

A Commission Report



Intergovernmental Regulation of Telecommunications

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Intergovernmental Regulation of Telecommunications

Preface

In 1987, ACIR decided to examine the intergovernmental regulatory and tax implications of two of the most rapidly changing sectors of the American economy—banking and telecommunications. The banking studies were completed in 1988—*State Regulation of Banks in an Era of Deregulation*—and 1989—*State Taxation of Banks: Issues and Options*.

This study of the regulation of telecommunications is the first of two reports on the telecommunications industry. The second report, on state and local taxation of telecommunications, will be published later this year.

Just a few years ago, most Americans took “plain old telephone service” for granted. It was rather straightforward: the vertically integrated American Telephone and Telegraph Company (AT&T) had a virtual monopoly on local as well as long-distance voice communications. As an entity, AT&T was organized much like a corporate pyramid. The base consisted of 22 local operating companies (the “Bell” companies) and a long-distance division (“long lines”). The local operating companies held state government franchises that were effective in barring competition from entry into the “local loop.” Long-distance service was regulated and protected by the Federal Communications Commission (FCC), which derived its authority from the *Communications Act of 1934*.

Beginning in the 1950s, a series of technological advances, such as microwave transmissions of voice communications, began to chip away at the pyramid and erode AT&T’s monopoly status. In 1959, a series of judicial and regulatory rulings began to erode AT&T’s legal protections. As technical advancement expanded to include terminal equipment, the regulatory reforms continued to narrow the scope of the AT&T monopoly. By 1981, FCC had loosened up on a variety of regulatory matters, ranging from the manufacture of terminal equipment and the use of most combinations of computers and communications equipment to the opening of certain types of long-distance service to new competition, such as MCI.

A particularly important event was the 1982-83 settlement of the U.S. Department of Justice antitrust suit against AT&T. The decree broke up the vertically integrated monopoly of AT&T, requiring a whole new regulatory scheme.

This report lays out the key intergovernmental issues that have arisen as a result of this new regulatory environment and provides the context and rationale for three Commission recommendations relating to the intergovernmental regulatory process.

The report begins with a brief history of the telecommunications industry and the early development of state and federal regulation. It recounts the events leading up to the 1982-83 settlement of the antitrust suit (divestiture) and examines the elements of the settlement decree. The report also describes the post-divestiture telecommunications regulatory environment, including state initiatives and areas of state-federal regulatory tension.

Robert B. Hawkins, Jr.
Chairman

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Full responsibility for the content of this report, however, lies with the Commission and its staff.

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Findings and Recommendations

Recommendation 1:

Continuing Regulatory Experimentation

The Commission finds that the differences in the nature of the intrastate intraLATA and interLATA markets create a diversity of requirements and that a number of states have been innovative in developing forms of regulation that are well tailored to differences in the competitive nature of their geographic market areas.

The Commission recommends, therefore, that states continue to explore alternative forms of regulation for their intrastate intraLATA and intrastate interLATA markets in order to fulfill their roles as laboratories for experimentation and creativity.

Recommendation 2:

Promoting Universal Service and Access to the Benefits of the Information Age

The Commission finds that states are actively engaged in studying, planning, and initiating experiments to promote the economic competitiveness of their states by implementing policies that will encourage the development and spread of new technologies to all state residents.

The Commission recommends, therefore, that state legislators and regulators (and ACIR) continue to study the changing nature of the telecommunications infrastructure with respect to (1) adopting plans for the future needs of businesses and residents in rural as well as urban areas, and (2) the interests that all citizens of a state have in access to the benefits of the information age.

Recommendation 3:

Strengthening Joint Board and Conference Procedures

The Commission finds that the institutional processes associated with the joint boards and conferences could be improved by permitting the states, rather than solely the Federal Communications Commission (FCC), to convene meetings and select board and conference chairpersons.

The Commission recommends, therefore, that the Congress amend 47 U.S.C. sections 410 (a), (b), and (c) to allow meetings of the joint board and the joint conference to be (1) initiated and convened upon motion of FCC or on vote of a certain percentage of the 50 states as determined by the National Association of Regulatory Utility Commissioners, and (2) that issues to be considered by the boards and conferences be drafted in partnership between FCC and the states.¹ Finally, the Commission recommends that state and federal regulators continue to use the joint board and joint conference procedures as revised in order to build an integrated, competitive, national public telecommunications network.

The recommendations were adopted by the Commission on September 29, 1989.

Introduction

States began regulating telephone companies in the beginning of the 20th century. Early regulatory legislation focused on the conditions under which a telephone company could operate in the state. Typically, legislation required a company to apply for and receive a Certificate of Public Convenience and Necessity from the appropriate state regulatory body prior to beginning its operations. Because telephone service required a heavy investment in rights of way, equipment, and wire, it was frequently thought of as a natural monopoly. Most states therefore prohibited competitive entry, emphasizing the importance of protecting the investment of the incumbent phone companies and the goal of universal service.

To control the intrastate rates of the monopoly telephone companies, state regulators turned to rate-base/rate-of-return regulation. According to this system, companies set their rates to recover their reasonable expenses and earn a fair return on their investment in the property used in the telephone business. The state commissions determined the allowable rate of return. Although seemingly straightforward, this method of rate regulation proved difficult to administer. An administratively troublesome aspect of rate-base/rate-of-return regulation involved the separation of the costs of the local telephone plant between intrastate and interstate service. Because the local plant was used to complete both local and interstate toll calls, its costs and operating expenses had to be divided between intrastate service (regulated by the states) and long-distance toll service (regulated by the Interstate Commerce Commission). Eventually, state and federal regulators and the industry instituted a process of *separations*, whereby the costs of the local plant were apportioned between intrastate and interstate business, and *settlements*, whereby a fraction of the interstate toll revenues was pooled and divided among the states.

As long as intrastate and interstate telephone service remained primarily in the hands of one monopoly provider, the vertically integrated American Telephone & Telegraph Company (AT&T), rate-base/rate-of-return regulation and the separations-and-settlements process basically constituted a system of internal transfers of costs and revenues. In 1982, however, the structure of the industry and the regulatory system that had been developed over a half-century came to an end. The federal judicial divestiture decree, which settled the federal government's antitrust suit against AT&T, required AT&T to divest itself of all Bell operating companies by January 1, 1984. The decree also directed the Bell operating companies, which retained monopoly control of the local exchanges, to provide equal access to the local exchange for all competitors in the long-distance market. The settlement prohibited the Bell operating companies from providing long-distance service and from manufacturing telecommunications and terminal equipment.

The breakup of the vertically integrated monopoly telecommunications network created a disaggregated telecommunications system, requiring a new regulatory scheme. Although the Bell operating companies have largely retained monopoly control of the local exchange, several telecommunications providers compete in some

parts of the intrastate market and in virtually all of the interstate market. Currently, state regulators are experimenting with new methods of regulating and/or deregulating the restructured telecommunications industry. Thus, telecommunications providers may be subject to different regulatory schemes, depending on the state in which they are located, the type of service they offer, the market in which they operate, and whether they are deemed to be a dominant or nondominant provider.

In addition to the structural changes wrought by the divestiture decree, technological advances have changed the face of the industry. Advances in fiber optics, which allow a higher transmission rate, and the increasing use of digital switches, which allow additional information services, have paved the way for the integrated transmission of voice, data, and video over the same loop. Cognizant of technological advances in the industry, states are redefining universal service, studying and experimenting with ways to develop a telecommunications structure that will enhance their economic competitiveness, and prodding the industry to begin test runs of integrated digital transmission services within the public switched network. In these experiments, some state regulators have moved out in front of FCC, introducing diversity and flexibility into the system.

As this report concludes, however, in recent years states have frequently been thwarted in their efforts to develop a telecommunications policy tailored to the

needs of their citizens and businesses by the actions of FCC in preempting state law. Continued pursuit of a federal policy of preemption may result in an incalculable loss to the nation of the lessons to be learned from and the models developed by the current state experiments. Uniformity of technical engineering standards is essential to assure the development of an integrated national network; uniformity of regulation in other areas is not. A new federal-state regulatory paradigm, built on the cooperative base of joint boards and conferences provided for in the *Communications Act*, would assure uniformity of technical standards where needed to produce an integrated national telecommunications system. Restraint in using federal preemptive powers will protect the vitality and diversity of the system.

The purpose of this report is to examine and evaluate the key intergovernmental regulatory issues that arise as a result of the changing institutional and economic structure of the telecommunications industry. The report begins with a review of the history of the telecommunications industry and the early development of state and federal regulation. It then recounts the events leading up to divestiture and examines the elements of the decree. Next, the report describes the post-divestiture telecommunications regulatory environment, including state initiatives and the areas of state-federal tension. The report concludes with a description of a new state-federal regulatory paradigm.

BEGINNINGS: FROM COMPETITION TO MONOPOLY AND BACK AGAIN

On the eve of the invention of the telephone, Western Union dominated the telegraph industry in the United States. With its lines strung alongside railroad rights of way, Western Union's telegraph services spanned the nation. As the holder of the Morse patents, Western Union also enjoyed a virtual monopoly in the business. The company identified two potential threats to its continued primacy, however: (1) attempts by financiers to organize the existing small companies into a single system, and/or (2) the development of major technological innovations not controlled by Western Union.²

Western Union had strategies in place to counter such challenges. With small companies that were viewed as potentially serious competitors, the company first engaged in price wars and then offered favorable merger terms. The company also purchased the patents to those technological inventions that it identified as posing a risk to its dominance. For example, in 1868, the company purchased for \$250,000 a patent from one J.B. Stearns for a device that would permit the transmission of more than one message at a time on a telephone wire. In 1877, however, Western Union turned down an offer from Alexander Graham Bell to purchase for \$100,000 his patent on a method of "electrical transmission of articulate speech and sound of every kind . . ."³ In part, Western Union's refusal resulted from its belief that an engineer employed by its subsidiary, Western Electric, had superior patent rights on a similar invention.⁴

Rebuffed by Western Union, Bell formed his own company. The Bell company began by leasing telephones to customers who strung their own wires to connect with those telephone lessees of their choice. In this way, each telephone lessee created a private line between two points. Despite the awkwardness of this arrangement, Bell's telephone leasing business proved successful. In fact, many of Bell's first business customers had been customers of Western Union. Hoping to stem the loss of its business base, Western Union hired Thomas Edison to improve on Bell's invention. Edison was up to the task. He invented a transmitter that greatly improved the quality of the voice transmission.

The two companies engaged in a heated battle, each seeking to gain an advantage over the other. One of the products of this competition signaled the birth of the modern telephone industry: the creation of the Bell exchange company, a switching center through which each subscriber line passed in order to connect all subscribers. Bell's other competitive strategies included emphasis on technological excellence and the filing in 1878 of a patent infringement lawsuit against Western Union. Both tactics were successful. With the invention of its own new transmitter, the quality of the Bell voice transmission equaled that of Western Union, and a negotiated settlement to Bell's patent infringement lawsuit in 1879 left Bell in control of the telephone industry. According to the terms of the settlement, Western Union withdrew from telephone service, sold its network of phones to the Bell company, and transferred its telephone-related

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Historical Background of the Telecommunications Industry

patents to Bell. For its part of the bargain, Bell agreed to stay out of the telegraph business.⁵

The period from 1879 to 1894 is generally considered one of Bell monopolization of the telephone industry. Moving quickly to consolidate its hold, Bell undertook to build a vertically integrated system, controlling all aspects of the industry. In 1881, Bell purchased Western Electric, which became its exclusive manufacturing arm, from Western Union. In 1885, Bell established AT&T to operate long-distance lines to interconnect the local exchange areas.

Bell concentrated its development efforts in the major cities, largely ignoring rural areas and small towns. This failure to serve less populated areas explains in part the rapid rise of independent telephone companies when two of Bell's basic patents expired in 1893 and 1894. The increase in the number of new systems between 1895 and 1900 was remarkable—199 new telephone systems came into existence in 1895, 207 in 1896, 254 in 1897, 380 in 1899, and 508 in 1900. The proportion of telephones controlled by the independents rose from 19 percent in 1897 to 44 percent in 1902 to 51 percent in 1907.⁶ Looking at these numbers, Bell recognized that its dominant status was in danger and turned once again to the tactics that it had used so successfully against Western Union.

Bell filed five patent infringement suits against the independents in 1894, and 23 in 1895.⁷ Yet, the numbers of independent telephone companies and their subscribers kept growing. When lawsuits failed to reduce the competition, Bell turned to other schemes to shore up its waning status. Under the direction of Theodore Vail, the first president of AT&T⁸ (which had been transformed into the parent company in 1900), and with the financial backing of J.P. Morgan, AT&T began purchasing independent telephone companies. The independents that refused AT&T's offers found themselves cut off from interconnection with the other independent companies that had merged with Bell and from the long-distance lines of AT&T. The AT&T merger policy reached its peak with the purchase of the controlling interest in Western Union in 1909.

Some of the disconnected independent telephone companies began to fight back by filing complaints with the new state regulatory bodies and by suing Bell under state and federal laws. In a move considered by many to be proof positive of his extraordinary political savvy, Vail decided not to risk legal action. Recognizing the anti-big business social and political temper of the times and the advantages of regulation, Vail decided to negotiate a settlement of the federal antitrust suits with the U.S. Attorney General. The agreement reached by the parties, known as the Kingsbury Commitment, was in the form of a letter from AT&T Vice President Kingsbury to Attorney General J.C. Reynolds. In the letter, AT&T agreed to sell its Western Union stock, to allow interconnection with the independent companies, and to refrain from acquiring any directly competing companies.⁹

As early as 1907, Vail had spoken of the benefits of regulation. He expressed his pro-regulatory views in the company's annual reports of 1907 and 1910. In a 1915 speech, Vail expressed his support for the concept of a regulated monopoly as follows:

I am not only a strong advocate for control and regulation, but I think I am one of the first corporation managers to advocate it. It is as necessary for the protection of corporations from each other as for protection to, or from, the public.¹⁰

Sharing Vail's enthusiasm for a regulated monopoly, federal legislators amended the *Interstate Commerce Commission Act* to bring interstate telephone companies under the jurisdiction of the Interstate Commerce Commission (ICC), while state lawmakers established and/or strengthened their state regulatory bodies.

Depending on the vantage point of the viewer, the effects of the early period of regulation looked either beneficial or pernicious. Regulation stabilized the industry, ended the rate wars, curtailed new entries, and placated the public critics, while allowing AT&T to maintain its earnings and growth. With public acceptance of regulation, Vail saw on the horizon the fulfillment of his dream of a telephone system that was "universal, interdependent and intercommunicating, affording opportunity for any subscriber of any exchange to communicate with any other subscriber of any other exchange." This goal of universal service could not, Vail believed, be "accomplished by separately controlled or distinct systems nor [by] competition in the accepted sense of competition."¹¹

THE GROWTH OF REGULATION: STRUCTURE AND ELEMENTS

There are at least three methods to resolve the conflicts that arise from a system of dual state-federal regulation: (1) one government can agree voluntarily to the policies and goals of the other; (2) one jurisdiction can command compliance with its regulatory decisions; or (3) a mechanism can be put in place to require or facilitate compromise between the two. Because the latter two methods are under the sole control of the federal government, one would expect state regulatory policies to dominate only when conflicts are handled through the first method. The history of state and federal regulation of the telephone industry supports this proposition.

The Early Period of State Regulation

Although five states had established some regulatory control over telephone companies prior to 1907, none of them attempted to impose authority over telephone rates.¹² After 1907, the number of states that enacted legislation pertaining to telecommunications grew rapidly.¹³ This early legislation focused on the conditions under which a telephone company could operate in a state. Typically, the legislation required that a company apply for and receive a Certificate of Public Convenience and Necessity from the appropriate state regulatory body prior to beginning its operations. Most state commissions interpreted this legislation to limit the number of telephone companies that could operate in the state. For example, in their early decisions, the Public Service Commissions of New Jersey, Wisconsin, Illinois, Indiana, Missouri, New Hampshire, Arizona, Minnesota, and Pennsylvania adopted policies against duplication of service,

thereby prohibiting competitive entry. In their refusals to grant the required certificate to competitors, the state regulators affirmatively emphasized the importance of protecting the investment of the incumbent phone companies and the goal of universal service, stating that additional facilities would create “wasteful duplication,” “ruinous competition,” and “cream skimming.”¹⁴

On rare occasions, such as when a state commission found that an existing telephone company provided inadequate service, the commission would grant a certificate to a competitor company. More often, however, state commissions found that even in the case of inadequate service “the remedy is not to attempt to install another plant, thereby so depleting the revenue of both that neither can afford to furnish adequate service but to apply to [the] Commission [for relief].”¹⁵ The commissions claimed to have sufficient power to correct the usual complaints of service deficiencies, the failure to allow interconnection of systems, and high rates.

By 1930, all but three states had enacted legislation giving state regulatory commissions power over intrastate telephone rates. In regulating the rates, the commissions focused on the reasonableness and efficiency of the earnings of the companies within their jurisdiction. According to the rate-base/rate-of-return regulation, a telephone company should set its rates so as to recover its “reasonable” expenses as well as to earn a “fair” return on its investment in property (rate base) used in the regulated business. In order to calculate its rate of return (ROR), the company related its net earnings (the difference between intrastate revenues and intrastate expenses) to its net property investment in the state according to the following formula:

$$\text{ROR} = \frac{\text{revenues-expenses}}{\text{state (net) property investment}}$$

Rates (*r*), then, would be deemed proper if they were set to produce revenues according to the following formula:

$$r = \frac{(\text{ROR} \times \text{state net property investment})}{+ \text{expenses}}$$

The commissions determined the allowable rate of return. If, for example, a state commission found that 10 percent was a fair rate of return, the telephone company would set its rates so as to generate sufficient revenue to cover its approved expenses and earn 10 percent on its investment.

Hidden in the above formula is a cost-of-service problem that has plagued the telephone industry continuously since it was first identified in 1910.¹⁶ An explanation of the problem must begin with a brief description of the operation of the telephone system of the 1920s and 1930s. Assume that Person X living in City A wants to make a call within the same city. One commentator has described the path of such a call as follows: X would take the receiver off the hook, and then

... a light would flash in front of the switchboard operator indicating the specific customer desiring service. The operator would plug in her answering cord into the jack and obtain the called number. She then would plug in the calling end of her cord circuit into the jack associated with the called party’s line and ring. Upon completion of the conversation, the line lamps would re-flash and the operator would disconnect by removal of the cords.¹⁷

If X made a long-distance toll call to another city or state, the same procedure would occur, with the additional need to access a toll office.

[T]he operator at the local originating switchboard would plug into an idle outgoing toll connecting trunk, which terminated at the toll switchboard. The toll operator recorded the details of the call and completed the call by jacking into the trunk before her to summon the inward toll operator at the called exchange. When the subscriber hung up at the end of conversation, the toll operator would enter the time on the toll ticket and disconnect.¹⁸

Thus, while the toll connecting trunks, circuits, and switching trunks, and the toll offices were used only for the toll service, the local telephone plant—the loop and local office—was used for both local service and long-distance toll service. This shared use of the local plant created a problem for regulators in determining what portions of the joint and common costs for the property should be recovered by toll rates and by local service rates. Two theories competed to provide the answer.

The board-to-board principle of telephone costing, which predominated prior to 1930, held that toll rates should be set so as to cover only the cost of the toll connecting equipment and switches (i.e., the facilities beginning at the trunk side of the originating local switchboard and ending at the terminal side of the terminating toll switchboard). In modern economic jargon, the board-to-board principle is very similar to the concept of incremental costing. Advocates of the competing station-to-station theory of telephone costing maintained that because the local loops and switchboards were used to complete a long-distance toll call, some portion of the local plant costs should be recovered through the toll rates. Otherwise, the local exchange ratepayer would be subsidizing the toll user. Station-to-station principles required fully distributed costs, that is, the costs of interstate services should include the fraction of the joint and common costs of the local telephone plant assigned to interstate service.

Because telephone rates were set so as to produce revenue sufficient to allow the company to recover its expenses and a fair return on the property used in its regulated business, the choice between the theories had a significant impact on telephone rates. If, for example, a state regulatory body were to adopt the station-to-station theory, then some portion of the costs (expenses plus investment in plant) of the local exchange service would be imputed to interstate long-distance service. The reduction in the costs (smaller rate base and fewer expenses)

assigned to the local service market meant that less revenue was needed to earn the allowed rate of return in that market. The station-to-station theory, then, had the effect of reducing (or maintaining without increase) local rates, and increasing long-distance toll rates, which now had to earn revenue sufficient to reimburse the local exchange companies for the local exchange costs imputed to the long-distance service.

Conversely, if a state public service commission required board-to-board principles for telephone rates, the local rate base would be deemed to include 100 percent of the expenses and plant (subset, loop, and local office) incurred to provide both local and toll service, leading to the need for increased revenues and higher local telephone rates. By allowing long-distance toll rates to be set at their incremental cost, the board-to-board theory minimized long-distance rates but raised local rates.¹⁹

Jurisdictional Separations

In a 1930 decision, the U.S. Supreme Court addressed the federal-state jurisdictional aspect of the problem. The issue before the Court in *Smith v. Illinois*²⁰ was whether an order of the Illinois Commerce Commission, which reduced the rates for certain classes of local telephone service, was confiscatory in violation of the due process clause. Without deciding the ultimate question, the Court held that because the Illinois regulatory body had not "separated" (i.e., apportioned) the intrastate and interstate property, revenues, and expenses of the Illinois Bell Telephone Company, it could not rule on the validity of the rate reduction ordered by the Illinois commission. According to the Court, the failure to impute some of the costs of the local exchange to the interstate toll service resulted in the subsidization of interstate toll service by the local service: "unless an apportionment [of the local exchange costs] is made, the intrastate service to which the exchange property is allocated will bear an undue burden. . . ."²¹ Thus, in *Smith v. Illinois*, the Supreme Court adopted the station-to-station theory.

The decision had no practical effect, however, because the Court failed to clarify how the process of separating the costs of the local exchange between intrastate and interstate markets should be accomplished. Indeed, the Court's decision left the impression that the separation of the costs was primarily a matter of drawing boundaries between state and federal authority in regulating telephone rates.²² In fact, in a later case, the Court found it acceptable for the telephone company to impute a fraction of the local costs to the interstate service *along with* a corresponding amount of revenue.²³

The *Smith* decision also had an unintended effect on state regulation. Because the Supreme Court emphasized the federal-state jurisdictional nature of the separations process, its decision extended federal jurisdiction over what had been solely state costs under the board-to-board theory. Consequently, many state regulators refused to adopt station-to-station principles, recognizing that to do so would threaten their exclusive regulatory authority over local exchange rates.²⁴

The Early Period of Federal Regulation

By the 1940s, changes in federal regulatory policies led to a recognition of the full significance of the station-to-station theory and to its adoption. In 1934, the Congress created a new regulatory structure for the telephone industry. The 1934 *Communications Act*²⁵ established the Federal Communications Commission (FCC), and conferred on that agency control over interstate and foreign communications companies, including the telephone industry. The Act also retained the dual federal-state regulatory system. Prior to this time, jurisdiction over interstate telephone service rested with the Interstate Commerce Commission (ICC). Because ICC viewed its primary function as the regulator of the railroads, it had neither time for nor interest in the telephone industry.²⁶

The Federal Communications Commission proved to be a more shrewd regulator than ICC, if not a more active one. Between 1936 and 1940, interstate rates were reduced on four separate occasions. Commentators do not agree on the role of FCC in these rate reductions; some maintain that the reductions were a result of voluntary action by AT&T,²⁷ while others contend that the reductions were a result of negotiations spearheaded by FCC.²⁸ All agree, however, that FCC took credit for the rate reductions.

One of the side effects of the decrease in interstate toll rates was a disparity between the rates for interstate toll service and intrastate toll service. While the rates for interstate toll service (regulated by FCC) had dropped, the intrastate toll rates (regulated by state commissions) remained relatively high. The growing divergence in the rates finally jolted state regulators out of their lethargy. In 1941, a group of state regulators and representatives of the National Association of Regulatory Utilities Commissioners (NARUC—a quasi-governmental nonprofit organization of regulators in the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands), met with FCC to discuss the disparity in the toll rates. The outcome of the meeting was an agreement to begin a comprehensive cooperative investigation of separations problems.

Moreover, after 1940, FCC began to take a more active role in supervising continued reductions in the interstate rates. As a result of the increased federal regulatory surveillance over its rates and rate of return, AT&T began to see the wisdom of the station-to-station theory. AT&T reasoned that by using station-to-station principles its interstate business would be less vulnerable to forced rate reductions because its property base and expenses would be swelled by absorbing some of the costs of the local exchange.²⁹ In 1943, AT&T filed its interstate tariffs³⁰ using station-to-station principles, resulting in a \$22 million transfer of revenue to the local Bell companies. Seven years later, the local Bell companies also adopted station-to-station principles in filing their intrastate tariffs. Thus, in 1950, 30 years after the Supreme Court had advocated station-to-station costing in *Smith v. Illinois*, that method became the norm.

An Era of Cooperative Regulation

AT&T pressed state and federal regulators to formalize station-to-station principles by adopting policies

setting forth what fraction of the component costs (expenses and physical plant) would be imputed to the interstate services. At issue was the formula to apportion or separate each unit of the physical plant and its related costs between the intrastate and interstate telephone services. The NARUC-FCC committee had suggested that the separations be based on the relative actual use made of the plant for each of the services.

Over the following three decades, state and federal regulators experimented jointly with varying formulas, all of which were criticized by one or more of the players as arbitrary and/or inequitable. The fact that the formulas tried were found wanting in one or more particulars did not, however, undermine the basic agreement among the regulators as to the propriety and importance of the station-to-station method in promoting the shared goal of universal telephone service. Indeed, over the years, FCC acquiesced in a gradual increase in the fraction of the local exchange plant assigned to the interstate jurisdiction.³¹ By 1980, the formula assigned approximately 26 percent of the costs of the local plant and its related expenses to the interstate toll service.³²

State regulators used two other methods to keep basic rates relatively low. First, they engaged in "residual ratemaking." That is, the regulators spread general rate increases among the various intrastate telephone services according to a hierarchy that placed intrastate toll rate increases at the top, increases in the cost of directory advertising and sales in the middle, and basic exchange rate increases at the bottom. According to residual ratemaking policies, basic rates were raised only as a last resort.³³ Second, state regulators allowed telephone companies to depreciate their plant and equipment over long lifetimes. This depreciation policy allowed recovery of these costs (with their associated revenue requirements) to be spread over many decades.

By keeping the local service rates low, the separations process, residual pricing, and depreciation policies all played a key role in the growth of the telephone system across the nation. By 1965, 85 percent of all households located in areas served by AT&T were able to afford a telephone.³⁴

THE FIRST FEDERAL ANTITRUST SUIT

The *Communications Act of 1934* established the Federal Communications Commission to regulate interstate communications and authorized the new agency to investigate the industry and make recommendations for further legislation if needed. The FCC investigation lasted several years and culminated in two reports. The first "Proposed Report" (also known as the Walker Report), issued in 1938, criticized the close ties between the Bell operating companies and Western Electric, especially the agreements covering the purchase of telephone equipment from Western Electric. The report urged that the operating companies be required to buy their telephone equipment through competitive bidding.

The Walker report drew widespread and sharp criticism from the press. The criticism had its desired effect, and the final report, issued in 1939, backed away from the previous pro-competition recommendations. Instead, the

report advocated minor changes in the law and more money for enforcement. The issue of the ties between Western Electric and AT&T did not die, however. Based on information garnered from the FCC investigation, the Justice Department filed a *Sherman Act* antitrust suit against AT&T and Western Electric in 1949. The relief requested by the government included divestiture of Western Electric by AT&T and a ban against restrictive agreements among AT&T, the Bell operating companies, and Western Electric.

Because of numerous delays caused by legal maneuvering and the outbreak of the Korean war, the suit lay dormant for many years. The passage of time and a change in political administrations led to settlement negotiations beginning in 1953. In 1956, the parties agreed to the entry of a consent decree that limited the activities of AT&T and the entire Bell system as follows: (1) AT&T could not engage directly or indirectly in any business other than that of providing common-carrier communication services (e.g., AT&T could not enter the computer information market) and (2) all patents owned by the Bell system must be licensed to others on request. The decree allowed the existing agreements among the companies of the Bell system to continue in force.³⁵

MOVING TOWARD DIVESTITURE

Although AT&T's vertically integrated corporate structure emerged untouched from the antitrust lawsuit, other developments were brewing that would lead ultimately to the company's breakup. Competition, in the form of attachments to Western Electric telephones, new service offerings in specialized markets and finally in the public service network itself, gradually eroded the AT&T monopoly. Technological advances, entrepreneurial challenges, a shift in federal regulatory policy, and judicial activism all played a role in the process.

Challenges to the Telephone Equipment Monopoly

Challenges to Western Electric's control over telephone equipment began modestly enough. In the 1920s, a company began selling a telephone accessory called Hush-A-Phone. The cup-like device was snapped on to the telephone handset to focus the speaker's voice directly into the telephone instrument, thereby providing privacy. AT&T policy prohibited the attachment of any device to the telephone that was not furnished by the company. Violation of this "foreign attachment" rule could result in suspension or termination of service. The rationale for the policy was that the use of such devices might be "detrimentous to the telephone system and injure the service rendered by it."³⁶ As a result of this AT&T policy, some of the Hush-A-Phone distributors stopped selling the device. In 1948, the Hush-A-Phone company filed a petition with FCC requesting that the commission order the Bell system to allow the connection. When FCC ruled against the company, Hush-A-Phone appealed the decision to the DC Circuit Court of Appeals. The court set aside the FCC order, finding that the device did not harm the telephone system. The court set out a much-quoted standard prohibiting "unwarranted interference with the telephone sub-

scriber's right reasonably to use his telephone in ways which are privately beneficial without being publicly detrimental."³⁷

The next challenge came in 1968, when an entrepreneur named Thomas Carter began marketing the "Carterfone," a device that interconnected mobile radio systems with the telephone system. Once again, AT&T refused to allow customers to use the device on the ground that such use would damage the telephone system. This time, however, FCC, mindful of the *Hush-A-Phone* decision, ordered AT&T to allow private customers to use the Carterfone, and it ordered the common carriers to propose regulations that would protect the telephone system against harmful devices.³⁸ AT&T filed regulations that allowed direct electrical connection of foreign equipment to its telephones only through "protective connecting arrangements" (PCAs) rented by AT&T.

In 1975, FCC eliminated AT&T's control over the PCA market by allowing the direct hookup of any device that met certain performance criteria. Finally, in 1980, FCC ordered the deregulation of all new customer telephone equipment, or CPE (customer premises equipment) as it was now called.³⁹

Competition in the Long-Distance Market

In the 1950s, technological progress made it possible for entrepreneurs to challenge the AT&T monopoly in the long-distance market. Voice transmission by means of radio waves only a few centimeters long (microwaves) had been developed during World War II. With the development of microwave communication came the potential for competitive entry into the long-distance market. Building a microwave communications system was far less expensive and far faster than laying cables. Yet, for some time, FCC policy hindered that competition. Until 1956, FCC, believing that there was a shortage of frequencies in the microwave band, had severely restricted the number of microwave licenses it granted. Those eligible were common carriers, certain television broadcasters, and pipelines and railroads.

By 1956, however, microwave technology had progressed, making it possible to use a greater range of frequencies and causing FCC to review its entry limitations. The hearings, which began in 1956, culminated in the "Above 890" decision in 1959. Reversing its earlier policy of limited access, FCC opened the market to private users. The "Above 890" decision opened the door for entrepreneurs to compete in the long-distance market. In 1963, Microwave Communications, Inc. (MCI) filed a request with FCC to operate as a limited common carrier providing microwave voice transmission between St. Louis and Chicago over private lines. Despite opposition by AT&T and the independent telephone companies, FCC granted MCI's application in 1969.⁴⁰

Spurred on by MCI's toehold entry into the intercity communications market, a large number of other providers filed similar applications with FCC. The commission opened a broad policy inquiry regarding the effects of competition in the "specialized communications field" (i.e., service to or from limited points and pursuant to private contracts).⁴¹ In 1971, FCC issued a general

policy statement sanctioning increased competition in the specialized communications field, which was found to be served inadequately by existing common carriers. Not surprisingly, the companies providing specialized communications services soon sought to use their toehold entry into the field to gain access to the far larger switched long-distance market.

The challenge came in the form of a new service offered by MCI—the "Execunet" service. Using Execunet, an MCI customer could reach any telephone in distant cities served by MCI by dialing the local MCI office and entering a customer number and the number of the person to be called. AT&T filed a complaint with FCC claiming that Execunet competed directly with AT&T's long-distance switched service, thereby violating FCC policy restricting the specialized carriers to private line offerings.⁴² The commission agreed and ordered MCI to discontinue the service. MCI chose instead to appeal. In a series of cases referred to as Execunet I,⁴³ II,⁴⁴ and III,⁴⁵ the DC Circuit Court of Appeals ruled that: (1) FCC could not forbid MCI from offering its Execunet service because the commission has no general authority to insist that carriers receive its approval before filing tariffs proposing new rates or services; (2) FCC must require AT&T to provide the local physical interconnection that MCI needed to offer Execunet; and (3) FCC properly allowed MCI to expand into Lincoln, Nebraska. In 1980, FCC opened the interstate telephone service market to competition.

Although both FCC (in its *Specialized Common Carrier* decision) and the federal courts (in the *Execunet* opinions) had ruled that AT&T must provide equal access to the local exchange facilities to all competitors, technical difficulties delayed the full implementation of the equal access requirement. For some time, subscribers to the services of other common carriers (OCCs) suffered a lower quality connection than that of AT&T and were required to dial extra digits to complete their calls. Because AT&T owned virtually all of the local exchange companies (in terms of the number of subscribers per exchange), and because interconnection with the local exchange was vital to the ability of the OCCs to reach the homes and offices of their subscribers, AT&T was arguably in a position to frustrate the growth of competition by controlling the price for access to the local exchange. Not surprisingly, then, the tariffs that AT&T filed to provide local service for MCI (known as the ENFIA tariffs⁴⁶) were very high. After negotiation between AT&T and MCI (under the auspices of FCC), the parties agreed on reduced rates.

THE SECOND FEDERAL ANTITRUST SUIT

This march toward restricting AT&T's monopoly status and deregulating the communications industry culminated in an antitrust suit against AT&T and Western Electric filed by the Department of Justice in 1974. The usual explanation given for the government's intervention during a period of regulatory reform was a fear by the Justice Department that the delaying tactics of AT&T would impede FCC's ability to foster competition. When the suit was finally settled in 1982, AT&T's vertically integrated regulated telephone monopoly was given 16 months to dissolve itself. More than a century of rule by AT&T and its subsidiaries had ended.

A key concept in the government's lawsuit was its theory of "bottleneck monopoly"—a monopoly over a necessary part of a larger economic process. According to this theory, market power in the bottleneck is easily expanded to other markets by (1) charging high prices for access to the bottleneck, (2) setting unreasonably strict conditions for access, and/or (3) refusing access entirely. In the antitrust suit against AT&T, the bottleneck was, of course, the monopolistic local Bell operating companies. According to the government's theory, AT&T had engaged in all three practices at one time or another to foreclose competition in the long-distance market. The government's case was thus aimed directly at the heart of AT&T's integrated structure. Structural reform—severing one or more of AT&T's vertical or horizontal limbs—was the only relief acceptable to the Department of Justice.

As the suit dragged on, AT&T began to realize that it could not control the outcome of the suit. First, the company had attempted, and failed, to persuade the Administration and the Congress of the imprudence of the suit. Second, Judge Harold Greene had denied the motion to dismiss filed by AT&T after the presentation of the government's case. Although such motions are typically denied, in this case Greene also filed a lengthy opinion in which he expressed his preliminary opinion as follows: "The testimony and the documentary evidence adduced by the government demonstrate that the Bell System has violated the antitrust laws in a number of ways over a lengthy period of time."⁴⁷ Soon after Greene denied AT&T's motion to dismiss, settlement talks began in earnest.

The negotiated settlement was framed as a modification of the 1956 final judgment, which had ended the government's first antitrust suit against AT&T. The modification of the final judgment (MFJ): (1) required AT&T to file a plan of reorganization that transferred ownership of the Bell operating companies to AT&T stockholders; (2) directed the operating companies to provide equal access to all competing firms; and (3) prohibited the divested operating companies from furnishing interexchange long-distance service. The government filed the settlement with the court and moved for a dismissal of its lawsuit. In a move that surprised some, Judge Greene invoked the *Tunney Act*,⁴⁸ and retained jurisdiction over the case to assure that the settlement was in the public interest. Publication of the proposed settlement in the *Federal Register* and the call for comments resulted in the filing of more than 600 responses from the public, legislators, regulators, and representatives of the industry.⁴⁹ Based on these responses, Greene amended several provisions of the settlement and signed an order dismissing the suit on August 24, 1982.

As modified by Judge Greene, the settlement allowed AT&T to offer hybrid communications-computer services and to enter the computer and electronic fields without restriction. It also contained eight major mandates:

1. AT&T must divest itself of all of the Bell operating companies;⁵⁰
2. AT&T may retain Long Lines, Western Electric, and the Bell Labs;

2

Divestiture

3. AT&T must not enter into the electronic publishing business for seven years;⁵¹
4. The local Bell operating companies must provide equal access to all interexchange carriers;
5. The local Bell operating companies may not provide interstate LATA service;
6. The local Bell operating companies may not offer information services;⁵²
7. The local Bell operating companies may not manufacture telecommunications or terminal equipment, but may sell such equipment; and
8. The local Bell operating companies may market the Yellow Pages.

January 1, 1984, was set as the date for divestiture.

THE STRUCTURE OF THE DIVESTED TELECOMMUNICATIONS INDUSTRY

Five concepts are crucial to understanding the post-divestiture telecommunications environment: (1) the Local Access and Transport Areas or LATAs, which delineate the boundaries between the service (or market) areas of the local exchange and interexchange carriers; (2) the structure of the 7 regional holding companies (referred to as Regional Bell Operating Companies or RBOCs), which are the parents of the 22 local Bell operating companies (BOCs); (3) the system of access charges, which replaced the process of separations and settlements; (4) the threat of bypass or the avoidance of local facilities by large users of telephone services; and (5) the struggle to maintain the dual regulatory system. This section describes each of the five concepts.

The Local Access and Transport Area or LATA

The fundamental building block of the post-divestiture structure of the telecommunications industry is the LATA, the geographic area within which the BOCs may perform exchange and exchange-access functions. Without court approval, no LATA may cross state boundaries. As illustrated in Figure 1, the settlement divided the nation into more than 160 LATAs, most of which do not cross state boundaries. According to the decree, a local BOC may transport telephone calls only between telephones located within the same LATA. A telephone call that originates in one LATA and terminates in another is an interexchange call and may not be completed by a BOC.⁵³ All interexchange calls are handled by AT&T and the other (non-Bell) common carriers (OCC).⁵⁴

The decree also ordered the BOCs to provide AT&T and the OCCs access to subscribers within each LATA. This directive requires the local BOCs to deliver telephone traffic originating or terminating within a LATA to or from the point of presence (POP)⁵⁵ of the interexchange carrier(s) located within the LATA. AT&T has at least one POP in each LATA. OCCs choosing to do business in a LATA may connect to an AT&T POP. More

commonly, however, OCCs establish their own POPs. The restrictions on the activities of the BOCs arise from their continuing status as "bottleneck" monopolies. The decree thus defines three market areas: intrastate intra-LATA service (handled by the local BOCs⁵⁶); intrastate interLATA service (handled by AT&T and the OCCs); and interstate service (handled by AT&T and the OCCs).

It is important to remember that the boundary of a LATA is not identical with that of local service areas. The phrase "local service area" or "exchange" describes the geographic boundaries of a local (non-toll) telephone call. For example, single-LATA states may contain several exchange areas, and multi-LATA states may have one or more exchange areas *within each* LATA.

The Regional Holding Companies

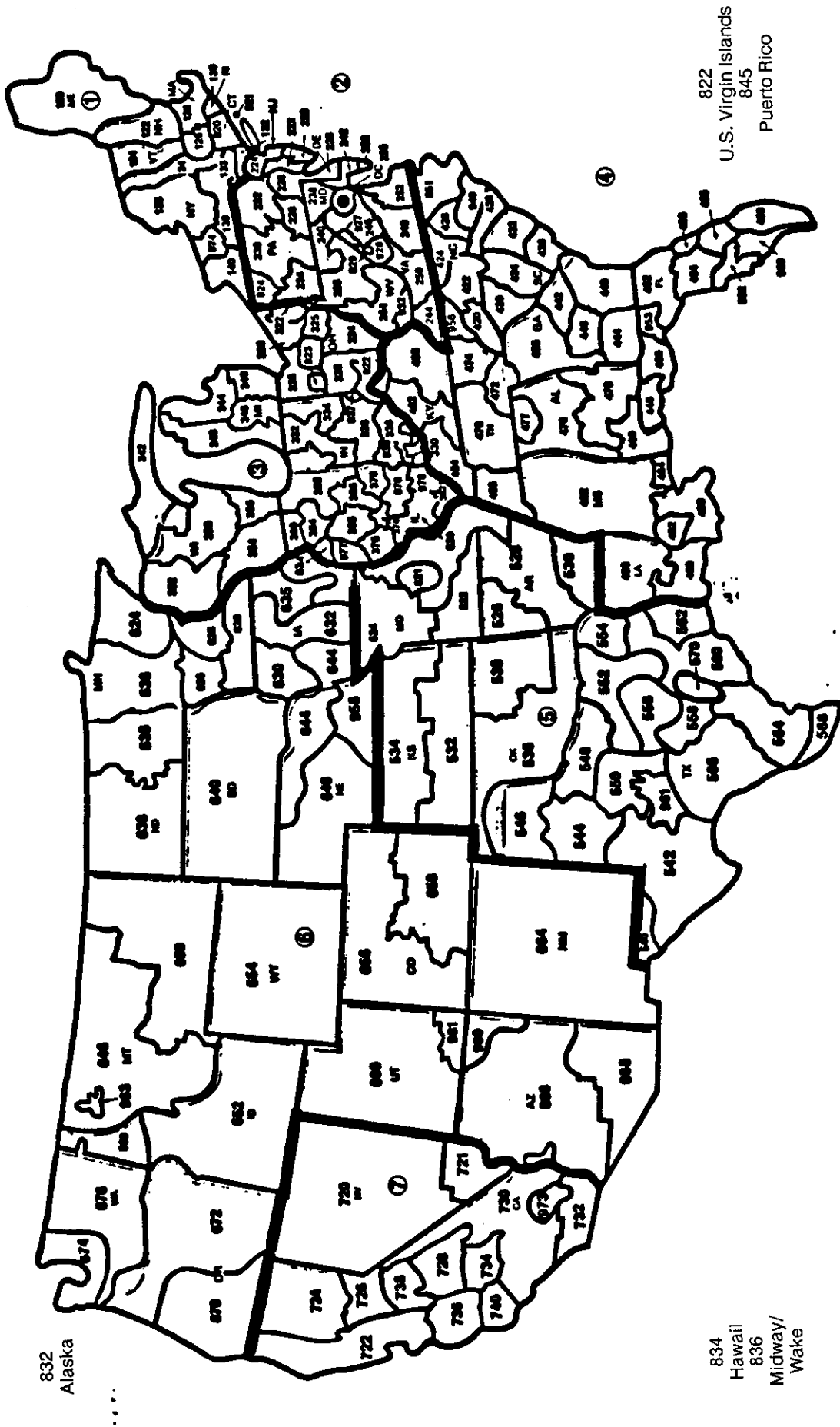
At divestiture, the court ordered AT&T to divide its assets, liabilities, and employees between the BOCs and the reorganized AT&T. According to the settlement, ownership of the 22 BOCs shifted from AT&T to 7 regional holding companies, usually referred to as Regional Bell Operating Companies or RBOCs. Figure 2 depicts the boundaries of the RBOCs. The MFJ permitted each RBOC to provide exchange telephone and exchange access service through its local BOCs. In addition, each RBOC could provide directory advertising and sales (Yellow Pages), new customer premise equipment, and cellular mobile telephone service. RBOCs are prohibited from supplying information services.⁵⁷

The initial settlement document limited the RBOCs to providing regulated monopoly services; it did not allow the RBOCs to sell new CPE or to market the Yellow Pages. Judge Greene amended the settlement document to add the latter two unregulated, competitive services after he found that to do so would serve the public interest. Greene found the Yellow Pages particularly important to the RBOCs because they

... provide a significant subsidy to local telephone rates. . . . The loss of this large subsidy would have important consequences for local telephone service. . . . [it will] reduce the number of households with telephones and increase the disparity, in terms of the availability of telephone service, between low-income and well-off citizens. This result is clearly contrary to the goal of providing affordable telephone service for all Americans.⁵⁸

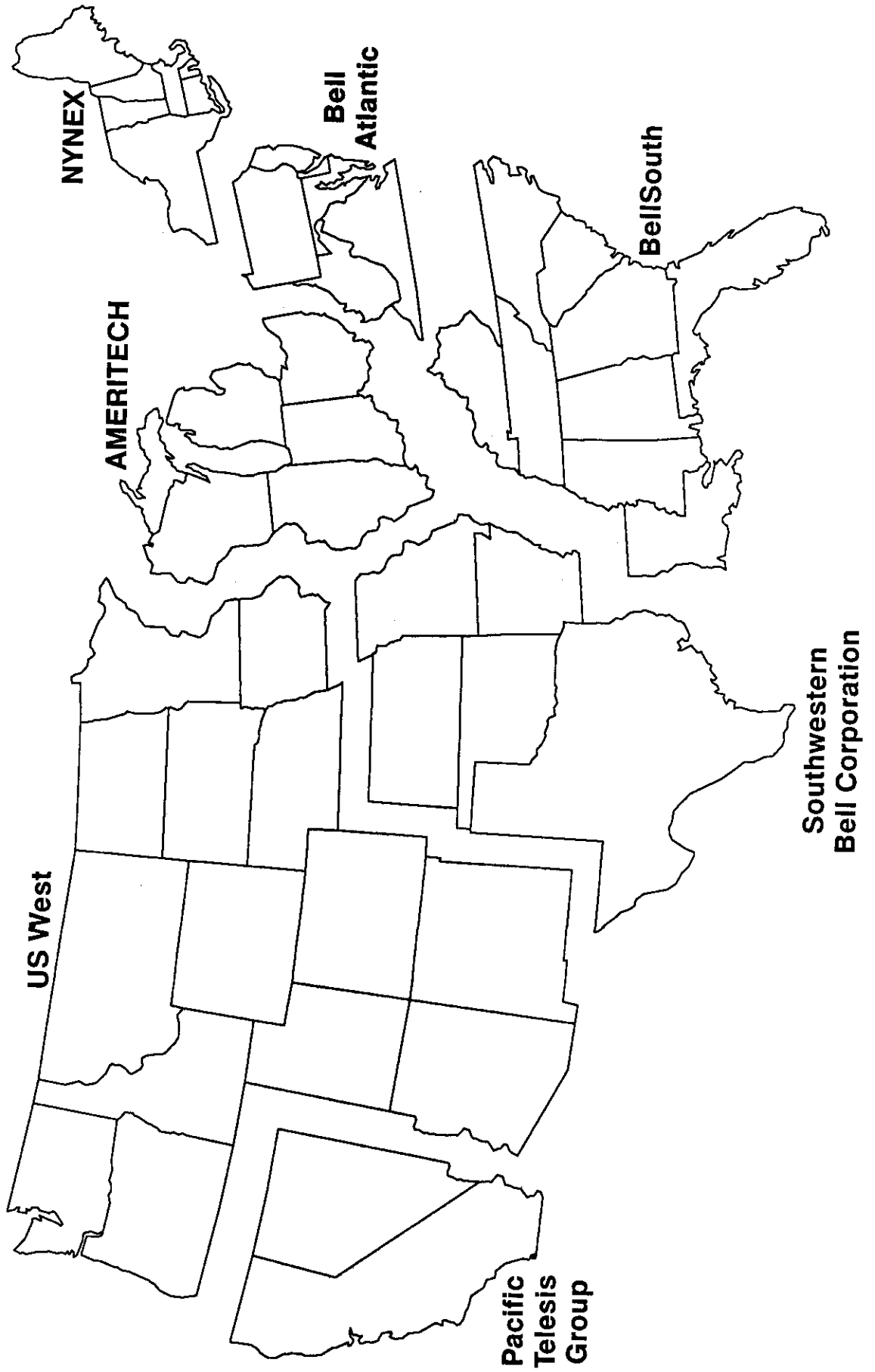
Even at the time of the entry of the MFJ, everyone recognized that the ban on RBOC provision of information services was likely to dissipate over time as the border between telecommunications and computer services became more blurred.⁵⁹ In 1976, in its *Computer II Inquiry*, FCC had attempted to draw a line between basic services and enhanced services. The commission had defined a basic transmission service as "the transmission of telephone messages or the movement of information over the telephone network," and an enhanced transmission service as one "which combines basic service with computer processing applications that act on the format, content, code, protocol . . . of the subscriber's transmitted information, or

Figure 1
National Local Access and Transport Areas (LATA) Map, March 1988



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Source: CCMI/McGraw Hill (1-800-526-5307)

Figure 2
Territories of the Regional Holding Companies



provide the subscriber additional, different, or restructured information, or involve subscriber interaction with stored information."⁶⁰ (The term enhanced services is virtually identical to the phrase information service used in the divestiture order.) The commission found it difficult to administer these definitional distinctions in the rapidly changing technological environment.

Nevertheless, Judge Greene found, both in the MFJ and in a review three years later, that the language restricting the RBOCs from providing information services was necessary in order to preserve competition in that segment of the industry. Thus, the local BOCs can provide only "gateway"⁶¹ access to carriers that offer such services, but cannot supply the actual services themselves. It is likely that the boundary between basic and enhanced or information services will continue to be problematic. Recognizing that, over time, some of the reasons for the restrictions on the activities of the RBOCs may evaporate due to technological or market changes, Greene put in place a method for removing the limitations. On petition by the RBOCs, the court will remove any restrictions when it is shown that "there is no substantial possibility that [the RBOC] could use its monopoly power to impede competition in the market it seeks to enter."⁶²

The System of Access Charges

Prior to divestiture, the system of separations and settlements had allocated a fraction of the costs of the local exchange plant and operating expenses to the interstate toll service (separations) and had mandated that related interstate toll revenues earned to recover the imputed local costs be pooled and divided among the states (settlements) according to the applicable formula. The separations-and-settlements process did not survive divestiture. After divestiture, AT&T became just one of the several, unrelated interexchange carriers that needed access to the local exchange plant in order to complete interLATA calls within or between states.

The court had directed the BOCs to "provide access services to interexchange carriers and information service providers which are 'equal in type, quality, and price' to the access services provided to AT&T."⁶³ To implement this order, the court instructed the divested BOCs to file tariffs for their access service. Thus, the BOCs filed rates for interconnecting long-distance services with the local network. One of the most significant of the post-divestiture federal-state conflicts concerns these long-distance access charges and who should pay for them. To understand this important issue requires a review and update of the process of making a telephone call.

The local exchange facilities used in making a telephone call can be grouped into three categories:

- 1) Station equipment, which consists of CPE, Private Branch Exchanges (PBXs) and inside wiring;
- 2) Outside plant, which includes drops and blocks, subscriber line outside plant, exchange outside plant, and interexchange outside plant; and
- 3) Central office equipment, which includes the

end office, tandem dial exchange switch, tandem dial interexchange switch, and circuit equipment (amplifiers, etc., which maintain or modify the quality of the signal).⁶⁴

Figure 3 depicts the local exchange plant in schematic form. Most of the local exchange plant is used for interstate toll, intrastate interLATA toll, intraLATA toll calls, and local exchange service. The only exceptions to this rule are the tandem dial interexchange switch, which is used for intraLATA toll as well as for interLATA and interstate toll calls, and the interexchange outside plant, which is used *only* for interLATA and interstate toll calls.

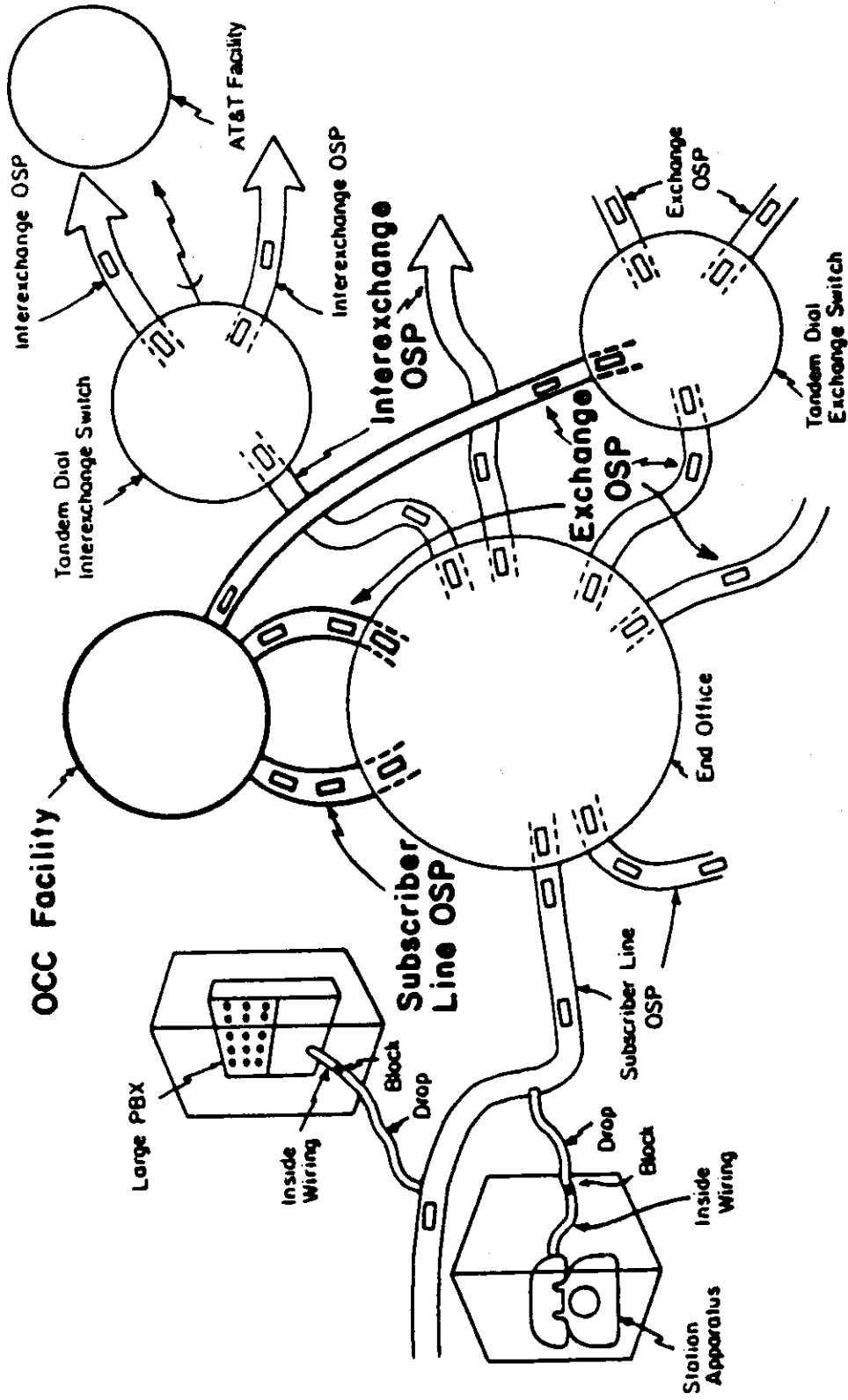
Most of the local exchange facility consists of non-traffic sensitive (NTS) plant.⁶⁵ The NTS plant is so named because the costs associated with that fraction of the local exchange facility are fixed; they do not vary with the amount of usage. As illustrated in Figure 4, the NTS plant (and associated costs) includes CPE and inside wiring, drops and blocks, subscriber line outside plant with its corresponding circuit equipment and a portion of the end office. The traffic-sensitive segment of the local exchange facility includes the bulk of the end office, other switching offices, exchange and interexchange trunks, and transmission facilities.⁶⁶ While commentators agree that much of the local exchange facility is non-traffic sensitive, they do not necessarily agree on where to draw the line between non-traffic sensitive and traffic sensitive (TS) costs. For example, according to an expert witness at a Wisconsin Public Utility hearing;

In the long run, some of the so-called [NTS] costs are actually variable in the economic sense: as a community expands, more NTS costs must be incurred to meet the increasing demand for telephone service. Moreover, usage patterns can affect the level of these costs. . . . Conversely, a large portion of the so-called [TS] plant and equipment is actually fixed in the short run. The switching and trunking facilities in this category are engineered to meet peak demand; thus their cost rises as the level of peak demand increases. However, relatively few costs in this category actually vary with usage in the very short run. That is, once the facilities are in place to meet a certain level of peak demand, the costs are not significantly affected by day-to-day fluctuations.⁶⁷

The distinction between NTS and TS costs, however fuzzy, is particularly important in the debate over who should pay the access charges.

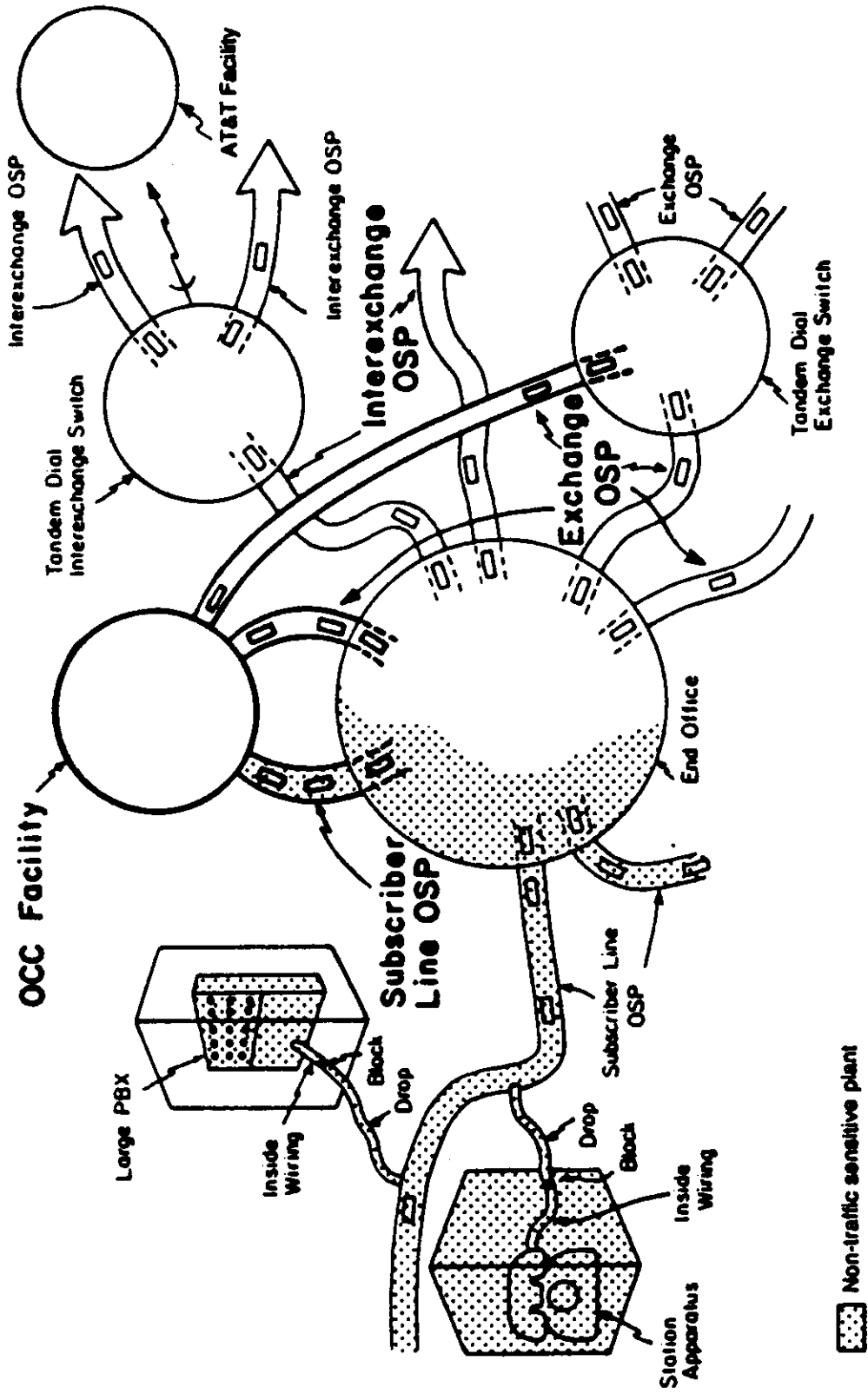
In theory, access charges are similar to the separations-and-settlements process. Both methods rely on the concept of joint and common costs; therefore, under both theories, the interexchange carriers must pay some portion of the NTS costs because an interexchange toll call cannot be completed without using the local exchange facility. Like the separations procedure, jurisdiction over access charges is split between FCC and state regulators; and like separations, the NTS and TS costs of the local exchange facility are classified as either interstate or intrastate. The costs allocated to the interstate jurisdiction

Figure 3
Schematic of Local Exchange Plant



Source: Carol Weinhaus and Anthony G. Oettinger, *Behind the Telephone Debates, Volume 3: Federal-State Costing Methods: Who Controls the Dollars*, Figure 9. Copyright 1986 Program on Information Resources Policy, Harvard University. Reprinted with permission.

Figure 4
Schematic of Non-Traffic Sensitive (NTS) Plant



Source: Carol Weinhaus and Anthony G. Oettinger, *Behind the Telephone Debates, Volume 3: Federal-State Costing Methods: Who Controls the Dollars*, Figure 9. Copyright 1986 Program on Information Resources Policy, Harvard University. Reprinted with permission.

are recovered through charges for interstate service and the costs assigned to the intrastate service are recovered through charges for intrastate service. Because this process uses station-to-station principles, an increase in the costs assigned to the interstate jurisdiction should result in an increase in the interstate telephone rates in order to recover those costs, as was the case prior to divestiture. In fact, however, the post-divestiture interstate telephone rates closely follow board-to-board principles. The reasons for this anomaly are found in FCC policies.

The MFJ required state and federal regulators to replace separations charges with a set of tariffs for the provision of access to the local network. To implement this order, FCC adopted an access charge plan in December 1982.⁶⁸ According to the plan, each telephone subscriber would pay a minimum flat rate monthly to recover the NTS portion of the interstate access charges. Initially, FCC ordered that only a portion of the charge would be recovered through the flat rate (set at \$2 per residential subscriber line and \$4 per business subscriber line), with the remainder to be recovered as a common-carrier line charge passed on as a part of the charge for the use of interstate toll service. Over time, however, FCC planned to increase the subscriber line charge to cover the total interstate NTS allocation. Thus, the effect of the FCC access charge plan is to increase the rates of telephone subscribers even if they do not use interstate telephone service. To a telephone subscriber, the new flat rate subscriber line or end user charge looks and acts like an increase in local rates and a return to board-to-board principles of telephone costing. To AT&T, recovery of NTS costs through the subscriber line charge is merely a reduction in the prior payments running from the long-distance market to the users of the local exchange.

The FCC access charge plan drew heavy criticism from state regulators, consumer groups, the Congress, and Judge Greene. These critics charged that the imposition of a flat rate subscriber line charge without regard to interstate telephone service use or the extent of such use⁶⁹ was a disguised attempt to set local rates, a violation of the principle of universal service, and "directly counter" to the intent of the consent decree.⁷⁰ In 1983, two bills, which were designed to reverse the FCC access-charge recovery plan, were introduced in the Congress. S.1660 prohibited the imposition of flat fees to recover NTS costs from residential and business customers. The bill provided that the NTS costs would be recovered by a surcharge on long-distance carriers. H.R.3621 also reversed the flat rate end-user charge and required privately owned and operated telephone systems that bypass the local telephone company to contribute to the local telephone company's costs. Reacting to the political pressure, FCC announced on January 25, 1984, its decision to defer implementation of the subscriber line charges until June 1985. The next day, S.1660 was defeated by a 44-40 vote.⁷¹ In June 1985, the first residential subscriber line charge took effect. Currently, the flat rate subscriber line charge is permanently capped at \$3.50 per residential and single-line business line.⁷² The multi-line business charge is currently set at up to \$6.00 per line and is not permanently capped.

The FCC plan for recovery of the traffic sensitive

piece of the interstate access charge has not caused any controversy. The TS costs appear as common-carrier line charges and are passed along by the interexchange carriers to the telephone subscriber according to actual use of the interstate telephone service. Thus, at present, all telephone subscribers pay a portion of the NTS access charge costs as a flat rate subscriber line charge regardless of their use of interstate telephone service, and subscribers that use interstate service also pay a portion of the NTS access charge costs as well as the TS costs based on their use of interstate phone service.

The FCC policy is designed to compel a gradual shift of NTS access charge costs away from common carrier line charges to flat rate subscriber line charges. The results will be a decrease in interstate telephone rates for heavy users of that service and a corresponding increase in the rate for basic telephone services. According to FCC, there are several justifications for this policy. First, the commission argues that true competition requires that prices be matched with costs. Accordingly, NTS costs should not be recovered through traffic sensitive services like interstate telephone service.⁷³ Second, a mismatch of prices and costs will result in the overpricing of interstate telephone service relative to the marginal or incremental cost of providing the service, causing common carriers to bypass⁷⁴ the regulated service. Third, if prices correspond to costs, the price of interstate service will decrease, and consumers will come out the same. This last justification appears to ignore the fact that only a small number of subscribers use interstate service at a level that will allow them to benefit from the rate decrease.⁷⁵

Critics of the FCC's subscriber line charge policy assert that it is based on the erroneous assumption that local facility costs are truly non-traffic sensitive and are incurred for the provision of local service, when in fact many of these costs are directly related to interstate toll calling. For example, the cost of improving the quality of the signal would not be incurred for local calling alone, and the higher levels of usage tied to toll service require more and longer subscriber loops. According to the critics, FCC should properly treat the former costs as part of the marginal costs of providing interstate toll service. Other local facility costs, such as the replacement of copper wires (traditionally used to connect residential subscribers to local exchanges) with fiber optic cables and analog switches with digital switches are related to the provision of enhanced services offered through the network, such as burglar alarm, voice mail, and video text services. For that reason, some commentators maintain that the latter costs should be treated as part of the marginal costs of enhanced services rather than recovered in the flat charge for basic service.⁷⁶

In addition to supplying access for interstate calls, the BOCs provide access to the local network for interexchange carriers who transport intrastate interLATA toll telephone calls. All states require that the traffic sensitive portion of the intrastate access charge be based on use and recovered from the carriers, who then pass such charges along to the end users of the toll service. No such uniformity exists, however, with state rules governing the recovery of intrastate NTS costs. To date, most states do not

allow the recovery of NTS costs through a flat rate subscriber line charge as does FCC. Instead, states have chosen to charge the carriers either a fixed monthly rate for each customer they serve or a rate based on use.⁷⁷

Bypass

Intimately related to the federal system of access charge recovery is the phenomenon of bypass. Indeed, the FCC's access charge policy was justified largely by the fear of bypass.⁷⁸ A large end-user of telecommunications services⁷⁹ can bypass or avoid the local facility by installing a direct connection from its location to the POP of the interexchange carrier (local facility bypass). Interstate facility bypass, in the form of avoiding the use of the monopoly long-distance provider, began even before divestiture. For example, MCI began installing microwave towers to bypass AT&T's long-distance facilities in 1969. Some large end-users bypassed the facilities of both local exchange carriers⁸⁰ and interexchange carriers by constructing their own private network (total bypass).

Some analysts allege that bypass poses a threat to the long-term viability of the public switched network because a significant loss of customers in the local switched network would require an increase in the rates of the remaining subscribers to cover the costs of the local plant. Such a rate increase would in turn force more subscribers from the system, and so on. The threat that bypass actually poses to the public network is difficult to measure. On the one hand, consumer advocates assert that the goal of universal service is thwarted by a policy that (like the current FCC policy) requires all subscribers to pay increased flat monthly rates for long-distance service they may never use. These advocates believe that the frequent users of long-distance service are in a better position to pay for the increases in long-distance rates that are attributable to interstate access charges. On the other hand, champions of FCC's current policies maintain that de-

creasing interstate long-distance rates will help retain large business subscribers on the public switched network, thereby advancing the goal of universal service.

Efforts to find solutions to the problem of bypass have been hampered by the failure of the interested parties to agree on what constitutes bypass⁸¹ and by a lack of relevant data on the extent of the problem. Some analysts doubt that bypass is a problem at all. For example, in his September 10, 1987, order, Judge Greene evaluated the assertion of the RBOCs that they lacked bottleneck monopoly power because "there now exists substantial consumer bypass."⁸² In denying the request of the RBOCs for a release from the line-of-business restrictions in the MFJ, Greene found that:

Exchange telecommunications is characterized by very substantial economies of scale and scope. . . . A Regional Company could easily aggregate the one percent of total calls that represent potentially competitive special access traffic with all of its 99 percent monopoly traffic and achieve lower unit costs than could any bypass system. In other words, *objective economic conditions entirely preclude the provision of local distribution function at a lower or equal economic cost than could the established local exchange carrier.*⁸³ [emphasis supplied and citations omitted]

In reaching the conclusion that no threat of bypass exists, Judge Greene relied primarily on the findings in the well regarded Huber Report, which found that "only one-tenth of one percent of interLATA traffic volume, generated by one customer out of one million, is carried through non-Regional Company facilities to reach an interexchange carrier."⁸⁴ According to Judge Greene, the Huber Report demonstrates that the premise for FCC's current policies—the need to halt the menace of growing bypass and the resulting abandonment by large users of the regular network—is largely imaginary.⁸⁵

3

The Post-Divestiture Environment: Phase One

Divestiture introduced a new telecommunications environment and created new regulatory problems, many of which remain unresolved. First, prior to divestiture, the regulatory goals were clear. Basic agreement existed among regulators that universal service was the fundamental goal and that the separations-and-settlements procedure, regardless of its complexities and controversies, furthered that goal. Moreover, the structure of the industry was consistent with that goal. AT&T, as the monopoly provider of local and long-distance telephone service and related telephone equipment, was in an ideal position to deliver low-cost basic telephone service. From the point of view of vertically integrated AT&T, it mattered little whether the system's total revenue requirements were recovered through local service rates or long-distance rates. In the post-divestiture environment, the rules are changed. The breakup of the vertically integrated monopoly telecommunications network created a disaggregated system, the components of which are furnished by competitors with divergent interests and with a large stake in who pays the charge for access to the local network. State and federal regulators are searching, therefore, for alternative methods of assuring universal telephone service.

Second, prior to divestiture, general agreement existed among regulators as to the wisdom of rate-base/rate-of-return regulation of the monopoly provider. Today, state and federal regulators are experimenting with a wide variety of regulatory options from price cap to social contract to incentive regulation for the so-called dominant providers of telecommunications services. Third, divestiture has brought with it a new kind of cross-subsidization problem—that between regulated monopoly services and unregulated competitive services offered by the same carrier. Finally, prior to divestiture, the need for a single regulator and single set of regulatory policies was not essential for a nationally integrated telecommunications system. One company provided virtually all of the nation's telephone service and related equipment. Today, numerous companies compete in the long-distance and telephone equipment markets, and federal regulators advocate preemption of state law to avoid "balkanization" of the national network. This section examines these issues and states' responses to them.

UNIVERSAL SERVICE

In a 1983 order, the Federal Communications Commission listed a set of policy objectives for its access charge plan. Included in those objectives was the preservation of universal service.⁸⁶ The commission described this objective as "avoiding actions that would cause a significant number of local exchange service subscribers to cancel that service."⁸⁷ Critics of the FCC policies have suggested another way to describe the goal of preservation of universal service—avoiding actions that would cause a reduction in further penetration.

Responding to complaints that the recovery of the interstate access charge through a flat-rate subscriber line charge might affect universal service adversely, FCC adopted a lifeline program. The program provides two

kinds of assistance to qualifying low-income subscribers. First, the plan reduces the flat-rate monthly subscriber line charge by (1) 100 percent if the subscriber's state of residence has a narrowly targeted lifeline plan filed with and approved by FCC and offers an equivalent reduction in the local exchange rate; or (2) 50 percent if the subscriber's state of residence has a plan for an equivalent reduction in the local exchange rate and a verifiable means test designed by the state. Second, the "Link Up America" portion of the federal lifeline assistance plan offsets half of the telephone connection and installation charges up to a maximum of \$30. Currently, 38 states and the District of Columbia take part in the Link Up America program. Twenty-six states and the District of Columbia have taken advantage of FCC's waiver program. These states have adopted policies that meet FCC requirements for a full waiver of the subscriber line charge by "piggy-backing" their lifeline service plans on state-run social service programs. California has found, however, that FCC mandated verification requirements are costly to administer and create inequities among those in need of assistance.

California adopted its lifeline program in 1983,⁸⁸ well before the FCC plan was in place. California residents are eligible for Universal Lifeline Telephone Service (ULTS) if they meet three criteria: the residence at which the service is requested is the principal place of residence in California for the applicant, there is only one telephone line serving that residence, and the total income of the applicant's household does not exceed 150 percent of the federal poverty level for the fiscal year in which the service is furnished.⁸⁹ Eligibility for state assistance is handled through a self-certification procedure. Residents qualifying for the California plan receive a 50 percent subsidy toward the basic telephone rate and an allowance equal to the current federal subscriber line charge.⁹⁰ The California plan is funded by a surcharge, currently set at 4 percent, which is levied on intrastate interLATA and intrastate toll services.

After FCC introduced its waiver program, the California Public Utilities Commission held a series of workshops to investigate the effectiveness of its lifeline law and to determine whether the state could develop a verification plan that would meet FCC requirements.⁹¹ At the close of the workshops, the California regulators recommended no change in its verification of eligibility requirements. Participants in the workshop found that FCC verification requirements would be too costly to implement unless California adopted a system of piggy-backing on social service program verification procedures. Yet, the state regulators criticized the use of social service program eligibility lists as discriminatory because new immigrants and aliens granted amnesty do not qualify for many social service programs. The use of social service verification procedures prevents these needy persons from receiving the subsidy, a result that the California Commission was unwilling to endorse. Therefore, the California plan is not eligible for the 100 percent federal subsidy.

Using FCC's definition of the preservation of universal service (i.e., avoiding actions that would cause a significant number of local exchange subscribers to cancel ser-

vice) the commission appears to have achieved its objective with its access charge plan. According to Census Bureau figures for November 1988, the percentage of households subscribing to some kind of telephone service is 92.5, while in November 1983 that percentage was 91.4. It is too early to proclaim that the goal of universal service has been achieved, however, because there are significant variations in penetration levels among white, black, and Hispanic households and across income levels. For example, in November 1988, the percentage of black households having telephones ranged from 63 to 91, depending on the age of the subscriber; the percentage of Hispanics with telephones ranged from 59 to 93, again depending on the age of the subscriber. The percentage of whites having telephones ranged from 81 to 96. Similar patterns exist when penetration is measured according to family income.⁹² No statistics exist that measure the differences among rural and urban areas, or whether the subscriber has single or multi-line service, an issue (discussed in the next section) of increasing importance to states that seek to promote the competitiveness of their economic climate.

Lifeline legislation, such as that enacted by the states participating in the federal plan, is one mechanism for furthering the goal of universal service by specifically targeting state and federal subsidies to low-income telephone subscribers. State regulators also seek to further the goal of universal service by adopting measures to keep local telephone rates low for all subscribers. For example, prior to divestiture, many state regulators used the profits from directory advertising to reduce local rates.⁹³ After divestiture, however, six of the seven RBOCs caused their subsidiary BOCs to transfer the responsibility for producing the Yellow Pages to an affiliate of the holding company. In return for the right to publish and receive the revenues from the highly profitable Yellow Pages, the BOCs typically received a publishing fee from their affiliate.⁹⁴ Judge Greene had considered and rejected a similar proposal in the settlement.⁹⁵ In a subsequent opinion, Greene found that the transfers of the directory advertising to affiliates of the RBOCs were contrary to his decision that the revenues from the Yellow Pages be used to protect the universal service goal.⁹⁶

Several state commissions sought to void these transfers as contrary to the public interest. For example, the Colorado Public Utilities Commission (PUC) ordered Mountain Bell to reacquire the publishing assets that it had transferred to U.S. West Direct, an affiliate of RBOC U.S. West. According to the findings of the Colorado PUC, Mountain Bell would suffer a net loss of \$45.7 million over the three-year term of its contract with U.S. West Direct, and Mountain Bell's customers would lose an annual rate offset that the PUC valued at over \$29 million. Mountain Bell appealed the decision, contending that the commission did not have jurisdiction over the directory publishing assets because the transfer was made as part of Mountain Bell's private business. Alternatively, Mountain Bell argued that the remedy of voiding the transfer was an abuse of discretion and/or unconstitutional. In October 1988, the Colorado Supreme Court affirmed the decision of the Colorado PUC ordering Moun-

tain Bell to reacquire the publishing assets and resume its publishing operations in Colorado.⁹⁷ In a case with similar facts, the New York Court of Appeals upheld a decision of the state's Public Service Commission disapproving a directory publication agreement between New York Telephone and NYNEX Information Resources Company.⁹⁸

CROSS-SUBSIDIES

In the post-divestiture era, all of the interexchange carriers can offer nonregulated services as well as regulated ones. Nonregulated "enhanced"⁹⁹ telecommunications services are described as those "which combine basic service with computer processing applications that act on the format, content, code, [and] protocol . . . of the subscriber's transmitted information, or provide the subscriber additional, different, or restructured information, or involve subscriber interaction with stored information";¹⁰⁰ along with regulated "basic" services, defined as "the transmission of telephone messages or the movement of information over the telephone network."¹⁰¹ Although the BOCs are still prevented from offering information (i.e., enhanced) services,¹⁰² they can provide other nonregulated services, and many urge the lifting of the restraints to allow the BOCs to offer nonregulated information services. Thus, the issue of how to guard against cross-subsidies¹⁰³ flowing between the regulated and nonregulated activities of both interexchange and local exchange carriers has gained in importance since divestiture.

State Investigations of Cross-Subsidization

In September 1986, the NARUC staff subcommittee on accounts issued its "Summary Report on the Regional Holding Company Investigation." The report summarizes the results of state examinations of the financial relationships between the regulated and unregulated subsidiaries of six of the seven regional holding companies. The state auditors found many instances of cross-subsidization that were detrimental to the ratepayers of the regulated entities and to the competitors of the unregulated companies. Specific problems included inadequate accounting practices, improper allocation of costs between regulated and unregulated affiliates, use of highly qualified personnel from the telephone company to direct projects of unregulated companies without compensation, and transfer of assets among affiliates at prices below fair market value.¹⁰⁴

The Evolving FCC Policy on Cross-Subsidization

Although the Federal Communications Commission has never defined the term "cross-subsidization" specifically, it has described the kinds of intercompany and intra-company transactions it deems troublesome. For example, in *First Computer Inquiry*, FCC sought to control cost shifting among the regulated and nonregulated services provided by telephone companies (other than AT&T) by requiring them to provide data processing services through separate subsidiaries. In *Second Computer Inquiry*, FCC described two harms that could result from the mixing of nonregulated and regulated services in the same

entity. The carriers could use their control over regulated telephone services to discriminate against competitors and could misallocate costs from nonregulated to regulated activities, imposing an unfair burden on ratepayers. To guard against the possibility that regulated carriers would engage in cross-subsidization, predatory pricing, and denial of access to the monopoly local network, the commission instituted a policy of structural separation—AT&T and its wholly owned Bell operating companies must offer their unregulated enhanced services only through a separate corporate subsidiary.

Ironically, as the danger of cross-subsidies has increased, FCC has decreased the stringency of its rules against cross-subsidization. In *Third Computer Inquiry*, FCC found that the costs of structural separation outweighed the benefits. That is, structural separation requires a duplication of facilities and personnel, discourages the development of innovative services, and forecloses the opportunity to take advantage of economies of scope. Moreover, the commission concluded that nonstructural safeguards could eliminate these costs and still provide protection against possible cost shifting and discrimination. Consequently, FCC adopted a plan to permit carriers to offer nonregulated telecommunications services without having to set up a separate subsidiary. Carriers choosing to take advantage of this new freedom must (1) allow competitors equal access to the network to provide competing services,¹⁰⁵ (2) disclose information to competitors about their regulated customers and future changes in the regulated network, and (3) comply with detailed cost-accounting procedures.¹⁰⁶

There is some reason to believe that these safeguards may not be sufficient to prevent cross-subsidies. For example, Judge Greene, in his opinion of September 10, 1987, found that "the cross-subsidization problem is as acute now as it ever was."¹⁰⁷ He went on, "[I]t is intrinsically difficult for a relatively small group of regulators to prevent cross-subsidization within several multi-billion dollar entities, particularly if the entities are as complex internally and as fluctuating organizationally as the Regional Companies."¹⁰⁸

In a recent opinion, Judge Greene denied the request of Bell South, Bell Atlantic, and Southwestern Bell that the court permit them to provide electronic publishing and electronic directory services, finding that to allow the BOCs to provide such information services would likely lead to improper cross-subsidization.¹⁰⁹ In the opinion, Greene reviewed the incentives and potential for cross-subsidization by the regional companies described in previous opinions.¹¹⁰ According to those earlier opinions, a regional company would "have the incentive as well as the ability to 'milk' the rate-of-return regulated monopoly affiliate to subsidize its competitive ventures and thereby to undersell its rivals in the markets where there is competition." Other cross-subsidies noted include the "transferring of assets from . . . regulated affiliates to . . . unregulated affiliates at less than their cost or below their market value"; "the bundling of . . . regulated monopoly services with . . . competitive products or services"; and the provision to its "customers in the competi-

tive market [of] more timely telecommunications services, preferential access, or both.”

After reviewing the issue again in his June 1989 opinion, Judge Greene concluded that the “potential for Regional Company cross-subsidization with respect to information services, and thus for use of the companies’ monopoly power to impede competition, is enormous.” . . . “[G]iven the Regional Company structure and the existing economic incentives, [anticompetitive activities] are well-nigh inevitable.”¹¹¹

In its 1987 report on cross-subsidy between regulated and unregulated services, the U.S. General Accounting Office¹¹² mirrored those concerns. GAO found “substantial reason for regulators to be concerned about the cross-subsidy potential between regulated and nonregulated activities of the local telephone companies.”¹¹³ As a result of its investigation, GAO concluded:

[T]he level of oversight we see FCC prepared to provide will not, in our opinion, ultimately provide telephone ratepayers or carrier competitors positive assurance that FCC’s joint cost rules will guard against cross-subsidy . . . such assurance is important in the future with the growth in carriers’ competitive ventures, the loosening of restrictions on their entry into more of these ventures, and the increased potential for undetected cross-subsidy in the absence of structural separation requirements.¹¹⁴

As discussed below, FCC attempted to preclude the states from imposing either separate subsidiary or variant nonstructural safeguards on enhanced service operations.

REGULATING THE NEW TELECOMMUNICATIONS INDUSTRY

Both state and federal regulators are questioning the continued validity of rate-base/rate-of-return regulation in the post-divestiture, pro-competitive telecommunications environment. Rate-base/rate-of-return regulation, formerly thought to emulate the operation of a competitive market and once touted as promoting universal service, efficiency, low telephone rates and high quality service, is in the post-divestiture era frequently charged with creating inefficient incentives,¹¹⁵ restraining innovation,¹¹⁶ fostering cross-subsidization,¹¹⁷ and increasing administrative costs. The alternative methods of regulation proposed by state and federal regulators are now the recipients of the praise previously reserved for rate-of-return regulation. This section describes some of those alternatives.

The FCC Price Cap Plan

In March 1989, FCC issued its *Report and Order*,¹¹⁸ in which it adopted a new plan of incentive or price-cap regulation for dominant carriers. The new FCC plan, which took effect on July 1, 1989, applies to all “dominant”¹¹⁹ interexchange carriers (AT&T). The price-cap method limits the prices that dominant carriers charge for their services rather than their rate of return. Under the plan, AT&T is regulated as follows:

1. All of its existing regulated services are subject to the aggregate price cap and service category price bands.¹²⁰
2. The affected services are grouped into one of three baskets: residential and small business, 800 service, and all other AT&T business services.
3. Each basket is subject to an aggregate price cap; that is, the weighted average of the group of services within each basket must remain below the price cap applicable to the basket.
4. Initially, the aggregate price cap for each basket is to be set by reference to AT&T’s existing rates for the services included in each basket.
5. The rates are adjusted each year pursuant to a formula that reflects economy-wide cost changes as measured by the Gross National Product Price Index. Rates are also adjusted for cost factors beyond AT&T’s control, such as changes in tax laws and jurisdictional separations.
6. AT&T must adjust its rates downward each year by 2.5 percent to reflect the productivity gains that AT&T has historically experienced, and by another 0.5 percent in order to ensure that consumers receive a guaranteed share of “the additional efficiencies flowing from the improved incentives created by price cap regulation” (the so-called Consumer Productivity Dividend).¹²¹
7. To moderate the cost shifting that can occur under an aggregate cap, AT&T must comply with a system of price “bands” on categories of services within each basket. A “band” is the range within which the carrier may raise or lower any individual rate element in any year.

FCC will treat AT&T tariffs that comply with the aggregate price caps and individual price bands as presumptively valid, thereby allowing AT&T to use those rates 14 days after filing without the need for an administrative hearing on their reasonableness. In the future, the commission plans to implement price-cap regulation for local exchange carriers as well.

The National Association of Regulatory Utility Commissioners has identified what it believes to be three major flaws in the FCC price-cap plan.¹²² First, FCC proposes to cap rates at current levels, which were set according to rate-of-return regulatory principles and may therefore be unreasonably high. According to NARUC, FCC has chosen to cap prices at rates that it admits are inflated. Second, although FCC maintains that the 5 percent limit on price increases within each price band will protect consumers against excessive price changes, during the first four years, a carrier will be able to raise or lower the initial rate by 22 percent without any FCC review.¹²³ Third, the FCC proposal may lead to a decline in the quality of service because price caps create an incentive to reduce operating costs to improve earnings, and FCC has not enacted service standards to counteract the potential decline.

In contrast, AT&T maintains that the pricing flexibil-

ity allowed it under the FCC price-cap plan is long overdue. Until the adoption of that plan, AT&T was the only interstate carrier subject to rate-base/rate-of-return regulation. According to AT&T, it has been subjected to regulatory discrimination, resulting in increased costs and harm to consumers. The FCC price-cap plan is, therefore, a first step in the direction of a level playing field.

State Experiments with Alternative Methods of Regulation

States began experimenting with alternative forms of regulation first in their competitive state markets (i.e., the intrastate interLATA market). To date, 37 of the 42 multi-LATA states have authorized more than one facilities-based interexchange carrier to operate in their inter-LATA markets. In this competitive market, then, 19 states have removed rate-base/rate-of-return regulation for interexchange services; 15 states allow pricing flexibility for all or most interexchange services; two states allow partial pricing flexibility for some services; and one state has deregulated interexchange services entirely.¹²⁴

States are exploring new ways to regulate local exchange carriers. In this market, 38 states have adopted some form of regulatory reform. Vermont, California, New York, North Dakota, and Nebraska represent the range of current experimentation.

Vermont. In 1985, Vermont began studying the effects of the new telecommunications environment. Prior to divestiture and deregulation, Vermont had been in a unique position. Due to the manner in which the separations-and-settlement procedure had operated prior to divestiture and due to the highly rural nature of the state, the interstate long-distance share of the NTS costs in Vermont was approximately 45 percent.¹²⁵ Vis-a-vis the national average of 26 percent, basic local service in Vermont was receiving a heavy contribution from toll rates. Thus, when FCC changed the rules to provide that the interstate portion of the NTS costs would be a flat 25 percent for all companies, the state was faced with large rate increases for basic service. A move toward a competitive environment appeared to offer the possibility of stabilizing basic exchange rates while encouraging technological advancement.

Louise McCarren, chairman of the Vermont Public Service Board from 1981-1987, proposed a "new social contract" theory of regulation designed to introduce regulatory flexibility. McCarren proposed to reduce regulation of New England Telephone in exchange for three concessions:

- 1) The charges for basic local rates would be negotiated and then be subject to a fixed annual percentage change.
- 2) The company would be prohibited from dropping the service of any existing markets.
- 3) The company would commit itself to a modernization program that would ensure the development of new technology throughout the state in a timely manner.¹²⁶

In 1987, a modified version of the McCarren proposal became law. The law allows the Vermont Public Advocate

to negotiate a five-year contract with any company that provides basic exchange telecommunications services, subject to review by the Vermont Public Service Board.¹²⁷ At a minimum, the contract must provide for specified basic exchange rates during the life of the contract; minimum plant and equipment modernization schedules; specified service quality levels, including those offered to competitors; dissemination of technical information needed by competitors; and rates, terms, and conditions for access charges.¹²⁸ The contract is filed with the Public Service Board, which must hold a hearing within 45 days to determine whether it will approve the contract. Before approval, the board must find that the contract is just and reasonable, will not create risk of cross-subsidies, and will promote the general good and support competition. Companies entering into a contract approved by the Public Service Board under this statute are not subject to traditional rate-base/rate-of-return regulation. The statute contains a sunset provision, requiring reconsideration of the legislation after five years.

Soon after passage of the law, a contract covering 90 percent of the state's ratepayers was negotiated between New England Telephone and Vermont's Public Advocate. The contract was filed for review with the Public Service Board in October 1987. Initially rejected by the board, the contract was renegotiated and approved as modified in December 1988. Among the modifications required were the following: basic residential services must not be directly bundled with new services; blocking of unwanted "976" services must be available at no charge; basic exchange rates must not be raised throughout the term of the contract; the \$284 million in revenue expected to be spent for network enhancements must be spent or returned to ratepayers. The board required the last modification in order to prevent the cross-subsidies that could occur if a pool of unused funds became available for that purpose.¹²⁹

California. In 1985, the California Public Utilities Commission began an investigation of the new telecommunications industry to determine whether it should grant regulatory flexibility to AT&T Communications of California (AT&T-C),¹³⁰ the dominant firm in the state's interLATA market. In the first decision rendered under the investigation, the commission determined that some regulatory relaxation was appropriate and considered two approaches: a prediction approach¹³¹ and an observation approach.¹³² The prediction approach requires the commission to make a finding that AT&T-C's market power is too weak to allow it to engage in anti-competitive practices. After such a finding, the commission may relax its regulation of AT&T-C. According to the observation approach, the commission initially grants regulatory flexibility and thereafter monitors the results to assess the response of the marketplace and the costs to ratepayers.¹³³

In October 1987, AT&T-C submitted a price flexibility proposal under the observation approach that would allow it to respond more quickly to changes in market conditions. The plan called for rates for existing services to be set initially at their current level and thereafter to vary asymmetrically within a range specific to each service. For example, increases in rates for WATS services were lim-

ited to 5 percent, while decreases of 15 percent were allowed. In general, the proposal provided for rate fluctuations within bands that contained greater downward than upward flexibility. AT&T-C could implement rate changes that fell within the bands on five days notice. With a few modifications, the California commission adopted the AT&T-C plan in December 1988.¹³⁴

In return for this pricing flexibility, the commission ordered AT&T-C to maintain statewide average rates, introduce all new services on a statewide basis, make a maximum of four revisions within approved rate bands per service per year, not impose restrictions on the resale and sharing of its services, not abandon any service except by formal application to the commission, not seek to withdraw any service from a community on a geographically discriminatory basis, and use the formal application process for any new service submission or for the revision of existing services.¹³⁵

New York. New York recently adopted "incentive regulation" for both local exchange and interLATA service providers. In 1986, the New York Telephone Company and the state Public Service Commission entered into an agreement for deferring any general rate increase for 18 months; later, the agreement was extended through 1990. The plan allows New York Telephone two limited rate increases for the purpose of recovering increases in wages and fringe benefits, separations charges ordered by FCC, New York City property taxes, and depreciation cost. During the rate moratorium, New York Telephone receives two benefits: it is exempted from rate-of-return regulation and it is permitted to retain some of the increased earnings that may result from operational efficiencies. Any increase in earnings that leads to a return on equity greater than 14 percent is shared equally with the ratepayers at the end of the moratorium. Thus, under incentive regulation, the telephone company bears the risk of increased costs but retains the benefits of increased productivity and sales at least until a portion of the profits is returned to ratepayers in the next general rate increase.¹³⁶ The commission has entered into a similar plan with AT&T.

North Dakota. In 1989, North Dakota enacted a law exempting all telecommunications companies and services from rate-of-return regulation.¹³⁷ According to the law, any telecommunications company can notify the state public service commission that it wants to be subject to rate-of-return regulation.¹³⁸ Except for a class of services deemed essential, the new law does not regulate the price that can be charged for telecommunications services. Essential services include, in part, access, billing and collection of the billing company's own essential services, directory listing and local exchange directory assistance, connection to the local exchange, and emergency 911 services. Increases in charges for essential services may be assessed no more than once a year, and the aggregate annual price change for a service may not exceed an amount calculated according to a telecommunications price factor. Company productivity gains must be shared 50-50 with subscribers. Essential service price increases so calculated go into effect automatically, but the public service

commission retains the right to investigate (on its own motion or on complaint of any person) and set aside any unreasonable or inadequate price. The charges for all toll services, including intraLATA toll, are deregulated because the latter services are deemed nonessential.

The North Dakota law prohibits cross-subsidization by forbidding companies from using revenues from regulated services to subsidize unregulated or nonessential services. As an enforcement tool for this provision, the law gives the public service commission authority to require companies to keep separate books of account, or to allocate costs in accordance with procedures established by rule or order of the commission. Profits from nonessential services can be used to subsidize essential services. Finally, the statute creates a six-member regulatory review commission composed of two members of the public service commission, two members of the Senate and two members of the House of Representatives. The review commission is charged with the duty of monitoring and reporting annually to the legislature on the effects of the new law from 1989 through 1995.

Nebraska. Nebraska has gone further than any other state in deregulating its basic local exchange service. In 1986, the Nebraska legislature enacted LB 835, which deregulated the rates of all local exchange and toll (interLATA and intraLATA) service providers in the state. Due to a constitutional challenge to the law, the state's Public Service Commission did not implement the law until March 1987. The deregulation provisions of the Nebraska law are drastic; although there is no competition in basic local service, the law removes virtually all state regulatory oversight of that monopoly market. According to LB 835, local exchange service rates can be changed, without the need for a prior hearing (or indeed without even notifying the commission) on the reasonableness of the rate changes, on 60 days notice to all affected subscribers. The commission can hold a hearing only if the rate increase is above 10 percent or if a certain percentage of subscribers petition for a hearing. Changes in rates for toll service are effective on 10 days notice. Regardless of the percentage increase and the number of complaints, the commission has no regulatory jurisdiction over toll service.

Although it is too early to evaluate the effectiveness of these state experiments, their existence is a sign of the vitality of the state telecommunications regulatory environment.

OVERVIEW OF FEDERAL PREEMPTION OF STATE LAW

The Federal Communications Commission in recent years has aggressively preempted state regulation of the intrastate telecommunications market. Prior to divestiture, FCC had argued that preemption of state law would foster competition through deregulation. In nearly every case, the federal Circuit Courts of Appeals upheld the FCC preemptive orders.¹³⁹ After divestiture, FCC added another argument—state regulation is inconsistent with the need for uniform national policies. Once again, the Circuit Courts of Appeal upheld FCC.¹⁴⁰

In 1986, however, the U.S. Supreme Court reversed a decision of the U.S. Court of Appeals for the Fourth

Circuit, which had upheld the right of FCC to preempt state regulation of depreciation rates for intrastate telecommunications property. The lower court had agreed with FCC that different state depreciation methods must be preempted because they frustrated the federal goal of designing an efficient nationwide telecommunications service. The Supreme Court disagreed. In *Louisiana Public Service Commission v. F.C.C.*,¹⁴¹ the court in a 5-2 vote held that the system of dual state-federal regulation established by the 1934 *Communications Act* precluded the attempted preemption.¹⁴² According to the Supreme Court, "given the breadth of the language of section 152(b), and the fact that it contains not only a substantive jurisdictional limitation on the FCC's power, but also a rule of statutory construction, we [do not] accept the narrow view urged by [FCC]."¹⁴³ The court continued: "Section 152(b) constitutes . . . a congressional *denial* of power to FCC . . . [T]hus we simply cannot accept an argument that FCC may nevertheless take action which it thinks will best effectuate a federal policy. An agency may not confer upon itself power."¹⁴⁴

The *Louisiana Public Service* case did not halt FCC's drive to deregulate and centralize the intrastate and interstate telecommunications markets, but it did compel the commission to rely on alternative theories for federal preemption. Three recent decisions from the Ninth and DC Circuit Courts of Appeals illuminate the power of these alternate theories and the precedential effect of *Louisiana Public Service*.

The Statutory Dual Regulatory Scheme

Most of the recent preemption litigation in telecommunications has involved conflicts over the proper interpretation of three sections of the 1934 *Communications Act*. That Act established a dual federal-state regulatory system, set forth in 47 U.S. Code, sections 151, 152(a) and (b). Section 151 grants to FCC the authority to regulate

. . . interstate and foreign commerce . . . in communication by wire and radio so as to make available . . . to all the people of the United States a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges

Section 152 (a) sets out the reach of the law:

The provisions of this chapter shall apply to all interstate and foreign communication by wire or radio and all interstate and foreign transmission of energy by radio, which originates and/or is received within the United States, and to all persons engaged within the United States in such communication

Finally, section 152 (b) limits the extent of FCC's jurisdiction:

[N]othing in this chapter shall be construed to apply or to give the Commission jurisdiction with respect to (1) charges, classifications, practices, services, facilities, or regulations for or in con-

nection with intrastate communication service by wire or radio of any carrier

The interplay between these three sections forms the basis for judicial analysis of the *Communications Act*.

Recent and Pending Preemption Cases

Given the new life breathed into section 152(b) by the *Louisiana Public Service* decision, FCC can no longer base its preemption orders solely on its mandate under section 151 to create an efficient nationwide telecommunications network. Instead, the commission must refer to specific statutory authority to support its direct or ancillary jurisdiction to preempt state regulation. The commission also must demonstrate the inseparability of the interstate and intrastate components of the service or activity preempted. In two recent appeals of its preemption orders, FCC relied on an alternate theory of preemption, based on the classification of the preempted activity as a non-common carrier service. The force of this theory is a key issue in two important cases, "Inside Wiring"¹⁴⁵ and "Computer III"¹⁴⁶ appealed to the DC and Ninth Circuit Courts of Appeals, respectively. The breadth of the federal right of interconnection to the public switched network¹⁴⁷ as a basis for preemption was reviewed recently by the DC Circuit Court of Appeals in a third case: *Atlantic Richfield (ARCO)*.¹⁴⁸

Inside Wiring (NARUC III)

One of the FCC depreciation orders at issue in the *Louisiana Public Service* case involved a mandated change in the accounting treatment of "inside wiring" (i.e., the cost of labor and materials to install wire inside the premises of a business or residence). The FCC rule required that, henceforth, inside wiring would be treated as a cost to be expensed in the year incurred rather than as a capital investment to be depreciated over time. At first, FCC took the position that its order did not affect state regulation of inside wiring. Indeed, in a 1982 Memorandum Opinion, the commission specifically noted that its order did not preclude states "from using their own accounting and depreciation procedures for intrastate ratemaking purpose[s] . . ."¹⁴⁹ and that "no policy of this Commission would be furthered by requiring state commissions to adhere to the rules that we have adopted for the purposes of computing the interstate revenue requirement."¹⁵⁰ Later, however, FCC changed its opinion and preempted state regulation of inside wiring, basing its preemption order on sections 220 (concerning accounts, records, depreciation charges, etc.) and 151 of the 1934 Act. The U.S. Supreme Court rejected both theories in connection with the federal attempt to preempt state regulation of depreciation rates in the *Louisiana Public Service* case.

In February 1986, FCC issued an order deregulating the installation and maintenance of inside wiring.¹⁵¹ The commission had concluded that deregulation would "ensure that inside wiring costs were recovered from the cost causative ratepayer, would stimulate competition and new entry in the inside wiring market, would produce cost savings for ratepayers, and would help in developing a

competitive, unregulated telecommunications marketplace.”¹⁵² According to the commission, after deregulation, telephone companies would not act as common carriers in supplying inside wiring services because they would be likely to tailor their services to the individual need of their customers and set their prices competitively.¹⁵³

The commission also preempted state regulation of inside wiring. In so doing, FCC relied on its authority under sections 151 and 152(a) and dismissed section 152(b) as irrelevant. Citing NARUC II, the commission found that section 152(b) applied only to common-carrier services and activities. Inside wiring was no longer a common-carrier service; therefore, section 152(b) did not act as a bar to the preemption. FCC found an alternative basis for its preemption order in footnote 4 of the *Louisiana Public Service* case: “the inseparability of the interstate and the intrastate components of inside wiring.”¹⁵⁴

The DC Circuit Court rejected the argument of FCC that it may preempt state law whenever telephone facilities used for both intrastate and interstate service are physically inseparable. The court also rejected FCC’s attempt to limit the reach of Section 152(b) to intrastate common carrier communication services. Nevertheless, the court did uphold the commission’s preemption of state regulation of the installation and maintenance of inside wiring, holding that such state regulation interfered with the achievement of the federal goal of providing interstate users with the benefits of a free market and free choice in the installation and maintenance of inside wiring.

Computer III

The Computer III appeal arose out of a series of commission orders involving the provision of enhanced services, a subject that has a long history with FCC. In its earlier Computer II decision,¹⁵⁵ the commission had distinguished between basic telephone services, defined as “the transmission of telephone messages or the movement of information over the telephone network,” and enhanced services, described as those which “combine basic service with computer processing applications that act on the format, content, code, protocol . . . of the subscriber’s transmitted information, or provide the subscriber additional, different, or restructured information, or involve subscriber interaction with stored information.”¹⁵⁶

The commission concluded in Computer II that the 1934 Act did not apply to enhanced services. Thus, the Computer II decision drew a line between regulated basic services and unregulated enhanced services. To guard against the possibility that regulated carriers would engage in cross-subsidization,¹⁵⁷ predatory pricing, and denial of access to the monopoly local network, the commission instituted a policy of structural separation (i.e., AT&T and its wholly owned Bell operating companies must offer their unregulated enhanced services only through a separate corporate subsidiary).

In Computer III, FCC reexamined its policies toward the provision of enhanced services and found that the costs of structural separation outweighed the benefits. That is, structural separation requires a duplication of facilities and personnel, discourages the development of

innovative services, and forecloses the opportunity to take advantage of economies of scale. Moreover, the commission concluded that nonstructural safeguards could eliminate these costs and still provide protection against possible cost shifting and discrimination. Consequently, FCC adopted a plan to permit carriers to offer nonregulated telecommunications services without having to set up a separate subsidiary. Carriers choosing to take advantage of this new freedom must (1) allow competitors equal access to the network to provide competing services,¹⁵⁸ (2) disclose information to competitors about their regulated customers and future changes in the regulated network, and (3) comply with detailed cost-accounting procedures.

The commission’s order in Computer III preempted state regulation of enhanced services¹⁵⁹ and precluded states from imposing separate subsidiary requirements or nonstructural safeguards on the enhanced service operations of AT&T and the Bell Operating Companies. To support its preemption order, the commission relied on theories similar to those discussed in the inside wiring case; in particular, the inseparability of interstate and intrastate enhanced services and the inapplicability of section 152(b) to non-common carrier activities.

On June 6, 1990, the U.S. Circuit Court of Appeals for the Ninth Circuit vacated both of the FCC orders under review.¹⁶⁰ First, the court overturned the FCC ruling that the divested BOCs no longer be required to maintain corporate separation between their regulated and unregulated activities, finding that the record did not support the commission’s conclusion that changed circumstances reduced the danger that BOCs will “subsidize their competitive activities with monopoly revenues improperly derived from captive ratepayers.”¹⁶¹ Having found that the reasons given by FCC for its removal of the previously required structural separations was not supported by the record, the court held that the commission’s decision to remove the required separation was arbitrary and capricious in violation of the *Administrative Procedures Act*. With regard to the second FCC ruling on appeal—commission preemption of state regulation of enhanced services—the court rejected FCC’s theories. Like the D.C. Circuit Court in NARUC III, the Ninth Circuit Court rejected FCC’s attempt to limit the reach of Section 152(b) to intrastate common carrier services and limited the “impossibility” exception carved out of Section 152(b) by the U.S. Supreme Court in *Louisiana Public Service*,¹⁶² by requiring the commission to demonstrate that its order is narrowly tailored to “preempt only such state regulations as would negate valid FCC regulatory goals.”¹⁶³ Having found that the commission failed to meet its burden of showing that its preemption order was necessary to avoid frustrating its regulatory goals, the court overturned the FCC preemption order.

ARCO

Not surprisingly, the parties involved in the ARCO case defined the issues very differently. FCC described the issue as “whether ARCO’s federal right of interconnection is violated if the Texas Public Utilities Commission (PUC) prevents it from connecting its Plano lab to

the public switched network at Dallas by means of its private microwave facilities.”¹⁶⁴ In contrast, the petitioners (State of Texas, National Association of Regulatory Utility Commissioners, and GTE Southwest) defined the issue as: did FCC exceed its authority when it effectively issued a federal certificate to provide local exchange telephone service, thereby preempting the Texas certification law and the Public Utilities Commission’s order regulating local exchange service?

Although the parties differed in their description of the legal issues, they agreed on the facts. The location of the Texas headquarters of ARCO is in Dallas. ARCO also has a research complex in Plano, which is approximately 19 miles from its Dallas offices. Dallas and Plano lie in different telephone exchange areas. Dallas is served by the Southwestern Bell Telephone Company, and Plano is served by GTE Southwest. Each telephone company holds a certificate of public convenience and necessity from the Texas PUC, which authorizes the company to serve its specifically designated area. The franchises are exclusive; Texas does not allow competition within a single exchange area. Telephone service at both the Dallas office and the Plano plant is handled by ARCO’s private branch exchange (PBX) switchboards,¹⁶⁵ which are connected by trunk lines to the public switched network. Until 1982, access to the public switched network at the Dallas PBX was provided by Southwestern Bell, while GTE Southwest provided public network access to the PBX at the Plano plant. Private microwave links connected calls between the two plants and within the interstate private ARCONET system.

In 1983, ARCO sought to connect its Dallas PBX to Southwestern Bell’s central office in Dallas via its existing private microwave system.¹⁶⁶ ARCO planned to have Southwestern Bell provide access to the public switched network for the Dallas office and the Plano plant, even though Plano is outside the franchise area of Southwestern Bell. The Texas PUC ordered Southwestern Bell to cease and desist from providing service to the Plano plant. The PUC had found that: (1) ARCO was one of GTE Southwest’s largest customers, and the loss of the ARCO business would materially diminish the revenues of GTE Southwest; (2) GTE Southwest had invested some \$331,000 in serving ARCO’s Plano labs, and much of that investment would be “stranded” by the loss of ARCO business; (3) the telephone company’s planning of new facilities would become less efficient and effective because of arbitrary shifts in customer demand; and (4) Southwestern Bell was not authorized to serve the Plano area.

ARCO petitioned FCC for emergency relief and a declaratory ruling ordering Southwestern Bell to provide service to Plano. In 1985, the FCC Common Carrier Bureau granted ARCO’s request. In 1988, FCC denied the applications for review of the bureau’s order submitted by Texas and GTE Southwest,¹⁶⁷ finding that ARCO has a federal right to interconnect its facilities to the public switched network in a manner that it finds “to be privately beneficial without being publicly detrimental.”¹⁶⁸ The commission interpreted the federal right of interconnection to include a right to choose the particular location

and thus the particular carrier for interconnection. Further, preemption was necessary because business users are entitled to uniform national policies regarding the use and interconnection of their microwave systems.¹⁶⁹

On appeal, the petitioners acknowledged the federal right of interconnection, but maintained that the federal right must coexist with state regulatory policies. According to the petitioners, both the federal right of interconnection and state regulatory policies were being served by requiring ARCO to use GTE Southwest to provide service to Plano.¹⁷⁰ In contrast, FCC’s interpretation of the federal right was viewed as allowing large business users to circumvent state regulatory boundaries between local service providers and sanctioning bypass of the authorized local carrier. The consequent reduction in revenue may adversely affect basic rates for small business and residential users.

The DC Circuit Court of Appeals upheld the FCC order, admonishing the Texas PUC for its failure to seek a middle ground. The court agreed with FCC’s depiction of the Texas commission’s order as “drastic,” finding that “it seems to us that, in effect, the Texas PUC threw out the interstate baby with the intrastate bath water.”¹⁷¹ The court noted, however, that it did not accept the broad proposition that a private microwave operator has an absolute federal right of access to the public switched network at locations of its choice. Despite the court’s protestations to the contrary, the opinion does appear to grant FCC very broad preemption rights in cases that the commission can characterize as involving the federal right of access to the public switched network. According to the court, the test to be applied for affirmation of federal preemption in such cases—the private benefit must not be outweighed by a public detriment—is solely a federal standard, and the alleged public detriment can be proved only by concrete evidence of economic harm.

The Effect of Federal Preemptive Policies

FCC’s preemptive actions suggest that it has viewed its mission as one of deregulating telecommunications services on a national basis in order to encourage competition and foster a uniform nationwide system of regulation. Although competition *can* benefit all users, it may not do so immediately. Even when competition does bring benefits to all users, it may have a differential effect on different customer classes. The early returns on rate reductions provide evidence of these facts. For example, between December 1983 and November 1986, local telephone charges were up 26.1 percent, while interstate long-distance charges dropped 23.5 percent.¹⁷² In 1987, intrastate toll rates declined 3 percent, while interstate rates declined 12.4 percent.¹⁷³

The primary beneficiaries of the large rate reduction in interstate service are a few very large business customers, who are the principal users of interstate long-distance service. For example, a small number of residential customers, 10 percent, make over \$25 worth of calls per month, and only 14 percent of business users make over \$50 worth of long-distance calls per month.¹⁷⁴ The large business users, with their specialized needs and their heavy use of the interstate long-distance market, are an

important constituency of the FCC. Some analysts argue that residential and small business users will find little benefit in the long-distance interstate rate reductions prompted by FCC policies. Further, recent price cuts in AT&T's interstate long-distance rates (during business hours) were accompanied by a monthly increase in the charge that customers pay for their local service.¹⁷⁵

It is, of course, the task of government regulators to balance these differential effects. If the natural constituency of FCC is large businesses, residential and

small-business telephone subscribers must rely on state regulators (who are usually more sensitive to local concerns) to protect their interests. The dual regulatory system serves, therefore, to mediate between two goals: a telephone service that is flexible enough to serve large specialized users and yet is available to and affordable by all. Continued federal preemption of state law by the Federal Communications Commission may destroy this balance created by the Congress.

OVERVIEW OF PHASE-TWO ISSUES

The Phase-One docket contains issues requiring prompt attention and, often, the search for short-term solutions to transitional problems. Phase-One tasks have required states to implement new methods of regulating telecommunications providers, monitor the relationship between the competitive and noncompetitive activities, maintain universal service in the face of lost interstate subsidies and the threat of bypass, and resist federal encroachment on state control of the intrastate telecommunications market. Other Phase-One tasks not covered in this report include some First Amendment issues (e.g., the banning of dial-a-porn), and alternative operator services.¹⁷⁶

Although state legislators and regulators will continue to be occupied primarily with Phase-One tasks, some states have already moved into a new regulatory era, called here Phase Two. If Phase One was a reactive phase marked by deregulatory experiments and contentious federal-state relations, Phase Two promises to be a proactive period in which states encourage telecommunications providers to bring forth the developmental and competitive promise of the information age. Phase Two also offers the hope of a harmonious state-federal partnership.

The Phase-Two agenda is replete with prickly policy issues. For example, some state regulators are now actively involved in the design of their state's telecommunications infrastructure, prodding the industry where it is found to be moving too slowly. Also, federal and state regulators have embarked on a joint project to chart a national, modular network with uniform standards of interconnection. The agenda is being driven by the desire to stimulate local economic development and to capture the market in an increasingly competitive international telecommunications arena. Optimists will see in the agenda an opportunity to spur economic growth by fostering a flexible, pluralistic network and to create an innovative paradigm for dual state-federal regulation. Pessimists will raise the specters of network balkanization, intrusive government regulation and interference with free market principles.

LOCAL ECONOMIC DEVELOPMENT ISSUES

Many commentators have noted that we live in an information age, and that the new business that virtually every state seeks to woo from other localities and/or nurture from seed are likely to be information intensive. Thus, "fiber optic cables, digital switching, laser disks, satellite communication, word processors, facsimile transmissions and computer-integrated manufacturing are now as essential to economic development as interstate highways, industrial parks, water and sewage systems, and assembly lines were to the mass society era."¹⁷⁷ One of the much-heralded benefits of the information age and the service economy involves the uncoupling of employment opportunities from urban centers. In theory, at least, some service industries can locate wherever an advanced telecommunications infrastructure exists, and an employee can sit at a computer workstation hundreds or even thousands of miles from a home office. Such services are described as "footloose" because they have little or no produc-

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tion constraints restricting their locations. Research and mail-order retailing are two examples of footloose services.

Rethinking Universal Service

In an information age, the economic health of states will depend in large measure on a strong telecommunications infrastructure. Yet, the evidence to date, though scanty, suggests that without government intervention, many communities and citizens will be deprived of the benefits of the information age. Rural communities, for example, frequently lack the kind of telephone service necessary to join the information age. For individual work-at-home projects, the minimum requirements include one-party telephone service, touch-tone calling, and digital switching. These essential core elements facilitate the connection of a computer to a modem for data transmission, allow access to custom calling features, and assist in effective machine communication. Yet, in rural communities, where the cost of providing such services is high, the percentage of households with one-party lines and touch-tone service may be far below that in urban and suburban households.

No nationwide surveys have measured the extent and geographic spread of one-party service and touch-tone calling,¹⁷⁸ but at least one state, Washington, has conducted its own statewide survey. According to the survey conducted for the state's Joint Select Committee on Telecommunications,¹⁷⁹ only 4.8 percent of the state's residence customers had party-line service, but 24 percent of the rural countryside residents were on multi-line service. Such disparities in rural and urban telecommunication services recently led the Utilities and Transportation Commission of Washington to conclude that the definition of universal service should be revised. The commission's study represents the range of issues involved in redefining universal service.

In the past, the Washington commission had required all local exchange companies to offer multiparty service as a lower price alternative in order to promote universal service. While reaffirming its commitment to universal service, the commission noted that the definition of what constitutes universal service is evolving. According to the commission, so-called Plain Old Telephone Service (POTS), consisting of a local access line and basic central office switching for a single, flat monthly fee, is no longer an adequate universal service goal. In the commission's words, "simply maximizing the number of residents of the state who have working telephones in their homes is no longer sufficient to meet the policy goal of universal telecommunications service in a meaningful way. A rotary-dial telephone hooked to a multiparty local access line that is served by a mechanical central office switch is a link with the past rather than a connection with today's information age."¹⁸⁰ A universal service goal consistent with the information age requires at a minimum affordable single-party service with touch-tone calling.

The Washington commission cited several reasons for the need to upgrade the definition of universal service. Some of the reasons cited belong in the public safety category (i.e., access to enhanced 911 emergency fea-

tures¹⁸¹ and automated burglar and fire alarm systems, each of which require single-party lines). Others belong in the economic development category. While careful to point out that a sophisticated telecommunications infrastructure is not a panacea for the ailments of economically disadvantaged areas of the state, the commission found that "the availability of a modern, high-quality telecommunications infrastructure is a threshold resource that the State of Washington must achieve and maintain to remain competitive in a national and global information economy."¹⁸² Accordingly, the commission ordered all local exchange carriers participating in the state's new incentive regulation program to submit specific plans for conversion to universal one-party, touch-tone service.

The conversion to universal one-party, touch-tone service has profound implications for the state's telephone rate structure. The primary reason for the relative prevalence of party lines in rural areas is affordability. For example, 16 of the 24 local exchange carriers assess an incremental charge on basic service rates for customers whose premises are outside of the base rate area (i.e., the area closest to the location of the central office in a given exchange). In general, the farther the customer is from the base rate area boundary, the higher the monthly basic service charge. In Washington, many suburban and most rural single-party line subscribers are subject to the incremental charge through a so-called suburban mileage charge, which can add \$40 or more to the monthly bill for basic telephone service. In most cases, however, the suburban mileage charges are not assessed on the lowest available grade of service, the four-party line.

Moreover, the commission found that existing plant capacity in many service areas was not sufficient to allow total conversion to one-party service without significant new investment. The cost of the required investment must in turn be recovered from subscribers, again impacting local ratepayers and raising questions of whether one-party service should be subsidized and if so, how. In order to study these complex rate issues, the commission has ordered the state's local exchange carriers to provide it with estimates of the cost for conversion to one-party service and to design alternative rate plans to recover those costs.¹⁸³

California, too, has begun to reexamine the concept of universal service. In a 1987 report issued by a consumer advisory council commissioned and funded by Pacific Bell, the council noted that "we now face the real possibility of a society divided between the information rich and the information poor, with the information poor precluded from most of the nation's jobs."¹⁸⁴ Accordingly, the council recommended that regulators and the industry redefine universal service to include affordable access to touch-tone service, publicly supported information services (i.e., data bases and public library services), special provisions for disabled persons and for those not fluent in English, including automatic language translation.

Urban Centers

New York is a state with a highly developed financial services industry, which competes directly in the international market and relies heavily on sophisticated telecom-

munication services. It is not surprising therefore that the New York Public Service Commission has taken the lead in developing a vision of a futuristic modular network. One of the New York Commissioners, Eli Noam, envisions a "network of networks—domestic and multinational, hardware and software, specialized and general, private and public."¹⁸⁵ Admittedly an "untidy affair," Noam has named this new network "the pluralistic network."¹⁸⁶ Ultimately, the pluralistic network will require a modular architectural design. The local exchange carriers will unbundle their services into their basic elements and allow providers of telecommunications services to purchase only those services that are useful to them. Further, in the pluralistic network, service providers will be allowed to connect, or collocate, their private lines and their software packages directly into the local exchange. Three recent decisions of the New York Public Service Commission illustrate how the commission is moving to implement its vision.

In September 1988, the commission issued its "Order Instituting Procedures for the Implementation of Open Network Architecture."¹⁸⁷ The order was a response to the Open Network Architecture (ONA) plans filed by New York Telephone with FCC. As noted, FCC, in its Computer III proceeding, ordered the seven RBOCs to file ONA plans as a precondition for the removal of the requirement that the RBOCs conduct their enhanced service operations in a separate subsidiary. According to the FCC order, the required ONA plans must describe the unbundling of services useful to enhanced service providers, as well as define the procedures for equal treatment of enhanced service providers who wish to interconnect to specific basic network functions. The RBOCs responded to the FCC order with an ONA model that allowed enhanced service providers access to basic service elements (BSEs) through access links called basic service arrangements (BSAs). BSEs are the smallest service increments offered to enhanced service providers. Examples of BSEs include custom calling features like call forwarding. BSAs are the smallest assemblages of network features and facilities that enhanced service providers can purchase for access to the network. For example, a plain old telephone service (POTS) line is a BSA.

Although the model was generally accepted by FCC, the New York commission found that it did not go far enough in unbundling services. According to the New York commission, the ONA concept can work only if the network is disaggregated into its elemental components, thereby allowing enough flexibility to accommodate and encourage future telecommunications advancements. Thus, the commission ordered New York Telephone to (1) file tariffs immediately for 19 new BSEs not included in the FCC filing, and (2) tentative rates for an additional 21 new BSEs by December 1988.

A second commission order, issued in April 1989, directed New York Telephone to institute an ISDN trial on the public network.¹⁸⁸ Integrated Services Digital Networks or ISDN is a technology first developed abroad that allows, through digital switching and a high transmission rate, voice and data to be combined in the same telephone line and two telephone conversations to be carried on the

same line. After noting that Japan, Singapore, France, and Germany have conducted ISDN trials over the public network for several years, the commission ordered New York Telephone, which had delayed such trials citing concern about the absence of demand for ISDN services, to work with PSC staff to conduct trials of ISDN over the public network, with New York ratepayers bearing a portion of the cost of the trials. Prior to this order, New York Telephone had experimented with ISDN only in connection with the provision of services to specialized users.

The third New York commission decision, entitled "Opinion and Order Concerning Regulatory Response to Competition," was issued in May 1989.¹⁸⁹ One of the questions before the commission in this docket was whether Teleport, an entity created for business users through a public/private partnership and equipped with satellite dishes and links to the long-distance carriers, could collocate or interconnect its fiber optic facilities inside New York Telephone central offices in order to duplicate the local exchange company's ability to aggregate low-volume traffic. The commission ordered New York Telephone to allow the collocation, stating that "[a]llowing liberal interconnections with the local exchange network generally fosters competition and will likely provide more effective and efficient carrier access service."¹⁹⁰ By allowing collocation, the Public Service Commission has skirted the issue of bypass of the local exchange because specialized users will share rather than duplicate the local exchange. The commission has not yet come to grips with the issues of cost, however. These cost issues are just as serious with collocation as they are with bypass. Suggestions for solutions to the cost problem, such as requiring a collocator to make a contribution in support of basic services, remain vague and undeveloped.

International Competitiveness

In its ONA and collocation decisions, the New York Public Service Commission has gone far beyond the present stance of FCC, which has to date declined to require unbundling of services into their most basic elements or to compel collocation. Instead, FCC has been satisfied to allow the market to control the development of the public network. New York Commissioner Noam cites several dangers of following such a *laissez faire* policy. First, the delays created by waiting for the market to demand technical innovations will cause the United States to lag behind foreign countries whose governments are actively pursuing the adoption of new technologies. Second, the countries that are in the vanguard of technological advances will set the standard for network electronic equipment. To the extent that the United States is not in the forefront of technological innovations, then, it will have to purchase its network equipment overseas, increasing the trade deficit.¹⁹¹

Other commentators have noted similar pitfalls in the present FCC policy. In their research on the new telecommunications revolution, Stephen Cohen and John Zysman found that by relying on the market to drive the development of the nation's telecommunications infrastructure, the "U.S. is allowing the next generation

network to be built to suit the needs of the largest firms, with the risk that the possibilities of increases from the smaller batch production firms may be lost.”¹⁹² In contrast, many foreign governments are using public policy to permit small firms, not just large ones, to “capture the productivity gains implicit in the new technologies.”¹⁹³ According to these commentators, by continuing the pursuit of the present *laissez faire* policy, the U.S. “risks developing a system aimed at large users, but not necessarily designed to facilitate the adaptation of the economy as a whole.”¹⁹⁴ The resulting market-driven telecommunications infrastructure may be available only to major users rather than to all Americans.

As illustrated by current experiments, state regulators are in a good position to assure that a strong telecommunications infrastructure is available to small businesses and residential subscribers.

The Search for a New Telecommunications Regulatory Paradigm

As noted, the 1934 *Communications Act* established a dual federal-state regulatory system. According to that Act, the federal government has authority to regulate interstate and foreign communications, and the states have jurisdiction over intrastate communication services. As interpreted thus far by the courts, the Act allows federal regulators to preempt state regulation of seemingly intrastate telecommunications services if the services are an integral part of the interstate network, except when the activities at issue can be divided into their intrastate and interstate components and continued state regulation will not negate a valid federal policy, such as the promotion of a free market.

A jurisdictional test that depends in part on the severability of intrastate and interstate services may be dysfunctional in the modern telecommunications environment. For example, some telecommunications providers are currently developing integrated broadband networks (IBN). An IBN is a fiber optic transmission network that permits voice, data, and video transmission over the same facility. Such a network would consist of a mix of services, including video entertainment as well as data and voice transmission. Currently, a variety of federal and state laws restrict cross ownership among the providers of video, data, and audio transmissions. The *Cable Communications Policy Act*¹⁹⁵ prohibits a local telephone company from providing video programming to viewers in its telephone service area and permits governmental authorities to require cable service providers to have a local franchise; the Modification of Final Judgment prohibits the RBOCs from providing information services; and FCC requires a local exchange carrier to file an application before it constructs and leases facilities to cable systems on a common-carrier basis.¹⁹⁶ Although the state and federal laws governing the provision of video, data, and audio services are confusing, it is still possible to define separate federal-state regulatory systems because cable systems are physically segregated from telephone service. With IBN, the bright-line tests for jurisdictional separation will disappear, and that disappearance may require regulators to find a new paradigm for dual regulation.¹⁹⁷

The new model will require more cooperation among

the various regulators. The contentious state-federal relations of recent years are no longer viable for either state or federal regulators. By and large, states are not winners in the preemption game, and FCC, too, has much to lose from building its regulatory policy on the foundation of preemption. For example, as presently constituted, the Federal Communications Commission has neither the staff nor the expertise to set local exchange rates. Rate-making for basic service is an intensely local affair, differing in states with large rural, mountainous regions (like Colorado), in thinly populated states (like Wyoming), in states with multiple urban centers (like California), and in states with a large financial service industry (like New York). Subscriber plant costs vary widely across states. According to a 1984 study, monthly revenue requirements range from \$21 per subscriber in Wisconsin and Texas to \$45 in Wyoming.¹⁹⁸

The FCC cannot monitor the numerous regional problems, such as the cross-subsidization of unregulated services, and the local consumer protection violations that are likely to appear as deregulation proceeds. Unlike their federal counterpart, state commissions frequently hold public hearings to receive input from a wide variety of subscribers. These subscribers cannot afford to testify at public hearings in Washington DC. Most important, a policy of preemption would result in an incalculable loss of the lessons to be learned from state experiments.

The *Communications Act* contains two provisions for cooperative state/federal regulation—the Joint Board process and the Joint Conference procedure.

The Joint Board Process: Sections 410 (a) and (c)

In 1971, the Congress amended the *Communications Act* to provide for the establishment of joint federal-state boards. The joint boards consist of seven members—four appointed by FCC from nominations submitted by NARUC, and three FCC commissioners, one of whom is the chairman of FCC, who chairs all joint boards. The statute gives joint boards both mandatory and discretionary jurisdiction. For example, FCC must convene a joint board before it amends its cost separations rules [section 410(c) mandatory jurisdiction], and may call a joint board before it revises its other rules [section 410(a) discretionary jurisdiction]. Each member of the joint board has one vote, but because the board’s power is limited to making recommendations to FCC (which is then free to reject or modify the recommendations), the joint board process is one of discussion and compromise, nearly always resulting in a unanimous recommendation.¹⁹⁹

While recognizing the importance of the joint board process, the states have expressed some dissatisfaction with its operation. The power to convene a joint board and to frame the issues rests solely with the FCC chairman, and the state members do not have an independent source of funding to hire a staff. State representatives have made several suggestions for improving the joint board process, including the following: (1) meetings of the joint board be convened on motion of a majority of the members of the board, or of the states; (2) the chairman of the joint board

be chosen by vote of the board; and (3) the decisions of the board be final, subject only to review by the courts.²⁰⁰ These changes will require a statutory amendment.

The Joint Conference Process: Section 410 (b)

Recently, FCC established a joint federal-state conference under Section 410(b) of the *Communications Act* to facilitate federal-state cooperation on ONA issues. FCC established the joint conference in response to a NARUC resolution calling for the conference. The members of the joint conference include 13 state commissioners chosen from each of the BOC regions and three FCC commissioners, one of whom is the chairman of FCC and who will serve as chairman of the joint conference. According to the FCC plan, the conference will focus on "(1) ONA technologies, the delivery of new services to the public, nondiscrimination and efficiency in ONA services, and the relationship of ONA implementation to state and national economic development and competitiveness; (2) the propriety of, and possibly the development of, model ONA tariffs, with uniform nomenclature, format, and terms and conditions; and (3) coordination of state and federal efforts in such areas as BOC technical and marketing trials for enhanced services and the effects of one jurisdiction's rules and policies on those of the other."²⁰¹

State and federal regulators have great hope for the new joint conference process. The regulators tout the greater flexibility of the joint conference which, unlike the joint board, has no specific statutory requirements regarding its output. In a ringing affirmation of dual regulation, FCC noted that the conference should serve as a vehicle to foster cooperative efforts to encourage compatibility between state and federal regulations and to facilitate the full measure of economic development that is crucial to the country's economic vitality in the emerging information age. Because this ONA joint conference is the first use of section 410(b), and because only two meetings of the conferees have been held to date, it is too early to evaluate the effectiveness of the approach. It is important to note, however, that the joint conference procedure is, like the joint board process, under the control of FCC, which has the sole power to convene the conference, appoint state members nominated by NARUC, and define the issues heard. Also, like the joint board, the joint conference procedural guidelines do not provide for formal votes on the issues addressed by the conferees but rely instead on a process of consensus.

CONCLUSION

Prior to divestiture, telephone service in the United States was provided by means of a highly integrated, monopolistic, centralized public switched network. AT&T and its Bell subsidiaries provided most of the long-distance and local telephone service for the national network. In the early 1900s, states began regulating the telephone rates charged by the monopoly providers by means of a rate-base/rate-of-return formula, which was designed to emulate the operation of competitive markets. This meth-

od was used by federal regulators, too, after the passage of the 1934 *Communications Act*. The Act established a dual federal-state regulatory system, giving states authority over intrastate communication services and the FCC authority over interstate and foreign communication.

Rate-base/rate-of-return regulation was designed for an integrated, monopolistic industry. With the introduction of competition into the interstate market, that method became less credible. With divestiture, the demise of rate-base/rate-of-return regulation became inevitable. The 1982 judicial divestiture decree, which settled the federal government's antitrust suit against AT&T, required that company to divest itself of all of the Bell operating companies (BOCs), restricted the BOCs to providing intrastate intraLATA service, and required the BOCs to provide equal access to the local plant for all toll carriers.

In addition to the structural changes effected by the divestiture decree, technological advances have changed the face of the telecommunications industry. Advances in fiber optics and the increasing use of digital switches, which allow a higher transmission rate, have paved the way for the integrated transmission of voice, data, and video over the same loop. These technological changes have led states to redefine universal service, to study how telecommunications can enhance their economic competitiveness, and to prod the industry into upgrading the public network. In these activities, some states have moved out in front of FCC, introducing innovations into and creating diversity and flexibility within the public network.

These structural changes and technological advances require a response from regulators that goes beyond the adoption of new methods of regulation and the redefinition of universal service. The changes require an entirely new state-federal regulatory paradigm. Under the old model, the federal government has sought, in recent years, to create a uniform national telecommunications network by preempting state laws. The new model will require more cooperation among the regulators. The contentious state-federal relations of recent years are no longer viable for either state or federal regulators. By and large, states have not been winners in the preemption game, and FCC, too, has much to lose from building its regulatory policy on the foundation of preemption. For example, FCC has neither the staff nor the expertise to set local exchange rates. Ratemaking for basic service is an intensely local affair, differing in states with large rural, mountainous regions (like Colorado), in thinly populated states (like Wyoming), in states with multiple urban centers (like California), and in states with a large financial service industry (like New York). Nor can FCC monitor the numerous regional problems, such as cross-subsidization of unregulated services, that are likely to appear as deregulation proceeds. Most important, a policy of preemption would result in an incalculable loss to the nation of the lessons to be learned from the current state experiments.

The 1934 *Communications Act*, which created the dual regulatory system, may contain the answer. Sections 410(b) and (c) of the Act provide for joint federal-state boards and conferences. Restructured to meet some of the concerns of the states, including who may convene,

define the issues, and chair a joint board or conference, the joint board and conference process could form the basis for a new regulatory paradigm. Uniformity of technical standards is essential to assure the development of an integrated national network; uniformity of regulation in other areas is not. State and federal regulators could use the boards and conference mechanism to assure uniformity of technical standards where needed to produce an integrated national telecommunications network. Restraint in using federal preemptive powers will protect the vitality and diversity of the dual regulatory system.

NOTES

¹ The Commission considers the role of the states in the joint board and joint conference procedures to be of paramount importance. Although the Commission has stopped short of recommending that the decisions of the joint boards and conferences be final and binding on all parties, subject only to judicial review, the Commission believes that the states' role on these entities should not be limited to cheerleading. In order for the states to have an effective voice under the dual regulatory scheme set up by the Congress, the joint boards and joint conferences should be decisionmaking bodies, and the state representatives should have full voting power.

² Gerald W. Brock, *The Telecommunications Industry* (Cambridge: Harvard University Press, 1981), p. 85.

³ Bell patent, reprinted in *The Bell Telephone* (New York: Arno Press, 1974), p. 463-469, cited in Brock, *The Telecommunications Industry*, p. 91.

⁴ Brock, *The Telecommunications Industry*, p. 91.

⁵ *Ibid.*, p. 95.

⁶ J. R. Bornholz and D.S. Evans, "The Early History of Competition in the Telephone Industry," in David S. Evans, ed., *Breaking Up Bell: Essays on Industrial Organization and Regulation* (New York: North-Holland, Elsevier Publishing Co., 1983), pp. 12-13.

⁷ Brock, *The Telecommunications Industry*, p. 115.

⁸ Theodore Vail was president of AT&T from 1885-1887 and from 1907-1917.

⁹ Brock, *The Telecommunications Industry*, p. 155.

¹⁰ Theodore N. Vail, "Some Truths and Some Conclusions," speech to Vermont State Grange, December 14, 1915, quoted in Brock, *The Telecommunications Industry*, p. 159.

¹¹ _____, AT&T Annual Report, 1910, quoted in Harry M. Shooshan III, ed., *Disconnecting Bell: The Impact of the AT&T Divestiture* (New York: Pergamon Press, 1984), p. 10.

¹² Brock, *The Telecommunications Industry*, p. 158.

¹³ William K. Jones, "Origins of the Certificate of Public Convenience and Necessity: Developments in the States, 1870-1920," *Columbia Law Review* 79 (1979): 426.

¹⁴ *Ibid.*, p. 501. Cream skinning is the practice of soliciting only the most profitable business, leaving the established phone company with the less profitable business, thereby threatening the provision of service to marginal customers.

¹⁵ *Ibid.*, p. 481.

¹⁶ Richard Gabel, *Development of Separations Principles in the Telephone Industry* (East Lansing: Michigan State University, 1967), p. 22. In a 1910 hearing in which the New York Public Service Commission attempted to determine the reasonableness of metropolitan area exchange rates in the state, the Commission vacated the inquiry, stating: "It is impossible to determine the cost of the toll service separately from that of the local service for the reason that the greater part of the cost

of both is joint cost and there is no way of allocating the proper portion of the joint cost to each branch of service." FCC Docket 6053 reported in 1941 NARUC Proceedings, p. 142, and quoted in Gabel, p. 22.

¹⁷ Gabel, *Development of Separations Principles in the Telephone Industry*, p. 14.

¹⁸ *Ibid.*, p. 15.

¹⁹ In practice, the two theories shift costs among users in very different ways. For example, small business and lower income users tend to make short-distance calls, while larger businesses and wealthier users make far more long-distance calls. Thus, shifting cost recoveries between long-distance and short-distance rates has real distributional effects.

²⁰ *Smith v. Illinois*, 282 U.S. 133 (1930).

²¹ *Ibid.*, p. 151.

²² According to the Court, "The separation of the intrastate and interstate property, revenues and expenses of the Company is important not simply as a theoretical allocation to two branches of the business. It is essential to the appropriate recognition of the competent governmental authority in each field of regulation." *Smith v. Illinois*, at 148.

²³ *Lindheimer v. Illinois Bell*, 299 U.S. 151 (1934).

²⁴ Gabel, *Development of Separations Principles in the Telephone Industry*, pp. 30, 37.

²⁵ 48 Stat. 652 (1934).

²⁶ Brock, *The Telecommunications Industry*, p. 159.

²⁷ *Ibid.*, p. 179.

²⁸ Gabel, *Development of Separations Principles in the Telephone Industry*, p. 36.

²⁹ *Ibid.*, p. 43.

³⁰ A tariff is a statement filed by a carrier with a state or federal regulatory agency describing a publicly available service, a schedule of conditions, and the charges for the service.

³¹ Originally, the non-traffic sensitive (NTS) costs of the local exchange plant were apportioned between interstate and intrastate jurisdictions according to a formula that took into account only the subscriber line use (SLU); i.e., the relative minutes of use of the plant for local exchange service, intrastate toll service, and interstate toll service for a given company. In 1971, the Ozark Plan added a distance-sensitive multiplier to the formula: the so-called subscriber plant factor or SPF. On average, interstate calls cover longer distances than state toll calls; therefore, the use of a distance-sensitive multiplier increased the portion of the NTS costs assigned to the interstate jurisdiction, causing an aggregate increase in interstate toll and decrease in intrastate rates (the more costs that are assigned to interstate service and recovered from interstate rates, the less they need to be recovered from local rates). See Carol L. Weinhaus and Anthony G. Oettinger, *Behind the Telephone Debates* (Norwood, New Jersey: Ablex Publishing, 1988), pp. 80-103.

The multiplier effect of the SPF was not uniform. The greater the relative distance of long-distance calls within a company/state combination, the greater its SPF and, therefore, its share of NTS costs. Mark L. Lemler, "The FCC Access Charge Plan: The Debates Continue" (Cambridge: Harvard University, Center for Information Policy Research, 1987), pp. 34-35. Before divestiture, the states with the five highest SPF factors were Nevada, Wyoming, Arizona, Vermont, and the District of Columbia, and the states with the five highest SLUs were Nevada, Wyoming, Vermont, New Hampshire, and Delaware. In 1980, the interstate SPF was frozen, and in 1983, it was replaced with a gross allocator of 25 percent for all companies. Weinhaus and Oettinger, pp. 99, 102-103.

³² The 26 percent figure is an average. In fact, the actual local plant cost assigned to interstate service varied from state to state. See footnote 31.

³³ Weinhaus and Oettinger, *Behind the Telephone Debates*, pp. 64-66.

- ³⁴ John Brooks, *Telephone, the First Hundred Years* (New York: Harper & Row, 1975), p. 266.
- ³⁵ Brock, *The Telecommunications Industry*, pp. 191-193.
- ³⁶ *Hush-A-Phone v. United States*, 238 F.2d 266, 268 (1956).
- ³⁷ *Ibid.*, p. 269.
- ³⁸ 13 FCC 2d 420, *recon. denied*, 14 FCC 2d 571 (1968).
- ³⁹ The FCC order was effective January 1, 1983.
- ⁴⁰ Brock, *The Telecommunications Industry*, p. 210.
- ⁴¹ Specialized Common Carrier Services, Notice of Inquiry to Formulate Policy, Notice of Proposed Rulemaking, and Order, 24 FCC 2d 318 (1970), 29 FCC 2d 870 (1971), *Washington Utilities & Trans. Comm'n. v. FCC*, 513 F.2d 1142 (9th Cir. 1975), *cert. denied*, 423 U.S. 836 (1975).
- ⁴² Private line service is "a service whereby facilities for communication between two or more designated points are set aside for use of a particular customer and authorized users during stated periods of time." 47 CFR sec. 21.2. In contrast, public message service is "a service whereby facilities are offered to the public for communication between all points served by a carrier or by interconnected carriers on a nonexclusive message-by-message basis, contemplating a separate connection for each occasion of use." *Ibid.*
- ⁴³ *MCI Telecommunications Corp. v. FCC*, 561 F.2d 365 (D.C. Cir., 1975), *cert. denied*, 434 U.S. 1040 (1978).
- ⁴⁴ *MCI Telecommunications Corp. v. FCC*, 580 F.2d 590 (D.C. Cir. 1978), *cert. denied*, 439 U.S. 980 (1978).
- ⁴⁵ *Lincoln Tel. and Tel. Co. v. FCC*, 659 F.2d 1092 (D.C. Cir., 1981).
- ⁴⁶ ENFIA is the acronym for Exchange Network Facilities for Interstate Access.
- ⁴⁷ *U.S. v. American Tel. & Tel.*, 524 F.Supp. 1336, 1381 (D.C. Cir., 1981).
- ⁴⁸ 15 U.S.C. sec. 16. *The Antitrust Procedures and Penalties Act*, popularly known as the *Timney Act*, requires that any proposal for a consent decree submitted by the United States in an antitrust proceeding be filed by the court and published in the *Federal Register* at least 60 days prior to the effective date of the judgment. The purpose of the *Timney Act* was to assure the public and governmental representatives that antitrust settlements are in the public interest. Peter Temin, *The Fall of the Bell System* (New York: Cambridge University Press, 1987), p. 252.
- ⁴⁹ Temin, *The Fall of the Bell System*, p. 287.
- ⁵⁰ Except that AT&T was allowed to retain its minority ownership in Cincinnati Bell and Southern New England Telephone.
- ⁵¹ Proponents of this restriction justified it on First Amendment (free speech) grounds. Opponents saw it as protection for the politically potent newspaper interests.
- ⁵² "Information services" are defined in the divestiture decree as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing or making available information which may be conveyed via telecommunications. . . ." *U.S. v. American Tel. and Tel. Co.*, 552 F. Supp. 131, 179 (1982).
- ⁵³ The MFJ contained two exceptions to the rule barring the BOCs from providing interLATA interexchange services: a corridor between the New York Metro LATA and the North New Jersey LATA and another corridor between the Philadelphia LATA and the Delaware Valley, New Jersey LATA. In these two corridors, the BOCs and AT&T compete directly. Weinhaus and Oettinger, *Behind the Telephone Debates*, p. 131.
- ⁵⁴ OCCs are the large independent companies, the seven largest of which are MCI, Western Union, SPRINT, Tymshare, US Transmission Systems, RCA Communications, and US Telephone. Weinhaus and Oettinger, *Behind the Telephone Debates*, p. 48.
- ⁵⁵ A POP is "a physical location where there is a point of interface between the BOC facilities providing a LATA access function and an interLATA carrier's facilities providing an interLATA function." A POP must be located within the boundary of the LATA being served, and it may contain an interLATA carrier's switching system or some other designated facility. *AT&T Plan of Reorganization*, p.12, n.11.
- ⁵⁶ Some states allow competitive entry in the intraLATA toll market.
- ⁵⁷ See note 52 for a definition of information services.
- ⁵⁸ *U.S. v. American Tel. & Tel. Co.*, 552 F. Supp. 131, 194 (D.C. Cir. 1981).
- ⁵⁹ *Ibid.*, p. 179.
- ⁶⁰ Computer II Final Decision, p. 55.
- ⁶¹ A gateway is an electronic device that modifies electronic information for more efficient transmission, management, and access (but does not modify the user content). See *U.S. v. Western Electric Co. Inc. et al.*, 673 F.Supp. 525 (1987) and *U.S. v. Western Electric Co. Inc. et al.*, No. 82-0192, March 7, 1988.
- ⁶² *U.S. v. American Tel. & Tel. Co.*, 552 F. Supp. at 231.
- ⁶³ *Ibid.*, p. 196.
- ⁶⁴ Mark L. Lemler, "The FCC Access Plan: The Debates Continue" (Cambridge: Harvard University, Center for Policy Information Research, 1987), pp. 22-23.
- ⁶⁵ Lemler, pp. 25-28.
- ⁶⁶ *Ibid.*, p. 26.
- ⁶⁷ Wisconsin Public Service Commission, *Hearings, In Re Investigation of Intrastate Interexchange Access Charges and Related IntraLATA and InterLATA Compensation Matters*, Docket No. 05-TR-5, Testimony of Ben Johnson, p. 11, quoted in Lemler, p. 27.
- ⁶⁸ Third Report and Order. 93 FCC2d 241.
- ⁶⁹ In 1983, 84 percent of all call minutes on the Bell System's switched network were local, and 16 percent were toll. Peter Huber, *The Geodesic Network, Report on Competition in the Telephone Industry* (Washington, DC: U.S. Department of Justice, Antitrust Division, 1987), 2.3.
- ⁷⁰ *U.S. v. American Tel. & Tel.*, 569 F.Supp. 990, 998-1000, (D.C. Cir. 1983).
- ⁷¹ For a detailed description of the congressional action, including letters between FCC and members of the U.S. Senate, see Lemler, *The FCC Access Charge Plan: The Debates Continue*, pp. 60-65.
- ⁷² The \$3.50 cap is the maximum flat rate subscriber line charge. In low-cost states, the subscriber line charge is less than \$3.50.
- ⁷³ One of the promised benefits of FCC's current policy is the elimination of the prior "cross-subsidization" of the local service by the interstate long-distance service. The existence and extent of this subsidy has been and continues to be a controversial subject. Some do not accept the theory of joint and common costs, believing that imputing any portion of the NTS costs of the local exchange facility to interstate service creates an unwarranted subsidy. See discussion in Peter Temin and Geoffrey Peters, "Cross-Subsidization in the Telephone Network," *Willamette Law Review* 21 (1985): 199. Others accept the theory of joint and common costs, but believe that the amount of NTS costs assigned to interstate service (25 percent) is too high. See, for example, Roger G. Noll, "State Regulatory Responses to Competition and Divestiture in the Telecommunications Industry," in Ronald E. Grieson, ed., *Antitrust and Regulation* (Lexington, Massachusetts: Lexington Books, D.C. Heath Co., 1986), p. 167 et seq. Still others maintain that the pre-divestiture system of subsidies was ex-

tremely complex and did not consist just of an allowance from interstate service to basic service. For example, Robert Horwitz argues that because users of private line services (primarily large corporations) were always exempt from contributing to NTS costs, such users received a subsidy from other interstate and intrastate long distance telephone users. Moreover, the purchase of equipment and services from AT&T at inflated prices by the Bell operating companies constituted a subsidy from the local service to AT&T Long Lines. Robert Britt Horwitz, *The Irony of Regulatory Reform* (New York: Oxford University Press, 1989), pp. 135-136.

⁷⁴ The issue of bypass is covered in the next section.

⁷⁵ Hearings Examiner Mary Ross McDonald of Texas has characterized this justification in literary terms: "The contention that the impact of increased monthly flat rates will be 'offset' by the predicted lower toll rates is from the Marie Antoinette School of Rate Design: "Let them make toll calls!" Quoted in Noll, "State Regulatory Responses to Competition and Divestiture in the Telecommunications Industry," p. 167. McDonald made the comment after a witness for Southwestern Bell testified that a customer needed to average more than four toll calls a month in order to benefit from cost-causative pricing. Approximately 80 percent of Southwestern Bell's residential customers average fewer than four toll calls per month.

⁷⁶ See "Here Comes the Fiber-Optic Home: Experts Worry that New Technology Will Encourage Formation of a Communications Elite," *New York Times*, November 5, 1989. For a slightly different view, see the discussion in Alfred E. Kahn and William B. Shew, "Current Issues in Telecommunications Regulation: Pricing," *Yale Journal on Regulation* 4 (1987): 191. The authors of this article argue that the decision to install fiber-optics is driven by its lower capital and maintenance costs, which make it more economical than the traditional copper cable even for POTS (plain old telephone service). In contrast, the authors appear to agree that the replacement of analog switches with digital switches may inflate inefficiently the incremental costs of subscriber access. *Ibid.*, p. 220.

⁷⁷ States determine usage based on either the number of calls placed or the minutes of use for toll calls. Noll, "State Regulatory Responses to Competition and Divestiture in the Telecommunications Industry," p. 189.

⁷⁸ Discouraging "uneconomic" bypass was one of the significant criteria that FCC considered in its design of an access plan. 93 FCC2d 241 (1982), para. 78. Defining the distinguishing characteristics between "economic" and "uneconomic" bypass is not easy. A typical definition of economic bypass will refer to the scale or nature of the customer's service requirements and conclude that an alternative system "offers a real economic advantage over the local telephone company's services . . . because of "fundamental differences in the underlying economic costs of furnishing the service." See Coopers & Lybrand, *State Policy and the Telecommunications Economy in New York* (Boston: Economics and Technology, Inc., 1987), Appendices, p. 17. Similarly, a typical definition of "uneconomic" bypass concludes that uneconomic bypass results from pricing distortions, such as rate averaging and depreciation schedules based on average service lives, which mislead "customers into perceiving . . . [an] alternative as being less costly." *Ibid.* Given the lack of precision in these definitions and the lack of agreement as to the cost of providing service, the distinction between economic and uneconomic bypass appears to lack any real substance.

⁷⁹ Examples of large end-users include financial organizations, such as Citicorp, Chemical Bank, and Manufacturers Hanover; "Fortune 500" types of distributors or manufacturers with either national or international distribution networks, such as Westinghouse and Ford; aerospace industries, such as Hughes Aircraft; local, state, and federal government agencies, such as GSA, FAA, DOD, and the cities of San Francisco

and Los Angeles; large-scale educational complexes, such as Duke University and UCLA; and the transportation industry, such as major airlines.

⁸⁰ The term local exchange carriers (LECs) includes the independents as well as the BOCs.

⁸¹ For example, FCC's initial bypass report looked only at private systems and did not deem private lines available from the telephone company to be part of the bypass issue. Weinhaus and Oettinger, *Behind the Telephone Debates*, p. 153. See also the discussion of the ARCO case, this report, pp. 28.

⁸² *U.S. v. Western Electric Company*, 673 F.Supp. 525, 537 (D.C. Cir., 1987); *aff'd* in part, *rev'd* on other grounds, No. 87-5388 (D.C. Cir. Apr. 3, 1990).

⁸³ *Ibid.*, p. 538.

⁸⁴ Huber, *The Geodesic Network*, 3.9, Table IX.5.

⁸⁵ *U.S. v. Western Electric Company*, 673 F. Supp. at 640, note 68; and see *People of the State of California et al. v. FCC*, June 6, 1990, 1990 U.S. App. Lexis 8930, 500 (9th Cir.) "In short, although the record contains an impressive array of evidence demonstrating the technical feasibility of bypass, the record contains no evidence that bypass has become a realistic option for any appreciable number of ordinary telephone users."

⁸⁶ The four primary objectives listed by FCC were: (1) elimination of unreasonable discrimination and undue preference among rates for interstate services, (2) efficient use of the local network, (3) prevention of uneconomic bypass, and (4) preservation of universal service. In the Matter of MTS and WATS Market Structure, CC Docket No. 78-72, Phase I, Third Report and Order, 93 FCC2d 241 (1982).

⁸⁷ *Ibid.*, para. 78.

⁸⁸ The California plan was created by the Moore Universal Telephone Service Act (AB 1348). In 1987, AB 1348 was repealed and reenacted as AB 386. AB 1348 was funded by a tax on the service suppliers while AB 386 is funded by a surcharge on the customers.

⁸⁹ The income base is raised each year to reflect increases in inflation based on the Federal Consumer Price Index.

⁹⁰ The amount of the allowance is reduced by the amount of any credit or allowance authorized by FCC. Currently, FCC provides a 50 percent reduction in the SLC charge for ULTS subscribers and the ULTS fund provides the other 50 percent.

⁹¹ California Public Utilities Commission, Auditing and Compliance Branch, *Report on the Results of Workshops Held for Universal Lifeline Telephone Service*, June 1988.

⁹² All figures are from the Federal-State Joint Board, Monitoring Report, CC Docket No. 87-339, March 1989.

⁹³ The assets of directory publishing were included in the rate base on which the company was permitted to earn a return, and the profits of the Yellow Pages were taken into account in the computation of the allowed rate of return.

⁹⁴ The Yellow Pages have always generated "supra competitive" profits. See *U.S. v. American Tel. & Tel. Co.*, 552 F. Supp. 131, 193 (D.D.C. 1982), *aff'd* sub nom. *Maryland v. United States*, 460 U.S. 1001 (1983).

⁹⁵ Judge Greene rejected an MFJ provision that would have prohibited the operating companies from publishing directories in return for an AT&T guarantee of Yellow Pages revenues for four years after divestiture. *U.S. v. American Tel. & Tel. Co.*, 552 F. Supp. 194.

⁹⁶ *U.S. v. Western Electric Company*, 592 F. Supp. 846, 856-66 (D.D.C. 1984).

⁹⁷ *Mountain States Tel. and Tel. v. Public Utilities Commission et al.*, Supreme Court of Colorado, No. 86SA319, October 31, 1988.

⁹⁸ Both New York Telephone and NYNEX Information Resources Company are subsidiaries of RBOC NYNEX. See In

the Matter of New York Telephone Co. v. Public Service Commission, October 25, 1988. The Wyoming Supreme Court and the Minnesota Court of Appeals reached a different result. Based on the statutes of those states, the two courts held that the state regulators could not void the transfers. Both courts found, however, that the regulators could investigate the reasonableness of the publication fees and impute income to the BOC if the fees were found to be inadequate.

⁹⁹ The term used in the divestiture decree is information services. Apparently, no real distinction exists between the terms enhanced services and information services.

¹⁰⁰ Computer II Final Decision, 77 FCC2d, p. 55.

¹⁰¹ Ibid.

¹⁰² The MFJ contained provisions preventing the BOCs from entering certain lines of business, such as providing information or long-distance services and manufacturing telecommunications equipment. In 1987, the Justice Department recommended to the court that the restrictions on the BOCs' provision of information services and manufacturing of equipment be relaxed. After reviewing the Justice recommendations and receiving comments and testimony from interested parties, Judge Greene relaxed the restrictions only to the extent of allowing the BOCs to provide "gateway" transmission services and to engage in non-telecommunications services. The order also retained the restraints on manufacturing and providing long-distance service. *U.S. v. Western Electric Co., et. al.*, #82-0192 (D.C.Cir., 1988).

¹⁰³ Cross-subsidization occurs when a carrier misattributes costs incurred in the provision of unregulated services to the provision of regulated services. The misattribution of costs results in the carrier's monopoly ratepayers bearing a part of the cost of unregulated service and in unfair competition.

¹⁰⁴ The report noted differences found among the six regional holding companies. For example, the auditors gave Bell Atlantic the highest marks for its attention to separating the two sides of its business and for developing a reasonable and efficient method of consolidating functions among its regulated and unregulated subsidiaries. In contrast, the operations and methods of Pacific Telesis were found to "bring to life the worst nightmares of regulators."

¹⁰⁵ In telecommunications jargon, the equal access plan is labeled "comparably efficient interconnection" (CEI). To gain maximum regulatory freedom from the requirement of structural separation, a telephone company must file an approved "open network architecture" (ONA) plan. ONA compels the use of CEI concepts in the overall design of the basic network.

¹⁰⁶ On June 6, 1990, the Ninth Circuit Court of Appeals overturned the FCC's decision in Computer III. See the discussion of the Computer III case in the section entitled "Overview of Federal Preemption of State Law," page 26.

¹⁰⁷ 673 F.Supp. 571.

¹⁰⁸ Ibid.

¹⁰⁹ *U.S. v. Western Electric Co.*, Civil Action No. 82-0192 (D.C.Cir.), June 13, 1989.

¹¹⁰ 592 F. Supp. at 853-54.

¹¹¹ *U.S. v. Western Electric Co.*, Civil Action No. 82-0192 at 21.

¹¹² U.S. General Accounting Office, *Telephone Communications: Controlling Cross Subsidy between Regulated and Competitive Services* (Washington, DC: GAO, October 1987).

¹¹³ Ibid., p. 10.

¹¹⁴ Ibid., pp. 54-55.

¹¹⁵ According to FCC, rate-of-return regulation creates distorted incentives. In a competitive market, prices are dictated by the market, and a company's costs and profits are inversely related. Under rate-of-return regulation, a carrier seeking to increase its earnings often can do so merely by increasing its ag-

gregate investment on which it earns a return. Thus, profits can go up as investment goes up. This relationship is said to create a powerful incentive to "pad" costs. See FCC, *Price Cap Proposal*, June 6, 1988 (Chicago: Commerce Clearing House), p. 11.

¹¹⁶ Examples given by FCC include the following: If a carrier attempts to produce the same service at a lower cost, rate-of-return regulation denies the carrier any future benefit by forcing a rate reduction. Rate-of-return regulation offers carriers little incentive to bring new services to market because they are denied the benefits of successful innovations to the extent the benefits exceed the authorized rate of return. Ibid., p. 62.

¹¹⁷ FCC maintains that carriers subject to rate-of-return regulation have an incentive to manipulate their reported cost allocations, assigning the greatest amount of costs to their least competitive services, thereby cross-subsidizing their most competitive services. Ibid., p. 63. This proposition is somewhat difficult to reconcile with the FCC position that rate-of-return regulation and the separations-and-settlements procedure assigned too many costs to the long-distance services, which was and is the most competitive market.

¹¹⁸ In the Matter of Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, *Report and Order*, FCC 89-91 (1989).

¹¹⁹ The FCC has classified as dominant certain carriers that are considered to have market power sufficient to exploit consumers by charging excess rates or discriminating unreasonably in the provision of service. Under that definition, AT&T and all local exchange carriers are deemed dominant carriers. Ibid., pp. 8-9.

¹²⁰ New services, defined as those that offer users an additional measure of choice, are outside the price cap structure.

¹²¹ *Price Caps v. Rate of Return Regulation*, Text of Statement by Chairman Dennis R. Patrick before the House Subcommittee on Telecommunications and Finance, July 13, 1988 (Chicago: Commerce Clearing House), para. 23,399.

¹²² NARUC, *Comment on FCC Price Cap Proposal*, in 1988 Report of the Administrative Director on Litigation, pp. 154-156. NARUC has noted the same flaws in the FCC price cap proposal for interstate access services. See FCC, "Reply Comments of the National Association of Regulatory Utility Commissioners," in the Matter of Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313.

¹²³ Ibid., p. 159, note 32.

¹²⁴ Correspondence from Kathleen Oleinyk, District Manager, Eastern Region, AT&T, May 24, 1989.

¹²⁵ Vermont Office of Policy Research and Coordination, *New Opportunities, New Challenges. First Report and Recommendations of the Vermont Telecommunications Commission* (Montpelier: January 1986), p. 35. For an explanation of the Vermont situation, see note 29 of that report.

¹²⁶ Ibid., pp. 31-32.

¹²⁷ "Basic exchange telecommunications service" is defined as the provision of publicly switched, voice grade interactive telecommunications services between or among two or more end-users, where a single central office provides that service. 30 Vermont Statutes Annotated, Sec. 226 (a).

¹²⁸ Ibid.

¹²⁹ Phone conversation with Michael H. Dworkin, General Counsel, Public Service Board, January 12, 1989.

¹³⁰ California Public Utilities Commission, (L.) 85-11-013 (1985).

¹³¹ See *ibid.*

¹³² California Public Utilities Commission, (D.) 87-07-017 (1987).

¹³³ See California Public Utilities Commission, Decision 88-12-091, December 19, 1988, pp. 3-4.

¹³⁴ One of the commission-ordered modifications sets a maximum/minimum limit of +/- 15 percent on all rate bands. The

- commission approved all of the proposed rate bands that fell within this limit.
- ¹³⁵ California Public Utilities Commission, Decision 88-12-091, December 19, 1988.
- ¹³⁶ In late 1989, New York Telephone expressed dissatisfaction with the rate moratorium and sought modification to the plan, including a return to rate of return regulation, at least until a new and broader incentive program is negotiated.
- ¹³⁷ North Dakota Century Code, Chapter 49-21.
- ¹³⁸ For telecommunication companies with more than 50,000 subscribers, the election is a one-time, irrevocable decision. Other telecommunications companies face no such constraint.
- ¹³⁹ See, for example, *National Association of Regulatory Utility Commissioners v. FCC* (NARUC I) 525 F.2d 630 (1976), *cert. denied*, 425 U.S. 992 (1976); *North Carolina Utilities Commission v. FCC* (NCUC I), 537 F.2d 787 (1976), *cert. denied*, 429 U.S. 1027 (1976). But see *National Association of Regulatory Utility Commissioners v. FCC* (NARUC II), 533 F.2d 601 (1976).
- ¹⁴⁰ See, for example, *NARUC v. FCC* (Inside Wire), Case No. 86-1678, D.C. Circuit Court of Appeals, decided July 7, 1989.
- ¹⁴¹ 106 S. Ct. 1890 (1986). See also John Kincaid, "The State of American Federalism—1986," *Publius: The Journal of Federalism* 17 (Summer 1987): 15-16.
- ¹⁴² Chief Justice Warren E. Burger and Justice Harry A. Blackmun dissented. Justices Lewis F. Powell, Jr., and Sandra Day O'Connor did not take part in the decision.
- ¹⁴³ *Ibid.*, p. 1901.
- ¹⁴⁴ *Ibid.*
- ¹⁴⁵ *NARUC et al. v. FCC*, No. 86-1678, (D.C.Cir.)
- ¹⁴⁶ *People of the State of California et al. v. FCC*, Nos. 87-7230, 7233, 7265, 7361, 7362, 7441, 7451, (9th Cir.), 1990 U.S. App. Lexis 8930.
- ¹⁴⁷ The public switched network refers to the "partnership" among AT&T and other common carriers (e.g., MCI and Sprint) as well as the local operating companies (Bell Operating Companies and independent companies), which allows them to interconnect through switches the parts of the nationwide network owned by different entities.
- ¹⁴⁸ *Public Utility Commission of Texas v. FCC*, Nos. 88-1274, 88-1287, 88-1294, (D.C. Cir.)
- ¹⁴⁹ *Uniform System of Accounts*, 89 FCC 2d 1094, 1095.
- ¹⁵⁰ *Ibid.*, p. 1097.
- ¹⁵¹ *Detariffing Order*, 51 *Federal Register* 8498 (J.A. 473). FCC had considered the possibility of detariffing inside wiring earlier, in a 1985 *Further Notice of Proposed Rulemaking*, 50 *Federal Register* 13991 (J.A. 323).
- ¹⁵² Brief for Federal Communications Commission in the United States Court of Appeals for the District of Columbia Circuit, No. 86-1678, p. 15 (November 1988).
- ¹⁵³ *Ibid.*, p. 24.
- ¹⁵⁴ Concurring statement of Commissioner Dennis Patrick, 1 FCC Rcd. at 1200. In footnote 4 in the Louisiana Public Service case, the Supreme Court appeared to affirm the continuing validity of the NCUC I and II opinions, at least insofar as the facts in those cases demonstrated that it was "not possible to separate the interstate and intrastate components of the asserted FCC regulation."
- ¹⁵⁵ 77 FCC 2d 384 (1980), *aff'd* *CCIA v. FCC*, 693 F.2d 198 (1982), *cert. denied*, 461 U.S. 938 (1983).
- ¹⁵⁶ Computer II Final Decision, 77 FCC 2d p. 55.
- ¹⁵⁷ Cross-subsidization occurs when a carrier misattributes costs incurred in the provision of unregulated services to the provision of regulated services. The misattribution of costs results in the carriers's monopoly ratepayers bearing a part of the cost of unregulated services.
- ¹⁵⁸ In telecommunications jargon, the equal access plan is labeled "comparably efficient interconnection" (CEI). To gain maximum regulatory freedom from the requirement of structural separation, a telephone company must file an approved "open network architecture" (ONA) plan. ONA compels the use of CEI concepts in the overall design of the basic network.
- ¹⁵⁹ The FCC argued on appeal that its preemption of state regulation of enhanced services was merely a reaffirmation of its previous order in Computer II (Computer II Final Decision, 77 FCC2d at 431-35), which had been upheld by the D.C. Circuit Court of Appeals (*CCIA v. FCC*, 693 F.2d 198, 1982; *cert. denied*, 434 U.S. 903, 1977).
- ¹⁶⁰ U.S. Circuit Court of Appeals for the Ninth Circuit, Nos. 87-7230, 87-7233, 87-7361, 87-7362, 87-7441, 87-7451; June 6, 1990, 1990 U.S. App. Lexis 8930.
- ¹⁶¹ *Ibid.*, page 43.
- ¹⁶² The so-called "impossibility" exception arises out of footnote 4 of the Louisiana Public Service case in which the Supreme Court indicated that it might uphold federal preemption of state regulation of admittedly intrastate activities if the contested state regulation cannot feasibly coexist with the federal scheme; e.g., if "it were not possible to separate the interstate and intrastate components of the asserted FCC regulation." 476 U.S. 375, n. 4.
- ¹⁶³ U.S. Circuit Court of Appeals for the Ninth Circuit, Nos. 87-7230, 87-7233, 87-7361, 87-7362, 87-7441, 87-7451; June 6, 1990, 1990 U.S. App. Lexis 8930, p. 77.
- ¹⁶⁴ FCC, *Memorandum Opinion and Order*, 3 FCC Rcd. No. 11, p. 3091, January 1988.
- ¹⁶⁵ A PBX consists of common equipment—a switchboard or switching equipment, remotely located station equipment (i.e., telephones), and wiring connecting the two.
- ¹⁶⁶ Accordingly, ARCO directed Southwestern Bell to connect 81 trunks to the microwave site in Dallas and to assign 2,000 telephone numbers having a Dallas prefix. At the same time, ARCO instructed GTE Southwest to remove most of the 73 trunks between the GTE central office and the ARCO PBX and to discontinue assignment of all 1,600 numbers having a Plano prefix. See Joint Brief of Petitioners, In the United States Court of Appeals for the District of Columbia, *PUC of Texas v. FCC*, Nos. 88-1274, 88-1287 and 88-1294, pp. 4-5 (December 1988).
- ¹⁶⁷ FCC, *Memorandum Opinion and Order*, 3 FCC Rcd. No. 11 (January, 1988).
- ¹⁶⁸ *Ibid.*, p. 3090. The test is from *Hush-A-Phone v. U.S.*, 238 F.2d 266 (1956).
- ¹⁶⁹ 3 FCC Rcd., p. 3092.
- ¹⁷⁰ ARCO had raised a question about the quality of service it was receiving from GTE Southwest. Yet, the company did not use the state's statutorily defined method to deal with service problems. Under Section 61 (1) of Article VII of the Texas Act, the Commission can order a public utility to provide specified improvements in its service in a defined area, if service in such area is inadequate or is substantially inferior to service in a comparable area and it is reasonable to require the company to provide such improved service. Article VII also allows a carrier to apply for a certificate outside its designated area. Such an application will be granted if the Texas PUC determines that the requested certificate is necessary for the service, accommodation, convenience, or safety of the public.
- ¹⁷¹ *Public Utility Commission of Texas v. FCC et al.*, No. 88-1274, D.C.Cir., September 22, 1989.
- ¹⁷² U.S. Department of Labor, Bureau of Labor Statistics, CPI Detailed Report, cited in Kahn and Shew, "Current Issues in Telecommunications Regulation: Pricing," pp. 191, 196.
- ¹⁷³ FCC Monitoring Report, CC Docket 87-339, July 1989.

- ¹⁷⁴ Horwitz, *The Irony of Regulatory Reform*, p. 274, citing 1984 AT&T statistics.
- ¹⁷⁵ According to a recent article in the *Wall Street Journal*, consumers will find little benefit in the long-distance rate reductions, which were skewed heavily toward reducing the cost of long-distance calls during business hours. Robert Daniels and Sanford Jacobs, "AT&T Makes Cuts in Rates Deeper than Proposed," *Wall Street Journal*, April 3, 1989.
- ¹⁷⁶ Providers of alternative operator services resell long-distance service for operator-assisted calls. These providers package the resale of toll with the operator assistance function, which they provide themselves. These firms contract with institutions, such as hotels and hospitals, where large volumes of demand for operator assisted calls are concentrated. When a hotel or a hospital has a contract with an AOS provider to carry all of its operator-assisted traffic, the customers or patients may have no alternative means of carrier selection. These captive users are thus vulnerable to high rates and poor service.
- ¹⁷⁷ Donald A. Dillman and Donald M. Beck, "Information Technologies and Rural Development in the 1990s," *The Journal of State Government* 61 (1988): 33.
- ¹⁷⁸ Estimates of multiparty line usage from data provided by the United States Telephone Association and the Rural Electrification Administration indicate that from 1984 to 1987, the number of multiparty lines has declined from 4.2 million to 3.1 million. According to these estimates, multiparty lines represent approximately 2.5 percent of all lines nationwide. Edwin B. Parker, Heather E. Hudson, Don A. Dillman, Andrew D. Roscoe, *Rural America in the Information Age: Telecommunications Policy for Rural Development* (Colorado, Aspen Institute and University Press, 1989), pp. 69-70.
- ¹⁷⁹ Don A. Dillman, Lesli P. Scott, and John Allen, "Telecommunications in Washington: A Statewide Survey" (1988).
- ¹⁸⁰ Washington Utilities and Transportation Commission, "1989 Report on the Status of the Washington Telecommunications Industry," Vol. II, p. 41.
- ¹⁸¹ Enhanced 911 features include automatic identification of the phone number and location of the calling party.
- ¹⁸² Washington Utilities and Transportation Commission, "1989 Report on the Status of the Washington Telecommunications Industry," Vol. II, p. 11.
- ¹⁸³ Rural areas, too, are beginning to address the problem of how to assure that their residents have access to high quality telecommunications systems. For example, in a recent report entitled "Telecommunications Opportunities for Bloomsburg," the town of Bloomsburg, Pennsylvania, made several recommendations for upgraded services intended to attract back office services of large companies and information intensive operations in education, management, consulting, and similar fields. The authors of the report also noted that a high quality telecommunications system would increase the educational opportunities of Bloomsburg residents, including the development of relationships with Asian and European educational institutions.
- ¹⁸⁴ "The Intelligent Network Task Force Report," October 1987, p. 31.
- ¹⁸⁵ Eli M. Noam, "The Past Five Years and the Next Five Years: A Look at the Post-Divestiture Network and the Next Regulatory Agenda," paper presented at the Annual Regulatory Conference at Williamsburg, Virginia, p. 19.
- ¹⁸⁶ *Ibid.*
- ¹⁸⁷ Case 88-C-004.
- ¹⁸⁸ NY PSC, Order Directing ISDN Trial, Case No. 88-C-196.
- ¹⁸⁹ Opinion No. 89-12, Case 29469.
- ¹⁹⁰ *Ibid.*, p. 25.
- ¹⁹¹ Eli M. Noam, "Beyond ONA: Designing a Modular Network as a Strategy for National Competitiveness," Discussion Paper, May 1989.
- ¹⁹² Stephen S. Cohen and John Zysman, *Manufacturing Matters: The Myth of the Post-Industrial Economy* (New York: Basic Books, 1987), p. 180.
- ¹⁹³ *Ibid.*
- ¹⁹⁴ *Ibid.*, p. 190.
- ¹⁹⁵ 47 U.S.C. sec. 521 et. seq.
- ¹⁹⁶ 47 CFR 63.01.
- ¹⁹⁷ For a detailed discussion of the technical, legal, and regulatory issues involved in IBN, see Robert M. Pepper, *Through the Looking Glass: Integrated Broadband Networks, Regulatory Policies, and Institutional Change* (Washington, DC: Federal Communications Commission, Office of Plans and Policy, 1988). Working Paper No. 24.
- ¹⁹⁸ Congressional Budget Office, *The Changing Telephone Industry: Access Charges, Universal Service, and Local Rates* (Washington, DC: CBO, June 1984), pp. 12-13.
- ¹⁹⁹ Telephone conversation with Cindy Schonhaut, FCC Special Council for Joint Board Matters, July 5, 1989.
- ²⁰⁰ Telephone conversation with Ron Choura, Special Assistant to the Michigan Public Service Commission and Chief of Staff for Joint Board staff, July 5, 1989.
- ²⁰¹ FCC Memorandum Opinion and Order, In the Matter of Filing and Review of Open Network Architecture Plans, CC Docket No. 88-2, p. 112, Released December 22, 1988.

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