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Calendar No. 67

102D CONGRESS *1st Session*	SENATE	REPORT 102-41

TELECOMMUNICATIONS EQUIPMENT RESEARCH AND MANUFACTURING COMPETITION ACT OF 1991

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

OF THE

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

TOGETHER WITH

ADDITIONAL AND MINORITY VIEWS

ON

S. 173



APRIL 19, 1991.—Ordered to be printed
Filed under authority of the order of the Senate of April 18 (legislative day, April 9), 1991

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Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

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[To accompany S. 173]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 173) to permit the Bell Telephone Companies to conduct research on, design, and manufacture telecommunications equipment, and for other purposes, having considered the same, reports favorably thereon with amendments and recommends that the bill as amended do pass.

PURPOSE OF BILL

The purpose of the bill, S. 173, as reported, is to permit the Bell Telephone Companies to manufacture and provide communications equipment, subject to regulatory safeguards. The bill is intended to promote U.S. competitiveness in global telecommunications markets, stimulate employment opportunities, and preserve U.S. leadership in developing innovative telecommunications technologies. The bill includes a provision that requires the BOCs to conduct all their manufacturing in the United States. The safeguards are intended to protect the ratepayer and competition against possible abuse.

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BACKGROUND AND NEEDS

ORIGIN AND HISTORY OF THE MANUFACTURING RESTRICTION

Events Leading to the AT&T Consent Decree

1. History of concern over AT&T's monopoly

For most of this century, AT&T was a horizontal and vertical monopoly. AT&T Long Lines provided the only long distance telephone service throughout the country; AT&T owned 22 BOCs, which provided the only local telephone service to 80 percent of the nation's population; AT&T owned Western Electric, which manufactured almost all the equipment needed for the operation of the telephone network; and AT&T owned Bell Laboratories (Bell Labs), which conducted the most extensive research involving high technologies and telecommunications of any research center in the world. AT&T was not just the world's largest provider of telephone service, it was also the largest corporation in the world.

The strength of AT&T's monopoly and AT&T's attempts to extend this monopoly into other businesses, were, until recently, a constant concern of U.S. policymakers. The government has made several attempts to control AT&T through antitrust actions and by regulation. In 1913, the Department of Justice (DOJ) pressured AT&T into agreeing not to purchase any more competing telephone companies. AT&T also agreed to allow competing telephone companies to interconnect with the AT&T network. This agreement also required AT&T to sell its shares in Western Union, the monopoly provider of telegraph service in the country, which AT&T had recently purchased.[1]

In the 1920s, the Government forced AT&T to relinquish its ownership of movie theaters, again based on antitrust law principles. Congress passed the Communications Act of 1934 (the 1934 Act) and created the Federal Communications Commission (FCC) to regulate AT&T's provision of telephone service on an ongoing basis.[2] AT&T, in part, welcomed this legislation, hoping that it would forestall any future antitrust actions against it.

2. The antitrust case of 1949

In 1949, the Federal Government filed another antitrust action against AT&T, alleging that AT&T had abused its control over the telephone network to discriminate against competitive manufacturers of telephone equipment.[3] The government contended that AT&T had purchased all its equipment needs from its Western Electric subsidiary regardless of the price or quality of that equipment. Since AT&T and its affiliated Bell Companies purchased as much as 75 percent of the telephone equipment sold in the country, competing manufacturers had little opportunity to find a market for their products. The DOJ suit sought to separate Western Electric from AT&T's telephone services business and to bar AT&T

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[1] *United States* v. *AT&T*, No. 6082, U.S. Dist. Ct., Dist. of Oregon, *Original Petition*, July 24, 1913; Nathan C. Kingsbury to James C. McReynolds, December 19, 1913; *United States* v. *AT&T*, No. 6082 (D. Or. 1914) (Decree).

[2] 47 U.S.C. 151, et seq.

[3] *United States* v. *Western Electric*, No. 17-49 (D.N.J. 1949).

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from engaging in any future telephone manufacturing activity. That suit was settled in 1956. The agreement required no structural change in AT&T's operations, but it did bar AT&T from participating in the emerging computer and data processing businesses.[4]

3. The growth of competition and the origins of the 1974 antitrust case

Beginning in the 1960s and continuing into the 1970s, the FCC and the courts introduced greater competition to AT&T's monopoly businesses. In 1968, over AT&T's objection, the FCC ordered AT&T to permit customers to attach non-Western Electric telephone equipment to the telephone network.[5] Three years later, the FCC also issued an order permitting "specialized" common carriers, such as MCI, to compete with AT&T in the provision of certain long distance services.[6] The courts subsequently upheld these decisions and further recognized the right of long distance companies to compete against the full range of AT&T's long distance services.[7]

AT&T's new equipment and long distance competitors, however, soon found that permission to compete was not enough to overcome AT&T's market power. The competitors complained that AT&T was using its control over the monopoly local telephone carriers to discriminate against them and prevent them from gaining a foothold in their markets.[8] For instance, the long distance competitors alleged that the BOCs would not give the competitors the same quality connections to the local telephone company that the BOCs gave to AT&T. The equipment manufacturers alleged that AT&T and the BOCs would not purchase equipment made by companies other than Western Electric. The DOJ found merit in these complaints and filed another antitrust suit against AT&T in 1974, alleging harm to both the long distance and manufacturing market.

4. Rationale for the antitrust action regarding AT&T's manufacturing activities

With regard to the telephone manufacturing market, the DOJ alleged that AT&T, through its ownership of the BOCs, engaged in three unlawful activities: (1) AT&T and the BOCs purchased all of their telephone equipment for their long distance and local networks from Western Electric, regardless of the relative price or

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[4] *United States* v. *Western Electric Co.*, CA No. 17-49, Final Judgment, 1956 Trade Cas. 68,246 (D.N.J. 1956).

[5] FCC Docket 16942, adopted June 26, 1968, 13 FCC 2d 420 ("Carterfone" decision).

[6] *First Report and Order*, FCC Docket 18920, "Specialized Common Carriers," June 3, 1971, 29 FCC 2d 870, *aff'd sub nom. Wash. Util. & Trans. Comm'n* v. *FCC*, 513 F.2d 1142 (9th Cir. 1975), *cert. denied*, 423 U.S. 836 (1975) (Specialized Common Carrier decision).

[7] *MCI* v. *FCC*, No. 75-1635, 561 F.2d 365 (D.C.Cir.), *cert. denied*, 434 U.S. 1040 (1978) ("Execunet" decision).

[8] To reach a customer, also known as an "end user", all telecommunications service providers, including long distance companies and information service companies, must almost always connect with the local telephone network. While there are a few companies offering competitive "bypass" services to business customers in some major cities, it is virtually impossible for competitors to duplicate the millions of miles of copper cable strung beneath the street and on telephone poles that are controlled by the telephone companies. Because the competitors had no alternative other than to connect their lines to the local Bell Companies in order to reach their customers, the competitors argued that the BOCs exercised "bottleneck" control over the quality of the competitors' services.

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quality of that equipment; [9] (2) AT&T subsidized its equipment manufacturing activities with revenues earned from its telephone service businesses, thereby forcing telephone service customers to pay higher telephone rates than necessary and allowing Western Electric to sell equipment below its actual costs of manufacturing that equipment; and (3) AT&T manipulated the design of its telephone network so that only equipment manufactured by Western Electric would be compatible with the telephone network.

5. The court proceedings

After several years of pre-trial procedures, the DOJ began presenting its case in 1981. Later that year, the Federal court judge administering the case, Judge Harold Greene, ruled that the DOJ had presented sufficient evidence of antitrust activity to satisfy its initial burden of proof. The Judge thus denied AT&T's request to dismiss the case and ordered AT&T to present its defense. About three weeks before the trial was to conclude, however, the DOJ and AT&T came to a settlement agreement. Judge Greene accepted the agreement, with several alterations, on August 24, 1982.

6. The Consent Decree

The settlement agreement is today known as the "Modification of Final Judgment" (MFJ) or the "AT&T Consent Decree." [10] The parties agreed to separate AT&T's competitive businesses (long distance and manufacturing) from its monopoly services (local exchange telephone service). AT&T agreed to divest itself of any ownership interest in the 22 BOCs, and the DOJ agreed to allow AT&T to retain its long distance operations, its Western Electric manufacturing subsidiary and its Bell Labs research facilities. In exchange for relinquishing the BOCs, AT&T received the DOJ's commitment that it would ask the courts to lift the restriction in the 1956 decree that barred AT&T from participating in the computer and data processing markets.

The DOJ remained concerned, however, that the BOCs would retain their dominance over local telephone service after their divestiture from AT&T. The parties thus agreed to restrict the lines of business that the BOCs would be allowed to enter. The parties agreed to bar the BOCs permanently from providing information services and long distance telephone services and from manufacturing and providing telephone equipment.[11] In addition, another provision of the agreement restricted the BOCs to providing only local telephone exchange services. AT&T and the DOJ believed these restrictions were necessary to prevent the BOCs from leveraging their dominance over local telephone service to gain an unfair advantage over participants in competitive markets.[12]

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[9] Since AT&T purchased up to 75 percent of the telephone equipment in the country, there was little opportunity for competing manufacturers to sell their equipment elsewhere if AT&T was not a buyer.

[10] The "Modification of Final Judgment" modifies the Final Judgment that concluded the government's earlier antitrust action begun in 1949 and settled in 1956. *United States* v. *Western Electric Company*, 552 F.Supp. 131 (D.D.C. 1982), *aff'd sub nom.*, *Maryland* v. *United States*, 460 U.S. 1001 (1983).

[11] These are known as the three "line of business" restrictions.

[12] The BOCs also were required to provide "equal access" to all long distance carriers. This means that the BOCs are obliged to make available to all long distance companies the same quality access to the customer that they provide to AT&T.

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Pursuant to the Tunney Act,[13] Judge Green took extensive comment on the proposed settlement agreement to determine whether it was supported by the evidence introduced at trial and consistent with the public interest. After his review, Judge Greene suggested several changes. For instance, he directed the parties to change the terms of the decree to permit the BOCs to publish and distribute "Yellow Pages" directories. While he accepted the ban on the BOCs' provision and manufacture of telecommunications equipment, he permitted the BOCs to provide (but not manufacture) "customer premises equipment".[14] He allowed the BOCs to apply for waivers of the three "line of business" restrictions and accepted the DOJ's commitment to report to the court every three years after the decree on the continued need for these restrictions. The Judge also established a standard, discussed in more detail below, for determining when the restrictions could be lifted entirely.[15] Finally, the Judge retained jurisdiction over the decree to consider waivers to the restrictions and to the decree in general.

Enforcement and Interpretations of the Decree

1. The Plan of Reorganization

The Consent Decree, accepted by the court in August 1982, provided that the divestiture by AT&T of its Bell Companies would take effect on January 1, 1984. To comply with this deadline, AT&T submitted to the DOJ and then to the court a detailed "Plan of Reorganization" that set forth a plan for dividing its assets between itself and the BOCs. Since the vast majority of the investment in the Bell System consisted of wires and switches used for local service, AT&T relinquished almost three-quarters of its assets ($112 billion out of $155 billion).

The 22 Bell Companies were organized into seven Regional Bell Operating Companies (RBOCs) or Regional Holding Companies (RHCs), each of similar size in terms of assets and revenues, but not in terms of geographic area.[16] Each of the RBOCs was roughly equal in size at that time to the largest independent telephone company, the General Telephone and Electric Company (GTE).

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[13] Antitrust Procedures and Penalties Act, 15 U.S.C. 16(b)-(f) (hereinafter referred to as the Tunney Act).

[14] The decree defines two types of telephone equipment: "telecommunications equipment" refers to equipment used in the telephone network and includes central office switches and transmission equipment such as fiber optic cable; "customer premises equipment" (or "CPE") refers to equipment used at the customer's location and includes telephones and telephone switches installed by businesses on their premises. For purposes of convenience, telecommunications equipment and CPE will be referred collectively to as "communications equipment".

[15] This standard essentially permits the BOCs to enter the three prohibited lines of business when there is significant competition to their local exchange services or when there are other reasons for believing that the BOCs could not harm competition in the market they seek to enter.

[16] The seven RBOCs, and the BOCs they control, are as follows: NYNEX Corp. (including New England Telephone Company and the New York Telephone Company, the Bell Telephone Company of Pennsylvania; the Diamond State Telephone Company, and the Chesapeake and Potomac Telephone Companies of Washington, D.C., Virginia, Maryland, and West Virginia); BellSouth Corp. (including Southern Bell Telephone and Telegraph Co. and South Central Bell Telephone Co.); Ameritech Corp. (including Ohio Bell Telephone Co., Michigan Bell Telephone Co., Indiana Bell Telephone Co., Illinois Bell Telephone Co., and Wisconsin Telephone Co.); US West Corp. (including Northwestern Bell Telephone Co., the Mountain States Telephone and Telegraph Co., and Pacific Northwest Bell Telephone Co.); Pacific Telesis Corp. (including Pacific Bell Telephone and Telegraph Co. and Bell Telephone Company of Nevada); and Southwestern Bell (including the Southwestern Bell Telephone Co.).

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2. The waiver process

Shortly after the divestiture took effect on January 1, 1984, several BOCs filed motions requesting waivers of the line of business restrictions. The DOJ noted that the waiver applicants made no attempt to demonstrate that the relevant economic conditions had significantly changed since the divestiture, and the court denied the motions. The court indicated that it would not consider waivers by the BOCs to enter the long distance, information services or manufacturing markets unless the BOCs provided evidence that the risks of anticompetitive conduct had diminished. Judge Greene indicated that waivers to enter other lines of business generally would be easy to obtain, as long as the total revenues from these competitive lines of business did not exceed 10 percent of the BOCs' total revenues.

Judge Greene also set up a procedure to consider future waiver requests. He directed that the BOCs first submit their waiver requests to the DOJ for review, that the DOJ would make a recommendation on those requests, and that the requests would then be forwarded to the court. By January 27, 1987, the BOCs had submitted approximately 160 waivers to the DOJ for review before being submitted to the court. One hundred and three of these had been decided, 30 were pending with the DOJ, and 13 were pending with the court.[17] The court noted at the time that the number of waiver applications was greater than the court initially expected.[18]

3. The First Triennial Review

On February 2, 1987, three years after the divestiture, the DOJ submitted its report and recommendations to the court concerning the continued need for the line of business restrictions. In a fundamental shift from its earlier position, the DOJ recommended complete removal of the restrictions on information services, manufacturing, and the BOCs' entry into other, non-telecommunications lines of business. The DOJ further recommended that the long distance restriction be modified substantially to permit each BOC to provide long distance service outside of the region in which it provides local telephone service.[19] The DOJ also submitted a lengthy study of the telecommunications marketplace prepared under contract by Dr. Peter Huber (known as the "Huber Report") to support its recommendations.

a. The DOJ's Views on Manufacturing.—Regarding the manufacturing restriction,[20] the DOJ argued that several changes had oc-

[17] As of that date, only one waiver request supported by the DOJ had been denied. "Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment", Civil Action No. 82-0192, p. 25.

[18] *See, United States* v. *Western Elec. Co.*, 592 F.Supp. 846, 858 (D.D.C. 1984), *appeal dismissed*, 777 F.2d 23 (D.C. Cir. 1985).

[19] DOJ altered this recommendation by suggesting that the restriction on long distance should be retained but that the court should entertain requests for waivers of the restriction as soon as state and local regulations limiting competition in the local exchange market were lifted.

[20] From this point on, unless otherwise noted, the term "manufacturing restriction" will be used to describe the restriction contained in the AT&T Consent Decree that bars the BOCs from manufacturing telecommunications equipment and customer premises equipment and from providing telecommunications equipment.

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curred since 1982 that made it unlikely that the BOCs could engage in any anticompetitive abuse. The most significant change, in the DOJ's view, was the divestiture itself. It argued that one vertically-integrated monopoly had been replaced by eight companies (the seven RBOCs and AT&T). The DOJ pointed out that, whereas the former Bell System purchased about 80 percent of the central office switching and network transmission equipment, "no one BOC accounts for more than a relatively small percentage of the purchases in any equipment market." [21] The DOJ further noted that the markets for communications equipment were competitive and included several vertically-integrated firms, numerous "fringe" firms, and many large foreign firms.

The DOJ found that these market changes were accompanied by regulatory changes that reduced the ability of any BOC to engage in anticompetitive activity. Primary among these regulatory changes was the FCC's adoption of standards governing the interconnection of terminal equipment to the telephone network and rules governing the disclosure of network design information. In addition, the DOJ noted that private national and international interconnection standards also had been promulgated. The DOJ asserted that these standards would prevent the BOCs from designing their network to favor their own equipment manufacturers. Further, the DOJ argued that the FCC had adopted new cost allocation rules that would prevent cross-subsidization. Finally, the DOJ pointed out that the BOCs would remain subject to the antitrust laws even after the manufacturing restriction was lifted and that the DOJ would prohibit any anticompetitive attempt to recreate the old Bell System.

The DOJ further argued that continuing the manufacturing restriction could impose several direct costs on society. According to the DOJ, the manufacturing restriction kept the BOCs from taking advantage of the natural efficiencies between providing telephone service and manufacturing. Such efficiencies include the sharing of joint or common costs, technical and engineering expertise, and especially joint research. The DOJ also noted that the "gray areas" between permitted and impermissible activities (such as between "manufacturing" and "providing" CPE, between designing the telephone network and designing equipment to be used in that network, and between designing generic standards and designing specific products to meet those standards) could result in substantial litigation costs and constitute a drain on judicial resources.

b. The District Court's Opinion.—After taking extensive public comment on the DOJ's recommendations, the court granted the request to remove the restriction on non-telecommunications businesses and modified the restriction on information services. But the court made no change in the long distance or manufacturing restrictions.[22]

The court began its analysis by noting that section VIII(C) of the Consent Decree provides that the restrictions may be removed only

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[21] DOJ Recommendations, p. 161. DOJ noted that Dr. Huber had found that "no single BOC's 'purchasing decisions . . . can have much impact on competition in the market as a whole.'" DOJ Recommendations, p. 162, note 318, quoting Huber, *The Geodesic Network, at 1.16.*

[22] 673 F. Supp. 525 (D.D.C. 1987).

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if the BOCs demonstrate that "there is no substantial possibility that they could use their monopoly powers to impede competition in the markets they seek to enter". The court explained that this standard imposes a burden on the BOCs to demonstrate that unforeseen changes have occurred that warrant the removal of the restrictions.

The court found that the three changes claimed by the BOCs were not sufficient to satisfy this burden. First, it found that the BOCs still controlled a monopoly over local telephone service. Second, it found that the divestiture was not a relevant change for two reasons: the parties knew that AT&T would be separated into eight separate companies at the time that they agreed to the line of business restrictions; and also, despite being separated, the BOCs collectively remained about equal to the old Bell System in terms of their monopoly power. Third, the court found that FCC regulation was actually less stringent than it was prior to the divestiture due to the FCC's loss of staff and its shift toward a more deregulatory philosophy.

Regarding manufacturing, the court found that no changes had occurred in the previous three years that warranted removal of the restriction. It found:

> (1) the Regional Companies still have an ironclad hold on the local exchanges; (2) collectively they account for the purchases of what may be estimated at seventy percent of the national output of telecommunications equipment, only slightly less than the share of the pre-divestiture Bell System; (3) if the restriction were lifted, the Regional Companies may be expected to act as did the Bell System: they would buy all, or almost all, of their equipment requirements from their own manufacturing units rather than from outsiders; (4) no measures, regulatory or otherwise, are available effectively to counteract such activities; and (5) in short order following removal of the restriction, a return to the monopolistic, anticompetitive character of the telecommunications equipment market would be likely, if not inevitable.[23]

c. The Circuit Court of Appeals Decision.—The BOCs appealed this decision. On appeal, the U.S. Court of Appeals for the District of Columbia Circuit upheld the District Court's finding that the BOCs had not carried their burden of proving why the restrictions should be lifted. The Circuit Court thus affirmed the District Court's decision.[24]

Regarding the manufacture of telecommunications equipment, the Circuit Court found that the District Court had properly relied upon DOJ admissions that (1) the BOCs would likely purchase sub-

[23] 673 F.Supp. 525, at 573 (D.D.C. 1987).

[24] *United States* v. *Western Electric*, Slip Opinion, No. 87-5388 (April 3, 1990). The Circuit Court also upheld the District Court's refusal to lift the ban on long distance services but remanded the District Court's decision not to lift the restriction on information services. The Circuit Court held that the District Court had applied the wrong standard to review the information services restriction and remanded to the District Court the issue of whether the information services restriction should remain in effect under the correct standard. The Supreme Court declined to review the ruling (cert denied, *MCI Communications Corp.* v. *United States*, 59 U.S.L.W. 3273 (October 9, 1990)).

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stantially all of their equipment requirements from their manufacturing affiliates regardless of price or quality, thereby foreclosing some "substantial portion (5–15 percent) of the equipment market", and (2) that the BOCs would possess both the incentive *and the ability* to cross-subsidize, at least somewhat." (emphasis in original).[25] The Circuit Court determined that "it is not enough for the BOCs . . . to show that a significant number of stable competitors will be able to survive BOC entry." [26]

The Circuit Court stated that it was "inclined to think that the question [of whether to lift the ban on manufacturing CPE] is much closer than it was for telecommunications equipment." Since the BOCs petitioned for complete removal of the manufacturing restriction and urged the District Court not to separate telecommunications equipment from CPE, however, the Circuit Court found that the BOCs had failed to carry their burden under the section VIII(C) standard.

Despite upholding the District Court, the Circuit Court found fault with the District Court's interpretation of the section VIII(C) standard. Specifically, the Circuit Court found that the District Court had erred in determining that the BOCs were required to show an unforeseen change in circumstances to satisfy the section VIII(C) standard. The Circuit Court said that the divestiture and the practices of the BOCs were significant factors that the District Court could have considered in reviewing the restrictions. Also, the Circuit Court expressly noted that the District Court was not authorized to review the effect of the restrictions on consumers or on U.S. international trade. The Circuit Court emphasized that the District Court could not deny the BOCs' motions "for any other reason not related to the antitrust laws." [27]

4. The Definition of Manufacturing

The Consent Decree does not contain a definition of the term "manufacturing", an omission which created great uncertainty as to the scope of the BOCs' permissible activities. In April 1985, AT&T and several other companies submitted complaints to the DOJ that several BOCs were violating the manufacturing prohibition by engaging in the design and development of telecommunications products. Two years later, after the DOJ refused to act on these complaints, AT&T filed a motion with the District Court seeking a declaratory ruling that the Consent Decree's ban on manufacturing prohibits the "design" and "development" as well as the "fabrication" of equipment. The BOCs opposed the motion, arguing that this expansion definition went beyond the plain meaning of the word "manufacture" and the expectations of the parties in agreeing to the Consent Decree.

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[25] Slip Op., at 44.
[26] Slip Op., at 46.
[27] Slip Op., at 36. The Circuit Court noted that the district court "considered the impact of removing the restrictions on various public polices, including the welfare of local ratepayers, innovation in the manufacturing market, the goal of universal telephone service, first amendment values, and the United States' position in international trade. The District Court explained its discussion of these factors by noting that 'the same standards may be applied in proceedings addressing continued viability of the restrictions as were used in determining whether the restrictions were to be imposed in the first place.' 673 F.Supp. at 583. We disagree." Slip Op., at 35–36.

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The District Court granted AT&T's motion.[28] Judge Greene stated that "[t]here is no valid basis for the position that only fabrication is prohibited" by the ban on manufacturing. The court determined that defining "manufacturing" to include "design" and "development" as well as "fabrication" was consistent with the parties' intent at the time the decree was entered. The court noted that AT&T's anticompetitive activities had occurred more during the "design" and "development" phases of manufacturing than during the "fabrication" phase. The Court also clarified that the ban on "design" and "development" extended to the design and development of software integral to communications equipment.

On appeal the U.S. Court of Appeals for the District of Columbia upheld Judge Greene's ruling.[29] The Circuit Court found that the contemporaneous statements of the parties concerning the Consent Decree's objectives left no question that the parties intended to prohibit design and development. The Circuit Court agreed with the District Court that much of the anticompetitive behavior attributed to AT&T involved AT&T's design and development activities, not just its fabrication activities. If permitted to engage in design and development, the Circuit Court speculated, a BOC could see its network information to design unique products, contract out the fabrication work, and then purchase the fabricated items at inflated prices.[30] Finally, the Circuit Court also determined that the District Court's inclusion of software design in the prohibited manufacturing activities was consistent with the court's definition of manufacturing.

THE MANUFACTURING MARKET TODAY

The World Market

The annual world-wide market for communications equipment is now over $120 billion.[31] The U.S. market, at about $33 billion, is by far the largest in the world and is twice the size of the second largest market (the Soviet Union).[32] The North American market as a whole, however, is roughly as large as the European market.[33]

The market for high-technology products (such as central office switches, private branch exchanges (PBXs) and fiber optic transmission equipment) is becoming increasingly concentrated among a few firms. In the past several years, Siemens has purchased Rolm, a manufacturer of PBXs, from IBM; Siemens combined with GEC (a U.K. company) to acquire Plessey in the United Kingdom and Stromberg-Carlsson in the United States; AT&T has entered joint ventures with Philips in the Netherlands and with Italtel in Italy, and has purchased a controlling interest in GTE's manufacturing facilities in the United States; and Ericsson acquired CGCT, a

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[28] *United States* v. *Western Elec. Co.*, 675 F. Supp. 655 (D.D.C. 1987).

[29] *United States* v. *Western Electric*, Slip Opinion, No. 88-5050 (February 2, 1990).

[30] Ironically, the Circuit Court also noted that the parties to the decree intended to include design and development in the definition of manufacturing so as to avoid future legal disputes concerning the BOCs' compliance with the antitrust laws. Slip Op., at 11.

[31] "International Telecommunications", *Financial Times Survey*, July 19, 1989, Section III, p. I.

[32] "Telecommunications Market Review and Forecast: Annual Report of the Telecommunications Industry", 1990 Edition, North American Telecommunications Association (NATA Report).

[33] *Telecommunications Equipment*, The Freedonia Group (1986), in 1988 Telephone Industry Directory and Sourcebook.

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French equipment manufacturer. Experts predict that, by the end of this decade, there will be no more than six major switches manufacturers in the world. This is primarily due to the extremely high research and development costs necessary to remain competitive in this market.[34]

The supplies of "low-end" CPE (telephones, facsimile (fax) machines, cordless telephones, telephone answering machines, etc.) are much more numerous. This market is highly competitive, and the profit margins are low. Manufacturers of this equipment usually locate their manufacturing facilities in areas of the world with low labor costs (such as Mexico and Asia) to remain competitive. Sales of simple voice telephones are growing slowly (about four percent per year) while sales of data equipment (computers, fax and telex machines), mobile equipment (cellular and cordless telephones) and fiber optic equipment are growing quickly (up to 20 percent a year).[35]

Up until 1986, AT&T was the largest manufacturer of communications equipment in the world, supplying about 20 percent of the world's needs.[36] By 1990, AT&T had slipped to second place behind Alcatel of France, with Northern Telecom of Canada close behind AT&T in third. According to data supplied by AT&T, of the top eight international switch manufacturers, only one is an American company, AT&T.

The U.S. Market

1. Trends in the U.S. Market

The U.S. market grew at a rate of about 10 percent a year from 1984 to 1987, but has slowed recently to about a three percent annual growth rate.[37] This growth is being driven by new technologies (such as cellular radios, fax machines, and fiber optic systems) and the conversion from analog to digital transmission modes.

In his report for the DOJ, Dr. Huber noted two "overarching" trends in the equipment markets: "the continued dispersal of equipment consumption, and the steady consolidation of equipment production." [38] He noted that the dispersal of equipment consumption was caused not just by the break-up of AT&T into eight independent companies, but also by the growth of private buyers. He states, for instance, that private buyers and non-telephone company carriers "buy much more equipment in almost every category than any single RBOC".[39]

Regarding the consolidation of equipment production, Dr. Huber noted that AT&T and Northern Telecom supply over 80 percent of the central office switching market in the United States and that the three largest manufacturers supply over 80 percent of fiber

[34] "It will cost between $1 billion to $1.5 billion for each switchmaker to develop the next family of switches. . . . According to Siemens, the world's third-largest switchmaker, a supplier needs at least 15% of the world market. . . . That leaves room for roughly six switchmakers. There are ten." "A Tale of Too Many", *The Economist*, March 10, 1990.

[35] "A Tale of Too Many", *The Economist*, March 10, 1990.

[36] "Dealmakers are Burning Up the Phone Lines," *Business Week*, March 13, 1989, p. 140.

[37] *1991 U.S. Industrial Outlook*, U.S. Department of Commerce, Chapters 30 and 31.

[38] *Huber Report*, at 1.10.

[39] *Huber Report*, at 1.16.

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optic cable, 85 percent of cellular switching systems and 60 percent of PBXs.[40]

For the equipment market as a whole, AT&T is by far the largest supplier of U.S. equipment needs, satisfying about one-third of U.S. demand. AT&T employs about 60,000 people in 25 manufacturing plants throughout the country and employs another 30,000 employees in research, sales, and other manufacturing-related activities. According to AT&T, all the equipment that AT&T sells in the United States is assembled in the United States, except for telephones, which it assembles in Singapore. Many components of AT&T equipment, however, are manufactured overseas. AT&T has an ownership interest in 14 other plants over seas, which employ about 20,000 people and which manufacture equipment for sale in foreign markets.

The amount of equipment supplied by other U.S. suppliers varies depending upon the market segment. For instance, the market for transmission equipment and CPE is scattered among 50–100 firms, each serving particular niches.

Foreign-based manufacturers, however, have made significant inroads in most of the high-technology and high growth products.[41] For instance, Northern Telecom increased its share of the central office switch market by a compounded annual growth rate of 20.3 percent per year from 1984 through 1989, while AT&T's sales increased only 2.3 percent per year.[42] In the exploding market for fax machines, not one of the dozens of suppliers is based in the United States. In the PBX market, AT&T captured 22 perecent of the market in 1988 but was closely followed by Northern Telecom (19 percent), Rolm (recently purchased by Siemens, 16 percent), NEC (8 percent), Mitel (a Canadian-based company recently sold by British Telecom, 8 percent), and Siemens (5 percent).[43]

2. The U.S. Trade Position

The U.S. market is very open to foreign competitors compared to many other nations. The result has been increasing foreign penetration of the U.S. market both in terms of sales and investment. Overall, foreign manufacturers increased their share of the U.S. equipment market from 17 percent in 1984 to 21 percent in 1988.[44]

The U.S. trade balance in communications equipment shifted from a surplus of over $800 million in 1981 to a deficit of about $2.6 billion in 1988. In 1989 and 1990, the U.S. trade deficit improved to $1.9 billion and $772 million, respectively. This improvement, however, resulted partly from accounting changes implemented by the Department of Commerce in 1989 (for example, the inclusion of communications satellites and various types of radio equipment) and partly from softness in the U.S. economy during 1990 that caused U.S. businesses to cut back on their imports of foreign-made products.

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[40] *Huber Report*, at 1.11–1.12.

[41] It should be noted that some of these foreign-based firms, including Northern Telecom and Siemens, have a substantial manufacturing presence in the United States and employ several thousand American workers.

[42] NATA Report, p. 81.

[43] NATA Report, p. 111, Figure 31.

[44] NATA Report, p. 3.

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Despite this improvement in the U.S. trade position, the United States still faced a trade deficit of $2.3 billion in CPE in 1990. The CPE market has been dominated increasingly by foreign suppliers, especially Asian ones. Although there are 16 U.S.-based manufacturers of telephone systems, the combined U.S. market share of these U.S. firms is less than 35 percent.[45]

In network switching equipment, the United States has maintained a trade surplus for several years, including a surplus of $710 million in 1990. Much of this surplus, however, is driven by exports of switches made in the United States by foreign-owned firms. For instance, Northern Telecom (Canada), Siemens (Germany), and GEC (U.K.) all own significant switch manufacturing plants in the United States. Annual foreign investment in the U.S. high technology industries increased from $214 million in 1985 to $3.3 billion in 1988.[46] From 1984 to 1989, 66 different U.S.-based computer and telecommunications equipment companies have been bought by or merged with foreign-based firms. The home country of the acquiring firms and the number of transactions for each are as follows:

Canada	11
Asia:	
Japan	9
Hong Kong	1
Australia	1
Europe:	
Great Britain	21
West Germany	7
Italy	6
France	4
Switzerland	3
The Netherlands	2
Israel	[47] 1

[47] DATABASE: Dun & Bradstreet, Promt, IAD, Securities Data Co. and Salomon Bros.

The United States faced a trade deficit in communications equipment with the five major East Asian countries of $3.5 billion in 1990.[48] The United States had a deficit of $30 million in 1989 with France but had a trade surplus with Europe as a whole.

3. U.S. Resaerch and Development

U.S. firms in the communications industy are spending more on research and development (R&D) than ever before, but U.S. spending on research and development lags behind several other nations in percentage terms. Total U.S. R&D expenditures ($95 billion in 1988) were greater than those of Japan, West Germany, France and Britain combined ($80 billion). However, the United States trails other countries in non-defense R&D when expressed in terms of percentages of Gross National Product (GNP). According to the National Science Foundation, in 1988, the United States spent 1.9

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[45] AT&T pleading before the International Trade Commission (ITC). AT&T recently obtained a ruling from the ITC on its complaint that Japan and Korea had engaged in unlawful dumping of their products in the United States.

[46] In testimony before the Communications Subcommittee, Alfred Sikes, Chairman of the FCC, noted that there had been about $12 billion in purchases of high-technology equipment firms by Japanese companies in the last two years, and that Japanese companies purchased 26 companies during 1989 alone. Transcript of the Hearings Before the Communications Subcommittee, Committee on Commerce, Science, and Transportation, on S. 1981, The Telecommunications Equipment Research and Manufacturing Competition Act, May 9, 1990, pp. 18-19.

[48] *U.S. Telecommunications Trade in 1990*, International Trade Administration, Department of Commerce.

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percent, Japan 2.9 percent, and West Germany 2.7 percent of their respective GNPs on R&D.[49]

AT&T's R&D budget has grown an average of only 3 percent per year since the divestiture, from $2 billion in 1983 to approximately $2.4 billion in 1990 (about 5 percent of total revenues). Nevertheless, AT&T devotes more resources to communications equipment R&D than any other U.S. communications equipment manufacturer.

The BOCs' R&D budgets also lag behind the typical R&D expenditures of other firms, especially high-technology firms. The BOCs spent over $1 billion in R&D activities in 1990, including research done at Bell Communications Research (Bellcore) and at the BOCs' own independent research facilities.[50] However this represented only 1.3 percent of their revenues in 1988 and 1989. This is less than one-half the average of all U.S. industry (3.4 percent) and much less than the average for the typical telecommunications and computer firms (average 6 percent to 10 percent).

A a result, the growth in U.S. spending on research and development falls far short of our international competitors. When combined, the total R&D budget for AT&T and the BOCs is only about 70 percent larger than AT&T R&D budget before divestiture, a growth rate of about 9 percent per year. By contrast, between 1982 and 1989, Japan's six leading manufacturers of computers, communications and electronics increased their annual outlays on R&D from $2.5 billion to $11.3 billion, or an average compounded rate of nearly 24 percent per year.[51] Similarly, between 1985 and 1988, the five leading high technology manufacturers in Europe increased their annual investment in R&D from nearly $4 billion to $7.1 billion, an average annual growth rate of about 22 percent.[52]

REASONS FOR REPLACING THE MANUFACTURING RESTRICTION WITH REGULATORY SAFEGUARDS

The Congress and the FCC, not the federal courts, should be setting telecommunications policy

Because of the unusual nature of the AT&T Consent Decree, a federal judge is now responsible for regulating a huge portion of the U.S. communications industry. The BOCs alone control over one-half the communications assets in this country and earn over $80 billion in annual revenues. The BOCs thus have such a strong presence in the industry that their activities inevitably affect the entire communications industry, and the entire economy.[53] Judge Greene's decisions concerning the permissible lines of business that

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[49] National Science Foundation, Division of Science Resource Studies.

[50] Four BOCs have established their own research facilities, NYNEX, Ameritech, US West and Southwestern Bell.

[51] These firms are NEC, Matsushita Electric, Toshiba, Pioneer Electronic, Sony and Hitachi.

[52] These firms are Siemens, Philips, Plessey, Ericsson and Thomson.

[53] In addition, the BOCs employ more than one percent of the total U.S. workforce. They purchase about 50 percent of all telecommunications equipment sold in this country. Further, they serve 80 percent of the country's telephone customers and carry an even greater percentage of actual traffic.

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the BOCs may enter thus have the effect of setting national telecommunications policy.[54]

Judge Greene has acted within the bounds of the law. Judge Greene's responsibilities to oversee the Consent Decree derive directly from an act of Congress. In passing the Tunney Act, Congress specifically directed federal judges to review antitrust settlement decrees to determine whether they would be in the public interest. Judge Greene has shown flexibility in administering the decree, and has often made changes to the decree that have favored the interests of the BOCs.[55]

Nonetheless, there is considerable question whether it is good public policy for a single federal court judge to be exercising such control over the communications industry. As familiar as Judge Greene may be with the issues involved in the Consent Decree, no Federal judge should be responsible for setting federal communications policy. There are several reasons for this conclusion.

(1) The District Court has a small staff compared with the amount of work involved in enforcing the decree. As the Judge himself has admitted, it is taxing for him to resolve all questions related to the decree with a staff of a few clerks at the same time that he handles a full judicial caseload.[56] The BOCs have filed over 200 waiver requests since the decree was entered. The Judge has been required to rule on numerous petitions for clarification and declaratory rulings concerning the terms of the decree. In addition, he is involved in several enforcement proceedings concerning possible violations of the MFJ by the BOCs. The sheer scope of these activities would make it difficult for any single person to devote sufficient time and attention to these issues.

(2) The Consent Decree requires the court to make a number of decisions based on communications economics, technology and marketing. No federal judge can be expected to be an expert on these matters. For instance, the court must make decisions based on the distinction between design of the telephone network and design of equipment that is used in the network, between providing customer equipment and manufac-

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[54] It is interesting to note that, in choosing the top 25 most influential telecommunications leaders in the world in 1988, *Communications Week* listed Judge Greene second, just after Richard Butler, Secretary General of the International Telecommunications Union, and just before Robert Allen, Chairman of AT&T. In 1989, *Communications Week* listed Judge Greene fifth, three places ahead of Alfred Sikes, Chairman of the FCC. In 1990, *Communications Week* again placed the Judge second among the top 25. See, *Communications Week*, October 24, 1988, p. C3; *Communications Week*, November 13, 1989, p. C2; *Communications Week*, October 22, 1990, Special Report, p. 1.

[55] For instance, the Judge refused to accept the DOJ's proposal to make the line of business restrictions permanent (by allowing them to file for waivers and agreeing to review the need for the restrictions every three years), he permitted the BOCs to provide "Yellow Pages" directories and to market CPE, he removed the limitation that barred the BOCs from taking in more than 10 percent of their total revenues from non-communications ventures, and he loosened the information services restriction to permit the BOCs to provide "gateway" functions.

[56] "The enforcement of the AT&T decree by my court is a considerable personal burden, for the work exists on top of a normal judicial caseload, and that burden is rarely accompanied by the opportunity to consider and decide novel or otherwise interesting legal issues that would balance the extra work in an intellectual sense. Yet I have a sworn obligation as a member of the judiciary to enforce laws and judgments even if some of the work is burdensome, or if it is accompanied by criticism from the sidelines by those with an economic or ideological axe to grind. Unless and until the laws are changed, I will carry out my responsibilities." "The Antitrust Laws, Telecommunications, and Consumers", an address by Judge Harold H. Greene, February 5, 1988.

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turing customer equipment,[57] and between engaging in applied research for the issuance of generic product specifications and engaging in the design and development of specific products. Even assuming a rational basis for these rules, any district court judge, with a staff of a few law clerks, would find it extremely difficult to make decisions that must be founded on a detailed understanding of communications technology and markets.

(3) The court is limited to considering antitrust law standards, not "public interest" standards, in making its decisions. As the U.S. Court of Appeals for the D.C. Circuit recently ruled, the District Court may not consider ratepayer concerns or international trade concerns in enforcing or interpreting the decree. Further, federal judges are not directly accountable to the public through the democratic process as are the Congress or the President. The judicial branch was created to act as an independent check on the behavior of the legislative and executive branches of government, not to set policy. This is why the courts are immune from Congressional influence.[58] For the court to attempt to make policy decisions based upon its independent review of the public interest in reaching its decisions is inconsistent with the principles of democratic government set forth in the Constitution.

The Constitution places responsibility for enacting laws and setting U.S. policy with the Congress and the President, not with the judiciary. Only Congress can consider all the relevant factors in deciding whether the BOCs should be permitted to manufacture.

Additionally, to the extent that the Congress has delegated some of this responsibility to the FCC, even the FCC is more qualified to consider the need for these restrictions than is the judiciary. The FCC is the expert agency created by Congress specifically for the purpose of regulating communications to satisfy the "public interest". The FCC is authorized to consider antitrust concerns as well as consumer, trade and competitiveness concerns in enforcing the "public interest" standard contained in the 1934 Act.

The FCC has an extensive staff of professionals, including economists, engineers, lawyers and telephone industry analysts, many with years of experience in regulating the telephone industry. It is responsible for monitoring and regulating the telephone industry, and it has developed sophisticated rules governing the industry's operations. The FCC also has authority to take into account antitrust laws in making its decisions. The Commission staff is trained to understand the technical operations of the telephone network, take into account the principles of antitrust laws, consider the concerns of telephone service ratepayers, and integrate these findings into a decision that represents the "public interest". The reported bill reasserts that the authority for regulating the communications

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[57] The BOCs argued in petitions before the Judge that the process of "providing" CPE permits them to perform research and design engineering. If not allowed to perform such functions, the BOCs argued, they could not market distinctive lines of CPE, as the court intended.

[58] As Chairman Sikes of the FCC pointed out at the Communications Subcommittee May 9th, 1996, hearing, ". . . I would add additionally that if you do not think I am doing a good job, you will not hesitate, I know, to call me up here [to testify]. And I would doubt that Judge Greene has ever been up here [to testify before a Congressional committee]." Hearing Transcript, p. 19.

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industry lies with Congress and the expert agency created to carry out that task.

Lifting the manufacturing restriction will promote the international competitiveness of the United States in high technology industries

The competitive position of the U.S. manufacturing industry is facing a serious challenge.[59] This appears to be especially true in the field of communications equipment manufacturing. There is substantial evidence indicating that the United States has already begun to lose its world leadership position in this market.[60] The amount of funds spent by U.S. companies on research and development is well below the proportional amounts spent by other countries; the United States continues to suffer a trade deficit in communications equipment; foreign firms are increasing their share of the U.S. and world equipment markets; and more U.S. jobs are being moved overseas.

The market for communications equipment is a global one, and several large, foreign-based equipment manufacturers are rapidly consolidating to divide up the world market among them.[61] A large, worldwide market share is becoming increasingly important to the development of new technologies because of the heavy research and development costs that are necessary to develop "state-of-the-art" technology. Unless the United States takes a more active role in permitting its companies to compete fully in these international markets, the United States faces the possibility that it will be shut out of the world market altogether.[62]

Lifting the manufacturing restriction on the BOCs may help the United States reverse the trend in several ways. Because of their intimate knowledge of the communications equipment industry and their tremendous resources, the BOCs may themselves be able to become strong international players. The BOCs' ability to work closely with existing U.S. manufacturers could help these manufacturers grow into strong international players. Lifting the restriction may also stimulate spending on research and development that could spawn new and innovative technologies based in the United States. At a minimum, lifting the restriction will ensure that the United States is not holding back resources that could have a significant impact on the Nation's ability to compete.

The following provides a more detailed explanation of the benefits that can be expected to accrue to the U.S. communications

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[59] *See*, "Paying the Bill: Manufacturing & America's Trade Deficit", Office of Technology Assessment, Congress of the United States, June 1988. This report finds, among other things, that ". . . America's relative decline [in manufacturing] is not just the natural effect of growth in other countries but also reveals a fundamental weakening in our ability to use technology to make things cheaply and well." *Id.*, at 26.

[60] "Comparisons of various measures of technological innovation and productivity in the telecommunications industry suggest a general trend of declining U.S. competitiveness relative to certain of its major trading partners, particularly Japan." "U.S. Telecommunications in a Global Economy: Competitiveness at a Crossroads", A Report from the Secretary of Commerce, August, 1990, (DOC Competitiveness Report), p. 19.

[61] "The telecommunications industry is rapidly becoming as globalized as other major international enterprises, such as the financial services, computer, and movie industries." DOC Competitiveness Report, p. 7.

[62] "American [telecommunications equipment] companies have been losing business in their home market faster than they can gain market share in the rest of the world." DOC Competitiveness Report, p. 9.

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equipment industry as a result of lifting the manufacturing restriction on the BOCs.

1. New and better telecommunications products and services

Perhaps the most important reason for lifting the manufacturing restriction is that allowing the BOCs to enter the manufacturing market will bring tremendous benefits to the American consumer. A sophisticated telecommunications network can reduce the need for travel, speed response time and enhance productivity. Fact, high-capacity telecommunications services are essential for businesses in urban areas to stay on top of the latest developments in world finance. Governments require the best communications systems to keep in touch with world affairs that may have a direct impact upon our national interests. An enhanced telecommunications network will allow rural areas to compete more favorably with their urban counterparts for economic development. Finally, the telecommunications network can bring entertainment, news, computer services, and other services to the consumer's home no matter where the services are located.

The network cannot satisfy these needs if the equipment necessary to provide these services is not available for the network or to the user. Yet the manufacturing restriction poses a significant barrier to the introduction of new equipment to address these needs. Not only can the BOCs not develop or design equipment themselves, they also are limited in their ability to work closely with existing manufacturers to help the manufacturers bring their products to the market.

One example of how the MFJ restriction serves as a barrier to the introduction of new equipment and services results from the artificial distinction between research (which the BOCs are permitted to do) and design and development (which are prohibited). This distinction harms manufacturers that want to manufacture products to work with the telephone network. If a manufacturer tests a piece of equipment on the BOC network, BOC engineers can tell the manufacturer that the product does not work, but they cannot tell the manufacturer why the product does not work or how to fix it. The manufacturer must return to its own shop and try again, with no idea what the problem is. Such a manufacturer must continue in this "trial-and-error" fashion until the manufacturer discovers the problem or abandons the effort completely. Lifting the manufacturing restriction could allow the BOCs to work closely with such a manufacturer to test the product, discover the problems, and work together to find the solutions.

Bringing new services to the consumer requires a sophisticated understanding of both consumer needs and the network's capabilities. The telephone companies are very familiar with these two issues. The BOCs provide telephone service to 80 percent of the nation's population, serving the cities, the suburbs, and the rural areas. They are as close to the telecommunications needs of the public as any company in the telecommunications field, and they understand their network better than anyone else.

Allowing the Bell Companies into manufacturing will permit them to take full advantage of these resources. They will be able to design equipment to meet the needs of their customers. They will

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be able to upgrade their service offerings by manufacturing equipment specifically for the network. The BOCs can integrate their knowledge of the customers' needs and the potential of the network to ensure that the United States operates the highest quality telecommunications network in the world.

Lifting the manufacturing restriction should benefit all citizens, and particularly those persons with disabilities. Congress has reaffirmed consistently that the benefits of new communications technologies are to be made "available, so far as possible, to all the people of the United States".[63] Allowing the BOCs to engage in manufacturing will help to ensure that this mandate is carried out through the generation of products and services specifically designed to meet the needs of handicapped and disabled persons. In entering the manufacturing market, the BOCs should seek to accommodate the alternate access needs of individuals with functional limitations of hearing, vision, movement, manipulation, speech and interpretation of information. The BOCs are encouraged to focus their resources on developing access solutions to the public network for all people, including those with disabilities.

Also, the BOCs have been among the nation's leaders regarding programs to encourage minority participation in procurement. They are encouraged to continue their leadership in promoting opportunities for minority-owned businesses to work with them in the field of manufacturing.

2. Increased investment in the United States by U.S. companies.

The amount of foreign investment in the United States has increased tremendously since the AT&T divestiture. As noted previously foreign manufacturers have purchased or merged with 66 U.S. high-technology firms in the past five years. This trend in foreign investment has increased dramatically over the past three years:

> As recently as 1977, only about 3.5 percent of the value added and the employment of American manufacturing originated in companies controlled by foreign parents. By 1987, the number had grown to almost 8 percent. In just the last two years, with the faster pace of foreign acquisitions and investments, the figure is now almost 11 percent. Foreign-owned companies now employ 3 million Americans, roughly 10 percent of our manufacturing workers. In fact, in 1989, affiliates of foreign manufacturers created more jobs in the United States than American-owned manufacturing companies.[64]

The manufacturing restriction poses a severe limitation on the ability of small manufacturing companies in the United States to find funding from other U.S. manufacturing companies. Currently, entrepreneurs and small, start-up companies cannot go to the BOCs for financing because the MFJ restriction bars the BOCs

[63] 47 U.S.C. 151. *See also*, the Americans with Disabilities Act of 1990 (ADA), Public Law 101-336, 104 Stat. 327, 366-69.

[64] Robert B. Reich, "Who is Us?", *Harvard Business Review*, January-February 1990, p. 55.

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from owning any equity in a manufacturing concern.[65] As one small manufacturer testified at the 1991 hearing on this bill:

> By prohibiting the Bell Companies from engaging in *any* aspect of the telecommunications manufacturing process, the MFJ implicitly restricts the business activities of *every* telecommunications manufacturer in America. . . . Instead, independent telecommunications manufacturers are required by the MFJ to limit their business relationships with the Bell Operating Companies to arms-length dealings. . . .[66]

This manufacturer noted that there are 31 small companies that have indicated their support for allowing the BOCs to participate in the manufacturing process.

Removal of the manufacturing restriction on the BOCs can help to reverse this trend of increasing foreign investment in the United States. Today, entrepreneurs often must turn to foreign-based businesses to find necessary start-up capital. For instance, Centigram Corp. found it necessary to sell a substantial part of its equity to foreign communications companies after the BOCs refused to provide such funding, based on a fear that such funding would violate the manufacturing restriction. Lifting the manufacturing restriction thus could reduce the incentives for small companies to seek funding from abroad and thus slow the growth of foreign investment in the United States.

3. Increased research and development

Research and development are the linchpins of industrial competitiveness. Highly developed research laboratories are one of the key foundations of a healthy and growing industry. For instance, many experts attribute AT&T's former dominance over the telecommunications equipment marketplace to its outstanding research facilities at Bell Labs. The importance of basic research is demonstrated by the U.S. government's willingness to devote significant Federal funds to basic research projects every year.

As discussed above, however, total research and development spending in the United States is in decline relative to U.S. gross national product and lags well behind that of many foreign countries. This trend is particularly apparent in the communications equipment industry. According to the companies' annual reports, the research budgets for AT&T and the BOCs combined have grown at a rate of 9 percent per year since the divestiture, while the principal foreign competitors have increased their R&D expenditures by 19 to 23 percent per year. The BOCs spend about 1.3 percent of their sales revenues on R&D, while the average high technology firm spends between 6 and 10 percent of their revenues on R&D.

The trends in R&D spending have had an impact on the ability of U.S. firms to obtain patents in new telecommunications technol-

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[65] The extent to which a BOC can loan money to a manufacturing entity is unclear, although the court has indicated that any financial relationship between a BOC and a manufacturer may be prohibited.

[66] Testimony of Stuart M. Gibson, III, president and CEO, Concept Communications, Inc. before the Communications Subcommittee, February 28, 1991, p. 2.

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ogies. Between 1980 and 1988, for instance, the percentage of telecommunications patents awarded by the U.S. Patent Office to U.S. inventors fell from 58 percent to 48 percent of the total, whereas the percentage of such patents awarded to Japanese interests rose from 18 percent to 31 percent. In both years, Europeans accounted for the remaining 24 percent of all telecommunications patents awarded in the United States. For example, Sam Ginn, the chairman and CEO of Pacific Telesis Group (one of the seven RBOCs), testified that Germany's Siemens spent 11.2 percent of its sales revenues on R&D, Japan's Fujitsu spent 10.3 percent, and Sweden's Ericsson spent 11.3 percent.[67]

The MFJ restriction discourages the BOCs from conducting such research for several reasons.

(A) If a BOC develops a new technology or product, the manufacturing restriction bars the BOC from manufacturing that product and bringing it to market. Thus a BOC has no incentive to engage in research because its ability to profit from that investment is limited. If the restriction is lifted, the BOCs could develop, design and fabricate a product based upon their research discoveries. The opportunity to make a profit from the manufacture of a product they develop should give the BOCs greater reason to spend more of their resources on research than is currently permissible.

(B) The Court's interpretation of "manufacturing" makes it very difficult for the BOCs to know what research activities are permitted. The court's decision effectively drew a line between R (research) and D (development). This has reduced any efficiencies from conducting joint research and design and development activities and has created substantial uncertainty for the BOCs.[68] For instance, the BOCs may conduct applied research and issue generic product specifications but may not design particular products that meet those specifications. The BOCs also may design software for their telephone network, but may not design software for equipment that is installed in the network. Because of the severe penalties that can apply if the BOCs cross the line into prohibited "manufacturing" activities, the BOCs are discouraged from engaging in any research activities at all.[69]

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[67] Testimony of Sam Ginn, chairman and CEO, Pacific Telesis Group, before the Communications Subcommittee, February 28, 1991, p. 3.

[68] An example of the confusion caused by the court's decision was provided by Mr. Ginn in his testimony. He tertified that the following guidelines are given to each Pacific Telesis employee: "Pacific Telesis may not develop 'firmware' or software integral to the functioning of hardware for customer premise equipment, central office switches, transmission systems or other telecommunications equipment. For example, software generics for stored program controlled central office switches containing algorithms which make the hardware work are considered software integral to the operation of hardware. A Rule of Thumb: Software that is not sold separately from the hardware is probably software integral to the hardware. Warning: Software that is sold separately (e.g. certain switch generic software) may be integral to the operation of the hardware." Testimony of Sam Ginn, Hearing before Communications Subcommittee, February 28, 1991, p. 14.

[69] Bell Atlantic brought this confusion concerning the scope of the manufacturing restriction to light in a 1989 filing with the National Telecommunications and Information Administration (NTIA). Bell Atlantic notes that, after Judge Greene's order interpreting the meaning of the term "manufacturing", it submitted to the court a detailed description of the engineering and software development activities in which it was engaged. The court found that some of these activities "may be forbidden" and might subject Bell Atlantic to an enforcement proceeding.

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Lifting the manufacturing restriction should have a positive effect on the amount of research conducted by the BOCs and by the entire communications industry. There would be no limitations on the research the BOCs may conduct. Lifting the restriction also will allow the BOCs to profit from that research by bringing new products to market. The BOCs' increased spending on research and development, and their ability to coordinate their R&D activities with their operation of the network also, of course, should improve their chances of developing new technologies and acquiring patents.[70]

Further, BOC entry may encourage AT&T and other manufacturers to devote more resources to research in order to stay competitive with the BOCs' manufacturing affiliates. Finally, lifting the manufacturing restriction might allow the United States to shift some of the responsibility and desire to conduct greater research onto private industry and, possibly, reduce the pressure on the United States Treasury to fund such research activities.

4. Improved balance of trade

As described earlier, the U.S. market is very open to foreign competitors, particularly compared to many other nations. Foreign competitors have increased substantially their sales and investment in this country. The U.S. trade deficit, while declining over the past two years, continues to be a source of concern, especially considering that the United States formerly maintained a huge trade surplus in communications equipment.[71] The mounting trade surpluses in telecommunications equipment enjoyed by foreign manufacturers are particularly worrisome because the surpluses have allowed them to underwrite substantially higher levels of R&D spending on communications and related technologies, unmatched by leading U.S. manufacturers and the BOCs.

There is no guarantee that the BOCs' entry into manufacturing will reverse the country's trade deficit. The balance of trade depends upon many factors unrelated to the quality and price of the products produced, such as exchange rates, trade barriers and tariffs, and the telephone network standards in that country, for example. However, permitting the BOCs to enter the market, espe-

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Rather than specifying which activities were potentially in violation of the Decree, the court directed Bell Atlantic to seek guidance from DOJ. In commenting on Bell Atlantic's request, however, DOJ refused to provide any guidance because, it said, it "has neither the obligations nor the resources" to do so. Bell Atlantic's Response to NTIA Notice of Inquiry, Docket 81267-8267, January 1989, at 6, n. 21.

[70] *See* Robert B. Reich, "The Quiet Path to Technological Preeminence", *Scientific American*, October 1989, pp. 41-47, for a description of how the loss of American competitiveness has resulted in part because American companies have not learned how to integrate their research and development activities with the manufacturing engineering, design and production processes.

". . . This quiet path back to competitiveness depends less on ambitious government R&D projects aimed at specific technology areas . . . than on improving the process by which technological insights . . . are transformed by American workers into high-quality products. . . . U.S. companies must link their own R&D efforts more closely to commercial production. Compared with Japanese firms, most American firms draw a sharper distinction between R&D on the one side and production and marketing on the other. . . . This division prolongs product-development times and causes marketing opportunities to be lost." *Id.*, pp. 43, 45.

See also, "A Smarter Way to Manufacture: How 'concurrent engineering' can reinvigorate American industry," *BusinessWeek*, April 30, 1990, pp. 110-117.

[71] As mentioned earlier, while the trade deficit has improved over the past two years, part of this improvement is due to the adoption of a more detailed methodology for identifying telecommunications equipment exports. *See*, DOC Competitiveness Report, p. 1.

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cially with the requirement that they make all their products in the United States, could provide a significant benefit to the U.S. trade position.

BOC participation in manufacturing could help the trade deficit in several ways. First, the BOCs may generate significant exports of communications equipment from their own manufacturing activities. Second, the BOCs may stimulate greater exports by investing in entrepreneurs or small, start-up companies that have good ideas but lack the capital to bring those ideas to market. Third, BOC manufacturing also may stimulate AT&T and other manufacturers to become more competitive, thereby improving the productivity and export potential of AT&T and other manufacturers. Several of the BOCs, for instance, allege that AT&T has not been responsive to their equipment needs because its leadership among U.S. communications manufacturing firms is unchallenged. As a consequence, the BOCs argue, they have had to turn to foreign suppliers to meet their customers' needs.

It is true that the U.S. trade deficit in telecommunications equipment is primarily due to the import of "low-end", low-profit CPE (telephones, cordless telephones, fax machines, etc.) that the BOCs are unlikely to manufacture. It is also true that the United States had a trade surplus in the "high-end" equipment market, that of intelligent switching equipment.

These facts do not tell the whole story, however. For one thing, the U.S. trade surplus in "high-end" switching equipment is partly due to the export of equipment made in U.S. plants that are owned by foreign-based companies such as Northern Telecom and Siemens. There is considerable question as to whether the United States should be satisfied with a trade surplus that is based upon exports by foreign-based companies operating in this country. Also, even if the BOCs forsake the "Low-end" equipment market for the higher-profit switching market, the BOCs' entrance into that market could improve the trade balance significantly.

5. Increased U.S. share of the world market

The market share of U.S. companies has fallen dramatically in several key equipment markets related to communications. As noted earlier, foreign manufacturers supplied 21 percent of the U.S. telecommunications market in 1988, up from 17 percent in 1984.[72] The most recent data supplied by three trade groups opposing the reported bill show a decline in the U.S. market share in almost every category of equipment (from "Assessment of the U.S. Department of Commerce Study: U.S. Telecommunications in a Global Economy, Competitiveness at the Crossroads," by the Independent Data Communications Manufacturers Association, North American Telecommunications Association, and the Telecommunications Industry Association, p. 5):

[72] NATA Report, p. 3.

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U.S. WORLDWIDE MARKET SHARE

[By percentage]

Product	1985	1988
Central office switching	25.0	19.5
Private branch exchanges [PBX's]	38.0	35.0
Data PBX's	71.0	62.0
Fax machines	0.0	0.0
Key telephones	55.0	50.0
Voice mail	98.5	95.5
Data modems	66.0	52.0
Statistical multiplexers	73.0	69.0

It is instructive to note that U.S. firms produce no fax machines sold in the United States, even though fax machines are among the fastest growing type of equipment in the world. Of particular importance is the lead held by Japan in the market for optical-based equipment, as this market is likely to be one of the key high-technology industries of the future. According to World Semiconductor Trade Statistics Inc., "Japanese companies will sell nearly $1.4 billion worth of optoelectronic devices in 1992, four times the U.S. total." [73]

Many observers believe that the actual U.S. market share figures are even lower than the ones quoted above, but these figures are included to demonstrate that information from the opponents of the reported bill shows that the United States is losing its advantage in every sector of the international communications equipment market. Further, these figures reflect the market share of all firms operating in the United States without regard to the nationality of the firm. For instance, these figures include sales by the Siemens factories located in the United States. One certainly must question whether sales by these firms can be said to benefit the United States if the profits from these activities flow back to the home country of the foreign manufacturer. If the sales of foreign-based companies operating in the United States is excluded, the true market share of U.S.-based firms operating in the United States is much lower than the numbers quoted above.

The BOCs' entry into manufacturing should have a positive impact on the total market share controlled by U.S. firms. Because of the BOCs' intimate knowledge of the U.S. market, network standards, customer needs, business economics, among others, the BOCs are likely to be strong competitors in the equipment market. Although the BOCs will certainly compete for many contracts with other U.S. firms, it is also likely that the BOCs will develop innovative products suiting particular customer needs that will expand the total equipment market. In other words, rather than simply taking business away from existing manufacturers, the entry of the BOCs may stimulate greater customer demand for communications products in a way that will advantage all equipment manufacturers.[74]

[73] George Gilder, "Into the Telecosm," *Harvard Business Review*, p. 158 (March-April 1991).

[74] New entrants into the markets for long distance telephone service and international telecommunications services have caused those markets to increase in size, for instance.

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Because of their years of experience in the telecommunications business, the BOCs can be expected to make significant contributions to the development of new and sophisticated communications technologies. It is clear that there are substantial efficiencies between the operation of the local exchange network and the design and development of equipment used with the network.[75] Such efficiencies include the BOCs' sharing of joint costs, their knowledge of the network, their familiarity with customers' needs, and administrative economies. The Department of Commerce has noted that one of the principal advantages held by Japanese companies is their "superior production techniques and efficiency." [76] The BOCs are well suited to take advantage of these efficiencies and compete effectively with Japanese and other foreign competitors.

Allowing the BOCs to manufacture also will benefit the BOCs' telephone service customers. The BOCs provide ongoing telephone service to 80 percent of the nation's population. The BOCs will be able to make use of their knowledge of customer needs by developing and manufacturing equipment to meet those needs. Currently, if a customer comes to a BOC with a requirement for a particular service, that BOC cannot design or manufacture any equipment to meet that need. By lifting the manufacturing restriction, telephone service customers will be able to have their equipment and services needs satisfied by the company that knows their needs best.

6. Increased jobs in the United States

AT&T has closed down or reduced the work force at 33 manufacturing plants in the United States since the divestiture, resulting in the loss of 60,000 manufacturing-related jobs.[77] At the same time, AT&T has signed 18 joint venture agreements with foreign manufacturers and has opened seven new manufacturing facilities overseas. For instance, AT&T built a $200 million computer chip factory in Madrid, Spain in 1985. In 1990, AT&T built and will soon open a second plant nearby to build 5ESS switches. In Singapore, AT&T owns a telephone manufacturing plant that employs 7,000 people. AT&T is also a joint equity owner with the principal telecommunications companies of several countries, including the

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[75] In denying a request to separate Western Electric and Bell Labs from AT&T, Judge Greene recognized that the nation had benefited greatly from AT&T's joint ownership of its communications services businesses and its manufacturing businesses:

". . . AT&T argued vigorously that the present structure of the Bell System was in significant part responsible for this admirable record [of innovation in the telecommunications industry] because the researchers were linked with a manufacturer—Western Electric—and with two service organizations—the Operating Companies and the Long Lines Department.

"The Court is of the opinion that there is considerable merit to these contentions. Bell Laboratories has been a positive force both in basic and in applied research, and this research has had a beneficial effect on the nation's economic position in all of its varied aspects. It also seems to be true that the links between Bell Laboratories and the manufacturing and service arms of the Bell System have been of assistance in the achievement of these technological successes." (Footnotes omitted.)

In a footnote, the Judge recognized that these benefits to the nation's economic position included basic scientific advances, cheaper and better products for consumers, increased foreign trade, and improved national defense. 552 F.Supp. at 167.

[76] "The principal competitive advantage for many foreign-based companies in [the CPE] market appears to be superior production techniques and efficiency, not necessarily lower labor costs, as is commonly assumed. Japan has a significant advantage in manufacturing processes. Improving the efficiency of U.S. manufacturing process—so-called 'production engineering'—could contribute significantly to an improvement in our competitiveness in many of these product areas." DOC Competitiveness Report, p. 12.

[77] AT&T Form 10-K Reports.

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Netherlands, Italy, Denmark, Taiwan, Thailand, Hong Kong, South Korea, Japan, and China. AT&T also has opened a plant employing 7000 people in Matamoros, Mexico, and is constructing a second plant in Guadalajara, Mexico.

AT&T is not the only U.S. manufacturer in the communications equipment industry to have moved jobs offshore.[78] According to the Small Business Administration, from 1980 to 1986, small U.S. manufacturers (i.e., firms with less than 500 employees) added nearly 700,000 persons to their employment rolls, as compared to a net loss of nearly 2 million jobs among large U.S. manufacturers.[79]

According to Robert Reich, Professor at the John F. Kennedy School of Government, the transfer of jobs overseas has become a pervasive corporate strategy:

> American corporations have been abroad for years, even decades. So in one sense, the multinational identity of American companies is nothing new. What is new is that American-owned multinationals are beginning to employ large numbers of foreigners relative to their American work forces, are beginning to rely on foreign facilities to do many of their most technologically complex activities, and are beginning to export from their foreign facilities—including bringing products back to the United States. . . . Forty percent of IBM's world employees are foreign, and the percentage is increasing. . . . Another example is Texas Instruments, which now does most of its research, development, design, and manufacturing in East Asia. . . . More than 100,000 Singaporians work for more than 200 U.S. corporations, most of them fabricating and assembling electronic components for export to the United States.[80]

Allowing the BOCs to manufacture undoubtedly will promote job opportunities in the United States, especially because the reported bill requires that the BOCs conduct all their manufacturing in this country. The seven BOCs have the potential to create thousands of new employment opportunities for scientists, technicians, engineers, marketers, and support staff. Even if the BOCs enter the manufacturing market by providing seed capital to existing firms, the expansion of these existing firms could create thousands of new employment opportunities.[81]

7. Summary

To summarize, substantial benefits can be expected from permitting the BOCs to enter the business of manufacturing communications equipment. The BOCs have considerable expertise and experience in the communications field that can be readily transferred

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[78] Ironically, the Consent Decree does not prohibit a BOC from engaging in manufacturing activities outside of the United States, as long as the products are only sold outside the United States. Thus, the Decree has the effect of permitting the BOCs to do overseas what they cannot domestically.

[79] "The State of Small Business: A Report of the President and Annual Report on Small Business and Competition," U.S. Small Business Administration (Washington, D.C.: U.S. Government Printing Office, 1988).

[80] Robert B. Reich, "Who is Us?", *Harvard Business Review*, January-February 1990.

[81] A study performed on behalf of US West found that lifting the information services and manufacturing restrictions would result in a net gain of 55,000 jobs by the year 2000 in the US West region alone. "The Economic Impact of Telecommunications in the US West Region and the United States," Center for Economic Analysis, University of Colorado, Boulder, CO, November 1, 1989.

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into manufacturing activities. These increased manufacturing activities can be expected to stimulate greater spending on research and development, improve the nation's trade position, increase job opportunities, increase the market share of U.S. firms both in the United States and abroad, and give U.S. firms an opportunity to seek funding from another U.S. firm rather than seek capital from overseas.

The Consent Decree imposes an unfair and unjustified restriction on the BOCs

The manufacturing restriction on the BOCs cannot be justified on policy grounds. There are 1,400 different local telephone companies operating in the United States; only the seven RBOCs are prohibited from manufacturing. In fact, several large telephone companies have extensive manufacturing concerns.

GTE, which takes in more revenues from providing telephone service than several BOCs, supplied about 10 percent of the Nation's central office switching equipment needs before it sold its equipment manufacturing operations to AT&T. United Telecom owns the North Supply Company, a leading distributor of voice and data communications equipment. There is no reason to bar the BOCs from the mnaufacturing market and not bar similar companies.

One must also question why AT&T is permitted to manufacture and the BOCs are not. AT&T remains the largest provider of long distance service in the country, with a market share of between 65 and 70 percent. AT&T is also the largest manufacturer of communications equipment in the world. AT&T's long distance and international businesses purchase more equipment from their own manufacturing affiliates than the sum total of equipment purchased by any one BOC.

Clearly, if there is a concern about vertical integration between telecommunications services and the manufacture of communications equipment, that concern should apply equally to other local exchange carriers and to AT&T. There is little evidence that these carriers have abused their ability to engage in joint participation in both the services and manufacturing markets to the detriment of competition or of customer rates. There is no reason to bar the BOCs and not bar all other local telephone companies from the manufacturing market.

Some argue that the MFJ restrictions are justified because of the BOCs' past anticompetitive activity. The Court never determined, however, that AT&T engaged in unlawful anticompetitive activity prior to the divestitute.[82]

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[82] Judge Greeene did find, in ruling on a motion for directed verdict filed by AT&T after the government had presented its case, that the Government had met its burden of presenting enough evidence to warrant continued prosecution of the case. The case was settled before AT&T had finished presenting its defense. The Judge also stated that the case against AT&T regarding its manufacturing activities was not as strong as the case against its long distance operations:

"It should be noted, however, that the government's procurement case was not extremely strong. In the first place, it consisted only of 16 individual episodes. Measured against the large field of procurement decisions in which the Bell System was engaged, this was not a formidable number. . . . Moreover, even as to those 16 episodes the proof was not overwhelming. Where the

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Further, even if such activities were proved to have occurred, there is no reason to attribute the activities of the former AT&T to the present BOCs. The RBOCs are seven, completely independent companies that are actively competing with each other in many markets. There is no longer a single "Bell System" that could systematically thwart competition as could the AT&T monopoly.

It is important also to remember that the BOCs were bound by the line of business restrictions before they became legal, independent entities, and had no opportunity to oppose these restrictions.

Allowing the BOCs to manufacture will not cause anticompetitive harm to the communications equipment market

As discussed in the previous section, the District Court never found that AT&T had engaged in anticompetitive activity regarding its manufacturing and procurement activities. Yet, even if the BOCs had engaged in anticompetitive conduct while they were a part of AT&T, it is difficult to believe that the BOCs could cause harm to the communications equipment market through anticompetitive conduct today.

It is generally agreed that the communications market has changed drastically in the last eight years. The divestiture of AT&T into eight separate companies, the globalization of the communications equipment market, the concentration of equipment suppliers, the increasing foreign penetration of the U.S. market, and the continued dispersal of equipment consumption have greatly diminished the potential market power of the BOCs over the equipment market. Further, the safeguards included in the bill and the FCC's enhanced regulatory safeguards (detailed below) should permit the FCC to monitor anticompetitive activity more closely. These changes have substantially reduced the possibility that the BOCs could gain an anticompetitive advantage in manufacturing.

In presenting the antitrust case, the DOJ argued to the Court that AT&T had engaged in three general types of anticompetitive conduct with respect to the manufacture of communications equipment: (1) the Bell System purchased Western Electric equipment even when those products were more expensive and/or of lesser quality than alternative goods available from unaffiliated vendors; (2) the Bell System granted Western Electric premature and otherwise preferential access to necessary technical data, compatibility standards, and other information concerning the BOCs' network; and (3) the Bell System subsidized the prices of its equipment with the revenues from the BOCs' monopoly services. The following section will examine whether the BOCs could engage in any of these activities today.

1. The individual BOCs do not have nearly the market power that AT&T had prior to divestiture

The market power possessed by each BOC over the communications equipment market is not comparable to the market power for-

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government's evidence tended to demonstrate anticompetitive acts, AT&T's market share was generally not high: where market share was high, there was relatively little evidence of anticompetitive acts."

The part of the case dealing with pricing of equipment sold by Western Electric was dismissed on September 11, 1981. 552 F.Supp. at 163, note 137.

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merly exercised by AT&T. Prior to the divestiture, AT&T purchased approximately 80 percent of all the central office switching and transmission equipment sold in the United States. About 80 percent of that equipment was manufactured by AT&T's manufacturing subsidiary, Western Electric.[83] As a result, only small fractions of the market remained open to independent manufacturers.

Today, the seven RBOCs are separate independent companies and could not damage competition in the equipment market. Each RBOC purchases about four percent of the total amount of communications equipment sold in this country each year.[84] Thus, even if an RBOC satisfied all its equipment needs by purchasing from itself, the remaining 96 percent of the market would remain open to other suppliers.

Further, private (non-telephone company) purchasers of communications equipment account for a much larger percentage of the total purchase market than they did 10 years ago. Dr. Huber found that, as a group, private buyers "buy much more equipment in almost every category than any single RBOC". The BOCs simply do not have the ability to foreclose the equipment market to competing manufacturers that AT&T possessed prior to the divestiture.

2. Increasing competition will prevent the BOCs from cross-subsidizing or engaging in unlawful self-dealing

Some argue that, if allowed to manufacture, the BOCs will purchase all their equipment from their affiliated companies, regardless of the cost or quality of the equipment. These opponents claim that the BOCs will simply pass on the costs of this equipment on to their telephone service ratepayers. The BOCs simply cannot afford to take this risk.

First, it is important to recognize that self-dealing in itself is not an anticompetitive activity. If a BOC manufactures the best product at the cheapest price, public policy should permit the BOC to use that product to provide telephone service to the public. Self-dealing only causes harm if a BOC purchases equipment from itself at prices that exceed the market rate for that product.

Those who would propose to ban the BOCs from purchasing any equipment from their own affiliates would undercut the reason for enacting this bill. If a BOC manufactures a better product than any of its competitors, the Bell Telephone Company should be able to purchase the equipment at the market rate so that it can provide high-quality service to its telephone customers. To forbid a BOC from purchasing any of the equipment it manufactures would prevent the BOCs and their telephone customers from being able to take advantage of the latest advances in technology. Further, if they could not purchase equipment from themselves, the BOCs

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[83] Huber Report, at 1.15. A substantial portion of the remaining 20 percent of telephone company purchases was supplied by the manufacturing affiliate of the GTE operating companies. These GTE telephone companies also purchased telecommunications equipment from this manufacturing affiliate.

[84] The BOCs spent a total of $8.5 billion on communications equipment in 1989, while total telecommunications equipment sales were about $32.7 billion. From these figures, it is apparent that the BOCs collectively purchased about 26 percent of the communications equipment sold in this country in 1989. *See, Telephony*, January 9, 1989; 1990 Telecommunications Market Review and Forecast, North American Telecommunications Association, Table 1, p. 12.

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might be forced to purchase equipment from foreign manufacturers.

Second, the BOCs have little incentive to purchase equipment from themselves at inflated prices. The BOC are facing an increasing amount of competition for local telephone service.[85] These competitors will purchase the highest quality equipment at the lower prices in order to find a market advantage. The BOCs cannot afford to suffer lower quality service and higher prices when competitors to their access services are increasing their market shares. Even if full competiton does not arrive for several years, network equipment often is not replaced for a decade or longer. The BOCs must prepare for the threat of this competition in the future by purchasing today high-quality equipment at market rates. Thus, the BOCs have on reason to purchase equipment from themselves if this equipment is not competitive on a cost and quality basis with the equipment of competitive manufacturers.

3. Competition in the equipment market will prevent anticompetitive activity

Even if the BOCs were to attempts to engage in anticompetitive self-dealing, the competitiveness of the equipment market will make it easier for regulators to determine whether a BOC was purchasing its own equipment at inflated prices. This is because the regulators will be able to compare the prices paid by the BOC with the prices paid by other purchasers of similar equpment. First, regulators could compare the price paid by the BOC with the price paid for that same equipment on the open market by other purchasers.[86] Second, regulators could compare the price paid by the BOC with the prices for similar equipment manufactured by other manufacturers. If the BOCs paid a price that was higher than the market price for that equipment, that would be prima facie evidence of unlawful activity. The existence of these "benchmarks" makes the process of detecting unlawful activity much easier than when there were no other alternative sources of similar equipment.

The presence of several competitors in the communications equipment market also will aid in preventing anticompetitive conduct. The equipment manufacturers undoubtedly will seek to protect their interests by scrutinizing every BOC activity. If there is any potential violation, these private "policemen" will be sure to bring these matters to the attention of the FCC and the DOJ.[87]

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[85] Several companies are constructing fiber optic rings around major cities for the transmission of voice and data services by business customers. Some other companies, such as Teleport in New York City, are also providing earth station and satellite services to businesses.

[86] If the BOC purchases all the equipment manufactured by its affiliate and the affiliate did not sell its equipment on the open market, so that no "benchmarks" were available, this would itself raise suspicions among regulators that the products it was manufacturing were not competitive on the open market and thus that the BOC was purchasing low-quality equipment or paying overly high prices.

[87] The bill, as reported, requires the BOCs' manufacturing subsidiaries to file public reports concerning their activities with the appropriate regulatory authorities. These public reports, in addition to the filings made before the FCC, will assist the private interests in monitoring the BOCs' activities.

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4. The FCC and the States are better equipped today to protect against anticompetitive activity

Regulators are generally better equipped today to protect against anticompetitive activity than they were before the divestiture. In the first place, the AT&T monolith has been replaced by eight independent companies. The FCC can now compare the actions and operating results of one of the BOCs against those of the other BOCs, and can require each company to conform its actions and accounting methods to a single system if necessary.

The FCC has also developed several new and stronger measures to protect against cross-subsidization and discrimination. The FCC has adopted sophisticated rules governing cost allocations (the "Part X Rules") to prevent a BOC from shifting costs from unregulated enterprises (such as manufacturing) to its regulated telephone operations.[88] Each BOC is required to prepare and have approved by the FCC a cost allocation manual that complies with the FCC's cost allocation rules. In addition, the FCC requires an annual attestation audit by independent auditors to verify that each BOC's cost allocation manual is in compliance with the FCC rules. As a final check, the FCC reviews the audit findings and the auditors' work papers. The FCC has also adopted asymmetric rules governing transactions between the BOCs and their affiliates which insulate ratepayers from cross-subsidy of unregulated operations.

The FCC has boosted its auditing programs in the past few years, partly in response to congressional concerns. For instance, the FCC now has an automated reporting and management information system (ARMIS), which allows the FCC to compare one BOC's performance to that of its peers and to compare historical trends. The BOCs submit this information in the same format and on computer tapes, which make it easy for the FCC to compare the reports provided by the BOCs to determine if any one of them deviates substantially from established benchmarks.

The FCC has worked hard to develop strong relationships with the State regulatory commissions that have oversight authority over the BOCs' intrastate communications services. The FCC frequently confers with State public utility commissions to coordinate and compare regulatory activity by the various BOCs.

The State public utility commissions, through the National Association of Regulatory Utility Commissioners (NARUC) and similar regional associations, share information about actions taken within their territories to preclude improper conduct by the BOCs. They assist each other in interpreting the information provided by the BOCs so as to regulate the intrastate operations of the BOCs with more uniformity.

Congress recently increased the potential fines and forfeitures for violations of the 1934 Act by over 10 times. Each of the BOCs can now be fined up to $1 million for each violation of the FCC's rules or the Act. These increased penalties will help to deter the BOCs from violating the Act through discrimination and cross-subsidization.

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[88] *See*, Separation of Costs of Regulated Telephone Service from Costs of Nonregulated Activities, CC Docket No. 86-111, Report and Order, FCC 86-564, released February 6, 1987.

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Congress has also recently increased the amount of funds provided to the FCC so that it can enforce these rules. After several years of stable (and sometimes declining) funding, the FCC received increased in appropriations of about eight percent in both fiscal years 1990 and 1991. For fiscal year 1992, Congress is considering providing the FCC with a budget of $133 million, a 15-percent increase over fiscal year 1991.

The FCC has been committed to developing and enforcing sound rules to protect competition.[89] The risk of interconnection discrimination has been limited by the FCC's adoption of regulations that detail the requirements for interconnection of terminal equipment[90] and the provision of enhanced services.[91] The FCC has also prevented discrimination in installation, repair, and maintenance by requiring the BOCs to form Centralized Operations Groups that process, coordinate, and schedule orders for CPE interconnection. Private interconnection standards have also been developed by working groups of the International Telecommunication Union and other standard-setting bodies that are equally available to all manufacturers. Perhaps one of the most important set of regulations is that which requires the BOCs to disclose information about network design changes.[92]

In addition, the FCC's willingness and desire to enforce these rules is of utmost importance. The recent commitments made by the Chairman of the FCC indicate that the FCC takes its enforcement responsibilities seriously.[93] In fact, the FCC has already indicated that it intends to use its additional budget authority from Congress to increase the number of staff members dedicated to enforcement activities.

Because of these rules and enforcement mechanisms, as well as the FCC's enforcement intentions, the Committee is confident that the FCC will vigorously enforce the law and regulations so as to prevent any harmful activity on the part of the BOCs.

5. The bill contains many additional safeguards

Despite the changes in the communications industry and the enhanced ability of regulators to detect anticompetitive activity, some argue that there remains a possibility that the BOCs' entry into the manufacturing market could cause harm to ratepayers and competition. For this reason, S. 173 contains many safeguards to protect against this possibility. These safeguards should also aid regulators in detecting and preventing such conduct.

First, the bill precludes any BOC from engaging in manufacturing with another unaffiliated BOC. This will, for example, preclude New York Telephone from manufacturing in conjunction with New Jersey Bell. The purpose of this provision is to ensure that each of the seven RBOCs competes with each other in the manufacturing

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[89] Testimony of Alfred C. Sikes, Chairman, FCC, before the Communications Subcommittee, on S. 173, February 28, 1991.

[90] 47 C.F.R. 64.702(d)(2) (1985). These rules were clarified in *Computer and Business Equipment Mfrs.' Ass'n.*, 93 FCC 2d 1226 (1983).

[91] *See, e.g., Computer III Remand Proceedings: Bell Operating Company Safeguards, and Tier 1 Local Exchange Company Safeguards*, 6 FCC Rcd 174 (1990).

[92] *See* 47 C.F.R. Part 68 (1985).

[93] Testimony of Alfred C. Sikes, Chairman, FCC, before the Communications Subcommittee, on S. 173, February 28, 1991.

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market. This provision will preclude the BOCs from "reviving" the moonlithic system formerly controlled by AT&T.

Second, the bill requires the BOCs to perform any manufacturing through an affiliate that is separate from the operating telephone companies. This will ensure that, at least for accounting and regulatory purposes, the manufacturing operations must remain apart from the telephone operations so that any potential cross-subsidization can be easily detected.

S. 173 also specifies some of the minimum requirements of this separation. For instance, a BOC manufacturing affiliate must maintain separate books of account that identify any transactions between the manufacturing affiliate and the telephone company and the affiliate must prepare and file financial reporting statements just as if it were a publicly held corporation. The FCC may adopt other regulations to enforce this "separation" requirement.

Further, the bill requires that any affiliate of the Bell Telephone Company that becomes affiliated with a manufacturing entity must comply with the separate affiliate provisions of the bill and the rules adopted by the FCC. This precludes the BOCs from acquiring or otherwise obtaining an interest in a manufacturing entity without complying with all of the provisions of the bill. Thus, a BOC cannot "hide" a manufacturing affiliate to avoid the requirements in the bill by placing it within another affiliate or subsidiary. The intent of this provision is to ensure that a BOC cannot evade the regulatory and safeguard provisions of the bill through the use of other, non-manufacturing affiliates. In other words, the bill ensures that a BOC may not do through another affiliate what it could not do with the manufacturing affiliate directly, and vice versa.

Also, the legislation prohibits a Bell Telephone Company from performing sales, specific advertising, installation, and similar functions for its manufacturing affiliate. This provision removes opportunities for cross-subsidization by precluding the two companies from sharing certain costs. This provision also ensures that the BOC manufacturing affiliate does not gain a special market advantage by virtue of its relationship with the telephone company. The manufacturing affiliate must compete on its own footing just like any other manufacturer.

S. 173 also prohibits a BOC from owning more than 90 percent of the equity of its manufacturing affiliate. The remaining 10 percent must be made available on the open market to outside investors. These outside investors will provide further oversight over the manufacturing affiliate's operations to ensure that it does not engage in any unlawful conduct, and they will further ensure that the manufacturing affiliate will remain a competitive, self-sustaining and for-profit entity separate from the telephone company.

In addition, the bill precludes the manufacturing affiliate from incurring debt in a manner that would allow a creditor, on default, to have recourse to the telephone company's assets. This ensures that the rates and quality of telephone service will not suffer if the manufacturing affiliate cannot service its debt.

This provision also requires the manufacturing affiliate to procure its debt from the financial markets outside the operations of the telephone company or any of its affiliates. By barring a BOC from internally financing its manufacturing operations, this provi-

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sion prevents a BOC from giving its manufacturing affiliate a marketplace advantage over other manufacturers who must also acquire their debt from the financial markets.

Next, the bill requires that the manufacturing affiliate sell, without discrimination as to price, delivery, terms, and conditions, the equipment it manufacturers to other telephone companies for use in the local telecommunications network. This provision will assist other local exchange telephone companies and ensure that the network of all telephone companies benefit from the equipment manufactured by a BOC affiliate.

In addition, the bill mandates that the FCC will promulgate regulations requiring the Bell Telephone Companies to maintain at the FCC complete information regarding the protocols and technical requirements for connection with the telephone exchange network. This will preclude the BOCs from discriminating against other manufacturers by refusing to provide them information about the technical aspects of the network. The regulations must also require that a Bell Telephone Company not inform its affiliates of this type of information unless the information is immediately filed with the FCC. The FCC is authorized by the bill to promulgate further regulations to ensure that competitors have "ready and equal access" to this type of information.

To preclude discrimination in procurement, the bill requires that a Bell Telephone Company provide to other manufacturers of telecommunications equipment and customer premises equipment opportunities to sell such equipment that are comparable to those that it provides to its manufacturing affiliate. It further prohibits the Bell Telephone Company from subsidizing its manufacturing operations with revenues from its regulated telecommunications services and requires that it purchase equipment from its manufacturing affiliate only at the open market price.

Finally, it is important to point out that this bill does not grant the BOCs an exemption from the antitrust laws or change existing antitrust law in any way. It creates no immunity to any civil or criminal action under Federal or State antitrust laws. Nor does the legislation alter or restrict application of Federal or State antitrust law, including penalty provisions. The BOCs will remain fully subject to the antitrust laws and any pending or future antitrust actions against them. The safeguards included in this bill are intended, in some cases, to prevent possible antitrust abuse, but they are not intended to replace existing antitrust law liabilities or remedies in any way.

All of these safeguards are decigned to, and should, preclude the BOCs from engaging in unlawful cross-subsidization, unreasonable discrimination against competition, or self-dealing. Combined with the abilities and inherent powers of the FCC and the State public service commissions, these safeguards will protect fair competition and the ratepayer without binding the BOCs under such rigid rules that they cannot compete with our international competitors. This bill delicately balances the need to allow the BOCs to take advantage of their assets, expertise and experience while preventing monopoly abuse. This will ensure that the bill fulfills its stated premise of increasing the economic growth and international competitiveness of American industry.

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Domestic Manufacturing Provision

1. Need for a domestic requirement

The purpose of this bill is to reverse the trend of declining American competitiveness in communications equipment manufacturing. This bill is intended to promote research and development, create jobs, encourage investment, and enhance productivity here in the United States. These goals will not be achieved if the BOCs are permitted to manufacture outside of the United States. Nor will these goals be obtained if the BOCs import components from overseas that are available in this country under reasonable prices, terms and conditions. The bill thus includes provisions that ensure that the BOCs' manufacturing operations, from the initial design and development phases through the fabrication phase, will be done in the United States, and that ensure that the BOCs' entry into the manufacturing market will benefit domestic production of components.

Because of the current restrictions imposed under the consent decree the BOCs have conducted much of their manufacturing activities overseas. Since the divestiture, the BOCs have made enormous investments in other countries. They have invested billions of dollars in cellular communications systems, cable systems, personal communications systems, computer services and real estate in Europe since the divestiture.[94] Two Bell Companies (Bell Atlantic and Ameritech) recently purchased the New Zealand telephone company for $2.4 billion, while another Bell Company (Southwestern Bell) participated in a consortium that purchased a stake in the Mexican telephone company for another $1.8 billion. Bellcore, the BOCs' joint research center, has also entered several joint venture agreements with foreign-based manufacturers.[95]

The recent history of AT&T is also noteworthy in this regard. Since the divestiture, AT&T has invested in or started up foreign manufacturing operations in 16 different countries. AT&T's Asian manufacturing facilities alone now employ at least 15,000 foreign nationals. AT&T frequently uses foreign-made components in the equipment that it assembles here in the U.S. [96] Also, several large foreign equipment manufacturers have filed comments in favor of lifting the manufacturing restriction. These companies believe the BOCs could provide significant amounts of much-needed capital to fund their manufacturing operations. This position indicates that these foreign companies expect the BOCs to become partners with them in their overseas operations.[97]

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[94] *See* "Global Markets Lure 'Baby Bells' ", *New York Times*, Dec. 19, 1990, p. D1; "Reaching Out to Unchartered Territories: Seven 'Baby Bells' Look to Less-Predictable Overseas Markets for Growth", *Washington Post*, November 15, 1990, pp. E1, E12.

[95] Sixteen of 34 joint venture research projects entered into by Bellcore over the past five years have been with foreign companies. In 1990 alone, Bellcore signed joint research projects with the Toshiba Corp. of Japan, the Furukawa Electric Co., Ltd. of Japan, the Industrial Technology Research Institute of Taiwan, and Siemens Aktiengesellschaft of West Germany. Notices Filed in the Federal Register Pursuant to the National Cooperative Research Act of 1984; Department of Justice, Antitrust Division.

[96] Testimony at the hearings before the Communications Subcommittee indicated that 58 percent of the chips used in some AT&T circuit boards, for instance, are manufactured abroad.

[97] The danger that the BOCs would establish their manufacturing facilities overseas is also supported by the actions of several other major U.S. corporations. An article in the Harvard

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This pattern of activity is not in the long-run best interests of the United States. The movement of jobs to offshore locations will eventually cause the American workforce to lose the expertise that attracts other manufacturing establishments. Increasing investment by foreign companies in the United States could cause U.S. technology and profits to be exported back to the home country of the foreign investor. If domestic companies focus too much on the possibilities of investment in foreign markets, the American economy will suffer from a lack of growth, especially in the latest technologies. These trends could lead to a serious decline in U.S. productivity, U.S. leadership in high technology industries, the availability of jobs, and the U.S. trade position.

2. The domestic manufacturing provisions

In the 101st Congress, S. 1981, the "Telecommunications Equipment Research and Manufacturing Competition Act of 1989," authorized Bell Telephone Companies to engage in manufacturing, but required that all such activity (including design, development, fabrication and the manufacturing of components) take place within the United States. That bill also contained additional language granting the FCC authority to waive the domestic manufacturing provision upon a showing of extraordinary circumstances.

Several parties, however, expressed concern that this waiver provision granted too much flexibility to the FCC. In an effort to address these concerns, the BOCs and the Communications Workers of America entered discussions as to how this provision could be drafted to accommodate some of these concerns. The two groups came to an agreement, and this agreement has been included, without any change, in S. 173.

As in last year's bill, S. 173 states that all manufacturing performed by the BOCs must be conducted within the United States, including design, development, and fabrication activities concerning communications equipment. This year's bill, however, contains new provisions regarding the BOCs' use of components that they do not make but that are included in the equipment they manufacture. The bill states that all component parts used in the manufacture of customer premises equipment and telecommunications equipment must have been manufactured in the United States. In place of the FCC waiver process, however, S. 173 states that component parts manufactured outside the United States may be used, but only after a BOC makes a good faith effort to find equivalent U.S. components made in the United States.

In granting a BOC authority to use foreign components under certain circumstances, S. 173 limits use of such components so that the aggregate cost of foreign-manufactured components in BOC-made equipment may not exceed a certain percentage of the BOCs'

Business Review documents the overall trend of U.S. companies to move their manufacturing operations, including their research and development facilities, overseas.

"The old trend of overseas capital investment is accelerating: U.S. companies increased foreign capital spending by 24 percent in 1988, 13 percent in 1989. But even more important, U.S. businesses are now putting substantial sums of money into foreign countries to do R&D work. According to National Science Foundation figures, American corporations increased their overseas R&D spending by 33 percent between 1986 and 1988, compared with a 6 percent increase in R&D spending in the United States." Robert B. Reich, "Who is Us?", *Harvard Business Review*, January-February 1990, pp. 54-55.

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revenue from the sale of telecommunications equipment and customer premises equipment in any calendar year. This percentage is to equal the average percentage cost of foreign-made components present in all the communications equipment sold in the United States in any calendar year. (This percentage is set at 40 percent for the first year and is adjusted every year thereafter to correspond to the industry average.) [98]

If foreign components are included in equipment manufactured by a BOC, that BOC is required to report quarterly such use to the FCC and certify that, prior to using such components, it made a good faith effort to find equivalent components manufactured in the United States at reasonable prices, terms and conditions. In addition, a BOC must certify to the FCC annually that for the aggregate of telecommunications equipment and CPE sold in the United States by such company in the previous year, the cost of foreign-made components did not exceed the statutorily prescribed percentage.

The bill contains specific safeguards to ensure BOC compliance with the domestic manufacturing obligation. It states that the FCC may impose penalties or forfeitures if it determines that the BOC did not make a good faith effort to obtain U.S.-made components prior to using foreign-made components or if the limit on the use of foreign-made components was exceeded. In addition, suppliers who claim to have been damaged as a consequence of BOC failure to comply with the "good faith effort" requirement may file a complaint with the FCC or bring suit for the recovery of actual damages.

Finally, S. 173 authorizes the BOCs to use intellectual property created outside the United States in the manufacture of telecommunications equipment and CPE in the United States Research, design and development activities are occurring in laboratories all over the world, and especially in Europe and Japan. The BOCs' manufacturing affiliates must be able to take advantage of the latest developments in technology if they are to be competitive internationally.

3. Implications of the domestic manufacturing provisions on U.S. international trade policies

The domestic manufacturing provisions do not conflict with current U.S. policies or agreements concerning international trade.

[98] Some have suggested that it is improper to determine the "cap" on foreign components by dividing the cost of those components by the total sales revenue, and have proposed instead to divide the cost of the foreign-made components by the total cost of all components in equipment manufactured by a Bell Company. These persons suggest that, as currently drafted, a BOC could meet the 40 percent "test" even if it used all foreign-made components in its equipment because the sales revenue is often much higher than the cost of the components. While these comments may have some merit for the first year of operation, they have no merit after the first year. The 40 percent figure only applies for the first year after the bill's enactment. After that first year, the percentage is adjusted to correspond to the average for the entire industry. For these years, whether the denominator is the total sales revenue or the cost of all components is irrelevant because the BOC will be bound by the same standard as every other manufacturer in either case. Even if the suggestion may be apt for the first year, the BOCs are unlikely to be able to manufacture a significant amount during the first year after enactment of the bill. There is a substantial lead time required to establish any manufacturing facilities. Further, the bill provides that the BOC may not engage in any manufacturing until after the FCC has set forth regulations to implement the terms of the bill. The FCC is unlikely to issue such regulations prior to the 180 day deadline set forth in subsection (i).

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The provisions are not intended to serve as a barrier to international trade, nor will they limit the ability of foreign manufacturers to market their products or services in the United States. Rather, as described below, the provisions will promote trade opportunities for both foreign and domestic manufacturers and will remove inhibitions to the economic growth of developing as well as developed countries.

First, S. 173 places no restrictions on foreign companies. The only restrictions in this bill are those imposed on American companies, the BOCs. This bill does not reduce the ability of foreign companies to market or invest in the United States. Under this bill, foreign manufacturers will be able to invest in the United States and sell their products and components in the United States as freely as they do today. While the bill does restrict the foreign activities of the BOCs, such restrictions do not conflict with international law. Our trade agreements and international understandings consistently recognize the right of a government to restrict the operations of its own companies within its borders in order to comply with domestic law or policy. The lifting of the manufacturing restriction is a domestic policy decision that our trade agreements recognize as completely legitmate.

Second, the domestic manufacturing provision is not a trade restriction, it is simply a condition of allowing the BOCs to enter the manufacturing market. Currently, the BOCs are prohibited from manufacturing; under international law, the U.S. Government has the right to decide to lift the manufacturing prohibtion under whatever safeguards it chooses to impose. The restriction on the BOCs' use of foreign-made components is simply a condition of allowing the BOCs to enter this market.

Further, S. 173 expands the opportunities of foreign manufacturers to sell in the United States. By allowing the BOCs to engage in manufacturing, S. 173 opens the U.S. market to foreign providers more than ever before. Currently, foreign manufacturers do not sell any components to the BOCs since the BOCs cannot manufacture, they have no reason to purchase such components. The bill, however, allows the BOCs to purchase foreign components after they make a good faith effort to find those components in the United States under reasonable prices, terms and conditions. If those components are not available, the BOCs may purchase as many foreign components as other manufacturers. This legislation will thus give the BOCs the incentive and the ability to purchase such components for the first time since the divestiture.

Finally, the provision does not conflict with the U.S. obligations under the General Agreement on Tariffs and Trade (GATT). The GATT contains no restrictions on investment; thus, the requirement that the BOCs conduct all their manufacturing in the U.S. is consistent with the GATT. Second, the bill does not restrict the BOCs' purchase of foreign-made equipment for installation in its network or for direct resale to customers. The only restrictions occur on a BOC's use of foreign-made components in equipment that it manufactures. Thus, the BOCs may continue to purchase foreign-made telephones to sell in the United States and may continue to purchase central office switches for installation in the telephone network without any restriction. Third, the limitations on

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the BOCs' use of foreign-made components does not discriminate based on whether the component was made by an American company or a foreign company. S. 173 treats all manufacturers of foreign-made products equally, whether the firm that made the components is U.S.-based or foreign-based. S. 173 thus treats all manufacturers of these products in the same manner, and does not discriminate based upon the nationality of the manufacturer. Since there is no discrimination here, the reported bill poses no conflict with the GATT.

Conclusion

Since the divestiture, both technological advances and the emergency of a global economy have completely altered the communications marketplace. The market is becoming more global in scope, and foreign manufacturers are taking advantage of the openness of the U.S. market to increase their U.S. and worldwide market shares. The United States is facing the possibility of being shut out of this emerging world market if it does not allow seven of its most potent and able companies to enter the market soon. The BOCs control 60 percent of the Nation's telecommunications assets and possess enormous technical expertise. The restriction that bars them from manufacturing cannot be justified on policy grounds.

The BOCs could bring enormous benefits to the market. Lifting the manufacturing restriction would allow them to take advantage of the natural efficiencies between the operations of the telephone network and the manufacture of equipment to be installed in that network. Permitting the BOCs to manufacture will promote research and development, exports, jobs, investment, and overall U.S. international competitiveness. Because of the significant changes in the communications market place and in the regulatory arena, there is little likelihood that the BOCs could cause harm to the nation's equipment marketplace through anticompetitive activities. Further, regulators are now well equipped to prevent harm from occurring to ratepayers or to the competitiveness of the U.S. market, and several provisions in S. 173 should assist regulators in preventing and detecting such activity.

If the United States expects to compete worldwide, domestic communications policy will have to abandon its excessive preoccupation with the alleged misbehavior of a company that no longer exists and embrace a vision of the future in which the seven RBOCs are full and active players in the international communications equipment marketplace.

Legislative History

S. 173 is almost identical to S. 1981, a bill introduced by Senator Hollings, Chairman, Committee on Commerce, Science, and Transportation, in the 101st Congress. The Communications Subcommittee held two hearings on S. 1981 in that Congress. The Committee ordered S. 1981 reported by voice vote with an amendment in the nature of a substitute at its executive session on May 22, 1990. The bill was not considered by the full Senate.

Senator Hollings introduced S. 173 on January 14, 1991. The Communications Subcommittee held a hearing on the bill on Feb-

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ruary 28, 1991. Witnesses at this hearing included the Chairman of the FCC, the Administrator of the NTIA, the Chief of the Antitrust Division of the DOJ, and representatives of the BOCs, AT&T, equipment manufacturers both opposed to and supportive of the bill, the Communications Workers of America, the National Association of State Utility Consumer Advocates, and the burglar alarm equipment manufacturers. The Committee ordered S. 173 reported by a vote of 18 to 1 at its executive session on March 19, 1991.

SUMMARY OF MAJOR PROVISIONS

The bill as reported adds a new section 227 to the 1934 Act that would lift the manufacturing ban on the BOCs as long as they comply with certain safeguards set forth in this new section. The bill does not address the two other lines of business restrictions on the BOCs (provision of information services or long distance services).

In conducting their manufacturing activities, the BOCs must comply with the following safeguards:

NO JOINT MANUFACTURING

To prevent collusion, the BOCs cannot manufacture in conjunction with one another. The bill requires that, if all of the RBOCs decide to manufacture, they will create at least seven independent manufacturing entities that will compete with each other as well as with existing manufacturers.

SEPARATE AFFILIATES

The BOCs must conduct all their manufacturing activities from separate affiliates. The affiliate must keep books of account for its manufacturing activities separate from the telephone company and must file this information publicly.

NO SELF-DEALING

(1) The BOC may not perform sales advertising, installation, production, or maintenance operations for its affiliate. (2) The BOC must provide opportunities to other manufacturers to sell to the telephone company that are comparable to the opportunities it provides to its affiliate. (3) A BOC may only purchase equipment from its affiliate at the open market price.

NO CROSS-SUBSIDIZATION

The BOC is prohibited from subsidizing its manufacturing operations with revenues from its telephone services.

DOMESTIC MANUFACTURING REQUIREMENT

The BOCs must do all their manufacturing within the United States. This prohibits the BOCs from owning an equity interest in any manufacturer that manufactures outside in United States.

DOMESTIC COMPONENTS

Regarding components used by the BOCs that they do not manufacture, the BOCs must make a good faith effort to purchase com-

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ponents that are made in the United States. The percentage of foreign-made components in products manufactured by the BOCs shall not exceed the industry average (set at 40 percent for the first year and adjusted each year thereafter).

LIMITATION ON EQUITY OWNERSHIP

A BOC may own no more than 90 percent of the equity of its affiliate. The remaining 10 percent must be made available to outside investors.

LIMITATION ON DEBT

The affiliate only may secure debt from the financial markets separate from the BOC. No creditor shall have recourse to the assets of the telephone company.

PROTECTIONS FOR SMALL TELEPHONE COMPANIES

A BOC manufacturing affiliate must make its equipment available to other telephone companies without discrimination or self-preference as to price, delivery, terms, or conditions.

DISCLOSURE OF NETWORK INFORMATION

The BOC must file with the FCC full and complete information concerning the telephone network immediately upon revealing any such information to its manufacturing affiliate.

CLOSE COLLABORATION

Any BOC may engage in close collaboration with any manufacturer.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, April 4, 1991.

Hon. ERNEST F. HOLLINGS,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has reviewed S. 173, the Telecommunications Equipment Research and Manufacturing Competition Act of 1991, as ordered reported by the Senate Committee on Commerce, Science, and Transportation on March 19, 1991. We estimate that implementation of this bill would result in additional costs to the federal government of about $3 million annually in fiscal years 1992 through 1996, assuming appropriation of the necessary funds. The bill would not affect direct spending or receipts, and therefore would not affect pay-as-you-go scoring.

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S. 173 would permit the Bell Telephone Companies to develop and manufacture telecommunications equipment, but only through separate afffiliates. The bill would require the Federal Communciations Commission (FCC) to prescribe regulations governing varying aspects of the operations of manufacturing affiliates within 180 days of enactment. The FCC would be required to issue regulations concerning the relationship of the affiliates and the companies. The regulations would cover areas including accounting, financing, recordkeeping, and reporting. The FCC also would be required to issue regulations to ensure that manufacturing affiliates make their equipment available to local telephone exchange carriers and allow other manufacturers to sell equipment to the Bell Companies.

Finally, S. 173 would require that manufacturing activity by affiliates be conducted within the United States, but would allow them to purchase component parts manufactured outside the United States under certain circumstances. The FCC would be required to determine the cost of foreign-made components in all relevant equipment sold in the United States as a percentage of sales revenue.

Based on information from the FCC, CBO estimates that development and implementation of the various regulations and procedures required by the bill would result in costs of about $3 million a year over the next five years. Most of the costs would be for additional personnel to develop and implement the regulations. The FCC also would incur costs to revise its automated cost-accounting system to monitor the financial relationships between companies and their affiliates.

No costs would be incurred by state or local governments as a result of enactment of this bill.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Marjorie Miller, who can be reached at 226-2860.

Sincerely,

ROBERT D. REISCHAUER,
Director.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported.

This legislation authorizes the BOCs to engage in the manufacture of telecommunications equipment and customer premises equipment, and the provision of telecommunications equipment. The bill would replace the current antitrust prohibition with several regulatory safeguards designed to prevent the BOCs from engaging in anticompetitive behavior. The bill requires the FCC to develop regulations to enforce the provisions of the bill. These regulatory provisions are necessary to ensure that the BOCs will not enter the manufacturing business at the expense of competition and telephone service ratepayers.

While these provisions will require some amount of increased regulatory activity by the FCC, it is important to note that any

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concern about these potential burdens must be balanced against the desire to allow the BOCs to enter a new line of business that was previously prohibited to them. The increase in productivity in the private sector that will result from this bill is sure to outweigh any increase in regulatory activity.

NUMBER OF PERSONS COVERED

Most of the bill's regulatory provisions concern the activities of the BOCs' telephone operations, not the activities of their manufacturing affiliates. The BOCs' telephone operations, and their employees, are already heavily regulated by the various State commissions and the FCC. Thus, the regualtory provisions concerning the telephone operations are unlikely to increase the number of persons affected by regulation. Some provisions do concern the manufacturing affiliate, such as the requirement that the affiliate make the equipment it manufactures available to other telephone companies, and that the affiliate make public filings of its financial information. While the total number of persons affected by such regulations will increase as the BOCs' manufacturing affiliates become very successful, the additional productivity that will result from the BOCs' success is sure to outweigh any regulatory hindrances. In any case, these regulations are unlikely to be overly burdensome.

ECONOMIC IMPACT

As mentioned earlier, the economic impact of these regulations is likely to be minimal, especially considering the potential economic benefit that is likely to accrue from allowing the BOCs to enter the manufacturing arena. The BOCs' manufacturing arms would have the potential to stimulate jobs, investment, and export opportunities for the American economy. In addition to boosting overall economic output and productivity, these activities are likely to generate significant tax revenues for local, State and Federal Governments. Most of the regulatory provisions affect the activities of the telephone company's operations, which are already regulated, and are unlikely to impose much of an economic burden.

PRIVACY

The legislation will not have any adverse impact on the personal privacy of the individuals affected.

PAPERWORK

This bill requires the manufacturing affiliate of a BOC to make public filings of its financial information. The bill does not require the affiliate to generate new information but simply requires the public filing of information that it would collect in the regular course of business. The bill also requires the FCC to adopt rules to implement the provisions of the bill. Thus, the bill's reporting and rulemaking requirements, at first, will increase the paperwork burden on the BOCs and other interested parties, but these burdens will diminish over time. The bill imposes no regular reporting requirements on any company other than the BOCs' manufacturing affiliates.

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SECTION-BY-SECTION ANALYSIS

SECTION 1

Section 1 states that the short title of the bill is the "Telecommunications Equipment Research and Manufacturing Competition Act of 1991."

SECTION 2

Section 2 states the findings of the Congress that the economic growth and international competitiveness of the United States would be assisted by permitting the BOCs to engage in manufacturing (including design, development and fabrication) and research regarding communications equipment.

SECTION 3

Section 3 adds a new section 227 to the 1934 Act. This new section sets forth the activities in which the BOCs may engage and specifies the obligations and regulations that will govern their participation in these activities. The following describes the provisions of this new section 227 of the 1934 Act:

Section 227(a) permits a BOC, through an affiliate, to engage in the manufacture and provision of telecommunications equipment and manufacture of CPE, notwithstanding any restriction or obligation contained in the MFJ. The provision does not grant the BOCs an exemption from pending or future antitrust actions. The provision also states that the BOCs may not engage in manufacturing "in conjunction with" a BOC with which it is not currently affiliated. For instance, this provision would permit Illinois Bell to engage in joint manufacturing with Michigan Bell because they are both owned by Ameritech, but would not permit Illinois Bell, owned by Ameritech, to manufacture in conjunction with New York Telephone, which is owned by NYNEX.

Also, a BOC may not avoid this "joint manufacturing" prohibition by becoming affiliated with a BOC with which it is not currently affiliated. For instance, were Ameritech to purchase NYNEX, this affiliation would not permit Illinois Bell to manufacture in conjunction with New York Telephone. This provison is intended to bar any form of joint activity that might permit the BOCs to engage in anticompetitive behavior.

This provision is not intended to change the status of Bellcore. Bellcore was created by the MFJ and is owned jointly and equally by the seven divested companies. It provides a centralized organization for the provision of engineering, administrative, and other services. One such service is providing a single point of contact for coordination of the BOCs to meet national security and emergency preparedness requirements. The Committee does not intend to disrupt Bellcore's current activities. Nor does the provision authorize Bellcore to do anything more than it is authorized to do today. In short, Bellcore may continue to perform any of its current activities under this bill, and anything that Bellcore is prohibited from doing today will continue to be barred.

Section 227(b) restates that a BOC may only engage in manufacturing through an affiliate and states that the affiliate must be

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separate from the BOC. The manufacturing affiliate of a BOC may be a subsidiary of the BOC or a subsidiary of the RHC that owns or is owned by the BOC. This provision, for instance, does not require that each of the 22 BOCs establish its own separate affiliate; each of the seven RHCs may set up its own manufacturing affiliate or affiliates as long as those manufacturing affiliates are separate from any of the BOC's telephone service operations. There is no limit to the number of manufacturing entities with which a BOC may affiliate, as long as they are all separate from the BOC's telephone service operations, and as long as they comply with the prohibition on joint manufacturing contained in subsection (a).

The word "separate" is intended to ensure enough distance between the manufacturing affiliate and the BOCs' telephone service operations to allow regulators to detect any possible cross-subsidization or anticompetitive behavior. Although other provisions of the bill require specific measures and regulations concerning the activities of the BOCs and their manufacturing affiliates, these provisions establish the minimum regulatory requirements for such separation. The FCC may, after notice and comment, adopt rules that address issues not covered by this bill and that require further separation if the FCC finds that such rules are necessary to protect against cross-subsidization and anticompetitive behavior. In adopting such rules, however, the FCC shall balance the need for these rules with the need to permit the BOCs to compete on an international scale and the need to permit them to engage in close collaboration with any manufacturer, as set forth in section 227(f).

Section 227(b) also states that the use in section 227 of the term "manufacturing affiliate" refers to a BOC affiliate that is engaged in manufacturing or provision of equpment as authorized by section 227(a).

Section 227(c)(1) requires the manufacturing affiliate to maintain books, records, and accounts separate from its affiliated BOC. These materials must also identify all transactions between the manufacturing affiliate and the BOC. Even if the manufacturing affiliate is not a publicly held corporation, it must prepare financial statements which are in compliance with Federal financial reporting requirements for publicly held corporations, file such statements with the FCC, and make such statements available for public inspection.

Section 227(c)(2) requires that a BOC and its non-manufacturing affiliates may not perform sales, advertising, installation, production, or maintenance operations for a manufacturing affiliate. In other words, the manufacturing affiliate must conduct these activities on its own behalf, either with its own employees or using an agent that is independent of the affiliated BOC or its affiliates. The BOC and its manufacturing affiliates may carry out institutional advertising not related to specific telecommunications (or customer premises) equipment as long as the manufacturing affiliate pays its pro rata share of the costs of such advertising.

This section does not prohibit a BOC from installing or maintaining equipment that it purchases from its manufacturing affiliate for use in its own communications network. It would be unnecessary and inefficient for a BOC to be required to bring in persons from outside the telephone company to install or maintain equip-

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ment that the BOC uses for its own purposes. A BOC cannot, however, install or maintain equipment purchased by a third party for use by that party. This section also prohibits a BOC from purchasing and then reselling to third parties equipment manufactured by its affiliate. There are no efficiencies in permitting a BOC to sell the equipment of its affiliate, but there would be a potential for the BOC to discriminate in favor of the equipment manufactured by its affiliate if it were allowed to sell such equipment. Thus, the bill prohibits a BOC from selling its affiliate's equipment.

Section 227(c)(3) contains several provisions to promote the domestic manufacturing industry. In general, Section 227(c)(3) requires the BOCs to conduct all their manufacturing activities within the United States and encourages them to employ components made in the United States. This provision will stimulate jobs, research and development, investment, and productivity in the United States.

Under subparagraph (A) of section 227(c)(3), a BOC manufacturing affiliate is required to conduct its manufacturing of telecommunications equipment and CPE in the United States. It also is required to conduct its manufacturing of components used in the manufacture of telecommunications equipment and CPE in the United States, although exceptions are provided in subsequent subparagraphs.

Under subparagraph (B), a BOC may use foreign-made components in its manufacturing of telecommunications equipment and CPE in the United States under certain limited circumstances. Prior to using foreign-made components, a BOC manufacturing affiliate must first make a good faith effort to obtain equivalent components from a manufacturer in the United States at reasonable prices, terms, and conditions.

Notwithstanding good faith efforts on the part of a BOC manufacturing affiliate, its cost of foreign-made components may not exceed 40 percent (or adjusted percentage in subsequent years) of the revenue derived from its sale of telecommunications equipment and CPE in the United States in any calendar year.

Under subparagraph (C), a BOC manufacturing affiliate that uses foreign-made components must certify quarterly to the FCC its good faith efforts to obtain equivalent components manufactured in the United States at reasonable prices, terms, and conditions; certification must list foreign-made components by type. The affiliate also must certify annually to the FCC that, in the previous calendar year, its cost of foreign-made components did not exceed 40 percent (or adjusted percentage in subsequent years) of the revenue derived from its sale of telecommunications equipment and CPE in the United States.

Under subparagraph (D), the FCC is authorized to impose penalties or forfeitures as provided for in title V of the 1934 Act when, after reviewing the quarterly certification, the FCC determines a BOC manufacturing affiliate failed to make a good faith effort to obtain equivalent components manufactured in the United States at reasonable prices, terms, and conditions.

The FCC also is authorized to impose penalties or forfeitures as provided for in title V of the 1934 Act when, after reviewing the annual certification, the FCC determines a BOC manufacturing af-

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filiate sold telecommunications equipment and CPE in the United States in the previous calendar year containing foreign-made components whose cost was in excess of 40 percent (or adjusted percentage in subsequent years) of the sales revenue from the equipment.

Also under subparagraph (D), suppliers of components manufactured in the United States who claim they were damaged because a BOC manufacturing affiliate failed to make a good faith effort to obtain equivalent components that were manufactured in the United States at reasonable prices, terms, and conditions are authorized to file complaints with the FCC, or bring suit in Federal court. Suppliers are expected to follow standard procurement, marketing and sales practices.

Under subparagraph (E), the FCC, in consultation with the Secretary of Commerce, is required to conduct an inquiry to determine the cost of foreign-made components as a percentage of the sales revenue from all telecommunications equipment and CPE sold in the United States during the previous calendar year; this inquiry, which must be done annually, must conform to administrative procedure practices set forth in title 5, U.S. Code.

Under subparagraph (F), a BOC manufacturing affiliate may use intellectual property created outside the United States in its manufacturing of telecommunications equipment an CPE in the United States.

Under subparagraph (G), the FCC is prohibited from waiving or altering any of the requirements of Section 227(c) except that the FCC is required to replace the 40 percent figure in subsequent years with the number resulting from the annual FCC/Department of Commerce inquiry in any calendar year.

For purposes of this subsection, the term "manufacturing" does not include "provision of telecommunications equipment". Section 227 is not intended to bar the BOC manufacturing affiliates from being able to sell telecommunications equipment abroad. In fact, it is hoped that the BOCs will produce goods that can be exported and can help to improve the U.S. balance of trade.

Section 227(c)(4) requrires that a BOC and its affiliates may own no more that 90 percent of the equity of any of its affiliated manufacturers. In other words, a BOC manufacturing affiliate cannot manufacture unless at least 10 percent of the equity of such affiliate is owned by a private entity or entities not affiliated with that BOC. This 10 percent equity share must be made available for purchase on the open market; the BOC and any affiliate of the BOC may not be involved in selecting or in any way restricting the owners of this 10 percent share. Further, section 227(a), discussed earlier, prevents any other BOC, or any affiliate of any other BOC, from purchasing any equity interest in that manufacturing affiliate.

The intention of this provision is to increase the oversight of the operations of the affiliate by outside parties and to ensure that the manufacturing affiliate operates as an independent, market-driven competitive entity separate from the BOC. Independent manufacturers are most likely to be interested in making this equity investment so as to obtain shareholder and financial information of the company. These outside entities can act as "private police officers" by scrutinizing the activities of the manufacturing affiliate and

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bringing any possible violations of the law to the attention of regulators. These outside investors also can exercise their rights as shareholders to bring suit against the directors of the corporation should they fail to fulfill their legal obligations.

This provision also will ensure that the affiliate faces the same commercial incentives as any other manufacturer. In order to attract outside investors of this 10 percent share, the affiliate must attempt to be a profit-making entity; it cannot simply pass through the costs of its manufacturing activities to the purchasers of such equipment without attempting to earn a profit. This will ensure that the manufacturing affiliate has the same incentives to become efficient and market-driven as any other manufacturer and will prevent the manufacturing affiliate from being able to benefit unfairly from its relationship with the BOC.

Section 227(c)(5) recognizes that the manufacturing affiliate may choose to incur debt as part of its capitalization. This section provides that such debt may not be issued by any affiliate of the manufacturing affiliate, which includes any affiliate of the BOC with which it is affiliated. The purpose of this provision is to prevent the BOC or RHC from loaning money to its manufacturing affiliate at a below-market rate. Such a loan both could harm ratepayers of the telephone company and cound give the manufacturing affiliate an anticompetitive advantage over other manufacturers. In essence, section 227(c)(5) requires that the BOC acquire its debt on the open market in the same manner that most other manufacturers acquire their debt.

Also, any debt incurred by the manufacturing affiliate cannot permit a creditor, on default, to have recourse to the assets of the BOC's telephone service operations. The purpose of this provision is to protect the indeptendence and viability of the BOC's basic telephone service in recognition of the vital service that these companies provide and the necessity to keep these companies solvent.

Paragraphs (6) and (7) of section 227(c) clarify the separation requirement of section 227(b). Section 227(c)(6) makes it clear that section 227(b) only requires that the manufacturing affiliate be separate from the BOC. It does not require the manufacturing affiliate to separate from any other affiliate of the BOC or the RHC. For instance, if the BOC or RHC has a real estate affiliate, the manufacturing affiliate need not operate separately from that real estate affiliate.

However, section 227(c)(7) further clarifies that, if the manufacturing affiliate operates on an unseparated basis with an affiliate other than a BOC, that affiliate itself becomes a manufacturing affiliate and must operate separately from the BOC and otherwise comply with the provisions of the reported bill. For instance, if the manufacturing affiliate operates on an unseparated basis with a real estate affiliate, that real estate affiliate then becomes treated as a manufacturing affiliate and must operate separately from the BOC.

The purpose of these two provisions is to provide a "wall" of separation between the telephone company and any affiliate that operates with the manufacturing affiliate. These provisions ensure that the BOC cannot avoid the separation requirements of the bill by using another affiliate as a conduit.

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Section 227(c)(8) requires BOC manufacturing affiliates to make any telecommunications equipment they manufacture available to all local exchange carriers without discrimination or self-preference as to price, delivery, terms, or conditions. There are approximately 1,400 carriers that provide local exchange telephone service in the United States. These carriers interconnect with each other and with interexchange carriers to provide nationwide telephone service. These 1,400 local telephone companies need access to the latest advances in telecommunications equipment to maintain high-quality telephone service. High-quality telecommunications service is particularly important in rural areas, often served by independent telephone companies, because of the need to stimulate jobs and economic growth in those regions.

The Committee assumes that the BOCs will continue to manufacture equipment (including software) for which there is reasonable demand, taking into account the profitability of manufacturing the product, the price the buyer is willing to pay for the product, alternative sources of the product, the importance of the product to the local telephone companies, the quantity demanded, the obsolescence of the product, and other appropriate factors. The telecommunications equipment that the BOCs must make available to other local telephone companies must be intended for use in the public telecommunications network (including for use with information services) and includes software that is integral to such telecommunications equipment. This provision is not intended to obligate a BOC manufacturing affiliate to sell to companies providing directly competitive local exchange service within the BOC's service area.

The manufacturing affiliate's obligation to sell telecommunications equipment to an unaffiliated local telephone exchange carrier is a reciprocal one. This obligation is only enforced if the local telephone company either does not manufacture equipment (by itself or through an affiliated entity), or it agrees to make available to the BOC any telecommunications equipment (including software integral to such equipment) that the local telephone company manufactures (by itself or through an affiliated entity) without discrimination or self-preference as to price, delivery, terms or conditions.

Section 227(d) imposes certain information disclosure obligations on the BOCs. The BOCs' telephone exchange service facilities are essential facilities for a wide variety of telecommunications products and services, including long distance services, cellular services, information services, CPE, and telecommunications equipment. Those who interconnect with and those who manufacture equipment to operate with the local exchange network are dependent on the BOC for full and complete information about protocols and the technical requirements for such interconnection. To design customer premises equipment and telecommunications equipment, for instance, manufacturers of such equipment must know what interfaces will be made available for the interconnection of their equipment to telephone exchange facilities.

In presenting the antitrust case against AT&T, the DOJ made several allegations that AT&T had withheld critical information concerning the operation of the telephone network from outside equipment manufacturers in order to favor its affiliated manufac-

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turing affiliate, Western Electric. Although the conditions of the market have changed substantially since that case was argued before the courts, some continue to assert that the BOCs would have the same ability and incentive to control their use of the information concerning their networks to favor their manufacturing affiliates.

To prevent the possibility that the BOCs might engage in such behavior, paragraph (1) directs the FCC to prescribe regulations to require a BOC to file and make publicly available the protocols and technical information concerning the operation of its network for the use of those that must interconnect with that network. The BOCs must report promptly to the FCC any material changes or planned changes to such protocols and technical requirements, and the schedule for implementation of such changes or planned changes. This provision is intended to cover all technical information necessary for the interconnection of other service providers to the network as well as for the interconnection and use of CPE and telecommunications equipment with that network. It is also intended that the BOCs will reveal when and where such changes to the network will take place as soon as these changes are planned.

Under paragraph (2), the BOCs must reveal the information required to be filed under paragraph (1) as early as possible, but at a minimum, no later than immediately upon making such information available to any of its affiliates. The purpose of this requirement, once again, is to ensure that competitive manufacturers of CPE and telecommunications equipment have an opportunity to compete on an equal footing with the BOCs' manufacturing affiliates. This notification requirement takes effect immediately when a BOC makes available the information to any of its affiliates, not just its manufacturing affiliates. The purpose of applying this provision to all affiliates is, of course, to ensure that a BOC would not attempt to avoid the "immediately" requirement by passing the information to its manufacturing affiliate through one of its other affiliates.

Further, such information should not be limited solely to the minimum information necessary for interconnection of equipment available at that time. The BOCs should reveal protocols and technical information that may be useful for the design and development of new equipment that interconnects with that network, including both CPE and telecommunications equipment. Paragraph (2) should not be interpreted to permit a BOC to withhold information concerning the network from both its affiliated and other unaffiliated manufacturers if such information could be useful to such unaffiliated manufacturers in designing new products or equipment that would be of benefit to the public.

All carriers providing regulated local exchange service, including the BOCs, are required under paragraph (3) to provide timely information concerning the deployment of telecommunications equipment in their networks to other regulated carriers serving the same area of interest. For the purposes of this section, the term "area of interest" means a geographic area encompassing one or more franchise exchange areas serving common social, economic, and other purposes related to the provisions of telephone exchange service by local exchange carriers. The geographic areas and the

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number of franchise exchange areas covered by this term are not required to be uniform but may vary to meet differing conditions and requirements.

This paragraph does not require these carriers to engage in joint network planning because of the potential anitcompetitive and antitrust difficulties with such a requirement. The BOCs and the local carriers located in the same area of interest should, however, take whatever steps are necessary to ensure that efficient, transparent telephone service, using the latest technology, continues to be made available at the highest possible level to all members of the public.

As with subsection (c)(8), this provision is not intended to extend to a carrier that competes with a BOC in the same geographic area in the provision of local telephone service. This requirement on the BOCs does not lessen their obligations under paragraph (1) to make any material or proposed changes to the technical requirements of the network available to everyone.

Finally, paragraph (4) recognizes the FCC's authority to prescribe other regulations as may be necessary to ensure that manufacturers competing with a BOC's manufacturing affiliate have as ready and equal access to information with respect to the protocols and technical requirements for connection with and use of its telephone exchange service facilities that is necessary for such competiton as do the manufacturing affiliates. The FCC, as it has in the past, should protect commercially sensitive information. The BOCs' manufacturing affiliates are entitled to earnings based on their intellectual property and to protect the proprietary nature of their commercially valuable information.

Section 227(e) imposes additional obligations on the BOCs to protect competition and the ratepayer. Paragraph (1) requires that any BOC that has an affiliate that engages in manufacturing must provide to other manufacturers of telecommunications and CPE opportunities to sell such equipment to the BOC that are comparable to the opportunities it provides to its own manufacturing affiliate. "Comparable" as used in this section means that the BOC must seek out technically suitable, available equipment of good value and benefit to the corporation regardless of source.

The provision recognizes that it may be impossible to provide any two companies, affiliated or not, with "equal" opportunities to sell equipment. Such a requirement would be unrealistic and could subject the BOCs to such strignent standards and frequent litigation that they would choose not to enter the manufacturing market at all. It is also important to note that no other carrier, including AT&T, which purchases all its own equipment for its network, is obliged to provide a comparable opportunity to other manufacturers. The bill, however, does require the BOCs to strive to provide competitive manufacturers with opportunities that are as equal as possible to the opportunities they provide to their manufacturing affiliates.

Paragraph (2) requires the FCC to prescribe regulations to prohibit a BOC from subsidizing its manufacturing operations with revenues from the BOCs' regulated telecommunications services. The FCC may take whatever action it deems appropriate to pre-

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vent such cross-subsidization, including regulatory measures that go beyond those contained explicitly in this bill.

Paragraph (3) requires the FCC to prescribe regulations requiring that a BOC may only purchase (or acquire) equipment from its manufacturing affiliate at the open market price. The open market price of a product that incorporates sophisticated and rapidly changing technology generally reflects multiple product dimensions (e.g., product quality, specificity, and compatibility of design, timely availability, specific technology, future product support, and technology development). This provision is intended to protect both against anticompetitive self-dealing and cross-subsidization.

Section 227(f) permits the BOCs and their affiliates to work in close collaboration with any manufacturer of CPE or telecommunications equipment. This provision, for instance, permits a BOC to work closely with AT&T, or any other manufacturer, in manufacturing a piece of equipment to be used in the BOC's network or elsewhere. During the hearings on S. 173, several witnesses testified that the manufacturing restriction reduces efficiency and dampens innovation because it prevents the BOCs from collaborating closely with manufacturers of CPE and telecommunications equipment. A collaborative effort is often necessary to design and develop a successful product. Collaboration between manufacturers and network engineers and researchers can produce efficiencies that can lead to new products and innovative services. The inability to collaborate can cause delays and increased expense.[99]

The Committee intends to allow BOC personnel, personnel of its manufacturing affiliate, and any other affiliate, and any manufacturer, to work together in the design and development of CPE and telecommunications equipment, including hardware and software. Such collaboration, however, is not intended to override the separation requirement between the BOC and the manufacturing affiliate under subsection (b) and the other provisions of the bill. Further, such collaboration is permitted only subject to the rights of unaffiliated manufacturers to obtain access to all necessary technical information concerning the operation of the network at least as early as it is received by the BOCs' manufacturing affiliates under subsection (d). Finally, this provision is not intended to change the status of Bellcore. As mentioned earlier, this bill allows Bellcore to continue to conduct those activities that it is authorized to do today, but no more.

Section 227(g) authorizes the FCC to prescribe such additional rules and regulations as the FCC determines necessary to carry out the provisions and the purposes of this section.

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[99] "One of the factors that helps explain the relatively poor American showing in manufacturing performance and technology is the link between production and research/development/design. Constant flows of people, information, and ideas between research and production is characteristic of Japanese firms. In American firms, the processes of research (or design) and production are more often sequential, with the results of developmental work handed over to a different set of people for management of production. There is much less interaction between the designers of the product and the production managers."

See, "Paying the Bill: Manufacturing & America's Trade Deficit", Office of Technology Assessment, Congress of the United States, June 1988, p. 34. *See also*, "Special Report: Manufacturing: A Smarter Way to Manufacture: How 'concurrent engineering' can reinvigorate American industry", *Business Week*, April 30, 1990.

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Section 227(h) recognizes that the FCC has the same authority over the BOCs and their manufacturing affiliates that the FCC has in enforcing the 1934 Act with respect to any common carrier subject to the Act.

Section 227(i) requires the FCC to prescribe regulations to enforce this section within six months after the date of enactment of this section. The BOCs shall only be permitted to engage in the manufacturing authorized by subsection (a) after the regulations to enforce subsections (c), (d), and (e) are in effect.

Section 227(j) permits the BOCs to continue to engage in activities in which they were authorized to engage prior to the enactment of this bill. The District Court has granted waivers permitting the BOCs and their affiliates to manufacture and provide telecommunications and customer premises equipment outside the United States. This bill does not alter or void such authority.

These waivers prohibit the BOCs from importing back to the United States the telecommunications and customer premises equipment that they manufacture outside the United States under the authority previously granted by the District Court. Paragraph (3)(F) of subsection (c), however, does permit a BOC to use intellectual property created outside the United States in the manufacture of equipment in the United States, including intellectual property created by a BOC manufacturing operation engaged in manufacturing outside the United States under the waivers granted by the District Court. This provision is essential if the BOC is to be allowed to compete effectively in the worldwide market. Were this provision on intellectual property not included in the bill, a BOC would have an incentive to increase its overseas manufacturing operations in order to take advantage of the intellectual property that is available there. This is precisely the result that the Committee is trying to avoid.

Subsection 227(k) contains several definitions. Among the most important are:

Paragraph (1) defines the term "affiliate" to mean any entity that owns or controls, or is owned or controlled by, or is under common ownership with a BOC. Occasionally, as in section 227(c)(8), the term "affiliate" refers to the affiliate of a non-BOC telephone company, which is clear from context.

Paragraph (2) refers to a BOC as including any successor or assign of a BOC. Prior to divestiture, AT&T controlled and operated the Bell System's cellular businesses. At divestiture, AT&T transferred those businesses to the seven RHCs, not to the BOCs under the control of the RHCs. Therefore, the cellular businesses are not to be considered either successors or assigns of the BOCs for the purposes of this section. Such cellular companies, are, of course, affiliates of the BOCs.

Paragraph (4) defines the term "manufacturing" as it is defined by the District Court in its decision interpreting the term as it is used in the MFJ. Such term includes the design and development of equipment, including software integral to the operations of that equipment.

Section 3(b) of last year's bill, S. 1981, contained a conforming amendment to section 2(b) of the 1934 Act to recognize the FCC's authority to regulate the operations of the BOCs in relation to

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their manufacturing affiliates and the operations of the manufacturing affiliates themselves. This section was interpreted by some as preempting the States from regulating the activities of the BOCs and their manufacturing affiliates. That provision was not intended to pre-empt the States from exercising their regulatory responsibilities and did not do so. To avoid this interpretation, that provision was not included in this bill, S. 173. This bill makes no change in the authority of State regulatory officials to regulate in the best interests of their residents.

ROLLCALL VOTES IN COMMITTEE

In accordance with paragraph 7(c) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following description of the record votes during its consideration of S. 173:

At the close of debate on S. 173, the Chairman announced a rollcall vote on the bill. On a rollcall vote of 18 yeas and 1 nays as follows, the bill was ordered reported:

Yeas—18	Nays—1
Mr. Hollings	Mr. Pressler
Mr. Ford [1]	
Mr. Exon	
Mr. Gore	
Mr. Rockefeller	
Mr. Bentsen [1]	
Mr. Kerry	
Mr. Breaux	
Mr. Bryan	
Mr. Robb	
Mr. Danforth	
Mr. Packwood	
Mr. Stevens	
Mr. Kasten	
Mr. McCain	
Mr. Burns	
Mr. Gorton	
Mr. Lott	

[1] By proxy.

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ADDITIONAL VIEWS OF MR. FORD

Mr. Chairman, I am pleased to support this bill. I know you have put forth great effort and have built a strong case for removing the manufacturing restrictions from the Regional Bell Telephone Companies.

When passed into law, S. 173 will promote U.S. competitiveness in domestic and global telecommunications equipment markets, stimulate employment opportunities in the U.S. and preserve U.S. leadership in developing new, innovative technologies.

I support the Chairman in reporting this bill as it is presented today, however, I do want to convey my concern about the minority ownership provision. The purpose of this provision is to increase the oversight of the operations of the manufacturing affiliate by outside parties. This appears to be unnecessary since S. 173 already contains numerous and adequate safeguards. A more reasonable approach would be to require the filing of an annual independent audit with the FCC concerning compliance with safeguards contained in S. 173, particularly the one dealing with Bell Company purchases from affiliated manufacturers at the open market price.

Again, I want to express my support for the Chairman's leadership on this effort. This legislation is significant for the future of our telecommunications industry and U.S. positioning in the global economic market.

WENDELL FORD.

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ADDITIONAL VIEWS OF MR. KERRY

Mr. Chairman, last year I expressed several concerns with S. 173, Senator Hollings' bill to lift the manufacturing restriction on the Regional Bell Operating Companies (RBOC's). I supported the objectives of the bill, but I was concerned that the potential risks outweighed the possible benefits.

Having had more time to examine the complex issues raised by the proposal, I sense that the gains could be very large. We should look for ways to realize these gains and not be blinded by the risks. The concerns that I had last year remain—and I hope that the most important can be addressed before this bill gets to the floor—but they will not force me to oppose this bill today.

Obviously the world in general, and the telecommunications industry in particular, have changed since the break up of AT&T and the Modified Final Judgement. Competition in the telecommunications area has become increasingly fierce and increasingly global. Moreover, telecommunications and the Nation's productivity and overall competitiveness have never been so tightly linked.

In this environment of the 1990's, we have to ask ourselves if our current system of regulating telecommunications remains appropriate. I believe that allowing the RBOC's to compete in manufacturing can strengthen the competitive position of the U.S. globally. First, no longer will half of the Nation's telecommunication assets, and most of the network know-how, be sidelined. This is not a criticism of the companies that are currently in the industry; it is simply a belief that in an area as critical as telecommunications America must bring all of the resources at its disposal to bear.

Second, not only will the entrance of the RBOC's provide the U.S. with substantial international clout, but it will also dismantle an artificial barrier between R&D and product development. Part of the competitiveness problem in this country is due to the inability to convert a lead in basic R&D into a lead in new product development. The bill will clearly correct a structural barrier to communication within the business system and, in doing so, will undoubtedly generate efficiencies.

But, as was stated in the minority views of last year, one man's efficiencies can be another man's cross-subsidies. That is one of the dilemmas that policy makers face on this issue. Should we risk cross-subsidies in order to generate efficiency gains, or should we maintain a severe structural solution to the problem of cross-subsidies at the cost of efficiency losses?

Given the vital importance of telecommunications to our Nation's future and the increasingly fierce nature of global competition, I maintain that the potential gains from lifting the manufacturing restriction outweigh the possible risks. However, this support is contingent on our doing everything in our power to effectively protect not only ratepayers, but also existing manufacturers.

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A continuing danger in passing S. 173 in its present form is that the RBOC's will find ways to hurt ratepayers and competitors through cross-subsidy and preferential treatment. Furthermore, the very competitiveness that we are seeking to improve could be hurt if the RBOC's ally with foreign competitors and share profits and market knowledge and find ways to manufacture abroad.

The safeguards in the bill are extremely important in preventing these abuses from occurring. Personally, I would like to have seen them go further. For example, a safeguard prohibiting the RBOC's from purchasing from themselves, at least until such time as there is sufficient competition in the local exchange, would eliminate the problem of preferential treatment and still leave six-sevenths of the domestic market available. Moreover, a prohibition against joint ventures with companies from countries whose markets are not open to U.S. manufacturers would keep us from getting suckered into giving foreigners more access to our market than we have to their markets. I intend to see whether changes to this end can be made before we pass this on the floor.

With adequate safeguards policed with vigor—which is critical—this bill has the potential to benefit the telecommunications industry in this country. I envision an industry in which the RBOC's can lever their network knowledge to design new products and redesign existing products more efficiently. In this market for manufactured products, the RBOC's will face robust competition from existing players, who will not be afraid to cry foul when they see competitive abuses. As a result, I can envision an innovative industry in which no single RBOC dominates the market as a seller like Western Electric once did nor dominates the market as a buyer like AT&T once did. I can envision an industry in which the RBOC's under increasing competitive pressures in their bread and butter business of local network services look to the highest quality products at the lowest possible prices. Finally, I can envision an industry that is increasingly powerful internationally and not retrenching further at home.

Mr. Chairman, I hope that my deep concerns can be addressed as this bill moves forward.

JOHN F. KERRY.

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ADDITIONAL VIEWS OF MR. LOTT

Mr. Chairman, thank you for your diligent effort in moving this legislation forward. I am pleased to support this bill as it involves an issue I have followed for many years.

Before coming to the Senate, I introduced legislation in the House to allow the seven Bell operating companies to manufacture telecommunications equipment. Even then U.S. competitiveness in domestic and global telecommunications market was losing ground. Today over 60,000 American telecommunications manufacturing jobs have been eliminated since 1984. Practically all telephone sets and one-third of all telephone processing equipment are manufactured overseas. Major foreign companies are acquiring American telcommunication and related high-tech companies to increase their market share in this global economy.

S. 173 is timely and targeted to address many of these problems. The Regional Bell Operating Companies (RBOCs) represent over one half of the nation's telecommunications assets. They are greatly underutilized sources of opportunity and innovation for the U.S. The telecommunications equipment market is being divvied up before our very eyes, it is high time we unleash our best players.

Along this line, there are two provisions of this bill which I would like to request clarification on. In order to assure an equitable playing field I would like to revisit the provision dealing with debt issuance. This bill states that affiliates may not issue debt on behalf of a manufacturing affiliate. It also prohibits manufacturing affiliates from incurring debt in a manner that permits creditors to have recourse to the assets of the affiliated telephone company's telecommunications business. It is my understanding that the intent of this provision is to assure manufacturing affiliates do not have an unfair advantage over those manufacturers not affiliated with a Bell company. Secondly, the objective is to protect the local telephone company and its ratepayers from any risk incurred by manufacturing affiliates.

It seems to me that this provision actually puts manufacturing affiliates at a disadvantage by prohibiting *nontelephone company* affiliates of manufacturers from issuing debt on the manufacturer's behalf. Rather than neutralizing any advantage manufacturing affiliates have, it overlooks the fact that competitors such as NEC, Fujitsu, and Siemens are internally financed or receive lower cost of capital because of their corporate affiliation and proven track record. A more proper safeguard for the ratepayer is to prohibit regulated telephone companies from issuing debt on behalf of their manufacturing affiliates.

I would also like to express concern over the 90/10 provision dealing with oversight of a manufacturing affiliate's operations. This legislation states that the FCC must prescribe regulations to ensure that no more than 90 percent of the equity of a Bell Tele-

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phone Company's manufacturing affiliate may be owned by that Bell Telephone Company and its affiliates. The purpose of the provision is to increase oversight and a more effective way would be to require the filing of an annual independent audit with the FCC concerning S. 173 safeguards, particularly the one dealing with Bell Company purchases from affiliated manufacturers at the open market price.

On the whole, I am very supportive of this bill and am confident that these two matters can be resolved. I realize this legislation is critical to the future of the nation's telecommunications industry and I want to express my strong support of it. Once again, I commend the Chairman for bringing it to markup this morning.

TRENT LOTT.

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MINORITY VIEWS OF MR. INOUYE

For some 25 years, the Chairman of this Committee and I have served on the Commerce Committee. In that time, I can only count a few times that we have disagreed on a communications issue. I have learned that the Chairman is extremely knowledgeable about these matters and generally knows how to strike the proper balance. It is for that reason that I have had to think long and hard about opposing this legislation. At the end, however, I feel strongly that this legislation will not achieve its objective of increasing American competitiveness in the international telecommunications market. In fact, it may do just the opposite.

In Washington, we often believe history is what was on last night's news and ignore its import and significance. I consider that unfortunate. We ignore important lessons and wind up repeating our mistakes. I am afraid that by approving this legislation, this Committee has taken this narrow view of history and that we are setting in motion a cycle of conflict and uncertainty that may eventually lead back to the courts for resolution.

To comprehend the issue debated here, it is essential to remember a fundamental fact: the nation's local telephone companies are not like other businesses. Because they control essential telephone facilities and because they are rate regulated, they have incentives to act anticompetitively when they enter into unregulated lines of business. It is not that the people who work there are malevolent. On the contrary, I have found just the opposite to be the case. It is simply that these incentives cause them to use their undue market power to the detriment of competitors.

That is why the United States government has brought four antitrust actions against AT&T in the past seventy-five years.[1] Three of these actions resulted in AT&T divesting some of its operations. All of these actions resulted in AT&T or its progeny being prohibited from engaging in certain actions.

That is why companies and individuals filed dozens of private antitrust actions against AT&T during the years when newcomers were trying to enter into the telecommunications marketplace. These suits resulted in multimillion dollar awards.

With the most recent court action, we thought we had put most of these problems to rest. The source of this undue market power—the essential (bottleneck) local telephone facilities—was given to seven different companies (the Regional Bell Operating Companies or RBOCs) and these companies were forbidden to vertically inte-

[1] The first action resulted in the 1913 Kingsbury Commitment. AT&T agreed to sell its holdings in Western Union and to refrain from purchasing any local telephone company. The second action, in 1926, resulted in AT&T divesting its ownership of a nationwide radio programming network. The third action resulted in the 1956 Consent Decree, which in effect barred AT&T from offering data processing type services. The final action is the 1984 Modified Final Judgment.

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grate into certain businesses: the provision of long distance and information services and the manufacturing of communications equipment. Without the threat of anticompetitive acts, firms in these three "forbidden" sectors have flourished. Their growth rates are stunning.[2]

We are now asked to undo this arrangement based on vague promises that regulators can do a better job and that these firms have some special ability that can improve our lot. Untested theories, unproven approaches, and unknown protections do not give me any solace. The result will almost certainly be that all of the benefits gained by the Modified Final Judgment—at a not insignificant cost—will be for naught.

A closer examination of the specifics of this debate over the telecommunications manufacturing prohibition further demonstrates my points.

The Modified Final Judgment

The last two antitrust actions brought by the U.S. government were founded on the same premise: the structure of AT&T was inherently anticompetitive. Firms providing long distance or information services required AT&T's local telephone facilities to complete their calls. Firms manufacturing telecommunications equipment could hardly stay in business if they could not sell to AT&T's local telephone companies. Yet, AT&T, with control of almost all of this country's local telephone facilities, too was engaged in providing long distance and information services and in manufacturing equipment. Not surprisingly, AT&T, the government argued, acted to favor its own enterprises, either by cross-subsidizing them from regulated telephone revenues or by discriminating against competitors. In other words, because it controlled "bottleneck" facilities, AT&T had both the incentive and ability to foreclose competition. As a result, it was virtually impossible to compete against AT&T and for the Government's pro-competitive policy to be successful.

In the area of equipment manufacturing, the Government alleged that AT&T acted to foreclose competition in several ways. First, AT&T gave to its manufacturing subsidiary, Western Electric, ready and immediate access to key engineering and technical information about the local telephone network. At the same time, this information was withheld from or not given as quickly to competitors. Without timely information, competitors found they were at a grave disadvantage in designing and manufacturing equipment for the local telephone companies.

Second, AT&T used revenues from regulated telephone services to subsidize the local company's purchase of equipment from Western Electric and the sale of Western-provided customer premises equipment. More specifically, the Government claimed that costs of equipment research, design, and development were allocated to design of the basic telephone network. Thus, competitors were harmed by facing products sold at below cost, and ratepayers were harmed since their revenues paid for this predatory conduct.

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[2] *See* the Testimony of Michael J. Birck, chairman, Telecommunications Industry Association, Before the Subcommittee on Communications, on S. 173, February 28, 1991 and on S. 1981, May 9, 1990, pp. 1–6.

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Third, even where competitors produced a better product at cheaper rates, AT&T simply purchased from Western as a matter of practice. With the enormity of the Bell System and the relative lack of regulatory oversight, the odds of getting caught were slim.

The consequence of these practices was that the local Bell telephone companies purchased virtually all of their products from Western Electric, regardless of effectiveness, quality, or price. After all, how does a firm compete with a fully integrated monopolist that can merely turn to its subsidiary when it wants something? That is what the antitrust actions tried to remedy.

The obvious question at this point is: what happened to the regulators? Weren't they supposed to police these anticompetitive actions? To some extent, the regulators tried. The FCC conducted lengthy, but totally unsuccessful, proceedings into AT&T's manufacturing operations. State regulators only occasionally reviewed an equipment purchase by local telephone companies. Neither had direct jurisdiction over manufacturing operations, and neither spent much time in this area.

Despite the obvious lack of oversight of this area by regulators, AT&T argued at the beginning of the last antitrust case that regulatory oversight was so pervasive that the courts should not hear the case and should permit regulators to work their will. The court (Judge Waddy) soundly rejected this argument after a thorough review of the extent of the FCC's oversight of AT&T. The court concluded that the Commission failed to adequately oversee many AT&T activities, leaving more than ample room for anticompetitive conduct.[3]

The antitrust case thus continued. In early 1982, DOJ and AT&T entered into a consent decree, which later became, after court review, the Modified Final Judgment (MFJ). The overall thrust of the MFJ was to separate competitive activities from those that would continue to be regulated monopolies. AT&T kept the former, and the newly created seven BOCs were given the latter along with conditions restricting them from certain activities.

THE TELECOMMUNICATIONS MANUFACTURING RESTRICTION

The MFJ prohibits the BOCs from manufacturing telecommunications equipment and customer premises equipment. In a 1987 opinion, the court found that this manufacturing prohibition includes "the entire manufacturing process, including design, development, and fabrication." [4] The court went on to support this finding by stating:

> The decree was aimed at preventing in the future the anticompetitive practices in which the Bell System was assumed to have been engaged in the past. Yet the Bell System's practices in design and development were responsible for the section II(D)(2) restriction as much as, if not

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[3] Judge Joseph C. Waddy, *Memorandum Opinion and Order on Jurisdictional Issues*, November 24, 1976, U.S. v. AT&T, CA No. 74-1698, 427 F Supp. 57 (D.D.C., 1976); *AT&T v. U.S.*, AT&T, *Petition for Writ of Certiorari to the United States District Court for the District of Columbia*, January 6, 1977. AT&T appealed this ruling, but both the Court of Appeals and the Supreme Court refused to overturn it.

[4] *United States v. Western Electric Co.*, Civil Action No. 82-0192, filed Dec. 3, 1987, U.S. District Court for the District of Columbia.

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> more than, its practices with regard to fabrication. In fact, in virtually every "manufacturing episode" that was the subject of a pretrial charge by the government or that produced evidence at the trial, it was design and development manipulation that was the focus or the sole subject rather than discrimination with respect to fabrication.[5]

The scope of the manufacturing prohibition thus goes to the entire process. Yet, it is vital to this debate to understand that this does not mean that all the BOCs can do is issue generic requests and sit back to await the results. They can engage in a variety of manufacturing related activities, including close coordination with manufacturers to ensure that they obtain the necessary products. The following list provides a description of manufacturing activities within and outside the scope of the prohibition:

Manufacturing activity	Can BOCs' provide?	
Market research	Yes.	
Product conception—Generic specifications and functions of a product	Yes.	
Manufacturing ownership (In house, acquisition, joint venture)	No.	
Select exclusive manufacturer	Yes.	
Fund manufacture development	Yes.	
Engineering—Design of product	No	(but can work closely with manufacturer).
Manufacture prototype	No	(but can work closely with manufacturer).
Sell products they develop:		
CPE	Yes.	
Network	No.	

Despite the rhetoric heard during the MFJ debate, the BOCs' are able to work relatively closely with manufacturers in the design and development of products. For example, they meet regularly with equipment manufacturers through a group known as the Multi-Vendor Interaction program. Through Bellcore (the research and standards arm of the seven RBOCs), they have offices located at or near the plants of major switch manufacturers; and they regularly come to these plants to provide specifications for equipment and carry out tests.

The vice-president of Technology Systems for Bellcore demonstrated this close working relationship in a 1989 statement:

> Not only have we solved the immediate problems of divestiture, but we have as an industry, moved well beyond our immediate post-divestiture circumstances. In particular, we have seen major progress towards the opening of the telecommunications marketplace through a free flow of information on architectures, requirements, and interfaces. The response has been an outpouring of products that Bellcore's clients [the BOCs] are using to grow and evolve their networks, to provide existing services more economically than heretofore and to provide new services . . .
>
> In January 1984, our supplier database contained 2,000 companies; by January 1986, that number has grown to 4,850, and now we have 9,000 suppliers in our database

[5] Ibid. Pp. 17-18.

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> and 500 shelf feet of supplier information in our library . . .
>
> The two-way communications that has been established between Bellcore and the telecommunications supplier community is one of the successes of divestiture.[6]

All of this success is based on the fact that the BOCs cannot engage in manufacturing and thus have no reason to act anticompetitively. All of this success is in jeopardy if this manufacturing prohibition is lifted.[7]

Without having an in-house equipment manufacturer, the BOCs have embarked on a sophisticated strategy that meets their needs. They have used their enormous size and purchasing power to ensure they are not beholden to any single vendor. They have made sure that, for each product, equipment vendors compete to provide it. That way the BOCs obtain the best, most innovative equipment at the lowest price,

Moreover, over time, they have, in effect, forced vendors to tailor their products to specific BOC needs. For example, the BOCs had been concerned that the software in their switches was written in a way that required them to return to the vendors each time they wanted to change or create a service. Each such change may take up to a year or two. Because this delayed the provision of service, the BOCs met with the switch vendors and now the software is written in functions so that the BOCs can make these changes themselves. It is thus incorrect to state that the BOCs cannot work closely with manufacturers or have no control over vendors. Their very size ensures they are assiduously courted by each vendor.

Despite this working relationship, the proponents of this legislation allege that the full competitive might of the BOCs could be used much more extensively to increase our economic strength. They further argue that the regulators can control any anticompetitive problems, despite the fact that the regulators have never been able to do so. They contend that regulators have new tools at their disposal. Since these safeguards are fundamental, they should be explored more fully. Once they are, it is again clear that they are not sufficient.

SAFEGUARDS

While the BOCs may argue that their bottleneck strength is rapidly eroding, no other party—not even among their supporters in the Government—believes this to be the case.[8] Four years ago in its first triennial review of MFJ, DOJ found that the BOC's carried 99.99 percent of all interexchange access traffic in their service areas. While there has been some growth in local exchange competition, the fact remains that except for some of the largest global businesses in metropolitan areas, users are still totally dependent

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[6] Bellcore, *Digest of Technical Information*, January, 1989, pp. 1-4.

[7] For a more complete discussion of the interaction between the BOCs and equipment vendors, see the Testimony of Michael J. Birck, chairman, Telecommunications Industry Association, Senate Subcommittee on Communications Hearings on S. 173, February 28, 1991, and S. 1981, May 9, 1990, pp. 14-19.

[8] See, for example, *The Geodesic Network, 1987 Report on Competition in the Telephone Industry*, Department of Justice (Huber Report), Chapter 2.

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on local exchange companies for telephone service. New technologies are making competition in the local exchange technically possible, but competition does not yet exist. Were competition in the local exchange a reality, then there would be no basis for maintaining the manufacturing restriction on the BOC's.[9]

There is no real dispute that by permitting the BOC's to enter restricted markets in the absence of competition, they would have the same type of vertical monopoly structure that gave birth to DOJ suit against AT&T and many private anti-trust suits. This might also subject ratepayers to higher rates if adequate protections are not instituted. Are any remedies sufficient to protect against these anti-trust concerns while permitting entry?

There are two general types of anti-competitive conduct by the BOC's that must be addressed. First, they may cross-subsidize these new ventures. It is likely that new ventures, especially those now restricted, would share corporate resources, both people and telephone plant, with local telephone operations. The costs of these resources may be capable of being allocated specifically to each activity, but in many cases they will not. There is then the potential for some of these shared costs to be picked up in a greater proportion than proper by the ratepayer, giving rise to predatory pricing. For example, how should we allocate the costs of research that spawns innovations in both basic telephone services and unregulated equipment manufacturing? What about adminsitrative overhead, such as legal services? What about a telephone switch that provides various functions?

Second, the local telephone companies may give preferential treatment to their own ventures. Such preferences may take the form of advance notice of new products, services, or standards. It may involve use of existing customer information. Competitors may find themselves with a lesser grade of interconnection or with slower service. These and other types of preferences comprise a host of ways for competitors to be unfairly discriminated against.

CROSS-SUBSIDIZATION

In regard to the matter of cross-subsidization, the BOC's claim that they can construct a proper scheme of accounting for these common costs such that the ratepayer would not be harmed. The FCC, after many years of examining this matter, has finally established rules for such an accounting scheme.[10] At the Committee's May 1990 hearing on S. 1981, the Chairman of the FCC stated that these rules are in place and are working and that these rules require annual independent audits to ensure compliance with the rules. The true value of these rules, however, is very limited.

At the outset, it is questionable whether the FCC rules correctly allocate these common costs between regulated telephone operations and unregulated ventures. No one can deny that some of these allocation rules are arbitrary. Because they have been in

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[9] In fact, several states have statutes that provide exclusive franchise for local exchange service. Two States, Michigan and Colorado, are considering adopting similar restrictions.

[10] *Separation of Costs of Regulated Telephone Service from Costs of Nonregulated Activities*, FCC Docket No. 86-111, Report and Order, *FCC 86-584, released February 6, 1987.*

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place only a short time, no one can say with certainty whether they can work.

A GAO report of a few years ago questioned whether the Commission can ever implement an effective accounting scheme. This view is shared by almost all non-BOC entities. They argue that any allocation would be by its very nature arbitrary and that these accounts are too complex to track accurately, especially by the FCC with its limited resources. In any event, even if there is a successful accounting scheme, it does not address other financial aid the telephone parent can give the new venture. For example, the parent can guarantee debt acquired by the new venture. The parent also funds other key start-up costs. In each of these instances, ratepayers might well pick up costs not attributable to local telephone service.

An elaborate description of the problems involved in detecting cross-subsidization was contained in a letter to the staff working on the 1987 Huber report on behalf of the Telecommunications Committee on the Western Conference of Public Service Commissions:

> The presence or extent of cross-subsidy is obscured by the following three phenomena: cost allocation factors, indirect subsidies, and the shifting of risk from competitive to monopoly ventures . . .
>
> . . . the nature of joint and common costs is such that they cannot be associated with particular services on the basis of cost causation. Conventional practice has used cost allocation factors in a fully distributed cost study to allocate joint and common costs to the various services . . . The absence of a consensus on these cost allocation factors precludes state commissions from having confidence that cross-subsidization has been effectively prevented.
>
> . . . [Indirect subsidies occur] when an intangible asset is developed in the utility business—often at condsiderable expense to monopoly ratepayers—and the benefit of the intangible asset is effectively transferred to a non-utility line of business. This sort of transfer occurs when an affiliate is allowed access to the utility's pool of highly trained and experienced personnel, and when it is able to rely upon the utility's name and reputation of marketing information and usage patterns—all without proper compensation.
>
> . . . it may happen that competitive lines of business into which utilities diversify are inherently more risky than the franchised, monopoly utility operations. If that is the case, the diversified company's cost of capital will rise as a direct consequence of the diversification. If no adjustment is made, the utility subsidizes its affiliate by bearing a portion of the risk of the affiliate's line of business. Unfortunately, there is no consensus—either among regulators, utilities, or the professions—on methods for calculating the magnitude of this subsidy and removing its effect from the utility's proper share of aggregate costs.

There is then no reason to believe the FCC has finally crafted rules that properly allocate these common costs between regulated

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and unregulated activities so as to preclude cross-subsidization. But, even assuming they do, there are two additional significant weaknesses in relying on these rules. First, they do not apply to the states, which control most of the BOC costs. Second, they cannot be adequately enforced.

The FCC's common cost rules only apply to activities controlled by the Commission, that is, activities over the facilities used for interstate telephone calls. But, about three-quarters of the facilities (and costs) of the telephone company are not used for interstate calls. The states control activities over these facilities. The states, however, do not have to follow the FCC's rules; and few have comparable rules for the allocation of common costs. In addition to the lack of effective oversight in many states, because each BOC is in many states and because there is some flexibility in locating facilities and operations, they have some ability to avoid those few states with strict regulations.

While the FCC's independent audit requirement helps ensure that whatever is on the accounting ledgers complies with the common cost rules, it does little more. Some agency not only needs to check on the independent audits but has to look behind the ledgers. There are at least four reasons for more careful oversight: each BOC (1) adopts its own cost manual, (2) chooses its own cost allocation procedures, (3) selects its own auditors, and (4) uses its own reporting categories and terminology. The FCC has assured us they will carry out this task; however, the GAO recently indicated that the FCC has only enough resources to audit fully each major telephone company once every 16 years.

Both the FCC Chairman and the Chairman of BellSouth claimed at the Committee's hearing that the GAO figure is misleading and they pointed to the success of the recent FCC audit of NYNEX Material Enterprises. They claim that a full audit is rarely required and that selective enforcement is effective.

There are two major problems with this interpretation. First, the actions of NYNEX occurred about five years ago, and it was not until a short time ago that the FCC ruled on this matter. While FCC enforcement after such a long time may make the ratepayer whole, it does nothing for competing equipment providers. There is no way to make up for lost sales, especially when competition is stiff and margins are slim. Slow enforcement for these competitors is tantamount to no enforcement.

Second, selective enforcement only works when the auditors know what area to target. How did this work with respect to the NYNEX audit? The FCC acted only after disclosures were made to the "Boston Globe." So, the Commission was not in the posture of aggressively auditing or looking for problems. It was initially passive. As anyone knows, disclosures of the type in the NYNEX case are rare. It is at best misleading for the FCC to portray its policies as successful based on this case. It is more an example of regulation by good fortune. This is hardly a policy for the long run.

The FCC Chairman and the BOCs have also argued that the regulators are turning away from rate of return regulation and changing to price based on incentive regulation and that this will lessen the opportunities for cross-subsidization. First of all, rate regulation will always serve as a basis for overseeing the regulated tele-

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phone companies. Even under the FCC's price cap approach, the BOCs will be regularly evaluated to determine whether their earnings are excessive. In addition, if the BOCs ever find themselves underearning, they will seek changes in the regulations. This, in fact, occurred recently in New York where New York Telephone sought changes in its incentive plan when it found it was underearning by hundreds of million dollars. Second, whether this incentive regulation will be successful in lessening cross-subsidization depends entirely on how the plan is constructed. The FCC's proposal for the BOCs groups too many different services together and thus will not provide little protection. At the state level, the approaches tried so far are either short-term contracts that can be changed or complete deregulation (thus no control) of certain service offerings.

The best way to sum up all of these problems with policing cross-subsidization is to turn to a 1990 statement by FCC Commissioner Barrett—the only Commissioner who has also been a state regulator: "I contend there's a distinct possibility that there's not a regulatory body in the country that would recognize a cross-subsidy if it smacked them in the face." [11] There is simply no reason to have any faith that regulators can solve this problem. They have never had this ability; they have not acted to change this fact.

DISCRIMINATION AND PREFERENTIAL TREATMENT

As for the matter of preferential treatment, the BOC's claim that the FCC and state regulators can impose certain rules of conduct that will prevent such activities. The FCC, for example, has rules that require the disclosure of network information and the protection of telephone customer information from improper release. These rules, however, provide little solace for competitors; there continue to exist opportunities for preferential treatment that are too numerous for any regulatory body to police effectively.

At the outset, the supporters of this legislation argue that the world has changed: There are now seven companies, instead of one, and the market is global, not domestic. These supporters then go to argue that an equipment firm could not be successful selling just to itself and that this would aid detection. To begin with, there is a fundamental flaw in these agruments; the MFJ assumed this to be the case and still believed that the prohibitions on BOC activities were necessary even with the break-up of AT&T. That is because the MFJ is based on the BOCs' control of local exchange bottlenecks, and there is no doubt that the BOCs' control remains as great today.

While there are now seven companies, each company has a monopoly in its operating region (about 12 percent of the U.S. market). There is no question that this market power is sufficient to translate into total control over smaller equipment vendors. It will also translate into greatly increased leverage over even the largest vendors. In fact, the Department of Justice in its filing in the First Triennial Review of the MFJ admits that if the manufacturing restriction were lifted, each BOC could satisfy all or nearly

[11] *Communications Daily*, March 5, 1990, p. 1.

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all of its equipment needs from its own manufacturing affiliate.[12] The Huber Report for the Department "(The Geodesic Network, 1987 Report on Competition in the Telephone Industry)" estimates that in-house purchases by each BOC will foreclose anywhere from five to fifteen percent (and for some items as much as 20 percent) of the U.S. equipment market.[13] Under traditional antitrust analysis, serious competitive concerns are raised when as low as seven or eight percent of a market is foreclosed as the result of leveraging by a regulated utility. Consequently, the BOCs even in this new incarnation continue to pose a substantial threat to competition if they become vertically integrated, and the facts demonstrate that this threat is not diminished by regulatory oversight.

For regulatory oversight of discrimination to be successful, there must be similar prices for similar products (the so-called benchmarks). It should be noted first that the FCC had benchmarks prior to divestiture—in companies like GTE and United—but was unable to police anticompetitive acts. Second, benchmarks only work if there are outside sales. However, there is no certainty this will occur to any great extent. In most sectors of the communications equipment market, sales to one BOC would be considered enough to ensure a firm's success. Third, the 1987 Huber Report concludes that telecommunications equipment prices for similar products can vary, sometimes greatly. For example, the Report found that prices for similar switches can vary by about 20 percent, "a competitively significant margin." [14]

Not only is it difficult to find similar prices, it is difficult to find similar products. Many telecommunications products behave more as "custom" items than as commodities. More importantly, even for products where price variations have not been great, the BOCs have an incentive to make every product into a "custom" product. This makes regulatory detection virtually impossible.

Even assuming that is it easy to find similar products with similar prices, FCC oversight will likely prove ineffective in policing discrimination, First, the Commission acts after the fact, after a BOC has not bought a product from a competitor. The competitor must first present a case to the Commission that he offered a similar quality product at rates, terms, and conditions that were at least as good. The Commission then must get a response from the BOC, and then investigate and weigh the evidence. In the early 1970s, a company, Datran, brought such a complaint to the FCC. Before the FCC could complete its years of investigation, Datran went bankrupt.

More recently, US West admitted to four violations of the Modification of Final Judgment, including discriminatory pricing, and agreed to pay a record fine of $10 million (the largest civil penalty ever levied by the DOJ Antitrust Division). US West admitted to charging the GSA less for access than it charged AT&T, the competitive bidder for a GSA contract for the sale of switching equipment. This discriminatory pricing occurred between September,

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[12] *Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment, February 7, 1987, pp. 169-179.*

[13] *See* Huber Report at 1.15, 14.8, and 14.13-14.

[14] *See* Huber Report at 14.18.

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1985 and June, 1987. In addition, US West admitted to two violations of the MFJ imformation services restriction and one violation of the manufacturing restriction.[15]

Second, every year, the BOCs enter into many thousands of equipment transactions. Even if a small percentage of these were taken to the FCC, the Commission would have to increase its resources many times over to be able to deal with them. The reality is such that these resources will simply not be expended and that effective enforcement will simply not occur.

Finally, while the FCC has adopted rules requiring disclosure of technical information, these rules make this information available only at the "make/buy" point, that is when the BOC makes the decision to procure the product. However, prior to this point, there are extensive discussions about the technical make-up of the network. If the BOCs were permitted into equipment manufacturing, they would be part of these extensive discussions, giving them a head start over the competition.

THE SEPARATE SUBSIDIARY SAFEGUARD IN S. 173

Supporters of this legislation admit that the existing regulations are insufficient to control anticompetitive acts by the BOCs. S. 173 proposes that these activities be carried out through separate affiliates with some outside financing. The purported value of these separate affiliates is that while they do not change incentives to act anticompetitively, they make these activities somewhat easier to detect.

There are two major problems with S. 173's separate affiliate approach. First, this approach was rejected by the antitrust experts in the AT&T case as insufficient. They recognized that such an approach continues to rely on regulatory oversight, and they had no indication that such oversight would ever be adequate. Second, the idea behind separate affiliates is to separate costs and activities as much as possible. S. 173 begins down this road and then turns around to permit greater commingling by the parent and the offspring in order to gain the benefits sought by this legislation. By this maneuver, the ease of detection gained through separate affiliates is greatly diminished.

Further, S. 173 as reported has been severely weakened since it was initially introduced as S. 1981 in the 101st Congress. The Bell Companies have succeeded in having several of the original safeguards removed from the bill. For instance, the original bill required the Bell Companies to manufacture out of separate subsidiaries, required them to deal with the subsidiary on an "arms-length" basis, and required the subsidiary to be "fully" separate from the telephone company. S. 173 as reported changes the subsidiary to an affiliate, and it deletes the "arms-length" and "fully separate" requirements.

In fact, S. 173 goes further by specifically adding language that allows a Bell Company affiliate to "engage in close collaboration with any manufacturer . . . during the design and development of

[15] The Department of Justice agreed to drop nine other pending investigations against US West. *See U.S. v. Western Electric Co. et al. (Civ. Action No. 82-0192(HHG)), Feb. 15, 1991.*

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hardware, software, or combinations thereof . . ." This language specifically recognizes that a Bell telephone company can work closely with its affiliated manufacturer to the exclusion of any other manufacturer. This provision almost invites discriminatory self-dealing.

In sum, the safeguards relied upon in this legislation are chimerical. Ratepayers and competitors will have to return to the pre-MFJ days and continually go hat-in-hand to the regulators and ask for help. No one has come before us with good reason why regulators have all of a sudden gained the skills and the will necessary to do this job. Even the Chairman of the FCC appears unsure of the abilities of regulators. In his statement before the Committee in 1990, he stated, "Finally, Mr. Chairman, we should bear in mind that, while S. 173 would change limitations imposed under the 1982 AT&T consent decree, it would have no effect on the potential antitrust exposure of Bell Companies . . ." [16] Thus, the Chairman understands that regulation may not work and that the antitrust laws have an important role to play. Whey then, don't we let them work? Why then, are we going down a road that will most likely lead back to where we already are?

The Putative Benefits of S. 173

Even the proponents of this legislation are convinced that some measures must be enacted to prevent anticompetitive acts by the BOCs. These proponents argue that any problems with these safeguards are more than offset by the benefits that can come from BOC entry into equipment manufacturing. It is therefore important to examine these putative benefits. In the end, they are just as imaginary as the proposed safeguards.

To begin with, the BOCs have absolutely no expertise in equipment manufacturing. They have no idea what the manufacturing process entails. They have never designed, made, sold, and serviced a product (with the exception of selling and maintaining customer premises equipment). For them to gain this expertise would take far too long, especially in today's dynamic environment. It is therefore almost certain that they will enter through acquisition, merger, and joint venture.

Likely candidates for deals with the BOCs are foreign manufacturers, all of whom are eager to sell in the American market. S. 173 correctly recognizes this threat, and the bill contains a domestic content provision. I commend the Chairman for including this provision. However, it is doubtful that the administration can accept it. Since this provision is fundamental to the objectives of this bill being achieved, I am greatly concerned that we will move this bill forward assuming that this provision will remain—when in fact it may vanish. If it does vanish, the effect of this bill will be to turn over our domestic manufacturing to foreign concerns. That would be a disaster.

Assuming the provision remains, what do the BOCs bring to the manufacturing market? First of all, the proponents argue that the

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[16] Statement of Alfred C. Sikes, Chairman, FCC, Before the Senate Subcommittee on Communications, Hearing on S. 1981, May 9, 1990, p. 7.

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BOCs will bring their technical expertise in transmission and networking and will be able to integrate this into the creation of new products. While there may be economies of scale in the operation of telephone networks and the creation of equipment, there is no evidence that they are so great that a vast amount of new and better products will be introduced more quickly. There is also no evidence that many of these economies are not already captured by the close working relationship of the BOCs and equipment vendors or that they could not be captured with just a few minor changes to the MFJ (that would not threaten renewed anticompetitive activity).

In addition, one man's economies are another man's cross-subsidies. Inherent in these ties between the regulated telephone activities and these new equipment activities is increased commingling and the blurring of lines. It was this very problem—that was unsolvable over seventy-five years of antitrust disputes with AT&T—that brought about the equipment prohibition in the MFJ.

The proponents also argue that the BOCs bring money. They argue that our small, high-tech firms are going under because they cannot find capital and that the BOCs can fill this void. This "BOCs as bankers" argument is somewhat puzzling. First, the capital markets in the United States are generally thought to work efficiently. Money flows fairly easily and constantly. If for some reason these markets are not working properly, we should address them directly.

Second, the BOCs do not have unlimited capital; and if they have excessive amounts, the regulators should examine whether their returns from regulated telephone operations should be lowered. With their capital, the BOCs make decisions on what can give the highest return. Today, they are investing this capital in the telephone network and overseas. They are also increasing shareholder dividends. There is no inherent reason why they would all of a sudden decide to invest in small, high-tech companies.

The proponents of this legislation next argue that by removing this prohibition on manufacturing our telecommunication trade balance will improve. While it is true that the years immediately following divestiture saw a substantial trade deficit, that trend has been reversed. Between 1989 and 1990, there was a 70 percent drop in the trade deficit in telecommunications equipment from $2.6 billion in 1988 to only $.8 billion in 1990. Exports completely overshadowed imports with a growth rate of 24 percent annually versus import growth of 2 percent in 1990.

Moreover, the United States continues to run a trade surplus in the higher value, telephone network products. In switching equipment used in telecommunications networks, the U.S. trade surplus increased from $115 million in 1988 to $710 million in 1990, an increase of over 500 percent in just two years. It is in this area of switching hardware and software that the issue of international competitiveness is most relevant and significant, for this segment requires the largest investment in capital and research and development, demands the greatest skills and knowledge about advanced technologies, and provides the greatest promises for advances in information movement and management.

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We run a trade deficit in the low end consumer and customer premises equipment, which are akin to consumer electronics products. However, representatives of the BOCs who testified before the subcommittee in the 1990 and 1991 hearings testified that they do not intend to enter this lower end market on a large scale. Thus, even the passage of this bill, by the BOC's own admission, will not improve the trade deficit in lower value equipment.

The greater fear here is that the BOCs will further worsen our balance of trade. As stated above, this legislation is precariously balanced on the domestic content provision. If this provision is weakened or removed entirely, this fear is likely to become a reality as the BOCs venture with eager foreign partners.

The proponents next turn to research and development, claiming that by permitting the BOCs to manufacture, the amounts expended here will increase dramatically. First as a general matter, it is incorrect to compare the R&D expenditures of the BOCs with those of American and foreign manufacturers because the BOC's are service companies, not manufacturers. The BOC's lower level of investment is entirely consistent with the nature of their business—they provide telecommunications services, not costly telecommunications products and data processing products.

Even if such gross comparisons were appropriate, we should not rely on a single quantitive statistic as the benchmark of competitiveness. It was recently noted that:

> Cultivating core competence does not mean outspending rivals in research and development. In 1983, when Canon surpassed Xerox in world wide unit market share in the copier business, its R&D budget in reprographics was but a small fraction of Xerox's. Over the past 20 years, NEC has spent less on R&D as a percentage of sales than almost all its American and European competitors.[17]

In addition, it must be noted that the amounts expended on R&D by domestic manufacturers have gone up steadily since divestiture. At that time, AT&T spent about $2 billion on R&D. Today, the divested AT&T alone spends about $3 billion. To this amount needs to be added the amount expended by the other domestic manufacturers as well as the amount expended by the BOCs and Bellcore. The total amount expended for R&D today by all domestic firms is about twice that expended at the time of divestiture. Because BOC entry would almost certainly cut into sales by existing businesses, particularly AT&T, while BOC R&D might grow, R&D for other companies—now with lower sales—would fall. In fact, it may well have the result of causing severe problems for current R&D efforts, including those by Bell Labs.

CONCLUSION

The Chairman has often stated that there's no education in the second kick of a mule. That goes for the third and fourth kicks as well; yet, we continue to show we have not learned our lesson.

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[17] C.K. Prahalad and Gary Hamel, "The Core Competence of the Corporation", Harvard Business Review, May-June 1990, p. 83.

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Given the opportunity to become vertically integrated, the BOCs will use their essential facilities to undermine the competition. We have 75 years of evidence to demonstrate this point.

The proponents argue that the world has changed—that in the global marketplace, we need the BOCs to use their strength to help us compete and that on balance the regulatory safeguards are sufficient. But, we have only vague promises that the BOCs can bring to the marketplace. In contrast, we know that they will try to act to the detriment of ratepayers and competitors. The trust we put into the regulators to protect these parties is greatly misplaced. Not only have they not demonstrated they deserve our trust; but, as soon as we pass this legislation, the BOCs will be back before the regulators looking to ease existing requirements—and they will continue to press all of these regulators until this is accomplished.

No one wanted AT&T to be divested, but we let it happen, believing it would bring benefits to the public and our nation. We went through years of uncertainty and problems because of this decision. Now, we are seeing the benefits, and they are substantial. I have heard no cogent reason why this should all be undone.

Finally, I would like to point out that the telecommunications manufacturing industries opposed to S. 173 proposed a compromise that was rejected by the supporters of this legislation. I believe that the proposed compromise was a genuine effort by the opponents of this bill to try to address the concerns of the BOCs and more importantly to try to find a common ground. I believe that the public interest would be better served if the interested parties devoted some efforts to resolving their differences on this legislation.

DANIEL K. INOUYE.

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MINORITY VIEWS OF MR. PRESSLER

I share Chairman Hollings' goal to increase American innovation and growth in the telecommunications equipment industry, and applaud his leadership on this key issue. This legislation passed the committee by voice vote last year.

At that time, though, a number of consumer groups, senior citizens, small business organizations, and state regulators voiced concern that, because of the lack of adequate anti-competitive safeguards, some companies may abuse the freedom this legislation would give them. These groups were concerned that a BOC could use its control of the local phone market to gain an unfair advantage when it enters an unregulated line of business. They argued that higher residential telephone rates could result from a BOC's decision to underwrite with ratepayer supported capital and personnel the expenses of launching its unregulated business ventures. These groups were concerned that consumers and competitors could be harmed by having to compete against products subsidized by ratepayer funds. And detection of these practices could be made very difficult by informal agreements and "creative accounting" of huge corporations who could bury ratepayer subsidization in the books, even with the separate subsidiary and other protection devices incorporated in this bill.

These groups and individuals argued that telephone companies are a unique business. My understanding of this aspect of their concern was best summarized by U.S. District Court Judge Harold Greene's comment that:

> To the extent that these companies perceive their new unregulated businesses as more exciting and more profitable than the provision of local telephone service—as they obviously do—it is inevitable that their managerial talents and financial resources will be diverted.

They point out that because telephone companies control the local telephone exchanges and are guaranteed a rate-regulated income, they have access to ratepayer funded capital and possess the market power to use against their competitors in unregulated lines of businesses. This concern is predicated on the belief that a company could effectively hide prohibited practices through informal agreements, creative accounting, or other methods.

Last year I did not object to this legislation. At that time I was not personally aware of any systematic evidence of violations or of deliberate efforts to undermine efforts to investigate ratepayer impact issues related to this legislation. However, I became concerned when I read subsequent press reports of a DOJ investigation into consent decree violations by US West, which serves my constituents in South Dakota. The investigation led to the assessment of a record $10 million fine against US West for engaging in anti-

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competitive behavior, providing information services prohibited by the consent decree, and violating the consent decree's ban on manufacturing telecommunications equipment. Part of the agreement was to drop the investigation of these and other activities under question. Because of the importance the US West case had to my state, and because of its relevance to this legislation, I tried to obtain more information as to how these practices could affect ratepayers in my state.

The nature of US West's record keeping make it impossible for regulators or government officials to prove or disprove with certainty whether violations occurred. A DOJ memorandum filed in Judge Harold Greene's U.S. District Court warned US West that: "[US West's] admitted history of noncompliance will provide a substantial basis for finding that any similar additional conduct is 'willful' and hence actionable as criminal contempt of the decree."

As a practical matter it is clear that a company of this size can frustrate legitimate investigative efforts, as I have recently learned first hand. I hold no great hope that any regulatory agency will have any better luck at receiving definitive answers in the future if US West continues its present practice of apparent stonewalling.

Because the majority of my constituents are US West ratepayers, this case is of particular concern to me. Although DOJ wisely and admirably stipulated that the $10 million fine should come out of shareholder funds rather than ratepayers, even they acknowledged that the fungibility of money makes it impossible to insulate the consumer from paying the ultimate tab.

In addition to the potential consumer impact of the fine, I raised concerns about the ratepayer impact of US West's actions to the extent that telephone company funds, which are generated by the ratepayers, are being used to develop, market, and operate these theoretically unrelated businesses. During questioning at the Senate hearings, Mr. James Rill, Assistant Attorney General, Antitrust Division, DOJ, indicated his confidence that US West telephone companies and their employees had engaged in the activities involved in the violation of the consent decree, but had no basis on which to estimate the magnitude of ratepayer impact related to the 13 activities in question. Only US West could answer this question definitely.

I think it is important to ascertain the amount of ratepayer resources directed towards these activities. Not only would such resource diversion put ratepayer service and funds at risk, but it also would put competitors at an unfair disadvantage. And as Judge Greene notes, it can distract them from their primary mission of providing and improving basic telephone service. I contacted DOJ and the FCC to ascertain background information on this matter, and asked US West to supply information on the extent to which ratepayer funds were used in connection with the development, operations, marketing, etc., related to these activities. Understandably, neither the FCC or the DOJ are able to answer the ratepayer impact question without complete information from US West.

Despite my repeated attempts to obtain answers from US West, they responded by altogether ignoring or redefining the questions as to how much ratepayer funding was used to launch and operate the practices questioned in the DOJ lawsuit. At best, their response

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can be characterized as avoiding the question; at worst it was disingenuous and misleading. For example, US West in an initial response sent to my office five boxes of paper with no organization or information describing the contents. In subsequent letters it misrepresented staff telephone conversations and later simply redefined the question so narrowly as to be—as one consumer advocate put it—"an insult to our intelligence." Further inquiries on basic information as to how much telephone company staff time and resources were invested in developing and marketing the 13 activities questioned by DOJ were answered with "we couldn't provide that type of information." Yet US West went to great pains to provide spontaneously, in writing, exactly how many hours and employees it claims to have devoted to my simple, straight-forward request for information. So I find it hard to understand how a business so efficient at record keeping in one area is so incapable of keeping track of how it spends ratepayers' resources. This uncooperative non-response makes it impossible to determine the ratepayer impact of US West actions, and gives me great concern that an unwilling corporation of this magnitude cannot be monitored sufficiently to protect its ratepayers from the abuses mentioned by consumer groups, seniors, small businesses, and others.

I am beginning to understand the frustration Judge Greene expressed in the earlier stages of this case when he noted that: "US West has been engaged in a systematic and calculated effort to frustrate the Justice Department's legitimate demands for information, frequently by patently frivolous and usually dilatory maneuvers."

I commend the Chairman for his efforts to include safeguards in this legislation in hopes they will prevent actions similar to those US West has undertaken. The US West experience, however, leads me to wonder whether those legislative safeguards can prevent such a huge corporation from using its local monopoly to compete unfairly, and from juggling and confusing its book work so as to make it impossible for any regulatory agency or watchdog group to adequately protect consumers. Virtually every group we contacted regarding this case voiced the unanimous opinion that US West's response not only avoided the question but was carefully crafted to avoid supplying any meaningful information from which to conduct an independent analysis using realistic definitions and relevant data.

The bottom line here is trust and corporate accountability. My experience with most telephone companies would generally lead me to give them the benefit of the doubt, as I have done in the past. I have found the vast majority to be straightforward in their dealings. I still hope US West will be more directly responsive in the future. But my first priority is to my constituents, and they are monopoly bound to US West. My vote against this bill in Committee was based in large part on my disappointment with US West's dilatory tactics and misrepresentations to date. Like Judge Greene I have felt frustrated in attempts to get straight answers to the questions asked. US West is our largest single telephone company, with monopoly control over most of my State. Its actions have a profound impact on the vast majority of my constituents. I will continue in my attempt to get a straight answer to my inquiry. Pend-

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ing the outcome of that process, I will reserve judgment with respect to future votes on this legislation. I agree with Senator Holling's desire to move this technology forward. But we must take care to protect consumers, seniors, and small businesses in the process. I hope we can do so. But for the time being, I must reluctantly voice my opposition to this legislation based on this particular case which affects my state so profoundly.

LARRY PRESSLER.

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CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

COMMUNICATIONS ACT OF 1934

Title II of that Act

TITLE II—COMMON CARRIERS

SEC. 201-226. * * *

REGULATION OF MANUFACTURING BY BELL TELEPHONE COMPANIES

SEC. 227. (a) Subject to the requirements of this section and the regulations precribed thereunder, a Bell Telephone Company, through an affiliate of that Company, notwithstanding any restriction or obligation imposed before the date of enactment of this section pursuant to the Modification of Final Judgment on the lines of business in which a Bell Telephone Company may engage, may manufacture and provide telecommunications equipment and manufacture customer premises equipment, except that neither a Bell Telephone Company nor any of its affiliates may engage in such manufacturing in conjunction with a Bell Telephone Company not so affiliated or any of its affiliates.

(b) Any manufacturing or provision authorized under subsection (a) shall be conducted only through an affiliate (hereafter in this section referred to as a "manufacturing affiliate") that is separate from any Bell Telephone Company.

(c) The Commission shall prescribe regulations to ensure that—

(1) such manufacturing affiliate shall maintain books, records, and accounts separate from its affiliated Bell Telephone Company which identify all transactions between the manufacturing affiliate and its affiliated Bell Telephone Company and, even if such manufacturing affiliate is not a publicly held corporation, prepare financial statements which are in compliance with Federal financial reporting requirements for publicly held corporations, file such statements with the Commission, and make such statements available for public inspection;

(2) consistent with the provisions of this section, neither a Bell Telephone Company nor any of its non-manufacturing affiliates shall perform sales, advertising, installation, production, or maintenance operations for a manufacturing affiliate; except that institutional advertising, of a type not related to

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specific telecommunications equipment, carried out by the Bell Telephone Company or its affiliates shall be permitted if each party pays its pro rata share;

(3)(A) such manufacturing affiliate shall conduct all of its manufacturing within the United States and, except as otherwise provided in this paragraph, all component parts of customer premises equipment manufactured by such affiliate, and all component parts of telecommunications equipment manufactured by such affiliate, shall have been manufactured within the United States;

(B) such affiliate may use component parts manufactured outside the United States if—

(i) such affiliate first makes a good faith effort to obtain equivalent component parts manufactured within the United States at reasonable prices, terms, and conditions; and

(ii) for the aggregate of telecommunications equipment and customer premises equipment manufactured and sold in the United States by such affiliate in any calendar year, the cost of the components manufactured outside the United States contained in the equipment does not exceed 40 percent of the sales revenue derived from such equipment;

(C) any such affiliate that uses component parts manufactured outside the United States in the manufacture of telecommunications equipment and customer premises equipment within the United States shall—

(i) certify to the Commission that a good faith effort was made to obtain equivalent parts manufactured within the United States at reasonable prices, terms, and conditions, which certification shall be filed on a quarterly basis with the Commission and list component parts, by type, manufactured outside the United States; and

(ii) certify to the Commission on an annual basis that for the aggregate of telecommunications equipment and customer premises equipment manufactured and sold in the United States by such affiliate in the previous calendar year, the cost of the components manufactured outside the United States contained in such equipment did not exceed the percentage specified in subparagraph (B)(ii) or adjusted in accordance with subparagraph (G);

(D)(i) if the Commission determines, after reviewing the certification required in subparagraph (C)(i), that such affiliate failed to make the good faith effort required in subparagraph (B)(i) or, after reviewing the certification required in subparagraph (C)(ii), that such affiliate hos exceeded the percentage specified in subparagraph (B)(ii), the Commission may impose penalties or forfeitures as provided for in title V of this Act;

(ii) any supplier claiming to be damaged because a manufacturing affiliate failed to make the good faith effort required in subparagraph (B)(i) may make complaint to the Commission as provided for in section 208 of this Act, or may bring suit for the recovery of actual damages for which such supplier claims such

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affiliate may be liable under the provisions of this Act in any district court of the United States of competent jurisdiction;

(E) the Commission, in consultation with the Secretary of Commerce, shall, on an annual basis, determine the cost of component parts manufactured outside the United States contained in all telecommunications equipment and customer premises equipment sold in the United States as a percentage of the revenues from sales of such equipment in the previous calendar year;

(F) a manufacturing affiliate may use intellectual property created outside the United States in the manufacture of telecommunications equipment and customer premises equipment in the United States;

(G) the Commission may not waive or alter the requirements of this subsection, except that the Commission, on an annual basis, shall adjust the percentage specified in subparagraph (B)(ii) to the percentage determined by the Commission, in consultation with the Secretary of Commerce, as directed in subparagraph (E);

(4) no more than 90 percent of the equity of such manufacturing affiliate shall be owned by its affiliated Bell Telephone Company and any affiliates of that Bell Telephone Company;

(5) any debt incurred by such manufacturing affiliate may not be issued by its affiliates, and such manufacturing affiliate shall be prohibited from incurring debt in a manner that would permit a creditor, on default, to have recourse to the assets of its affiliated Bell Telephone Company's telecommunications services business;

(6) such manufacturing affiliate shall not be required to operate separately from the other affiliates of its affiliated Bell Telephone Company;

(7) if no affiliate of a Bell Telephone Company becomes affiliated with a manufacturing entity, such affiliate shall be treated as a manufacturing affiliate of that Bell Telephone Company within the meaning of subsection (b) and shall comply with the requirements of this section; and

(8) such manufacturing affiliate shall make available, without discrimination or self-preference as to price, delivery, terms, or conditions, to all local telephone exchange carriers, for use with the public telecommunications network any telecommunications equipment manufactured by such affiliate so long as each such purchasing carrier—

(A) does not either manufacture telecommunications equipment, or have a manufacturing affiliate which manufactures telecommunications equipment, or

(B) agrees to make available, to the Bell Telephone Company affiliated with such manufacturing affiliate or any of the other affiliates of such Company, any telecommunications equipment manufactured by such purchasing carrier or by any entity or organization with which such carrier is affiliated.

(d)(1) The Commission shall prescribe regulations to require that each Bell Telephone Company shall maintain and file with the Commission full and complete information with respect to the proto-

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cols and technical requirements for connection with and use of its telephone exchange service facilities. Such regulations shall require each such Company to report promptly to the Commission any material changes or planned changes to such protocols and requirements, and the schedule for implementation of such changes or planned changes.

(2) A Bell Telephone Company shall not disclose to any of its affiliates any information required to be filed under paragraph (1) unless that information is immediately so filed.

(3) When two or more carriers are providing regulated telephone exchange service in the same area of interest, each such carrier shall provide to other such carriers timely information on the deployment of telecommunications equipment.

(4) The Commission may prescribe such additional regulations under this subsection as may be necessary to ensure that manufacturers in competition with a Bell Telephone Company's manufacturing affiliate have ready and equal access to the information required for such competition that such Company makes available to its manufacturing affiliate.

(e) The Commission shall prescribe regulations requiring that any Bell Telephone Company which has an affiliate that engages in any manufacturing authorized by subsection (a) shall—

(1) provide, to other manufacturers of telecommunications equipment and customer premises equipment, opportunities to sell such equipment to such Bell Telephone Company which are comparable to the opportunities which such Company provides to its affiliates;

(2) not subsidize its manufacturing affiliate with revenues from its regulated telecommunications services; and

(3) only purchase equipment from its manufacturing affiliate at the open market price.

(f) A Bell Telephone Company and its affiliates may engage in close collaboration with any manufacturer of custom premises equipment or telecommunications equipment during the design and development of hardware, software, or combinations thereof relating to such equipment.

(g) The Commission may prescribe such additional rules and regulations as the Commission determines necessary to carry out the provision of this section.

(h) For the purposes of administering and enforcing the provisions of this section and the regulations prescribed thereunder, the Commission shall have the same authority, power, and functions with respect to any Bell Telephone Company as the Commission has in administering and enforcing the provisions of this title with respect to any common carrier subject to this Act.

(i) The authority of the Commission to prescribe regulations to carry out this section is effective on the date of enactment of this section. The Commission shall prescribe such regulations within one hundred and eighty days after such date of enactment, and the authority to engage in the manufacturing authorized in subsection (a) shall not take effect until regulations prescribed by the Commission under subsections (c), (d), and (e) are in effect.

(j) Nothing in this section shall prohibit any Bell Telephone Company from engaging, directly or through any affiliate, in any manu-

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facturing activity in which any Company or affiliate was authorized to engage on the date of enactment of this section.

(k) As used in this section:

(1) The term "affiliate" means any organization or entity that, directly or indirectly, owns or controls, is owned or controlled by, or is under common ownership with a Bell Telephone Company. Such term includes any organization or entity (A) in which a Bell Telephone Company and any of its affiliates have an equity interest of greater than 10 percent, or a management interest of greater than 10 percent, or (B) in which a Bell Telephone Company and any of its affiliates have any other significant financial interest.

(2) The term "Bell Telephone Company" means those companies listed in appendix A of the Modification of Final Judgment, and includes any successor or assign of any such company, but does not include any affiliate of any such company.

(3) The term "customer premises equipment" means equipment employed on the premises of a person (other than a carrier) to originate, route, or terminate telecommunications.

(4) The term "manufacturing" has the same meaning as such term has in the Modification of Final Judgment as interpreted in United States v. Western Electric, Civil Action No. 82-0192 (United States District Court, District of Columbia) (filed December 3, 1987).

(5) The term "Modification of Final Judgment" means the decree entered August 24, 1982, in United States v. Western Electric, Civil Action No. 82-0192 (United States District Court, District of Columbia).

(6) The term "telecommunications" means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received, by means of an electromagnetic transmission medium, including all instrumentalities, facilities, apparatus, and services (including the collection, storage, forwarding, switching, and delivery of such information) essential to such transmission.

(7) The term "telecommunications equipment" means equipment, other than customer premises equipment, used by a carrier to provide telecommunications services.

(8) The term "telecommunications service" means the offering for hire of telecommunications facilities, or of telecommunications by means of such facilities.

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