Book Review Essay

The Titanic Remembered: AT&T and the Changing World of Telecommunications


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Gerald R. Faulhaber’s *Telecommunications in Turmoil: Technology and Public Policy* chronicles the breakup of AT&T consequent to Judge Harold Greene’s approval of the Justice Department-AT&T consent settlement in 1982 (colloquially known as the modified final judgment or MFJ). Some saw the breakup as a disaster on the order of the sinking of the Titanic: “they were sad when the great ship went down.” While people mourned the Titanic as a human tragedy, however, probably no one thought of the AT&T breakup in quite that way; Ma Bell was not, after all, mom. Still, she was held in fairly high regard. In contrast to other monopolists we’ve loved to hate—railroads, gas utilities, broadcast

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† John C. Stennis Professor of Law, University of Virginia; B.A., Harvard, 1958; J.D., Stanford, 1961. The author served as an FCC Commissioner from 1974-76, when some of these events occurred. This may account for the occasional defensive tone of my remarks: although the statute of limitations has expired on my participation in FCC decisions, cognitive dissonance is still at work. I am indebted to Eva Saks and Eric Blank for many helpful suggestions.
4. At press time, the breakup of AT&T had not inspired any folk songs.

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stations, and countless other enterprises with protected market positions—AT&T's monopoly seemed not only natural but relatively benign. Notwithstanding Joan Rivers' carping MCI advertisements, the system pioneered and developed by AT&T was justly acclaimed the world's finest. Telephone rates were comfortably affordable; furthermore, in the heyday of the telephone monopoly the rate system was generally perceived as fair. Service innovation, while not rapid, nevertheless did proceed more rapidly than in other sectors of the economy.

To be sure, AT&T did not cater to what it considered to be customer whims like novelty or designer telephones. Theodore Vail, the great designer of the modern AT&T system, was of the Henry Ford school of product design: the consumer could have any model he wanted as long as it was a black Model A. However, those of us who went through life without the thrill of a Mickey Mouse telephone at home had reason to be content with the product and the service. AT&T's phones were plain, but they worked.

No doubt nostalgia for the good old monopoly days has been generated partly by the discomfort of the transition from the old to the new. One major discomfort results from a mixed blessing: the freedom to choose among market choices formerly unavailable. When we had only AT&T as our sole supplier of telephones, we had no need to worry about equipment quality or whether we were getting our money's worth. AT&T guaranteed the quality. Whether the rental price of telephones was fair (cost-justified) did not arise since the absence of alternatives made the question one for regulators, not us consumers. A more serious and controversial discomfort has arisen from the substantial alteration of service rates, notably the rise of local telephone rates resulting from the necessary reduction in long distance rates that were historically used to subsidize local service.

5. In the economic sense—i.e., based on economies of scale that allow a single provider to serve the market more cheaply than multiple providers.

6. We do know now that rates could have been lower and that there was a considerable amount of economic distortion involved in the allocation of rates among different classes of service. See text infra at notes 59-60. At the time, however, ignorance was (relative) bliss.

7. Under a separations arrangement used to divide revenues between interstate and intrastate (including local exchange) service, revenues are assigned on the basis of respective costs. Before divestiture, the traditional formula for cost allocation artificially assigned a disproportionate percent of joint and common costs to interstate service, to be borne by interstate rates. For a good description of the mechanism and the consequences, see MacAvoy & K. Robinson, Winning By Losing: The AT&T Settlement and Its Impact on Telecommunications, 1 Yale J. on Resc. 1, 2-9 (1983).

The ostensible justification for the subsidy of local service was that it promoted "universal service" by reducing the cost of installing and maintaining basic telephone services. Although universal service has been justified primarily in terms of general social benefit, it has also been defended in purely economic terms as a positive externality to users of the system. However, on either rationale the evidence suggests the costs of subsidy have exceeded identifiable benefits. See Pp. 110-12. Whatever the soundness of the social or economic justifications, the immediate motive force of the subsidization was political. Requiring interstate users to subsidize local service was relatively painless because the
To be sure, these adjustments were not the consequence of breaking up AT&T; they were the inevitable product of the antecedent authorization of competition by the FCC which eroded the profit base of the subsidy. However, those discomforted by the changing world of telecommunications are not much concerned to locate the precise source of their pain—whether divestiture or competition, the Justice Department (and Judge Harold Greene) or the FCC, is a mere detail. Those who complain of the new order do not finely discriminate among the various causes of change, so the break-up of AT&T stands as a convenient symbol for all of the events that produced the current regime.

Not everyone regrets the sea change in telecommunications; the breakup of AT&T and the emergence of competition have introduced a "brave new world" of new communications services. Economists in particular are wont to see the benefits of competitive enterprise more quickly than others, and have enthusiastically applauded the transformation of the telecommunications industry from one dominated by AT&T and superstition to one that is increasingly competitive and responsive more to market preferences than regulatory design.

Faulhaber, like most economists, is an enthusiast of deregulation. He recounts the story of this transformation and argues that it was long overdue. This story has been told so often, from so many perspectives, that the appearance of yet another book on the subject is suspect. Yet Faulhabe-
ber's account of the modern era, aptly characterized as "turmoil," is a
valuable contribution. If the story is no longer novel, it is nevertheless told
with critical insight, albeit with occasionally excessive moralizing.

The story does not begin with the break-up of AT&T. In fact, the
antitrust decree that accomplished that impressive feat was almost anticli-
mactic. Most of the events that would transform the shape of the industry
from one dominated by a monolithic company to a fiercely competitive
environment were well under way before Judge Greene approved the
MFJ in 1982.

It is always problematic to identify a single event or series of events as
the origin of something as complicated as the transformation of telecom-
munications. Traditional accounts identify a series of major FCC deci-
sions going back to the 1960s and reaching maturity in the early 1980s.
Faulhaber discusses most of these with a good eye for detail and a sense of
the economically relevant aspects. However, his narrative is sometimes
confusing because its organization is thematic rather than chronological;
this format makes the complex evolution of turmoil somewhat difficult to
grasp. He also displays an unfortunate tendency towards determinism,
seeing the historical evolution of competition as more or less the inevitable
outcome of certain historic decisions, and underestimating the degree of
policy uncertainty and simple confusion—on the part of all of the play-
ers—as to just where events were leading.

This deterministic bias is a natural product of retrospective observation,
as cognitive psychologists have shown. In this case it is also a product of
the compactness of events: virtually all of the important economic events
occurred in less than a score years, and most of the major policy decisions
within little more than a decade (roughly from the early 1970s to the
early 1980s). Considering the magnitude of the transformation these deci-
sions caused, this was a remarkably rapid pace. The effect of such an
accelerated change is to collapse observations of discrete events and
thereby obscure alternative evolutionary scenarios.

I. The Iceberg Cometh: Competition and Deregulation

For expositional convenience, the events prior to the 1982 MFJ may be
divided, Gaul-like, into three parts, which correspond to three distinct
technological, economic, and regulatory developments. Though the lines of
evolution converge after 1982, it is still useful to consider contemporary
policy issues in light of their distinctive origins.

10. See Fischhoff, Hindsight Does Not Equal Foresight: The Effect of Outcome Knowledge on
Judgment Under Uncertainty, 1 J. EXPERIMENTAL PSYCHOLOGY: HUMAN PERCEPTION AND PER-
FORMANCE 288 (1975).
A. Terminal Equipment and the Carterfone Decision

The evolution of competition in telecommunications is simplest in the area of terminal equipment. For all practical purposes modern times began with the FCC's 1968 *Carterfone* decision,\(^\text{11}\) though the true historian will note that it was anticipated by the District of Columbia Court of Appeals over a decade earlier.\(^\text{12}\) For all of the importance of *Carterfone* as a beginning, however, it was not quite the unequivocal endorsement of open competition that later observers have made of it. Indeed, it was not in the first instance a decision about competition so much as about customer convenience: the Carterfone device did not compete with any equipment offered by AT&T. At issue was the lawfulness of a tariff that flatly forbade “foreign attachments” to Bell telephone instruments. The ostensible justification for the restriction was to prevent electronic harm to the network, a rationale the FCC had no difficulty rejecting on the facts of the case inasmuch as the attachment in this case was a simple acoustical coupling device quite incapable of interfering with other users of the system. Absent a showing of harm, the FCC reasoned, there was no excuse for restricting customers’ use of the telephone to suit their convenience.\(^\text{13}\)

The FCC in *Carterfone* did evince some awareness that it was taking a first step in the direction of allowing competition: “No one entity need provide all interconnection equipment . . . any more than a single source is needed to supply the parts of a space probe.”\(^\text{14}\) At most, however, this was a recognition that Bell’s monopoly of the telephone system would not be extended to control the use of all peripheral equipment. How far the FCC would permit competitive supply of equipment that was integral to the basic telephone network—for example, ordinary handsets—was not to be determined until the mid-1970s. Current conventional wisdom reads the *Carterfone* principle very broadly as permitting private supply of any terminal equipment; however, this interpretation owes more to AT&T’s replacement tariff than to the *Carterfone* opinion. AT&T’s tariff actually went beyond *Carterfone* insofar as it permitted not only foreign attachments to telephone instruments but the substitution of privately supplied telephones or other central telephone equipment as well. *Carterfone* had said nothing about substitute equipment; there is no indication that the

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12. Hush-A-Phone Corp. v. FCC, 238 F.2d 266, 269 (D.C. Cir. 1956) (AT&T tariff prohibiting attachment of passive device to telephone handset held invalid as unreasonable restriction on customer telephone use).
13. 13 F.C.C.2d at 423–44; see also Hush-a-Phone, 238 F.2d at 266.
14. 13 F.C.C.2d at 424.
FCC intended to terminate AT&T's monopoly of non-peripheral terminal equipment.\(^1\)

In fact, AT&T's tariff implemented a policy the FCC had not itself articulated. The significance of that fact was not appreciated at the time, most likely because attention was focused not on the scope of equipment interconnection but on the tariff condition that required a so-called Protective Connection Arrangement (PCA)—which Bell alleged to be necessary—to protect the network. The PCA requirement allowed the use of non-Bell equipment, but it imposed a cost penalty on such equipment and thereby taxed suppliers that offered equipment in competition with AT&T and other telephone companies which did not have to use PCAs.\(^6\)

Given the cost handicap and doubts about the technical necessity of the PCA, it was inevitable that pressure would build in the FCC to invalidate this tariff requirement. In 1972, the FCC began a proceeding to investigate the entire equipment interconnect issue, culminating in 1975 and 1976 in a program of technical registration for all customer premises equipment (CPE) interconnected with the telephone network including basic telephone handsets.\(^7\) Under this program, which was a blow for Bell, manufacturers or suppliers of equipment could, by obtaining registration of their equipment, avoid the interface requirement. Since the FCC's interconnect decisions flow logically from *Carterfone*, one might conclude that they should have been issued immediately; indeed, Faulhaber observes that AT&T's insistence on a PCA as a condition of interconnection delayed introduction of competition into the terminal equipment market for eight years.\(^18\) That AT&T's action delayed competition is obvious, but Faulhaber's eight year calculation is based on an incorrect reading of *Carterfone*. It is simplistic to view *Carterfone* as a definitive decision meant to be immediately implemented to produce open competition like that of the late 1970s. The FCC did not make that policy choice in 1968, and it is naive to think it could have. Shifts in major regulatory policy don't occur like lightning bolts. They occur as a consequence of changes in political and economic circumstances that unfold over time.\(^19\)

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15. In American Tel. & Tel. Co. Proposed Tariff Revisions (Mebane), 53 F.C.C.2d 473 (1975), the Commission ruled that a proposed state commission rule prohibiting substitute equipment was invalid because it was inconsistent with *Carterfone*. However, the Commission acknowledged that its ruling extended the *Carterfone* order.

16. It was later established that AT&T designed the PCA requirement for this purpose and did not have a bona fide concern for network protection. See Litton Systems Inc. v. American Tel. & Tel. Co., 700 F.2d 785, 809-14 (2d Cir. 1983), *cert. denied*, 464 U.S. 1073 (1984).


19. AT&T made a strategic mistake in developing a phony PCA requirement which later pro-
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In this particular instance the Commission's policy of full competition in terminal equipment did not crystallize until 1974.

B. Interstate Transmission Service

The same point applies to emergent competition in interstate transmission service, which was a more complex evolutionary development than equipment supply. In 1959 the FCC's decision in *Allocation of Frequencies in the Bands Above 890 Mcs* first opened up the possibility of privately supplied microwave transmission facilities. As in *Carterfone*, the logic of allowing users to do for themselves what previously only AT&T could do for them would lead to competitive supply of telephone services. In this instance the competitive effects trailed the decision by a decade; the effects were first manifest in 1969 by an authorization to MCI to provide private line services between Chicago and St. Louis. The MCI decision in turn prompted a general rulemaking, the *Specialized Common Carrier Services* proceeding which in 1971 authorized competition in private line services generally.

The FCC's "original intent" in the *Specialized Common Carrier Services* decision, which authorized competitive private line services, was the subject of much controversy in the mid 1970s and early 1980s. Emerging private line carriers sought to give it a capacious interpretation and AT&T a narrow one. Interpretation of what the FCC had meant in 1971 was crucial to the Justice Department's antitrust suit against AT&T, as well as to private actions by MCI and others. This debate over intent recalls Robert Browning's response to an inquiry into the meaning of one of his early poems: "When I wrote that only God and Robert Browning knew what it meant; now only God knows." If God knew what the FCC meant in 1971, He didn't say; neither did the FCC. It seems that what the FCC originally had in mind was specialized services tailored to distinctive service needs of particular customers, as opposed to the homogenized services provided by MTS and WATS. It should follow that the specialized carriers could not demand that AT&T provide interconnection arrangements to allow the new carriers to provide service directly compet-

itive with MTS-WATS. But this was never precisely stated in the FCC’s decision.

The issue of intent arose specifically in connection with whether the specialized carriers would have access on the same terms as other common carriers to AT&T’s foreign exchange (FX) and common control switching arrangement (CCSA) services. In 1974 the FCC ordered access, over Bell’s vigorous opposition. AT&T’s resistance to providing access to its FX and CCSA services was to be a key element in the Justice Department’s antitrust case against AT&T, as well as in private antitrust actions.23

However, neither AT&T nor the FCC then appreciated that a little adroit packaging of these interconnections would allow MCI to provide a basic switched service in direct competition with AT&T’s MTS and WATS services. This was what MCI accomplished with its “Execunet” service.24 When the FCC learned (from AT&T) that this is what access to FX and CCSA produced, it rejected MCI’s Execunet tariff: direct competition with AT&T’s basic switched service was not part of the “original intent” of Specialized Common Carrier.25

The court of appeals rejected the FCC’s rejection, remanding for a clearer rationale of why competition with MTS and WATS was not in the public interest.26 This was the beginning of the end. Execunet would be as devastating to AT&T as the iceberg was to the Titanic. On remand the Commission instituted a rulemaking proceeding to consider the scope of competition in AT&T’s switched service markets, concluding in 1980 that there should be open competition27 and unlimited resale of switched services.28

A series of decisions constraining AT&T’s rate-cutting responses to the new competition was perhaps as important as the decisions authorizing competition in interstate service markets. The Commission’s Specialized Common Carrier decision had acknowledged that it would lead to adjustment of AT&T rates in different markets to bring them more into line

27. MTS and WATS Market Structure, 81 F.C.C.2d 177 (1980).
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with costs—a departure from the pattern of uniform nationwide pricing that the FCC had historically approved.\textsuperscript{29} It could hardly be otherwise. Competition was being induced in high-density/low-cost markets where rates had been kept artificially high in order to subsidize low-density/high-cost markets. It would have been indefensible to deny AT&T the right to defend its market position by reducing rates in competitive markets and raising them in subsidized, noncompetitive markets.

While the FCC clearly accepted the principle of rate deaveraging to bring rates into line with the cost of service in different markets, its practical implementation was a more complex matter. The heart of the problem was the difficulty of determining on which costs rates should be based. In unregulated competitive markets, such questions are occasionally raised in the context of alleged “predatory pricing” behavior. As Faulhaber notes, predation in unregulated markets is rare because it can succeed only under very special conditions; in regulated competitive markets, on the other hand, the availability of monopoly rents from protected segments of the market makes predation a more viable and likely strategy for the regulated firm.\textsuperscript{30}

Unsurprisingly, insistent claims of predation were heard from AT&T’s competitors throughout the 1970s and echoed in the Justice Department’s antitrust case. The FCC’s response to complaints about AT&T’s competitive pricing was not a model of clear thinking. It got off to a bad start by adopting a highly dubious cost allocation standard: in 1976 the Commission ruled that Bell’s competitive rates must cover fully distributed costs (FDC pricing) to ensure that AT&T service in competitive markets was not subsidized by its monopoly services.\textsuperscript{31} Few economists applauded this standard. There was much criticism that the FCC was becoming a great handicapper of competition in the fashion of the pre-deregulation ICC, in its prime the quintessential regulatory cartel manager.\textsuperscript{32}

The problem is both theoretical and practical. In theory, FDC pricing violates a venerated axiom of economic efficiency, the principle of margi-

\textsuperscript{29} 29 F.C.C.2d at 915: (“Where services may be in direct competition, departure from uniform nationwide pricing practices may be in order, and in such circumstances will not be opposed by the Commission.”).


\textsuperscript{32} 32. Faulhaber devotes some of his sharpest barbs at the FCC on this score. Pp. 64–79, 115–25. On pre-deregulation ICC cartel management through the use of fully distributed cost standards, see Boies, Experiment in Mercantilism: Minimum Rate Regulation by the Interstate Commerce Commission, 68 Colum. L. Rev. 599 (1968). For a general critique of the use of full cost pricing standards by regulators, see Baumol & Walton, Full Costing Competition and Regulatory Practice, 82 Yale L.J. 639 (1973).
nal cost pricing. In practice, there are also measurement problems. How do you allocate joint costs among different products? Not only is there no generally accepted principle for choosing FDC over marginal cost, there is no accepted formula for defining either one. In the early 1960s the Commission devised seven different methods covering a range of particular cost assignments that blurred the classic simple dichotomy between marginal and average costs. In 1976 it chose the most extreme fully distributed cost standard, though it later relaxed that standard.

Defining general standards was only half the task. Applying them was the other. The Commission did the first poorly and the second questionably. The Commission rejected major AT&T tariffs on the ground that the particular cost assignments were not adequately justified, but refused to provide any real guidance as to what they should be.

The FCC's conduct over this period is not easy to interpret, but I suspect there was more to it than was officially reported. After the Execunet remand, the Commission became committed to a policy of open competition, apparently envisioning that after a "decent interval" all would be left to compete with little or no regulatory constraint. Yet well into the 1980s the Commission also feared that without a helping regulatory hand the infant competition could not survive open competition with AT&T.

Of course, predation is easier to imagine than define (and easier to define than discover). No doubt many key FCC personnel thought AT&T's conduct was predatory. However, the FCC's anxiety about predation was certainly influenced by a sense of paternalistic responsibility towards the creatures it helped bring into the world. That paternalism began to erode sometime in the early 1980s, when the FCC began deregulating competitive segments of the interstate equipment and service market. This brings us to the third part of the story.

34. See American Tel. & Tel. Co., 58 F.C.C.2d 362 (1976) (Hi-Lo tariff); American Tel. & Tel. Co., 74 F.C.C.2d 1 (1979) (MPL tariff). The MPL tariff was temporarily suspended but allowed to go into effect pending investigation. It is reported that when AT&T's chairman personally requested clarifying guidelines from the FCC's common carrier bureau, the bureau chief told him that the FCC could not provide such advance guidance but could only pass on specific tariffs as filed. P. Temin, supra note 9, at 177. Assuming the episode has been correctly reported (the bureau chief's side of the story is unreported), I think there are two plausible explanations for the bureau's response: one, it did not believe AT&T was sincere in seeking guidance, and two, it did not have any clear idea of what specific costing methodologies it wanted. An advance commitment might impede its ability to examine the competitive impact of an AT&T tariff.
35. As an FCC commissioner in 1974–76, I observed considerable hostility towards AT&T on the part of the common carrier bureau staff. I did not observe any among the commissioners, but on matters of tariff supervision, costing standards, etc., it was the bureau that called most of the shots in this period.
C. Communications-Computer Convergence and Deregulation

The third strand of the evolution of competition involved the technological evolution of computers and the convergence of communications and data processing. Not long after Carterfone the Commission initiated an inquiry into computer uses of communications facilities. The inquiry was prompted by the growth of computer technology leading to a logical integration of computers and communications. The major questions were whether communications carriers should be permitted to market data processing services, and whether data processing services should be regulated when they are integrated with communications services.

The FCC answered the first question in the affirmative in 1971 but conditioned its permission on the formation of separate subsidiaries. It answered the second question in the negative. The regulatory issues presented the definitional problem of distinguishing between data processing and communications. The Commission attempted sharply to distinguish “data processing” from “communications” in this decision, but its attempt was overtaken by technological advances that made the two virtually indistinguishable. The same device that could act as a telecommunications terminal (a network signalling device and modem) could be designed to handle general data processing functions.

In 1976 the FCC instituted a second inquiry to review the rules. While that inquiry was pending, the problem came to a head with an AT&T tariff for a “smart” terminal device known as “Dataspeed 40” which AT&T defined as a “communications” (not “data processing”) device and sought to offer as part of a tariffed communications service. The distinction was critical for AT&T, which was precluded under a 1956 antitrust consent decree from offering such non-communications services or products except as an incidental aspect of providing a tariffed (i.e., regulated) communications service. Thus, if Dataspeed 40 were declared a data processing device (rather than a communications device), Bell could not provide it at all. Meanwhile, computer firms were afraid that if Bell succeeded in getting the FCC to characterize it as a communications terminal, this could lead to an FCC extension of regulation to general purpose computer terminals whenever they incorporated functions usable for communications purposes.

The FCC decided that Dataspeed 40 was a communications device,
its decision was affirmed over challenge by, among others, IBM. But the Commission had misgivings over its resolution of the dilemma. While sympathetic to Bell's argument that it ought not to be foreclosed from a market in which it had as much to offer as IBM, the FCC had no desire to regulate the computer industry.

The FCC's second computer inquiry (commonly called Computer Inquiry II or simply Computer II) was of greater scope. The Commission could now effect a dramatic measure which would avoid the need to distinguish between data processing and communications services, the deregulation of all CPE and those services that were most subject to competition—so-called "enhanced" services (any service other than "basic" transmission and switching).

Computer II was a momentous decision, comparable to Carterfone (1968) and Specialized Common Carrier (1971) in its effect on the character of telecommunications equipment. Computer II differed from the other two in that its primary interest was not so much to open the telecommunications market to outsiders as to open it to AT&T itself. For AT&T's competitors, the deregulation of CPE and enhanced services was thus a mixed blessing. IBM, concerned that the FCC might extend regulation to computers with telecommunications uses, no doubt was somewhat relieved by the FCC's decision to deregulate terminal equipment. But relief was mixed with distress that AT&T itself was now free to compete on an unregulated basis in both its own and IBM's markets. Enhanced service providers (Graphnet and Tymnet, for example), of course, had never operated outside a regulated environment and were not eager to do so; for them regulation had been a benefit, since it functioned as a protective shield against AT&T. Anxiety over the prospect of competing with AT&T was compounded by the fact that AT&T had a unique advantage through its control of the basic telephone network: long distance switched services via AT&T Long Lines and local exchange service via the Bell Operating Companies. First, competitors feared that AT&T would use its basic service monopoly to cross-subsidize its competitive CPE and enhanced services; second, and perhaps more important, they feared that AT&T's control of access to the basic services network (on which all competitors depended) gave AT&T the means to handicap the competition, for example by manipulating network design or access arrangements. Fears of predatory conduct had not disappeared.

38. See International Business Machs. v. FCC, 570 F.2d 452 (2d Cir. 1978).
To meet these concerns the Commission required that AT&T provide CPE and enhanced services only through corporate subsidiaries fully separated from AT&T operating companies (including long lines).\textsuperscript{40} After the divestiture of the Bell Operating Companies (BOCs) from AT&T, the same conditions were imposed on the now-independent BOCs.\textsuperscript{41} The FCC’s theory was that this structural separation would make it more difficult for AT&T to handicap competitors and to subsidize its own services and equipment. No doubt it did. However, it was very costly to AT&T,\textsuperscript{42} and it prevented efficient integration of services.\textsuperscript{43}

The inefficiency of structural separation quickly became apparent, and the FCC began dismantling it almost as soon as it took effect.\textsuperscript{44} In its stead AT&T has imposed a set of regulatory requirements designed to ensure that AT&T and the competitive providers of CPE and enhanced services will have full access to the basic service network.\textsuperscript{45}

II. The Great Ship Goes Down

A. Abandoning a Sinking Ship?

Against this backdrop of regulatory episodes, Justice’s antitrust suit emerges as the culmination of a series of major changes in the structure of the telecommunications industry; even so, new controversies arose over the character and pace of economic change. While we cannot know what would have happened if AT&T had not been broken up, it is reasonably certain that, even absent divestiture, telecommunications today would be

\textsuperscript{40} Faulhaber approves this strategy as a way to allow AT&T to compete. Pp. 65–67.

\textsuperscript{41} See Illinois Bell Tel. Co. v. FCC, 740 F.2d 465 (7th Cir. 1984) (affirming BOC separation rules); North Am. Telecommunication Ass’n v. FCC, 772 F.2d 1282 (7th Cir. 1985).

\textsuperscript{42} One estimate put the cost to AT&T at $1 billion a year in extra operating cost. Telecommunications Survey, ECONOMIST, Oct. 17, 1987, at 10.

\textsuperscript{43} For criticism of structural separation on this ground, see Baumol & Willig, Telephones and Computers: The Costs of Artificial Separation, Regulation, Mar.-Apr. 1985, at 23.

\textsuperscript{44} In 1985 the Commission relieved AT&T of the structural separations requirement in the provision of CPE. Furnishing of Customer Premises Equipment & Enhanced Services by Am. Tel. & Tel. Co., 102 F.C.C.2d 655 (1985), modified, 104 F.C.C.2d 739 (1986). This was followed by the Third Computer Inquiry in which the Commission eliminated the structural separation rules for enhanced services provided by AT&T and the BOCs. Amendment of Sections 64.702 of the Comm’n’s Rules & Regulations (Third Computer Inquiry), 104 F.C.C.2d 958 (1986), modified., 2 F.C.C. Rcd. 3035 (1987). Finally, the Commission eliminated the structural separation rules for BOC provision of CPE. Furnishing of Customer Premises Equip. by the Bell Operating Tel. Cos. and the Indep. Tel. Cos., 2 F.C.C. Rcd. 143 (1987).

\textsuperscript{45} As a precondition for offering enhanced services the BOCs and AT&T are required generally to provide “comparably efficient interconnection” (CEI) for all carriers and “open network architecture” (ONA) on which all basic service elements are provided on an unbundled nature to all users or other carriers. Disclosure of network information and certain customer information is also required. See Third Computer Inquiry, 104 F.C.C.2d at 958. In the case of CPE, BOCs and AT&T are required to disclose relevant information concerning networks and customers that affect CPE interconnection. See Furnishing Customer Premises Equipment, 2 F.C.C.2d at 143.
fundamentally different from fifteen years ago. The competitive environment we see today was largely guaranteed by Computer II.

Opinion at the time was divided on the wisdom of AT&T accepting the MFJ. Some pundits thought it a coup for AT&T, inasmuch as AT&T was able to slough off the most heavily regulated and least dynamic parts of its business (the local exchange service) while retaining the high-growth segments (long distance service and CPE) free of regulation. One might ask why AT&T would have fought divestiture so long, at nontrivial expense (estimated in the hundreds of millions of dollars), if it was such a coup.

Moreover, a highly competitive business is not unambiguously preferable to a regulated business. The performance of AT&T stock prices vis-à-vis those of the divested regional holding companies (RHCs) soon evidenced what astute observers had foreseen: AT&T had much to learn about competing in unregulated markets. One might infer the flip side of that message from the performance of RHC stock prices; to paraphrase Sir John Hicks, "The best of all monopoly profits is the . . . [regulated] life." In terms of final outcome, AT&T's acceptance of the MFJ may not have mattered much. Despite AT&T's public predictions of ultimate victory, few objective observers thought AT&T would emerge intact, the only question was how much it would lose. Although it undoubtedly could have prolonged the case for years, AT&T was probably wise in electing to settle in the Department of Justice antitrust suit. Of critical importance in this decision was the fact that a litigated judgment in Justice's public antitrust suit would weaken AT&T's defense in subsequent private antitrust


47. Total costs of the litigation have been reported at $400 million. Telecommunications Survey, supra note 42, at 10.

48. See Marcial, Why Investors Are Dumping AT&T For Its Spinoffs, Bus. Wk., Apr. 30, 1984, at 126 (decline in AT&T stock prices in first quarter after effective date of divestiture in January, 1984, in contrast to RHCs); Fortune, Nov. 10, 1986, at 172 (RHC stock prices increased an average of 90% versus 30% for AT&T from January 1984 through the first quarter of 1986).

49. For Hicks, of course, it was "the quiet," not the "regulated" life. Hicks, Annual Survey of Economic Theory: The Theory of Monopoly, 3 Econometrica 1, 8 (1935). Some accounts of modern regulation hold that there is not much difference.

50. MacAvoy & K. Robinson, supra note 7, at 21, unconvincingly assert that it is "not clear from Judge Greene's opinions whether he would have found AT&T guilty." This reflects a naively literal reading of Greene's opinions both on the motion to dismiss, United States v. American Tel. & Tel. Co., 524 F. Supp. 1336 (D.D.C. 1981), and on approval of the MFJ, United States v. American Tel. & Tel. Co., 552 F. Supp. 131 (D.D.C. 1982). That Judge Greene believed at least some of AT&T's actions constituted antitrust violations is evident not only in these opinions but in his recent opinion refusing to waive the MFJ restrictions on BOC activities. See United States v. Western Elec. Co., 673 F. Supp. 525, 531 (D.D.C. 1987).

Of course, it does not follow that Greene would necessarily order the break-up of AT&T, but some divestiture, coupled with extensive injunctive relief, was almost certain.
litigation. An adverse litigated judgment in an antitrust action brought by the United States is prima facie evidence of illegality in subsequent private actions, but a consent decree is not.\textsuperscript{51} Even if AT&T could have emerged from the case with most of its enterprise intact—suffering, say, only the spinoff of a few of the operating companies—it would have undermined its status in the numerous private suits then pending.

Finally, there was the matter of securing authorization for AT&T to enter into unregulated markets, notably the general computer business. It was and is doubtful that these markets were AT&T's comparative advantage. AT&T's critical disadvantage was its lack of marketing skill and experience, a consequence of a regulatory environment in which its principal sales functions were directed towards regulators in Washington, D.C. That is a liability that continues to threaten AT&T's survival in the computer industry.\textsuperscript{53}

Nevertheless, AT&T could hardly be expected to stay out of electronic equipment markets that were so integrally tied to its telecommunications business, and the 1956 consent decree continued to pose a threat to AT&T's participation in those markets. In \textit{Computer II}, the FCC had interpreted the 1956 decree to permit AT&T's participation in computer markets;\textsuperscript{54} so had a district court in New Jersey.\textsuperscript{55} However, the Justice Department opposed that interpretation, largely in order to maintain pressure on AT&T to settle the current antitrust suit, and its continued opposition was a significant threat to AT&T's future as an equipment supplier.\textsuperscript{56}

B. \textit{The Terms of Settlement: The "Bottleneck Theory"}

The precise terms of the MFJ are complex, but the basic design is simple. For my purpose a very general outline is sufficient.\textsuperscript{56} The "bottleneck theory" dictated a separation of the bottleneck monopoly from all competitive services, including transmission services, information services, and equipment supply. Inasmuch as local exchange service was regarded as a "natural" monopoly (at least in terms of current technology, and economic and political circumstance) while long distance service was now regarded as competitive, it followed that the twenty-two Bell Operating

\begin{itemize}
  \item \textsuperscript{51} 15 U.S.C. § 16(a) (1982).
  \item \textsuperscript{53} \textit{See Second Computer Inquiry, supra note 39, at 105–09.}
  \item \textsuperscript{55} \textit{See Geller, Regulation and Public Policy After Divestiture, in Disconnecting Bell: The Impact of the AT&T Divestiture, supra note 9, at 83, 87.}
  \item \textsuperscript{56} For details, see Pp. 96–101.
\end{itemize}
Companies (BOCs) should be severed from AT&T long lines and made independent. By the logic of the bottleneck theory it also followed that the BOCs should not be authorized to enter those markets considered competitive lest as independent bottleneck monopolies they revive AT&T's anticompetitive strategies. So it seemed at the time. The BOCs were reorganized as subsidiaries of seven new regional holding companies (RHCs) and authorized to provide service only within defined "local access and transport areas" (LATAs); the LATA is an area larger than the old local exchange area and generally coextensive with a defined metropolitan area (in exceptional instances a LATA embraces the entire state). The RHCs were forbidden to provide interLATA service which was reserved for long distance carriers such as AT&T, MCI, US Sprint, and others. The RHC/BOCs were also prohibited from providing information services (such as videotex, voice storage/retrieval, electronic mail), and from manufacturing CPE, though they were allowed to supply CPE made by others.

As noted, these prohibitions were rationalized in terms of the same concern over bottleneck control that prompted the ban on RHC/BOC interLATA transmission service; inasmuch as these competitive services are dependent on access to the local exchange service, it was thought the RHC/BOCs would have both the incentive and ability to use their control of that network to handicap competitive service/information/equipment providers.

The need for these and other conditions on the RHC/BOCs is currently the subject of much controversy. It is important to note that Judge Greene retained indefinite jurisdiction over the decree to consider waivers of the conditions as future conditions might arise. Given the scope of the MFJ and the importance of the conditions on the structure and performance of the telecommunications industry, this continuing surveillance power has given Judge Greene a regulatory role that has come to rival that of the FCC—to the discomfiture of the FCC and, ironically, the Justice Department.  

III. Lessons from the Voyage

A. Judging Regulation

Although much of Faulhaber's account of AT&T and the telecommunications industry is historical, to him the history is more than just a story:

57. When William Baxter replaced Sanford Litvak as head of the antitrust division, he rejected a Litvak proposal for a regulatory decree with minimal divestiture. Baxter opposed regulatory solutions in general and saw divestiture as the alternative. See P. TEMIN, supra note 9, at 225-30. The MFJ has produced both.
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it is a morality play, or at least a play with a moral, and that moral is the foolishness and fecklessness of economic regulation. I find the moral, if there is one, more ambiguous. As I suggested at the outset, there is a plausible case that the old regime, though not Pareto optimal by present standards, was reasonably satisfactory by then-prevailing norms, including the norms of Faulhaber’s own economics profession.

Faulhaber gives three major examples of regulation-induced inefficiencies. First, in the production of services and equipment, regulation has induced wasteful investment and an inefficiently large work force. Second, in pricing, regulation has led to distortions, with high prices for price-elastic long-distance services and low prices for relatively inelastic local services—precisely the reverse of what economists prescribe for efficient resource allocation. Third, in service supply, regulation has distorted resource allocation by subsidizing certain types of services and users with no social or economic justification.\(^5\)

Faulhaber’s list of regulation’s deficiencies is unexceptionable by contemporary norms. However, economists have not always known what they know today, and it is anachronistic, not to say uncharitable, to be so judgmental about regulatory policy in an era before we knew much about regulatory economics. Faulhaber’s example of pricing distortions illustrates the point. He is correct in pointing out that regulation permitted, even encouraged, local and long distance services to be priced in a way that is precisely contrary to the Ramsey pricing rule in which prices are inversely related to demand elasticity.\(^6\) But the disregard of Ramsey pricing efficiency was not simply the consequence of a regulatory policy designed to correct for market failure as Faulhaber seems to imply; rather, it was the product of a conscious social and political judgment about the relative importance of developing and maintaining local versus long distance service.

No doubt there were and are other, more efficient ways of achieving the objective of maintaining essential services, as Faulhaber points out.\(^6\) But within the general industry framework as it existed, internal subsidies were not altogether irrational. The principal distortions that were created by them have appeared recently as a consequence of the radical alteration

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59. P. 108. The label was invented by Baumol & Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 AM. ECON. REV. 265 (1970); the eponym is mathematician and philosopher Frank Ramsey, who formalized the rule in *A Contribution to the Theory of Taxation*, 37 ECON. J. 47 (1927). Ramsey did not invent the principle; as Baumol and Bradford point out, the basic rule has been known in public utility economics as “value of service” pricing both before and after Ramsay.
60. P. 114. The FCC has initiated plans for federal-state assistance programs to support essential telephone service for low income households. For a recent study of them, see L. JOHNSON, *Telephone Assistance Programs for Low-Income Households* (1988).
of the industry structure from a monopolistic, hierarchically integrated structure to a competitive, pluralistic one.

In the new structure, the distorting effects of the subsidization of local exchange service are most visible in the "by-pass" problem. The historic subsidy of local exchange service by interexchange toll service users creates an incentive for the latter to circumvent the local exchange network by constructing self-contained, end-to-end systems or by using local by-pass facilities to avoid the local access charge (and the subsidy). There is no sensible objection to be made against cost avoidance as such, and, if by-pass methods are the cheapest mode of communications, there is no basis for public concern. The problem arises because the traditional subsidy creates an incentive to by-pass the exchange network even where it is the cheaper mode of delivery. In response to the problem, the FCC has reduced the subsidy by reallocating some of the fixed costs of local access lines from interexchange to exchange service—to the immense distress of public activists who decried the consequential increase in local telephone bills.62

Faulhaber believes by-pass is a "transitional phenomenon" that will end in due course with the elimination of the subsidy from local access charges. Of course, most phenomena are "transitional" if one has a suitably long-run perspective, and the BOCs are clearly mindful of Keynes' celebrated remark about the long run in which we are all dead. But the problem for the BOCs goes beyond "uneconomic" by-pass. The BOCs face a long term competitive challenge from "economic" (cost-effective) by-passers as well. Part of the BOCs vulnerability to by-pass competition is no doubt due to their obligation to maintain a network that provides back-up (default) capacity for users and by-passers alike. A "default capacity" charge on by-passers has been proposed to solve this "free rider" problem.63 Also, competition between BOCs and by-passers is not reciprocal because of the MFJ. While interexchange carriers like AT&T can poach on the local exchange market, the BOCs are barred from competing in interexchange markets.

The latter issue is not only, or even especially, tied to by-pass. The

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62. See supra note 8.
63. Weisman, supra note 61. Weisman's argument for default capacity charges draws in part on the concept of "option value" pioneered by Weisbrod, Collective-Consumption Services of Individual-Consumption Goods, 78 Q.J. Econ. 471 (1964), and Kahn, The Tyranny of Small Business Decisions: Market Failure, Imperfections, and the Limits of Economics, 19 Kyklos 23 (1966). The option (in this case, default capacity) is a public good that will be undersupplied by competitive market arrangements. By the same token it may be oversupplied by regulatory coercion.
MFJ restrictions on BOC entry into interexchange service markets, like the restrictions on BOC equipment manufacturing and provision of information service, are designed to implement the central premises of Justice's antitrust case, which was that a monopolist with control over a vital bottleneck facility should not be allowed to compete with those who depend on access to that facility. Whether that premise is still correct is now the dominant controversy in telecommunications.

As one might expect from his opposition to traditional regulatory impediments to competition, Faulhaber is a critic of the MFJ restrictions. He has some interesting company. The Justice Department, which negotiated the restrictions, has now concluded they are not necessary and has sought removal of these and other line-of-business restrictions. Justice and the RHCs maintain that local exchange companies need not be restrained because they do not have the capability to handicap competitors in the ways AT&T did when it dominated telecommunications service and equipment. Judge Greene has not been convinced. While waiving some of the MFJ restrictions to permit RHC/BOC entry into incidental markets, he has been steadfast in refusing to eliminate the main restrictions on entry into interexchange transmission service, information service, and equipment manufacturing.

Faulhaber's own views on the MFJ's line-of-business restrictions seem contradictory. At one point, he criticizes Judge Greene for allowing RHC/BOCs to enter certain competitive markets on the ground that this perpetuates the bottleneck problem that prompted divestiture, while, at another, he criticizes Greene for maintaining the restrictions on RHC/BOC entry into interexchange transmission service, information services, and CPE. This inconsistency may simply reflect Faulhaber's propensity for rhetorically exuberant criticism of all regulation, which sometimes causes him to forego careful analysis of the finer points. However, the inconsistency may also reflect a basic ambivalence about the appropriate course of public policy at this point in the evolution of telecommunications. If so, it is an ambivalence I share.

On the one hand, anyone who thinks competition should be the business of businessmen and not their lawyers will share Faulhaber's revulsion at the avidity with which favored telecommunications interests defend

64. The occasion for seeking removal of the line-of-business restrictions was the filing by Justice of a report that the original MFJ required to be filed at three year intervals on the status of competition. The Department's report relied heavily on a monumental study prepared by Peter Huber as a consultant. U.S. DEP'T OF JUSTICE, GEODESIC NETWORK: 1987 REPORT ON COMPETITION IN THE TELEPHONE INDUSTRY [hereinafter the HUBER REPORT].


the existing restrictions on additional competition. It is all the more unsettling to see who the protected are: AT&T and IBM, leading electronic equipment manufacturers, newspaper publishers, and the cable television industry. These are not infants of American industry needful of a helping hand while they grow up. Even firms like MCI and US Sprint, which may be still struggling to survive in the markets that the RHC/BOCs seek to enter, have little claim on our sympathy. They received ample solicitude a decade ago; their childhood has ended.

On the other hand, anyone who accepts the legal and economic theory that prompted the antitrust case must concede that the MFJ restrictions follow the logic of that theory—just as Faulhaber himself points out in his initial criticism of Judge Greene’s waiver of some of the line-of-business restrictions. One may think it unseemly that businesses like AT&T and IBM, inter alia, are the beneficiaries of these legal shackles on competition. But, unseemliness aside, the case for these restraints is just as persuasive as the case for the original divestiture order. If the Justice Department is correct in asserting that the restrictions are not necessary, it comes perilously close to saying that divestiture was an unnecessary exercise in the first place. If it is true that RHC/BOC competition is not a significant threat to competition, why wasn’t AT&T allowed to continue to own and operate the BOCs?

This question is not answered simply by saying that conditions were different in the early 1980s. Of course they were. But most of the changes that have occurred have not been the consequence of divestiture but the products of evolving competition set in motion by the FCC and by technological innovation wholly independent of and even prior to the MFJ. The Justice Department’s request for modifying terms of the MFJ that go to the very heart of its original case for divestiture is thus deeply ironic.

B. Regulating Judges

There is equal irony in Judge Greene’s stance insofar as it has put him in the position of assuming the regulatory functions he testily condemned when they were exercised by the FCC. Despite his repeated criticism of the FCC for its handling of regulatory policy,67 his critics have observed that he has come to play a very similar role himself.68


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It must be emphasized that Judge Greene’s regulatory role has been far more than simply interpreting and enforcing the conditions of the MFJ. Given the complexity of the MFJ, it is not objectionable for the court to retain jurisdiction to interpret the decree for some initial period. As Greene has defined his role, however, it is not merely that of interpretation and enforcement, but one of policymaker, evaluating and acting on requests for waivers of MFJ restrictions as deemed fit in the circumstances. Whatever the merits of the individual actions taken, Judge Greene’s self-conscious effort to make regulatory policy in this manner is sufficient cause to justify transferring the court’s authority over the MFJ, or at least the line-of-business restrictions to the FCC—as proposed by the RHCs, the Justice Department, and the Commerce Department’s National Telecommunications and Information Administration (NTIA).

Proposals to divest Judge Greene of his authority over MFJ conditions are influenced not only by the questions of separation of powers and appropriate institutional responsibilities. In fact, the present controversy is generated less by Judge Greene’s view of his role than by his substantive views on the basic policy questions—in particular his continued refusal to remove the general restrictions on RHC/BOC entry into equipment manufacturing, interexchange service, and information services. As noted, I find it difficult to fault Judge Greene’s judgment that these restrictions are entailed by the justification for the divestiture itself. Nevertheless, there comes a time when one must look forward to consider whether continuing to enforce these restrictions against RHC/BOC competition makes sense. It is not possible to examine the arguments here in detail; a few general observations must suffice.

Virtually all parties continue to acknowledge that the RHC/BOCs “bottleneck” monopoly over local exchange service puts the RHC/BOCs in a strategic position to handicap or gain an advantage over competitive service or equipment suppliers. The controversy boils down to how effectively this strategic position could be controlled by regulations short of a

69. One is tempted to see parallels here to the increasingly common role of judges in managing schools, public employment, prisons, and other subjects of modern institutional reform. On that role, see Diver, The Judge As Political Powerbroker: Superintending Structural Changes in Public Institutions, 65 Va. L. Rev. 43 (1979).

70. A bill sponsored by Senator Dole in 1986 to transfer control to the FCC generated the expected mix of support and opposition. In addition to the RHCs, the Dole bill was supported by the FCC, the NTIA, and the Justice Department; it was opposed by, inter alia, AT&T, MCI, state regulators, the Consumer Federation of America, and the National Cable Television Association. Some others such as IBM and the Computer Business Equipment Manufacturers Association did not oppose the change in regulatory forum but expressed reservations about eliminating all restrictions on RHC/BOC competition. See Hearings on S. 2565, supra note 68; see also Hearings on Proposed Modifications to the AT&T Decree Before a Subcomm. of the Senate Judiciary Comm., 100th Cong., 1st Sess. (1987).
total ban on RHC/BOC participation in competitive markets. Judge Greene's skepticism about the efficacy of limited regulation (and consequent refusal to lift the absolute restrictions on RHC/BOC participation) is understandable in light of his interpretation of what the antitrust case was all about—the FCC's apparent inability to police AT&T. Although his view seems to exaggerate the events of the 1970s, he cannot be considered irrational for questioning the effectiveness of regulation in curbing strategic behavior by regulated monopolists. Nevertheless, one must balance the possible costs of ineffective regulation of strategic behavior against the plain costs of the alternative currently in effect (preventing the potential strategists—the RHC/BOCs—from competing). Judge Greene's apparent indifference to this balancing makes one wonder if he thinks it necessary to destroy competition in order to save it.

Perhaps this judgment is too harsh. One must at least pause to ask just what is at stake. How important would RHC/BOC competition really be, given that there appears to be fairly vigorous competition in all of the markets where they are now excluded?

The answer differs for the various markets. The case for additional competition is undoubtedly weakest in equipment manufacturing; there is scarcely any sector of the economy where competition is more robust and durable. The case for allowing RHC/BOCs to manufacture telecommunications equipment (recall that they are permitted to sell it) has to rest entirely on the desirability of increasing their entrepreneurial options, and on the absence of any significant risk of harm to competition from allowing them to compete. While these reasons may be sufficient to justify lifting the restrictions, they should not be confused with an argument that such entry will produce any direct contribution to the consuming public in terms of cost savings or innovation. It is conceivable that there may be some economies from integrating manufacturing and service functions, for example, in the exchange of information about equipment design and system architecture.\(^{71}\) AT&T frequently claimed such economies in defending the integration of Western Electric with other Bell system entities.\(^{72}\) But I am skeptical of such claims, particularly given present FCC requirements for carrier disclosure of network and customer information which are imposed to prevent carriers from using their control of the basic service network to handicap competitors.\(^{73}\)

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71. For a general treatment of such nonproduction cost economies of vertical integration, see O. Williamson, Markets and Hierarchies: Analysis and Antitrust Implications 82-131 (1975).
72. See, e.g., American Tel. & Tel. Co., 64 F.C.C.2d 1, 41-42 (1977) (Bell System procurement dominated by Western Electric ties; open procurement ordered).
73. See supra note 45 and accompanying text.
With interexchange transmission service, the case for RHC/BOC entry is probably stronger. Although AT&T's historic market dominance has eroded somewhat, it still retains eighty to eighty-five percent of the interLATA market compared to five to eight percent for MCI and four for US Sprint (the remainder is divided among other carriers), which suggests that competition may be less than optimally robust. Of course, one should not make too much turn on market shares alone; so long as MCI and US Sprint are large enough to be viable, their ability to enter AT&T's markets cheaply should operate as an effective competitive constraint on AT&T. Indeed, their competitive effectiveness is as much a function of their potential as their actual performance. The important question that supporters of RHC/BOC competition raise is whether these carriers (which currently compete with AT&T) will remain viable over the long term. In contrast, there is little doubt that the RHC/BOCs could provide strong and durable competition for AT&T. Moreover, allowing RHC/BOCs to enter the interLATA market might put pressure on state regulatory authorities to permit greater intraLATA competition. Facilities-based intraLATA competition is now barred in most states, but authorizing competitive entry into interLATA markets might be used as bargaining leverage for reciprocal authorization of such competition in intraLATA markets.

The strongest case for RHC/BOC entry is in the provision of information services. Whatever the arguments for additional competition in both CPE and interexchange service, no one argues that in those areas consumers are presently denied important services at competitive prices. In contrast, prohibiting RHC/BOCs from providing information services has meant that some electronic information services cannot be provided because they are not economically viable as separate services. A prime example is videotex, an all-purpose electronic information service. Despite popularity in Great Britain and France, videotex has failed to develop significantly in the United States. It is not clear that the requisite de-
mand now exists to support videotex service on a major scale in the United States; however, the integration of videotex with basic telecommunications services might offer economies that would make such service less costly and more attractive. The present MFJ restrictions have made it difficult to find out.

In an important recent decision Judge Greene has eased the restrictions on information services to allow BOCs to transmit information services generated by others, including videotex and other services.\textsuperscript{80} The BOCs are still barred from originating or changing the content of these services, but this new authorization is a substantial step in the direction of allowing BOC entry into the information services market.

I suspect that the MFJ's restrictions on RHC/BOC entry into CPE manufacturing, interexchange transmission, and information services markets will not survive much longer in the current environment of deregulation and competition, despite Judge Greene's present disposition to retain them. But I would not expect their sudden abandonment. We are more likely to see increasing erosion of the restraints—for example, partial entry or conditioned entry subject to open network architecture, comparably efficient integration, and other requirements of the kind the FCC has recently substituted for its former structural separation rules. If Judge Greene himself does not accept such modifications, it is possible Congress will intervene and give the FCC full regulatory jurisdiction over the character and scope of RHC/BOC competition. It is conceivable that the FCC might assert such jurisdiction on its own initiative, though this seems improbable at the present time.\textsuperscript{81}

But it is not essential to anticipate precisely how the changes will come to forecast that they will come. And, if I am correct that the present restrictions have a short life expectancy, the present controversies should not be overheated by those anxious to reach some ideal equilibrium of unregulated competition. The divestiture was not effective until 1984, and the industry is still adjusting to the post-divestiture era. We can afford a little "quiet time" before proceeding with the revolution.

IV. Charting Future Voyages (And Icebergs)

With or without immediate modifications in the MFJ there will be continual changes in telecommunications technology and services. These


\textsuperscript{81} The NTIA has requested the FCC to do so. See TELECOMMUNICATIONS REPS., Nov. 23, 1987, at 17.
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will have an effect on the industry quite independent of the MFJ. Telecommunications has been in the forefront of futurologists' imaginations for at least a quarter century. This is due mainly to the technological character of the subject. Nothing so captures the imagination of the futurologist as technological change with its capacity for novelty and surprise, and there is no area of contemporary life where the technological change has been greater than electronic information processing and communications.

By the standards of telecommunications futurology, Faulhaber's predictions are not adventurous. Where bold futurologists in this field are wont to sail off into the unchartered waters of at least twenty five to fifty years into the future, Faulhaber pretty much hugs the shoreline of contemporary events. Indeed, his discussion of the future is less predictive than didactic, a continuation of his previous critique of regulatory policy with sufficient forward spin to talk about the possible future complications of the controversies discussed above. He expresses particular concern about the possibility that RHC/BOCs will continue to use local regulatory authorities to handicap local service competition—playing the same game AT&T played (successfully) in the 1970s.

Faulhaber provides a useful recital of the innumerable ways the regulatory process can be used to thwart competition, though he occasionally overdoes the regulation-bashing. That point aside, however, his discussion of the future is a bit disappointing in its preoccupation with contemporary regulatory problems and its unwillingness to speculate about future services and markets, and the problems they might present. I do not ask that Faulhaber indulge in futurist fantasies. That sort of communication is the comparative advantage of Alvin Toffler and his ilk. Still, Faulhaber might have speculated a bit more about some near-term possibilities.

For example, the rapid development of cellular radio raises an in-

82. Along with computers, telecommunications are the foundation of the "new information age," which has been celebrated for enough years that it is no longer "new." For an informative commentary and bibliography on the information age, see W. Dizard, The Coming Information Age: An Overview of Technology, Economics, and Politics (1982). A rather breezier account is J. Martin, The Wired Society (1978). For the quintessential futurist forecast, see A. Toffler, The Third Wave 184-223 (1980).
84. Pp. 154-56.
85. I confess to having indulged in this pastime myself from time to time. See, e.g., Robinson, The Federal Communications Commission: An Essay on Regulatory Watchdogs, 64 Va. L. Rev. 169 (1978). However, as an erstwhile regulator, I usually look for occasions to be charitable.
86. Cellular radio has made possible an exponential increase in the number of mobile units which, coupled with technological advances in mobile radio equipment, have made radiotelephones a relatively low cost and increasingly popular convenience. There are an estimated 350,000 to 450,000 subscribers today, a number that has been projected to increase to 10 million by 1990! See Huber
triguing question that has far-reaching implications. What are the realistic prospects that a fully deployed cellular radio mobile telephone system will offer a competitive alternative to the fixed wireline network? The possibility is tantalizingly raised by Faulhaber but not developed with enough detail or imagery to engage our imagination. Futurologists will naturally raise questions like the following: what would a fully developed mobile system with phones in every car and briefcase look like? How might it alter the character of telecommunications? The true futurologist would spin this into an investigation of the effects on business, culture, homelife, the family, and so on.

Where the mobile telephone scenario suggests a rather loose and highly flexible system for local telecommunications services, another currently unfolding scenario focuses on fixed broadband transmission facilities—a single, integrated services “pipeline” carrying all forms of communication, including television, into every home and office. Speculation about such a system has been common since the earliest days of cable television, which provides the kind of broadband capacity needed for such an all-purpose communications system. The major obstacle to the development of a broadband system is the economic cost of replacing the existing wireline system which represents billions of dollars in sunk investment. However, even within the limits of the present network a large increase in capacity will be made possible by digitalization. A so-called integrated services digital network (ISDN) is now being planned in the United States and other developed countries. The market for a digitalized system is still uncer-

REPORT, supra note 64, at 4.4. From growth figures like this it is not difficult to envision a local mobile telephone network that parallels the local wireline exchange/access network. Whether mobile network could provide the basis for an alternative to the BOC’s wireline network is more problematic, however, since the BOCs themselves operate most of cellular systems within their market areas. Id. at 4.9. Building a competitive alternative to conventional local exchange/access service on the basis of cellular radio depends on a more substantial growth of nonwireline carrier-owned systems. Unfortunately, nonwireline carriers have been at a distinct disadvantage as a consequence of the FCC’s division of mobile radio frequencies into separate portions, one for wireline carriers and one for unwireline carriers. Cellular Communications Sys., 86 F.C.C.2d 469 (1981); 89 F.C.C.2d 58 (1982); 90 F.C.C.2d 571 (1982). Given that there is typically only one qualified wireline carrier in each cellular market, wireline carrier service has not faced the delay of comparative hearings that nonwireline carriers have faced. Indeed, freeing wireline carriers from the obstacle of comparative hearings was central to the FCC’s design in order to ensure that cellular service was not strangled in its infancy by the regulatory power. However, the FCC also provided for selective moratoria on particular wireline operations to prevent unfair handicaps to nonwireline competitors. See generally MCI Cellular Tel. Co. v. FCC, 738 F.2d 1322 (D.C. Cir. 1984).

87. P. 154.
88. Including, I suppose, the obligatory reference to G. ORWELL, 1984 (1949), with explanation of how 1984 was avoided in 1984.
89. ISDN is a design for digitalized integration of different services including not only interactive voice and data communications but a variety of information services such as videotex, electronic mail, home telemetry. ISDN will enhance the capacity of the existing telephone network but not enough to handle regular television programs for which a broadband system such as coaxial cable or optical fiber is required. For a short account of ISDN developments, see Pandhi, The Universal Data Connection,
The adequacy of present rate controls is one such concern. Traditional modes of regulating natural monopolies, particularly rate-of-return rate regulation, have been subject to much criticism in recent years. As an alternative to rate-of-return regulation for "dominant" interstate carriers, the FCC itself is currently studying the substitution of price caps adjusted to, say, a consumer price index. Whatever changes are made in rate control methodology, any movement in the direction of increasing the scope of dominant carriers in the manner suggested by the all-purpose...
pipeline scenario would clearly increase the stakes in effective regulatory control. Critics of regulation will be discomforted by that thought.

Another major concern is regulatory control over access to basic transmission services in order to ensure that competitors are not strategically disadvantaged by the BOCs and other local exchange carriers—the problem with which the Commission has already wrestled in the succession of computer inquiries discussed earlier.91 The access problem would be compounded by the single pipeline carrier scenario if the carrier were permitted to provide information services in competition with subscribers. This is the issue currently being debated before Judge Greene.

For all the competitive diversity introduced into the telecommunications world in the past twenty years, some see in present technological developments (such as ISDN) the basis for a turn away from the “confusion” of competition and towards a more ordered, integrated and centrally controlled system. Probably no one expects the Titanic to set sail again, under AT&T’s flag or anyone else’s. But it is not beyond imagination that what Faulhaber calls the “turmoil” in telecommunications will sink into a quiet arrangement among a small number of megacompanies.

Like Faulhaber, I am not much given to futurology. Despite my disappointment at his conservatism in this respect, I confess to a similar bent. In a field as turbulent as telecommunications it is hard enough to assess what will happen today, let alone ten years hence. Were I pressed to speculate, however, I would predict that we will not see a return to the simple days of monopoly or centralized direction. Some technological developments (ISDN and optical fiber networks) might look towards centralized control, but others (distributed processing of information and telecommunications switching) look towards greater diffusion of control and more diversity. Some markets that are now monopolistic, such as local exchange service, may continue to resist competition. However, even they will be vulnerable at least to a kind of Schumpeterian “creative destruction”92 that should promote diversity and change—unless the regulators frustrate the process.

If the past is prologue, confusion will be the one certain product of the next decade. Some will come from the ordinary “turmoil” of change. Sad to say, more will probably come from political and regulatory strategic reactions to change. Despite Faulhaber’s passionate plea to rid the world

91. See supra text accompanying notes 38-45.
92. See J. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 81-86 (3d ed. 1950). Schumpeter thought the traditional model of competition was a humbug: what really drives the capitalist system is not an equilibrium model of price-taking competitors but a process of aggressive entrepreneurship and rivalry among firms seeking monopoly profits. He also thought entrepreneurship and capitalism were doomed, to be replaced by the “organization man.”
of regulators (judicial regulators included), I feel safe in predicting that this act of "creative destruction" will not take place any time soon.