

GERMANY'S NEW TELECOMMUNICATION LAW

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This article is a critical, comparative introduction to West Germany's new telecommunication law that suggests solutions to some of the problems the new law creates but does not address. The world currently is passing through a period in which the fruits of the third technological revolution are being diffused.¹ Part of that revolution is a new telecommunications technology that efficiently links computers, microelectronics and telephone lines, creating an information technology of advanced voice, video and data processing that is revolutionizing social and economic affairs. Diffusion of the new technology is uneven, repeatedly running squarely into restrictive and highly protective national telecommunications monopolies, which tend to be large, sluggish and wedded to the status quo. Yet, the world's telecommunication economy is changing as rapidly as governments permit the emerging technologies to be exploited.²

Government regulations both at the national and international levels, however, often lag behind, are often sorely outdated, and frequently hamper attempts to modernize. When the regulations

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1. See Bell, *The Third Technological Revolution and Its Possible Socioeconomic Consequences*, DISSENT, Spring 1989, at 164-76; see also D. BELL, *THE COMING OF POST-INDUSTRIAL SOCIETY: A VENTURE IN SOCIAL FORECASTING* (1973).

2. The telecommunications revolution apparently began in the United States but is rapidly spreading throughout the world where business and other opportunities similar to those found in the United States may develop. "A measure of the commercial significance accorded telecommunication capabilities is the growth seen in their relative share of the United States Gross National Product (GNP). Twenty years ago, communications and computer data processing, narrowly defined, accounted for slightly less than 2.7 percent of an \$892.7 billion, 1968 U.S. GNP. Today, they exceed six percent of a forecast 1988 \$4.9 trillion GNP." U.S. DEP'T OF COMMERCE, NTIA TELECOM-2000, at 25 (1988) [hereinafter TELECOM-2000]. The stakes and the players are mammoth. For example, the size of Japan's Nippon Telephone and Telegraph "is staggering. Even though the recent scandal has pushed its stock price to record lows—currently 1.44 million yen (\$10,900) a share—its market capitalization is still the equivalent of \$169.2 billion, bigger than International Business Machines Corp., General Motors Corp. and American Telephone and Telegraph Co. combined." Int'l Herald Tribune, Apr. 19, 1989, at 19.

are current, they tend to be episodic, seemingly more designed to defuse existing trade crises than to anticipate and avoid them.³ However, constructive governmental regulation of telecommunications at the national level is stirring. It is beginning to look as though telecommunication at the national level may become an exception to the general pattern of "crises defusion" regulation, even though some telecommunication changes seem to have been motivated by the most provincial notions of national self-interest. International governmental agreement and regulation aimed at generally developing and maintaining an open, stable, fair and vigorous international telecommunication order remain to be created.⁴

I. THE UNITED STATES: FROM MONOPOLY TO COMPETITION

Telecommunications developments in the United States are instructive. They represent an early response to demands of the third technological revolution, and provide a convenient benchmark for understanding and comparing developments in other countries, even though the United States institutional telecommunications pattern traditionally has been distinctly different from those found in the rest of the world.⁵ The United States has had the greatest experience with competition in communications, and the world currently is moving towards more competition. It is useful, therefore, to begin a comparative analysis of recent liberalization in Germany with a brief synopsis of the development of American events.

The United States' role in telecommunication developments is characterized by classic American commitments to individualism, private ownership of enterprises, strong legal protections for contract and property rights, an unabiding faith in markets and al-

3. For a discussion of the responses of government to economic crises see P. GOUREVITCH, *POLITICS IN HARD TIMES: COMPARATIVE RESPONSES TO INTERNATIONAL ECONOMIC CRISES* (1986).

4. See, e.g., J. ARONSON & P. COWHEY, *WHEN COUNTRIES TALK: INTERNATIONAL TRADE IN TELECOMMUNICATIONS SERVICES* (1988).

5. For an overview, see TELECOM-2000, *supra* note 2; see also S. BARNET, M. BOTEIN & E. NOAM, *LAW OF INTERNATIONAL TELECOMMUNICATIONS IN THE UNITED STATES* (1988); U.S. DEPT. OF JUSTICE, *THE GEODESIC NETWORK* (1987); G. BROCK, *THE TELECOMMUNICATIONS INDUSTRY: THE DYNAMICS OF MARKET STRUCTURE* (1981); Wiley, *Competition And Deregulation in Telecommunications: The American Experience*, reprinted in E. MESTMÄCKER, *KOMMUNIKATION OHNE MONOPOLE* 31-50 (1980) (I draw on these books, except where otherwise indicated, for the remainder of the description of the American telecommunications industry).

though waning somewhat recently, deep concern about the antisocial, exploitative potential of private monopolies and large business concentrations. Because of the emphasis on private enterprise, the telecommunications roles played by United States governmental bodies have been more limited than in other countries. In the United States, government influence has been largely limited to ameliorating cases of market failure or providing for national defense. Market failure exists whenever markets lack the necessary competitive structures and mechanisms to safeguard against developing antisocial concentrations of private economic power such that the market neither functions efficiently nor in socially beneficial ways, usually because of certain "industry peculiarities." In such circumstances, monopoly exploitation, arbitrarily distorted prices and resource allocations can occur that generally lead to demands for government action, usually resulting in some form of regulation. In telecommunications, chief among the more important "industry peculiarities" are: the natural monopoly characteristics found in telecommunications networks, an absence of property rights in the electromagnetic spectrum and public-good externalities inherent in the legal requirement of universal service.⁶ As a

6. The Federal Communications Act of 1934 places on the Federal Communication Commission the obligation to build a telecommunications system that will "make available, so far as possible to all the people of the United States, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges." 47 U.S.C. § 151(1) (1934).

The theory of natural monopoly was not well developed in 1934 when the Communications Act was passed. It postulated the production of a single, identical commodity or service and rested on the belief that economies of scale (declining average cost per unit of output) at least to the level of market output was enough in and of itself to show natural monopoly and would deter all possible competitive entry. The ability of a natural monopolist to repel profitable entry by using economies of scale was seen as justification for complete regulation of the firm. It may well be justified if only one single identical commodity or service is involved. However, the modern theory of monopoly includes analyses of multi-product outputs. It yields the counterintuitive conclusion that a natural monopolist is not necessarily protected against successful market entry by competitors if two or more commodities or services are produced, rather than only one. Moreover, the property of a monopoly being natural is now seen as a purely economic and technological function and can be estimated and expressed as a cost function, assuming a given level of market demand. In other words, a natural monopoly is present for a given level of production if one and only one firm can produce an entire level of production of one or more products at a lower cost than any two or more firms acting in concert. Thus, natural monopoly corresponds to what is known as the "subadditivity" of the cost function. See W. SHARKEY, *THE THEORY OF NATURAL MONOPOLY* (1982); W. BAUMOL, J. PANZAR & R. WILLING, *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (1982); Shepherd, "Contestability" vs. Competition, 74 AM. ECON. REV. 572 (1984). The modern theory is gravely limited in that it is static and does not account for bringing about technological change or new goods and services and it assumes that all firms share the same technology. It also assumes that an incumbent will be

result of such peculiarities, most telephone, telex, telegraph and other basic communication services are provided by governmentally regulated private firms known as "common carriers."

A common carrier is an enterprise that either voluntarily holds itself out, or is expressly required by law, to provide transmission or some other basic telecommunication service on a non-discriminatory basis to all financially qualified customers.⁷ A regulated common carrier must sell or lease its transmission facilities or services to all financially qualified members of the public (including resellers who thereby can compete directly with the common carrier), under rates (tariffs) and other conditions that have been approved by the Federal Communications Commission (FCC), a state regulatory agency, or both. Local telephone exchange companies must grant access to all long distance carriers and to all telephone users. No common carrier may control or censor the content of the information it transmits. Communication satellites,⁸ international and domestic long distance telephone networks, and local telephone exchanges are all examples of common carriers.

A. *The Monopoly Era: The Rise of AT&T*

Until quite recently, the United States telecommunications industry was effectively a monopoly, consisting first and foremost of American Telephone and Telegraph Company (AT&T) plus a number of weaker and much smaller rivals. There was an early period during which it looked as though competition might emerge in the industry (1893-1910), but AT&T's aggressive market behavior led the industry back into a basic, *de facto* monopoly.⁹ Until di-

passive in the face of competitive threats. Yet, it does show that the existence of a natural monopoly (in subadditivity terms) is a necessary, if not a sufficient condition, for prohibition of entry into a market.

7. National Ass'n of Regulated Utility Comm. v. FCC, 525 F.2d 630 (D.C. Cir.), cert. denied, 425 U.S. 992 (1976). The Federal Communication Act definition of a common carrier is neither adequate nor specific enough: a common carrier is a "common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmission of energy. . . ." 47 U.S.C. § 153(h) (1946).

8. For a good discussion and overview of satellite communication, see M. SNOW, *THE INTERNATIONAL TELECOMMUNICATIONS SATELLITE ORGANIZATION (INTELSAT)* (1987).

9. From 1907 to 1915, AT&T's few remaining competitors brought a mounting number of antitrust suits against it. In 1913, AT&T entered into the Kingsbury Commitment with the United States Department of Justice wherein AT&T sold its interest in Western Union, thereby leaving telegraphy never to return, guaranteed the then existing telephone companies access to its long distance network and agreed not to acquire its telephone competitors or their territories for AT&T's expansion purposes. AT&T focused much of its efforts in additional markets such as sound movie and commercial radio technology, but in 1921 the

vestment in 1984, AT&T was probably the most vertically integrated telecommunications firm in the world, producing almost everything from all kinds of telecommunications equipment, conducting research and providing long-distance transmission and local service.¹⁰

Because of obvious market failure and a clear lack of any genuine, robust competition, government regulation of interstate telecommunication firms as common carriers came in 1934 when Congress passed the Communications Act,¹¹ leaving the intrastate aspects of telecommunications for regulation by the states. For a long time the FCC and state regulatory bodies prohibited competition and preserved monopoly areas by carefully excluding telecommunication firms from each other's markets; moreover, the FCC set tariffs, guaranteed profits and other contracting conditions, and sought to prohibit the regulated companies, especially AT&T, from exploiting their monopoly powers.

Courts were also involved. For example, in 1956, AT&T began operating for a period of about twenty-five years under a Consent Decree¹² that ended a United States Department of Justice anti-trust suit brought in 1949, restricting AT&T to its common carrier transmission status, and prohibiting AT&T, *inter alia*, from directly providing data processing and other enhanced telecommunication services.

B. Movement Toward Deregulation and Reliance on Competition

The present era is characterized by a policy shift from monopoly to deregulation and reliance on competition. It began effec-

restrictions were lifted and AT&T again began acquiring other telephone companies. By 1934, when the Federal Communications Act was passed, AT&T owned eighty percent of all the telephones in the United States as well as the only national long-distance set of transmission lines.

10.

Western Electric (now AT&T Technologies) produced both terminal and switching equipment; Long Lines Division (now AT&T Communications) provided ninety percent of the nation's long-distance traffic; Bell Labs (the only AT&T entity to survive without a name change) did basic research through a complex set of contracts with the other AT&T components; and twenty-two wholly or majority-owned local telephone companies—such as New York Telephone Company or Southern Bell—provided local exchange service to one or more states.

S. BARNET, M. BOTEIN & E. NOAM, *supra* note 5, at 24.

11. Federal Communications Act, 14 U.S.C. § 151 (1949).

12. United States v. Western Electric Co., No. 17-49 (D.N.J. 1956). This Consent Decree was later amended to provide for AT&T's recent divestment. See *infra* note 29.

tively in the mid-to-late 1960's when widespread business user needs for high-speed digital data communications (telephone lines plus computers) became clear, and new microwave technology was perceived as being able to overcome some of the "industry's natural monopoly peculiarities" in intercity telecommunications transmission. The FCC studied the emerging problem in its First Computer Inquiry (Computer I),¹³ and reached five conclusions: (1) computer and communication services were in their infancy; (2) timely development of these services was crucial to overall United States economic growth and needs; (3) many users of existing telephone communications capabilities were dissatisfied; (4) special private lines capable of being shaped to meet unique user needs were necessary and possible, particularly high speed data transmissions and (5) the integrated office automation systems market should be subject to competition. Primarily as a result of these conclusions, the FCC began reassessing whether continued monopoly regulation or deregulation and competition was generally in the public interest. Deregulation ("liberalization") became the new philosophy.

A judicial push toward deregulation and competition in terminal equipment had come earlier in 1956 when the District of Columbia Court of Appeals ruled that AT&T acted illegally when it followed its internal policy of allowing only its own customers' premises equipment (CPE) to be connected to its system, and refused to allow the Hush-A-Phone to be connected to any of the telephones, which Bell Operating Companies owned and lucratively rented to customers.¹⁴ Having lost, AT&T's position was that the court's decision was strictly restricted to its facts, not applying to other terminal equipment. However, while the Computer I inquiry was being processed, the FCC, in 1968, decided *Carterfone*,¹⁵ ruling that AT&T must allow the non-AT&T-owned *Carterfone*¹⁶ to be interconnected to its lines because it did not adversely affect the telephone system, and because it satisfied an

13. GTE Service Corp. v. FCC, 474 F.2d 724 (2d Cir. 1973).

14. Hush-A-Phone v. United States, 238 F.2d 266 (D.C. Cir. 1956). The Hush-A-Phone is a cup-like device that one places on the telephone handset to funnel the speaker's voice directly into the telephone instrument thereby facilitating telephone conversations in offices and other crowded places.

15. *Carterfone*, 13 F.C.C.2d 240 (1968), *reh'g denied*, 14 F.C.C.2d 531 (1968).

16. Thomas Carter marketed to private persons this device that acoustically and inductively interconnected mobile radio systems with the national telephone system. AT&T refused to allow the *Carterfone* to interconnect and the manufacturer petitioned the F.C.C. for relief.

unmet communications need. This ruling ultimately led to the FCC's creation of a Federal registration program for all terminal equipment, and to the current situation of full and free competition in the manufacture, sale and interconnection of all types of non-harmful, terminal equipment (CPE), from simple telephones to highly sophisticated office systems.¹⁷

Network trunk lines have a similar history. Conditions facilitating the move towards deregulation and competition in network trunk lines and basic transmission services were created earlier in 1959 with the FCC's *Allocation of Frequencies*¹⁸ decision. With that decision the FCC began to tear down legal monopoly barriers to new, self-contained network trunk lines. It did so by ruling that any responsible applicant for a private, non-common carrier microwave transmission system from point-to-point would be granted entry and be authorized to operate even though other common carrier facilities existed that could provide service to the applicant. Because microwave technology was new and relatively cheap, many large businesses in need of self-contained telecommunications transmission service such as pipelines, railroads and mining operations bypassed the publicly switched network completely and constructed their own private microwave transmission systems to serve their communications needs. AT&T also developed a competitive microwave technology capability within its own network.

The FCC next created a specialized common carrier (SCC) status, and further stimulated competition among basic, trunk line common carriers. It granted Microwave Communications Incorporated's (MCI) application for market entry to provide specialized point-to-point, microwave common carrier services between Chicago and St. Louis. The reason given was that the information flow between and within computers is based on digital technology, which microwave can handle, but the public telephone system, es-

17. The most important decisions instituting competition in terminal equipment were AT&T (Foreign Attachments), 15 F.C.C.2d 605, *reh'g denied*, 18 F.C.C.2d 871 (1969); First Report and Order, 56 F.C.C.2d (1975), *aff'd sub nom.* North Carolina Util. Comm'n v. FCC, 537 F.2d 787 (4th Cir.), *cert. denied*, 429 U.S. 1027 (1976); Second Report and Order, 58 F.C.C.2d 739 (1976), *aff'd sub nom.* 552 F.2d 1036 (4th Cir. 1977).

18. *Allocation of Frequencies in the Bands Above 890 Mc.*, 27 F.C.C. 359 (1959). The post-World War II development of microwave telecommunications transmissions technology provided a technological means of overcoming the natural monopoly characteristics of leased-line transmission between and among cities, but a problem remained within cities. In the *Allocation of Frequencies* decision, the FCC found that a sufficient amount of microwave channels existed fully to satisfy the reasonably foreseeable needs of common carriers and private inter-city, point-to-point microwave systems.

pecially local phone lines leaving office buildings, was, and largely still is, based on analog technology, which is best suited for voice (wave) transmission.¹⁹ Thus, although analog technologically can be converted into digital and vice-versa by modems,²⁰ the FCC believed an intrinsic incompatibility existed between computer and data requirements on the one hand and the extensive transmission facilities needed to support the rapidly growing demand for them on the other.²¹

19. The general shift from a continuous wavelike analog (voice or sounds are waves) to digital transmission, which consists of discrete pulses, is a most notable development, especially when linked with microelectronics. Through digital switching, a telephone line becomes converted to the use of binary systems, which in turn permits data transmission, linkage with computers, all permitting transmission of extremely high quality sound recordings such as musical discs, and the development of information theory. On the last, see, e.g., C. SHANNON & W. WEAVER, *THE MATHEMATICAL THEORY OF COMMUNICATION* (1964); R. HAMMING, *CODING AND INFORMATION THEORY* (1980); M. USHER, *INFORMATION THEORY FOR TECHNOLOGISTS* (1984); Bharath, *Information Theory*, *BYTE*, Dec. 1987, at 291.

Digital cable transmission links offer many advantages over analog. One of the most important is an improved error rate by greater elimination of noise, which tends to enter the system when analog's waves are boosted along by amplifiers: the error rate is about 1 in 10⁷ for digital but only 1 in 10⁶ for "dial-up" analog. Rather than being amplified, digital signals are simply regenerated when they pass through network nodes. While analog's error rates are acceptable for voice transmissions, they are too high for reliable data transmissions, a crucial element of the information age. Additionally, analog lines provide only limited speeds for data transmission (the modem is only one of the bottlenecks), but very high-speed data links are fully possible through digitalization. The third technological revolution, it seems, will produce the conversion of all previous systems into digital form.

20. Modems are cumbersome but will be necessary until analog telephone lines are fully digitalized. The most widely used modem is capable of sending reliable data traffic over dial-up, analog telephone lines at 2,400 bits per second (bps), but newer 9,600 bps modems are available. Higher-quality analog leased lines can support modems operating up to 19,200 bps. Companies that require high-speed data links cannot use modems and must either lease a special digital link from local and long-distance telephone companies such as those provided by AT&T Communications, which range from operating at 2,400 bps, to data and video transmission services, which operate at 1,544 megabits per second (commonly known as the T1 rate), or bypass part or all of the public telephone system by installing their own digital transmission lines, microwave or fiber-optic cable. See *infra* note 21. For discussion see Davis, *Making Sense of the Telecommunications Circus*, *HIGH TECHNOLOGY*, Sept. 1985, at 20.

21. Microwave was not the only new technology. Although microwave can establish a direct digital link and should not be overlooked because it is cheap to operate and offers acceptable error rates (1 in 10¹⁰ to 1 in 10¹²), it has drawbacks limiting its usefulness to certain situations. One is that it must have a clear "line of sight" between two end points. Another is the short transmission range and the tendency for rain or snow to interfere with transmissions at frequencies greater than 11 gigahertz, thereby requiring a much closer location of transmitters, perhaps every six or seven miles.

Developments in digitalized fiber optic cable transmission have clearly demonstrated that it, along with microelectronics and innovative software, are the keys to the future of telecommunications. Fiber optic cable delivers performances that simply cannot be matched by coaxial copper cables. Almost all of the digital capacity being installed today is fiber-optic cable, which is dazzlingly fast, can support huge amounts of traffic and provides ex-

In expressing a concern over this problem, the FCC, in its *Specialized Common Carrier* decision,²² ruled over AT&T's objections that specialized common carriers (SCC) should be allowed to enter the basic trunk line transmission market freely because SCCs were developing new markets and services that met otherwise unmet communication needs. In addition, it ruled that competition in the area would promote technical innovation of enhanced telecommunications services, and that AT&T's local Bell Operating Companies (BOCs) must afford SCCs reasonable interconnection services similar to those provided AT&T, so the SCCs could reach and serve local customers. This decision was a long step toward creating competition among basic networks. One year later, in 1972, the FCC adopted a similar competitive entry policy toward domestic satellite communications networks. Furthermore, it sought to make free market entry economically meaningful by protecting new competitors from AT&T's existing economic strength by prohibiting AT&T for three years from using its satellite facilities for private line services.²³

It was an easy next step to institute competition in local area

tremely reliable transmission. Since 1980 some thirteen million kilometers of fiber-optic lines have been installed in Europe, America and Asia, and that figure is expected to double by 1993. To function, the telephone voice channel needs only a narrow frequency bandwidth of 3.1 kilohertz. Microwave transmissions work at one million times this frequency, and the infra-red light transmission of fiber-optics has a frequency 100,000 million times greater than telephone's conventional voice channel.

The discovery in the 1970's that infrared light can be propagated economically within glass fibers gave rise to opto-electronics. A single fiber-optic line consists of a core made of glass or plastic the thickness of a human hair, a cladding that surrounds the core to reduce light-scattering loss and a buffer coating to protect against physical damage. A typical fiber-optic cable is about the size of a garden hose and consists of 144 glass fibers; each fiber can support four thousand voice channels or two thousand conversations. In April 1989, a fiber-optic cable was completed across the Pacific Ocean. It can carry forty thousand simultaneous telephone conversations, compared with the previous maximum of six thousand transpacific calls handled by standard coaxial cable and satellites. Fiber-optic cable induced error is most rare; transmission is almost at the speed of light, and a completely digitalized fiber optic telephone system, reaching all American residences and business offices, ("the Superpipe") is clearly the wave of the future. For discussion, see R. PEPPER, *THROUGH THE LOOKING GLASS: INTEGRATED BROAD BAND NETWORKS, REGULATORY POLICY AND INSTITUTIONAL CHANGE* (1988) (Working paper prepared for the Federal Communications Commission Office of Plans & Policy). U.S. Sprint is the only United States long distance carrier with a nationwide fiber-optic network, but Sprint's advantage may "slowly slip away as AT&T and MCI install it in their long distance network." *Int'l Herald Tribune*, June 12, 1989, at 13.

22. 29 F.C.C.2d 870 (1971), *aff'd sub nom.* *Washington Util. & Trans. Comm'n v. FCC*, 513 F.2d 1142 (9th Cir. 1975), *cert. denied*, 423 U.S. 836 (1975).

23. First Report and Order, 22 F.C.C.2d 86 (1970); Second Report and Order, 35 F.C.C.2d 844 (1972), *aff'd sub nom.* *Network Project v. FCC*, 511 F.2d 786 (D.C. Cir. 1975).

networks (LANs). Under FCC rulings and because they all are common carriers, AT&T and all its new network competitors must sell or lease basic transmission services on a non-discriminatory basis to any financially qualified user, including resellers. To meet an organization's internal and external communication needs that will permit data and other communication links among a company's computers, telephones, or both, large enterprises may lease or buy a complete local system, lease a telecommunication line, or privately install their own lines and then create their own local area networks. LANs in turn can be coupled to either a privately-owned (PBX) or a leased switch from the telephone company to gain access lines connecting them to the outside world.²⁴

In addition to fostering LANs, the FCC in the 1970s further increased competition in telecommunications in an important area by stimulating the development of value-added networks (VANs). An enhanced or additional service is "value-added" when it is superimposed onto the basic, "plain-old-telephone" network transmission service.²⁵ VANs provide enhanced services for consumers and primarily consist of software plus a switch. They are specialized, "intelligent" data networks geared to specific users' needs and offer advanced data and other services that go beyond the basic transmission services offered by network common carriers, i.e., voice and data channels plus switches to route signals to their intended destination. Except for those provided by the common carriers themselves, other owners' VANS must be hooked up to common carrier network lines in order to sell and deliver their services to ultimate customers.

Packet switching with protocol conversion can occur on public packet networks or on privately-owned bypass networks. In 1973, the VAN market saw heavy competition when the FCC approved a packet switching communications network offered by Packet Com-

24. LAN vendors now compete for business, selling LAN systems that will carry data at one to ten million bits per second (Mbps). This will considerably enhance business possibilities such as computer-aided design, or engineering, etc. The Bell Operating Companies have responded by marketing alternative systems, including Centrex and the Datakit Virtual Circuit Switch.

25. Examples are encryption, scrambling, forwarding and storage of messages, electronic mail, telephone and other directories, trade and industry information, news, sports, weather information, teleshopping for goods and services, telettranslation, telesoftware, teledictation, medical consultation, telediagnosis, tax consultation, expert reports, data banks of all sorts, bookkeeping, training and education, telemetry, teleprocessing, and telecontrol services. VANs typically fill a niche between the small data communication user who can get by with simple, dial-up analog telephone lines and the large corporate or other enterprise user that requires its own fully dedicated lines.

munications Inc.²⁶ and determined that market entry for packet switching should be allowed even though that entry might radically change market structure for enhanced, i.e., value-added, services. Packet switching is the method by which most VANs transmit their data. The process begins when messages are broken into discrete, one hundred character units, or packets, that also carry codes for packet routing, sequence and error correction. Thereby packets can carry messages of different users that are intermixed when transmitted over a single line. Packet assemblers and disassemblers are an adjunct of a digital switch, and protocols specify how the packet must be constructed. Many communication uses involve bursts of information between a remote terminal and a mainline computer. Ordinary communication lines can lie idle for short periods between bursts. A packet network exploits this unused capacity by constantly filling the transmission line with packets from many sources.

Packet switching introduced new and improved means for meeting consumers' data transmission requirements and did so in a way then not available from any other carrier. Two of Packet Switching's main advantages are a much higher rate of error detection and correction than other technologies, a boon to data transmission, and a capacity to divide transmission time into minute quantities which can be profitably resold wherever a differential exists between prices for high and low-traffic users. Additionally, packet switches are constantly becoming more rapid, from a previous fifteen-hundred packets per second to five thousand packets per second, to an expected sixty thousand with parallel processing.

The FCC further stimulated VAN competition by its 1976 decision requiring all common carriers to abolish their internal regulations which banned or inhibited the unlimited resale and sharing of common carrier leased, flat-rate private line facilities and services.²⁷ Now independent VAN owners can purchase the unused

26. Packet Communications Inc., 43 F.C.C.2d 922 (1973). Packet switching originated in research done for the Pentagon by the Boston BBN firm (Bolt, Beranek and Newman), which resulted in "Arpanet" linking researchers nationwide and the currently-available commercial spin-off, Telenet.

27. Resale and Shared Use, 60 F.C.C.2d 261 (1976), *amended on reh'g*, 62 F.C.C.2d 588 (1977), *aff'd sub nom. American Tel. & Tel. v. FCC*, 572 F.2d 17 (2d Cir.), *cert. denied*, 439 U.S. 875 (1978). Common carriers traditionally have dampened competition by restricting or prohibiting resale or sharing of private line facilities and services (to avoid "cream skimming," see *infra* note 102) but exempting certain favored customers. At the time of the decision, AT&T prohibited resale and sharing generally, but voluntarily permitted Western Electric to resell and certain other groups to share AT&T services. *American Tel. & Tel.*

portions of a third party's leased private line at a cheaper rate than the service initially could have been purchased from the common carrier. Competition from reselling and sharing of leased lines at flat rates tends to produce benefits such as lower prices for basic and other communication services more closely related to costs, avoidance of unused capacity, better management of the network, and the creation, by research and development, of ancillary enhanced services using basic communication lines. Entities that resell basic communications services are common carriers under the 1934 Communications Act.

C. *The Divestment of AT&T*

Initially, AT&T was slow to embrace the FCC's new competitive policies. Apparently, this stance, plus additional AT&T practices, led to an antitrust suit in 1974. In the eyes of the United States Department of Justice, AT&T was attempting to monopolize a broad variety of telecommunication services and equipment markets in violation of § 2 of the Sherman Antitrust Act. These violations included unreasonably exerting control over the Bell Operating Companies (BOCs) to prevent or substantially impair interconnections which the SCCs, such as MCI, needed to serve their local customers. This activity unreasonably created a severe, structural "bottleneck" to competition in the unregulated intercity telecommunications market, and also restrained competition in unregulated telecommunications equipment markets.²⁸ After a trial on the merits had been nearly completed, AT&T and the United States Department of Justice in 1982 surprisingly chose not to go to judgment but settled their antitrust case in an unusual way. The 1974 case was dismissed and the parties agreed to a Modification

572 F.2d at 20.

28. *United States v. American Tel. & Tel.*, 552 F. Supp. 131, 139 n.18 (D.D.C. 1982), *aff'd mem. sub nom. Maryland v. United States*, 460 U.S. 1001 (1983). This situation is important for world developments. Companies sometimes use "bottlenecks" aggressively, even when it is not economically optimal to do so, to block competition and to develop a reputation for being a "tough" competitor, thereby deterring entry by prospective competitor. "Predators" must have a monopoly segment to rely on for this purpose. See J. WENDERS, *THE ECONOMICS OF TELECOMMUNICATIONS* (1987); O. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM* (1986); Kreps and Wilson, *Reputation and Imperfect Information*, 27 J. ECON. THEORY 253 (1982). In Europe, Japan and elsewhere in the world where a governmentally-owned monopoly controls large segments of the market during a transition time of turning away from monopoly to market-entry competition, the ability and incentive for predatory action is quite real indeed, requiring strict regulation of the former governmentally-owned monopoly.

of Final Judgment (MFJ), which became effective in 1984. Technically, this modification is an amendment to AT&T's previous 1956 Antitrust Consent Decree.²⁹

The new decree solved the anticompetitive "bottleneck" problem by requiring AT&T to divest itself of all of its local-exchange service companies (twenty-two BOCs) and equipment. This act removed more than sixty percent of AT&T's assets plus fifty percent of its revenue and eliminated a crucial segment of AT&T's vertical integration. The MFJ also ended AT&T's ability to require BOCs to pay inflated prices for equipment manufactured by AT&T's Western Electric, costs the BOCs recovered by charging higher government regulated prices to their local customers.

Currently, the twenty-two BOCs are owned by seven Bell Regional Holding Companies (RHCs). The Consent Decree created one hundred sixty-four Local Access and Transport Areas (LATAs) in the United States. Each Local Exchange Carrier (LEC)—there are more than one thousand independents plus the BOCs—is assigned and confined to one or more LATAs. BOCs directly offer Local Exchange Service, MTS or WATS toll service, Exchange Access service, Private Line service and Central Office Based Services; e.g., Custom Calling, Centron, and Gateway Information Transmission service. None of these generates or changes the information transmitted, and therefore, is not a value-added service. BOCs are not permitted to offer "enhanced" services except through a structurally separate subsidiary and then only with prior court approval under the MFJ. This restriction is expected to be lifted soon. They are prohibited from offering long-distance or international service. Furthermore, AT&T cannot provide local service.

AT&T kept Bell Labs, its FCC-regulated Long Lines Division (now renamed AT&T Communications), AT&T Information Services, a newly created entity whose purpose is to provide state of the art enhanced telecommunications services and AT&T Technologies, formerly Western Electric. Except for electronic publishing, which is in its infancy and does not yet have a sound competitive market and could easily become wholly dominated by AT&T if it were allowed to compete before August 1989, the MFJ lifted all of the previous 1956 court bans on AT&T participation in data

29. *United States v. American Tel. & Tel.*, Civ. No. 74-1698 (D.D.C. 1984), *modifying United States v. Western Elec. Co.*, Civ. No. 17-49 (D.N.J. 1956); see *supra* note 12. The initial decision is reported in *United States v. American Tel. & Tel.*, 552 F. Supp. 131 (D.D.C. 1982), *aff'd mem. sub nom. Maryland v. United States*, 460 U.S. 1001 (1983).

processing, computer, computer-related and information markets. Essentially, the new AT&T is a regulated trunk line common carrier offering the basic network service of transmitting communications between and among local and international exchanges and a potential and very potent competitor in all unregulated enhanced service markets. For the first time since the turn of the century, AT&T faces significant competition.³⁰ As the industry leader in the United States today, "AT&T has about seventy percent of the long-distance market [down from ninety-seven percent], followed by MCI with about twelve percent, and Sprint with eight percent," and the "rest is spread among smaller long-distance companies that serve specific regions."³¹

D. The FCC's Development of a More Competitive Value-Added Market: Eliminating Cross-Subsidization

Before the AT&T Consent Decree was agreed upon, the FCC in 1981 announced its decision in its Second Computer Inquiry, Computer II.³² Its twofold purpose was to stimulate competition and to further the development of all kinds of enhanced telecommunications services, especially VANs. To achieve these ends, the FCC developed a formal distinction between "basic" network services, i.e., essentially the pure, direct technological transmission of customer-supplied information, voice or data, without any pre-receipt modification by the receiver (basically direct telephone and telex), and "enhanced" (value-added) services, which largely consist of software driven services plus a switch transmitted over a network's lines. The FCC stated that these are essentially "any offering over the telecommunication network that is more than a basic transmission service." Specifically included are all "services, offered over common carrier transmission facilities . . . which employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different or restructured information; or involve subscriber interaction with stored information." The FCC determined that the burgeoning competition

30. "AT&T now faces substantial competition from other long distance providers. At year end 1987, there were as many as 540 long distance competitors—mostly resellers." TELECOM-2000, *supra* note 2, at 234.

31. Int'l Herald Tribune, June 12, 1989, at 17.

32. See Amendment of Section 64.702(a) of the Commission's Rules and Regulations (Computer II); 47 C.F.R. § 64.702(a) (1988). The additional quotations in the text are from these sources.

in enhanced service markets was crucial and expected it to become robust. Also, competition, not regulation, would serve the public's best interest. The FCC, therefore, eschewed all direct regulation of the enhanced, value-added services markets, classifying them as a non-regulated activity and allowing full, free market entry. Yet, problems of VAN market domination and cross-subsidization continued to exist because the BOCs and AT&T were very strong and well capitalized. They still had, and currently have, excellent technical personnel and management skill. Turned loose, they could have competed most effectively in, and probably dominated, the emerging "enhanced" services markets. Added to this is the ever present problem of cross-subsidization.

AT&T or BOC competitors, i.e., the other enhanced service providers, must pay a fee to transmit their enhanced services to customers over lines leased from AT&T or a BOC. It remains to be seen if AT&T or a BOC must charge itself the same fee for transmission of their VANs, and if so, is such a fee a genuine economic cost or is it merely an economically meaningless accounting entry since AT&T and BOCs have excess line capacity and pricing in enhanced service markets is unregulated. Also, in such a situation, it would be in AT&T's or a BOC's interest to push as many competitive value-added market costs back into its regulated market activity. The company would then be assured of governmentally regulated compensation to cover them. The pushed-back costs would not figure into the price of its enhanced service, which would then be cross-subsidized and become very competitive indeed. Moreover, the BOCs and AT&T seem to be in an unfair competitive position in the enhanced, value-added markets. They are able to fix trunk line technical standards that could favor their enhanced service offerings, cross-subsidize their competitive activities in fledgling enhanced service markets by pushing competitive costs into regulated areas and draw upon technical personnel, management, marketing expertise, and finance capital from their regulated basic trunk line services area.³³ "The heart of the cross-subsidy issue," a former Chair of the FCC has declared, "is found in the co-existence of monopoly and competitive markets."³⁴

33. Generally considered, a price structure is subsidy-free if no good or service, or combination of goods and services, can be provided separately and more cheaply. For discussion, see Faulhaber, *Cross-Subsidization: Pricing in Public Enterprises*, 65 AM. ECON. REV. 966 (1975).

34. R. WILEY, *COMPETITION AND DEREGULATION IN TELECOMMUNICATIONS: THE AMERICAN EXPERIENCE* 48 (reprinted in E. MESTMÄCKER, *KOMMUNIKATION OHNE MONOPOLE* (1980))

Seeking to enable easy identification and prohibition of cross-subsidization, the FCC ruled that, while AT&T and the BOCs would be permitted to compete in the enhanced services markets, they could do so only through structurally separate corporations.³⁵ An undesirable consequence of the FCC's ruling was that it removed AT&T and BOC's economies of scope.³⁶ Thus, their competitive ability to lower costs and prices of enhanced services to ultimate consumers was reduced, even though a very fine line may sometimes separate economies of scope from cross-subsidization. Additionally, as time passed and stronger competition took hold, neither AT&T nor a BOC was seen as so easily capable of dominating the enhanced services markets. But the dangers of cross-subsidization persisted, and AT&T and the BOCs retained their ability to fix their own technical standards in ways that could jeopardize competing enhanced service providers using the network. Similarly, AT&T and the BOCs possess other aspects of monopoly power from which AT&T's competitors must be protected. The FCC could not simply do away with the structurally separate corporation and thereby permit AT&T and BOCs to exploit their economies of scope.

In response to this problem, in August, 1985, the FCC initiated another inquiry into the area, Computer III.³⁷ The next year,

35. See Amendment of Section 64.702 of the Commission's Rules and Regulations (Computer II), 77 F.C.C.2d 384 (1980); 84 F.C.C.2d 50 (1980); 88 F.C.C.2d 512 (1981), *aff'd sub nom.* CCIA v. FCC, 693 F.2d 198 (D.C. Cir. 1982). The BOCs also need prior court approval under the MFJ to offer specific enhanced services. See 1982-2 Trade Cas. (CCH) ¶¶ 73, 118 (a restriction that is soon expected to be lifted).

36. In a multiproduct or multiservice area, certain synergies or complements of the production process may exist, called economies of scope, that can result in a single firm being able to produce an entire line of variously related products or services more cheaply than can several single firms each specialized to producing only one, or very few, of the total products or services produced by the multiproduct or multiservice firm. The case of joint production, where one output or service is necessarily related to another, is a familiar special case of economies of scope, and an example of it is the production of meat and hides or cottonseed oil and cotton. In telecommunications, for example, economies of scope in producing enhanced ("value-added") services may exist in the shared use of transmission lines, switches and equipment, which are used to supply basic services, the technical "know-how" from basic services for constructing enhanced value-added service networks, and the marketing of enhanced services by adding them to that used in basic services. For discussion of the conceptual and empirical aspects of estimating economies of scope, see generally Pulley & Braunstein, *Scope and Scale Augmenting Technological Change: An Application in the Information Sector*, 5 INFO. RES. & RESUME REP. 105-18 (reprinted in COMMUNICATION AND INFORMATION ECONOMICS: NEW PERSPECTIVES (M. Jussawalla & H. Ebenfield ed. 1984)); Baumol & Braunstein, *Empirical Study of Scale Economics and Production Complementarity: The Case of Journal Publication*, 85 J. POL. ECON. 1037 (1977).

37. Amendment of Sections 64.702 of the Commission's Rules and Regulations, Com-

the FCC announced its decision and also indicated that yet another inquiry, Computer IV, would be necessary to fully resolve matters.³⁸ In Computer III, the FCC basically reaffirmed its distinction between "basic" and "enhanced" services, but it eliminated the requirement that AT&T and BOCs compete in enhanced service markets only through unregulated and structurally separate corporations. The Commission essentially concluded that structural separation requirements for enhanced services decreased efficiency and innovation. These costs outweighed their benefits in limiting AT&T to engage in anticompetitive behavior. Nonstructural safeguards can effectively preclude anticompetitive behavior and improper cost shifting to regulated services. The next step was crucial.

The FCC shifted its regulatory policy from structurally separate protections against cross-subsidization and dominant carrier abuse of markets to non-structural safeguards. Particularly, the FCC required Comparably Efficient Interconnection (CEI), an equal access legal standard, and suggested that a proper Open Network Architecture (ONA) could be the "technological implementation of CEI."³⁹ CEI was substituted, in effect, for the structurally separate corporation requirement. CEI and ONA are important because they occur at a time when United States dominant carriers are building nationwide fiber-optic, fully Integrated Systems Digital Networks (ISDNs) and even more powerful Integrated Broadband Networks (IBNs). Without CEI and ONA, ISDNs can lead to greater technological standardization and integration. This innovation carries the danger, especially because of new switch technology, of being developed in ways that might decisively favor dominant carriers, or certain other suppliers, in value-added and other competitive markets.

CEI's basic requirement is that AT&T and BOCs afford their enhanced services competitors a hook-up to an AT&T or BOC

puter III, Docket No. 85-229, Notice of Proposed Rulemaking, F.C.C. 85-397 (Aug. 16, 1985).

38. Report and Order, 102 F.C.C.2d 655 (1985); Memorandum, Opinion and Order on Reconsideration, Common Carrier Docket No. 85-229 (May 22, 1987) [hereinafter Computer III].

39. *Id.* ¶ 211. Earlier at ¶ 148, the Commission observed:

The structural separation requirements sought to achieve this goal [nondiscrimination] by physically and organizationally separating the carrier's enhanced services subsidiary from its basic operations. . . . [A] byproduct of this arrangement was the foreclosure of possible efficiencies from integrating enhanced and basic operations. In adopting an equal access standard for CEI while removing structural separation, we will best preserve our nondiscriminatory policies while promoting efficiency.

trunk line network that is similar to the hook-up that AT&T or a BOC provides itself for its enhanced or value-added service offerings in competitive markets. CEI is a doctrinal, legal standard adopted by the FCC in Computer III. A properly unbundled ONA would be its technical implementation. Because ISDN consolidates and integrates, it raises market entry barriers to prospective competitors. For example, the ISDN construct will confront an AT&T or BOC value-added competitor with an ISDN service greater and more expensive than needed; yet, the competitor must purchase that whole amount of transmission service, raising his costs and prices, in order to hook-up to the ISDN. ONA can eliminate those barriers by unbundling the ISDN. This makes its components available for use, and reduces market entry barriers. CEI and ONA reach into the very center of a network and open it up for use by all competitors in the value-added, enhanced services markets. This lowers barriers to entry for new rival services and maintains fair conditions for market competition while simultaneously permitting AT&T and the BOCs to exploit their economies of scope.

Basically, ONA is a framework that disaggregates a network ("unbundling"). It is grounded on the fact that all of a network's central office exchange functions that connect communication links can be built by using various combinations of building blocks, "Basic Service Elements" (BSEs). The BSEs can be unbundled and made available as separate units to VAN operators. Different value-added, enhanced service providers require different BSEs, or different configurations of BSEs, that can be sequenced in various ways by a central routing point. ONA enables value-added, enhanced service providers to use only the trunk line network building blocks of their choice. What remains is the possibility of purchasing an expensive set of required components from a separate supplier (other resellers-users or third-party service providers) and substituting them for, while combining them with, the rest of its needed BSEs purchased from the basic network owner. Thus, ONA's unbundling of a telecommunication switch's multiple functions itself can allow for a competitive market to develop for the various functions of the exchange switch.

Rigorously enforced over time, a strict ONA requirement that reaches deeply into a basic network will likely produce widely available, diverse, almost individually tailored value-added services market, future competition in central exchange services, a significant possibility of private group networks appearing with local transport competition perhaps bypassing part of the public

switched system and technological movement towards a distributive, rather than a centralized, kind of physical architecture of public central office exchange functions. Obviously, the success of an ONA in producing diverse entrepreneurial opportunities and genuine competition in the enhanced services markets is directly related to the degree to which the dominant carriers' trunk lines are required to be unbundled. The greatest amount of opportunity and competition is more likely to ensue when a common carrier's trunk lines are unbundled to their maximum feasible technological degree. Anything short of maximum technological unbundling will probably not produce the greatest entrepreneurial opportunity and full, robust competition.

In addition to requiring CEI in Computer III, the FCC required three additional safeguards: dominant carriers must implement a separate and detailed cost accounting system that will prevent them from improperly shifting costs to regulated basic services from unregulated enhanced services within a carrier,⁴⁰ observe disclosure requirements notifying the enhanced services industry well in advance of any proposed technical or other changes in hardware, software or services that may affect the compatibility of their enhanced services with the network⁴¹ and disclose customer proprietary network information (CPNI). These safeguards mean the dominant carriers must deliver their information about their customers' use of their basic network services plus all information about their customers' networks and services in the enhanced services market to all participants in that market so all market competitors can compete having the same knowledge.⁴²

The CEI's legal equal access standard applies to all dominant carriers; i.e., to AT&T, the BOCs and other common carriers similar in scale to BOCs.⁴³ The FCC further ordered that dominant carriers file plans complying with CEI's requirement that

the basic service functions utilized by a carrier-provided enhanced service to be available to others on an unbundled basis, with technical specifications, functional capabilities, and other quality and

40. *Id.* ¶ 223.

41. *Id.* ¶ 252.

42. *Id.* ¶ 261. This information containing analyses of traffic patterns and other customer usages can be helpful when enhanced value-added service providers are calculating demand for their special services. The FCC addressed user group's concerns about CPNI and the possibility of confidentiality in its Computer IV Inquiry into Filing and Review of Open Network Architecture Plans, Common Carrier Docket No. 88-2, ¶ 411.

43. Computer III, *supra* note 38, at ¶ 154, applies CEI to AT&T and BOCs, and ¶¶ 61-65 of the Supplemental Notice to other large common carriers.

operational characteristics, such as installation and maintenance times, [to be] equal to those provided to the carrier's enhanced services.⁴⁴

CEI regulates on a specific service-to-service basis. The FCC also recognized that a proper kind of Open Network Architecture technologically could meet "the CEI goals of preventing discrimination and promoting efficiency" and "would permit AT&T and the BOCs to offer such [enhanced] services on an unseparated basis without the need for the filing and approval of service-specific CEI plans."⁴⁵ The proper kind of ONA would have to be "unbundled,"⁴⁶ allow for resale and also satisfy all other CEI parameters.⁴⁷

44. *Id.* ¶ 147, citing n.209 which states:

We recognize that exact equality, in the sense that the parameters of every installation of a given type of basic service are precisely identical, . . . is unachievable. . . . We require 'equality' . . . to mean that variations in the CEI parameters of the basic services offered to competing enhanced service providers, should be no greater than those of the basic services used by a carrier in conjunction with its enhanced service offerings. We will view any systematic differences between a carrier and its competitors in such variations as inconsistent with this equal access standard.

45. *Id.* ¶ 201. At ¶ 211, the FCC stated: "[e]ssentially, we conclude that in a network design that uses properly defined Open Network Architecture principles, a technological implementation of our requirements can replace our service-by-service regulation of carrier participation in enhanced service markets." In ¶ 201, the FCC also required "carriers to minimize interconnection costs for other [enhanced service] providers either by adopting a collocation policy or by providing the most efficient available means of concentrating traffic, such as loop or trunk multiplexing, so long as it does not discriminate either against or among other providers in so doing."

46. Computer III, *supra* note 38, at ¶¶ 214-16 states:

Unbundling and Resale Requirements

214. As part of any Open Network Architecture, carriers must provide unbundled basic service 'building blocks' (Basic Service Elements) to others on a tariffed basis. Such unbundling is essential to give competing enhanced services providers an opportunity to design offerings that utilize network services in a flexible and economical manner. In essence, competitors will pay only for those Basic Service Elements that they use in providing enhanced services.

215. To promote the development of economical Basic Service Elements and to deter possible discrimination, we require carrier-provided enhanced services to utilize Basic Service Elements under the applicable tariffed terms and conditions, including rates. Because the carrier's enhanced services operation will obtain Basic Service Elements under tariff, customers and competitors will have access to some basic cost information for monitoring the prices of the carrier's enhanced services. Conversely, each set of basic services that a carrier incorporates into an enhanced service offering must be available to the public under tariff as a Basic Service Element or as a set of Basic Service Elements.

216. The identification and availability of Basic Service Elements are key aspects of our unbundling requirement. While we require all basic services incorporated into a carrier's enhanced offering to be available to others as a Basic Service Element or Elements, we will not permit carriers to introduce Basic Service Elements *only* at the same time or after they introduce enhanced services that utilize

The FCC requested common carriers to submit specific designs for an ONA that met its requirements and delayed final decision on ONA until November 1988, when, in its Fourth Computer Inquiry, Computer IV,⁴⁸ it approved a "common ONA model" that had been filed by the BOCs.⁴⁹

those Elements. Instead, we require each carrier subject to the Open Network Architecture requirements to develop an initial set of key Basic Service Elements that can be used in a wide variety of enhanced services and that will be provided to the public upon request. We would expect such a set to contain unbundled basic service functions that could be commonly used in the provision of enhanced services to the extent technologically feasible.

47. *Id.* ¶ 218. The CEI parameters are discussed in Section IV.B.1. On November 18, 1988, the FCC, in its Computer IV Inquiry (Opinion and Order, Common Carrier Docket No. 88-2, Phase II, on Filing and Review of Open Network Architecture Plans, Phase II, F.C.C. 88-382, at 24) summarized its adopted CEI requirements in addition to unbundling and resale, including CEI requirements pertaining to interface functionality; technical characteristics; installation, maintenance and repair; end-user access; CEI availability; minimization of transport costs, recipients of CEI; and CEI pricing.

48. Amendment of Sections 64.702 of the Commission's Rules and Regulations, Computer IV, Docket No. 88-2, Phase I, Memorandum Opinion and Order Filing and Review of Open Network Architecture, F.C.C. 88-381 (adopted November 17, 1988) [hereinafter Computer IV, Phase I].

49. *See id.* ¶¶ 1, 496, and paragraphs cited therein. A short description of the core of the approved ONA model appears at ¶¶ 56, 57:

56. As a basis for describing the unbundling of basic services proposed in their ONA plans, the BOCs, in collaboration with Bellcore, devised a 'common ONA model' that represents the functional means through which an ESP [enhanced service provider] would interconnect with a BOC's network. As described in the BOCs' Report No. 4, the common ONA model is based upon the architecture of the existing BOC local distribution networks, from which unbundled BSEs and other features may be offered to the public. As noted above, the model consists essentially of BSAs, BSEs, CNSs, and ANSs. BSAs are the fundamental tariffed switching and transport services that allow an ESP to communicate with its customers through the BOC network. Under the common ONA model, an ESP and its customers must obtain some form of BSA in order to access the network functionalities that an ESP needs to offer its specific services. Examples of BSAs include line-side and trunk-side circuit switched service, line-side and trunk-side packet switched service, and various grades of local private line service.

57. BSEs [basic service elements] are optional unbundled features (such as Calling Number Identification) that an ESP may require or find useful in configuring an enhanced service. CNSs [customer network services] are optional unbundled basic service features (such as stutter dial tone) that an end user may obtain from a carrier in order to access or to receive an enhanced service. Features that the BOCs describe as BSEs and CNSs are generally resident in the stored-program-controlled switch located in a carrier's end office. Specially written generic software packages in the switch make these functionalities available to ESPs and end users. ANSs [ancillary network services] are other services that the BOCs say fall outside of the ONA construct, but which may be useful to ESPs. ANSs could include enhanced services offered by the carrier, such as protocol conversion, or other deregulated, non-common carrier services, such as billing and collection. Furthermore, some BOCs include a number of regulated, basic services in this category.

The approved ONA model fully applies only to the BOCs and to other large local exchanges and to common carriers subject to CEI, but not fully to AT&T or other interexchange carriers. The FCC found "that AT&T's participation in the competitive market for interexchange basic services distinguishes it from the BOCs for purposes of ONA policies."⁵⁰ Because the competitive nature of the interexchange basic service market provided an important assurance that access to those services will be open to enhanced service providers and because much of the basic service information of greatest use to enhanced service providers is controlled by local exchange carriers (BOCs) that deal directly with the ultimate user and not by interexchange carriers like AT&T, the FCC ruled that AT&T is not fully required to implement the type of BOC unbundling required by the ONA model. Instead, it may rely on its filed and modified ONA plan, which the FCC essentially approved as meeting CEI's requirements.⁵¹

E. Summary of United States Development Toward Competition

Telecommunications in the United States has moved significantly from being essentially a regulated monopoly to a more robust competition. The basic network system has become pluralistic instead of effectively monolithic, and a federation of subnetworks has emerged. Basic trunk line competition exists. However, economies of scale and scope still exist. Broad-based public networks continue, and soon there will be fully Integrated System Digital Networks (ISDNs) with powerful Integrated Broadband (IBN) capability, which clearly carry characteristics of a natural monopoly.⁵² Additionally, reselling of local and long distance basic tele-

BSAs and BSEs used for interstate purposes will be tariffed by the FCC in future rulemaking and state tariffing of intrastate use of BSAs and BSEs will be scrutinized "to ensure only that they do not undermine fundamental ONA objectives, particularly with respect to preventing anticompetitive or discriminatory effects on ESPs, and that they are sufficiently clear and complete to be useful to us and to ESP competitors in determining that our requirements are satisfied." *Id.* ¶ 283.

A discussion of the adequacy of this ONA model to produce competition to the fullest extent is beyond the scope of this Article.

50. Summarized in Computer IV, Phase II, F.C.C. 88-382, ¶ 4.

51. *Id.* ¶ 78.

52.

It should be clear that development and deployments of integrated broadband networks will put traditional institutional relationships and arrangements under enormous pressure. The question for policymakers is how to promote the public interest by permitting new institutional arrangements to develop that will result in the best

communications service is widespread, and private line networks have been created primarily by large volume users of voice and data transmission. For example, New York's major brokers have a private line connecting their Manhattan offices directly to international satellite links in New Jersey, thereby by-passing the public network entirely. Competition exists in enhanced services markets, which are characterized by specializations aimed at the satisfaction of individualized needs. America's telecommunication system is no longer characterized by a solitary uniformity; instead, it is now pluralistic. With developments like ONA, it permits different groups of users (each group having a common set of needs but each group's needs different from others) to operate by using more efficient networks. Competition and diversity in telecommunications have taken hold generally.

Regulatory problems will continue and much remains to be done in America. For example, easy, fair access and technological interconnections must be vigilantly protected, the adequacy of ONA to produce maximum competition must be guaranteed, avoidance of cyclical instability and oligopolistic market activity must be insured, new methods of redistributing services to all Americans will have to be created, a new and correct principle governing telecommunications carriers as providers of all forms of mass media must be generated, and a fair and effective world system of interconnecting telecommunication regulations matching the global scope of existing networks remains to be generated. But on the whole, competitive American telecommunications markets are vigorously responding to the demands of the third technological revolution.

II. THE OTHER SIDE OF THE ATLANTIC

The historical development of telecommunications in Europe is quite different institutionally because telecommunications traditionally has been a sovereign branch of government and subject to all of the vicissitudes of politics and bureaucracy. Its usual form has been some sort of a state-owned monopoly telephone network known as the "PTT," because it is linked politically, administra-

technological solutions and deployment of new services. The alternative is to allow players to 'game the process'—use the regulatory, policy and political processes to thwart potential competitors—resulting in less competition and few, if any, benefits for customers—both consumers and content/information service providers.

R. PEPPER, *supra* note 21, at ¶ 125.

tively and particularly by subsidies and other ties to the Post and Telegraph services. Although changes are in the winds and "liberalization" is in the air, most European countries still essentially operate through a state-owned national champion more or less similar to the AT&T that existed twenty-five years ago in the United States.⁵³ The technological developments available in the United States have been equally available in Europe, and some originated there, but they have been implemented more slowly, in good part because telecommunications has been seen strictly as a national political concern. The sluggish PTT monopolies frequently ignored the new technology's potential, focusing narrowly on universalizing their range of basic services in their national markets and on supporting local equipment producers. One consequence of PTT monopoly is that compared to the United States,

53.

The Institutional Spectrum in the European Telecommunications Market (1987)

Policy Options	West Germany	Belgium	Denmark	Great Britain	France	Netherlands	Italy	Norway	Spain	Austria
Complete State Ownership	yes	yes	no ¹⁾	no	yes	yes ²⁾	no ³⁾	yes	no	yes
Separate Post- and Ciroservices	no	yes	yes	yes	no	no	yes	no	yes	yes
Separate Regulatory Institutions	no	no	no	yes	yes	no	no	yes	partly	no
Separate Subsidiaries in Competitive Markets	no ⁸⁾	no	no	no	yes	yes	yes	yes	yes	no ²⁾
Strong Network Monopoly	yes	no ⁴⁾¹⁾	no	4)	no ⁴⁾	no	yes ⁶⁾	no	yes	
Change in Telecom Monopoly envisaged	yes (1988/89)	yes (1988/89)	no	no	yes (1988)	yes (1988/89)	yes (1989-90)	yes (1987)	yes (1987/88)	no
Distorted tariffs	yes	yes	yes	less	yes	yes	yes	yes	yes	yes
Unrestricted Use of Leased Lines for VAS Services	no ¹⁰⁾¹²⁾	no	no	no ¹¹⁾	no ¹⁰⁾	no ¹⁰⁾	no	no	no	no ⁹⁾
Extensive CPE Monopoly	yes	yes ¹⁰⁾	yes ¹⁾	no	no	yes	yes	no	yes ¹⁰⁾	yes ¹⁰⁾
Industrial-Policy Goals in Procurement	yes	yes	no	no	yes	yes	yes	no	yes	yes
No. of Network Operations	1	1	4	3 ⁶⁾	27	1	3	1	1	1

1) Regional - 2) Some private shareholdings envisaged. - 3) ASST owned by the state. - 4) Open for CATV networks. - 5) Private local networks possible. - 6) BT, Mercury and Hull Telephone. - 7) DGT and TDF. - 8) Beginning activities through DETECON. - 9) Radio Austria a partial exception for some VAS. - 10) Further liberalisation envisaged. - 11) Unrestricted sale at least until 1988 prohibited. - 12) Shared use possible, also some interconnection of public network.

EUROPEAN TELECOMMUNICATION ORGANIZATIONS 30 (J. Peck & J. Müller eds. 1988) [hereinafter Foreman-Peck].

European prices are from forty to sixty percent higher for switching equipment and forty percent higher for transmission equipment, not to mention total labor costs. Naturally, these prices must in turn be reflected in consumer charges.⁵⁴

Influenced during the 1980s by American developments and a free-market philosophy, the United Kingdom was the first to "liberalize" and introduce competition in its telecommunication sector.⁵⁵ It privatized its state-owned monopoly, British Telecom (BT), by selling off fifty-five percent of BT's shares, yet continued to subject it to regulation. In 1984 the United Kingdom allowed a trunk line network competitor to BT, Mercury, to enter the market with the possibility of more entrants after 1990. The United Kingdom created additional competition by authorizing the licensing of private providers of mobile radio, paging, Cable TV and a wide variety of VANs. With the most liberalized institutions and widest competition in Europe, the United Kingdom is located at one end of the European telecommunications spectrum.

France, too, has actively restructured her telecommunications industry, and has produced an aggressive, high quality system which is a model of efficient technostructure. France deliberately developed a high-tech electronics industry, and substantially increased government's role in telecommunications. She nationalized a huge share of the telecommunications equipment and electric industries. In essence, France's new system is structurally very much like the old AT&T-Bell system: extremely high quality and vertically integrated, ranging from a Research and Development division to equipment manufacturing components and a telecommunications transmission monopoly, all of which are government

54. ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT, TELECOMMUNICATIONS: PRESSURES AND POLICIES FOR CHANGE 44 (1983). PTTs are powerful participants in European politics.

On the service side, the [European] market is dominated by PTTs, which usually have a wide-ranging monopoly. They are large employers, accounting for between 0.5 to 1.7% of total civil employment, and the most important customer of the telecommunications equipment industry. The four largest operators, British Telecom of the U.K., the Bundespost of West Germany, France Telecom, and SIP (together with ASST and Italcable) in Italy—earn more than 80% of the telecom revenue of the European Community. They determine the agenda for much of the current restructuring debate, at the national level and in the international bodies of Comité Européen de Post et Télécommunication (CEPT) and the International Telecommunication Union (ITU).

Foreman-Peck, *supra* note 53, at 24-25.

55. See *id.* at 31. For further discussion of developments in Great Britain, see *id.* at 257-78; FOREMAN-PECK & MANNING, TELECOMMUNICATIONS IN THE UNITED KINGDOM (1988).

owned.⁵⁶ France's nationalization locates her at the opposite end from the United Kingdom in Europe's telecommunications spectrum.

Lying between the United Kingdom's liberalization and competition and France's nationalization is the status quo. Chief among the status-quo group is the Federal Republic of Germany with its excellent, well financed and politically powerful PTT, the Deutsche Bundespost (DBP).⁵⁷ It has a huge budget not subject to direct parliamentary control and its labor force makes it the largest employer in Germany. The DBP has a high quality, uniform infrastructure and is ably staffed by experienced personnel who are seasoned, skilled and effective practitioners of the art of preserving and extending the DBP. It is a powerful political force in Germany. The DBP abhors losing its monopoly control over any aspect of domestic and international telecommunication, and has neither favored others reselling its basic network services nor the leasing of private lines at a flat rate. It successfully has found ways to encourage consumers to use its high quality, publicly switched network, which delivers overwhelmingly uniform, not individualized, services. The DBP has the largest telex system in the world.

A. *The European Common Market Level*

The Institutions of the European Common Market are playing an increasingly important role in European telecommunications. At the integrated common market level, Europe is inching towards greater liberalization. A crucially important push toward community-wide competition came in 1985 when the European Court of Justice ruled that national, governmentally-owned PTTs were subject to the competition and antitrust provisions of the EEC's Char-

56. For further detail, see *id.* at 131-54; NGUYEN, TELECOMMUNICATIONS IN FRANCE (1988).

57. The Deutsche Bundespost has come to symbolize national merchantilism. Despite growing pressure from domestic and international users, other German ministries, the United States and the European Community, the Bundespost continues to follow a national protectionist policy with regard to equipment, basic telecommunications services and enhanced services. The Bundespost stubbornly insists that a subscriber's premises is inseparable from the network. It consistently argues that it must put the good of the customer before the good of the manufacturer. All primary instruments (although not all private branch exchanges) are supplied to users by the Bundespost to protect the customer and the network. The Bundespost once based its policies on three unquestioned assumptions: the market for services is essentially static, the Bundespost is more technologically competent to judge and serve the needs of its users than the German users and liberalization will inevitably lead to cream skimming and substantial revenue losses. J. ARONSON & P. COWHEY, *supra* note 4, at 179.

ter, the Treaty of Rome, at least to the extent that they engaged in commercial undertakings such as selling goods and services for payment in markets that were otherwise open to competition.⁵⁸

A legislative spur to competition occurred two years later when the Single European Act was adopted by all national parliaments of the European Community, amending the Treaty of Rome for the first time.⁵⁹ It established the European Technology Com-

58. *Commission v. Italy*, 20 March 1985, EuGH. Slg. 873 (885 et seq.) (1985); WuW 229. (1986) (British Telecom). This case is seen by the European Commission as one of the cornerstones for achieving competition in Europe's telecommunication industry.

British Telecom's (BT's) telex tariffs from England to the United States were lower, and telephone tariffs were even lower still, than telex or telephone tariffs from the continent to the United States. Telespeed, an independent British firm, received Telex messages and data from continental senders and then, without interruption because of its special equipment and leased hook-up directly to BT's telephone line, forwarded the messages or data to the United States, thereby making Telespeed's value-added service available at a lower cost for continental senders and generally faster than their materials could be transmitted by BT's Telex or from a Continental Telex. BT had no monopoly over ancillary services such as Telespeed's retransmission value-added service and a competitive market existed. On discovering Telespeed's practice, BT refused to permit any further retransmissions by Telespeed over its lines and Telespeed complained.

The European Commission found that BT, a governmental agency at the time, had engaged in "abusive," anti-competitive behavior in violation of Article 86 of the Treaty of Rome (EC's Charter): "Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited within the common market in so far as it may affect trade between Member States." On several grounds Italy challenged the validity of the Commission's findings before the European Court of Justice and lost on all counts. The Court ruled that Article 86 applied to BT, for "when [BT] took action against private message-forwarding agencies, BT was acting not as an official [Governmental] body but as an undertaking" because "placing [its] equipment at the disposal of private users on payment of a fee amounted by its very nature to a business activity. . . ." Telespeed's "employment of a new apparatus and methods, which accelerated the transmission of messages, constituted technical progress in conformity with the public interest and could not be regarded as an abuse" and, although Telespeed's activity "undoubtedly led to some decrease of revenue for BT," it also increased the number of users of BT's facilities and revenues. "[T]aken as a whole, the results therefore, were in no way unfavorable to BT." One should be clear that the Court ruled any governmental entity (i.e., DBP) will be considered as an "undertaking" within Article 86 whenever its activity is of a "business" nature; i.e., it relates to the offering of services or goods for a fee in a market otherwise open to competition. In addition to Article 86, competition is protected by Articles 85 through 90 of the Treaty of Rome.

59. Single European Act, 2 Bull, EC Annex 1986; EVR 1986, at 179; HER, IA 22. The new Article 8a that was added to the Treaty of Rome by this Act reads:

The Community shall adopt measures with the aim of progressively establishing the internal market over a period expiring on 31 December 1992, in accordance with the provisions of this Article and of Articles 8b, 8c, 28, 57(2), 59, 70(1), 84, 99, 100a and 100b and without prejudice to the other provisions of this Treaty.

The internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured in accordance with the provision of this Treaty.

Id., reprinted in H. UNGERER & N. COSTELLO, TELECOMMUNICATIONS IN EUROPE 228 (1988).

munity for regional research and technological development, and created the strategic vision that by December 31, 1992, Europe's borderless, internal common market should be completed. Envisaged is a continental free trade area of 325 million consumers, with foundations having been laid for improving the environment and working conditions, and for creating irreversible progress toward European economic and monetary union.⁶⁰ The Commission of the European Communities issued its Green Paper⁶¹ on telecommunications in June 1987 and, after receiving comments, announced its implementation schedule in February 1988.⁶² Since then, the European Commission has marched steadily towards its 1992 goal of an

60. See Commission of the European Communities, *Completing the Internal Market*, COM (85) 310 final, June 14, 1985.

61. *Towards a Dynamic European Economy—Green Paper on the Development of the Common Market For Telecommunications Services and Equipment*, COM (87) 290, 30 June 1987. The European Commission proposed that:

a) by 1990 the CPE market in the European Community should be completely open to competition, although probably a transition period beyond that date will be permitted for the supply of the first telephone,

b) from 1989 value-added services, especially those used by business, should be liberalized but there will be no obligation to introduce competition in the supply of basic voice traffic,

c) by 1992 telephone tariffs should be "reasonably" aligned with costs,

d) competition in CPE throughout the Community should be encouraged by establishing a European Telecommunications Standards Institute for equipment approval,

e) general principles should be agreed under which companies will have access to leased lines, and

f) in 1989 there should be free competition in the supply of small satellite dishes for reception only (i.e., slow data transmission).

62. *Towards a Competitive Community-Wide Telecommunications Market in 1992—Implementing the Green Paper on the Development of the Common Market for Telecommunications Services and Equipment—State of Discussions and Proposals* by the Commission, COM(88), 9 February 1988. The action deadlines announced were:

(i) Rapid full opening of the terminal equipment market to competition by 31 December 1990 at the latest. (Formal Directive 88/301/EEC under Article 90 was issued on 16 May 1988 in line with this schedule, but France and Germany have challenged its legality, and the case is before the Court of Justice).

(ii) Progressive opening of the telecommunications services market to competition from 1989 onwards, with all services other than voice, telex and data communications to be opened by 31 December 1989.

This will concern in particular all value-added services. Special consideration will apply to telex, packet and circuit-switched data services. (The proposed directive has been drafted, as has another proposed directive on Open Network Provision (ONP), somewhat similar to ONA, which would lay the ground rules for common technical standards, unbundling, minimum services and harmonization principles on which tariffs should be based. Both proposed directives are coming under intense pressure from PTT's).

(iii) Full opening of receive-only antennas as long as they are not connected to the public network, by 31 December 1989. Directive 88/301/EEC includes this target.

(iv) Progressive implementation of the general principle that tariffs should follow overall cost-trends. Review of the situation to be achieved by 1 January 1992.

open, diverse, competitive and integrated, but flexible, telecommunications system having common high quality technological standards. It does this primarily through issuing proposed draft laws or standards backed up by the threat of issuing Directives to Member States, which are subject to court challenge⁶³ and which are largely based on the competition requirements of Article 90 of the Treaty of Rome.⁶⁴ The Directives are mandatory and are seen as a swifter, more effective application of Article 90 than case-by-case litigation.⁶⁵ Directives are limited, however, because they must be cast in highly abstract and general language in order to permit their application to the EEC's twelve, considerably diverse nations.

III. GERMANY'S NEW TELECOMMUNICATION LAW AND THE DBP

Historically, when the German Empire (Second Deutsches Reich) was founded in 1871, the postal services of the individual states were merged and became the national Reichspost.⁶⁶ More recently, the Deutsche Bundespost (DBP), a PTT, has dominated the Federal Republic of Germany's telecommunication industry, essentially enjoying a monopoly for all postal and telecommunications services. Both services were joined under one governmental department in 1876 when the *Reichspost und Telegraphenverwaltung* was created and then expanded in 1877 to include telephone—a German PTT was born. The important Law on Telegra-

63. *Id.* See *supra* note 58.

64. Article 90(1) provides that:

In the case of public undertakings and undertakings to which Member States grant special or exclusive rights, Member States shall neither enact nor maintain in force any measure contrary to the rules contained in this Treaty, in particular to those rules provided for in Article 7 and Articles 85 to 94.

See *supra* note 58 (art. 86). Article 90(2) provides that:

Undertakings entrusted with the operation of services of general economic interest or having the character of a revenue-producing monopoly shall be subject to the rules contained in this Treaty, in particular to the rules on competition, in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them. The development of trade must not be affected to such an extent as would be contrary to the interests of the Community.

Article 90(3) provides that "the Commission shall ensure the application of the provisions of this Article and shall, where necessary, address appropriate directives or decisions to Member States." Also, see *supra* note 58 (Article 86 and its relevance to Article 90 and directives).

65. For further discussion of Common Market developments and European Commission perspectives, see H. UNGERER & N. COSTELLO, *supra* note 59.

66. For historical materials presented in this paragraph, I draw on Haid & Müller, *Telecommunications in the Federal Republic of Germany*, in Foreman-Peck, *supra* note 53, at 155-80.

phy of 1882 established exclusive monopoly rights for telephone and telegraph activities. It was revised by the Telecommunications Installation Act (*Fernmeldeanlagen-gesetz*) in 1928,⁶⁷ which is still a valid law, having been recently amended by the main subject of this article: Germany's new telecommunications law that took effect on July 1, 1989 (*Poststrukturgesetz*).⁶⁸ The DBP is a *Sondervermögen des Bundes*, meaning that it has its own independent budget, which is not under direct parliamentary control (but the budget and DBP's external borrowing must receive the approval of the Minister of Finance), and accounting practices. No regulatory unit exists like the FCC that is charged with the creation of a body of specific rules governing the DBP, and otherwise controlling it on behalf of the public interest, because the German dogma is that public enterprises under direct political control are part of government, themselves, and need no additional direct regulation on behalf of the public interest. The DBP is headed by a Federal Minister of Posts and Telecommunications (MPT), who also is a government Cabinet member, and the DBP's employees are civil servants.

Traditionally, the DBP has sought to extend its monopoly to new areas. For example, in the *International Courier Services* case⁶⁹ involving value-added services in the postal area, the DBP sought to extend its domestic express delivery service (Datapost) over the local delivery of letters by international air couriers, thereby restricting all delivery through DBP's facilities. However, this idea was rebuffed by the European Commission's ruling

67. Telecommunications Installation Act (*Fernmeldeanlagen-gesetz*) [hereinafter FAG].

68. Gesetz zur Neustrukturierung des Post und Fernmeldewesens und der Deutschen Bundespost (*Poststrukturgesetz*) adopted by the German Parliament during its 137th sitting, 20 April 1989, Bundestagdrucksache 11/2854, [hereinafter *Poststrukt G*]. Actually the *Poststrukturgesetz* includes both the *Postverfassungsgesetz* [hereinafter *PostVerfG*], which is the new Deutsche Bundespost Constitution Act, and the FAG, see FAG, *supra* note 67, which is the newly amended Telecommunication Installation Act, dating from 1928. See *supra* text accompanying note 67.

The new law has two goals:

The promotion of competition in the telecommunications markets by introducing new regulatory conditions, and a restructuring of the Deutsche Bundespost by separating the sovereign from the entrepreneurial tasks and by implementing a market-oriented business organization to insure that it can fulfill its infrastructural obligations and improve its performance in competitive markets.

Federal Government Cabinet, Substantiation of the Draft Law Concerning the Restructuring of Posts and Telecommunications and of the Deutsche Bundespost 4 (Passed by the Federal Government's Cabinet, May 11, 1988) [hereinafter *Substantiation*].

69. See 1 Bull. E.C. (1985), point 2.1.10 (West Germany); 12 Bull. E.C. (1985), point 2.1.79 (France); WuW 381 (1985).

against DBP that its requirement was an abuse of its power under the competition rules embodied in Article 86 of the EEC Treaty.⁷⁰ In the *Cordless Telephone* case,⁷¹ the DBP sought to receive from the German government by law the exclusive right to supply almost all equipment connected to the DBP's public telephone network, including cordless phones (CPE), but not private automatic branch exchanges (PABXs). The European Commission determined that DBP's desired law would create a new partial monopoly, i.e., the scope of the exclusive right-to-supply, and it would destroy user free choice of network-compatible terminal equipment supplied by other Member States. It was, therefore, invalid under the second subparagraph of Article 37(1) of the EEC Treaty. Finally, in the *Modem* case,⁷² the DBP, under yet another proposed German law, claimed the exclusive right to supply all modems that were connected to the DBP's public telephone network. Again the DBP was rebuffed by the European Commission's rulings which stated that such monopoly extension fell under Article 37(1), similar to the *Cordless Telephone* case and that tying the purchase of DBP's modems to obtaining access to telephone network services was an abuse of the DBP's dominant position as network operator contrary to Article 86 of the EEC Treaty,⁷³ similar to the *International Courier Services* case.

A. The German Constitution

Germany's 1949 Constitution provides in one article that the postal service, which is interpreted to include telecommunications, shall be conducted as matters of direct federal administration with their own administrative substructures,⁷⁴ and that the German na-

70. For Article 86 and its interpretation, see *supra* note 58.

71. See 3 Bull. E.C. (1985), point 2.1.43; 2 C.M.L. Rep. 397 (1985). This case was decided under Article 37(1). The first sentence provides that Member States must "adjust any State monopolies of a commercial character so as to ensure that . . . no discrimination regarding the conditions under which goods are procured or marketed exists between nationals of Member States," and the second part applies the first sentence "to anybody through which a Member State, in law or in fact, either directly or indirectly supervises, determines or appreciably influences imports or exports between Member States," and "to monopolies delegated by the State to others."

72. EC 718 (1986), point 2.1.85.

73. For Articles 37(1) and 86 of the Treaty of Rome, see *supra* notes 58, 71.

74. Basic Constitutional Law of the Federal Republic of Germany (GRUNDGESETZ) GG art. 87 (W. Ger.). The Basic Law does not specify which institutions should render postal and telecommunication services nor how these institutions must be organized or whether they must be public or private. Presumably therefore, the German parliament, within a broad scope of reason, can resolve these matters by legislation.

tional government shall have exclusive power to legislate regarding postal and telecommunications services,⁷⁵ thereby excluding Germany's states and local governments from the field. The Constitution could be variously interpreted. The DBP's interpretation, with apparent acquiescence from the German parliament, holds that Germany's Constitutional PTT obligations cannot be discharged by completely privatizing the DBP and by government exercising only a regulatory role over competing, private common carriers including a privately owned DBP (the American and British solutions); instead, the government's sovereign obligations require the existence of a state-owned enterprise (DBP) as part of German government. It further claims that DBP must be authorized to provide the full range of telecommunication services. This view does not require an exclusive state monopoly over every aspect of telecommunications; thus, this interpretation does not exclude the possibility of competition for the DBP, and Germany's new law endorses competition in certain areas while retaining monopoly in others. This Constitutional interpretation has not gone unquestioned.⁷⁶

B. The New Law's Revision of DBP's Organizational Structure

One of the major goals of the new German law is to promote competition in certain telecommunications markets by introducing new regulatory conditions instituting circumscribed areas of competition where previously there was monopoly. This goal required the DBP to be restructured.

The new law first seeks, at least in part, to separate the sover-

75. *Id.* art. 73(7). The terms "post" and "telecommunications" are not defined, and according to the Federal Constitutional Court (BVerfGE 12, 205; 46, 120) the terms are not tied to the meaning they had when Germany's Constitution took effect, but are dynamic and future oriented, open to a modern interpretation and thereby capable of including all aspects of modern telecommunications. In two cases, Germany's constitutional court has ruled that the federal government's authority to legislate on telecommunications includes all aspects of a transmissions technical and structural functions, but not the substantive contents of transmitted information. See BVerfGE 12, 205, 225 ff. and BVerfGE, 12, 205, 226 ff.

76. See, e.g., A. HESSE, *DIE VERFASSUNGSMÄSSIGKEIT DES FERNMELDEMONOPOLS DER DEUTSCHEN BUNDESPOST* (1984), and the dissenters in the Report submitted by E. Witte (Chair) in *GOV'T COMM'N FOR TELECOMMUNICATIONS, RESTRUCTURING OF THE TELECOMMUNICATIONS SYSTEM* (1988) (Although not followed in all its recommendations, this report is the foundation for much of Germany's new telecommunications law). Moreover, claims have been made that the DBP's exclusive monopoly of services is unconstitutional under the Constitution's article 12 guarantee: "All Germans shall have the right freely to choose their occupation, place of work and place of training. The practice of an occupation may be regulated by legislation." See also BVerfGE II, at 168.

eign and political part of telecommunications; i.e., the governmental function from the DBP's entrepreneurial and business functions, and thereby create an independent, market-oriented, business-like DBP that simultaneously continues to be legally charged with fulfilling its monopoly infrastructural tasks and is also expected to be capable of vigorously participating in competitive markets. Thus, the DBP will have an even greater ambivalent institutional character. It will continue to be a financially independent institution, dependent upon earning revenues by competing in competitive markets and through its governmentally guaranteed monopoly tariffs. The DBP will be expected to be an independent-minded, competitive enterprise while simultaneously continuing to be dependent upon political will, especially over its monopoly and additional "infrastructure obligations." This means that government clearly will be its monopoly regulator, and, as set forth below, government may at times also control or participate in DBP's competitive market entrepreneurial decisions because the monopoly side of the DBP remains significantly interconnected to its competitive side. The new law retains the unity of DBP as an entity, and reorganizes the DBP's three existing services into three quite distinct but interlinked and interdependent enterprises: Postdienst (postal service), Postbank (postal bank) and Telekom.⁷⁷ Each enterprise has its own business Management and Supervisory Board,⁷⁸ and is to be managed in accordance with the principles of governmental administration and business management applicable to its various aspects.

1. *Telekom's Management Board*

Telekom's Management Board is intended to be a highly skilled professional entity with full-time Board members. The Board's appointees are subject to review and can serve for renewable five year terms. They "should be outstanding experts in business management," and must be "German" within the meaning of

77. PostVerfG, *supra* note 68, at § 1(2). Each separate enterprise can sue or be sued in its own name, but cannot sue another DBP enterprise, *id.* § 5, and is represented in or out of court by its Management Board unless otherwise specified by Board rules, *id.* § 15(3). However, only the Board of Directors of the DBP can represent the entire DBP in or out of court. *Id.* § 6. A form of cross-subsidization is legally mandated: "In carrying out their tasks, the enterprises shall be obliged to make use of the services provided by the other Deutsche Bundespost enterprises to the extent necessary to satisfy their needs, [however,] the principles of economic efficiency shall be taken into account in this connection." *Id.* § 4(2).

78. *Id.* § 3(2).

Article 116 of the Constitution. They are expected to work on a collegial basis, with the Board consisting of a Chair plus additional members, the number of which is determined later by the Federal Government's Cabinet after recommendations by the Minister of Posts and Telecommunications (MPT), who also must approve each person appointed and separately determine each Board member's salary, retirement and other benefits.⁷⁹ No Board member can receive payment from any other source for services rendered and one member must be made specifically responsible for personnel and welfare matters.⁸⁰ Telekom's Management Board, with MPT approval, can employ salaried staff,⁸¹ and has the fundamental entrepreneurial function. For example, it "runs" the entire enterprise, all monopoly and competitive aspects, by a majority vote, entrusting its affairs to an executive committee called the General Directorate.⁸² The Management Board must exercise "due care," and shares business management affairs with its Supervisory Board, to which it is required to report and respond to it. It also must submit all tariffs for mandatory services for approval to the MPT.⁸³ One of the Board's charges is to operate in accordance with business principles, and the obvious goal for Telekom, as well

79. *Id.* §§ 12(1)-12(5). Under § 13, Board Members are formally appointed and dismissed by the Federal President on recommendation of the Cabinet, and the MPT and the Supervisory Board agree on who shall be Chair of the Board; if they cannot agree, the Federal Government's Cabinet decides who shall be Chair. The basic principles of business enterprise governing management of DBP's Telekom are found in § 4.

80. *Id.* §§ 12(2), 12(4). Rather clearly, the DBP's union will be interested in this position as its administrators who can serve on the Board will be interested in positions on the management board. However, Board members must not occupy another salaried position or carry on a trade or profession in addition to their official function, and cannot be a management member of any other business enterprise, be a legislator or member of the executive branch, or give expert advice or opinions for pay. Presumably, they can receive gratuities and gifts. Under § 14, civil servants (DBP's personnel, Federal judges and military personnel) can be Board members but must go on leave of absence during the period; however, most of their civil servant benefits continue to accrue.

81. *Id.* § 47(2).

82. This is undefined in the law. *See id.* §§ 1, 15. It is the highest administrative authority and a supreme federal authority in terms of civil service law. *See also id.* § 40(3).

83. *Id.* § 15. Infrastructural or mandatory services are those services that must be rendered by the DBP's enterprises in the public interest, particularly on account of their obligation to make services and facilities available to the general public. The Federal Government Cabinet can ultimately determine the basic structure of the mandatory services and fix the tariffs payable for them. *See id.* § 25(2). Before the Management Board finally decides matters it must solicit the opinion of the Supervisory Board, which has two months to render it. Such matters include introducing new or major alterations in or abandonment of existing service branches, introducing fundamental technical innovations, determining principles for investing credit balances, setting tariffs for mandatory services that are important for future economic development of Telekom and drafting the annual report. *Id.* § 23(5).

as the other two DBP's enterprises, is to earn revenues from competitive markets and monopoly services sufficient to cover all costs plus a profit for future, self-financing expansion and development.

2. Telekom's Supervisory Board

Telekom's Supervisory Board seeks balanced interest group representation, and consists of twenty-one members who may not serve on any other Supervisory Board, who select their chair and deputy chair, whose meetings, which are not open to the public, must occur at least once every three months and who can receive renewable five-year appointments from, and be removed for cause by, the Federal Government Cabinet.⁸⁴ Seven Board members are independently identified and nominated by the MPT to represent the "Bund" as the governmental owner of Telekom, i.e., representing the interests of the Nation as a whole.⁸⁵ Seven members are nominated by the MPT to represent the interests of Telekom's customers, but only after consultation with various associations so that trade and industry will have four representatives: one represents agriculture and the remaining three represent all other consumers.⁸⁶ The final seven members represent Telekom's personnel and are nominated by the MPT after receiving proposals of specific persons from Telekom's union. At least four nominees must come from Telekom's staff.⁸⁷

The primary task of the Supervisory Board is to supervise, control and participate in Telekom's management, including deciding with the MPT the appointment and dismissal of Management Board members and nominating its Chair for appointment by the Federal President on the recommendation of the Federal Government Cabinet.⁸⁸ The Supervisory Board may make proposals and

84. *Id.* §§ 16(1)-(5), 18-21. For Telekom, its first board will see one member's appointment terminate at the end each of the first three years and two members' appointments end at the end of the fourth and fifth year. *Id.* § 19(5). Board membership expires if a member loses the capacity to hold public offices and to acquire rights from public elections, or if suspended or dismissed from the civil service or by breach of secrecy. *Id.* § 19(4).

85. *Id.* §§ 16(1), 17(1). Obviously, no one can be sure exactly what the specific, as opposed to generalized, interests of the nation as a whole are in each case and it is likely and also all too human that the MPT will recommend politicians, whether from his or other parties, who are sympathetic to his and his party's substantive views about Telekom and its future.

86. *Id.* §§ 16(1), 17(2).

87. *Id.* §§ 16(1), 17(3).

88. *Id.* §§ 13, 23(1). Under § 23 the Supervisory Board is especially charged to insure that the management principles found in § 4 are observed. Also under § 13(3), if by a two-thirds vote or more, the Supervisory Board resolves that one or more members of the Man-

inquiries to the Management Board, and after the Management Board makes a presentation, it must, within two months, pass resolutions adopting or altering the Management Board's economic plan, or budget, which must be based on business principles, its annual financial statement, its tariffs for Telekom's monopoly services, its specific rules regarding economic management, the creation of subsidiaries and purchase or sale of property or economic interests and the general rules of procedure governing Telekom.⁸⁹ These are substantial entrepreneurial decisions, carrying far reaching internal and external effects for both the DBP's monopoly and its competitive market operations. If the Management Board objects within one week of receipt of a Supervisory Board resolution, and so notifies the Board and the MPT, the Supervisory Board has one month in which to reconsider and "substantiate" its resolution. If by majority vote the Supervisory Board maintains its previous position, then the MPT shall decide the matter after a presentation by the Management Board.⁹⁰

3. *The DBP Continues as a Single Unit*

The continuity of the DBP as a separate entity is maintained in several ways. It has a general, overall responsibility for all entrepreneurial and operational tasks at the national and international level. It also has responsibility for a special DBP fund, which marks the limit of the German government's obligation to meet all DBP liabilities and which consists of the partial special funds generated by each of the DBP's three new enterprises. Thus, the three enterprises are made legally answerable for certain of each other's liabilities and cross-subsidization is expressly mandated.⁹¹

The Chairs of the three Management Boards constitute the Board of Directors of the DBP. They, in turn, elect their chair and will make most decisions unanimously.⁹² This Board represents the

agement Board must be dismissed, the MPT is required to submit that resolution to the Federal Government Cabinet for action.

89. *Id.* § 23(3). See also *id.* §§ 44(1), 45(4).

90. *Id.* § 24(1)-24(3).

91. *Id.* §§ 1, 2. The German government is not legally liable beyond their respective partial special funds for the liabilities of the DBP's three enterprises. Under § 4, the enterprises are required within a broad range of efficiency to make use of each other's services. See *supra* note 77.

92. PostVerfG, *supra* note 68, at § 7. If a unanimous decision cannot be reached within one month, the MPT must first be consulted on the matter and then within the next month, the decision can be taken by majority vote.

DBP as an entity in and out of court, coordinates economic and financial management among the three enterprises, determines the principles governing the required mutual use of the DBP's services and its special fund, and handles all of the DBP's welfare matters.⁹³

4. *The Minister of Posts and Telecommunications*

The Minister of Posts and Telecommunications (MPT) sets the overall direction in policy and serves as the link providing sovereign and political supervisory control over all of the DBP and its competitive and monopoly aspects. After first hearing Telekom or the other DBP enterprises on a matter, the MPT can recommend measures to the Federal Government Cabinet, which then can issue ordinances having the force of law. Such measures can govern a wide range of subjects, such as a common framework for all aspects of rights and duties of all parties involved in all contract formation, execution, termination and breach, including the nature and extent of Telekom's contractual liability, conditions for protecting data flows, connecting terminal equipment,⁹⁴ changes in monopoly tariffs and the development of infrastructure that must be rendered in the public interest.⁹⁵ The MPT must ensure that all enterprises of the DBP observe the law and other rules or regulations

93. *Id.* §§ 8-11. Under § 9, welfare matters include DBP's employees uniform health and accident insurance, social security, labor protection, protections for working mothers and minors and other welfare matters, the costs of which are allocated proportionately to each enterprise. Individually, the enterprises also can sue and be sued. *See supra* note 77.

94. PostVerfG, *supra* note 68, at § 30.

95. *Id.* § 25(2). A suggestion that new tariffs or new infrastructural services (mandatory services) be developed can originate in the Management Board, *id.* § 15, or Supervisory Board, *id.* §§ 23(1), 23(4), the MPT, *id.* § 25, or the Council on Infrastructural Matters, *id.* § 34, but in practice, even if suggested by others, the actual proposal would first be developed by Telekom's Management Board and then work its way through the Boards to the MPT and ultimately to the Federal Government Cabinet for action. Under § 15(5), the Management Board must also submit proposals directly to the MPT for action under §25(2), which permits the Federal Government to issue an ordinance requiring certain new infrastructural services.

The Council on Infrastructural Matters, an advisory body to the MPT, consists of eleven members each from the German Bundestag (the division of parliament representing the people) and the Bundesrat (the division representing the German states); they are not bound by any mandates or directions and must comment and resolve on MPT refusals, objections, instructions, or proposed resolutions having the force of law, regarding all matters of importance to the infrastructure or tariffs for it and Telekom's monopoly sector. *See id.* §§ 32-34. If the MPT concludes that he cannot take a certain resolution of the Council into effect, he must communicate his reasons in writing to the Council, which must reconsider it, but if the Council does not agree with the MPT, then the question goes to the Federal Government Cabinet, which must decide the matter within one month. *Id.* § 35.

governing the performance of their duties.⁹⁶ The new law hesitatingly bows in the direction of separating the MPT's sovereign and political controls over DBP from the MPT's controls over DBP's and Telekom's managerial and business activity.⁹⁷ For example, the MPT is charged in § 1 with performing only political and sovereign tasks, but the MPT must also approve or deny Supervisory Board resolutions on very substantial entrepreneurial or managerial decisionmaking, such as (1) adopting or significantly altering Telekom's economic plan (budget), (2) approving its financial statement, (3) discharging of Management Board members, (4) tariffing Telekom's monopoly services, (5) approving rules regulating detailed aspects of Telekom's economic management, and (6) approving the creation of subsidiaries or purchase or sale of any economic interest. An MPT denial, however, can rest only on the ground that the resolution conflicts with "the interests of the Federal Republic of Germany" (wholly undefined in the law), or conflicts with an applicable German law or regulation.⁹⁸ The new law also requires the MPT "to determine medium and long-term objectives" of Telekom in order to promote its development and to safeguard the interests of the Federal Republic of Germany, all of which seemingly are rather substantial entrepreneurial and managerial matters. Where he believes it necessary, the MPT may request "that profitability checks be made."⁹⁹ Given that all of the MPT's above-described activities either impinge on, or directly involve managerial functions, a serious question exists whether Ger-

96. *Id.* § 27.

97. For example, § 1 states that the provision of telecommunication services is incumbent upon the MPT and DBP, and then further states that the MPT shall exercise the rights of the "Bund," performing "political and sovereign tasks," and the DBP shall, within the framework of its public mandate, perform "entrepreneurial and operational tasks." *But see* § 25(1), which requires the MPT, within his obligations under § 1, to determine the "medium and long-range objectives" of the three enterprises in order to promote their development and safeguard Federal interests. That crucial task normally is considered a business or entrepreneurial function.

98. *Id.* § 28. In the case of Nos. 1, 2 or 5, identified in the text, the MPT must first consult with the Minister of Finance. *Id.* § 28(3). It is hard to see how that consultation requirement can be aimed at ensuring anything other than sound ordinary entrepreneurial decisionmaking, thereby involving the MPT in an ordinary business management area. With respect to No. 4, the MPT must first consult the Federal Minister of Economics, *id.* § 28(3), which presumably is for the purpose of checking the resolution's compliance with antitrust and similar laws, again a seemingly normal entrepreneurial or business management function.

99. *Id.* § 25(1). The Council for Infrastructural Matters would participate in determining objectives insofar as the determination of such objectives impinges upon the infrastructure. *See id.* § 31, 34(4).

many's new law actually meets the requirements of the EEC's Green Paper on Telecommunications. It requires a clear separation between governmental regulatory and operational functions as "a fundamental pre-condition for the establishment of a competitive market," for in the EEC's anticipated 1992 common market "the telecommunications administrations cannot continue to be both regulators and market participants, i.e., both referee and player."¹⁰⁰

C. Three Basic Economic Facts About Telecommunication

Three facts about European telecommunications, like telecommunication facts elsewhere in the world, are well known: a few very heavy users of a network (ranging from three to six percent) annually produce approximately sixty percent of a system's revenue, the telephone "service generates eighty to ninety percent of [all] the public telecommunications operators' (PTOs) revenues and these revenues are needed to finance all the social and political obligations of PTOs,"¹⁰¹ usually financing universal telephone service at a uniform price and cross-subsidizing other activities, especially the Post. The huge telecommunication revenues are largely profit, usually achieved by selling highly priced monopoly services well above their constantly declining costs of production. PTTs jealously guard their authority to generate telephone service revenues, whether from voice or data transmission, and are particularly opposed to any arrangement that could lead to their impairment, such as dreaded "cream skimming."¹⁰² On the other hand, large

100. Towards a Dynamic European Community—Green Paper on the Development of the Common Market for Telecommunications Services and Equipment, COM(87) 290, June 30, 1987 at 73 [hereinafter Green Paper]. This separation continues to be insisted upon by the European Commission. See H. UNGERER & N. COSTELLO, *supra* note 59, at 205-06.

101. Neumann, Models of Service Competition in Telecommunications 3 (DBP, Research Paper No. 28, August 1987). The large users of telecommunications generally are corporate headquarters, multinationals, banks, airlines, insurance firms, some universities, engineering and consulting firms, law offices, media organizations, advertisers, health delivery organizations and other large providers of services.

102. "The biggest—and under present conditions the only real—threat is the potential loss of voice traffic—which currently accounts for 85 to 90% of all telecommunication revenues—by public switched network." H. UNGERER & N. COSTELLO, *supra* note 59, at 207. "Cream skimming" presupposes monopoly pricing and is impossible against the most efficient competitor if his prices are marginal cost based. But, of course, marginal cost pricing would also eliminate monopoly profits, a result not desired by PTTs. Where prices are not cost-based, "cream skimming's" most obvious case occurs where competition is permitted to resell basic service, construct and operate competitive networks, or both, as is allowed in the United States. See *infra* text accompanying note 108. Given the fact that three to six percent of a network's heavy users produce nearly sixty percent of a PTT's revenues and that

users of a network constantly seek ways to cut their costs and, where permitted, as in the United States, they may bypass the public switched service completely.¹⁰³

1. Monopoly and Competitive Market Cross-Subsidization

One important purpose of Germany's new law is cross-subsidization. The law expressly requires one kind of cross-subsidization and permits another. First, the law states that financial cross-subsidization among the three enterprises of DBP "shall" be effected if one of the enterprises is unable to defray its expenses from its own revenue.¹⁰⁴ Secondly, the law provides for cross-subsidization

PTT monopoly prices are well above costs, new competitors with lower prices can attract away the heavy users and their high density routes from a PTT simply by lowering prices sufficiently to induce a user to change his network. From the point of view of the PTT, there has been no new service created and "cream skimming" has occurred. In time, effective "cream skimming" competition would push all prices down to a level where they would be marginal-cost-based, and assuming equal efficiency among competitors, "cream skimming" would cease, as would the monopoly profits, which the PTTs want.

"Cream skimming" can also occur when a PTT has a network monopoly but leases a private line to A at a reasonable flat rate and permits A to resell its use when not needed by A, as is the situation in the United States. See *supra* text accompanying notes 27, 47. Due to economies of scale, the per unit cost of A's leased line, e.g., cost to A per telephone minute of usage, will decrease as usage increases. Thus, it is in A's interest to have the line used all of the time, thereby reducing A's cost of leasing the line by revenues received for its use by others. In some circumstances, this can also be made attractive to others—the heavy users—because, due to A's declining average costs, A may be able to provide telephone service to others more cheaply than they otherwise could obtain it directly from the PTT. The tendency is to work towards cost-based pricing. This is another version of PTT-feared "cream skimming." Finally, if a PTT leases lines at a flat rate, the equivalent of "cream skimming" can occur, as it does in the United States, whenever a group of heavy users combine and lease a line sharing its use up to all of the time for their business needs. PTTs seek to eliminate the possibilities of "cream skimming" either by leasing lines only according to usage sensitive, not flat rates, prohibiting resale of leased lines, or obtaining a legal monopoly over the entire network and the services that can be offered.

Uniform flat, not usage-sensitive, rates for leasing of lines seem necessary for a vigorous, independent development of fair and competitive VAN services. Thus, a severe problem can be posed for PTTs that desire to eliminate all possibilities of "cream skimming" by obtaining a network and service monopoly and yet desire to provide their country the broadest possible range of VAN services, because it is highly unlikely any large PTT will meet all of the individually diverse needs of a broad range of consumers in any modern industrial state.

103. See *supra* text after note 52; Mansell, *The Telecommunications Bypass Threat: Real or Imagined?*, 20 J. ECON. ISSUES 145 (1986).

104. PostVerfG, *supra* note 68, § 37(3). Historically, substantial telecommunications revenues in Germany have been used to subsidize the Post. Dr. Schwarz-Schilling, the current MPT, in a press release heralding parliamentary passage of Germany's new law, optimistically predicted "that by the mid-90s it will be possible to achieve an economic situation for the Yellow Post that renders the question of financial compensation between TELEKOM and the POSTAL SERVICE virtually irrelevant." *Pressemitteilung*, April 20, 1989 at 6.

within a single enterprise's different services, expressly stating that "using revenues from monopoly services for the benefit of competitive services, shall be permissible."¹⁰⁵ Germany's new law also requires Telekom to maintain and extend a state-of-the-art telecommunications infrastructure.¹⁰⁶ To insure that Telekom will have the ability to achieve all of its telecommunication ends, Telekom is expressly given two legal monopolies, one over the physical network itself and the other over the supply of certain services over the network.

D. Telekom's Monopolies

The new law continues an exclusive monopoly in physical telecommunication facilities. It grants the exclusive right to Telekom to construct and operate all transmission lines including the associated network terminations,¹⁰⁷ thereby precluding the competition in trunk line networks, which is the norm in the United States,¹⁰⁸ the United Kingdom¹⁰⁹ and Japan.¹¹⁰ This has been the historical

105. PostVerfG, *supra* note 68, §§ 37(2), 37(4).

106. *Id.* §§ 4, 15(5), 23(3), 25, 34.

107. The new law also grants the exclusive right to construct and operate all radio installations. FAG, *supra* note 67, § 1(2). After justifying legal monopoly on grounds of avoiding "cream skimming" that could come with network competition and citing economies of scale, the Federal Government Cabinet stated:

The Deutsche Bundespost is to continue to develop new networks and network technologies not solely on the basis of profitability considerations. In future, too, telecommunication networks are to be set up on a nationwide basis and be accessible on the same conditions in all regions. Whereas the more or less equal development of the infrastructure is conceivable without monopoly, the objective of making the transmission network available for use everywhere on equal conditions and at equal tariffs ultimately requires the network monopoly to be preserved.

Reform of the Postal Telecommunications System in the Federal Republic of Germany, Concept of the Federal Government for Restructuring of the Telecommunications Market, MPT, May 1988 at 40-41 [hereinafter *Concept*].

This monopoly over network is most likely acceptable to the European Community. The EC's 1987 Green Paper on Telecommunications recognizes that "Article 222 [of the Treaty of Rome] provides that the Community shall in no way prejudice the system of property ownership in Member States. Therefore, the determination of the appropriate ownership of telecommunications administrations—in particular whether they should be in public or private ownership—falls to the Member States." Green Paper, *supra* note 100, at 71.

108. See *supra* text and accompanying notes 18-23, 28-31.

109. See *supra* text and accompanying note 55.

110. See K. EGIS, TELECOMMUNICATION DEREGULATION IN JAPAN (1988) and publications by Japan's Ministry of Posts and Telecommunication such as OPEN Telecommunications Market of Japan (Tokyo, March 1989); White Paper on Communications in Japan (Tokyo, 1988); Japanese Legislation on Telecommunications: The Telecommunication Business Law (Unofficial Translation, Tokyo, Dec. 1984).

situation in Germany.

The MPT can, however, make exceptions for the creation of special networks. He may grant self-contained concessions for certain routes or districts, stipulating their costs and conditions in the license, and he must grant licenses on application by public electric suppliers or satellite communication installations transmitting at low bit rates so long as the operational interests of Telekom are safeguarded.¹¹¹ Without requiring application to the MPT, the law continues to grant a right to private persons to install and operate limited internal networks, similar to American LANs.¹¹² However, the network can not be publicly linked. They can exist only within or between an owner's premises, or between premises united to form a common undertaking, so long as the linear distance between premises is not greater than twenty-five kilometers, and even then, only if the network's traffic relates strictly to activities on the premises.¹¹³ None of the exceptions competitively endanger Telekom's general network monopoly because they are wholly internal whether public or private. Not being linked to any of Telekom's lines or public switches, they are unable to transmit to third parties.

1. Telekom's Service Monopoly Over Voice Transmission

The second monopoly the new law grants Telekom is the exclusive right to supply certain services to third parties. Telekom has the exclusive right to operate telecommunication facilities for the purpose of transmitting "the exchange of speech" of third parties ("*Vermittlung von Sprache für andere dient*").¹¹⁴ The exact

111. FAG, *supra* note 67, § 2(2). The criteria governing the discretionary grant of concessions are not specified; so for guidance, the MPT presumably must refer back to his general duties and obligations to preserve and promote the DBP, including Telekom's monopoly and competitive service areas. See *id.* §§ 25, 27-31. In the past, licenses have been available for mobile radio services, telecommunication services for their own internal use and cable TV networks. Foreman-Peck, *supra* note 53, at 159. Limited to use exclusively for their own internal activities, towns, cities, States (including police), dike or sluice or drainage corporations, and transport companies are expressly given the right to install and operate internal telecommunications services by this law without prior MPT approval. FAG, *supra* note 67, § 3(1)-(2).

112. See *supra* text discussion accompanying note 24. They can be used to link all of a firm's computers together, or to link them to each other and a main frame computer, or to link other terminals of a firm, or its computers to other internal terminals, e.g., telex or fax machines.

113. FAG, *supra* note 67, § 3.

114. *Id.* § 1(4). "*Jedermann ist berechtigt, Telekommunikationsdienstleistungen für andere über Festund Wählverbindungen, die von der Deutschen Bundespost TELEKOM*

scope of this service monopoly grant is not clear. It definitely includes a huge revenue producer—the exchange of oral human speech by telephone.¹¹⁵ But does it also include emerging technologies, such as video telephony, video conferencing,¹¹⁶ or videotex?¹¹⁷ And does it cover those waiting to be born, such as videotex communication, which is initially delivered orally to computers linked

bereitgestellt werden, zu erbringen. Dies gilt nicht für das Betreiben von Fernmeldeanlagen, soweit es der Vermittlung von Sprache für andere dient; dieses Recht steht ausschliesslich dem Bund zu (Telefondienstmonopol)." *Id.* For a translation, see *infra* note 144.

115. "As far as telecommunications services are concerned, the Deutsche Bundespost's monopoly should only cover the telephone service in the future." Substantiation, *supra* note 68, at 38. DBP's telephone line network, "with sales of over DM 30 billion in 1985 . . . accounts for almost 90% of the DBP's telecom revenues of DM 33.4 billion." Haid & Müller, *Telecommunications in the Federal Republic of Germany*, in Foreman-Peck, *supra* note 53, at 162.

116. Videotelephony is oral speech communication by telephone plus a video, presumably of the person with whom one is speaking. Video conferencing can be lucrative. It requires a broader band network and simply takes videotelephony one step farther by using a different speech receiver/broadcaster and including more persons shown on a much larger videoscreen who might be in several different geographic locations. It also permits the display of documents and other items on the screen for conference discussion. One can be sure that DBP will seek to include videoconferencing within its monopoly. I think both are included within DBP's monopoly because the dominant purpose of each is that senders and receivers orally communicate with each other and hear the other's voice. The video and the conferencing aspects simply enhance the exchange of oral speech. These situations are highly similar to simple telephone conferencing, which clearly comes within DBP's monopoly grant.

117. Videotex is a two-way communication medium using computers, TVs, or both connected via telephone lines to a central computer. Pages of typed information are carried from their origin to a location over the telephone network and displayed on a television screen. The original name was Viewdata, and this term is still sometimes used. In a secondary sense, there is an exchange of "speech," which is manually-produced but not oral, and a quite broad interpretation of Telekom's monopoly could include Videotex. But neither voice nor its tones are transmitted or heard, and that is what one usually means by speech. This is a good place for the line to be drawn. Even though the DBP history is one of seeking to expand its monopoly, I am skeptical that such a broad interpretation of Telekom's monopoly grant will prevail because, in part, the EC is also moving towards a telecommunications industry without frontiers and is desirous of narrowly interpreting monopoly grants. Its "Green paper sees voice telephony as the only 'obvious' candidate for exclusive provision. . . ." See H. UNGERER & N. COSTELLO, *supra* note 59, at 214. In addition "the ultimate objective" of Germany's Federal Government in proposing the new law is to maintain DBP responsibility for telecommunication infrastructure while simultaneously promoting as wide as possible development of competitive markets in all areas not requiring a monopoly so that Telekom can discharge its infrastructure responsibilities, see *Concept*, *supra* note 107, at 39-62. "[T]he reform . . . is based on the demand that competition should be introduced on the largest possible scale. . . ." Thus, Telekom's service monopoly "should only cover the telephone service in the future." Substantiation, *supra* note 68, at 31, 38. Consequently, I believe Telekom's monopoly will apply only to the exchange of voice transmissions where the sender's message is oral and the sender's voice is heard at the other end of the communication, irrespective of what occurs in between during transmission. Yet, the new law is not as clear on this point as one wishes, and the question is not free of all doubt.

through the publicly-switched telephone network?¹¹⁸ Telekom's monopoly presumably is limited to the transmission of oral speech and no longer includes such services as telegraphy, telex, text facsimile, or telemetry.

2. Telekom's "Market Presence" Monopoly

A third and odd sort of a "reverse quasi-monopoly" is granted Telekom in the area of "mandatory" services. It is not a monopoly grant in the usual legal sense of excluding all possible competitors except Telekom from an area, because competitors are permitted and encouraged to provide mandatory services. Rather, it is the reverse: other firms can enter the area and compete with Telekom in the mandatory services market, but the law prohibits Telekom from being driven out of the market even by the fairest of competition.

By detailed ordinance, the Federal Government is authorized to prescribe infrastructural obligations for Telekom whereby it must either create new networks or provide specified "mandatory" services under tariffs dictated in the ordinance, or both, all on behalf of the public interest.¹¹⁹ These "mandatory" services presumably will be financed by Telekom from its monopoly revenues. They are not considered part of Telekom's monopoly services, and competition is fully encouraged by the new law in all mandatory service markets.

However, if it should appear that Telekom's supply of a mandatory service under the prescribed tariffs is "endangered" in the sense of not being "guaranteed," because Telekom's competitive market position may have become "considerably impaired" vis-à-vis its competitors, and if cross-subsidization of the

118. This communication situation could conceivably consist of videotex plus computer software that converts oral speech into written words displayed on a screen, which can then be transmitted via telephone lines to a similarly equipped computer for further communication. Software speech recognition systems are in their infancy and must contend with accents, jargon and words that sound the same but are spelled differently. However, Dragon Systems Inc. has now marketed a dictation system, Dragon Dictate, which allows a user with limited typing skills to work comfortably with any word processing software. The system handles thirty thousand words. See *Science News*, June 3, 1989. Oral speech and data and their manipulation and enhancement will become more technologically integrated in the future and the distinctions between them will blur more and more. DBP's Telekom can make a stronger case for this and similar situations falling within its monopoly than it can for videotex. Although the question is closer, I think its resolution essentially will be same as that governing videotex, and for the same reasons.

119. PostVerfG, *supra* note 68, § 25. See also *supra* note 95.

mandatory service is not possible because all divisions of the DBP show a persistent lack of profitability and DBP's Special Fund is depleted, then the MPT, after securing agreement from the upper house of Parliament (*Bundesrat*), is authorized to issue an ordinance imposing obligations on all of Telekom's mandatory service competitors having more than three percent of the market. The obligations must be designed to restrain Telekom's competitors from driving Telekom out of the mandatory services market, but they can relate only "to the conditions of supply as far as coverage and quality are concerned and to the factors determining prices," and the "current level of business activities achieved by these enterprises must not be impaired."¹²⁰ Any MPT order to Telekom's mandatory services competitors would clearly be anti-competitive and would operate in a market opened by Germany to competition, which by its very nature consists of a business activity. The necessary business considerations as well as the ultimate decision that the MPT must make under the law are solely from the perspective of only one competitor, the DBP, rather than from an overall, neutral market perspective of a functioning market, i.e., whether the market is satisfying overall demand or needs. Thus again, the new law seems to require the MPT to behave much more like a participant in the market rather than as an overall, dispassionate market regulator.¹²¹

If such an order were authorized to be given to its competitors by Telekom instead of by the MPT, the order most likely would be illegal, violating the competition rules of Article 86 of the European Economic Community's Treaty of Rome under the British Telecom case, which applies to commercial "undertakings" by governmental entities offering services for a fee in a market open to competition.¹²² Germany's new law seeks to avoid this result by having the MPT issue the order, desiring it to be characterized as a dispassionate, neutral governmental regulatory act rather than as an entrepreneurial "undertaking." This procedure is highly questionable, and the EEC's Article 86 under the British Telecom case may well apply. But, even assuming the MPT's order were construed to be a governmental rather than an entrepreneurial undertaking by Telekom, the MPT's order may still be invalid. Article 90(1) of the EEC Treaty applies its competition rules, including

120. FAG, *supra* note 67, § 1a(2). A fourth quasi-monopoly position in German value-added services markets is also conferred. See *infra* text following note 156.

121. See *supra* text accompanying note 100; *supra* note 58 and accompanying text.

122. See *supra* note 58.

Article 86, to any "undertakings to which Member States grant special or exclusive rights," e.g., DBP's Market Presence Monopoly, stating that "Member States shall neither enact nor maintain in force any measure contrary to the [competition] rules contained in this Treaty, in particular to those rules provided for in Article 7 and Articles 85 to 94."¹²³

E. Telephone Saturation and the Rise of Information Industries: A New Perspective

At least since the mid-1960s in the United States and since the beginning of the 1980s in most of Europe, telecommunications have faced an increasingly changing set of conditions. Overall economic growth, new technologies, changing procurement policies of users and network owners, and expansive growth in telecommunication-related markets have played significant roles. But also, change has come because a long cherished social goal substantially has been reached: establishment of a telecommunications network that would put basic, telephone voice service into every household, farm, or business.¹²⁴ For years the goal of universal service has

123. Would the EEC's competition rules also require the new German law to be ruled invalid (and with less direct anti-competitive consequences) where no MPT order exists affecting Telekom's competitors, but instead, funds derived from Telekom's or DBP's monopoly enterprises were used to cross-subsidize and finance Telekom's performance of a mandatory service against Telekom's competitors in a market otherwise open to competition, just as the new law provides? The cross-subsidization coming from a monopoly area and impacting a competitive market is clearly anti-competitive from a competitive market point of view, but not as directly destructive of competition as the MPT's order controlling DBP's competitors. Do Telekom's competitors in mandatory service markets have a valid legal complaint? I think not, because Article 90(2) of the EEC Treaty states that special "undertakings," such as the provision of certain specified mandatory infrastructure services in a competitive market that the Federal Government can force onto DBP's Telekom, are "subject to the [competition] rules contained in this Treaty . . . in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular task assigned to them," and so long as the subsidization of Telekom "would [not] be contrary to the [development-of-trade] interests of the community." This provision may insulate DBP's cross-subsidization of Telekom's mandatory services, unless it were to reach such unlikely magnitude as to impair the development of trade within the EEC. Of course, cross-subsidization of non-mandatory, i.e., value-added competitive services, could claim no protection from Article 90(2) of the EEC Treaty. See *infra* text accompanying note 152.

124. "For more than 50 years, a guiding public interest principle for U.S. Telecommunications has been to 'make available . . . to all people of the United States a rapid, efficient, nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.' Over the years, this language from section 1 of the Communications Act of 1934 generally has been interpreted as the basis for the goal of universal basic voice telephone service." TELECOM-2000, *supra* note 2, at 75 (1988). "[B]y the year 2000, we might enjoy being part of an electronic national neighborhood, or even international neighborhood, connected by several alternative telecommunications and information systems

meant a continuing expansion of an existing technology, with considerable profit to domestic manufacturers supplying standardized network components, particularly terminal equipment. Most developing countries of the world are still working to achieve this goal, and substantial universal penetration of telecommunications in most developed countries is a very recent phenomenon. In Germany there was only twelve percent penetration in 1960, but by 1980 it was seventy-five percent, and today it is more than ninety percent.¹²⁵

The European "equipment market is highly fragmented due to national procurement and certification rules and because each PTT insists on local manufacturing and technical expertise," requiring "explicitly or implicitly, [that] their purchases have a high proportion of local value added."¹²⁶ Once saturation substantially has been achieved, the telecommunication industry faces a wrenching reorientation, especially equipment manufacturers; otherwise, overall activity and profits will diminish disastrously because the industry becomes a victim of its own success. In such circumstances one or a combination of three possible events may occur. First, a PTT can enormously upgrade its network, thereby positioning itself for the future while providing new demand for its customary equipment suppliers,¹²⁷ e.g., by expanding into such ar-

which blend voice, data, and video communications. The existence of such an electronic neighborhood could allow people to share interests, hobbies and information." *Id.* at 76.

125. Schulte, *Endgeraetehouzeption im Fernsprechdienst der Deutschen Bundespost*, in TELEKOMMUNIKATION IN DER BUNDESREPUBLIK DEUTSCHLAND 321 (D. Elias ed. 1982).

It is obvious that the market [in Germany] for traditional telecommunications services such as telephone, telex and telegram is coming close to saturation or has already become stagnant for telex and telegram services. Whereas in the 70's the number of new telephone stations used to increase by up to 2 million every year, this net increase has dropped to about 0.8 million a year with a declining trend during the past few years. This means a subscriber growth rate of only about 3%—a decline that can not be offset by the traffic growth rate in the telephone service amounting to about 5% every year. The growth rate of the telephone market in its current form will as a result be reduced to the overall economic growth rate. New markets for new or enhanced communication services will develop instead that will possibly achieve in the long run traffic volumes similar to those of the current telephone service. This may above all apply to a telephone service offering additional features, improved voice transmission, picture phone and services for communicating texts and graphs.

Concept, supra note 107, at 26.

126. Foreman-Peck, *supra* note 53, at 25.

127.

On the equipment side[,] the Bundespost has stated that between 1988 and 1992 it will annually buy about DM 5-6 billion in sophisticated central office switching equipment, but only from two sources: Siemens and SEL (ITT's German Subsidiary

eas as ISDN,¹²⁸ IBN,¹²⁹ videotex¹³⁰ and videoconferencing.¹³¹ Second, domestic equipment manufacturers can seek to export, so long as recipient countries are not protectively using their local markets to develop their own domestic electronic industry. Finally and importantly, manufacturers can become innovative and produce special equipment for sale to telecommunication's heavy users that can reduce their user costs, which tends to increase competition, and like the export option, loosens the economic bonds tying together a country's PTT and its equipment industry.¹³²

A fourth, lucrative possibility also appears to be generated as saturation of the telephone market occurs. Unconnected new eco-

that is now owned by France's Alcatel). Approval procedures for attachment of equipment have grown more, not less complicated, making it particularly difficult for foreign firms to succeed in selling sophisticated customer premises equipment in Germany.

J. ARONSON & P. COWLEY, *supra* note 4, at 180.

128. The Integrated Services Digital Network is an advanced, wholly integrated network of digital transmission and switching systems that permits the simultaneous handling of voice, data and graphics with great speed and accuracy. Currently all European countries are investing heavily in digitalization of their telephone networks. Current ISDN technology is based on a basic access rate of 144 Kbps (two 64 Kbps "B" voice channels plus one 16 Kbps "D" data channel) and a primary access rate of 1.5 Mbps (T1 or DS1 rate). The Council of Europe has recommended the creation of such an ISDN before 1993, one governed by common technological standards. See Council Recommendation on the Coordinated Introduction of the Integrated Services Digital Network (ISDN) in the European Community (86/659/EEC), OJL 382, (December 31, 1986).

129. The Integrated Broadband Network is ISDN plus broadband and is the "superpipe" specially constructed from fiber-optic cable and connecting every household, farm or business. It will carry a very wide range of television and other entertainment plus all other rapidly expanding telecommunication services. ISDN has a primary access rate of 1.5 Mbps CTI or DSI rate, but the Broadband ISDN is being developed to carry transmissions of up to 150 Mbps. For discussion of the development of, and demand for, broadband ISDN, see, e.g., Anania & Solomon, *The Beauty and the Beast: Virtual Networking in B-ISDN*, TELECOMMUNICATIONS, Sept. 1987, at 33-34; Weinstein, *Telecommunications in the Coming Decades*, IEEE SPECTRUM, Nov. 1987, at 62-67. The best discussion of the implications of broadband ISDN is R. PEPPER, THROUGH THE LOOKING GLASS: INTEGRATED BROADBAND NETWORKS, REGULATORY POLICY AND INSTITUTIONAL CHANGE (FCC Working Paper, Nov. 1988).

130. See *supra* note 117.

131. See *supra* note 116. While videoconferencing can be done with ISDN, see *supra* note 128, extensive use of videoconferencing may require an ISDN-broadband, see *supra* note 129, to carry that load as well as other items such High Definition TV plus the regular telecommunication load.

132. This is an important option for the potential development of competition. It includes LANs, which in some organizations account for sixty percent of internal communication flows, and such other equipment as PABXs, modems, multiplexers, concentrators, key telephone systems, network management equipment, microwave and satellite equipment. This option also includes lucrative WANs (special wide area networks) that can span several continents.

conomic forces customarily appear in developed countries leading to the rise of new telecommunication information service markets, especially value-added services. Basic economic forces shift "sunset" industries, such as metals, steel, textiles and shipbuilding, to developing countries, replacing them with information technology industries. For example, "Japanese trading companies have recently been absorbed in avoiding becoming dinosaurs by paying very keen attention to developments in the high tech fields, especially new media."¹³³ The rise of telecommunication and other services in an economy should not be seen as a full de-industrialization process, because services and the remaining or new industrial activities penetrate each other as industry buys services to increase its productivity.¹³⁴

A shift towards information production requires several factors. Developed countries tend to have well-educated populations skilled in handling information. The costs of producing publicly switched telecommunications, not necessarily equal to customer prices, have shifted sharply downward, which can make ownership or leasing of equipment attractive to heavy users¹³⁵ by permitting

133. Otani, *Sogo Shoshas Shift away from Goods, Seek Profit in Service Business*, Japan Econ. J., July 24, 1983, at 7; see also Martin, *Japan's Trading Giants Look to Year 2000*, Wall St. J., March 31, 1986, at 22.

Technological revolutions often contribute to shifts in wealth and geopolitical influence by changing the sources of industrial and military success. In this respect, information technology is proving no exception. Advanced information technology is profoundly changing global competition, both commercial and military, in such fields as semiconductors, computers, fiberoptic communications, high-definition television, industrial control systems, robotics, office automation, globally integrated financial trading systems, military C³I (command, control, communication and intelligence), smart weapons and electronic warfare.

As this transformation progresses, the United States is being gradually but pervasively eclipsed by Japan. In semiconductors, automated machine tools, advanced manufacturing, and mass produced electronics products, America's problems are already severe. More significantly, the long term structural patterns of the interaction between the United States and Japan in finance and high technology imply a future of dependence on Japan. Moreover, the behavior of the embryonic though rapidly advancing Japanese defense industry suggests that this prediction holds for military technology as well as for commercial activities. Although a strong response by the United States could soften this decline, the economic and political costs of effective remedial action make some further deterioration almost inevitable. Ferguson, *America's High-Tech Decline*, 74 FOREIGN POL'Y 123 (1989).

134. "For the whole of the [European Economic] Community, from 1975 to 1981, the growth in volume of services bought by industry was between 3.5 and 4% per annum. During the same period, value-added of industry in real terms increased by no more than 2.4% per year." H. UNGERER & N. COSTELLO, *supra* note 59, at 89.

135. Heavy users of telecommunication services include multinational corporations especially their corporate headquarters; bank, stock, bond and other financial service agencies; airlines; insurance companies; health organizations; large universities; engineering, design, law, advertising and consulting firms; and the media. Telecommunication costs for these

them to exploit economies of scale.¹³⁶ One consequence of the growth of information service industries is that they become one of a developed country's major comparative advantages. When information service industries are most successful, the new markets become characterized by an ability to provide individualized and uniquely different services shaped to fill a particular user's needs. To take full advantage of the newly emerging value-added markets, a PTT's common network that previously saturated its domestic market by delivering uniform standardized telephone service now must maintain that standardized capability and face the gargantuan task of dramatically transforming a significant part of itself into a highly flexible system uniquely sensitive to and capable of satisfying emerging special customer needs.¹³⁷ This is unlikely to occur, but it is the German federal government's ideal for the DBP.

In most countries, the value-added service market can be substantially greater than the lost telephone-expansion market of a PTT due to saturation. But this market is different, and it works best with the flexibility and focus on individual needs served by competition, not monopoly. It is theoretically possible for a PTT monopolist flexibly to supply all value-added services, but it is highly unlikely from an institutional point of view. PTTs tend to be sluggish, bureaucratic and focused on the uniform delivery of standardized services to heavy users. But most users of value-added services need innovation, individualization and speed that traditional bureaucratic PTT's, such as DBP's Telekom, are not best equipped to deliver. So long as its conditions are fair and designed to achieve economic efficiency, competition among value-

kinds of businesses can be large, often ranking third after salaries and real estate. The minimization of telecommunications costs has led to the emergence of a new profession, the telecommunications manager, who is charged with finding ways to reduce telecommunication costs.

136. Telecommunication costs are a major expense to many business firms, so much so that it can become cost efficient to by-pass public switched networks. Recently, contracts for two WANs, *see supra* note 132, confirm that economies of scale and related forces are operative. General Electric Co. contracted with AT&T for the installation of its own global private telecommunication system for voice, video and data at a cost of \$25 billion. *Int'l Herald Tribune*, June 1, 1989, at 13. Also, Merrill Lynch & Co. contracted with MCI Communications Corp. to obtain a private world-wide voice and data network. "The contract is estimated to be worth \$150 million. Merrill Lynch said it expected to reduce its costs by more than \$100 million during the five-year contract." *Int'l Herald Tribune*, June 7, 1989, at 17.

137. This is the exact task facing the DBP. The FCC's requirement of Open Network Architecture seems to be part of the answer; the development of such network flexibility for the market as a whole is one of its major goals. *See supra* notes 45-50 and accompanying text.

added service providers most likely will better meet all of European business and household customer needs at lower prices. At the same time, it will spur PTT competitors to develop a greater flexibility and a lowering of their overall cost structures, which inevitably creep upwards as suppliers and employee unions share with PTTs in their monopoly profits.

F. Germany's Turn Toward Competition in Value-Added Service Markets

After reaching one hundred percent telephone saturation, most telecommunication networks in developed countries shift away from being supply-oriented to becoming demand-driven by the emerging market forces. One new market, VANs,¹³⁸ for example, "tailor and package information closely tuned to user needs;" however, they only accounted "in 1986 for \$944 million to \$1,062 million in Europe," but VANs are "disproportionately important" because they "will be essential for the future functioning of European businesses" and have been "projected to grow at 25 to 30% annually."¹³⁹ As of 1987, the DBP had "only a small market share in the value-added market."¹⁴⁰ But vast, lucrative opportunities lie ahead for public and private competitors because a "rough external estimation of the dynamics in the German value-added services sector records an annual sales volume amounting to about DM 80 billion [\$40 to 45 billion] by the end of this century."¹⁴¹ Clearly, if

138. See *supra* note 25 and accompanying text. In Europe but elsewhere too, the term "VAN" is used interchangeably with the term "value-added service," which can be extremely simple or extraordinarily complex. In Europe, basic telecommunication services are those services transmitted directly by the network without any delays, basically plain old telephone, telex and telegraph services. Services that add something to basic service are called "value-added" services. Examples are telex or teletext with time storage and forwarding added, and electronic mail, which is a type of facsimile system where users can send and receive messages from one computer to another without simultaneously being on-line because the electronic mail box acts as a sorting office and stores messages until the addressee can retrieve them. Frequently, an additional value-added services term, "information services," is encountered. It refers to such on-line services as database, data processing or other new services, which are essentially computer services directly transmitted over telephone lines. This can be an important category because many European and other countries traditionally regulate "telecommunications services" stringently, leaving "computer or information services" less regulated. But, strictly considered, these too are "value-added" services and often are incredibly complex.

139. H. UNGERER & N. COSTELLO, *supra* note 59, at 53-55.

140. K. Newmann, *Models of Service Competition in Telecommunications 9-10* (DBP Research Paper No. 28, 1987).

141. The new and rapidly growing market of electronic value-added services would thus amount to a share of three to four percent in the overall national product by the end of this

DBP's Telekom hopes to achieve its accustomed dominant position in this rapidly emerging and competitive market, it must move quickly and decisively to garner the lion's share of the projected annual sales volume. One question is whether it will seek to do so by becoming the most efficient competitor or by using its non-market powers, or both.

Value-added service competition is a fact in the United States and is the trend in Europe and Japan.¹⁴² It has been endorsed by Germany's Federal Government Cabinet.¹⁴³ For the first time, Germany's new law has introduced the possibility of unregulated competition into part of telecommunications. Telekom is to compete with private value-added service providers; however, they in turn

century and assume a higher significance for the economy as a whole within twenty or thirty years than has been achieved by the traditional communication services of the Deutsche Bundespost during the almost one hundred years of their development. The current share in the gross national product is approximately two percent. It has been estimated that the whole telecommunications sector including value added services will account for seven to nine percent of the national product of the Federal Republic of Germany by the end of the century, thus taking over the top position now held by the automobile industry. *Concept*, *supra* note 107, at 27.

142. "In light of developments in technology and market conditions and the transformations in the United States and Japan, all Member States of the European Community are now reshaping or reconsidering the regulation of their telecommunications sectors. . . ." H. UNGERER, & N. COSTELLO, *supra* note 59, at 186. "The current technological evolution towards multi-functional computer-based terminal equipment, including ISDN terminals, will make the current trend towards competitive provision inexorable." *Id.* at 196. For Japan, *see supra* note 110.

143. The range of services offered today by private providers is still small as compared to that of the Deutsche Bundespost. This is due to limited market entry possibilities, i.e., the DBP monopoly. Although the Deutsche Bundespost is already offering some of its postal and telecommunications services in competition with others, it nevertheless earns about eight percent of its total revenue in the monopoly sector, thus covering the largest part of these markets itself, particularly in telecommunications.

The increasing differentiation in the demand for postal and telecommunications services will not allow such a concentration on one single provider in the future. It must, therefore, be an essential goal of the reform to develop a new regulatory framework aimed at increasing the diversity of services offered, particularly in those market segments where customer needs develop and change rapidly. Such an enhanced offer will be of advantage to all customers. This can only be achieved if competition is increased and efficient use is made of its innovative effects. Competition can only bring about the desired economic results if an efficient infrastructure and a reliable and reasonably priced provision of basic postal and telecommunications services will continue to be guaranteed for all users. Only on the basis of these infrastructural services will equal opportunities be created for the development of additional and enhanced service offerings which will both reflect the diversity of demand and meet the needs of the general public. Thus, it is not intended to introduce competition as a general principle in all market sectors without distinction, since competition in these markets will only be a suitable instrument for securing benefits for all users if due consideration is given to the infrastructural significance of posts and telecommunications. Substantiation, *supra* note 68, at 2-3.

must rely on Telekom to supply them basic network services at reasonable prices that they might be able to compete effectively with Telekom in Germany's annual \$40 to 45 billion value-added services market.¹⁴⁴ The major telecommunications question now facing the German Federal Republic is whether this competitive market will become vigorous, robust and therefore, socially responsible, or remain "competitive" in name only under the control of the DBP?

In summary, the net consequence of Germany's new law is, therefore, to create three legal categories of telecommunication services—monopoly,¹⁴⁵ mandatory (basic),¹⁴⁶ and unregulated (value-added)—with competition expected to become the norm for the last two.¹⁴⁷

IV. SOLVING THE MARKET PROBLEMS CREATED BY, BUT NOT ADDRESSED IN, THE NEW LAW: DBP'S MONOPOLY AND CROSS-SUBSIDIZATION

The new law is quite defective from a competitive market point of view in that it neither identifies the structure and conditions of value-added competitive markets so they will be fair, effi-

144. FAG, *supra* note 67, § 1(4):

Everyone shall have the right to provide telecommunication services for third parties over permanent or switched connections to be made available by Deutsche Bundespost Telekom. This shall not apply, however, to the operation of telecommunication installations for the purpose of transmitting the exchange of speech of third parties; this shall be the exclusive right of the Bund

i.e., the DBP Telekom monopoly. The original German text of this section appears at *supra* note 114. The only requirement made of a value-added competitor is that he or she "give notice in writing of the opening of operation as well as any modifications in or cessation of this operation" to the MPT who "shall publish these notices in his official Gazette every six months." FAG, *supra* note 67, § 1a(1).

145. See *supra* text accompanying notes 102-118.

146. See *supra* text accompanying notes 119-124.

147. While the German law actually identifies three categories of services, the law is confusing because, strictly considered, Germany identifies only two kinds of services, basic and value-added. The law divides basic services into those basic services that only DBP's monopoly can provide, "*v]ermittlung von Sprache für andere dient,*" see *supra* note 114, and those other basic services that competition can provide but DBP's Telekom may be ordered to provide, called "mandatory" basic services. See *supra* note 146. To further the confusion, DBP's Telekom can also be ordered or forced to install a new network to provide a mandatory service, and the new physical network installation also falls within the "mandatory services" category. Moreover, the DBP's monopoly over basic services includes more than the basic services described in note 138, *supra*, including all transmission of voice exchanges, even if delayed or otherwise "value-added." None of the German categories is strictly identical to the American categories of "basic" and "enhanced" services. See *supra* text accompanying note 32.

cient and function on behalf of the public welfare, nor does it expressly charge any unit or Minister of government with that task—a task similar to the one discharged by the FCC in the United States. As a result, Germany's value-added services markets are clearly subject to severe possible abuses by the DBP's monopoly powers. The fledgling competitive markets are in grave danger of not achieving their social goals. The American experience with AT&T clearly shows that the transition from monopoly to competition requires careful, stringent regulatory controls over dominant carriers when creating competitive markets; otherwise, socially beneficial competition simply will not ensue, a vital point hazardedly ignored by Germany's new law.

One prerequisite to competition efficiently performing in behalf of the public interest is that enough genuine competitors exist in the market. Competitors demand equal access to equal opportunities in fairly structured, fully open markets. If the necessary market conditions fail to exist, competitors may refuse to enter into value-added competition with the result that a major goal of Germany's new law will not be achieved. The resulting "market" will be one in name only and simply will not perform on behalf of the public interest.¹⁴⁸ For example, without adequate controls, DBP's Telekom may take advantage of the new German law that expressly authorizes it to cross-subsidize; i.e., the use of "revenues from monopoly services for the benefit of competitive services shall be permissible."¹⁴⁹ In an excess of zeal to establish itself as the unquestioned dominant firm in most of Germany's lucrative, emerging value-added markets, Telekom easily could be tempted to use its cross-subsidization authority. Only one weak, highly cumbersome and unpredictable protection exists for DBP's competitors, and it is only against predatory pricing¹⁵⁰ by Telekom,

148. The FCC has faced similar problems. For attempts by the FCC to create the necessary market conditions, see *supra* text accompanying notes 32-52. Germany's MPT and its Federal Government Cabinet have power to issue ordinances having the force of law, and would do well to seize the initiative and to emulate the FCC.

149. PostVerfG, *supra* note 68, § 37(4). "*Ein Ausgleich zwischen den Diensten nach Absatz 2 [Ein Ausgleich zwischen den Diensten eines Unternehmens ist zulässig] oder zwischen den Unternehmen nach Absatz 3 [Zwischen den Unternehmen ist ein Finanzausgleich vorzunehmen] aus Monopoldiensten zugunsten von Wettbewerbsdiensten ist zulässig.*" See also *supra* text beginning at note 34.

150. Broadly, predatory pricing is pricing services at a level usually below cost calculated to exclude from the market an equally or more efficient competitor. See R. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 188-89 (1976). The Supreme Court of the United States has stated that "[p]redatory pricing may be defined as pricing below appropriate measure of cost for the purpose of eliminating competitors in the shortrun and reduc-

which is frowned on by the new law,¹⁵¹ leaving untouched DBP's other uses of its cross-subsidization powers. Moreover, a non-predatory, oligopolistic pricing policy would not come within the new law's protection against predatory pricing, and easily could be seen by the DBP as a means of using its power to achieve its accustomed lion's share of the lucrative value-added markets. There seems to be very little protection for DBP's competitors in Germany's new law.

DBP's value-added competitors may have to turn to the EEC for effective protection. It seems that cross-subsidization by the DBP, without predatory or oligopolistic pricing, may be held by the EEC's Court of Justice to violate Article 86 of the EEC Charter under the *British Telecom* case.¹⁵² But, is it at all likely that potential DBP competitors will immediately, before the DBP entrenches itself, actually fight a lawsuit, at considerable expense to themselves, simply to obtain the right to enter the German value-

ing competition in the long run." *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 117 (1986). Predatory pricing is illegal under § 2 of the Sherman Antitrust Act, 15 U.S.C. § 2, and the Robinson-Patman Act, 15 U.S.C. § 13(a) (however the Act does not apply to services), the Federal Trade Commission Act, 15 U.S.C. § 45(1), (2), and various state antitrust and unfair competition acts gathered in 2 Trade Reg. Rep. (CCH) ¶¶ 6500-6855. The FCC repeatedly has declared that one of its regulatory goals is to eliminate predatory pricing, especially by dominant carriers. See, e.g., Guidelines for Dominant Carriers' MTS Rates and Rate Structure Plans: Memorandum Opinion and Order, CC Docket 84-1235, 50 Fed. Reg. 42,945 (1985); Policy and Rules Concerning Rates for Dominant Carriers: Notice Of Proposed Rule Making, CC Docket 87-313, 2 F.C.C. Rcd. 5208 ¶¶ 48-51 (1987).

151. PostVerfG, *supra* note 68, § 37(4). The sentences immediately following DBP's authorization to cross-subsidize in § 37(4) indict DBP pricing below cost stating:

If a persistent [sic] deficit [by DBP] in the competitive sector impairs the competitive possibilities of other [competitive] enterprises in the market without any justifiable reason, the Federal Minister of Posts and Telecommunications, in consultation with the Federal Minister of Economics . . . shall take the necessary measures to eliminate this impairment. The Federal Minister of Economics, in consultation with the Federal Minister of Posts and Telecommunications, shall decide whether there is a case of inadmissible impairment. If the performance of this task so requires, the Federal Minister of Economics shall call in the Federal Cartel Office which, according to § 46 of the Law Against Restraints on Competition, is authorized to decide on such matters. The foregoing provisions shall not give any rights to third parties; the applicable law on competition shall remain unaffected.

For reasons too lengthy to explore here, substantial opinion exists that after Germany's new law, as before, the DBP's Telekom, a governmentally-owned and controlled entity with its contracts possibly specified by law, may not fully come within the scope of the German antitrust statutes. Even if it does, the new law expressly grants authority to cross-subsidize but, as shown above, not to the point of predatory pricing. Presumably, only cross-subsidized predatory pricing would come within the antitrust laws, assuming they apply to Telekom at all. That is a very weak and cumbersome protection for a competitor.

152. See *supra* note 58. Article 37(1) might also be implicated. See *supra* note 71. Cf. discussion in note 123, *supra*.

added markets on fairer market conditions, or will they simply invest elsewhere leaving the German market primarily to the DBP's Telekom?

Cross-subsidization need not always take so crass a form as the DBP's outright use of its monopoly revenues to undermine its competitors in the new competitive markets. Cross-subsidization and non-competitive pricing can occur simply by Telekom selling itself the use of that part of its own monopoly network used for marketing its own value-added services at prices significantly lower than those charged to its value-added market competitors.¹⁵³ No provision of Germany's new law expressly requires Telekom to publicly reveal the prices it charges itself for its own network services, which is an obvious defect from an open, competitive market point of view. By ordinance, however, the MPT with the Federal Government Cabinet can and should seize the opportunity now to ordain such disclosure,¹⁵⁴ as the FCC has in the United States.¹⁵⁵ But information alone is not enough. It is crucial from a competitive market point of view that the same fair price for the use of Telekom's monopoly network be established equally for all value-added market competitors, including Telekom. This can, and should, be achieved by an ordinance requiring a very narrow-range of rate banding¹⁵⁶ for Telekom's fair and equal sale of its network usage to itself and others. The ordinance also ought to prescribe a

153. Or cross-subsidization effectively could occur if Telekom should decide to use "creative" accounting techniques and shift its value-added costs backward from the competitive sector to the monopoly sector, thereby permitting it to charge a lower price in the competitive market while being assured that its tariffs in the monopoly area will cover its costs there. Neither situation comes within the meager protection afforded DBP's competitors by PostVerfG § 37(4) applying to cross-subsidization, see *supra* note 151, but conceivably could come within the *British Telecom* case, if that case is liberally applied. See *supra* notes 58, 152,

154. PostVerfG, *supra* note 68, § 30.

155. See *supra* text accompanying note 44.

156. Rate banding means that a narrow range of minimum and maximum price levels—price caps—are specified in a tariff. It has been used to regulate AT&T's intrastate inter-LATA long distance service prices. Without floors and ceilings for its prices, a monopoly seller of network usage can sell one or more services below cost to compete more effectively in value-added services markets, perhaps drive competitors out of the market or deter entry of new ones and make up its losses by inflating the prices of other services. The Supreme Court of the United States has suggested rate-banding as one way of handling this problem. See *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 588-93 (1986). Rate-banding does not eliminate all the problems of potential predatory, or roughly similar, pricing; consequently, in addition to rate banding, other effective proposals for eliminating predatory or near-predatory pricing have been advanced and should be implemented by Germany. See, e.g., Baumol, *Quasi-Permanence of Price Reductions: A Policy for Prevention of Predatory Pricing*, 89 YALE L.J. 1 (1979).

system of accounting that would prevent Telekom from pushing some of its costs backwards from value-added competitive markets into its rate-assured monopoly area, thereby attacking another form of cross-subsidization.

If Germany genuinely desires to deliver value-added services most effectively through competitive markets, then Telekom's prices for the use of its network by value-added market competitors must be cost-based,¹⁵⁷ not monopoly price-based. Additionally, all market competitors should be equally able to lease Telekom lines at an equal, flat rate per line. The rate should also be cost-based, and therefore, related to efficiency, rather than be usage-sensitive, as is so favored by the DBP. Usage-sensitive rates decrease economic efficiency since the cost to Telekom of providing a fixed connection to a network line for a value-added competitor is not related to the amount of use given that line. If usage-sensitive leased-line rates are charged to Telekom's value-added competitors, it will result in an extra, undeserved windfall of funds to Telekom. Telekom can extract the windfall solely because of its grant of a network monopoly. This is fundamentally anti-competitive and is not necessary to maintain DBP's network monopoly. The windfall funds can be used unfairly by Telekom to finance its own value-added services that are in competition with the private competitors who originally paid Telekom its unfair windfall in order to hook-up to the Telekom network.¹⁵⁸ This situation can, and should, be avoided by a proper ordinance issued by the MPT and the Federal Government Cabinet.

Telekom necessarily will have important technical and busi-

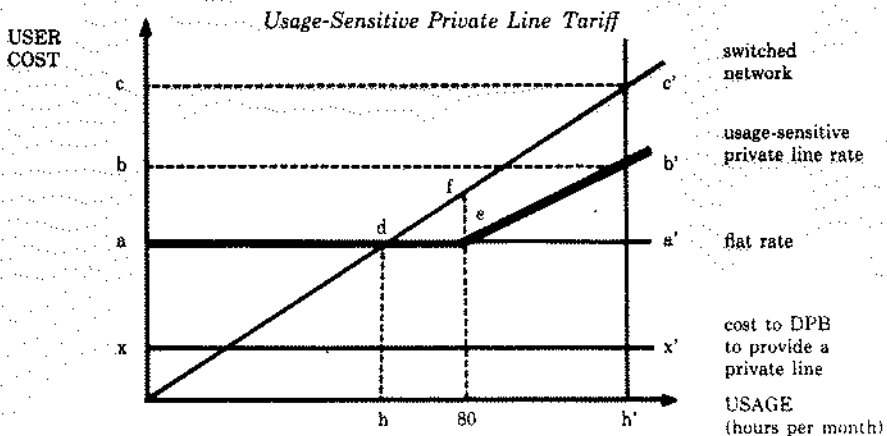
157. The literature on cost-based pricing is abundant. See, e.g., Baumol & Walton, *Full Costing, Competition and Regulatory Practice*, 82 YALE L.J. 639 (1973); Baumol & Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 AM. ECON. REV. 265 (1970). See also Baumol, *supra* note 156.

158. The DBP introduced usage-sensitive private line tariffs in 1981. Neumann & Wieland, *Competition and Social Objectives* 10, 15-16 (DBP Research Paper No. 14, Sept. 1985). Usage-sensitive rates are grudgingly accepted by the EEC's Green Paper and by the European Commission; both prefer flat-rate, cost-based private line leasing. See H. UNGERER & N. COSTELLO, *supra* note 59, at 207-10. Flat rates are the practice in the United States, see *supra* text accompanying note 27, and Germany's Federal Government Cabinet equivocally has indicated it wants to move in that direction. *Concept*, *supra* note 107, at 84.

The usage-sensitive rate structure so much desired by the DBP is non-linear. The user pays a fixed monthly charge for a minimum amount of usage plus an additional charge depending upon the amount of additional usage. The usage-sensitive part of the rate structure is "harmonized" with telephone call charges which also are usage-sensitive, and which means that the DBP tariffs its service substitutes at similar prices. The following diagram, adapted from Neumann & Wieland, *supra*, at 10, illustrates the DBP's usage-sensitive private line rates:

ness information about all of its value-added competitors because they all must give this information in order to interconnect with Telekom. Further, Telekom obtains additional information when it monitors the line for billing and other purposes. No Telekom competitor will have an equal amount of information about its competitors. Telekom, therefore, has another unfair competitive advantage in the value-added market, again derived solely from its network monopoly but not necessary for it. This unfair competitive advantage should be eliminated by ordinance, just as the FCC has eliminated such advantages in the United States.¹⁵⁹

By law, Telekom has two monopolies. All of its value-added market competitors in Germany, including foreign PTT's and Telekom itself, necessarily must use Telekom's network monopoly, which along with Telekom's voice-transmission monopoly is the



At h , a user is indifferent to using the switched network or leasing a private usage-sensitive line. At 80 hours, the minimum amount of hour usage permitted for a flat rate charge, the DBP has made it in the user's interest to lease a line as it also has at h' . But note that with information obtained about its value-added competitor's usage, DBP can subsequently adjust this 80-hour figure as well as the rate per hour sharing them but still allowing enough to attract user interest, all to DBP's advantage. The user's actual traffic demand is assumed to be h' . If a value-added services competitor having the uses identified by the diagram leases a line, the money represented by area $e-b'-a''$ must be paid over to Telekom in addition to the flat rate fee. Interestingly, the more successful the competitor is in the value-added market, the greater will be his network usage, and, of course, the greater will be DBP's monopoly receipts under the scheme due to its taking advantage of its value-added competitor's greater efficiency and success. The DBP seeks to justify usage-sensitive rates as a means of preventing "cream skimming," *see supra* note 102. Britain prevents it by simply forbidding the resale of flat-rate, leased lines, but under the DBP's scheme cream skimming is not eliminated. A user at h can obtain the minimum 80 hours of usage at the flat-rate cost and then "cream skim" the area $d-f-e$, and the usage-sensitive user at h' can "cream-skim" the whole area $d-e-b'-c''$.

159. *See supra* text discussion accompanying notes 39-44.

foundation for Telekom's economies of scope in the value-added markets. This is a competitive advantage due solely to the monopoly grants. Telekom should be permitted to compete in Germany's value-added markets only through structurally separate corporate subsidiaries.¹⁶⁰ This requirement is necessary to shear off Telekom's unfair, monopoly-based economies of scope.¹⁶¹ There is not always a bright line between economies of scope and cross-subsidization, especially in the murky market situation created by Germany's new law. If Telekom is permitted to exploit its monopoly-derived economies of scope in Germany's value-added markets, it will thereby obtain permanent, anti-competitive, unfair advantages flowing solely from its legalized monopolies that will distort competition in the value-added markets. If Telekom is not required to compete in Germany's value-added markets only through a structurally separate corporate subsidiary and is allowed to exploit its economies of scope, which originate solely in its legalized monopoly grants, Telekom will have an unfair permanent advantage in the competitive value-added markets that is legally prohibited to all other competitors. This is a result presumably unintended by the framers of Germany's new law, who sought for the first time to introduce a robust, fair and efficient competition into crucially important and lucrative value-added markets.

A. *A Clear and Effective CEI and Full ONA Are Necessary for German Value-Added Markets*

Telekom is actively creating an ISDN and an IBN is just

160. Nothing in the law prohibits DBP's Telekom's Management Board from creating structurally separate corporations for value-added services competition; its Supervisory Board is authorized to recommend them, PostVerfG, *supra* note 68, § 23(3), and the MPT in conjunction with the Federal Government Cabinet may order them, *id.* § 30, just as the FCC has done. See *supra* text accompanying notes 32-35.

161. See *supra* note 36, for identification of economies of scope. Baumol & Braunstein, *Empirical Study of Scale Economies and Production Complementarity*, 85 J. POL. ECON. 1037 (1977); Pulley & Braunstein, *Scope and Scale Augmenting Technological Change: An Application in the Information Sector*, in COMMUNICATION AND INFORMATION ECONOMICS: NEW PERSPECTIVES 105 (M. Jussawalla & H. Ebenfeld eds. 1984) discuss empirical and conceptual aspects of estimating economies of scope.

The FCC did not relax its structurally-separate subsidiary requirement for dominant carriers until it was convinced that competition would not suffer, see *supra* text accompanying notes 36-38, and it could substitute its CEI and ONA requirements to protect competition. See *supra* text accompanying notes 39-51. Germany's MPT would be well advised to act similarly if a genuinely competitive value-added market is honestly desired because, unlike AT&T's situation in the United States, the DBP has at least two legal monopolies, which make all the more necessary that competitive market structures be safeguarded.

around the corner. Neither CEI nor ONA are provided for in Germany's new law. Independent of requiring Telekom's value-added services competition to be carried out through a structurally separate subsidiary devoid of its anti-competitive, monopoly-based economies of scope, the MPT and the Federal Government Cabinet should seize the current opportunity and by ordinance insure the development of a genuinely competitive value-added market by requiring Telekom to institute CEI and a fully unbundled ONA, as has the FCC for dominant American carriers.¹⁶² Because the DBP has at least two profound legal monopolies, a condition not existing in United States telecommunications, the grounds for requiring CEI and a more fully unbundled ONA of Telekom are considerably stronger in Germany than in the United States. CEI and ONA are central to the development of an effective, competitive value-added services market in Germany. The EEC may act if Germany does not, but may not speak exactly to the country's specifically unique situation, nor speak soon enough or in sufficient detail. In its Resolution on the development of the Common Market for Telecommunications Services and Equipment up to 1992,¹⁶³ the Council of the European Communities identified the "rapid definition, by Council Directives, of technical conditions, usage conditions and tariff principles for Open Network Provision" (ONP) as being of crucial importance for "creating progressively an open common market for telecommunications services, particularly for value-added services." In January 1989, the EEC's Commission presented a proposal for a Council Directive on the guiding principles and structural framework within which a substantive ONP might be created; this proposal, like the actual ONP that may be developed, will be subject to review and debate by the Member States before its final form is approved and issued as a Council Directive.¹⁶⁴ The desire of the EEC is to have an accept-

162. See *supra* notes 35-51 and accompanying text for discussion of CEI and ONA.

163. 88/C257/01, 30 June 1988. The importance of Open Network Provision (a weak kind of ONA) was emphasized by the European Economic and Social Committee's opinion on the Green Paper, OJC 336 (Dec. 31, 1987) at 46; OJC (August 4, 1988) at 36. The Report by the Analysis and Forecasting Group (GAP) on Open Network Provision in the Community was issued on 20 January 1988. It was adopted by the Senior Officials Group on Telecommunications (SOG-T) on 13 April 1988, and the Commission reported on progress towards an ONP directive on 5 December 1988. (COM (88) 718).

164. Proposal for a Council Directive on the Establishment of the Internal Market for Telecommunication Services Through the Implementation of Open Network Provision (ONP), COM (88) 825 final, January 9, 1989. Issn. 0254-1475. In the Commission's 5 December 1988 Report (COM (88) 718) it summarized the general ONP requirements as follows:

—harmonized ONP conditions should follow a number of basic guidelines: con-

able ONP functioning by the end of 1992. The question is: how adequate will it be when all of Europe's PTT's are politically powerful at home, advising their governments on telecommunication policy positions, commonly communicating and working together, influencing the writing of technical standards and software to favor European and domestic producers and having a strong common interest in a live-and-let-live world in which each PTT monopoly secures the lion's share in its own domestic markets?

B. *The Customer Premises Equipment (CPE) Market*

The private manufacture of CPE has a long history in Germany, but not infrequently CPE has been supplied to the user only through the DBP. With the exception of DBP's monopoly over the supply of ordinary telephone equipment, which lasts until July, 1990,¹⁶⁵ Germany's new law now commits the entire terminal equipment market to competition. It provides that type-approved terminal equipment may be purchased directly, set up and operated by everyone willing to have it professionally installed and to observe proper conditions safeguarding the DBP's network, other

ditions must be based on objective criteria; conditions must be transparent and published in an appropriate manner; conditions must not discriminate between nationals of Member States; conditions must guarantee equality of access;

—the development and implementation of ONP conditions should be progressive. The emphasis should be on the development of harmonized offerings specifically suited for value-added service providers but available to all users;

—the importance of the development of open network standards is emphasized, in the framework of the overall Community approach to European standardization.

The reference framework defines the following three main areas for the development of harmonized ONP conditions:

—definition of harmonized technical interfaces and service features. It is proposed that existing technical interfaces should be used wherever possible. Where new technical standards are required for ONP offerings, the European Telecommunications Standards Institute (ETSI) should be requested to develop them, in accordance with evolving European standards taking account, as appropriate, of international standardization.

—definition of harmonized usage conditions. Common usage conditions which should apply for ONP offerings are indicated in the report. These refer to a number of parameters including: provision time; contractual period; quality of service; conditions for shared use, third party use, resale of capacity and network inter-connection, as compatible with Community Treaty rules.

—definition of harmonized tariff principles. The proposal indicates a number of guide-lines on tariff principles. In particular it proposes that tariffs for ONP offerings should be cost-oriented, be properly published, and apply to all users on a non-discriminatory basis.

165. "The exclusive right of the Bund to set up and operate ordinary terminal equipment for use in the telephone service shall be preserved until 1 July 1990." FAG, *supra* note 67, § 25.

users and the contents of messages, as set forth by ordinance of the MPT.¹⁶⁶ Much turns on what and who will be certified, which until recently was the task of the DBP. Presumably, the MPT now will rely on a recently created, non-DBP-related office, the Central Approval Office for Telecommunications in Saarbrücken, which has been given responsibility for equipment certification. "Its standards are high, reflecting the Bundespost's interest in and tradition of high quality products," and if there is a "barrier to entry in the West German CPE market," it "lies in the artificially high quality standard embodied in the certification criteria", which "is reflected in the relative high per-line charges in West Germany, as compared with France."¹⁶⁷ Although the prices in the two countries may not be directly comparable because of differences in quality, "a lessening of quality standards, and leaving the choices of quality more up to the market would reduce the barriers to entry and intensify competition considerably."¹⁶⁸

V. CONCLUSION

Traditionally, telecommunications in Germany effectively has been a monopoly affair. One of the major goals of Germany's new law is to establish effective "mandatory service" and "value-added" market competition. Yet, the law does not itself establish the conditions necessary for an effective, socially responsible and vigorous competition. Thus, much is left to be done. This is a grave limitation. However, the new law should not simply be dismissed out of hand as a bad law, or one necessarily destined for failure. Germany's new law creates a promise of competition for telecommunications. With sympathetic supplementation by the MPT and Germany's Federal Cabinet, it can be made into an effective law, achieving Germany's competition goals. The essential requirement is sophisticated supplementation that fills in the gaps in the law, that will produce an effective structure for genuinely competitive

166. *Id.* § 1(3). The MPT is authorized to stipulate the procedure for type approval of terminal equipment and radio installations . . . to insure the proper handling of public telecommunications traffic. Type approval shall be subject to the condition that neither the transmission lines of [DBP] nor any terminal equipment or persons are harmed or endangered by the connection or operation of the equipment to be approved. . . .

Id.

167. Foreman-Peck, *supra* note 53, at 169. "If equipment fulfills not only the safety standards but also compatibility and minimum quality requirements for certain services, it is usually certified within a few months," and for a reasonable charge. *Id.*

168. *Id.* at 170; see *supra* note 127.

markets, devoid of built-in advantages for the DBP. To the extent the new law successfully separates and liberates the DBP from direct governmental control and makes the DBP independent from politics, it also vitiates the German dogma holding that a specific set of regulations governing a public enterprise are not necessary because public enterprises under direct political control need no additional direct regulation. In this situation, the regulation of the DBP on behalf of creating competitive markets is particularly justified. By ordinance, the MPT and the Federal Government Cabinet can supplement the new law in many useful ways, including those suggested herein, but supplementation must come quickly if it is to be effective. Pessimistic reason exists leading one to believe that a Governmental Cabinet so busy with the more magisterial affairs of State will not occupy itself to the extent necessary and master sufficiently the detail of telecommunications in order to legislate effectively. If pessimism prevails and effective conditions of competition are not created, it is quite likely that the new competition will not deliver its promise. German markets will tend to become geared to the DBP and to the needs of a few large data and other telecommunications users, ignoring other users' needs that a bona-fide competition would meet.

Everyone agrees that some form of ISDN, and later some form of an IBN, will dominate the future of telecommunications. Because of the existence of centralized PTTs throughout Europe, development of the ISDN has been progressing quickly. The basic question about an ISDN's technical design is: "Who should manage the format for advanced communications and provide the new enhanced [value-added] services and customer premises equipment to the network . . . the central network, the major users or the independent suppliers of enhanced services?"¹⁶⁹ An ISDN developed without CEI and a fully unbundled ONA would give DBP's Telekom power to manage format, to favor itself and to affect equipment sales favoring traditional suppliers. Without ONA, the ISDN will integrate and consolidate, and move larger shares of the value-added data processing market to DBP's Telekom. Then, by continually investing and reinvesting in "smarter and smarter" switches and data processing equipment in keeping with the ability of a sophisticated, standardized, huge, high-quality telephone sys-

169. See J. ARONSON & P. COWHEY, *supra* note 4 at 191. A major current question is whether the DBP will be allowed to "game the process." See *supra* note 52.

tem,¹⁷⁰ Telekom's smarter and smarter but increasingly more uniform ISDN can dictate the kinds of interconnections that can be made technologically, affect competitors and aid DBP to garner the lion's share of the German telecommunications value-added market as that market grows in the future. This is especially if DBP is also allowed to retain its monopoly-based economies of scope. Moreover, "in general, equipment will be more standardized, longer in its life span, and more geared to centralized information processing."¹⁷¹ The result is that the pace of the DBP in installing the ISDN also will determine in significant part the pace of development of German information telecommunications markets. In such circumstances near predatory or oligopolistic pricing is an easy temptation.¹⁷² Without CEI, and without a fully unbundled ONA, the highly innovative, individualized technology of smaller firms' value-added services become less and less likely. The major telecommunications and data processing firms, such as DBP's Telecom and other PTT's, are more likely better to service the needs of heavy users in an environment stressing bigness, reliability and relative standardization, rather than meet the widely ranging but less lucrative needs of diverse, smaller users, which require rapid innovation and flexibility. This kind of development might be considered just good competitive business practice by the DBP. Ironically, in the long run, this development will probably favor Japanese, not German, equipment makers who deliver low-cost high-quality, uniformly standardized equipment. This portrayal is a likely possible future for competition in German telecommunications, or one similar to it. Germany currently is at the crossroads. Everything now depends upon the astuteness of Germany's MPT, the Federal Government Cabinet and on their commitments to create a genuine and effective set of market conditions for vigorous competition in Germany's new telecommunication markets.

170. It thereby also positions itself for the future while simultaneously changing the mix of equipment sales and influencing purchases that favor traditional or domestic producers. See *supra* text accompanying note 127, and also playing simultaneously a powerful role in the German political process. See *supra* note 54.

171. REID, THE ECONOMIC STAKES OF THE INTEGRATED SERVICES DIGITAL NETWORK (1984) (quoted in J. ARONSON & P. COWHEY, *supra* note 4, at 192).

172. See *supra* text accompanying notes 149-157; *supra* notes 28, 150, 151.