character of the typical CATV company changed drastically. One industry

⁶ Standard & Poors, *Industry Surveys: Broadcasting and Cable*, August 1, 1996, p. 13.

⁷ U.S. Department of Commerce, *Video Program Distribution and Cable Television: Current Policy Issues and Recommendations*, June 1988, p. 13.

⁸ U.S. Department of Commerce, *Statistical Abstract of the United States*, *op. cit.*

⁹ *Ibid.*

feature over this period best illustrates this dramatic alteration: the increase in size of the CATV provider. The data provided at the beginning of this section illuminate this fact. As indicated, the number of subscribers grew from 13 to 60 million from 1978 to 1995 (a 4.6-fold increase), while the number of cable systems increased from 3,875 to over 11,000 (a 2.8-fold increase).¹⁰ These data reveal an increase in the size of the average CATV provider and an increase in industry concentration.

There are a number of logical explanations for why the average CATV provider has become much larger and the industry has become more concentrated. First, economies of scale are associated with cable system ownership. CATV firms incur fairly large fixed costs such as capital, financing and overhead, that are independent of the number of subscribers. Therefore, by increasing the size of the firm, these fixed costs can be spread out over a larger set of customers, thus reducing per customer costs. Second, a CATV provider is motivated to become larger by the desire to increase its bargaining power. For example, data in the mid-1980s suggested that TCI, the largest cable operator, paid \$0.90 per subscriber for HBO, while a smaller cable operator paid as much as \$5.00 per subscriber.¹¹ As a result of economies of scale and the quest for added bargaining power, the typical cable company in 1996 in no way resembled its counterpart 20 years ago. The typical cable company in 1996 was large, established, financially sound and a formidable bargaining agent.

2. The Telecommunications Industry

In the 1978-1996 time frame, the pivotal year for the telecommunications industry was 1984. In 1984, as a result of a 1974 lawsuit filed by MCI and the Justice Department, AT&T was forced to divest its regional operating companies. The divestiture ushered in a new era for the industry in which deregulation and competition emerged as guiding forces. Much like the cable industry described in the last section, the telecommunications industry

¹⁰ *Ibid.*

¹¹ U.S. Department of Commerce, Video Program Distribution and Cable Television: Current Policy Issues and Recommendations, *op. cit.*, p. 80.

throughout this period experienced growth and a transformation in the type of firm doing business. Specifically, this era gave rise to the large, well-financed telecommunications companies observed today which negotiate with the electric utilities for pole and conduit access.

The more competitive environment brought about by relaxed regulation and the divestiture of AT&T certainly gave rise to the competitive long-distance providers we see today. In addition to these types of competitors, this period also saw the rise in competitive access providers ("CAPs") and competitive local exchange carriers ("CLECs"). These types of companies have arisen as the principal competitors to the incumbent local exchange carriers ("ILECs"). The latter include the seven regional Bell operating companies, their subsidiaries, as well as other large independent local exchange carriers.

The first CAPs were established in the mid-1980s to serve increasing demand for telecommunications services by business, finance, government, education and health care entities. Industry sources estimate that the voice traffic of such end-users increased at a rate in excess of 7% per year.¹² Significant improvements in technology also stimulated growth in CAPs. The rapid development of fiber optic and digital electronics encouraged growth in cost-effective alternatives to the monopolistic local exchange carriers.

The growth in CAPs and CLECs from 1978 to 1996, while robust, was constrained as a result of regulatory prohibitions on the services they could offer. When the first CAP networks were built in 1980 they could compete only for the approximately \$8.1 billion special access and private line services markets. This represented less than 10% of the \$97.1 billion local exchange market. In 1994, as a result of the FCC's Interconnection Decisions, which allowed CAPs to provide Collocated Special Access, Collocated Switched Access Transport and Switched Access Termination services, CAPs were allowed to compete for an

¹² Annual Report of Brooks Fiber Properties, May 2, 1996, p. 28.

additional \$12.4 billion portion of the market.¹³

C. *Post-1996*

1. The Cable Industry

The cable industry's growth will most likely continue. In 1996, the industry's subscriptions and market penetration reached all time highs.¹⁴ The industry is offering more channels and a greater number of individual program services than at any other time. The industry's financial performance continues to track an extremely favorable trajectory. As of early 1996, the industry was achieving double-digit growth in total revenues, premium-service-offerings revenues and advertising revenues. Capital expenditures and the number of mergers and acquisitions appear to be increasing.¹⁵ The growth in mergers and acquisitions highlights the increasing industry concentration that was observed over the last 20 years. It is clear that the average cable company is, and is expected to be, a large, well-established and financially secure firm.

The following table lists the top 15 cable companies, their 1995 cable services revenue, customer subscriptions and cash flow.¹⁶

¹³ *Ibid.*, p.42 (expressed in 1994 dollars).

¹⁴ Federal Communication Commission, CS Docket No. 96-133, Third Annual Report, pp. 10-18.

¹⁵ *Ibid.*

¹⁶ *Ibid.*, p. 122.

1995 Cable Industry Subscribers, Revenue and Cash Flow

<u>Company</u>	<u>Subscribers</u>	<u>Revenue (mil.)</u>	<u>Cable Cash Flow (mil)</u>
TCI Communications, Inc.	12,494,000	4,936.000	2,081.800
Time Warner	9,769,000	3,743.440	1,549.000
Continental Cablevision	4,066,795	1,695.263	705.272
Comcast	3,407,000	1,454.932	718.455
Cox Communication	3,248,759	1,287.016	510.998
Cablevision Systems	2,061,200	905.155	392.416
Viacom	1,179,500	444.400	182.900
Marcus Cable	1,154,718	325.414	173.597
Century Communications	1,100,000	349.641	177.210
Cablevision Industries	1,041,768	432.212	203.133
Adelphia Communications	1,002,760	390.413	204.145
Jones Partnerships	902,345	391.772	122.852
Lentest Communications	596,366	232.155	115.361
TCA Cable TV, Inc.	574,473	200.867	99.982
Intermedia Partners IV	554,000	211.800	87.000
Total for Industry	62,100.000	24,456.137	10,625.139

As can be seen from the above table, the size and financial strength of the average cable company is formidable.

It must also be noted that while franchised cable systems are the primary distributors of multichannel video programming, alternative technologies are growing as well. Such alternative technologies include direct broadcast satellite, wireless cable and satellite master antenna television. The market for these alternatives now represents 11% of total subscriptions for multichannel video programming and has been growing at an average of 22% each year since 1990.¹⁷ The growth in these alternative technologies has not, however, been at the expense of traditional cable systems which, as discussed above, continue to enjoy robust growth rates.

2. The Telecommunications Industry

The 1996 Act effectively removed the remaining barriers to entry in the local exchange

¹⁷ *Ibid.*, p. 5.

markets by CAPs and CLECs as well as other market participants. Thus, the entire local exchange market is opened to competition.

Today, the CAPs and CLECs are not the only companies that have indicated an interest in the local exchange markets. In addition to the CAPs and CLECs, long-distance carriers, cable television companies, microwave carriers, wireless telephone system operators and private networks are now vying for market share.

Of the firms listed above, the CAPs and CLECs are clearly among the firms requesting access to the poles and conduits of electric utilities. The size and financial strength of these firms have certainly grown over the years and appear to continue on an upward trajectory. The table below provides a cross-section of the types of firms in the industry.¹⁸

<u>Company Name</u>	<u>Revenues (000's of \$)</u>	<u>Assets (000's of \$)</u>
American Communications Services Inc.	3,415	223,600
GST Telecommunications	41,299	301,701
ICG Communication	169,094	939,351
IXC Communications, Inc.	203,761	459,151
MFS Communications Co., Inc.	1,115,006	12,550,329
Midcom Communications, Inc.	40,827	79,923
Murdock Communications Corp.	8,165	7,479
Systems Communications, Inc.	2,985	21,546
Teleport Communications Group	267,700	2,050,097
WinStar Communications, Inc.	68,048	290,223

Although not as large as the cable companies listed previously, the companies listed above certainly cannot be considered small by any measure. They are relatively large and well-established companies. These firms, however, are not the only potential set of companies that can seek access to the poles and conduits of electric utilities. In addition to the cable companies already described, long-distance carriers and incumbent local exchange carriers must also be included in the set of firms desiring access. It is true that in many cases long-distance carriers

¹⁸ Source: annual reports, press releases, forms 10-K.

and incumbent local exchange carriers can simply rely on their own facilities. However, in the deregulated environment created by the 1996 Act, these firms are likely to be looking beyond their traditional borders and markets. To the extent these firms attempt to compete in other markets, which they are doing and will continue to do, they will require access in some cases to the poles and conduits of electric utilities. There is no question that, for example, AT&T, MCI, the regional Bell operating companies and their subsidiaries are vast, well-financed organizations. For example, in 1994, the annual revenue of the smallest of these companies, Pacific Telesis, was over \$9 billion.¹⁹ As a means of comparison, the annual revenue for the largest electric utility in the country, Pacific Gas & Electric, was \$8 billion.²⁰

One final note regarding the growth of telecommunications companies needs to be made before moving to the next section. The growth in CAPs, long-distance companies, etc. was achieved without mandated access and in the absence of a regulated rates. The 1978 Act applied to cable companies, it did not apply to telecommunications companies. Until the 1996 Act, there was no obligation on the part of the electric utilities to provide pole or conduit access to telecommunications companies. Access was provided only on the basis of arm's-length negotiations. Nonetheless, these companies have flourished and matured and today have major business operations.

Section II. The History and Evolution of Pricing for Poles and Conduits

This section provides a general overview of the rationale underlying the regulation and pricing for poles and conduits and discusses what has occurred in other regulated industries. The pricing for regulated services has indeed evolved. A historical perspective is often times useful when contemplating the appropriate future pricing frameworks that should be adopted. The discussion in this section is separated into the same three times periods used in the previous section: (1) pre-1978; (2) 1978-1996; and (3) post-1996.

¹⁹ Standard & Poors, *Industry Surveys: Telecommunications/Wireline*, *op. cit.*

²⁰ Utility Data Institute, *Pocket Guide to U.S. Electric Utilities*, Fourth Edition, p.13.

A. *Pre-1978*

The genesis of pole and conduit access pricing regulation can be traced to the early disputes between telephone and cable companies. In the early years of the telephone and cable industries, the Bell System negotiated fees for pole attachments with cable companies. In the early 1960s, however, the Bell System began to perceive cable companies as potential competitive threats in that cable companies would gradually capture the market for video, data and ultimately voice transmission. Based on this concern, the Bell System began restricting the type of services that could be delivered over any cable attached to its poles. In addition, the Bell System raised the rates its affiliates charged for pole attachments and restricted the number of cable companies that were allowed to attach to its poles.²¹

At the same time these events were occurring, independent telephone companies that were not subject to the legislative restrictions imposed on the Bell System (which prevented the Bell System from providing cable services) began providing cable services. The independents became even more restrictive than the Bell System. At times, the independents steadfastly refused pole attachment requests and thus were accused of anti-competitive and discriminatory practices.²²

Regulatory intervention began as early as 1966 when the FCC questioned the nature and extent of its jurisdiction. In 1970, the FCC took limited steps to regulate access to telephone poles and conduits. In 1970, the FCC promulgated a general ban on cable/telephone company cross-ownership. However, the ban did not restrict a telephone company from owning a cable system outside of its service area. In addition, the FCC instituted a waiver process whereby a telephone company was allowed to provide cable service if it could demonstrate this provision of service would "advance the public interest." Any telephone company seeking a waiver of the restrictions on cross-ownership was required to demonstrate that independent cable companies had first been offered access to the company's poles and conduits at reasonable rates.²³

²¹ Telephony and Cable Television, *op. cit.*

²² *Ibid.*

²³ *Ibid.*

In 1973, the FCC terminated the evidentiary phase of its inquiry launched in 1966. In 1975, the National Cable Television Association and AT&T entered into an agreement on pole attachment rates. To aid other parties that were negotiating or renegotiating pole attachment agreements and that did not participate in this agreement, the FCC staff released a formula that could purportedly be used to establish reasonable rates. This action was the FCC's first attempt at rate formalization. In 1976, the FCC declared that it did not have jurisdiction over poles owned by power companies and deferred a decision regarding telephone poles. As late as March 1977, the FCC affirmed its 1976 decision.²⁴

Prior to 1978, the FCC relied primarily on negotiation as the principal means of establishing rates for pole attachments and conduit access. As described above, the conflicts that arose were primarily between telephone and cable companies. It was this conflict that, in large part, gave rise to the 1978 Pole Attachment Act.

1. Other Industries

Prior to 1978, the dominant regulatory theme was heavy price regulation, if not outright control. Before this time, the nation had legislative wellhead price controls on crude oil and natural gas. The natural gas industry was heavily regulated, with the interstate pipelines serving as merchants and transporters. The price ultimately paid by consumers consisted of a regulated wellhead price and a regulated mainline transportation and distribution charge. At no point along the transaction path were competitive market forces allowed to determine prices. The electric industry was regulated in a similar fashion. This industry was highly vertically integrated, with the consumer paying a regulated generation, transmission and distribution fee. At the time, regulation was motivated, in large part, by the belief that all the various functions of both industries were safely characterized as natural monopolies. As such, the guiding principle was to maintain extensive vertical integration and provide secure monopoly franchises. In most cases, the rates for the various industry functions were cost-based and developed with

²⁴ See U.S. House of Representatives, Rept. 95-721, Part 2, Supplemental Report, *Federal Communication Commission Action*, p. 6.

reference to the historical investment costs and current accounting costs.

B. 1978-1996

With the 1978 Pole Attachment Act, the FCC was given authority to regulate rates and terms of access for pole attachments in the event the states failed to impose regulation themselves. The FCC devised a formula to establish "just and reasonable" pole attachment rates and also set up a detailed complaint procedure to encourage private resolution of most disputes. The 1978 Act, while establishing a rate, did not provide an absolute right of pole access; it remained a matter of contract negotiation.²⁵ As described in the previous section, the cable industry flourished over these years and ultimately was able to run wire to the doorsteps of over 90% of the nation's residences.

1. Other Industries

The regulatory climate during the 1978-1996 era for other industries, energy in particular, contrasts starkly to the environment prior to 1978. Throughout this period, the energy industry became unshackled from price controls and was guided by deregulatory/market-based solutions.

In the early 1980s, as a result of legislative-induced shortages and distortions in the gasoline markets across the country, wellhead price controls for crude oil were lifted, as were the entitlement programs and other restrictions placed on domestic refining operations. In 1978, the Natural Gas Policy Act set out to decontrol the myriad of complex wellhead price controls established for natural gas that ultimately caused the gas shortages and curtailments experienced in the 1970s.²⁶

In addition to the decontrol of prices, Congress and the various state and federal agencies began to pursue a much more market-based approach to the provision of gas and electric

²⁵ Telephony and Cable Television, *op. cit.*

²⁶ Regulations Implementing the Natural Gas Policy Act of 1978, 5 FERC ¶ 61,114 (1978).

services. In the 1980s, a number of key mandates in the gas industry ultimately forced interstate pipelines to eliminate their merchant function and act solely as common carriers that provided non-discriminatory access on just and reasonable terms.²⁷ As a result, large industrial customers and local distribution companies ("LDCs") were allowed to contract directly with natural gas producers. In the 1990s, a similar process has begun for the LDCs themselves. In many cases, LDCs are exiting the merchant function and limiting their role to distribution only. In their place, marketers and brokers have emerged and are providing direct service to the LDCs' former customers.²⁸

The very same desire for direct customer access in the gas industry also developed in the electric industry. Throughout the 1980s, the issue of forced divestiture of generation, transmission and distribution has been debated, as has the issue of direct access to utility customers. In the 1990s, federal regulation was adopted to require non-discriminatory access on the nation's transmission networks.²⁹ Accordingly, many states have developed open-access plans that would allow their customers to purchase their electricity needs from any supplier, not just the local electric utility.³⁰

Along with the de-integration of the gas and electric industries and the increase in access at all levels for all functions, the various state and federal regulatory bodies also began to depart from the traditional ratemaking methodologies, such as embedded cost-of-service models, that

²⁷ Order No. 436, 33 FERC ¶ 61,007 (1985); Order No. 636, 59 FERC ¶ 61,030 (1992).

²⁸ LDCs in at least 18 states and the District of Columbia are offering their customers the opportunity to choose an alternative supplier. While not all of the LDCs have plans to completely exit the merchant function, they have opened their systems, allowing marketers and brokers direct access to customers. See also *Providing New Services to Residential Customers: A Summary of Pilot Programs and Unbundling Initiatives*, American Gas Association Issue Brief 1997-03, April 18, 1997.

²⁹ Order No. 888, 75 FERC ¶ 61,080 (1996).

³⁰ California State Legislature Assembly Bill 1890, Signed into law September 1996. Beginning January 1, 1998, consumers from all customer classes will be able to buy electricity from either their current utility or another electricity supplier. Likewise, several states have legislation in place requiring retail choice: New Hampshire and Rhode Island by 1998, Maine by 2000, and Montana by 2002. Several public service commissions have issued plans ordering open access: Massachusetts and Vermont by 1998, Arizona by 1999, and New Jersey by 2001. Finally, legislation for direct access has been proposed in Pennsylvania, Oregon, Oklahoma, and South Carolina.

were adhered to before 1978. Recognizing that price decontrols and open access had generated thriving spot markets and a plethora of alternative energy suppliers, regulators began developing more market-sensitive rate approaches for the services under their jurisdictions.

Throughout this period, regulators began investigating to what extent their ratemaking methodologies could better reflect competitive market outcomes. In some cases, the traditional embedded cost methodologies were modified in ways that produced rates more equivalent to the prices observed in the emerging markets. Regulators also sought to establish rates that provided better incentives and thus reduced the perverse and distortionary effect observed in the past. During this period, regulators also began to see the importance and feasibility of allowing market-based negotiated rates for services under their jurisdiction. Market-based prices were implemented for many functions of the energy industry that were heretofore considered natural monopolies. Market-based prices have been investigated and implemented for interstate gas transmission service and LDCs' sales functions. In the electric industry, market-based pricing has been adopted for generation in some states and is being considered for other segments as well.³¹

C. *Post-1996*

The evolution in pricing for poles and conduits in the post-1996 environment is currently being debated. The evolution in regulation and pricing for other industries continues along the same path as that prior to 1996. The objective for the electric and gas industries is more, not less competition. State and federal regulatory bodies continue to open up markets. Along with the increase in access, regulators are adopting and relying more heavily on market-based rate solutions. For those functions deemed competitive or potentially competitive, regulators are proposing market-based pricing. For those functions deemed not competitive or not likely competitive in the near future, regulators are continually experimenting with rate structures that provide proper incentives and generate rates more consistent with competitive market prices.

³¹ See Edison Electric Institute's *Regulatory Briefing Service-FERC Power Marketer Proceedings* for market-based ratemaking applications submitted to and approved by the Federal Energy Regulatory Commission.

Section III. Dominant Pricing Paradigms

The previous section presented a broad historical and evolutionary perspective on how the FCC and other agencies have approached the issue of pricing for regulated services under their jurisdiction. If one were to survey the methodological approaches relied on over the years, it would become apparent that regulatory agencies have employed variations on essentially five dominant pricing frameworks. These frameworks, which can be thought of in terms of a continuum, include pricing established via:

- A. Cost-of-service ratemaking where investment in plant is based on historical embedded costs;
- B. Cost-of-service ratemaking where investment in plant is based on replacement costs;
- C. Incentive ratemaking formulas;
- D. Negotiation with a recourse option; and
- E. Negotiation with no recourse option.

This section discusses each of these five dominant pricing frameworks and is included in this report as a means to evaluate the appropriate pricing methodology for pole attachments and conduit access. This discussion is intended to allow useful parallels to be drawn between the conditions (institutional, regulatory and market) that motivated the choice of framework listed above and that which exists for pole attachments and conduit access. This section also serves to highlight the evolution in pricing frameworks for regulated services.

The above list represents a continuum in that the first pricing option, cost-of-service ratemaking based on historical embedded costs, is clearly associated with what is commonly referred to as "heavy-handed" regulation, whereas the last pricing option, negotiation with no recourse option, is associated with a pure market-based outcome. The choice of pricing methodology, regardless of which agency or jurisdiction is doing the choosing, has always been guided primarily by perceived market conditions as well as the current institutional and regulatory environment. Each framework is described in detail below.